

THE CORRESPONDENCE OF CHARLES DARWIN
1879

From C. V. Smith [1879]¹

South West Pacific

Niua-fu or Good Hope Island which I presume to be the same as that Onouafu in “Coral Reefs” is entirely volcanic and has no reef whatever.² The shores are steep to. There is a salt water lake about 6 miles in circumference connected with the sea by a very narrow stream. The island is about 500 feet high. There are several craters and I was informed that some had very recently been in a state of activity. (June 1872)

Wallis Island is encircled. There are 11 islands, 7 of which are on the outer reef. Its native name is Uea³

Horn Islands comprising Fotuna and Alofa each have a distinct fringing reef. Fotuna is about 2500 feet and Alofa 1200 feet high.⁴ I can give you no information regarding the depth of water except that there is a deep ship channel between the islands no soundings being obtainable with the hand line. The channel is barely a mile broad.

Mitchell Island to the south of the Ellice Group is a very low atoll with about 10 small islands on the reef.⁵ We were unable to discover any entrance into the lagoon

“*Grand Cocal* was searched for in vain by HMS Basilisk and as all the local traders deny its existence, I cannot think it exists. It has long been marked doubtful on the Admiralty charts and the description leads me to suppose the island reported to have been S^t Augustine⁶

Sapona or Edgecumbe Island (Otooboa of Dillon”) has a barrier reef with a four fathom channel through it which leads into a harbour in the island itself.⁷ There is also deep but uneven water generally inside the reef

Espiritu Santo and the *Banks’ Islands* have reefs of the fringing kind as also have all the *New Hebrides & Torres Groups*.⁸

Indian Ocean

S^t. *Jean de Nova* or Farquhar Islands is an undoubted atoll with 4 large & several smaller islands.⁹ There is a channel into the lagoon at the N.W. side between the largest island and the Western reef. A coral bank of considerable extent stretches off the southern end of the atoll with 5 fathoms of water on it.

Aldabra is undoubtedly an upheaved atoll. The account in Horsburgh is very misleading as neither the red cliffs nor high forests were to be found.¹⁰ It is entirely

composed of coral rock with a fine growth of mangroves enclosing an extensive but shallow lagoon. There is a narrow riband of 9 fathoms water running 3 miles into the lagoon from the N.W. corner.

Great Comoro is volcanic and about 8600 feet high.¹¹ There is a little fringing reef on the North & S.E. sides

The above islands were surveyed by H.M.S. *Fawn* last year on an inch scale so that doubtless charts of them will shortly be published by the Admiralty.¹²

The East Coast of Africa South of Mombas has a fringing reef and is itself composed of coral rock.¹³ From Wasin to Punganis however there is a barrier of large coral reefs from 2 to 5 miles off shore with a deep channel inside having sometimes as great a depth as 20 fathoms. An Admiralty chart of Tanga Harbour and its approaches has recently been published by the Admiralty which will give a good general idea of the coast in that district.¹⁴

Chas V Smith | Lieut. HMS. *Fawn*

DAR 69: A61–2

CD ANNOTATION

Verso of last page: tick blue crayon

¹ The year is established by the references to the surveying voyage of HMS *Fawn* and the publication of the resulting charts; see n. 12, below.

² See *Coral reefs* 2d ed., p. 211; CD had described Onouafu, or Proby Island, as one of the islands of which he could find no distinct account. Niuafo'ou is the most northerly island in the kingdom of Tonga (formerly the Friendly Islands); it is a volcanic-rim island.

³ See *Coral reefs* 2d ed., p. 211. Wallis Island is surrounded by a barrier reef.

⁴ In *Coral reefs* 2d ed., p. 211, CD had referred to Alloufatou, or Horn island, as one of the islands of which he could find no distinct account. Futuna and Alofi, the Hoorn Islands, are remnants of an extinct volcano.

⁵ Ellice Islands: Tuvalu. Mitchell Island: Nukulaelae. Nukulaelae is now part of the nation of Tuvalu.

⁶ CD mentioned Gran Cocal, relying on Adam Johann von Krusenstern's account, in *Coral reefs* 2d ed., pp. 212–13. Smith was midshipman and then acting sublieutenant on HMS *Basilisk*, based at Australia, between 1872 and 1874 (*Navy list*). On the identity of Gran Cocal, as originally discovered by Europeans, with Niutao, Tuvalu, and the subsequent confusion over what the name referred to, see K. Chambers and Munro 1980. In 1872, the officers of the *Basilisk* searched for Gran Cocal north of Nanumanga, Tuvalu; when they failed to find it, the suggestion arose that the island had been confused with a reported shoal in the area between Nanumanga and Nanumea (St Augustine), Tuvalu (*ibid.*, p. 189).

⁷ CD mentioned 'Toupoua (Otooboa of Dillon)', one of the Santa Cruz islands, in *Coral reefs* 2d ed., p. 216. Peter Dillon explored the Santa Cruz islands in 1828 and 1829. Otooboa is now Utupua.

⁸ In *Coral reefs* 2d ed., pp. 215–16, CD wrote that the island of Espiritu Santo, and Banks Islands, had no reefs; in *ibid.*, p. 214, he wrote that the New Hebrides had fringing reefs. Banks Islands and the Torres Islands are in the northern part of Vanuatu; the central and south part of Vanuatu was formerly known as the New Hebrides. Espiritu Santo was the largest island of the New Hebrides.

⁹ See *Coral reefs* 2d ed., p. 246. The Farquhar Atoll is in the outer islands of the Seychelles.

¹⁰ CD cited James Horsburgh's *India directory, or directions for sailing to and from the East Indies, etc.* (Horsburgh 1836, 1: 176), for Aldabra in *Coral reefs* 2d ed., p. 244, and speculated that it might be an upheaved atoll, or the crater of a volcano. Aldabra is in the outer islands of the Seychelles.

¹¹ CD mentioned Great Comoro Island (Grande Comore) in *Coral reefs* 2d ed., p. 245.

- ¹² Smith was lieutenant on the surveying vessel HMS *Fawn*. The charts (Indian Ocean islands off the North Coast of Madagascar surveyed by Commander WJL Wharton and the officers of HMS *Fawn* 1878: G252:1/2) are at the Royal Museums, Greenwich; they were drawn up in 1879. Wharton completed the survey in August 1878 (see *Correspondence* vol. 1878, letter from W. J. L. Wharton, 14 August 1878).
- ¹³ Mombas: Mombasa, Kenya. See *Coral reefs* 2d ed., p. 248. Wasin: Wasini Island, now in Kenya. Punganis: Pangani, now in Tanzania.
- ¹⁴ Tanga is now in Tanzania. Admiralty chart 663, Mansa and Tanga bays, is held at the National Archives, Kew; it was made in 1878 (*Catalogue of Admiralty charts, plans, and sailing directions* 1898, p. 136).

From James Torbitt [1879?]¹

1879 Seedling, Crossed in 1876 and again in 1878.² Growth was retarded by the unfavourable season, and arrested by the destruction of the foliage by the parasite.³ Excepting under glass I have found no variety the foliage of which can resist the attack of the parasite.

AL incomplete
DAR 178: 151

- ¹ The year is conjectured from the reference to an 1879 seedling.
- ² Since 1876, Torbitt had been corresponding with CD about his attempts to breed a blight-resistant potato, and occasionally sending specimens (see *Correspondence* vols. 24–6). He previously sent seedlings (including an ‘1875 seedling’) shortly before his letter of 26 June 1878 (*Correspondence* vol. 26).
- ³ The year 1879 was exceptionally cold and wet (*Gardeners’ Chronicle*, 27 December 1879, p. 820). In his letter of 4 November 1879, Torbitt wrote that his statement that all foliage of the current year’s seedlings had been destroyed by the parasite was a mistake. The parasite responsible for potato late blight is *Peronospora infestans* (a synonym of *Phytophthora infestans*), a species of oomycete or water mould parasitic on the potato.

To Albert Günther 1 January 1879
Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Jan^y 1. 1879

My dear Friend

I must thank you cordially for your most kind little note & I sincerely return your good wishes.—¹

Believe me | Yours very truly | Ch. Darwin

Shrewsbury School, Taylor Library

- ¹ Günther’s letter has not been found. The recipient is established by the provenance, a collection of letters to Günther at Shrewsbury School.

From Marius Koch 3 January 1879

Rotterdam
3 Jan. 1879.—

Dear Sir!

By the present I take the liberty to accost you on some grave subject, hoping you will forgive an indiscreet young man, who wishes to receive some counsels from the

celebrated founder of the theory of the development himself.— I Studied since several years your works, “Descent of man” “the Origin of the species” etc etc & I am now one of your most diligent disciples & you can be assured that when I had time as much as I wished to have, I would do all my possible by writing & speaking to spread & to instruct your doctrine.— To my great regret I am merchant & have no much time! Nevertheless I use every moment and write sometime little articles.— The last one I wrote was titled, “Men with tails” in which I spoken about the communications of some travellers, who had seen some men with this difformity & who heard about whole nations in the interior of New Guinea who possesses a tail & where every child who is borned without this ornament is died instantly!—¹ I don’t say all those relations are true but I believe that this difformity is not *absolut impossible* and that a selection and a cruising of tailed individus can be the origin of a tailed people.— As I said above it is not the question if this people exists or not, but only if such a difformity is possible? Dear Sir will you be so kind now to write me your opinion in that subject & to say me if you have heard perhaps of one of your many correspondents about tailed men!

Wishing you a very happy year, I remain, after many thanks | your most obedient servant | M Koch

M. Koch | care off Koch & Vlierboom | Rotterdam²

DAR 169: 48

¹ For the story about people with tails on islands off the coast of New Guinea (now Papua New Guinea), see *The Times*, 29 December 1876, p. 4; it originally appeared in the *Sydney Morning Herald*, 12 October 1876, p. 3.

² Koch’s parents were Ferdinand Koch and Johanna Cornelia Vlierboom; the firm of Koch & Vlierboom were East India merchants.

To Edward Frankland 4 January [1879]

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)
Jan. 4th

My dear D^r Frankland

About a month ago you were so very kind as to say that you would give us a Bottle of pure water to proceed with our experiment on the exudation of alkaline matter from leaves on growing plants.— You said that the water w^d be sent in about a week’s time, & now a horrid fear has seized me that perhaps the water has been despatched & stolen under the impression that the Bottle contained Spirits.— I hope that they may merely have been forgotten or delayed—¹

Forgive me for troubling you on this to me important matter & believe me | Yours sincerely | Ch. Darwin

Endorsement: ‘/79’

The John Rylands Library, The University of Manchester (Frankland Collection)

¹ See *Correspondence* vol. 26, letter to Edward Frankland, 2 December [1878]; see also *ibid.*, letter to

Francis Darwin, [22 November 1878]. Evidently the water arrived or was re-sent; see letter to Edward Frankland, 8 February 1879. Neither Francis nor CD published on this subject.

From Mary Jung 7 January 1879

Sir,

A young austrian lady begs to allow of asking you a great favour. Endeavouring to get acquainted with the general principles and systems of the different sciences, I got the idea of possessing a little souvenir of the most celebrated men I know and so I shortly begun to make a collection of Autographes. I dont know a man, whoes opinion produced such a great revolution in this branche of science, a theory, which found such a general embracing, inspite the greatest efforts of refutation from other parts. I am partly submitted to your opinion and I remain doubting between your theory and the ecclesiastical dogma. When my reason agrees with your opinion, my heart stands to the latter and so I am in a continnual conflict with myself. I beg to excuse my speaking to you so freely, and I hope you will therefor not be unfavourable to me.

You would render *very very* happy by affording the request of honouring me with a single line, Yours | most thankfully and humbly | Mary Jung

Villa Jung | Salzburg, 7.1.79.

DAR 168: 94

From Carl Kraus 8 January 1879

Carl Kraus, | Pardubitz, Bohemia, Austria.
8th Jan. 1879.

Honoured Sir,

The letter you had dear Sir, the kindness to write me, has so agreeably surprised me, that I permit me testifying my gratitude; words, however, are too weak, to express what I feel for you.¹ I shall be happy to profit by every opportunity to give you a proof of my most esteem & veneration. Having the persuasion that you dear Sir, possess the largest interest for scientific publications, which bespeak the presumptive connection, between socialism and Evolution through natural selection, permit me to send inclosed essays, (supposing that you dear Sir, did not knowing this essays) of the excellent naturalist Charles Vogt, which this object has analyzed, with his notorious spirituously erudition.² The scientific world, shall be very happy, if they could hear the opinion of this object, on our illustrious natural philosopher Charles Darwin.

Begging to apologize for thus troubling dear Sir, and soliciting a continuance of your kind favour, I have the honour to be, honoured Sir, | Your respectfully admirer
| Techniker³ Carl Kraus.

Charles Darwin, Esquire | Down.—

DAR 169: 104

¹ CD's letter to Kraus has not been found.

² Kraus probably sent Carl Vogt's essay, 'Descendenz-Theorie und Socialismus' from the Vienna *Neue freie Presse*, 12, 14, and 19 December (Vogt 1878). There are clippings of the first two parts in DAR 226.1: 258–9 and DAR 226.2: 22. See also letter to Karl von Scherzer, 26 December 1879.

³ *Techniker*: a vocational title indicating expertise in engineering gained through practical experience rather than a university qualification.

From W. E. Darwin 9 January 1879

Bank, Southampton,

Jan'y 9 1879

My Dear Father.

<p>£27.434. Consol. 4 percent L.N.W. Ry guaranteed stock at 102 $\frac{1}{2}$ worth</p> <p style="text-align: right;">£28119.17</p> <p>£6516. ordinary stock at 140 $\frac{1}{2}$ worth</p> <p style="text-align: right;">£9154.19.1</p> <p style="text-align: right;">£28,119.17</p> <hr style="width: 20%; margin-left: auto; margin-right: 0;"/> <p style="text-align: right;">9154.19.1</p> <p style="text-align: right;">£37274.16.1 present value</p> <p style="text-align: left;">cost</p> <hr style="width: 20%; margin-left: 0; margin-right: auto;"/> <p style="text-align: right;">23.592. .</p> <hr style="width: 20%; margin-left: 0; margin-right: auto;"/> <p style="text-align: right;">£13,662.16.1 Gain</p>	
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This is a fine increase in value and must make you feel proud.¹

In these days consols are considered a far *readier* security than New 3 percents for Bankers to hold—. Do you mind my selling the £4000 New 3: I hold and buy £4000 Consols, I will send you the 3 months interest to make it straight.²

Things are all quite quiet & comfortable down here and the only possible danger of a run for us would be if one or two local Banks went to the dogs which is very unlikely.³

I was very glad to see that the Emperor of Prussia had confirmed your appointment to the Academy, though it shows what an autocratic country it is.⁴ We expect Sara⁵ tonight, not quite frozen I hope.

We have 3 inches of snow at Bassett.

It is Capital Horace being revived.⁶

Your affect son | W. E. Darwin

Cornford Family Papers (DAR 275: 70)

¹ In February 1879, CD converted his Lancaster and Carlisle Railway stock, bought in 1850, into London and North Western Railway stock (CD's Investment book (Down House MS), pp. 49, 130, 146).

² In CD's Account books—banking account (Down House MS), there is an entry under 'Bank Received' on 4 July 1879, 'Consols account of W. E. Darwin', £58 15s. Consols: consolidated annuities, consisting of several issues of stock, consolidated into one (Cordingley 1901).

³ On the banking crisis that took place in the last quarter of 1878, beginning with the failure of the City of Glasgow Bank, see M. Collins 1989.

⁴ CD was informed of his election as foreign member of the Königlische Preussische Akademie der Wissenschaften (Royal Prussian Academy of Sciences), subject to confirmation by the emperor, in November 1878 (*Correspondence* vol. 26, letter from Emil du Bois-Reymond, 7 November 1878). *The Times*, 7 January 1879, reported that the German emperor had confirmed the appointments of CD and of Richard Owen. The emperor of Germany was Wilhelm I.

⁵ Sara Darwin was William's wife.

⁶ Horace Darwin had been unwell but was improving (letters from Emma Darwin to H. E. Litchfield, [6 January 1879] and [12 January 1879] (DAR 219.9: 188, 189)).

To ? 9 January 1879

Down, | Beckenham, Kent. (Railway Station | Orpington. S.E.R.)
Jan. 9th 1879

Dear Sir

I am very much obliged to you for your great kindness in having sent me four copies of your engraving, which arrived safely yesterday.¹

The work seems to be, though I cannot pretend to be a judge, a very fine production, & I remain | Dear Sir | Yours Faithfully | Charles Darwin

Dr Mirko Majer (private collection)

¹ The engravings have not been identified.

To W. E. Darwin 10 January [1879]

From Mr. C. Darwin, Down, Beckenham.

Many thanks for answer.— Pray do whatever you like about the Consols.—¹ G. had a most prosperous visit at Worthing. A. R. quite a gentleman & highly accomplished in many ways.—²

C. Darwin

Jan. 10th—

ApcS

Postmark: JA 10 | 79

DAR 210.6: 152

¹ See letter from W. E. Darwin, 9 January 1879.

² Anthony Rich had decided to leave his property in the City of London to CD (see *Correspondence* vol. 26, letter from Anthony Rich, 7 December 1878). George Howard Darwin sent William an account of his visit to Worthing, a town on the coast of Sussex, on 8 and 9 January (letter from G. H. Darwin to W. E. Darwin, 10 January 1879 (DAR 210.14: 14)):

He is a very little lively old man with a grey beard, & does'nt look near his age of 75. He is a great talker & pleasant. He seems to read a great deal—including French Italian Latin & Greek—and is very advanced in his views political social & religious. ... I rather think his father had no profession; at any rate he lived in Surry & M^r. R. lived partly there & partly in London until about 20 years ago when his father died at

the age of 94. He M: R. was at Caius Coll. Camb. & was a scholar of the college, but did not go out in honours, as it was before the days of Classical Tripos. He was going to the bar but fell ill & went and lived for 8 years in Italy, where he regularly worked as an artist at Rome. He has several of his drawings hanging up & they strike me as good. He gave up art when he became ill some 20 years ago, and as he was turned out of his London house by the lease ending, he came and settled at Worthing. He is a member of the Reform Club, but thinks most of the members a very weak-kneed lot in their liberalism.

From Leopold Württenberger¹ 10 January 1879

Dettighofen bei Griessen (Gr. Baden)
den 10. Jan. 1879.

Hochgeehrtester Herr!

Seit mehreren Jahren verwende ich meine freie Zeit dazu, die Entwicklungsgesetze der Ammoniten näher zu erforschen und ich erlaubte mir vor einigen Jahren schon einmal, Ihnen eine kurze Publication über einige Resultate dieser Studien zuzusenden, worauf ich von Ihnen zu meiner grössten Freude ein so freundlich aufmunterndes Schreiben erhielt.² Da mich meine Studien davon überzeugten, dass die Entwicklung der Ammoniten einen der schärfsten und klarsten Beweise für die Wahrheit der Descendenztheorie liefern, so begann ich vor einiger Zeit schon, über meine Beobachtungen ein ausführliches Werk auszuarbeiten, dem eine Anzahl Abbildungen beigegeben werden soll.

In den letzten Jahren wurde ich jedoch an meinen Ammonitenstudien dadurch ausserordentlich gehindert, dass ich mich, wider meinen Willen, nur um existiren zu können, einem technischen Berufe hingeben musste, der mir fast gar keine Zeit zu wissenschaftlichen Arbeiten übrig liess.³ Es ist mir bis jetzt leider nicht gelungen, eine Stellung zu erringen, zu deren Wirkungskreis das Betreiben paläontologischer Studien gehört, und eigene Mittel fehlen mir ebenfalls, um die mich in so hohem Grade anziehenden Forschungen in unabhängiger Weise zu einem Abschlusse bringen zu können.

Diese Umstände werden mich vielleicht einigermaßen entschuldigen, wenn ich es wage, bei Ihnen, hochgeehrtester Herr, ergebenst anzufragen, ob es nicht etwa möglich wäre, von einer Stiftung zur Förderung geologischer Forschungen, deren es in Ihrem Lande mehrere gibt, eine Unterstützung zu bekommen, die mich in den Stand setzte, meine Untersuchungen über Ammoniten in den nächsten Jahren ungehindert fortsetzen zu können.

Der naturwissenschaftliche Verein zu Carlsruhe⁴ würde die Herstellungskosten der zu meinem Werke nöthigen Abbildungen übernehmen. Für eine Anzahl Entwicklungsreihen jurassischer Ammoniten habe ich bereits das vollständige Material beisammen und mehrere noch vorhandene Lücken würden sich nach meiner Ueberzeugung durch das weitere Ausbeuten guter Fundstellen unseres süddeutschen Jura ausfüllen lassen, auch hoffe ich durch das Studium einiger grösserer Sammlungen noch manches zu gewinnen. Wenn ich mich diesen Arbeiten ungehindert hingeben könnte, würde nach etwa $1\frac{1}{2}$ –2 Jahren mein Werk druckfertig sein.⁵

Wenn Sie, hochgeehrtester Herr, die Freundlichkeit haben wollten, mich bei einer Stiftung zu empfehlen, welche den Zweck hat, unbemittelte Naturforscher bei ihren wissenschaftlichen Arbeiten zu unterstützen, so würde wohl meine Angelegenheit einer günstigen Erledigung entgegengehen und ich wäre Ihnen dafür zu unendlichem Danke verpflichtet, denn nach dem Erscheinen meiner Arbeit würde mein Schicksal vielleicht auch eine günstigere Wendung nehmen, indem es mir dann wohl eher gelingen würde, eine meinen Neigungen entsprechende Stellung zu finden.

Ueber meine persönlichen Verhältnisse erlaube ich mir noch beizufügen, dass ich gegenwärtig 33 Jahre alt, allein stehend ohne eigene Familie bin und während mehrerer Jahre an der polytechnischen Hochschule zu Karlsruhe⁶ Geologie, Mineralogie, Chemie und Mathematik studirte.

Schliesslich möchte ich Sie noch höflichst bitten, mir meine Dreistigkeit nicht übel zu nehmen. Nur der Umstand, dass bei mir der unwiderstehliche Drang zu naturwissenschaftlichen Forschungen mit so ungünstigen äusseren Verhältnissen zusammentrifft, gibt mir den Muth, mich in dieser Angelegenheit an Sie zu wenden.

Mit der vorzüglichsten Hochachtung verbleibe ich | Ihr ergebenster | Leopold Würtenberger

DAR 181: 184

¹ For a translation of this letter, see Appendix I.

² CD's letter to Würtenberger has not been found. There is an annotated copy of Würtenberger's 'Neuer Beitrag zum geologischen Beweise der Darwin'schen Theorie' (New contribution to the geological evidence for Darwinian theory; Würtenberger 1873) in the Darwin Pamphlet Collection-CUL.

³ Würtenberger worked as an assistant in the Exchequer of Karlsruhe from 1874 to 1876, and then until 1877 as an assistant with the permanent exhibition of agricultural teaching tools, equipment, and machinery at Karlsruhe (Svojtka *et al.* 2009, p. 364).

⁴ Natural History Society of Karlsruhe.

⁵ Würtenberger published his conclusions in his book, *Studien über die Stammesgeschichte der Ammoniten: ein geologischer Beweis für die Darwin'sche Theorie* (Studies on the phylogeny of ammonites: a geological proof of Darwinian theory; Würtenberger 1880). He also published the conclusions of his forthcoming book in December 1879 in the German journal *Kósmos* (Würtenberger 1879).

⁶ Karlsruhe University.

To Mary Jung 11 January 1879¹

Down

[...] Permit me to advise you to try not to be troubled about the differences between ecclesiastics & scientific men.² Search for the truth, & then your conscience will be at ease. In the course of time ecclesiastics have always managed to make their conclusions somehow to harmonise with ascertained truths, which they at first vehemently & ignorantly opposed [...]

LS incomplete³

J. A. Stargardt (dealer) (catalogue 681, 28–9, June 2005)

¹ The date and the address, Down, are given in the sale catalogue.

² See letter from Mary Jung, 7 January 1879.

³ The original letter is complete and is described in the sale catalogue as being $1\frac{3}{4}$ pages long.

From C. H. Blackley 13 January 1879

Arnside House, | Stretford Road, | Manchester.

Jan^y 13th 1879

Dear Sir,

Some time ago I came across an anecdote that bears somewhat on your theory of the origin of species. I do not know if you will care to have it but to me, who am a Lancashire man, the story seemed to be almost worthy of being placed by the side of that of the late chimpanze “Joe” at the London Zoological Gardens.¹ I give it just as it came to me partly in the vernacular of this county or rather of the village in which the meeting occurred. In a school room of one of the country villages of Lancashire a gentleman had one evening gathered together a number of young poeple of both sexes for the purpose of giving a semi-scientific lecture. After the lecture the time was taken up by conversation and in the course of the evening one of the youths who was evidently acquainted with the doctrine of the “origin of species” gathered a group of girls around him and gave them two or three of the leading facts of this doctrine. One of the girls who was not considered to be very bright in her intellect listened to statements of the youth with rather a troubled countenance but said nothing at the time.

In the course of the evening however the girl found an opportunity of putting some questions to the gentleman who had been lecturing and the following conversation occurred:—

“Sir J— here’s John—has bin tellin us ut thers a mon i London as says at fust men as wur made wur made cawt o monkeys dun yo think its true?”

“Well” said the gentleman “not perhaps exactly as you put it but in the main it is true Mr Darwin of London does say that man is descended from the monkey.”

“An dun yo believe it?” “Yes I must say I do because Mr Darwin has, so far, had the best of the argument in spite of the very able opponents who have been pitted against him; but you know it is not quite as you represent it; man was not made directly from a monkey. The change has extended over a long period of time. “Well,” said the girl “Aw dunnot care heaw yo explain it but if it is so aw am summat fain ut awm noan a mon”*

*Something glad that I am not a man

Please do not take the trouble of replying to my note. If the story interests you at all I shall be quite repaid for my trouble

Sincerely Yours | Cha^s H Blackley

Cha^s Darwin Esq MA | FRS &c

DAR 160: 194

¹ Joe the chimpanzee, of the Zoological Gardens in London, died in 1874. He was known for his attachment to his keeper, and for his politeness to visitors; he would open the door for them and shake hands when they left. (*Daily News*, 24 March 1874, p. 3.)

To Karl Höchberg 13 January 1879

Down Beckenham Kent

Jan. 13. 1879

Dear Sir,

I am much obliged for your note and for the Essay which you have sent me.¹ I am a poor German Scholar and your German is difficult, but I think that I understand your meaning, and hope at some future time when more at leisure to recur to your Essay. As far as I can judge you have made a great advance in many ways in the subject; and I will send your paper to Mr. Edmund Gurney who has written and is much interested in the origin of the taste for music.² In reading your Essay it occurred to me that facility in the *utterance* of prolonged sounds (I do not think that you allude to this point) may possibly come into play in rendering them musical; for I have heard it stated that those who vary their voices much, and use cadences in long continued speaking feel less fatigued than those who speak on the same note.

I beg leave to remain, dear Sir, | Yours faithfully | Charles Darwin

Copy

DAR 145: 129

¹ Höchberg's note has not been found. The essay was probably Berg 1879 ('Die Lust an der Musik', The desire for music; see letter to Grant Allen, [before 21 February 1879]).

² CD's correspondence with Gurney on this subject has not been found; he discussed the origin of the musical abilities of humans and other animals in *Descent* 2d ed., pp. 566–73. For an early article by Gurney discussing the origin of music among other matters, see 'On some disputed points in music', *Fortnightly Review* n.s. 20 (1876): 106–30.

To C. H. Blackley 14 January 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Jan 14th / 79

Dear Sir

I must send you a line to thank you for your letter. The notion of the girl those men & women are descended from distinct progenitors is certainly a very ludicrous one.¹

Dear Sir | Yours faithfully | Ch. Darwin

Formerly in the private collection of Dr T. B. Robinson

¹ See letter from C. H. Blackley, 13 January 1879.

January 1879

To Melchior Neumayr 15 January 1879

Down, | Beckenham, Kent.

Jan 15. 1879

Private

My dear Sir,

I hope that you will excuse me begging a favour of you. L. Würtenberger published a paper in 'Ausland' 1873 on the development & succession of Jurassic ammonites, & being the first which I had read on the subject, it struck me greatly¹ He has now written that he is so poor that he cannot complete his work without aid; though the Carlsruhe Society would undertake the illustrations of the book if it were completed; & he asks me whether any scientific Society in England would give him assistance, but this I feel sure cannot be obtained.² Now will you have the kindness to tell me *in confidence*, whether you know that he is a trustworthy man & whether you think well of his work; for in this case I would aid him myself to a certain extent. I trust that you will forgive me for thus troubling you, & I should be very much obliged by an early answer.

I remain, my dear Sir | Yours very faithfully | Charles Darwin

LS

Christie's (dealers) (13 December 2017)

¹ There is an annotated copy of Leopold Würtenberger's paper, 'Neuer Beitrag zum geologischen Beweise der Darwin'schen Theorie' (New contribution to the geological evidence for Darwinian theory; Würtenberger 1873) in the Darwin Pamphlet Collection-CUL.

² See letter from Leopold Würtenberger, 10 January 1879. The Naturwissenschaftliche Verein zu Carlsruhe (Natural History Society of Carlsruhe) had offered to pay for the illustrations to Würtenberger's work. Carlsruhe, in Baden-Württemberg, Germany, is now known as Karlsruhe. On CD's correspondence with Neumayr, see Svojtka *et al.* 2009.

To Leopold Würtenberger 15 January 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Jan 15. 1879

Dear Sir,

I am extremely sorry that your circumstances interfere with the continuance of your scientific work. I grieve to say that I can see no prospect of any English scientific society aiding you.¹ But you may rely on my keeping your request in mind, & if any plan occurs to me I will write again in a fortnight's time. If you do not hear you will understand that I cannot aid you & this I shall be very sorry for.² I have carefully preserved your paper published in 1873 which then interested me greatly.³ I therefore return the copy received this morning as it might be useful to you.

I remain, | dear Sir. | Yours faithfully | Charles Darwin

LS

Helmut Würtenberger (private collection)

¹ See letter from Leopold Würtemberger, 10 January 1879.

² CD's next letter to Würtemberger has not been found, but see the letters to Melchior Neumayr, 15 January 1879 and 24 January 1879, and the letter from Leopold Würtemberger, 29 January 1879.

³ There is an annotated copy of Würtemberger's 'Neuer Beitrag zum geologischen Beweise der Darwin'schen Theorie' (New contribution to the geological evidence for Darwinian theory; Würtemberger 1873) in the Darwin Pamphlet Collection–CUL.

From Gaston de Saporta¹ 16 January 1879

Aix, (Bouches du Rhône)

16 Janvier 1879

Monsieur et honoré confrère,

Je viens solliciter de vous, en vous envoyant ma photographie, la faveur de me faire parvenir la vôtre; à laquelle j'attache un grand prix.² Puisque je n'ai pas le plaisir de vous connaître et de recueillir de votre bouche les enseignements que je trouve dans votre livre, ce sera pour moi une consolation de connaître vos traits—Je vous aurai une vraie reconnaissance de m'accorder cette faveur.

Je puis vous annoncer que mon dernier ouvrage, où vos théories tiennent une si grande place obtient en France un succès fort convenable; l'honneur vous en revient et comme nous poursuivons avant tout la vérité; il est bien certain qu'elle prévaudra après un temps plus ou moins long et malgré les obstacles & les objections souvent puériles qu'on oppose à votre doctrine.³

Je vous renouvelle, Monsieur et honoré confrère, l'expression bien sincère de mes sentiments très dévoués | C^{te} G de Saporta

DAR 177: 37

¹ For a translation of this letter, see Appendix I.

² Saporta's photograph has not been found in the Darwin Archive–CUL.

³ Saporta's book, *Le monde des plantes avant l'apparition de l'homme* (The world of plants before the appearance of man; Saporta 1879), was published in December 1878 (see *Correspondence* vol. 26, letter from Gaston de Saporta, 9 August 1878, and letter to Gaston de Saporta, 22 December 1878). CD's copy is in the Darwin Library–CUL. The book gave an overview of the stages through which prehistoric vegetation had passed, and was based on earlier articles by Saporta. On the critical reception of CD's theories in France, see Harvey 2008 and Tort 2008.

From Karl Höchberg¹ 17 January 1879

Castagnola presso Lugano. (Switzerland.)

d. 17.1.79.

Verehrtester Herr!

Ich bin Ihnen sehr dankbar für Ihren freundlichen Brief und erlaube mir noch, Sie darauf aufmerksam zu machen, dass meine Theorie von der Entstehung der Freude an den Farben in der nächsten Zeit durch die Forschungen eines englischen Gelehrten eine Bestätigung zu finden scheinen.²

Mr. *Grant Allen* sagt nämlich in der Anzeige seines im Druck befindlichen Werks "The Colour-Sense, its Origin and Development" im Januar-Heft der Zeitschrift

“Mind” unter Anderem Folgendes: “Then, after considering the nature of Taste, it points out the reasons for believing that a taste for bright colours exists only amongst fruit-eating or flower-haunting animals, and that they alone show secondary marks of its effects in the sexual selection of brilliant mates.”³ Dies bestätigt das, was ich s. 51 und 58 meiner Brochüre gesagt habe,— In derselben Nr. des “Mind” befindet sich ein Artikel von Mr. Gurney, der mich sehr interessirt hat.⁴

Wenn ich Ihnen nicht beschwerlich zu fallen fürchtete, würde ich Sie um Ihre Meinung darüber bitten, ob mein Essay interessant genug ist, um auch in Englischer Sprache herausgegeben zu werden? Vielleicht schreibt mir Herr E. Gurney darüber ein Wort.

Ihr aufrichtig Ergebener | K. Höchberg.

DAR 166: 226

¹ For a translation of this letter, see Appendix I.

² See letter to Karl Höchberg, 13 January 1879. Höchberg’s colour theory may have been included in the article about music that he sent to CD (Berg 1879).

³ G. Allen 1879a. The quotation is from *Mind* 4 (1879): 144.

⁴ Edmund Gurney’s article was ‘On discord’ (*Mind* 4 (1879): 22–35), and was a response to Grant Allen’s *Physiological aesthetics* (G. Allen 1877).

From W. K. Parker 17 January 1879

36 Claverton St SW

Jan^y 17/79

My Dear Sir

I have come across an excellent East-End-of-London Clergyman, who has devoted his life (besides his other work) to watching the progress of modern Science. I believe that he is better read in it than any other man in his profession, & being,— as is natural, a huge admirer of the *Hebrew Scriptures*, he is attempting, impartially, to give to Scripture the things that belong to Scripture, & to Science the things that belong to Science—

I do not expect that you will go very far with him; but his work (as it seems to me) is a very *healthy* & a very pleasing one; & if not useful as an apology for the Science of Moses, it is yet a capital defence—*clergy-ward*—of your work in bold research.

My friend is anxious that you should have a copy, & knowing me to be an old-fashioned, scripture-loving, orthodox kind of fellow, & yet a most out-spoken **Darwinian**, he asked me to introduce the book to you.¹

I know & am assured that you are too kindly & courteous to take his present in any other than a kindly manner—

With the most loving esteem, | I am My Dear Sir | Yours most truly | W. K. Parker

C. Darwin Esq, FRS

DAR 174: 21

¹ The book and its author have not been identified.

To T. H. Huxley 18 January 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Jan 18th 1879

My dear Huxley

I have just finished your present of the life of Hume, & must thank you for the great pleasure which it has given me.—¹ Your discussions are, as it seems to me, clear to a quite marvellous degree, & many of the little interspersed flashes of wit are delightful. I particularly enjoyed the pithy judgment in about 5 words on Comte.—² Notwithstanding the clearness of every sentence, the subjects are in part so difficult, that I found them stiff reading. I fear, therefore, that it will be too stiff for the general public; but I heartily hope that this will prove to be a mistake, & in this case the intelligence of the public will be greatly exalted in my eyes.

The writing of this book must have been awfully hard work, I should think.

My dear Huxley | Ever yours | Ch. Darwin

George has paid a visit to M^r Rich & liked the old gentleman much. They talked incessantly for about 24 hours— M^r R. seems to have enjoyed your visit hugely.—³

Imperial College of Science, Technology and Medicine Archives (Huxley 5: 333)

¹ CD's copy of Huxley's biography and discussion of the philosophy of David Hume is in the Darwin Library—Down (T. H. Huxley 1879).

² In T. H. Huxley 1879, Huxley had written that positivists (followers of Auguste Comte) believed that observation of the mind was inherently impossible, and that psychology was 'a phantasm generated by the fermentation of the dregs of theology'. He added:

if M. Comte had been asked what he meant by "physiologie cérébrale," except that which other people call "psychology;" and how he knew anything about the functions of the brain, except by that very "observation intérieure," which he declares to be an absurdity—it seems probable that he would have found it hard to escape the admission, that, in vilipending psychology, he had been propounding solemn nonsense.

³ For some of George Howard Darwin's comments on his visit on 8 and 9 January to Anthony Rich, who had decided to leave his property to CD, see the letter to W. E. Darwin, 10 January [1879], n. 2. Huxley had visited Rich at the end of December 1878 (*Correspondence* vol. 26, letter from T. H. Huxley, 28 December 1878).

To G. J. Romanes [18 January 1879]

From C. Darwin, Down, Beckenham.

I see advertised

Vignoli— *Fundamentalgesetz der Intelligenz im Thierreich. Versuch einer vergleich Psychologie* 234 pp 8^{vo} Leipz 1879— 4/—¹

pc

Postmark: JA 18 79

American Philosophical Society (558)

¹ Romanes was working on a book on animal intelligence (*Mental evolution in animals*; Romanes 1883). Tito Vignoli's book was titled *Über das Fundamentalgesetz der Intelligenz im Thierreich: Versuch einer*

vergleichenden Psychologie (On the fundamental law of intelligence in the animal kingdom: an experiment in comparative psychology; Vignoli 1879). It was a translation from the Italian of Vignoli 1877.

To Gaston de Saporta 19 January 1879
Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)
 Jan 19th 1879.—

My dear Sir

I am particularly glad to possess your photograph, as I was wishing a few weeks ago to add it to my collection.— I have the pleasure to enclose my own.—¹

I am very glad to hear that your work is popular in France. From being pressed by other work, I have not yet had time to read it.—²

With much respect | Yours faithfully | Charles Darwin

Archives Gaston de Saporta (private collection)

¹ See letter from Gaston de Saporta, 16 January 1879 and n. 2.

² Saporta 1879. See letter from Gaston de Saporta, 16 January 1879 and n. 3. CD was working on movement in plants (CD's 'Journal' (Appendix II)).

To Raphael Meldola 20 January 1879
Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
 Jan 20. 79

My dear Sir,

I think that you would like to read an article by F. Müller in 'Kosmos': anyhow it will only cost you the trouble of returning it to me.¹

Yours very faithfully | Ch. Darwin

LS

Oxford University Museum of Natural History (Hope Entomological Collections 1350: Hope/Westwood Archive, Darwin folder)

¹ Fritz Müller's article on sexual dimorphism, 'Epicallia Acontius. Ein ungleiches Ehepaar' (*Epicallia Acontius*: a dissimilar couple; F. Müller 1879a) was published in the January 1879 issue of *Kosmos*. CD's copy of the issue is in the unbound journal collection in the Darwin Archive—CUL.

To H. N. Moseley 20 January 1879
Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)
 Jan 20th 1879

Dear Moseley

I have just received your book, & I declare that never in my life have I seen a Dedication which I admired so much. Of course I am not a fair judge, but I hope that I speak dispassionately, though you have touched me in my very tenderest point, by saying that my old Journal mainly gave you the wish to travel as a Naturalist.

I shall begin to read your book this very evening, & am sure that I shall enjoy it much—¹

Yours very sincerely | Charles Darwin

Christie's, London (dealers) (online 31 October – 8 November 2018, lot 11)

¹ Moseley's *Notes by a naturalist on the 'Challenger'* (Moseley 1879) was dedicated to CD. The dedication read:

To Charles Darwin, Esq., LL.D., F.R.S., &c., from the study of whose Journal of researches I mainly derived my desire to travel round the world, to the development of whose theory I owe the principal pleasures and interests of my life, and who has personally given me much kindly encouragement in the prosecution of my studies, this book is, by permission, gratefully dedicated.

Journal of researches was CD's account of his experiences on the *Beagle* voyage. CD and Moseley had met one another in 1876 and corresponded since that year (*Correspondence* vol. 24). The *Challenger* expedition lasted from 1872 until 1876. CD's annotated copy of Moseley 1879 is in the Darwin Library–CUL (see *Marginalia* 1: 607).

From W. T. Thiselton-Dyer [20 January 1879]¹

the species of *Oxalis*.

O. tropæoloides = *O. corniculata*, L. var. *atropurpurea*

It is nothing more than a form of the well known *O. corniculata* with Copper coloured foliage²

The Cactus is no doubt a merely trifling variety of *Pilocereus Houletii*³

Apropos of our conversation on means of geographical distribution I think you would be interested at glancing at what Moseley says in the 15th. volume of the Journal of the Linnean Society p. 77 about pigeons ejecting seeds in a fit state for germination.⁴ He apparently regards this as the most efficient means of transport for all but littoral species in the Malayan archipelago.

One does not like to venture to propose any particular undertaking to you as you must know so much better than any one else what is most important to be done, but your collected notes on geographical distribution w^d. form a most delightful book⁵

Incomplete
DAR 205.2: 260

CD ANNOTATIONS

- 1.1 the species ... foliage 3.2] *crossed pencil*
- 4.1 The Cactus ... Houletii] *crossed ink*
- 5.1 Apropos ... Moseley 5.2] *crossed pencil*
- 5.2 says] *after 'Moseley' interl pencil*
- 6.1 One does ... book 6.4] *crossed pencil*
- Top of second page: 'Geograph. Distribution' pencil*

¹ The date is established by a note attached to the letter to W. T. Thiselton-Dyer, 25 January [1879]. This note contained a list of queries for Thiselton-Dyer, most of which CD crossed out as having been dealt

- with either in his letter or in Thiselton-Dyer's preceding letter. Thiselton-Dyer annotated one of them, 'Seeds of *Drosophyllum*', 'Ansd. Jan. 20/79'. From CD's letter to Thiselton-Dyer of 25 January [1879], it is evident that Thiselton-Dyer discussed *Drosophyllum* in a missing part of this letter.
- ² *Oxalis tropaeoloides* is a synonym of the horticultural variety *O. corniculata* var. *atropurpurea*. In *Movement in plants*, p. 118, CD referred to seedlings purchased under the name *O. tropaeoloides*, but 'certainly belonging' to the variety *O. corniculata* var. *atropurpurea*.
- ³ *Pilocereus houlettii* is an unresolved name; *Pilocereus houlettii* is a synonym of *Cereus houlettii*. CD mentioned *Pilocereus houlettii* in *Movement in plants*, p. 97.
- ⁴ Henry Nottidge Moseley was writing about the Admiralty Islands, which are north of New Guinea, not in the Malay Archipelago (Moseley 1875a). Thiselton-Dyer visited Down on 18 January 1879 (Emma Darwin's diary (DAR 242)).
- ⁵ CD's unpublished notes on geographical distribution are in DAR 205.4; for his published research, see *Origin* 6th ed., chapters 12 and 13.

From H. N. Moseley 21 January 1879

Mitcheldean | Gloucestershire
Jan 21. 79.

Dear M^r Darwin

I am delighted that the dedication of my book pleases you and am very much obliged to you for your kind remarks.¹ I only hope you may find something good in the contents of the book. I fear I have tried to talk about a good many things of which I have not more than a superficial knowledge.

I have been advised to become a candidate for the Registrarship of the University of London which is to be vacated by D^r Carpenter. I wish to obtain fairly paid employment and think I could do the work of this post well and have some leisure for scientific work whilst holding it.

If you should think me likely to be fit for the office you might do me some good by mentioning my name to Sir John Lubbock who is one of the most influential members of the Senate. Testimonials are not required in the matter and it is against etiquette for candidates to make any direct application to electors but I presume that in order to have any chance at all of election it is necessary to get one name brought before the notice of some members of the senate before the election. I hope you will excuse my mentioning the matter to you. It is only in the last ten days that I have thought of applying for the post. My chance of getting it is I fear very small but I hope at all events that a scientific man will be elected.²

I have great hopes that the London University may become in time a great scientific University like some of the best German Universities. The nation certainly ought to possess one such institution and would be greatly strengthened thereby.

yours truly | H N Moseley.

DAR 171: 257

¹ See letter to H. N. Moseley, 20 January 1879. Moseley had sent CD a copy of his *Notes by a naturalist* (Moseley 1879).

² Moseley became assistant registrar to University College, London (part of the University of London), in 1879. William Benjamin Carpenter was succeeded as registrar of University College by Arthur

Milman, the former assistant registrar. (*Historical record of the University of London* 1: 175). Lubbock had been vice-chancellor of the University of London since 1872 (*ODNB*).

From Fritz Müller 21 January 1879

Blumenau, St. Catharina, Brazil,
January 21, 1879

MY DEAR SIR,

If I remember well, I have already told you of the curious fauna which is to be met with between the leaves of our Bromeliæ.¹ Lately I found, in a large Bromelia, a little frog (*Hylodes?*), bearing its eggs on the back. The eggs were very large, so that nine of them covered the whole back from the shoulders to the hind end, as you will see on the photograph accompanying this letter, Fig. I (the little animal was so restless that only after many fruitless trials a tolerable photograph could be obtained). The tadpoles, on emerging from the eggs, were already provided with hind-legs; and one of them lived with me about a fortnight, when the fore-legs also had made their appearance. During this time I saw no external branchiæ, nor did I find any opening which might lead to internal branchiæ.²



FIG. I.

There is here another locality in which a peculiar fauna lives, viz., the rocks of waterfalls, which are of very frequent occurrence in almost all our mountain rivulets. On these rocks, along which the water is slowly trickling down, or which are continually wetted by the spray of the waterfall, there live various beetles not to be met with anywhere else, larvæ of diptera and caddis-flies, and a tadpole remarkable for its unusually long tail.

The pupæ of caddis-flies living on the rocks of waterfalls (I examined three species belonging to the *Hydropsychidæ*, *Hydroptilidæ*, and *Sericostomatidæ* (*Helicopsyche*)), as well as those living in the Bromeliæ (a species belonging to the *Leptoceridæ*), are distinguished by a very interesting feature.³ In other caddis-flies the feet of the second pair of legs (and in some species those of the first pair also) are fringed in the pupæ with long hairs, which serve the pupa, after leaving its case, to swim to the surface of the water for its final transformation. Now neither on the surface of bare or moss-covered rocks, nor in the narrow space between the leaves of Bromeliæ, the pupæ have any necessity, nor would even be able, to swim, and in the four species living on such localities which I examined, and which belong to as many different families, the feet of the pupæ are quite hairless, or nearly so, while in allied species of the same families or even genera (*Helicopsyche*) the fringes of the legs, used for swimming, are well developed.

This abortion of the useless fringes in the caddis-flies inhabiting the Bromeliæ and waterfalls appears to me to be of considerable interest, because it cannot be considered, as in many other cases, as a direct consequence of disuse; for at the time when the pupæ leave their cases and when the fringes of their feet are

proving either useful or useless, these fringes as well as the whole skin of the pupa, ready to be shed, have no connection whatever with the body of the insect; it is therefore impossible that the circumstance of the fringes being used or not for swimming, should have any influence on their being developed or not developed in the descendants of these insects. As far as I can see, the fringes, though useless, would do no harm to the species, in which they have disappeared, and the material saved by their not being developed appears to be quite insignificant, so that natural selection can hardly have come into play in this case. The fringes might disappear casually in some individuals; but, without selection, this casual variation would have no chance to prevail. There must be some constant cause leading to this rapid abortion of the fringes on the feet of the pupæ in all those species in which they have become useless, and I think this may be atavism. For caddis-flies, no doubt, are descended from ancestors which did not live in the water, and the pupæ of which had no fringes on their feet. Thus there may even now exist in all caddis-flies an ancestral tendency to the production of hairless feet in the pupæ, which tendency in the common species is victoriously counteracted by natural selection, for any pupa, unable to swim, would be mercilessly drowned. But as soon as swimming is not required and the fringes consequently become useless, this ancestral tendency, not counterbalanced by natural selection, will prevail, and lead to the abortion of the fringes.

I do not remember having seen, in any list of cleistogamic plants, the Podostemaceæ. These curious little aquatic plants, which Lindley placed near the Piperaceæ, Kunth between the Juncagineæ and Alismaceæ, and which Sachs considers as being of quite dubious affinity, cover densely the stones in the rapids of our rivers;⁴ on the branches which come above the surface of the water, there are pedunculated, open, fertile flowers; but there are numerous sessile flower-buds also on the branches, which probably remain submerged for ever; I have not yet ascertained whether these submerged flowers are fertile; if they are so, they can hardly fail to be cleistogamic.

FRITZ MÜLLER

Nature, 20 March 1879, pp. 463-4

¹ No previous letter from Müller on animals living in Bromeliæ (now Bromeliaceæ, or bromeliads) has been found. The original of this letter and the accompanying photograph and diagrams has not been found; the transcription here is from the published version in *Nature*.

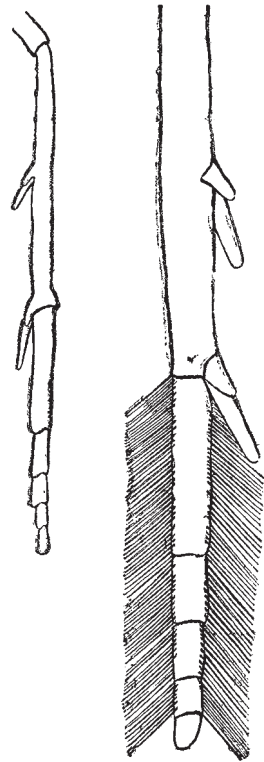
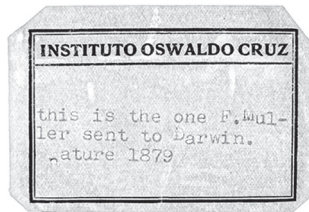


FIG. 2. FIG. 3.
FIG. 2.—Tibia and tarsus of the two pairs of legs of the pupa of a species of Leptoceridæ, inhabiting Bromeliæ. FIG. 3.—The same of a nearly allied species inhabiting rivulets.



Fritziana mitus collected by Fritz Müller.
Photographs by Marina Walker.
By kind permission of the Sector of Herpetology,
Museu Nacional, Rio de Janeiro, Brazil.

- ² Müller collected specimens of the egg-bearing frog; these are now in the Museu Nacional do Rio de Janeiro; for an image of one, see the plate on p. 21, reproduced at 250 per cent of the original size. *Hylodes* is a genus of tree frogs endemic to south-eastern Brazil; frogs of this genus are not egg-bearing. The frog that Müller photographed was a then unnamed species of *Fritziana* (the species has now been given the name *Fritziana mihus*; see M. Walker *et al.* 2018), in the egg-bearing frog family Hemiphraclidae, in which eggs develop into free-living non-feeding tadpoles or directly into froglets, bypassing the typical tadpole stage (see Duellman and Trueb 2015).
- ³ Hydropsychidae: the family of net-spinning caddisflies. Hydroptilidae: micro-caddisflies. *Helicopsyche* (the word was probably added by Robert McLachlan; see letter from Robert McLachlan, 13 March 1879) is now a genus in the family Helicopsychidae (snail-case caddisflies), but was previously tentatively associated with the family Sericostomatidae (McLachlan 1873, p. 40). Square brackets are used around *Helicopsyche* in the printed text. Leptoceridae: long-horn caddisflies.
- ⁴ Podostemaceae is the riverweed family; Piperaceae is the pepper family; Juncagineae (now Juncaginaceae) is the arrow-grass family; Alismaceae (now Alismataceae) is the water plantain family. John Lindley recognised the family Podostemaceae as dicotyledonous and placed it next to the Elatinaceae, which he called water-peppers and which are now more usually referred to as waterworts (Lindley 1846, pp. 482–3). Karl Sigismund Kunth mistakenly wrote that Lindley placed it near the Piperaceae (Kunth 1831, p. 243) and Müller evidently followed Kunth in this error. Kunth himself, believing the family Podostemaceae to be monocotyledonous, placed it next to the Juncagineae (Kunth 1831, pp. 242–3). Julius Sachs recognised the family Podostemaceae as dicotyledonous but recorded its placement as doubtful (Sachs 1874, p. 634). See also *Correspondence* vol. 6, letter to J. D. Hooker, [early December 1856], and letter from J. D. Hooker, [early December 1856].

From Melchior Neumayr¹ 21 January 1879

Wien
21.1.79

Geehrtester Herr!

Ich habe gestern Ihren geehrten Brief erhalten und beeile mich denselben zu beantworten; leider kann ich Ihnen wenig positives mittheilen, da ich Herrn L. Würtemberger nur aus seinen Arbeiten kenne.² Die früheren geologischen Publicationen von W., namentlich ein Aufsatz über den oberen Jura des Klettgau zeigen, dass er ein fleissiger und gewissenhafter Beobachter ist.³ Der Umstand, dass er als ein Privatmann, der nicht durch eine besoldete oder officiële Stellung dazu veranlasst ist, solche mühsame Arbeiten unternommen hat, spricht wol dafür, dass er dieselben aus Liebe zur Wissenschaft unternommen habe, und ein zuverlässiger Mann sei, aber mehr zu sagen bin ich nicht im Stande. Übrigens kann ich das, was Sie wünschen leicht durch weitere Anfragen erfahren, bei welchen der Grund der Erkundigung nicht genannt zu werden braucht. Doch wollte ich vorläufig nichts der Art unternehmen ohne Ihre Einwilligung, da Sie *im Vertrauen* an mich geschrieben hatten. Sollte es Ihnen erwünscht sein, so bin ich gerne bereit weitere Nachrichten einzuholen.

Was die im “Ausland” 1873 erschienene Arbeit über Ammoniten betrifft, so enthält dieselbe eine Reihe schöner und wichtiger Beobachtungen, namentlich über die Jugendentwicklung von *Ammonites liparus*, und es wäre wol zu bedauern, wenn dieselben nicht weiter verfolgt und vollständig veröffentlicht werden könnten.⁴

Gleichzeitig aber enthält der Aufsatz eine Reihe bedeutender Irrthümer in Einzelheiten, welche verbessert werden müssen, wenn das Werk von Werth sein soll. Herr W. war in seinen Schlüssen bisweilen etwas schnell, und kennt offenbar den Gegenstand und namentlich die Literatur über denselben nicht genug. Es ist das wol die natürliche Folge, der Isolirung in der Herr W. sich in einem kleinen Ort ohne wissenschaftliche Hülfsmittel befindet.

Wenn er einer Unterstützung bedarf um einige Bücher anzuschaffen oder einige Zeit an einem grossen Museum zu studiren, und so die Mängel seiner Arbeit zu verbessern, so ist es *wahrscheinlich*, dass das Geld hiefür gut angewendet ist. Übrigens könnte ich ihm die Sache wesentlich erleichtern, wenn er sich brieflich an mich wendet, und mir mittheilt, was er braucht; ich könnte ihm manche Bücher auf einige Zeit schicken, ihm aus anderen Notizen mittheilen, und auf dieses oder jenes aufmerksam machen; ich bin bereit einige Zeit auf Förderung einer Arbeit zu verwenden, welche wichtige Resultate verspricht und für welche Sie sich interessieren.

Schliesslich bin ich so frei, meinen Dank auszusprechen, dass Sie sich an mich gewendet haben; es wird mir immer ein Vergnügen sein und ich werde es mir zur Ehre rechnen, wenn ich Ihnen in irgend einer Richtung dienen kann.

Ich habe jetzt eben eine Arbeit über die Fauna des untersten Lias in den nord-östlichen Alpen abgeschlossen, welche ungefähr in zwei Monaten erscheinen wird; es zeigten sich auch hier wieder mehrere Formenreihen, die nur durch allmälige Veränderung entstanden sein können.⁵ Ich versuche in dieser Weise durch Monographien, die ich entweder selbst mache, oder meinen Schülern an der Universität zuweise, Material für ein Werk zu sammeln, das die Beziehungen der geologischen und palaeontologischen Überlieferung zur Descendenzlehre darlegen soll, und wie ich hoffe, Einwürfe wie die von Herrn Barrande entkräften wird.⁶

Mit dem Ausdrücke ausgezeichnetster Verehrung verbleibe ich, geehrtester Herr
| Ihr | ganz ergebener | M Neumayr

DAR 172: 16

¹ For a translation of this letter, see Appendix I.

² CD had asked Neumayr for his opinion of Leopold Würtenberger, who had asked for CD's assistance in finding a funder for his work on ammonites (letter from Leopold Würtenberger, 10 January 1879, and letter to Melchior Neumayr, 15 January 1879). Neumayr, like Würtenberger, was a geologist and palaeontologist.

³ Würtenberger 1867.

⁴ Würtenberger 1873. See letter from Leopold Würtenberger, 10 January 1879 and nn. 2 and 5. For the evolutionary significance of Würtenberger's ammonite studies, see Schmidt 1875, pp. 213–17. *Ammonites liparus* is a synonym of *Orthaspidoceras liparum*.

⁵ See also letter from Melchior Neumayr, 19 September 1879. The new work was Neumayr 1879, published on 15 July 1879.

⁶ Joachim Barrande, who carried out extensive work on the fossils of Bohemia, believed in the constancy of species (*DSB*). Neumayr was professor of palaeontology at the University of Vienna.

From W. S. Dallas 23 January 1879

Geological Society, Somerset House.

Jan. 23. 1879

My dear Sir

I have looked & enquired for the paper in the Quarterly Journal referred to by you but cannot find it.—¹ Duncan thought it must be in a paper by Tylor on changes of Sea levels but I find nothing on the subject of Coral islands.—² Semper's reference to the matter is most likely in his book on the Philippine Islands, but I cannot say positively as I am not acquainted with the book—³ Or he may have published a paper in the Senckenbergische Berichte,⁴ or in Wiegmann's Archiv,⁵ but I do not remember such a paper in those numbers which I have seen,— or possibly in the Journal des Museum Godeffroy.—⁶ I am very sorry that I can give you no more satisfaction, but if you are still in difficulty I will do what I can in searching for your desiderata as soon as this month is fairly out.—

With kind regards | Believe me | Yours very truly | W. S. Dallas.

C. Darwin Esq

DAR 162: 28

¹ CD's letter to Dallas has not been found, and the query has not been identified. Dallas was assistant secretary to the Geological Society of London.

² Peter Martin Duncan was a former secretary and president of the Geological Society. Alfred Tylor had published a paper on sea-level changes in 1853 in the *Philosophical Magazine* (Tylor 1853); only an abstract appeared in the *Quarterly Journal of the Geological Society of London* (Tylor 1852).

³ Carl Gottfried Semper discussed coral reefs in his *Die Philippinen und ihre Bewohner* (The Philippines and their inhabitants; Semper 1869, pp. 19–24 and 99–109). He first took issue with CD's theory of the formation of coral reefs in Semper 1863, pp. 565–9. For an summary of his views in English, see *Annals and Magazine of Natural History* 4th ser. 1 (1868): 486–7.

⁴ *Bericht über die Senckenbergische Naturforschende Gesellschaft in Frankfurt am Main.*

⁵ *The Archiv für Naturgeschichte*, first edited by Arend Friedrich August Wiegmann.

⁶ The Museum Godeffroy was a museum in Hamburg, Germany; Semper did not write for its *Journal*, but it held material from the animal class Holothuroidea (sea cucumbers) collected by him.

To Emil du Bois-Reymond 23 January 1879

Down, Beckenham

Jan 23. 1879

Sir,

I beg leave to acknowledge the safe receipt of my Diploma as one of the fellows of the Academy of Sciences of Prussia.¹ I hope that you will be so good as to express to your Academy my deep sense of this honour, which is one of the greatest that any Scientific man can receive.

I beg leave to remain | Sir | Your obliged & obedient servant | Charles Darwin

Perpetual Secretary | Academy of Sciences

LS

Berlin-Brandenburgische Akademie der Wissenschaften

¹ The letter to which this is a reply has not been found, but see *Correspondence* vol. 26, letter from Emil du Bois-Reymond, 7 November 1878, and this volume, letter from W. E. Darwin, 9 January 1879. Academy of Sciences of Prussia: Königl. Preussische Akademie der Wissenschaften. For the diploma, see *Correspondence* vol. 26, Appendix III.

To H. N. Moseley 23 and 30 January 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Jan 23. 79

Dear Moseley,

I have written by this post to Sir John Lubbock, telling him how very highly I think of the work which you have done; but more than this I could not do as I have no idea what the duties of the Registrar are.¹

Yours very sincerely | Ch. Darwin

P.S. Jan. 30th | You will see that there has somehow been a mistake in the address. I have since heard from Sir J. L. who says that he will see that your claims are fully considered.² | C. D.

LS(A)

Christie's (dealers) (online sale 31 October – 8 November 2018, lot 12)

¹ See letter from H. N. Moseley, 21 January 1879 and n. 2. Moseley was a candidate to be registrar of University College, London, which was part of the University of London. Lubbock was a member of the Senate of the University of London (Hutchinson 1914, 1: 80).

² Lubbock's letter has not been found.

To ? 23 January [1879?]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Jan. 23^d

Dear Sir

I procured (I believe from you) many years ago a small sheet of "Superior Gold-Beaters Skin: Whittings Patent". it is used like Sticking plaister, but I want a sheet for Experimental purposes.—² If any other similar sheets are sold which are **transparent** & *thinner & more flexible*, they w^d be still more useful to me.—

When you send me the sheet of Gold-beaters skin, will you kindly look & see if any sheet is more flexible & thinner than the others, for it has to be folded round most delicate stems of plants.

Dear Sir | yours faithfully | Ch. Darwin

Cleveland Health Sciences Library (Robert M. Stecher collection)

¹ The year is conjectured from the reference to gold-beater's skin (the outer coat of the caecum of an ox, used to separate sheets of gold being beaten into gold leaf). All the references to this material in CD's extant letters are from June and July 1879; see, for example, letter to Francis Darwin, 25 June [1879].

² CD described his use of gold-beater's skin in experiments on the movements of radicles (roots) in *Movement in plants*, pp. 133, 137, 146, 182, 194.

To Melchior Neumayr 24 January 1879

Down. | Beckenham Kent.

Jan 24— 1879.

My dear Sir.

I thank you cordially for your most kind letter, which tells me everything I wished to learn—¹ I have written to Herr Würtenberger by this post, offering to send him a sum of money, which with economy would allow him to work for about a year on science; but whether he will accept it, I cannot of course say.—² I have told him of your most generous offer to aid him with information references &c, if he will communicate with you.—

I am delighted to hear of your work on the Lower Liassic fossils; it is a most interesting geological stage & I feel sure that your manner of considering chiefly the forms which are closely allied will throw a flood of light not merely on Geology but on the whole Descent Theory.³

Again thanking you cordially, | I remain with much respect. Yours very faithfully— | Charles Darwin.

Copy

DAR 147: 184

¹ See letter from Melchior Neumayr, 21 January 1879. CD had asked Neumayr his opinion of Leopold Würtenberger, who had asked for financial support.

² CD's letter to Würtenberger has not been found, but see the letter from Würtenberger of 29 January 1879.

³ See letter from Melchior Neumayr, 21 January 1879 and n. 5. In the nineteenth century, the Liassic denoted a geological period synonymous with the early Jurassic.

From H. W. Bates 25 January 1879

Royal Geographical Society | 1, Savile Row, | Burlington Gardens, | W.
Jan 25 1879

My dear Mr Darwin

Mr Galton & other men of high esteem in the Royal have suggested to me the propriety of going in for the Fellowship, under the new Rules.¹

Of course it is impossible to decline such a chance, if there is one for me. Are you quite free to propose me? It is possible you may hesitate on the ground that you have already proposed a number of men this year; if so do not think I shall be hurt if I am told to wait another year

Yours sincerely | H W Bates

DAR 160: 94

¹ Francis Galton. In November 1878, Joseph Dalton Hooker, the president of the Royal Society of London, had announced a reduction of fees for new fellows, the entrance fee of £10 being abolished and the annual fee being reduced from £4 to £3 (*Record of the Royal Society of London*, p. 100; *Proceedings of the Royal Society of London* 28 (1878–9): 47).

To W. T. Thiselton-Dyer 25 January [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Jan 25th

My dear Dyer

Your letter, like so many previous ones, is most useful to me. I am perplexed about *Ox. tropaeoloides*, for in structure & movement the cotyledons differ from those of *O. corniculata* var. *atropurpurea*, which I have carefully observed.—² I hope that I may succeed in raising some plants.—

It is a shame that you sh^d have had trouble to write about *Drosophyllum*.³ Thanks for *Darlingtonia*; I hope it will not be injured by frost, which stops nearly all our experimental work.⁴

I will bear in mind what you say, about notes on Geograph Distribution; but trying to make out something new is so much more interesting than compiling old notes.⁵

We much enjoyed your visit here.⁶ I must to work

Yours very sincerely | Ch. Darwin

Dyer

Oxalis colorata) } seeds from Kew
— *articulata*) }

are these closely allied to *O. rosea*? &, are they American species?⁷

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–1881: ff. 153–6)

¹ The year is established by the relationship between this letter and the letter from W. T. Thiselton-Dyer, 27 January 1879.

² For *Oxalis tropaeoloides* and *Oxalis corniculata* var. *atropurpurea*, see the letter from W. T. Thiselton-Dyer, [20 January 1879] and n. 2. The name *Oxalis tropaeoloides* is also sometimes associated with the horticultural variety *Oxalis corniculata* var. *repens*, so CD's seeds may have been of this variety.

³ The reference has not been identified; the letter from W. T. Thiselton-Dyer, [20 January 1879], is incomplete. *Drosophyllum* is a genus of carnivorous plants containing a single species, *D. lusitanicum* (Portuguese sundew or dewy pine).

⁴ In *Movement in plants*, p. 450 n., CD commented that although one researcher had found the leaves of *Darlingtonia californica* (California pitcher-plants) to be strongly apheliotropic, he and Francis Darwin had not found this movement in a plant that they possessed for a short time.

⁵ See letter from W. T. Thiselton-Dyer, [20 January 1879] and n. 5.

⁶ Thiselton-Dyer and his wife, Harriet Anne, visited Down on 18 January 1879 (Emma Darwin's diary (DAR 242)).

⁷ This query appears on a separate sheet of paper, along with other queries that CD crossed out, evidently as having been sufficiently dealt with in this letter or the letter from W. T. Thiselton-Dyer, [20 January 1879]. The other queries are as follows: 'Ox. tropaeoloides, (seeds from Carter) can you tell me anything about affinities & habitat of this species | **T** or **Filocereus** Houtletianum leucocephalus,—(from Kew) what must I call this? | Seeds of *Drosophyllum* | *Darlingtonia*. specimen'. James Carter & Company were London seed merchants. *Pilocereus houletianum* is a synonym of *Cereus virens*, an unresolved name in the South American cactus genus *Cereus*. CD used the name *Pilocereus Houletii* (an unresolved name) in *Movement in plants*, p. 97. *Darlingtonia* is the monospecific genus of the California pitcher-plant.

To H. W. Bates 26 January 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Jan 26th 79

My dear Bates

It will give me *real* pleasure to propose you for the Royal.¹ You will see that you yourself must not circulate the certificate,—not that there can be the least impropriety in your asking any of your friends.—Will you therefore fill up all the necessary particulars, giving a pretty full list of your publications & return the paper to me. At the same time give me a list with addresses of such men as you w^d like to sign, & I will then write & forward certificate to each.—² *I do not know who are on the Council* & it is a confounded bore that some of the best men, to whom I sh^d. naturally apply, such as Hooker & Huxley are excluded.³ This makes it the more necessary that I sh^d. have some sort of list from you.—

Ever yours sincerely | Ch. Darwin

You must not be surprised if you are not elected the first time, for hardly anybody is thus elected.—⁴

Cleveland Health Sciences Library (Robert M. Stecher collection)

¹ Bates had asked CD to propose him for fellowship of the Royal Society of London (see letter from H. W. Bates, 25 January 1879). Bates was proposed for election as a fellow of the Royal Society of London on 27 January 1879 by CD, Philip Lutley Sclater, Francis Galton, George Rolleston, William Henry Flower, Henry Tibbats Stainton, Robert McLachlan, St George Jackson Mivart, James Augustus Grant, and George John Romanes; he was elected in 1881 (Royal Society archives, GB 117 EC/1881/09).

² For the signatories, see letter from H. W. Bates, 25 January 1879.

³ Joseph Dalton Hooker was president of the Royal Society and Thomas Henry Huxley was biological secretary (*ODNB*).

⁴ Bates was elected in 1881.

From W. T. Thiselton-Dyer 27 January 1879

Royal Gardens Kew

Jan^y. 27. 79

Dear M^r Darwin

I am sorry to hear that *oxalis tropæoloides* does not agree with *O. corniculata* var. *atropurpurea* as there seems no doubt that the names are really synonyms. I can only suppose that Carter has not sent you the seed true to name. Could your gardener grow some and let us see the result¹

I am also ashamed to confess that I can make nothing of *Oxalis colorata* The name after a protracted search cannot be found in any book or seed Catalogue. It is reprehensible of our people to send you a “dark” plant like this but it is difficult with much on one’s hands to get people to act always as one would wish them to do in an ideal world. It *may* be a garden form of *O. purpurata* which is a Cape species, but this is only a guess.

O. articulata is S. American species

If your gardener could grow *O. colorata* we might be able to make something of it even in a young state.²

Moseley has been here to day and he assures me that pigeons in Malaya eject seeds in a state fit for germination— He has himself found the seeds so ejected. He believes they do this habitually after over eating³

Believe me | yours sincerely | W. T. Thiselton Dyer

DAR 205.2: 259, DAR 209.6: 207

CD ANNOTATIONS

1.2 there seems ... synonyms.] *scored red crayon*

2.1 *Oxalis colorata*] *underl red crayon*

3.1 *O. articulata* ... species] *scored red crayon*

5.1 Moseley ... over eating 5.3] *double scored red crayon*

¹ See letter from W. T. Thiselton-Dyer, [20 January 1879] and n. 2, and letter to W. T. Thiselton-Dyer, 25 January [1879] and n. 2. James Carter & Company were London seed merchants.

² Daniel Oliver later concluded that CID's '*Oxalis colorata*' was *O. floribunda* (letter from W. T. Thiselton-Dyer, 22 April 1879).

³ Henry Nottidge Moseley. See letter from W. T. Thiselton-Dyer, [20 January 1879] and n. 4.

From A. F. Batalin¹ 29 January 1879

St Petersburg,
Januar 29. 1879.

Sehr geehrter Herr!

Zuerst erlaube ich mir Sie zu danken für die Acht, welche Sie für meine Arbeit über die Bewegungen der Blätter erwiesen haben.²

Was die Bewegungen der Blätter von *Impatiens parviflora*, *Imp. noli tangere*, *Polygonum aviculare* und *Sida Napaea* betrifft, so kann ich darüber folgendes sagen. Bei *Impatiens*-Arten sinken sich die Blätter nachts fast vertikal abwärts, so dass sie beinahe 90° machen. Die Blätter von *Polygonum aviculare* (und nicht *P. Convolvulus*, wie Sie schreiben) machen auch sehr große Bewegungen, beinahe 70° (aufwärts); die von *Sida Napaea*—bedeutend weniger, aber wie viel—kann ich mich nicht erinnern.³

Wenn ich meine Untersuchung über die Bewegungen der Blätter schrieb, so wählte ich als Beispiele nur solche Pflanzen, bei welchen die Bewegungen sich deutlicher erwiesen haben,—um die Missverständnisse zu vermindern, da meine im Aufsätze gegebene Erklärung der Erscheinung überhaupt ganz neu war; ich denke, daß ich der erste auf das Existenz derartigen Bewegungen bei den Laubblättern hingewiesen habe. Deswegen erwähnte ich nicht über die Fälle der unbedeutenden Bewegung, aber ich erinnere mich ganz bestimmt, daß solche Fälle nicht zu selten waren,—aber bei welchen Arten habe ich sie beobachtet—dass habe ich leider vergessen.

Über das Vorhandensein der Kissen bei *Sida*-Arten kann ich Ihnen folgendes mittheilen. So viel ich mich erinnern kann, besitzt *Sida Napaea* kein solches, welches vom bloßen Auge deutlich sichtbar ist; möglicherweise ist auch bei dieser Art die Krümmungsstelle des Blattstieles von kleinzelligem Gewebe gebaut, wie Sie es bei

Sida coronifolia gefunden haben,—aber ein deutliches Kissen existirt bei *S. Napaea* nicht.⁴ Nachdem ich Ihres Schreiben bekommen habe, suchte ich in Gewächshäusern des hiesigen botanischen Gartens frische Blätter von *Sida Napaea* und leider nicht gefunden, so dass ich nicht im Stande bin bestimmt zu sagen, existirt oder nicht ein solches kleinzelliges Gewebe auch bei *Sida Napaea*. Ich habe im reichen Herbarium des botan. Gartens alle *Sida*-Arten durchgesehen und gefunden, dass bei einigen Arten ein deutliches Kissen vorhanden ist, bei anderen—kaum erkennbar, und bei noch anderen—existirt gar kein; zu der letzten Kategorie gehört *Sida Napaea*. Das Vorhandensein und Nichtexistenz des Kissens ist an trockenen Blättern noch zu erkennen.

Im vorigen Sommer habe ich einige Versuche gemacht um die Frage zu lösen: was für Vortheile *Mimosa* und ähnliche Pflanzen durch die Bewegungen ihrer Blätter erwerben—und kam zu wenigen Resultaten.⁵ Es ist nur zu erwähnen, daß die Blättchen (kleine Lamina) bei *Mimosa* bald sich entfärben und zu Grunde gehen, wenn die *Blättchen*, ohne sie zu schädigen, so festgehalten sind, daß sie ihre Bewegungen nicht ausfüllen können. Was ist die Ursache dieser Erscheinung—weis ich nicht.

Zuletzt bitte ich Sie um die Entschuldigung, daß ich Ihnen deutsch antworte. Im englischen Schreiben bin ich nicht ganz fest.

Mit vorzüglicher Hochachtung | bleibt | Ihr ganz ergebener | A Batalin

DAR 209.14: 178

¹ For a translation of this letter, see Appendix I.

² CD's letter to Batalin about his paper, 'Ueber die Ursachen der periodischen Bewegungen der Blumen- und Laubblätter' (On the causes of the periodic movements of petals and leaves; Batalin 1873) has not been found. CD's annotated copy of the paper, with a separate sheet of notes, is in the Darwin Pamphlet Collection—CUL; CD cited it in *Movement in plants*, pp. 113, 229, 283, 321–2.

³ *Impatiens parviflora* is smallflower touch-me-not; *I. noli-tangere* is western touch-me-not. *Polygonum aviculare* is prostrate knotweed; CD cited Batalin for information on this plant in *Movement in plants*, p. 387. *Polygonum convolvulus* is a synonym of *Fallopia convolvulus* (black bindweed). *Sida napaea* is an unresolved name but may be a synonym of *Sida hermaphrodita* (Virginia mallow); CD cited Batalin for information on the plant in *Movement in plants*, pp. 321–2.

⁴ CD cited Batalin on the absence of a pulvinus (a cushion or joint-like swelling at the base of some leaf-stalks) in *Sida napaea* in *Movement in plants*, p. 322. *Sida coronifolia*, a name otherwise not found, may have been *S. rhombifolia* (arrowleaf sida; see *Movement in plants*, pp. 322–3; see also letter to W. T. Thiselton-Dyer, 24 March 1879). There is note on the pulvinus of a *Sida* in DAR 209.14: 123, in amongst notes, some of which are dated 1878, on what is presumably the same plant, referred to as *S. coronifolia*, *S. corylifolia* or *cordifolia*, and finally as *S. rhombifolia* (DAR 209.14: 114–25).

⁵ *Mimosa* is the genus of sensitive plants; CD worked on the movement of leaves in this genus (*Movement in plants*).

To Edmund Mojsisovics von Mojsvár 29 January 1879

Down. | Beckenham. Kent.
Jan 29— 1879.

Dear Sir

I thank you cordially for the continuation of your fine work on the Tyrolese Dolomites with its striking engravings & the maps which are quite wonderful from

the amount of labour which they exhibit, & its extreme difficulty—¹ I well remember more than 40 years ago examining a Section of Silurian limestone containing many corals, & thinking to myself that it would be for ever impossible to discover whether the ancient corals had formed atolls or barrier reefs; so you may well believe that your work will interest me greatly as soon as I can find time to read it.—² I am much obliged for your photograph & from its appearance, rejoice to see that much more good work may be expected from you—

I enclose my own photograph in case you should like to possess a copy—
Believe me dear Sir. | Yours faithfully & obliged | Charles Darwin.

Copy
DAR 146: 384

- ¹ Mojsisovics von Mojsvár sent the first volume of his *Die Dolomit-Riffe von Südtirol und Venetien* (The Dolomite reefs of South Tyrol and Veneto; Mojsisovics von Mojsvár 1878–9) to CD in April 1878 (*Correspondence* vol. 26, letter from Edmund Mojsisovics von Mojsvár, 28 April 1878).
- ² In his list of chapters, Mojsisovics von Mojsvár referred to 'Die sinkende ostalpine Insel der Triaszeit, umrandet von Strand- und Wallriffen' (The sinking eastern Alpine island of the Triassic, surrounded by fringing and barrier reefs; Mojsisovics von Mojsvár 1878–9, p. xii). CD published *Coral reefs* in 1842. There is a note by CD, dated July 1838, about the coral-rich limestones of Wenlock Edge in DAR 5: B21; the accompanying drawing is in DAR 130: 119–20. See also *Correspondence* vol. 2, letter to Charles Lyell, 6 [July 1841].

From Leopold Würtenberger¹ 29 January 1879

Dettighofen bei Griessen (Gr. Baden),
den 29. Ja(n.) 1879

Hochgeehrtester Herr!

Aus Ihren freundlichen Briefen ersehe ich dass keine Aussicht vorhanden ist, meinen Wunsch durch eine englische Stiftung befried(igt) zu sehen, dass jedoch Sie selbst mit so grossmüthiger Freigebigkeit bereit sind, meine wissenschaftlichen Arbeiten zu unterstützen² und ich nehme Ihr freundliches Anerbieten mit dem grössten Danke freudig an und in der Versicherung, dass ich die angebotene Summe gut anwenden und mir alle Mühe geben werde, etwas Gutes zu Stande zu bringen Ich bin sehr glücklich, meine Studien jetzt(t) mit aller Kraft ungehindert fortsetzen zu können und wenn es mir dann auch gelingen sollte, durch diese Arbeiten den Weg zu finden zu einer wissenschaftlichen Laufbahn, so werde ich nie vergessen, dass ich dies allein nur Ihrer ausgezeichneten Hilfe zu verdanken habe.

Mit der grössten Hochachtung und den innigsten Dankesgefühlen verbleibe ich, hochgeehrtester Herr; | Ihr ergebenster | Leopold Würtenberger

DAR 181: 185

¹ For a translation of this letter, see Appendix I.

² CD's letter to Würtenberger has not been found. See letter from Leopold Würtenberger, 10 January 1879, and letter to Melchior Neumayr, 24 January 1879. Würtenberger worked on the phylogeny of Jurassic ammonites.

To W. B. Cheadle 31 January 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Jan 31. 1879

Dear Sir,

As I can hardly consider myself as coming with the class who will sign your petition I do not like to sign it, although I fully think that the establishment of a Professorship of Pathology at Cambridge would be desirable.¹

Yours faithfully | Ch. Darwin

P.S. | One my sons tells me that he fancies that you have fallen into a slight mistake as to the abolition of Medical fellowships at Trinity²

LS

American Philosophical Society (559)

¹ Cheadle's letter to CD has not been found; he was circulating a memorial calling for the creation of a professorship of pathology at the University of Cambridge (a professor of pathology was elected in 1884; see J. W. Clark 1904, pp. 251–2). The memorial, signed by 'graduates of the University of Cambridge, engaged in the study or practice of medicine', was sent to the vice-chancellor, John Power, on 10 February 1879. The memorial is at UA CUR 39.40, University Archives, CUL. CD did not sign it.

² Probably either George Howard Darwin, who had been a fellow of Trinity College, Cambridge, or Francis Darwin, who had been an undergraduate at Trinity College and later studied medicine. See also letter from W. B. Cheadle, 17 February 1879. The 1560 statutes of Trinity College allowed for two lay fellowships, the holders of which were not required to ultimately take holy orders. One of these was set aside for a scholar of civil law and the other for a scholar of medicine. However, by the late eighteenth century, these subject-based ties had been loosened and the fellowships could be offered to scholars in any field. (Jonathan Smith, Trinity College Library, personal communication.)

From C. F. Austin February 1879

Closter, N. J.

Feb. 1879.

Dr. Chas. Darwin

Honored Sir:

I herewith send a copy of the Torrey Bot. Club. Bulletin, containing an account of a fungus which exhales chlorine,—believing the fact there published will interest you.¹

My chief object in writing to you at this time is to lay before you the facts of a still more wonderful discovery made by me on the morning of the 25th of June 1852: viz. a pair of perfectly formed beetles in the place of anthers, in a flower of *Cypripedium pubescens*.² They were attached to the thick filaments by the underside of their abdomen. *by actual growth*: at least so it appeared. The abdomen was of about the same size, form & color (yellow) as is usual in the anthers of this plant. The insects were similar in size, and form; but the color of one appeared to be changing to black, the head and thorax being of a dark color; the other was yellow throughout. Their position was perfect(ly) symmetrical; they being inclined downwards and inwards both to the same degree. Their form and external organs,

so far as observed, were perfect: that is their legs, antennae and eyes. Their eyes struck me as being exceedingly bright, and as I looked at them I experienced a queer sensation: for their wonderfully brilliant eyes suggested great shyness, and yet they gave no other sign of fear. As I looked at them I could not help feeling as if I was in the presence of sentient (yet mute) beings I almost imagined that I could see them striving—as one in a nightmare—to get away from my presence. I looked at them a hundred times—I should say;—and examined them from every possible standpoint to see if there was any deception in the mode by which they were attached to the plant: and in every instance, they appeared to be attached by actual growth, the same as were the lip of the corolla, or even the short filaments themselves to which they were attached.

I showed the flower, with the insects attached, to several persons; but none of them appeared to appreciate it: and knowing the stupidity of country people (gen)erally I did not wonder at it. And I myself was so stupid as to fail in my attempt to preserve the specimen. I was totally ignorant at the time, of Natural science and had never had much training or experience except at hard farm work, and knew absolutely nothing about preserving plants or insects: besides I had the idea that such phenomena could not be rare, and really expected that I could go out any day in the flowering time of the plant and find a similar thing— otherwise I should have taken the specimen immediately to some person who could instruct me how to preserve it.

I searched a good deal for the plant immediately afterwards, but could not find another one The next year I found one fine stool of it with about a dozen flowers: (and) I did not see the plant again until the spring of 1860. when I saw several hundred of them. I examined most of these but could find nothing unusual or strange about them. Since then I have not seen a dozen plants of it, although I have searched much for it (it being extremely rare in this region). I have hopelessly deferred attempting to make this discovery public, until I could verify it by a similar one; I have thought that if some society would offer a liberal reward (and publish it widely) for a rediscovery of this or a similar phenomenon that it would set a host of observers watching for it; and there would be a strong probability of its being again found. The thorax & heads of the insects were small in proportion to the abdomen. Upon examining flowers of the plant the next year I was struck with the similarity between the anthers & the abdomen of the insects mentioned.

Although many years have passed since that mysterious phenomenon was witnessed by me my recollection of it is still very vivid. Many is the time that I have pondered over it despairing of ever being so fortunate as to be able to interpret it. My last hope is that you may be able to throw some light on it.

Cordially “yours in the faith” | Coe F. Austin, | Closter, New Jersey. | U.S.A.

Chas Darwin, L, L, D.,
Down, | Beckenham, | Kent, | England.

DAR 159: 130

- ¹ Austin described the fungus *Agaricus chlorinosmus* (a synonym of *Amanita chlorinosma*) in December 1878 in the *Bulletin of the Torrey Botanical Club* 6 (1875–9): 278–9. He considered its exhalation of chlorine an important scientific discovery, and stated: ‘Here we have chlorine, hitherto considered a potent destroyer of all organic substances, actually exhaled by a living organism’ (*ibid.*, p. 278). He defended his view in a note in March 1879, maintaining that the exhalation was more likely to be chlorine than a hitherto unknown substance with same odour; odour was the most delicate and reliable test for chlorine, and plants were said to exhale ozone, which had the same disinfectant properties as chlorine (*ibid.*, p. 298).
- ² CD described the conical trap-like contrivances of *Cypripedium pubescens* (a synonym of *C. parviflorum* var. *pubescens*, greater yellow lady’s slipper) to deposit pollen on insects in *Orchids* 2d ed., p. 230. The species is normally visited by small to medium-sized bees (*Andrena* sp. or *Osmia* sp.); CD’s experiments were with *Andrena* bees (op. cit.). Many species of pollen beetle (e.g. *Trichotinus assimilis*, hairy bee mimic) have been observed in *Cypripedium* flowers, but this is rare (Cingel 2001, p. 42).

From D. Appleton & Co. 1 February 1879

Statement of Sales of Climbing Plants

by D. Appleton & Co., to Feby 1, 1879

for acc ⟨of⟩ Cha^s Darwin¹

<i>On hand last acc^t.</i>	45 ²	<i>On hand this day,</i>	423
<i>Printed since</i>		<i>Given away</i>	
		<i>Delivered,</i>	
		<i>Sold to date,</i>	29
	45 ²		45 ²
Sold 29, @ \$ 1 ²⁵ 10%			3.63
less $\frac{1}{2}$ copyright on 10 sold under Cost			63
			<hr/> 3.00

Orchids

Apl 29/78	On hand	564		
Feb 1/79	" "	38		
	Sold	26 10%— of \$1 ⁷⁵	4.55	
	less 10 sold under Cost— $\frac{1}{2}$ —		87	3.68

Different Forms of Flow⟨ers⟩

Apl 29/78	On hand	517		
Feby 1/⟨7⟩9	" "	504		
	Sold	13 10% of \$1 ⁵⁰		1.95

Cross Fertilization

Apl 9/78	On hand	344	
Feby 1/79	" "	311	
	Sold	33	10% of \$2 \$6.60
		30 sold under Cost $\frac{1}{2}$	—3
		Forw ^d	<u>3.60</u>
			\$12.23

Origin of Species

Feby 1/78	On hand	490	
Au (g)	Printed	500	
Feby 1/79	On hand	449	
	sold	541	5% of \$2 54.10

Expression of Emotions

Feby 1/78	On hand	178	
Feby 1/79	"	109	
	Sold	69	10% of \$3 ⁵⁰ 24.15

Descent of Man

Feby 1/78	On hand	201	
Jany /78	Printed	500	
Feby 1/79	On hand	216	
	Sold	485	10% of \$2 97.00

Insectivorous Plants

Feby 1/77	On hand	475	
"/79		424	
	Sold	51	10% of \$2 10.20
		less sold under Cost $\frac{1}{2}$	(2)5 2.50
			7.70
			\$195.18
	Stg value exch	488	£39.18.5 ²

D
DAR 159: 104

¹ The statement shows the calculation of royalties for the US editions of CD's works. *Climbing plants* US ed. was published from the stereotypes of *Climbing plants* 2d ed. in 1876. *Orchids* 2d US ed., *Forms of flowers* US ed., and *Cross and self fertilisation* US ed. were all published from the stereotypes of the English versions in 1877. *Origin* 3d US ed. was published from stereotypes of the sixth London edition in 1873. *Expression* US ed. was published in December 1872 from stereotypes of the English edition but has an 1873 imprint on the title page. *Descent* 2d US ed. was published in 1875 from stereotypes of *Descent* 2d ed. (tenth thousand). *Insectivorous plants* US ed. was published in 1875 from stereotypes of the English edition. (Freeman 1977.)

² CD recorded the receipt of £39 18s. 5d. under the heading, 'From Mr Appleton Profit on my books', in his Account books—banking account (Down House MS) on 10 April 1879.

From Henry Potonié¹ 1 February 1879

Berlin:
1.2.1879

Hochgeehrter Herr!

Am 16.4.1878 erlaubte ich mir Sie auf 1849–50 veröffentlichte Gedanken des unvergesslichen Alexander Braun aufmerksam zu machen, die sich in der “Einleitung” und in der “Schlussbetrachtung” seines höchst interessanten Werkes: “Betrachtungen über die Erscheinung der Verjüngung in der Natur etc.” vorfinden, und die, wie ich meine, für die Geschichte der Entwicklungslehre von wirklicher Bedeutung sind.²

Noch einmal wage ich es Ihre kostbare Zeit in Anspruch zu nehmen, weil ich eine englische Uebersetzung dieses Werkes hier in Berlin gefunden habe, und ich möchte mir erlauben Ihnen die, wie mir scheint, für die Geschichte der Descendenzlehre wichtigste Stelle aus dieser Uebersetzung mittheilen. Die Uebersetzung erschien 1853 in den “botanical und physiological Memoirs” der “Ray society” und ist von Arthur Henfrey übersetzt.³ Die folgende Stelle befindet sich Seite 322–323, sie lautet:

“That we might go still further in this direction, in the attempt to seize the conception of the natural continuity of the essence, we have already indicated in the *Introduction*. For as the individual appears as a link of the species, so does the species as a link of the genus, the genus as a link of the family, of the order, the class, of the kingdom; the kingdoms of Nature even as the great principal links of the organism of Nature; a view with which, indeed, we give to the Natural System its true and objective import, which is entirely lost in the mere subjective abstract conception of the natural divisions. It is true that the *common origin* and the historical connection among the links of the more comprehensive divisions of the Vegetable Kingdom, cannot be so readily demonstrated as is the case with the history of the individual in Cell-, Leaf-, and Sprout-formation, and the history of the Species, the formation of the Individuals effected by reproduction, and the circle of Varieties which come into existence in the course of reproduction; but the flora of the ancient world, and the geographical distribution of the plants of the present epoch, afford us important indices at least, pointing to the connection in time and space of the history of development of the Vegetable Kingdom as a whole and in its parts”.⁴

In der Hoffnung beizutragen dem edlen Alexander Braun hierdurch die ihm gebührende Stellung in der Geschichte der Entwicklungslehre zu verschaffen,⁵ verbleibe ich | Sie tief bewundernd | Henry Potonié.

Berlin N.W. Dorotheenstr. 42.

DAR 174: 59

CD ANNOTATION

2.6 322–323] *double underl blue crayon*

¹ For a translation of this letter, see Appendix I.

² See *Correspondence* vol. 26, letter from Henry Potonié, 16 April 1878; Potonié had recommended Alexander Carl Heinrich Braun’s *Betrachtungen über die Erscheinung der Verjüngung in der Natur, insbesondere in der Lebens- und Bildungsgeschichte der Pflanze* (Reflections on the phenomenon of rejuvenation in nature,

especially in the life and development of plants; Braun 1851) as a possible addition to CD's 'Historical sketch' in *Origin* 6th ed., pp. xiii–xxi.

³ Arthur Henfrey's translation (Braun 1853) was made as part of his *Botanical and physiological memoirs* (Henfrey ed. 1853; an annotated copy of Henfrey ed. 1853 is in the Darwin Library–CUL (see *Marginalia* rev. ed.)). CD had consulted Braun 1853 in 1855; see *Correspondence* vol. 5, letter to Arthur Henfrey, 17 March [1855].

⁴ The quotation is from Braun 1853, pp. 322–4; CD's copy is marked on p. 322 (see *Marginalia* rev. ed.).

⁵ Potonié published 'Alexander Braun's Stellung zur Descendenz-Theorie. Ein Beitrag zur Geschichte der Entwicklungslehre' (Alexander Braun's position on descent theory. A contribution to the history of the theory of development; Potonié 1879) in the August 1879 issue of *Kosmos*.

To W. T. Thiselton-Dyer 3 February 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Feb 3^d 79

My dear Dyer

I will despatch the *Darlingtonia* tomorrow in middle of day by Rail. I have been glad to see so wonderful a plant, but make nothing of its apheliotropism: I suppose it requires bright sun & there is no chance of this with this confounded weather.¹ I will give up all experiments until the Spring is well advanced for it is heart-breaking work now. I return at same time the *Strephium*.—² I have still 2 plants of *Bignonia capreolata*—*Smilax aspera* & the *Mutisia*, which I will keep for better days.³

Hearty thanks | Yours very truly | Ch. Darwin

Frank is off tomorrow to Algiers to join George, as he wants some change, & we have persuaded him to go.—⁴

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: ff. 158–9)

¹ See letter to W. T. Thiselton-Dyer, 25 January [1879] and n. 4. CD was returning the *Darlingtonia californica* (California pitcher-plant) that Thiselton-Dyer had lent him. Insectivorous plants were among the few plants with apheliotropic, or at least not heliotropic, leaves. CD did not find the leaves and pitchers of this plant to be apheliotropic; see *Movement in plants*, p. 450 n.

² In 1877, Thiselton-Dyer had sent CD a plant of the herbaceous bamboo *Strephium floribundum* (a synonym of *Raddia brasiliensis*); see *Correspondence* vol. 25, letter from W. T. Thiselton-Dyer, 16 July 1877. CD had observed the leaves to rise up vertically at night (DAR 209.14: 130–43; *Movement in plants*, pp. 391–2).

³ In 1878, CD had observed negative heliotropism (a term that he replaced with apheliotropism) in the tendrils of *Bignonia capreolata* plants from the Royal Botanic Gardens, Kew; see *Correspondence* vol. 26, letter to W. T. Thiselton-Dyer, 19 July [1878], and *Movement in plants*, pp. 5 and 432–3. He had failed to acquire any specimens from a nursery so that he could return the plants to Kew (*ibid.*, letter to W. T. Thiselton-Dyer, 30 August [1878]). CD had received plants of *Smilax aspera* var. *maculata* (rough bindweed) and *Mutisia clematis* from Kew on 16 December 1878 (*Outwards book*, Archives, Royal Botanic Gardens, Kew, p. 486).

⁴ Francis Darwin left Down on 4 February 1879 to join George Howard Darwin in Algiers for a month (Emma Darwin's diary (DAR 242)).

To Francis Darwin [4 February – 8 March 1879]¹

According to Pfeffer's brief description the leaves of *Phyllanthus niruri* (one of the Euphorbiaceæ) sleep closely like those of Cassia.—² I sh^d much like to know whether this is really the case. Will you enquire whether by any chance they have this plant

(*an East Indian annual*) or seeds of it I also want seeds of *Medicago maculata*—³ It is just possible they may possess such seeds & I am sure D^r Durando, (to whom give my kind remembrances) w^d try & get them.⁴

C. D.

DAR 211: 49

- ¹ The date is established by the reference to Gaetano Durando, a botanist in Algiers. Francis left for Algiers on 4 February 1879 (Emma Darwin's diary (DAR 242)) and departed from Algiers on 8 March (letter from G. H. Darwin, 3 March 1879). See also letter from Francis Darwin, [c. 25 February 1879].
- ² Wilhelm Pfeffer discussed *Phyllanthus niruri* (gale of the wind) in *Die periodische Bewegungen der Blattorgane* (The periodic movements of foliage organs; Pfeffer 1875, pp. 159–60). See also *Movement in plants*, pp. 388–9. On the sleep movements of many species of *Cassia*, see *Movement in plants*, pp. 369–73. In these species, and in *Phyllanthus niruri*, the leaves drop and twist at night so that the lower (abaxial) surfaces turn outwards.
- ³ CD mentioned a report of the sleep movements of *Medicago maculata* (a synonym of *M. arabica*, spotted medick) in *Movement in plants*, p. 345; according to the report, the leaves rose up and twisted so that the lower (abaxial) face turned skywards.
- ⁴ In *Cross and self fertilisation*, p. 105, CD mentioned that he had received seed from Durando in Algiers; see also *Correspondence* vol. 18, letters to J. D. Hooker, [29 June 1870] and 10 July 1870. Durando had visited Down in 1878 (letter from Emma Darwin to W. E. Darwin, 17 September [1878] (DAR 219.1: 115)). No reply to this letter has been found, but CD asked William Turner Thiselton-Dyer for specimens and seeds of *Phyllanthus niruri* and *Medicago maculata* from Kew in his letter of 24 March 1879.

To H. N. Moseley 4 February 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Feb. 4th 1879

Dear Moseley

I have at last read every word of your book, & it has excited in me greater interest than any other scientific book which I have read for a long time.—¹ You will perhaps be surprised how slow I have been, but my head prevents me reading except at intervals. If I were asked which parts had interested me most, I sh^d be somewhat perplexed to answer.

I fancy that the general reader would prefer your account of Japan. For myself I hesitate between your discussions & description of the Southern ice, which seem to me admirable, & the last chapter which contained many facts & views new to me. Though I had read your papers on the stony Hydroid Corals, yet your resumé made me realise better than I had done before, what a most curious case it is.—² You have also collected a surprising number of valuable facts bearing on the dispersal of plants,—far more than in any other book known to me.—³

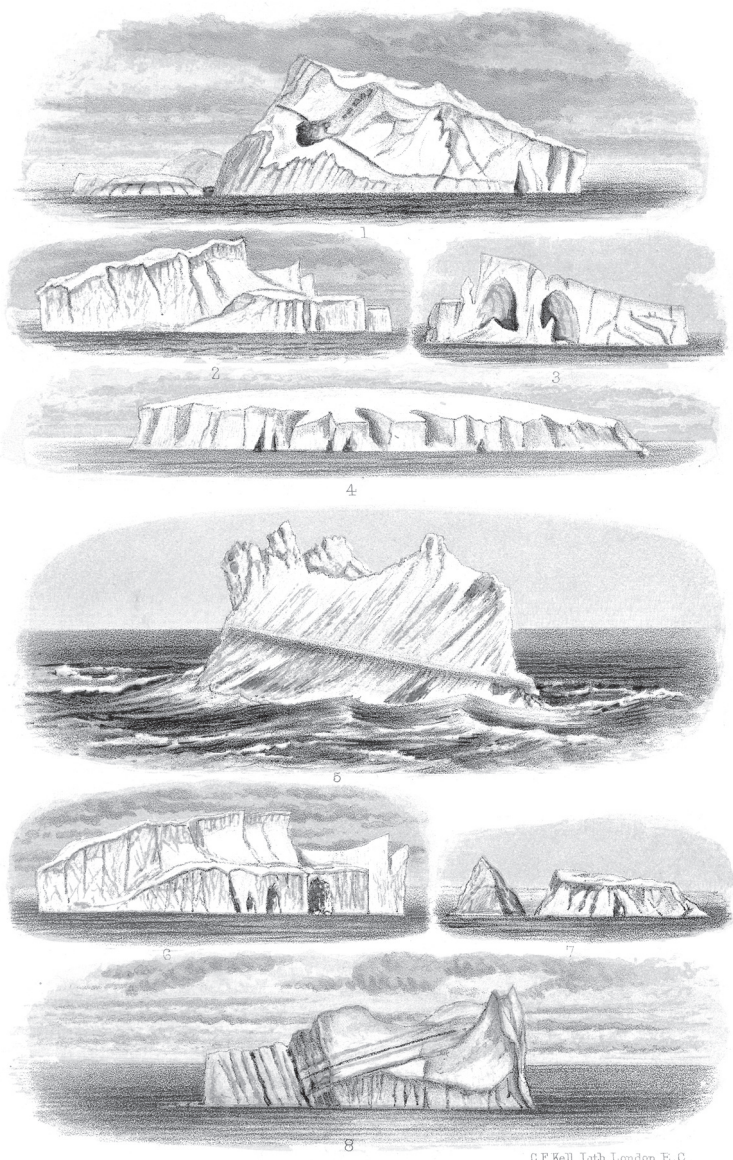
In fact your volume is a mass of interesting facts & discussions, with hardly a superfluous word; & I heartily congratulate you on its publication.

Your Dedication makes me prouder than ever.—⁴

Believe me | yours sincerely | Ch. Darwin

Christie's, London (dealers) (online 31 October – 8 November 2018, lot 13)

¹ Moseley had sent CD a copy of his *Notes by a naturalist on the 'Challenger'* (Moseley 1879); see letter to H. N. Moseley, 20 January 1879.



ANTARCTIC ICEBERGS.
From Sketches by the Author.

G.F. Keil, Lith. London. E. C.

Antarctic icebergs.
Moseley 1879, frontispiece.
By permission of the Syndics of Cambridge University Library.

- ² Moseley's chapter on Japan and the Sandwich Islands (Hawaii) is in Moseley 1879, pp. 481–512. His account 'Amongst the Southern ice' is on pp. 232–55, and the final chapter (pp. 565–99) concerns life on the ocean surface and in the deep sea. For Moseley's papers on hydroid corals, see Moseley 1875b and 1878.
- ³ Moseley had also published earlier work on seed dispersal in Moseley 1875a.
- ⁴ For Moseley's dedication to CD in Moseley 1879, see the letter to H. N. Moseley, 20 January 1879 and n. 1.

From Thomas Maston 5 February 1879

11 Jennetts Crescent | Westgate | Otley | Near Leeds
5/2/79

Dear Sir/

I hope you will not think me to bould in taking upon myself to write to you, beging of you a favour.

I am a stone Mason, and about 2 years ago I bought two of your works the "Origin of Species", and the "Descent of Man" and I have read them, and studied them the most of this time, and struggled, in my humble way, to defend the theory tharein enuniciated, against that un-holy cant, which as been risen against it by a certain class of desprate theological thinkers in the hope of provoking ignorant laughter, to shame honest men into silence on this subject, chosing in this way to show their weakness, and to exhibite the truth strength of your conclouitions.

I should like your later work ie., the "Expression of the Emotions in Man and Animals", but through slack trade for this last 2 years, and this most severar winter it is out of my reach now.¹

I should be very thankfull for any help you can give me,

hoping will not forget me | I am Yours most | respectfully | Thomas Maston

M^r. Charles Darwin, | M.A., F.R.S.

DAR 171: 88

¹ *Origin* 6th ed. (first published in 1872) and *Descent* 2d ed. (published in 1874 in a single volume) were cheaper than previous editions, selling at 7s. 6d. and 9s., respectively. *Expression* was still in its first edition, priced at 12s. (*Correspondence* vol. 22, letter from R. F. Cooke, 12 November 1874, and Freeman 1977).

From H. N. Moseley 5 February 1879

Coll. Exon.
Feb 5. 79.

Dear M^r Darwin

Very many thanks for your kind remarks about my book.¹ It has been a great relief to me to find that you consider it a success and worthy of having been dedicated to you.

A Captain Charles Owen Chief Constable of Oxford and who was for a long while at the Cape of Good Hope was in my rooms a few days ago. He said he knew you well long ago and that he had collected beetles for you. and he wished to be

remembered to you² His son is going out with M^r Wallis Nash to Oregon as an assistant and he called to ask me about the country.³

Again thanking you for your kind letter | I remain | yours truly | H N Moseley

DAR 171: 258

¹ Moseley 1879; see letter to H. N. Moseley, 4 February 1879.

² Charles Mostyn Owen (1818–94) served in the army in South Africa and became chief constable of Oxfordshire. He probably collected beetles for CD at Woodhouse, Rednal (West Felton), Shropshire, his family home. The Mostyn Owens were family friends of CD and he spent some of his university vacations at Woodhouse (see ‘Recollections’, p. 339, and *Correspondence* vol. 20, letter from S. H. Haliburton, 3 November [1872] and n. 3).

³ Mostyn Owen’s son Charles Mostyn Owen (1859–1938) emigrated to Oregon, USA, with Nash in 1879.

From Raphael Meldola 6 February 1879

Offices, | 50, Old Broad Street. | E.C. | Atlas Works, | Hackney Wick, | London, N.E.
Feb. 6th 1879

My dear Mr. Darwin,

After the great number of years that we have corresponded (I think 1870 is the date of the first letter I ever had from you) I hope you will in future grant me the privilege of thus addressing you instead of the more formal & thoroughly Anglican “Sir”.¹ I have been so busy during the last week getting out the index &c of Part IV of the Trans. Ent. Soc. that I have had no time to attend to Fritz Müller’s article in “Kosmos” & I therefore will beg for an extension of the time for keeping your copy of that publication— should you want it particularly a post-card will ensure its return at the shortest notice. I think I explained to you that I propose preparing an abstract of the article either for “Nature” or our own “proceedings”.²

Now as regards Weismann’s book—Messrs. Sampson Low, Marston & Co. have agreed to bring out the book—we bear the risk jointly— They have made it a condition that subscription-circulars should be issued so that I am driven to the ‘begging’ resource after all. The English edition is to be a smaller size* than the German— this will I think be acknowledged as an improvement. The matter will be printed in full as given by Weismann but the plates are to be reduced— The latter have been commenced under the supervision of Prof. Weismann.³ The first essay on Seasonal-Dimorphism is nearly completed—i.e. the *first rough translation*. I am going to add the results obtained in connection with this subject by Mr. W. H. Edwards in his exps. on the breeding of *Papilio Ajax* & other species. I suppose you have seen the last part of his “Butterflies of N. America” containing the results of his exps. on *P. Tharos*.⁴

By the way; I came across a paper of S. H. Scudder’s the other day—“Antigeny, or Sexual Dimorphism in Butterflies”—in which he brings arguments against the Sexual Selec. theory of the colours &c of these insects. I do not know whether you have seen the paper— I can let you have the exact reference if you would care to have it. It was published in the “Canadian Entomologist”.⁵

Mr. Wallace's article in this month's "Nineteenth Century" is decidedly good.⁶
 Yours sincerely, | R. Meldola.
 * Demy 8^{vo}.

DAR 171: 134

- ¹ The earliest extant correspondence between CD and Meldola is CD's reply to a missing letter from Meldola; see *Correspondence* vol. 19, letter to Raphael Meldola, 28 January [1871].
- ² Meldola was secretary of the Entomological Society of London. The proceedings and index for 1878 (pp. i–lxxxviii) follow part 4 (December 1878, pp. 259–335) in the 1878 *Transactions of Entomological Society of London*. CD had lent Meldola Fritz Müller's *Kosmos* article on sexual dimorphism, 'Epicallia Acontius. Ein ungleiches Ehepaar' (*Epicallia Acontius*: a dissimilar couple; F. Müller 1879a); see letter to Raphael Meldola, 20 January 1879. Meldola's abstract of Müller 1879 appeared with the title 'Butterflies with dissimilar sexes' in *Nature*, 24 April 1879, pp. 586–8.
- ³ Meldola was working on a translation of August Weismann's *Studien zur Descendenz-Theorie* (Studies in the theory of descent); see *Correspondence* vol. 26, letter to Raphael Meldola, 14 December [1878]. The translation (Weismann 1880–2) was published by Sampson Low, Marston, Searle, & Rivington in demy octavo format; the German original (Weismann 1875–6) was royal octavo. For Weismann's supervision of the translation, see Churchill 2015, p. 162.
- ⁴ Weismann's essay on seasonal dimorphism in butterflies (Weismann 1875–6, vol. 1) was the first part to appear in translation (Weismann 1880–2, part 1); William Henry Edwards's observations on different forms of *Papilio ajax* (a synonym of *Eurytides marcellus*, the zebra swallowtail) and *Phyciodes tharos* (the pearl crescent) were included as an appendix (*ibid.*, pp. 126–48). Edwards's breeding experiments with *Papilio ajax* were described in his *Butterflies of North America* (Edwards 1868–72, part 9); his experiments on *Phyciodes tharos* were described in *Butterflies of North America*, second series (Edwards 1884), part 7. Part 7 was published in 1878. Both parts are in the Darwin Pamphlet Collection–CUL.
- ⁵ Samuel Hubbard Scudder's article was actually published in the *Proceedings of the American Academy of Arts and Sciences* (Scudder 1877).
- ⁶ Alfred Russel Wallace's 'Animals and their native countries' (Wallace 1879) appeared in the February 1879 issue of *Nineteenth Century*.

To Raphael Meldola 7 February 1879

Down,
 Feb. 7th 1879.

Dear M^r: Meldola,

Pray keep *Kosmos* as long as you like, and I am glad to hear that you will write abstract.¹ I can't but think M^r: Sampson Low right about subscription, and I beg you to put down my name.²

I have M^r: Edward's paper³ but have not yet found time to read it—and I have seen M^r: Saunders but many thanks for telling me—I have many letters—to write so no more⁴

Yours very faithfully | Ch. Darwin.

Wallace's article in 19th Cent; seemed to me quite excellent.⁵

Contemporary copy

Oxford University Museum of Natural History (Hope Entomological Collections 1350: Hope/Westwood Archive, Darwin folder)

¹ Meldola had borrowed an issue of *Kosmos* containing F. Müller 1879a from CD; see letter from Raphael Meldola, 6 February 1879 and n. 2.

- ² See letter from Raphael Meldola, 6 February 1879 and n. 3. Sampson Low, Marston, Searle & Rivington had agreed to publish Weismann 1880–2 on the condition that subscription circulars be issued.
- ³ See letter from Raphael Meldola, 6 February 1879 and n. 4.
- ⁴ CD wrote ‘Saunders’ in error; Meldola referred to Scudder 1877 in his letter of 6 February 1879.
- ⁵ Alfred Russel Wallace’s ‘Animals and their native countries’ (Wallace 1879) was published in *Nineteenth Century*; see letter from Raphael Meldola, 6 February 1879 and n. 6.

From Leopold Würtenberger¹ 7 February 1879

Dettighofen bei Griessen (Gr. Baden)
den 7. Febr. 1879

Hochgeehrtester Herr!

Soeben erhielt ich Ihre freundliche Sendung und ich beeile mich, Ihnen ergebenst mitzuthemen, dass Ihr Wechsel auf die Summe von £100 sich nun in meinen Händen befindet.² Durch Ihre ausserordentliche Güte, welche mich jetzt in den Stand setzt, meine Studien für die nächste Zeit ungehindert fortsetzen zu können, geht nun zu meiner grössten Freude ein lange gehegter Wunsch jetzt so schön in Erfüllung. Schon in nächster Zeit werde ich wohl da Vergnügen haben, Ihnen etwas Ausführlicheres über meine Studien über die Stammesgeschichte der Ammoniten zuzenden zu können.³

Wie sehr ich von den Gefühlen des Dankes ergriffen bin für den grossen Meister, der in so hervorragender Weise meine Arbeiten unterstützt, lässt sich nicht in Worte fassen.

Mit ausgezeichnete Hochachtung verbleibe ich | Ihr ganz ergebenster | Leopold Würtenberger

DAR 181: 186

¹ For a translation of this letter, see Appendix I.

² Würtenberger had accepted CD’s gift to support his research on the phylogeny of Jurassic ammonites; see letter from Leopold Würtenberger, 29 January 1879. An entry in CD’s Classed account books (Down House MS) dated 6 February 1879 records a payment to Würtenberger of £100, under the heading ‘Science’.

³ Würtenberger published his results in ‘Die darwinistischen Schlußergebnisse meiner Ammoniten-Studien’ (The Darwinian final results of my ammonite studies; Würtenberger 1879), and *Studien über die Stammesgeschichte der Ammoniten: ein geologischer Beweis für die Darwin’sche Theorie* (Studies on the phylogeny of ammonites: a geological proof of Darwinian theory; Würtenberger 1880).

To Edward Frankland 8 February 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)
Feb. 8th 1879

My dear D^r. Frankland

The case stands thus: we find that drops of water left standing for some days on certain leaves injured them, & afterwards my son Francis found that water left on leaves, or leaves immersed in water (with their stalks outside) in most cases made the water alkaline.¹ When such was boiled down, the residue heated to redness & then redissolved, the solution was still alkaline. This shows that it cannot be Ammonia.

There is a wide difference in the degree of alkalinity when different species of plants are tried; & if I remember rightly none in a few cases; but my son is away from home at present.—² What we are very anxious to learn is what is the alkali in the water; & it is exceedingly kind of you to have it analysed.— I presume that it will be impossible to give the quantity of alkali.— As yet we have found no notice of any such phenomenon having been observed, excepting that Sachs says that dew on grass is alkaline, but he did not ascertain whether this was due to ammonia.—³ We suspect, naturally, potash, & it seems to us a strange thing if a substance which is considered so valuable a manure is secreted by the leaves.— I sh^d have said that the water becomes alkaline when the plants are kept in the dark.—

With very true thanks | Yours sincerely | Ch. Darwin

The John Rylands Library, The University of Manchester (Frankland Collection)

- ¹ CD had requested pure water from Frankland to try these experiments on the exudation of alkaline matter from leaves on growing plants; see letter to Edward Frankland, 4 January [1879]. Neither Francis Darwin nor CD published on this subject.
- ² Francis Darwin left for a month-long visit to Algiers on 4 February 1879 (Emma Darwin's diary (DAR 242)). The substance in the residue could not be ammonia (NH₃) because ammonia becomes a gas at room temperature. When the solution was boiled down or boiled dry, some trace ammonia salt would remain in the residue unless the water was very pure, although probably not sufficient to cause great alkalinity.
- ³ Julius Sachs had suggested the experiment to Francis; he had supposed the alkalinity of the dew was caused by the exudation of potash; see *Correspondence* vol. 26, letter from Francis Darwin, [4–7 August 1878] and n. 5.

From George Henslow 8 February 1879

6 Titchfield Terrace | Regents Park. | N.W
Feb 8/79

Dear Sir,

I hope to send you, as soon as I receive the extra numbers, a copy of my paper on "Self-Fertilization", for although you will see it in the Transactions, I thought you would prefer to have one to annotate or criticize¹

May I take this opportunity to say that though I have ventured to criticize your conclusions given in your work of "Cross & Self-Fertilisation" I trust I have not done so in any hostile spirit. The fact is that until 1872 I was an ardent believer in the value of Cross-fertilization; but so many facts have seemed to accumulate; not only to negative the idea of any *injuriousness*, but to support the *value* of self-fertilization; that my faith in the supposed importance of intercrossing began to waver.²

I do not pretend to have solved the mystery of *special adaptations* in flowers: but what does appear to me to be conclusive, is that *no physiological benefit can be proved to be permanent*, or even more than transitory: Though morphological characters, by which varieties may be known, may be.

Finally, I venture to look at the question thus:— If you are right, then any attempt to disprove your conclusions will assuredly soon be shewn to be useless; and the truth will be established firmer than ever.— If, however, y^r conclusions be erroneous;

then, I think you will see, that the enormous weight which your name gives to them, will make the error a hundred times of more importance. My sole object is that the truth may discovered and established; and shall most gladly welcome any criticisms you may favour me with.

I am Dear Sir | Y^{rs} faithfully | Geo: Henslow

DAR 166: 175

¹ Henslow's 'On the self-fertilization of plants' (G. Henslow 1877a) was published in *Transactions of the Linnean Society (Botany)* in January 1879; no offprint has been found in the Darwin Archive-CUL.

² In a multi-part review then in progress in *Gardeners' Chronicle* (G. Henslow 1877b), Henslow challenged CD's thesis in *Cross and self fertilisation* that crossing was beneficial for plants.

From Karl Alberts 9 February 1879

Wiesbaden,
den 9 Februar 1879

Most honoured Sir!

I beg in the name of all the Editors of the periodical "Kosmos", so kindly favoured by you, to be allowed to offer in the enclosed number our most sincere and respectful congratulations for the approaching festival so significant to us all.¹

May you long be preserved to us for the benefit of science and as a noble example of self-sacrificing zeal for the good of mankind.

With the highest respect and veneration | I remain | in the name of the Editors
| Karl Alberts

DAR 99: 95

¹ Alberts was the publisher of *Kosmos*. The editors were Otto Caspari, Gustav Jäger, and Ernst Krause, but from April 1879, Krause was the sole editor. The February 1879 issue (*Kosmos* 4: 335-437) contained essays on CD's life and work to mark the occasion of his 70th birthday on 12 February 1879.

From Ernst Haeckel¹ 9 February 1879

Jena
9 Februar 1879.

Hochverehrter theurer Freund!

Zur glücklichen Vollendung Ihres 70sten Lebensjahres werden Sie am 12. Februar mit so zahlreichen Glückwünschen aus allen Theilen der Welt überschüttet werden, dass Sie gewiss auch mir, als einem Ihrer eifrigsten aufrichtigsten und frühesten Verehrer gern einen herzlichen Gratulations-Brief gestatten. Eine andere Form der Huldigung erscheint in Gestalt eines Aufsatzes über "einstämmigen und vielstämmigen Ursprung" im Februar-Heft unseres "Kosmos".²

Mit gerechtem Stolz und mit höchster Genugthuung können Sie an diesem feierlichen Jubeltage auf Ihr ruhmgekröntes Lebenswerk zurückblicken.

Sie haben der menschlichen Wissenschaft für alle Zeiten eine neue Bahn angewiesen und die Biologie zum Range einer mechanischen Naturwissenschaft erhoben. Dieser Verdienst allein schon, die Entdeckung des Ursprungs der Arten

durch natürliche Züchtung, würde Sie für immer unsterblich machen, wenn nicht schon Ihre sonstigen grossen Verdienste um die Wissenschaft dazu ausreichten. Sie haben dem Menschen seinen wahren Platz in der Natur angewiesen und damit die anthropocentrische Fabel gestürzt!

Möge es Ihnen noch lange Jahre vergönnt sein, sich dieses Triumphes zu erfreuen und die Wirkung Ihrer bahnbrechenden Reform zu beobachten.

Bei uns in Deutschland ist in den letzten Jahren Ihre Theorie zu allgemeiner und vollständiger Anerkennung gelangt. Der letzte bemerkenswerthe Versuch, Sie zu bekämpfen, war die Rede von *Virchow* im München, im Sept. 77. Sie hat bloss ihm selbst geschadet! Meine Entgegnung, über “Freie Wissenschaft und freie Lehre” hat mir sehr viel Beifall eingetragen; sie wird jetzt in das Engl. und Franz. übersetzt.³

—Im letzten Herbst war ich mehrere Wochen an der Küste der Bretagne und Normandie (St. Nazaire, St. Malo, Granville) und auf der Insel Jersey; woselbst ich viele interessante neue Formen von Radiolarien und Medusen beobachtete.⁴

Meine Monographie der Medusen ist jetzt bald vollendet, ein starker 4^o Band mit 40 Tafeln.⁵

—Meine ganze Aufmerksamkeit und Zeit ist jetzt durch die *Radiolarie* der *Challenger*“ absorbiert, von denen ich bereits 1,100 neue Arten gezeichnet und beschrieben habe. Sie sind durch ihre Variabilität und Verwandtschaft höchst interessant für die Descendenz-Theorie. 30 Tafeln sind bereits auf Stein, 20 gedruckt.⁶

—Mir und meiner Familie geht es sonst ganz gut. Hoffentlich befindet sich auch Ihre liebe Familie im besten Wohlsein.

Nochmals die herzlichsten Grüsse und Glückwünsche, hochverehrter Freund, von Ihrem treu ergebenen | Ernst Haeckel

DAR 166: 72

¹ For a translation of this letter, see Appendix I.

² Haeckel’s essay ‘Einstämmiger und vielstämmiger Ursprung’ (Monophyletic and polyphyletic origin; Haeckel 1879a) was part of a special issue of *Kosmos* to commemorate CD’s 70th birthday on 12 February 1879. An incomplete offprint is in the Darwin Pamphlet Collection–CUL; CD’s copy of the complete issue is in his collection of unbound journals in the Darwin Archive–CUL.

³ Rudolf Carl Virchow had given the address ‘The liberty of science in the modern state’ (Virchow 1877) to the German Association of Naturalists and Physicians in Munich in September 1877; an English version of the text was published in *Nature*, 22 November 1877, pp. 72–4; 29 November 1877, pp. 92–4; 6 December 1877, pp. 111–13. In response to Haeckel’s address at the same meeting (‘The present position of the evolution theory’; published in English in *Nature*, 4 October 1877, pp. 492–6), Virchow used CD’s theory of descent as an example of a speculative scientific theory that should not be taught in German schools. He thought such theories constituted a threat to social order and might harm freedom of research:

All attempts to transform our problems into doctrines, to introduce our theories as the basis of plan of education, particularly the attempt to depose the church, and to replace its dogma by a religion of descent ... must fail, and their failure would at the same time bring the greatest dangers upon the position of science generally.
(*Nature*, 6 December 1877, p. 112.)

Haeckel’s response to Virchow’s address was *Freie Wissenschaft und freie Lehre* (Free science and free teaching; Haeckel 1878b); it was translated into English, with a preface by Thomas Henry Huxley, as *Freedom in science and teaching* (Haeckel 1879c). The French translation was entitled *Les preuves du*

transformisme (Evidence of transformism; Haeckel 1879b). For more on Virchow and Haeckel's debate as part of *Kulturkampf* (culture struggle), the power struggles over the role of the Catholic Church in the emerging secular nation state, see Benton 2002, pp. 56–60.

- ⁴ Haeckel also visited Le Croisic in Brittany, France, in autumn 1878; see Haeckel 1879–81, 1 (part 1): xvi.
- ⁵ The first part of the first volume of Haeckel's *Monographie der Medusen* (Haeckel 1879–81), and an atlas containing 40 plates, were published in 1879; the first volume of the monograph first appeared as vol. 1 (2 parts plus an atlas) of *Denkschriften der medicinisch-naturwissenschaftlichen Gesellschaft zu Jena*. A further volume of text, describing the HMS *Challenger* medusa specimens, and an atlas with 32 plates, followed in 1881. Medusa is the free-swimming form (e.g. jellyfish) of members of the invertebrate subphylum Medusozoa.
- ⁶ Haeckel's report on the Radiolaria collected by HMS *Challenger* was published in 1887; it described 4318 species (3508 of which were new) and contained 140 plates of about 1600 new species (Haeckel 1887, 1: ii and iv). The Radiolaria, a diverse group of unicellular protozoans with siliceous skeletons, belong to the class Rhizopoda.

To Karl Alberts [after 9 February 1879]¹

Dear Sir

I beg leave to return to you & to the Editors of *Kosmos* my most sincere th. for the unprecedented honour, which they have done me by publishing a [Geden....] in commemoration of my Birthday.—² I hope also that you will express to Herr A. Fitger my acknowledgement for the remarkable poem which the ghost of Faust has addressed to me.³ I see that there is much in the number, which will naturally interest me greatly.— It is no small honour, that so distinguished a person as Prof Prey. sh^d have published a sketch of my life, & in casting my eye over the list of what I have published I am astonished at its completeness, & I could not myself without much labour & reflection have compiled so complete a list.⁴

With my repeated thanks for the honour conferred on me | I remain Dear Sir | Yours faithfully | C. D.

ADraftS

DAR 99: 95v

¹ The date is established by the relationship between this letter and the letter from Karl Alberts, 9 February 1879.

² Alberts had sent CD a special issue of *Kosmos* with essays on CD's life and work commemorating CD's 70th birthday on 12 February 1879; see letter from Karl Alberts, 9 February 1879.

³ Arthur Fitger's poem 'Faust's Schatten an Charles Darwin' (Faust's shade to Charles Darwin) appeared in *Kosmos* 4 (1878–9): 335–8.

⁴ William Preyer's biographical sketch of CD included an extensive list of CD's publications from 1837 to 1877 (Preyer 1879, pp. 346–9).

From Ernst Krause¹ 10 February 1879

Berlin N.O. Friedenstrasse 10. II.
den 10 Februar 1879.

Hochgeehrter Herr!

Beim Beginne eines neuen Jahrzehnts Ihres uns Allen so theuren Lebens kann ich nicht unterlassen, mich der grossen Schaar derer anzuschliessen, die ihr Herz

treibt, Ihnen zu diesem Tage ihre innigsten Glueckwuensche direct auszusprechen.² Moechten Sie aus den zahlreichen Zuschriften, die Ihnen von nah und fern zugehen werden, erhöhte Kraft und Daseinsfreudigkeit schoepfen, um noch lange Jahre in ungetrübtester Gesundheit wirken und sich der Werke freuen zu koennen, mit denen Sie die Wissenschaft in neue Bahnen gelenkt haben. Ich fühle mich gluecklich, Ihnen sagen zu koennen, dass man durch ganz Deutschland an Ihrem Festtage Ihrer mit Liebe und Verehrung gedenken wird, und dass sich selbst in den Kreisen, welche sich bisher widerstrebend zeigten, ein bedeutsamer Umschwung bemerkbar macht.

Erlauben Sie, hochgeehrter Herr, mich mit innigster Verehrung zeichnen zu dürfen | Ihr | dankbar ergebenster | Ernst Krause.

DAR 92: B14

¹ For a translation of this letter, see Appendix I.

² CD's 70th birthday was on 12 February 1879. Krause had contributed to a celebratory issue of *Kosmos* 'Erasmus Darwin, der Großvater und Vorkämpfer Charles Darwin's: ein Beitrag zur Geschichte der Descendenz-Theorie' (Erasmus Darwin, Charles Darwin's grandfather and pioneer: a contribution to the history of the theory of descent; Krause 1879a). Under the pseudonym Carus Sterne, he also wrote 'Das Aufdämmern einer neuen Weltanschauung. Zu Darwin's 70. Geburtstagsfeier, am 12. Februar 1879' (The dawning of a new world-view. For Darwin's 70th birthday celebration, on 12 February 1879), *Die Gartenlaube* 7 (1879): 112–15.

To Anton de Bary 11 February 1879

Down, | Beckenham, Kent.

Feb 11. 1879

Dear Sir

I have often received from various writers copies of the Bot. Zeitung; but lately they have come so regularly that I think I must be indebted to you for them.¹ I assure you that I fully appreciate your kindness & the honour which you have thus done me. But I write to beg you not to send them in future as I regularly take in this your invaluable publication; & have procured the volumes from the commencement.

With the highest respect | I remain dear Sir | yours faithfully | Charles Darwin

LS

Natural History Museum (General Special Collections MSS DAR 45)

¹ Anton de Bary was one of the editors of *Botanische Zeitung*. Only a few issues and part issues of *Botanische Zeitung* are now in the Darwin Archive–CUL.

To George Henslow 11 February 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

Feb 11. 1879

My dear Sir

I thank you for your kind note & for the paper hereafter to be sent.¹ You have of course the most perfect right to criticise my work in any way you think fit, & indeed

it is the duty of a scientific man, when he writes, to express himself with entire frankness. I am sorry that we differ so much & fear that we shall continue to do so. But as you say truth will ultimately prevail, & we are both in search of it— Now that I am growing old, whatever I am at work on drives for the time every other subject completely out of my head; so I am a very poor critic. I will, however, hazard one remark: you say in your note “no physiological benefit (from cross-fertilisation) can be proved to be permanent”; but I never heard of any one who supposed the good effects on the offspring from crossing being more than temporary, like the effects of proper diet & other highly favourable conditions of life.—²

I remain my dear Sir | Yours faithfully | Ch. Darwin

In using the word temporary I do not mean that the good effects are necessarily confined to the first generation—

DAR (CD Library - G. Henslow 1888)

¹ See letter from George Henslow, 8 February 1879. Henslow was planning to send a copy of ‘On the self-fertilization of plants’ (G. Henslow 1877a).

² In his letter, Henslow had challenged CD’s conclusions on the benefits of cross fertilisation made in *Cross and self fertilisation*, pp. 436–69. See also G. Henslow 1877a, pp. 321–3.

From Grant Allen 12 February 1879

22 Bonchurch Road. | North Kensington. | W.

Feb. 12. 79.

Dear Sir,

I have asked my publisher, Mr. Trübner, to forward you a copy of my new book on the Colour-Sense, which I hope will reach you at the same time with this letter.¹ As I know your time must be very valuable to all the world, I venture to add that the parts of the book likely to interest you are Chaps. VIII and IX (on “Community of Taste” and “Direct Reaction”), and part of Chaps. III and IV. I mention this merely to save you the trouble of looking through parts of the book which are less connected with your line of study.²

May I also trouble you with a few words in anticipation of a probable criticism. You will doubtless ask why I have relied so much upon the recorded observations or experiments of others, and made so few myself. The fact is, I have not the time, money, or opportunity for working practically at natural science. I earn my whole livelihood by writing for the daily or weekly press. Now you will see at once that there is a great difference between a man working like yourself or Sir John Lubbock, and one who is perpetually occupied with the miserable trivialities of journalism. I can only give to science the little leisure which remains to me after the business of bread-winning for my family is finished. How scanty that leisure is, only those connected with journalism ever realize. At the same time, I believe that I can be of some little use to scientific men by throwing out such hints as occur to me, and by working, *crassa Minerva*,³ in my own way, with the few materials which come within my reach. I should immensely prefer, if I could spare the time and the money, to

take up physiological psychology in a scientific way; to work for some years in a laboratory; and then to bring out definite results. But as that cannot be done, I think it is better for me to do such humble scientific work as lies in my power, rather than give up my whole energies to phrasemaking for the daily press. I merely mention this as an apology for the obvious short-comings of my book, which nevertheless I think it better to write than to leave my aperçus wholly unexpressed.

Trusting you will forgive my letter, and with all the respect which every Evolutionist owes to the founder of his faith, I am, | Yours very faithfully, | Grant Allen.

DAR 159: 43

- ¹ Allen's book *The colour-sense: its origin and development. An essay in comparative psychology* (G. Allen 1879a) was published by Trübner & Co. (founded by Nicholas Trübner); CD's annotated copy is in the Darwin Library—CUL (see *Marginalia* 1: 14–15).
- ² Chapters 8 and 9 of G. Allen 1879a were titled 'The community of taste between flower-feeding and fruit-eating species' and 'The direct reaction of the colour-sense upon animal integuments'; chapters 3 and 4, 'The organ of vision' and 'Insects and flowers'. CD had commented on Allen's *Cornhill Magazine* articles, which were later incorporated into chapters 4 and 6 (see G. Allen 1878a and 1878b, letter from Grant Allen, 19 March [1878], and G. Allen 1879a, p. ix).
- ³ *Crassa Minerva* (Latin): a reference to Horace, *Satires* 2.2.2–3, meaning 'with slow or untutored intelligence' (Minerva is the Roman goddess of wisdom).

To H. W. Bates 12 February 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Feb— 12th 79

Dear Bates

Enclosed is the certificate with 7 signatures, which I sh^d think was ample, but I send it to you instead of direct to R. S., as you might like to get through some mutual friend Sir H. C. Rawlinson's signature, whom I do not know.— If I were in your place I sh^d append to your title "Ex Pres of Ent. Soc?"; but you are the best judge of this.—¹ I think that you had better send the certificate, *with note enclosed* by a safe hand or registered.—

Yours very sincerely | Ch. Darwin

Nate D. Sanders Auctions (dealers) (14 December 2017, lot 74)

- ¹ CD had agreed to propose Bates for fellowship of the Royal Society of London, and to circulate the necessary certificate; see letter to H. W. Bates, 26 January 1879. Henry Creswicke Rawlinson was not among the signatories on the certificate for election (Royal Society archives, GB 117 EC/1881/09); for a list of the ten signatories, see letter from H. W. Bates, 25 January 1879 and n. 1. Bates had been president of the Entomological Society of London in 1868, 1869, and 1878; his qualifications on the certificate included 'ex-president' of the society. He was elected FRS in 1881.

From Karl Beger [c. 12 February 1879]¹

Hamburg { }

Dear Sir,

My wife and I, beg to present you our very best wishes for your birthday, and hope that it may return always in health and happiness. Enclosed the photograph of our little Darwin.²

He is now two years old, and a very good, intelligent, and thoroughly healthy child. He speaks already and takes his meals without help.

In the upper chaw he has got 5. cutting-teeth instead of 4., but they stand regularly and ar(e) as nice and good as could be(.)

Dear Sir, | Your most obedient servant | F. T. C. Beger & wife

Charles Darwin, Esq^{re}. M.A. F.R.S. | Down,

DAR 160: 121

¹ The date is established by the relationship between this letter and the letter from Karl Beger, [12 February 1877] (*Correspondence* vol. 25).

² Beger's wife, Emma Friedrike Caroline Dalchow Beger, had given birth to a son on 11 February 1877; the couple named him Darwin Richard Beger after CD (see *Correspondence* vol. 25, letter from Karl Beger, [12 February 1877]). CD's 70th birthday was on 12 February 1879. The photograph has not been found.

To N. N. Christophe 12 February 1879

Beckenham¹

[...] I beg leave to return you my sincerest thanks for the kind congratulations I have received from you on the occasion of my birthday [...]²

Charles Darwin

Incomplete³

J. A. Stargardt (dealer) (catalogue 700, 25–6 March 2014)

¹ The recipient's name, the date, and the address are supplied by the sale catalogue. Christophe, of Eydtkuhnen in East Prussia (now Chernyshevskoye in Russia), has not been identified.

² CD was 70 on 12 February 1879.

³ The original letter is complete and is described in the sale catalogue as being one page long, and accompanied by its envelope.

To J. A. Crawley 12 February 1879

Down | Beckenham, Kent

Feb. 12/79

Dear Sir.

I am sorry to say that I can give you no information.¹

I have forgotten the very little Greek which I once knew. Nor have I ever read, to my shame be it spoken, the works of Aristotle. From extracts, which I have seen, I have an unbounded respect for him, as one of the greatest, if not the greatest observer, that ever lived.—²

Dear Sir | Yours faithfully | Ch. Darwin

Copy

DAR 143: 302

¹ No letters from Crawley have been found.

² CD cited the observations of Aristotle in *Origin* 4th ed., p. xiii, *Variation* 1: 24, 75 and 277, and 2: 51, and *Cross and self fertilisation*, pp. 415–16. CD's Reading notebook (1838–51) contains the entry 'read Aristotle to see whether any of my views are ancient' (see *Correspondence* vol. 4, Appendix IV, 119: 2v).

To Arnold Dodel-Port 12 February 1879
Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)
 Feb. 12th 1879

My dear Sir

I thank you for your most kind letter which has interested me much in several ways, & for the gift of the Atlas.—¹ In truth no praise can be too strong for these drawings, they are so wonderfully clear & instructive.

I rejoice to hear of the success of your Lectures & all your other success.²

I have not heard a word about H. Müller of Lippstadt & do not know to what you allude, but I will write to him.—³

Again accept my best thanks & believe me | Yours faithfully | Ch. Darwin

Zentralbibliothek, Zürich (Ms. Z VIII 417.2)

¹ The letter from Dodel-Port has not been found. He sent the second part of his and Carolina Dodel-Port's botanical atlas (Dodel-Port and Dodel-Port 1878–83). He had sent the first part in 1878; see *Correspondence* vol. 26, letter from Arnold Dodel-Port, 12 June 1878.

² Dodel-Port taught botany at the University of Zurich.

³ In his now missing letter, Dodel-Port had evidently written about Hermann Müller's problems related to his teaching; see letter to Hermann Müller, 12 February [1879], and letter from Hermann Müller, 14 February 1879.

From the masters of Greiz College 12 February 1879

To | Charles Darwin

the deep thinker, the learned and celebrated naturalist send their greetings and sincere congratulations to his 70th birthday and heartfelt wishes for many happy returns, with the assurance of their high esteem and veneration,¹

his German admirers, the undersigned Masters at the College of Greiz:

Retzlag. | Grahl. | Rossberg, Dr. phil. | Dr. Reissig. | A. Schlundt, Dr. |
 Dr. F. Ludwig | Schöber. | F. H. Grünler | [E. Dillner] | O. [Hertzsch]²

Greiz, Thuringia | Germany. | February 12th 1879.

LS

DAR 99: 94r

¹ CD was 70 on 12 February 1879.

² Friedrich Ludwig had written to CD with observations on the forms of flowers; see *Correspondence* vol. 25, letter to Friedrich Ludwig, 1 August 1877, and *Correspondence* vol. 26, letter to Friedrich Ludwig, 29 May 1878. The other signatories have not been identified.

To Ernst Haeckel 12 February 1879
Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
 Feb. 12th 1879

My dear Häckel

I thank you most cordially for your most kind letter.¹ But your expressions are so strong that they make me feel almost ashamed of myself, as not deserving them.

I have received the number of *Kosmos* which is a wonderful honour to me, & I have seen in it the article by you, but I have not yet had time to read any of it.² For many years I have marvelled at the amount of first-rate work which you manage in some inexplicable way to get through; & I rejoice to hear that your health is still good.

The Virchow affair was a lamentable one, & I grieved over the narrow views of so distinguished a man, whom I formerly greatly respected.³ His conduct is to me quite inexplicable, except by suspecting low motives & thus suspecting is to degrade oneself.—

I keep on working,—endeavouring to add a few bricks for building up the noble temple of Science—but not on subjects which would interest you or anyone greatly.—

With hearty wishes for the prosperity in every way of yourself & family, believe me | My dear Haeckel | Yours sincerely | Ch. Darwin

Ernst-Haeckel-Haus (Bestand A-Abt. 1: 1–52/46 [A 9900])

¹ See letter from Ernst Haeckel, 9 February 1879.

² See letter from Ernst Haeckel, 9 February 1879 and n. 2. Haeckel had written an essay on monophyletic and polyphyletic origin (Haeckel 1879a) for a special issue of *Kosmos* to mark CD's 70th birthday.

³ See letter from Ernst Haeckel, 9 February 1879 and n. 3. Rudolf Carl Virchow had given a speech in which he argued that CD's theory of descent should not be taught in German schools.

To Ernst Krause 12 February 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)
Feb. 12. 1879

Dear Sir

I must write a line to thank you for your extremely kind letter.¹ The Editors of *Kosmos* have done me a quite unprecedented honour by the publication of the last number,—much of which, I can see, will interest me greatly.²

With cordial thanks | Yours faithfully | Charles Darwin

University of Michigan, Bentley Historical Library (John Robert Crouse autograph collection)

¹ See letter from Ernst Krause, 10 February 1879.

² Krause was an editor of *Kosmos*; the February 1879 issue contained essays on CD's life and work to mark his 70th birthday, and also featured an essay on Erasmus Darwin by Krause (Krause 1879a).

To Hermann Müller 12 February [1879]¹

Down, Beckenham, Kent
Feb: 12.

My dear Sir

I have just heard from D: Dodel Port of Zurich that some misfortune has befallen you and that you have been treated shamefully by your Government.—² I grieve

deeply to hear this, and as soon as you can find a few minutes to spare, I earnestly beg you to let me hear what has happened.

Believe me your friend and admirer | Charles Darwin

Copy

DAR 146: 440

- ¹ The year is established by the relationship between this letter and the letter to Arnold Dodel-Port, 12 February 1879.
- ² The letter from Arnold Dodel-Port has not been found, but see the letter to Arnold Dodel-Port, 12 February 1879 and n. 3.

From Hermann Müller 12 February 1879

Lippstadt
Febr 12, 1879

My dear Sir

I cannot pass this day in which you accomplish the 70th year of your wonderfully rich life without sending to you my heartiest congratulation and the cordial wish that a long and serene evening of life may be destined to you.¹

It is very welcome to me that by your kind mediation my article has been dispatched to the Linnean Society²

Yours | very sincerely | Hermann Müller

DAR 171: 312

- ¹ CD's 70th birthday was on 12 February 1879.
- ² There is no article by Müller in any Linnean Society of London publication.

From the Naples Zoological Station 12 February 1879

Handed in at the Naples 12.10.43 am Office at 3.55 .M. Received here at 4.35 .M.

From C. J

To Charles Darwin | Beckenham Kent Engla

The Zoological Stations of Naples and the naturalists diferent nations there assembled presents their warmest congratulations to the veteran of Modern Zoology on the occaision of this seventieth Birthday¹

Telegram

Date stamp: FE 12 79

DAR 172: 2

- ¹ CD's 70th birthday was on 12 February 1879.

From Arthur Mellersh 13 February 1879

Fernhurst | Haslemere
February 13th 1879

My dear Darwin,

I see by a German paper that you entered this "Vale of tears" on the same day of the month, only five years sooner than my Wife may you enjoy many more

anniversaries of the day.¹ If you come into these parts again, I hope you will let me know that I may have one more peep at you.² I heard from Phil King³ the other day he, like me has been a horrid sufferer from sciatica. I would not wish my worst enemy (if I have one) to suffer what I did last year.

Hoping we may meet again, I am very truly Yours | A. Mellersh

DAR 171: 149

¹ CD was 70 on 12 February 1879. Mellersh had sailed on HMS *Beagle* with CD in the 1830s; his wife, Henrietta Frances Mellersh, was baptised on 13 February 1814 (*England, select births and christenings, 1538–1975* (Ancestry.com, accessed 29 November 2017)).

² The last known meeting between Mellersh and CD was at Down on 21 October 1862; see *Correspondence* vol. 10, letter from Arthur Mellersh, 30 November [1862].

³ Philip Gidley King had been midshipman on the *Beagle* voyage.

To Hugo de Vries 13 February 1879

Down, | Beckenham, Kent.

Feb 13 1879

My dear Sir

I am going to beg a favour of you. I have just read, with *great* interest & profit, your Essay in Heft 2. 1872 of *Arbeiten ... Wurzburg*¹ I have been observing, for a special purpose, the Cotyledons of a large number of plants, & some *young* leaves, with the stems of all secured to sticks close beneath. They all grew in pots & were placed close to a North East window, & I was greatly troubled (for I was not attending to Heliotropism) by their all turning to the light, though this was not very bright. From these many cases & from statements in almost every botanical book, I wrote in my notes “that all the cotyledons which I observed turned, like leaves, towards a lateral light”. I was therefore much startled when coming to a passage (p. 261) where you say “Aus diesen Versuchen geht hervor (1) dass in vielen Fallen kein Einfluss des Heliotropismus zu bemerken war.”² I infer therefore that your leaves did not turn to the light. Can the difference between what you so carefully observed, & what I have *repeatedly*, but only in a few cases, carefully observed, be accounted for by your having cut away the lamina?³

Perhaps you refer exclusively to the heliotropism of the petiole & mid-rib, yet I have often seen the petiole of cotyledons curve towards the light. My plants all grew on their own roots, whilst yours were cut off & stuck in sand; & this perhaps may have made some difference, as it certainly does with the revolving nutation of climbers.⁴

You know so very much more than I do on all these subjects, that I should be extremely obliged if you would tell me whether you think that I err in saying that cotyledons & *young* leaves turn to a lateral light, independently of the heliotropic movement of their stems; the stems having been secured to sticks.—

But I do not see how I could have erred.

Forgive me for troubling you & believe me my dear Sir | yours sincerely | Charles Darwin

PS. How do your observations progress on the contraction of young stems and radicles? I hope that you will publish soon.— I trust that you received the seeds from Prof. Asa Gray.—⁵

LS(A)

Artis Library (De Vries 5)

¹ De Vries's essay 'Ueber einige Ursachen der Richtung bilateralsymmetrischer Pflanzentheile' (On some causes of the direction of bilaterally symmetrical plant parts; Vries 1872) was published in *Arbeiten des botanischen Instituts in Würzburg*.

² CD's note has not been found in the Darwin Archive–CUL. For the German, see Vries 1872, p. 261; an English translation of the German quotation is: 'From these experiments it follows (1) that in many cases no influence of heliotropism was noticed.'

³ For De Vries's explanation of cutting away the lamina, see Vries 1872, pp. 262–3.

⁴ De Vries's description of the purpose and methodology of his experiment is in Vries 1872, p. 259.

⁵ CD had asked Gray to send seeds of *Echinocystis lobata* (wild cucumber) to De Vries; see *Correspondence* vol. 26, letter to Asa Gray, 15 August 1878.

To Henry Woodward 13 February [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Feb. 13th

Dear M^r Woodward

I have signed the paper with pleasure.—²

Many thanks for your letter which has interested me in many ways. That about the *Limulus* sounds like a particularly interesting discovery.³ I am obliged for your kind expressions about me & my son.⁴ I go on working in a humble way, trying to add a few stones for building up the great edifice of Science.—

Yours sincerely | Ch. Darwin

McGill University Library, Rare Books and Special Collections (Blacker-Wood Manuscript Collection, Woodward Collection of Autographs v. 3)

¹ The year is established by the relationship between this letter and the letter to Francis Darwin, 21 February [1879].

² The paper has not been found, but it was possibly a nomination form for the Lyell fund of the Geological Society of London, which Woodward was awarded in 1879 (*Geological Magazine* (1921) 58: 484).

³ Woodward's letter has not been found, but in his *Monograph of the British fossil Crustacea* (Woodward 1866–78, p. ii), he reported that the *Limulus* species of the Oolitic period had attained the degree of development and differentiation of modern representatives like *Limulus polyphemus* (Atlantic horseshoe crab). Despite its superficial resemblance to crabs, *Limulus* is now placed within the subphylum Chelicerata, not in the Crustacea.

⁴ CD quoted the 'kind expressions' about himself and Francis in the letter to Francis Darwin, 21 February [1879].

From Hermann Müller 14 February 1879

Lippstadt

14/2 79.

My dear Sir

Your heartily sympathising interest concerning my well-being is of much greater importance to me than all my pretended misfortune. The case alluded to by Mr. Dodel is as follows:¹

In this moment the party of bigot obscurants is favoured by our emperor and tries every possible experiment in order to remove our liberal minister of schools Dr. Falk, which, indeed, under these circumstances, occupies a somewhat balancing position. Now some weeks ago this party in our “Abgeordnetenhaus” had chosen my person as a mark of attacks against the Minister.² Sheltered by their privilege as representants some members of this party covered me during three sessions with outrageous accusations, as having taught to my scholars blasphemies, atheism, nihilism, socialism etc; the only fact they could lean upon being that I had read (two years ago) to my scholars some passage out of Carus Sterne’s work “Werden und Vergehen”, in which the words are met with: “Im Anfang war der Kohlenstoff”. Without respecting the connexion of the text, these words by my bigot aggressors were taken as a derision of the words of the evangely “Im Anfang war das Wort” and hence all the above accusations were deduced. The commissioner of the government on the one side praised myself as an excellent teacher, but on the other side defended myself against the attacks of the obscurants only in a very undecided manner. At last, in the third session one of the liberal members of the “Abgeordnetenhaus” having procured to himself the work of Carus Sterne, read the text hitherto unknown and nevertheless so much discussed about, and now suddenly it became evident that the words “Im Anfang war der Kohlenstoff” in their connexion were quite harmless ones.³ Thus the bigot obscurants had obtained no other effect than discredited themselves, and it was solely by the undecided behaviour of the government that some shadow of suspicion about the correctness of my teaching perhaps remained. But Carus Sterne (Dr. Ernst Krause, redacteur of the *Kosmos*), whose work had also been utterly calomniated, in order to be able of calomniating myself, has published two articles in one of our greater Journals in which he excellently defends his book and my person too. (I send you his articles.) I myself am just now about writing a justification of my method of teaching.⁴

With most hearty thanks for your friendly letter | yours | very sincerely |
H Müller.

DAR 171: 313

¹ Arnold Dodel-Port had reported in a now missing letter that Müller had suffered a misfortune (see letter to Arnold Dodel-Port, 12 February 1879, and letter to Hermann Müller, 12 February [1879]).

² Wilhelm I was emperor of Germany; Adalbert Falk was minister of culture; ‘this Party’ refers to the Ultramontanists, Catholics who wanted to integrate Church and State, with ultimate authority belonging to the former. ‘*Abgeordnetenhaus*’: house of representatives (German); one of two houses of the Prussian *Landtag* or legislative assembly. Müller was held up as an example of how the religious and moral attitude of schools had sunk under Falk’s leadership.

³ The phrases ‘Im Anfang war der Kohlenstoff’ and ‘Im Anfang war das Wort’ (In the beginning was carbon; In the beginning was the word (German)), appeared in Sterne 1876 (Genesis and decline), pp. 92–3, and may be translated in their wider context, as follows:

A modern chemist, who wanted to translate the history of creation into his beloved chemical sign language, must not begin like Faust: In the beginning was the word, or the sense, or the power — ‘he can not possibly esteem power alone so highly’— and struck with a sudden light, would exclaim: In the beginning was carbon with its remarkable inner powers.

Sterne was making an allusion to Johann Wolfgang von Goethe's *Faust*, which was interpreted as referring directly to the Bible and therefore as blasphemous. Müller's critics had focused on this passage in 1877, when Müller was denounced in several conservative German newspapers as a corrupter of youth. Müller sued the newspapers, and one case reached the courts in January 1879, reawakening public interest. The affair was one strand in the nineteenth-century German Kulturkampf (the struggle surrounding the role of the Catholic Church in the emerging secular nation state). For more on the affair, see Kelly 1981, pp. 61–4, and Bölsche 1906, p. xii). Carus Sterne was a pseudonym of Ernst Krause.

⁴ *Redacteur*: editor (German). Krause published the articles in the *Königlich privilegierte Berlinische Zeitung von Staats und gelehrten Sachen* (later known as the *Vossische Zeitung*), 19 January 1879, p. [6], and 21 January 1879, p. [9]; no copies have been found in the Darwin Archive–CUL. Müller defended his approach to teaching in *Die Hypothese in der Schule und der naturgeschichtliche Unterricht an der Realschule zu Lippstadt. Ein Wort zur Abwehr und Rechtfertigung* (Hypothesis in the classroom and natural history teaching at the Lippstadt secondary school. A word in defence and justification; H. Müller 1879a).

To John Tyndall 14 February 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

Feb 14. 1879

My dear Tyndall

I am a beggar for a little information. I have received a circular about a fund for poor Clifford, & I see that you are on the Committee.—¹ I sh^d. like to give handsomely, but feel bound with such a lot of children not to be extravagant.—² Now can you give me any idea what sort of sum the Committee hope to get, & whether there will be many subscribers. Do you know what any of the richer men (excluding millionaires) intend to subscribe. Without a scrap of information I find it very difficult to decide what to do.— Can you aid me even in the vaguest manner? Anyhow pray forgive me for troubling you in so odd a way.—

Yours very sincerely | Ch. Darwin

DAR 261.8: 30 (EH 88205968)

¹ Tyndall was a member of the University College, London, committee raising a public testimonial fund for William Kingdon Clifford, who had sailed to Madeira in January 1879 suffering from pulmonary disease (Chisholm 2009, pp. 662–3).

² CD's children were William Erasmus Darwin, Henrietta Emma Litchfield, George Howard Darwin, Elizabeth Darwin, Francis Darwin, Leonard Darwin, and Horace Darwin.

From C. A. Lindvall 16 February 1879

Stockholm

The 16 Febr. 1879.

Charles Darwin Esq^r.

Dear Sir!

Considering You the most competent as well as the most impartial judge in matters of Natural history, I hereby take the liberty to communicate an essay of Outlines of a new Systeme (as far as I know) of Geology. at least there is no harm in hearing the opinion of a practical man on these matters.

As You have a right to know something about the writer I will at once tell You that I am a Selfmade Man of 50 years, who, after studuing at a shipbuilding-school,

for the last 30 years have been engaged in the engineering and shipbuilding trade, and now have the position of director and chief Engineer of Bergsund Works, Stockholm, the principal at the port.—¹

From childhood an enthusiastic admirer of nature and its history, I have always applied the experiences, acquired from my struggles with the natural powers in daily work, upon the more extensive problems of Geology.—

In studying the different authors in this Science, I find that most of them have gone the right way—to collect existing facts, yet when going farther and putting them into systems, it seems me they are drowned in the multitude, just as the Yankee who could not see the town because there was so many houses.—²

In solving a problem, it may be in engineering or in Geology or whatever, we find a great number of powers acting on the question, and now it depends upon the man's ability to decide, which of these powers are essentials and which subordinate.—

To do this justly we must go in the distance as did Camille Flammarion when considering his "Inhabited Worlds", only taking for our guide the Natural Laws, and so considering all the known facts simultaneously.—³ To reduce a problem to its simplest form, and so solve it, that is the butt, but lots of people prefer a complicated solution to a very simple one, and an example of this kind is Mr Ademar's explanation of the change of temperature on the Earth, favorably accepted in some quarters.—⁴

Our country Sweden or Scandinavia present many Geological peculiarities; in most parts, except the southern part Scanie, you will find the Granite or Gneiss peeping up through the soil, and from the hardness of this stone, you can still trace the mode in which they have been rounded off (*moutonné*).—⁵

Between the Hills and under the vegetable soil, or layers of clay (in some parts) we always find great masses of what you term *Till*, a conglomerate of sand, fragments of stone (granite) large and small, mostly with sharp corners but now and then one rounded off, as also a clayish substance.—

But on the lowland plains north of Stockholm, this *Till* have been, by some mechanical power, formed into *long Hills of gravel*, some of which *can be traced for 100 English miles or more, all going nearly parallel and from North to South.* (see the Map). *The upper ridge thereof is not horizontal, but following the undulations of the ground.*

The interior of these mounds consist chiefly of *pure sand* in beautiful layers, and *layers of rounded stones* seldom above 4 in in diam and down to one inch and less.

All our great men have endeavoured to find out the origin of these sandhills.

In 1826 professor Sefström made the observation, that the ridges in the surface of our rounded granite mountains follows a certain law,— they are parallel to the direction of the sandhills in their neighbourhood; and he and Berzelius gave as their decided opinion, that the sandhills as well as the ridges have a common origin—a *mighty Current of water running from North to South.*

Not being able to call forth this current, the theory, how probable it was has been abandoned, and given place to the *Glacial Theory* in which our learned men are as fast frozen in as the Mammoth of Sibiria, although the Sandhills, running parallel to the highlands, by no means can be explained by the Glacial theory.—⁶

The little pamphlet here enclosed give my opinion on the matter.— Being written in one, to You unknown language, I will give the outlines of its content.⁷

With pleasure I read your explanation (in the geological Society) about “the paralel Roads of Glen Roy, and have taken it as a proof, *that Brittany, in a late Geological period, have been under Water* also indicated by the marin shells found at 1400 feet up on the hills in Wales.⁸

Also Scandinavia has been submerged cirka 600 feet, and if the depression of the both countries were simultaneous, the *Tidal Vave performed* the same phenomenens round our Island as now exist round Brittany. Every 12th hour the enormous mass of water had to go round the southern corner of Norway, in or out (see the two Pl. in the Pamphlet).—⁹

The mighty assistant this current had in denuding our shores, was the drift Ice.

Even now the Northern Baltic is often in winter filled with drifting Ice to a dept of often 20 feet, and just think if such a mass were lowered on the shores every 12th hour,—stones and sand frozen fast at the bottom—and so this Icemass lifted up by the Tide, and carried along the highland shore, to find its way out in the North sea round the southern corner of Norway,— *have You not herein a power which could grind off the mountains at the bottom, wash the sand and roll the stones, as also to form the sandhills paralel to the course of the water?*

If we now compare this to the traces left on the mountains surface, we find, that the rifles, after to have for a long while gone North and South, to the south of Stockholm turns gradually to the west, and at Gothenburg go nearly in west direction, and just the same is the case in the southern part in Scanie, *or the route the Tidal wave must have followed.*— See the small map of Scandinavia.¹⁰

But there is an other mighty power which may have contributed in the same way, from observations it is confirmed that the northern part of Scandinavia is rising out of the Water one foot or more in 100 years, and probably the Baltic and the Arctic Sea were combined not long ago.—

If you, in a Northern Country, see a river pouring into a lake, you are quite sure there must be an outlet and if more than one, it takes the nearest.— Now the Gulfstream is such a river pouring into the Arctic Basin, and the outlet or back current goes now partly through Behringssound but the greater part down both sides of Greenland.— But when there was an opening down the Baltic, it would be the nearest way for this backcurrent, carrying with it masses of Ice over the present lowlands of Russia, Germany Denmark Holland and Brittany, at this time more or less inundated.—

The occurence of Erratic Stones from Scandinavia over all these countries indicates this to be acceptable.

Also these Arctic shells, which gives our learned Men so much trouble, are called forth by this theory.—

Now for the change of temperature of northern Europe, we have in Sweden the experience, that in springtime, when the northeast wind is prevailing for a long period, and the drift Ice of the Baltic is forced to our shores, the arrival of Spring is detained as long as this wind prevailes.— If, in those remote times the backcurrent

of the cold waters from the arctic sea, half the year filled with drift Ice constantly went down over this central part of Europe, the borders would not be so cold as Greenland, but surely cold enough to admit of the Rendeer and Beer living in Belgium and France.

I hope these hints will be enough to make me understood, and should be very glad to hear your opinion about my explanation of the phenomens— at least Sir Charles Lyell would not have rejected it altogether.

Turning to the more general history of the Earth, we will consider some few cases thereof.—

Professor Hennesey argues that the centre of our Earth is a solid, and his proof therefor is, that the Earths Crust, when cracking by contraction must sink to the centre, *being heavier than the fluid mass underneath*.— he is quite mistaken, every Ironfounder will learn him that, putting a piece of redhot Iron in the liquid mass, it will float as Ice in water, and probably the same law exist with all minerals, that the stadium of greatest density is a little above the fusing point.¹¹

Everyone conversant with the difficulty of reheating large masses of minerals and still more of nonconducting materials will find the theory now adopted by our Geologists, that the Earth have been repeated times cooled down and reheated, *highly improbable*, the experience from Jorullo learns, that the lava, half a century after the eruption, was still considerably hot.¹²

The most probable is that the Earth, from a fluid state has gradually cooled down to what it is now a day, *and there is no necessity to proclaim the contrary*.

The hotter a mass is the quicker it looses its heat by radiation, and so the Earth must have, comparatively soon, been covered by a thin Crust all over its surface

By contraction this crust cracked, the cracks are filled with fluid, and this is repeated for a long time until the crust have grown mightier, perhaps being in a semi-liquid state. The interior now begin to cool, is reduced in bulk and forces the surface to follow, thereby causing the horizontal compressing strain which have formed all contorsions, crumpling of Rocks, and the undulations of the surface which are still going on, all over the Earths surface.—

At this early period of the Earths existence, and while still nearly redhot, the suns rays had been of little consequence to the Earth,—but soon their activity is visible. The radiation of heat from *the Earth* in the Equatorial Zone is checked by the heat from the Sun, while it goes on full in the polar Zones;—*so at last the day arrived, when the first rain fell at the pole, and this was the signal of great changes in the state of things*.—

All the waters of the present Oceans, being at this period held in suspension by the heat,—we may in vain try to form an idea of the torrents of water pouring out over the place where it could condense and the effect it produced there.—

Running down from the polar Zones the water was soon evaporated into steam thereby cooling the part of the surface it had touched, and so gradually widening its territory.—

This must have gone on for years without number until at last the Waters from both Poles met at the equator, and this forced distillation ceased to exist.—

To clear out one of the principal effects of the above, let us for an instant take an exemple from our time. Until 100 years ago, the working of our Iron mines in Sweden, was not made by blasting with powder, but by burning a heap of wood against the side of the rock, and, when sufficiently heated, water was poured upon it causing the breaking of the hard rock to pieces and to atoms.

Just the same must have taken place in the period related above, and You will have *sufficiently materials to form the enormous masses of strata and sand which cover our globe's surface*, and which have in later periods been transformed in many different ways.— Considering that the chemical affinities are most active at high temperature they must have contributed considerably to the alteration in this period.—

At last, when the cooling of the polar zones made it possible *The first Vegetable and Animal Life arose there, and probably long before the Water had settled on the Equatorial Zone of the Earth.*

If this conclusion is right, there is nothing wonderful in finding a tropical Flora in the Coalbeds of Spitzbergen and other Arctic localities,— No hothouse has ever been so well provided with proper heat at the bottom and abundance of rain from above.

Gradually this northern part cooled more and more,—the nature of vegetables and animals there, changed accordingly, until in our time they have nearly ceased to exist, only leaving to the coalbeds to tell the explorer about the abundance of former times.—

As long as the Equatorial part was comparatively hot, the evaporation of water went on faster than now in that part, and the rains in the other Zones of the world must have been heavier in proportion, *this must have in a great measure contributed to the denudations of the rocks visible all over the northern hemisphere.*

The larger the continents, the larger must the rivers and the temporary inundations have been, and no doubt, the Mammoth of Sibiria have been carried from the interior by such inundations, and buried in the alluvial soil, or carried far out in the Arctic sea and there frozen in.—

Summing up what is said the content will be:

1^o. The interior of the Earth is a liquid mass, and the Natural laws are not in opposition to this supposition.—

2^o. The cooling of our Globe first began at the poles, and consequently the vegetable and animal life was first started there; and so these parts have undergone all climates from the hottest tropical, to the eternal Ice of our days.—

3^o. The rains must have been immense at this period, when all the water of the Earth was in gas form and only the polar countries were cold enough to condens it.—

4th. The Water, when levelling down from the pole, soon met the hot territory, was boiled up, but at the same time causing the breaking up of the mountaines surface, and producing the materials which formed the stratified Rocks.—

5th. As long as the Equatorial Zone had a surplus of heat the rains of other parts were heavier than now, causing denudation and forming Alluvial ground, where fossil Annimals and trees still are to be found.—

6th. The temperature of the Earth as a whole has gone down at a steady pace, the local variations being caused by Geographical alterations.— Especially the cold of

middle Europe at a certain period, was occasioned by a current of cold water and drift Ice from the Arctic sea, passing over Finland down to the hearth of Germany, then inundated.— Glaciers existed in the mountainous districts, but sheets of Ice over the lowlands, as in Greenland—never.

My letter is too long already— if You think it worth the honour, please communicate it to the Geological Society,¹³ of course in better words than my poor english, writing as I am in a foreign language.

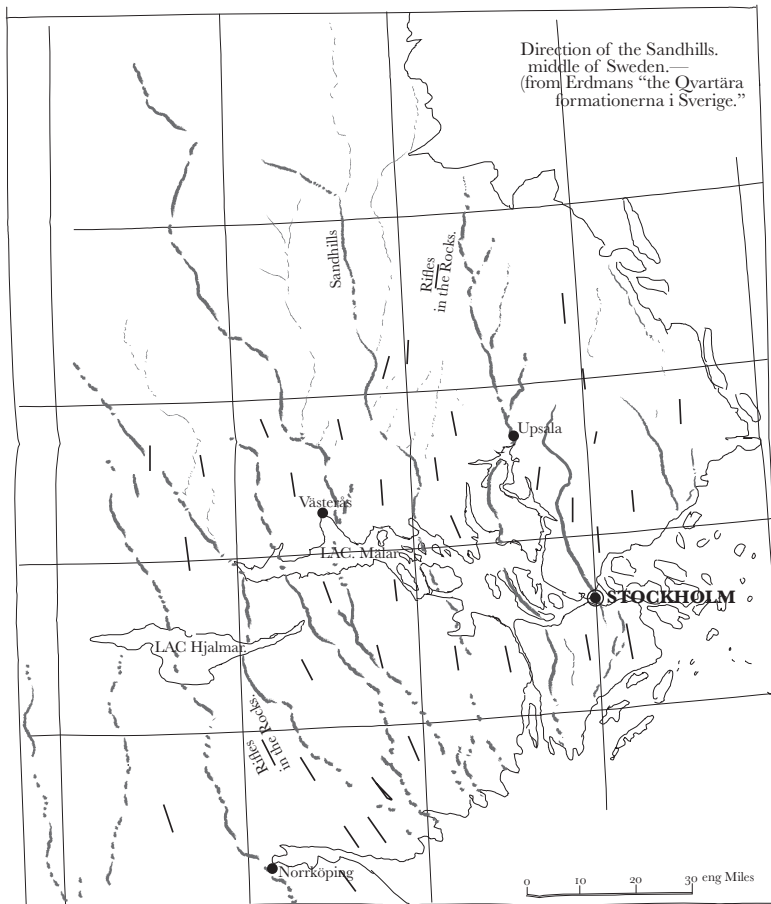
I should feel much honoured to be a member of your said Society.

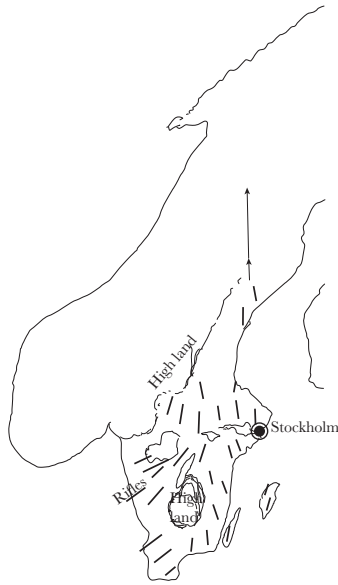
your humble Servant | C A Lindvall

adress *Stockholm Bergsund.*

[Enclosure]¹⁴

Map of sandhills in central Sweden





DAR 170: 4

CD ANNOTATIONS

31.4 which have formed all contorsions 31.5] *cross in margin pencil*

32.1 At this early] *cross in margin pencil*

Top of first page: 'The conceit of this working man is laughable' *pencil*

- ¹ Lindvall studied shipbuilding at Karlskrona and became director of the Bergsund Mechanical Workshop, Stockholm, in 1874 (*SBL*).
- ² The reference is to a verse in the American folk-song, Yankee Doodle: 'Yankee Doodle went to town, to buy a pair of trousers. He swore he could not see the town, for so many houses.'
- ³ The French astronomer Camille Flammarion's *La pluralité des mondes habités* (The plurality of inhabited worlds; Flammarion 1862) postulated that inhabitants of other worlds would be distinct beings adapted to their own worlds rather than parodies of human beings. The work was translated into several languages including, in 1868, Swedish.
- ⁴ Alphonse-Joseph Adhémar's *Les Révolutions de la mer* (Revolutions of the sea; Adhémar 1842) argued that astronomical events produced ice ages on earth and that alternate ice ages in northern and southern hemispheres were related to the precession of the equinox along the orbit of the earth around the sun. Butt: i.e. aim or target.
- ⁵ Rôche moutonnée (or sheepback) is a rock formation created by the passing of a glacier.
- ⁶ Nils Gabriel Sefström published a series of papers that explained the distribution of erratic boulders, eskers, and glacial striae as being the consequence of a major flood (see, for example, 'Undersökning af de räfflor, hvaraf Skandinaviens berg äro med bestämd riktning färade, stämd om deras sannolika uppkomst' (Investigation into the grooves whereof the mountains of Scandinavia are furrowed in a determined direction from their probable point of origin; Sefström 1836)). His teacher, Jöns Jacob Berzelius, was a keen supporter of his flood theory. The glacial theory developed by Louis Agassiz and others in the 1840s explained erosion, distribution of boulder clay, and the extinction of the mammoth by ice sheets covering most of northern Europe, America, and Asia during the Pleistocene period. For more on the rejection of glacial theory in favour of Sefström's flood theory in Scandinavia in the 1840s and later researcher's conversion to glacial theory, see Ingólfsson and Landvik 2013, pp. 35–6.

- ⁷ Lindvall enclosed *Försök till förklaring öfver tillkomsten af våra rullstensåsar, refflorna i bergen m. m.* (Attempt to explain the arrival of our glaciofluvial eskers, the grooves in the mountains, et cetera; Lindvall 1878). This pamphlet has not been found in the Darwin Archive—CUL.
- ⁸ In one of his earliest geological papers, 'Parallel roads of Glen Roy', published in the *Philosophical Transactions of the Royal Society of London*, CD had suggested that the parallel roads of Glen Roy were terraces produced by changing seawater levels, but he had since accepted that they were shorelines of a diminishing ice-dammed lake (see *Correspondence* vol. 24, letter to John Tyndall, 5 June [1876]). Brittany: Britain.
- ⁹ See Lindvall 1878, plates 1a–2b.
- ¹⁰ See enclosure (map on cloth). It is reproduced at about 40 percent of the original size, and the two parts have been placed vertically in relation to one another; in the original they are placed horizontally.
- ¹¹ Henry Hennessy's two-part article 'The figure and primitive formation of the earth, or researches in terrestrial physics' was published in the *Philosophical Transactions of the Royal Society of London* 141 (1851): 495–547. Solid iron does not float in molten iron unless it has absorbed hydrogen (a common contaminant of cast iron), as the solid form is denser; water is one of the few compounds that are less dense as solids than as liquids.
- ¹² El Jorullo is a cinder-cone volcano in Michoacán, central Mexico.
- ¹³ Geological Society of London.
- ¹⁴ The source referred to in the map is Erdmann 1868.

To Friedrich Ludwig 16 February 1879
Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)
 Feb. 16th 1879

Dear Sir

I hope that you will be so good as to give to the Masters at your college my most sincere thanks for their kindness in congratulating me on my Birth-day.¹ To receive the approbation & sympathy of one's fellow-workers in the acquisition of knowledge is the highest possible reward which any man ought to desire.

Believe me | Dear Sir | Yours very truly obliged | Charles Darwin

American Philosophical Society (Getz 11884)

¹ See letter from the masters of Greiz College, 12 February 1879. CD was 70 on 12 February 1879.

From W. B. Cheadle 17 February 1879
2. Hyde Park Place, | Cumberland Gate. W.
 Feb. 17. 1879

My dear Sir,

Will you excuse my troubling you again with regard to the Cambridge Memorial? The heading has been altered so as to include *all* graduates, in whatever faculty—who are, *or have formerly been*, engaged in the study or practice of Medicine.—¹ Thus the objection which, as I understood your letter, alone prevented you from appending your signature has been removed—and I venture to apply again, or, if you should prefer it will you kindly endorse the Memorial at the end—in company with others whose names are already appended. But I should of course feel most satisfied to have you support as a *Cambridge* man—

Should your son have returned to England, and be willing to give his signature also, I should be greatly obliged for it.—²

I find upon further enquiry that the statement with regard to Medical Fellowships is substantially correct— at Caius two Medical Fellowships were founded by D^r. Caius— one of these is now held by a non-medical Fellow— at Trinity, one of ten Fellowships was given on the condition that the holder proceeded to the M.D degree— This condition appears to have been abrogated—for I believe there is no such Fellow at Trinity now—³

Believe me | Very truly yours | W. B. Cheadle

DAR 161: 136

- ¹ See letter to W. B. Cheadle, 31 January 1879 and n. 1. CD had declined to sign a memorial calling for the creation of a professorship of pathology at the University of Cambridge on the grounds that he was not involved in the study or practice of medicine.
- ² Francis Darwin, who studied natural sciences at Cambridge and later studied medicine, was in Algiers; see letter from Francis Darwin, [c. 25 February 1879].
- ³ See letter to W. B. Cheadle, 31 January 1879 and n. 2. Commenting on Cheadle's letter, Francis or George Darwin told CD that Cheadle was in error about the abolition of medical fellowships at Trinity College, Cambridge. John Caius was a physician and second founder of Gonville and Caius College, Cambridge.

To Carlos Ribeiro 17 February 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Feb^r. 17th 1879.—

Dear Sir

I beg leave to thank you very sincerely for your great kindness in having sent me your fine work on Prehistoric Remains.—¹

I remain with much respect— | Dear Sir | Yours faithfully | Charles Darwin

Laboratório Nacional de Energia e Geologia (Records of the Portuguese Geological Commission 1857–1918)

- ¹ Ribeiro had sent his *Notícia de algumas estações e monumentos prehistóricos* (News of some prehistoric sites and monuments; Ribeiro 1878); CD's copy is in the Darwin Library–Down.

To John Tyndall 17 February [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Feb. 17th

My dear Tyndall,

Very many thanks for your full & clear information, which has removed all my utter perplexity & I have sent 50£ to the Committee.²

Yours very sincerely | Ch. Darwin

DAR 261.8: 31 (EH 88205969)

- ¹ The year is established by the relationship between this letter and the letter to John Tyndall, 14 February 1879.
- ² Tyndall's reply to CD's letter of 14 February 1879 has not been found. CD had asked for information about a public testimonial fund for William Kingdon Clifford. A payment dated 17 February 1879 for £50 marked 'Clifford Testimonial Fund' is in CD's Account books—cash account (Down House MS).

From A. G. Butler 19 February 1879

British Museum
19th Febr. 1879

Dear D^r: Darwin

In consequence of the sad loss which the Museum has recently sustained in the death of our Assistant Keeper, M^r. Frederick Smith, the post of Assistant Keeper in the Zoological Dept. has now become vacant.¹

As next in position, I naturally look forward to being permitted to occupy this office, but as it will be necessary for me to secure the support of leading Men of Science, and am sure that you are aware of my zeal in the acquirement and dissemination of Biological Science, I write to ask you kindly to give me a testimonial.

My scientific papers, as you are aware, treat of almost all Orders of Insects, of Arachnida & Myriopoda; many of them are Monographs or Revisions of Families and Genera: my principal papers on Arachnida are specially referred to in M^r. Cambridge's Article on the Arachnida in the present ed. of the Encyclopædia Britannica.²

I have now been in the Zoological Dept. since 1863, and my studies in the various Orders under my charge have, as my present position testifies, given satisfaction to my Superior Officers.

At one time I commenced the arrangement & study of the Crustacea, but was unable to devote sufficient time to them to do them justice. I have also, from my long stay in the Dept. had some insight into other groups of Animals.

In D^r. Gray's time, I had a certain amount of insight into the working of the Department and therefore have every reason to believe that I should be able to discharge the duties of the office with satisfaction to my chief.³

Believe me to be | Very sincerely yours | Arthur G Butler

D^r: Ch. Darwin F.R.S. | &c &c &c

DAR 160: 389

¹ Frederick Smith had worked as an entomologist in the zoology department of the British Museum since 1849; he was promoted to assistant keeper in 1875 (see *Correspondence* vol. 23, letter from Albert Günther, 6 February 1875).

² Octavius Pickard-Cambridge's article on the class Arachnida in *EB* 9th ed. referred to Butler's lists of the species of *Gonyleptes* (A. G. Butler 1873a and 1874), *Galeodides* (A. G. Butler 1873b), and *Phrynus* (A. G. Butler 1873c) on pp. 279, 281, and 290, respectively.

³ John Edward Gray was keeper of the zoological collections at the British Museum from 1840 until 1874. He was succeeded by Albert Günther.

From Anton de Bary 20 February 1879

Dear Sir,

Having read your kind letter d. Febr. 11, and feeling myself quite innocent of the regular sending of the *Botanische Zeitung* of which you complain, I wrote to the editor of the journal in order to get an explanation, and I received to-day the answer

from Leipzig. The editor writes that, by the orders of Mss. Williams and Norgate, London, he sends to you the B.Z. every week, franco, by post.¹ The copies, you receive regularly are therefore the continuation of the journal, which you seem to have formerly received by another way.

I beg you, dear Sir, to allow me the expression of the highest respect, and I remain | Yours faithfully | A de Bary.

Strassburg 20 Febr. 79.

DAR 162: 133

¹ See letter to Anton de Bary, 11 February 1879. CD had asked de Bary to stop sending him copies of the journal *Botanische Zeitung*, as he was already a subscriber. De Bary was one of the editors of the journal; he probably contacted the publisher, Arthur Felix of Leipzig. Franco: post-free, franked (*Chambers*). Williams & Norgate were CD's regular booksellers.

To A. G. Butler 20 February [1879]¹

Down, | *Beckenham, Kent.* | *Railway Station* | *Orpington. S.E.R.*
Feb 20th

My dear Sir

I do not know whether the enclosed will be of any use to you.— I can say nothing of your fitness for the desired office, as I know nothing whatever of its duties.²

I am sincerely sorry to hear of M^r F. Smith's death³

Yours very faithfully | Ch. Darwin

Natural History Museum (General Special Collections MSS DAR 71)

¹ The year is established by the relationship between this letter and the letter from A. G. Butler, 19 February 1879.

² The enclosure has not been found. In his letter of 19 February 1879, Butler had asked CD for a testimonial to support his application for the post of assistant keeper in the zoology department at the British Museum.

³ Frederick Smith; see letter from A. G. Butler, 19 February 1879 and n. 1.

To Grant Allen [before 21 February 1879]¹

Down Beckenham Kent

Dear Sir

I have read the whole of your Book with *great interest*.² It contains very many views new to me & highly ingenious, & some new facts. I read it, however, to avoid fatigue in an uncritical spirit: Nevertheless shades of doubt crossed my mind often. You impress me with having so ardent a love of truth, that I believe you will prefer hearing a few unfavourable remarks rather than more praise.—

(p. 73 Sprengel & not Lubbock ought to be referred to about the mark “saft-maal” to guide insects. During many a year I could not believe in their meaning, until I found that their development was correlated with that of the nectary. see p 373 *Cross-Fertilisation of Plants*.)³

(Wiesner of Vienna has shown that Chlorophyll in young & tender parts is injured by an excess of light. & he believes that the red scales &c at end of shoots &c serve to protect the parts from those rays which are the most injurious.)⁴

p. 39 | Before you have another edition, pray consult good authorities, about 2 individuals of Cryptogamic Plants not intercrossing: I believe that you will find this dreadfully erroneous. In *Fucus* sexes often distinct. With Ferns. why should not male & female elements have been enclosed in same receptacle, except to allow of occasional crossing? & hybrid Forms have occasionally appeared.— Think again on the conjugation of distinct *Algæ*— conjugation being the precursor of sexual generation.— Pray read my discussion on the origin of sexes in last chapter of *Cross Fertilisation*.⁵

p. 131 (I am now going to make a criticism beyond my tether; but I cannot believe in your theory of the origin of pleasure & pain; & I must think that these sensations have been specially acquired as a guide to each creature. Why sh^d the stimulation from Sugar give much pleasure to the gustatory nerves, & touching during the act of eating, not give pleasure to the delicate tactile nerves of the tongue & lips? If it had been highly advantageous to an animal that its lips sh^d be occasionally rubbed gently, then, I believe, the tactile nerves could have acquired pleasure in the act,— as in another part of the body, which need not be specified.⁶

(I am glad that you defend sexual selection: I have no fear about its ultimate fate, though now at a discount.— Wallace's explanation of, for instance, the display of a Peacock seems to me mere empty words— For many years I have quite doubted his scientific judgment, though admiring greatly his ingenuity & originality.—)⁷

(D^r Hochberg (under the name of D^r Berg) lately sent me a pamphlet in German which I have only skimmed, but which seemed to me clever: he maintains, (somewhat like you about colour with (birds and) Butterflies) that the origin of sexual music is the (3 or 4 words excised) He also speculates on sense of (3 or 4 words excised) our progenitors having been fruit-(3 or 4 words excised) (se)cond note (asking me to get his paper translated (3 or 4 words excised) not do) he says he now finds that you have published similar views on colour.—)⁸

(I may mention that some years (ag)o Fritz Müller expressed opinion in letter that the sight of beautiful flowers had influenced the sexual selection of Butterflies.— Before that I had speculated whether the sombre aspect of nature in Galapagos (under Equator) & in Patagonia had not destroyed taste for beautiful colours in the Birds of these Districts. I believe that I inserted a sentence to this effect; but I remember being frightened at such bold speculations, & perhaps struck out the passage.— The contrast in the colour of the birds in Patagonia, & on the bright-green, flower-decked plains of La Plata is very striking.—)⁹

I fear that you will hardly be able to decipher this letter (my *Amanuensis* is away)¹⁰ & perhaps not think it worth deciphering:—

I hope that you received my note acknowledging safe receipt of your Book.—¹¹

AL

Cleveland Health Sciences Library (Robert M. Stecher collection)

¹ The date is established by the relationship between this letter and the letter from Grant Allen, 21 February [1879].

- ² Allen had asked his publisher to send CD a copy of *The colour-sense: its origin and development: an essay in comparative psychology* (G. Allen 1879a); see letter from Grant Allen, 12 February 1879. CD's annotated copy of G. Allen 1879a is in the Darwin Library–CUL (see *Marginalia*, pp. 14–15).
- ³ In Sprengel 1793, p. 38, Christian Konrad Sprengel had observed that a spot of a different colour from the rest of the petal of a flower acted as a guide leading insects to the nectar within; he referred to this guide as *Saftmaal* (nectar mark; German). Allen credited John Lubbock with the idea in G. Allen 1879a, p. 73. In *Cross and self fertilisation*, p. 373, CD gives a case where these marks have been developed in correlation with the nectary.
- ⁴ Julius Wiesner had written 'Die natürliche Einrichtungen zum Schutze des Chlorophylls der lebenden Pflanze' (Natural contrivances for the protection of chlorophyll in living plants; Wiesner 1876); see pp. 41–2.
- ⁵ Allen had stated that cryptogamic reproduction was 'essentially hermaphrodite or non-sexual in its character' and cited CD's *Cross and self fertilisation* on the advantages of cross-fertilisation (G. Allen 1879a, p. 39). For CD's discussion of the genesis of the sexes and the many structures that allow the occasional cross in hermaphrodite plants, see *Cross and self fertilisation*, pp. 461–3. *Fucus* is a genus of brown algae; it is no longer classified as a plant but is in the kingdom Chromista (for its nineteenth-century classification, see Thuret 1854–5). The existence of hybrid ferns was debated at this time; see, for example, *Proceedings of the Royal Horticultural Society* 5 (1865): 167–8. Conjugation: the union or fusion of two (apparently) similar cells for reproduction, occurring in certain plants and animals of lowly organisation (*OED*).
- ⁶ For Allen's theory of the origin of pleasure with reference to sugar, see G. Allen 1879a, pp. 109–10.
- ⁷ Allen defended CD's theory of sexual selection against Alfred Russel Wallace's objections in G. Allen 1879a, pp. 155–94. Wallace had argued that the tail and elaborate display of the peacock could be explained by the vigour and vitality of the male bird; see Wallace 1877 and *Correspondence* vol. 25, letter to A. R. Wallace, 31 August 1877.
- ⁸ The pamphlet that Karl Höchberg sent CD was probably 'Die Lust an der Musik' (The desire for music; Berg 1879); see letter to Karl Höchberg, 13 January 1879. In Höchberg's reply to CD of 17 January 1879, he referred to Allen's new book on colour sense (G. Allen 1879a) and asked whether his pamphlet was of sufficient merit to be translated into English.
- ⁹ For Fritz Müller's observation that some species of butterflies preferred certain colours and the implications of this for the sexual selection of protective imitation, see *Correspondence* vol. 19, letter from Fritz Müller, 14 June 1871. For the passage in response to Müller's letter that CD did not add to *Descent* 2d ed., see *ibid.*, letter to Fritz Müller, 2 August [1871]. In *Descent* 2d ed., p. 422 n. 34, CD maintained that it was difficult to account for the dull colours of birds in the Galápagos Islands and Patagonia and noted that he had speculated on whether the prevailing dull tints of the scenery in these countries had affected the appreciation of bright colours by the birds inhabiting them.
- ¹⁰ Francis Darwin was CD's secretary and assistant but he was in Algiers; see letter from Francis Darwin, [c. 25 February 1879].
- ¹¹ The note from CD has not been found. CD's signature has been excised, causing damage to other parts of the letter.

From Grant Allen 21 February [1879]¹

22 Bonchurch Road. | North Kensington. W.
Feb. 21.

Dear Sir,

I have to thank you very much for both your kind letters. Thanks, too, for your offer of any of your books, to all of which however, I have easy access.²

I am much obliged to you for your criticisms and notes, of which I shall gladly avail myself if (as is very unlikely) my book should ever reach a second edition.³ With regard to the theory of pleasure and pain, I am afraid I must have

expressed my meaning badly, for I quite agree with what you say.⁴ For example, I shd. allow that the lack of any decided pleasure accompanying the action of the tactual nerves in the tongue was due to the fact that *all* substances, hurtful or desirable, would equally stimulate them: while the pleasure attached to the taste of sugar I believe to be due to its general character as a test for edible substances. I quite accept, also, your remark about the lips and the generative organs. All I meant to say was this—that when an action, voluntarily performed, was decidedly desirable for any species it would result in the development of a correspondingly large nervous organ capable of pleasurable stimulation. Clearly, some nervous centres are more capable of pleasure and pain than others: but I have tried to explain the reason, as it presents itself to me, in my *Physiological Aesthetics*.⁵

I am glad to learn that something the same ideas with regard to birds and butterflies, in the question of sexual selection, had already occurred to F. Müller and yourself.⁶ It forms some confirmation of my view. At the same time, I think the main thing to insist upon is this—that no taste can be purely arbitrary. The love for sweets or meats, for colours or musical sounds, *must*, I think, ultimately depend upon ancestral habits. Hence, the birds of the Galapagos and Patagonia may perhaps *have never acquired* the taste for beautiful colours, rather than have had it “destroyed”, as you suggest, by “the sombre aspect of nature.” In short, it seems to me that we have rather to account for the *presence* of the taste in any case than for its *absence* in a few instances. This is the humble task which I have set myself to do, as my small contribution to the scheme of evolution.

I am only too aware how imperfect my work must necessarily be, with the small means at my disposal for ascertaining facts at first hand,⁷ and I ought to apologise for addressing you at all: but I know your interest in scientific truth is so great that you will be willing to forgive even the bungling guesses of a learner, especially when, as in psychology, there is little else to be had as yet. This must be my excuse for troubling you once more with a letter.

Yours very faithfully, | Grant Allen.

DAR 159: 44

¹ The year is established by the relationship between this letter and the letter from Grant Allen, 12 February 1879.

² CD's first letter to Allen, in which he must have made the offer of books, has not been found; the second was the letter to Grant Allen, [before 21 February 1879].

³ CD's comments on Allen's book on colour sense (G. Allen 1879a) are in his letter of [before 21 February 1879]. A second edition was published in 1892 (G. Allen 1892) but the text is identical to that of the first edition.

⁴ See letter to Grant Allen, [before 21 February 1879] and n. 6.

⁵ Allen sets out his theory of pleasure and pain in chapter 2 of *Physiological aesthetics* (G. Allen 1877, pp. 5–29).

⁶ CD had mentioned Fritz Müller's work on butterflies and his own ideas about birds; see letter to Grant Allen, [before 21 February 1879] and n. 9.

⁷ In his letter of 12 February 1879, Allen had explained that he was unable to work practically at natural science because he had to earn a living through journalism.

To the Darwin children 21 February 1879

Feb 21 1879

Circular

M^r Norman a year or two ago told me that he divided the overplus of his income annually amongst his children.¹ As you are all very sensible & steady, this seems to your mother and me a good plan, & will we hope be pleasant to you. I find by taking an average for the last ten years, that £2728 has been invested annually; but this was before I gave up your Aunt Catherine's trust.² The amount in the future will be about £2000; but this depends largely upon how well my railway shares may pay.³ Moreover I sh^d think it right, since M^r Rich's bequest, to give rather more in aid of science.⁴ It is also very difficult to prevent our expenses increasing. Again, if any very good shares were allotted to me, I sh^d accept them & pay the calls. This year there will be less than usual to be divided, as I have already invested about £800 & shall have to pay some calls.⁵

After deliberation I have resolved to allot of the overplus of our income to each daughter two thirds of what will be allotted to each son.⁶ I have just found out that M^r Norman makes the same proportional division. Therefore supposing that next year £1900 has to be divided, £300 w^d be paid to each son & £200 to each daughter. At present I think each annual division shall be made early in Feb. after our Christmas bills have been paid.

Finally let me strongly advise you not to consider the whole of my overplus as income; for expenses always increase as life advances. Remember that though the same sum as before will be divided amongst you at our joint deaths; yet that your incomes will not be proportionately increased. I hope that you will keep this in your minds.

Secondly, let me advise you strongly to invest in safe securities paying low interest. By this plan my father died a rich man. I have lost only one investment of £500, & this was chiefly due to my believing that it would pay grandly—⁷

Consequently my fortune has gone on steadily increasing, whilst that of several of your relations has decreased, as they chose to take securities paying high interest. Trust to common sense & not to professional advisers.

Here ends my sermon—

Charles Darwin

To William

Please forward this soon to G. & F.⁸

“G. H. Darwin Esq

Villa Beau Séjour

Colonne Voirol

Algiers.”

LS(A)

DAR 210.6: 153

- ¹ CD refers to his neighbour George Warde Norman, who was an expert on finance.
- ² CD's sister Catherine Langton died in 1866. According to her will, dated 9 January 1866, date of probate, 4 June 1866, a trust was created by her marriage settlement through two indentures, dated 8 October 1863, between three parties: herself, her husband Charles Langton, and CD and Erasmus Alvey Darwin. The trust paid out twice yearly on 30 June and 31 December and was probably managed by CD's son William Erasmus Darwin. The last payment to CD, for £352 10s. 2d., is dated 30 June 1876 and marked 'W. E. Darwin in Trust money' (CD's Account books—banking account (Down House MS)).
- ³ CD had held shares in about ten railway companies (CD's Investment book (Down House MS)).
- ⁴ Anthony Rich had bequeathed property in London to CD in recognition of CD's services to science; see *Correspondence* vol. 26, letter from Anthony Rich, 10 December 1878.
- ⁵ Call: a stock-market term for an option to buy assets at an agreed price on or before a particular date (*OED*). An entry in CD's Investment Book (Down House MS) for 1879, p. 130, reads 'Feb. Lancaster & Carlisle shares converted partly into ordinary stock...65 1/6 Feb. 22 purchased 484 stock at 144 1/4 with expenses 706.27 ordinary stock...48 4 [Total] 800 0'.
- ⁶ CD's daughters were Henrietta Emma Litchfield and Elizabeth Darwin; his sons were William Erasmus, George Howard, Francis, Leonard, and Horace Darwin.
- ⁷ CD had purchased shares in the Patent Siliceous Stone Company in 1852, and had subsequently made several loans to it, with an initial investment of £501 10s. (CD's Investment Book (Down House MS), pp. 59–60). He cancelled the bond in 1864 and then was engaged in a correspondence about paying back the bonded loans, which were never repaid (see *Correspondence* vol. 12, letter from Frederick Ransome, 7 March 1864, and *Correspondence* vol. 14, letter from Frederick Ransome, 7 February 1866).
- ⁸ George Howard and Francis Darwin were in Algiers; see letter from Francis Darwin, [c. 25 February 1879].

To Francis Darwin 21 February [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Feb 21st

My dear F.

I have been considering money-matters & conclude that I do not pay you enough, so will add 100£ more.— Therefore 110[£] will be paid you on Jan^y. 1st & July 1st, instead of 60£. I calculate your income will then be 520[£], with all expences in this House paid.—²

In about a week's time George & you will receive a paper explaining another business matter.—³

I have begun this day my chapters on Sleep of Plants & I can see that it will be an awesome job.—⁴

Oh Lord I forgot that you were to forget the whole vegetable Kingdom

Good Bye dear old fellow | C. Darwin

P.S. Woodward of Brit. Museum (a very good worker in Palæontology) write to the other day & after asking about my health, proceeded, "I hope you are still able to enjoy & share in work going on & to feel (as we all do) that you live again in your son." This pleased me much.—⁵

P.S You & George are both rogues & villains, for neither have written for ever so long.—

DAR 211: 50

¹ The year is established by the relationship between this letter and the letter to the Darwin children, 21 February 1879.

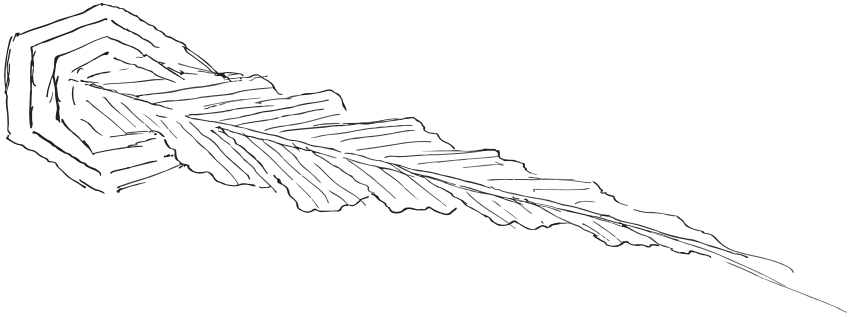
- ² Francis was working as CD's secretary and assistant and living with him at Down House.
³ See the letter to the Darwin children, 21 February 1879, in which CD explained his plan to divide the overplus of his income annually amongst his children. George and Francis were both in Algiers (see letter from Francis Darwin, [c. 25 February 1879]).
⁴ CD was writing up chapters 6 and 7 of *Movement in plants* (pp. 280–417).
⁵ The letter from Henry Woodward, an assistant in the geological department of the British Museum, has not been found, but for CD's reply, see the letter to Henry Woodward, 13 February [1879].

From C. W. Hamilton 21 February 1879

40 Dominickst | Dublin
 Feby 21. 1879


Sir

I almost feel that you will not consider me intrusive in asking you to look over this note—as far as I can find out nothing of this kind has been noticed before & what I have seen must either be otherwise explained or deemed a matter of Considerable importance—¹ my accuracy can be very easily tested as there is nothing to do but to cut a twig, smear a glass slide as thinly as possible to spread the little bubbles of gum, & touch them with a solution of Sulphid Iron—which acting on the tannin brings out the forms to a certain degree in a few minutes but more perfectly after some hours. Since I sent this note to the press I think I have had abundant Confirmation of the fact that the arrangement of this substance of the so called Resin takes Vegetable forms Take for instance this one from P. Douglassii²

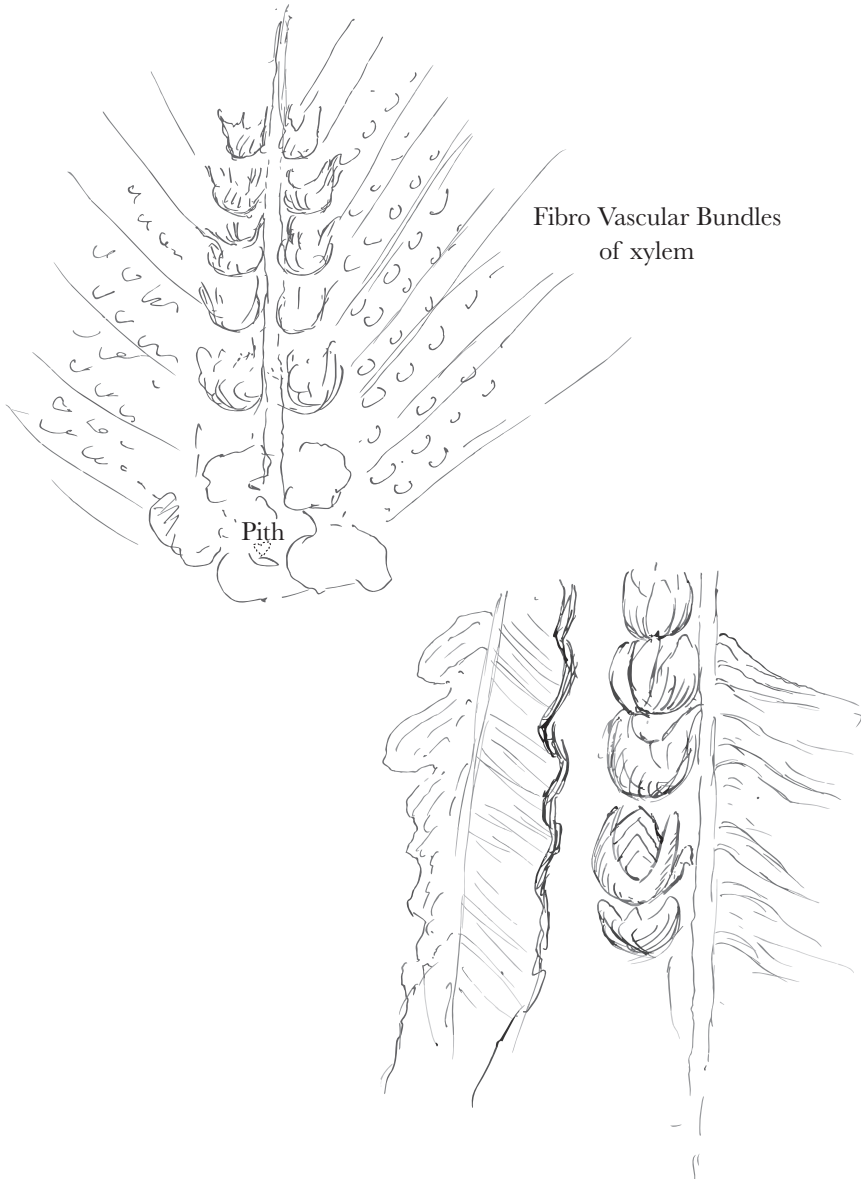


where the plates of the hexagonal Chrystal like form seem to develop into the Common branch like form sketched then take this lying close by



When the side  forms open out into circular forms bending in different directions surely this is not Chrystallization?

Now again in the living *P. Insignis*³ I find curious forms in the centre of the Channel leading from the Pith to the outburst of branch or Leaf



and again in the Sap what I have drawn above— roughly from more accurate sketches—can it be that these forms are merely Chrystals though imitating so Closely the forms we meet in the growing plant?

With many apologies for venturing to Consult such a Philosopher believe me with great respect | Yours faithfully | Charles W Hamilton

DAR 166: 91

- ¹ Hamilton's note is not in the Darwin Archive—CUL and has not been further identified. Sulphid iron: probably ferrous sulphate (FeSO₄), which is soluble.
- ² *Pseudotsuga douglasii* is a synonym of *Pseudotsuga menziesii*, the Douglas fir. The tree can exude resin or pitch after it is cut down. The images are reproduced at 80 per cent of their original size.
- ³ *Pinus insignis* is a synonym of *Pinus radiata* (Monterey pine).

From Karl Höchberg¹ 21 February 1879

Castagnola presso Lugano. (Switzerland.)
d. 21.2.79.

Hochverehrter Herr Darwin!

Auf die Gefahr hin, dass Sie vielleicht keine Zeit haben werden, die folgenden Zeilen zu lesen und zu beantworten, wage ich es, eine Anfrage an Sie zu richten, deren Beurtheilung durch eine unbestrittene Autorität ohne Zweifel vom allgemeinsten Interesse wäre.

Wie Ihnen gewiss bekannt ist, existiren sowohl in England als in Deutschland und anderen Ländern zahlreiche Anhänger der vegetarianischen Lebensweise. Unter diesen giebt es solche, welche aus moralischen Gründen Fleischnahrung oder animalische Speisen überhaupt nicht geniessen wollen, andere aber, die aus hygienischen Gründen sich nur oder fast nur an vegetabilische Nahrungsmittel halten. Die letzteren behaupten, die medizinische Wissenschaft *irre* sich, wenn sie behauptet, animalische Nahrung sei dem Menschen zuträglich, indem die Beweise für diese Behauptung noch nicht erbracht oder falsch seien. Insbesondere sei die Methode fehlerhaft, nach der die Physiologen gefunden zu haben angeben, welches Quantum der verschiedenen chemischen Stoffe ein Mensch täglich zum Leben braucht. Dieselbe bestand nämlich darin, nachzuwägen, wieviel Gramm Kohlenstoff, Stickstoff u.s.w. von gemischter Kost sich ernährende Leute durchschnittlich täglich zu sich nehmen und verdauen. Auf diese Weise wurde gefunden, das Verhältniss von stickstoffartigen Elementen der Nahrung verhalte sich zu den kohlenstoffhaltigen wie 1 zu 5 oder 6. Man wendet ein, es dürfe aus diesem Resultat kein Schluss gezogen werden auf das Normalverhältniss jener beiden wichtigsten Bestandtheile, denn es würden andere Ziffern, vielleicht 1 zu 7 oder 8 gefunden worden sein, wenn die Experimente mit vegetarianisch sich beköstigenden Leuten angestellt worden wären.— Übrigens hänge die Ausnützung, gute Verdauung und Angemessenheit der Nahrungsmittel auch ab von deren *physicalischer* Beschaffenheit, was gewöhnlich von den Medizinern übersehen werde; es dürfe entschieden nicht nur nach der chemischen Zusammensetzung gefragt werden.

Es wird ferner geltend gemacht, animalische Nahrung, insbesondere Fleisch, hätte *nachweislich* eine krankmachende Wirkung auf den menschlichen Organismus (natürlich mit Ausnahme der Milch für das Säuglingsalter). Das Fleisch enthalte in dem Kreatin, Kreatinin und verwandten Stoffen Bestandtheile, welche auf den Körper, besonders die Nerven, wie schwache Gifte wirkten, in grösseren Quantitäten

und dauernd genommen also schaden. Man stützt sich bei dieser Behauptung vorzüglich auf gewisse Versuche des Professor Ranke² und anderer Gelehrten.—Andererseits führt man auch an, dass Kranke durch Übergang zu einer fleischlosen Diät von körperlichen Übeln befreit wurden.

Schliesslich rufen die Vegetarianer—um nur ihre Hauptgründe anzuführen—den *Darwinismus* für sich an. Die Anatomie beweise, dass sich die Organisation des Menschen von der der Anthropoiden nicht wesentlich unterscheide, besonders nicht in den Verdauungsapparaten. Die anthropoiden Affen seien aber entschieden frugivore Geschöpfe, und daraus lasse sich der Schluss ziehen, dass auch für den Menschen eine Früchte-Nahrung die angemessenste und allein vollkommen gesunde sei. Es habe sich seit jener Zeit, wo auch die Vorfahren des Menschen sich nur oder fast nur von Früchten nährten (vielleicht hauptsächlich von Bananen?) der Organismus des Menschen *der gemischten Nahrung noch nicht angepasst*, was eben aus der Vergleichung des Verdauungsapparates des Menschen mit dem seiner frugivoren Verwandten und daraus hervorgehe, dass Fleisch keine indifferente, sondern eine *differente* Wirkung auf unser Nervensystem habe u.s.w.³

Ich vermeide, Sie mit den weiteren Ausführungen der vegetarianischen Schriften, der Begründung und der Controverse über die Möglichkeit und Nützlichkeit ihres Systems zu langweilen, sondern möchte mir nur erlauben, die Frage an Sie zu richten, was Sie von den oben angeführten Hauptbeweisgründen halten, und vor Allem, ob nach Ihrer Ansicht der menschliche Organismus im Laufe der Zeit sich der gemischten Nahrung so angepasst hat, dass er dieselbe ohne Schaden für seine Gesundheit und die Länge seines Lebens dauernd geniessen darf?

Ich bitte schliesslich um Verzeihung, dass ich in deutscher Sprache geschrieben habe, da ich das Englische zwar gut verstehe, aber nicht fliessend schreibe.

In der Hoffnung auf eine Zeile Antwort auf meine Anfrage | in ausgezeichnete Hochachtung | Ihr sehr ergebener | Karl Höchberg.

DAR 166: 227

¹ For a translation of this letter, see Appendix I.

² Possibly Heinrich Israel Ranke.

³ For vegetarianism in the context of evolution, see Gregory 2007, pp. 96 and 192.

To R. B. Sharpe 21 February [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Feb. 21st

My dear Sir

The enclosed testimonial is very short, & I do not know whether it will be of any use,² As I have told Mr. Butler I can offer no opinion about the fitness of anyone for the desired office, as I know nothing of its duties.³

Pray either use or destroy the Testimonial. It seems rather absurd to give two for the same office.

Believe me | My dear Sir | Yours very faithfully | Ch. Darwin

McGill University Library, Rare Books and Special Collections (Manuscript Collection: Folio A.L.S. Charles Darwin)

- ¹ The year is established by the relationship between this letter and the letter to the British Museum, 21 February 1879
- ² See letter to British Museum, 21 February 1879. The testimonial was for the post of assistant keeper of zoology at the British Museum, which had become vacant following the death of Frederick Smith. No letter from Sharpe on the subject has been found.
- ³ CD had also written a testimonial for Arthur Gardiner Butler; see letter to A. G. Butler, 20 February [1879].

To the British Museum 21 February 1879
Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
 Feb. 21st 1879

Having read many of Mr. Bowdler Sharp's papers on Ornithology, & from several interviews with him at different times, I have been led to form a high opinion of his knowledge of this branch of Natural History. I am further convinced that he is zealous to a quite unusual degree in the cause of Science.—¹

Charles Darwin

Wellcome Library (MS.7781/17)

- ¹ This letter is a testimonial for Richard Bowdler Sharpe for the post of assistant keeper of Zoology at the British Museum; see letter to R. B. Sharpe, 21 February [1879]. Sharpe's publications included a monograph on kingfishers and a catalogue of diurnal birds of prey (Sharpe 1868–71 and 1874). In 1868, he provided CD with information on kingfishers; see *Correspondence* vol. 18, Supplement, letter from Osbert Salvin, [1868?], and *Correspondence* vol. 16, letter from R. B. Sharpe, 5 August 1868. CD had supported a previous application by Sharpe for promotion at the British Museum; see *Correspondence* vol. 22, letter to R. B. Sharpe, 24 November [1874].

To W. T. Thiselton-Dyer 21 February [1879]¹
Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
 Feb 21st

Dear Dyer

In an old note of yours Dec. 1873, which I have just reread, you speak of Duchartre *Éléments de Botanique*, as containing much on sleep of Plants & on that of Cassia.² I have seen it elsewhere referred to on this subject. If it is your own, will you lend it me for *short time*: if it belongs to your public Library, will or can Hooker break rules & lend it me for short time, as I grudge buying it for the chance of its being useful & what is worse there w^d be much delay in getting it.³

If you cannot lend it, please send me a card, that I may order a copy instantly—

I am overwhelmed with my notes & almost too old to undertake the job which I have in Hand—ie movements of all kinds.⁴ Yet it is worse to be idle

Ever yours | Ch. Darwin

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: ff. 160–1)

- ¹ The year is established by the relationship between this letter and the letter to W. T. Thiselton-Dyer, 25 [February 1879].

- ² CD's undated notes on Pierre Etienne Simon Duchartre's *Éléments de botanique: comprenant l'anatomie, l'organographie, la physiologie des plantes, les familles naturelles et la géographie botanique* (Elements of botany: including anatomy, organography, plant physiology, natural families and botanical geography; Duchartre 1867) are in DAR 209.14: 171. They cover the discussion of sleep in the leaves of several species, including *Cassia floribunda* (a synonym of *Senna floribunda*), in Duchartre 1867, pp. 347–54. The December 1873 letter in which Thiselton-Dyer discussed Duchartre is missing; see, however, *Correspondence* vol. 21, letter from W. T. Thiselton-Dyer, 6 December 1873, and letter to W. T. Thiselton-Dyer, 22 December 1873.
- ³ Joseph Dalton Hooker was director of the Royal Botanic Gardens, Kew; the 'Public Library' was the collection of books belonging to the gardens. The books were not borrowable.
- ⁴ CD was beginning to write up his chapters on sleep in plants (*Movement in plants*, pp. 280–417); see letter to Francis Darwin, 21 February [1879].

From Anton Stecker¹ 24 February 1879

Sokna
d. 24. Februar 1879.

Hochverehrter Herr:

Ich sollte mich glücklich schätzen, wenn Sie Sich noch meiner erinnern wollen, der Sie etwa vor einem Jahre um das Recht, Ihr berühmtes Werk "The Origin of Species" in's Böhmische übersetzen zu dürfen, ersuchte.² Mit grösster Bereitwilligkeit, die mich noch heute mit Dank erfüllt, haben Sie damals Erlaubniss dazu gegeben. Seit der Zeit ist aber nahezu ein Jahr verflossen, ohne dass Ihnen die böhmische Ausgabe des in Rede stehenden Werkes mitgetheilt wurde: und dies aus dem Grunde, dass sehr wichtige, meinen Lebenslauf betreffende Ereignisse mich verhindert haben, das begonnene Werk zu beenden; ich hoffe aber, dass mein Nachfolger so glücklich sein wird, Ihnen noch im Laufe dieses Jahres die böhmische Ausgabe des "Origin of Species" verehren zu dürfen.³

Was mich anbetrifft, so dürfte es Sie und den Herrn Francis Darwin, dem ich für seine freundlichen Briefe zum herzlichsten Dank verbunden bin, interessiren, zu erfahren, dass ich von der afrikan. Gesellschaft in Deutschland (in Berlin) zum Begleiter des berühmten, Ihnen wohlbekannten Afrikareisenden D^r. Gerhard Rohlfs, auf seiner neuen Tour quer durch Afrika (von Tripolis über Uadaï, Quellen des Schari, Sansibar) erwählt wurde; seit Ende October 1878 befinde ich mich, dem neuen Berufe obliegend, in Afrika.⁴ Derzeit sind wir in Sokna, wo wir die Geschenke des deutschen Kaisers an den Sultan von Uadaï abwarten müssen, hoffen aber in den nächsten Tagen über Katarah weiter vorzurücken, so dass wir Ende Juni in Uadaï anzukommen gedenken.⁵

Als Zoologe, habe ich ein reiches Feld für specielles Studium vor mir, und ich versichere Sie, hochverehrter Herr, dass es bei allen meinen Forschungen Ihre epochale Theorie ist, für die neue Belege zu finden, neue Beweise darzubringen ich stets bemüht bin. Ich habe schon einige interessante Beobachtungen bezüglich der Erbllichkeit gewisser Charactere und der Mimicry bei den Orthopteren der Sahara, der Abstammung, Verwandtschaft und des Farbenwechsels bei den Chamaeleonten und Ascalaboten etc. etc. gemacht, und eine vorläufige Nachricht in den "Mittheilungen der afrikan. Gesell. in Deutschland (in Berlin)" veröffentlicht.⁶ Ich bin fest überzeugt, dass sich mir mit der Zeit viele andere, interessante, mit Ihrer

Theorie im Einklange stehende Thatsachen darbieten werden, und ich werde mir dann erlauben, Ihnen darüber direct zu referiren.

Indem ich Sie höflichst bitte, zu entschuldigen, dass ich mir die Freiheit genommen habe, an Sie diese Zeilen zu richten, habe ich die Ehre zeichnen zu dürfen, | in unbegrenzter Hochachtung | Ihnen stets ergebener Diener | D^r. Ant. Stecker.

DAR 177: 251

- ¹ For a translation of this letter, see Appendix I.
- ² See *Correspondence* vol. 26, letter from Anton Stecker, 9 March 1878; CD gave his permission for a Czech translation of *Origin* in his reply of 13 March 1878. 'Bohemian' was used to refer to the Czech language and people.
- ³ No Czech translation of *Origin* was published until 1914 (Klapálek trans. 1914; see Freeman 1977). None of CD's works were published in a Czech translation in the nineteenth century; in Bohemia and Moravia, his works were usually read in German (see Hermann and Šimůnek 2008, pp. 201 and 205).
- ⁴ In 1878, Stecker had asked whether CD could assist him in obtaining a position in a natural history museum or on an expedition, but had been informed that CD was unable to do so (see *Correspondence* vol. 26, letter from Anton Stecker to Francis Darwin, 12 March 1878, and letter from Francis Darwin to Anton Stecker, 17 March 1878). In December 1876, the Deutsche Gesellschaft zur Erforschung Aequatorialafrikas (German Society for the Study of Equatorial Africa) was amalgamated with the German section of the International African Association to form the Afrikanische Gesellschaft Deutschlands (African Society of Germany); see Rohlf's 1881, p. 4. For Stecker's appointment as Rohlf's companion on the expedition from Tripoli to Zanzibar (via Wadai (now Ouaddai) and the sources of the river Chari); see *ibid.*, p. 24. Rohlf's had sent comments on CD's *Descent*; see *Correspondence* vol. 19, letter from Gerhard Rohlf's, 6 June 1871.
- ⁵ The expedition set out in December 1878 but only made it as far as the Al Khufrah oases in the Libyan desert. They remained in Sokna until 10 March 1879 and then headed east, probably to the Qattara Depression ('Katarah' is a misspelling of 'Kattara' in German; see Rohlf's 1881, appendix 8 (Meteorologische Beobachtungen), tables v and vi). The presents from the German emperor, Wilhelm I, for Yusuf (kolak or sultan of Wadai) arrived in Awjilah in May 1879 but were stolen with the expedition's supplies and money in September 1879. The presents and some supplies were later returned but not the money (*ibid.*, pp. 229, 299–300, and 327).
- ⁶ Stecker's preliminary report was in *Mittheilungen der Afrikanischen Gesellschaft in Deutschland* (Communications of the African Society in Germany; Stecker 1879). On pp. 79–81, Stecker mentions mimicry in Orthoptera (the order of grasshoppers, locusts, and crickets), chameleons (family Chamaeleonidae) and *Ascalabotes* (a former genus of geckos whose members are now in *Stenodactylus* and other genera).

From Hugo de Vries 24 February 1879

Amsterdam
24 Febr. 1879

My dear Sir!

Permit me to pay you my sincere thanks for the great interest, you show in my researches on the growth of plants. I avow, that the numbers, given by me on pag 260–261 of *Arbeiten—Würzburg*, the passage quoted by you, may give occasion for the belief, that some leaves may be insensible to the influence of light.¹ This is, however, not my opinion, especially I should not dare assert, that the leaves of the species quoted there (*Clematis*, *Corylus*, *Inula*, *Polygonum*, *Sedum*),² may not be heliotropic. On the contrary, I am convinced, that by repeating my experiments under other circumstances, I should observe heliotropic movements in these cases too. That the leaves, I experimented with, did not show such movements, must be

attributed to peculiar circumstances. I suppose that (with the exception of *Inula*) the very strong epinastical curvations were an impediment to the observation of the heliotropic influence.³ Perhaps the cutting off of the petioles and the isolation of the midribs had an influence, as you suppose, but this influence cannot have been very great, as the epinastical curvations were especially in these cases very manifest.

I wholly agree with you, that Cotyledons and young leaves turn to a lateral light, independent of the movement of their stems; what I myself occasionally observed on this subject is quite conform to your opinion. I do not wish to infer from my experiments another conclusion, than that in isolated petioles and midribs, under the said circumstances, the heliotropism is in some cases so feeble, that it cannot be observed by the method, I employed.⁴

Prof. Asa Gray had the kindness to send me the seeds, you asked him for me, I have sown them as he wrote me to do, and hope to make this summer the experiments on the motion of their tendrils. I am much obliged to you for your kindness, and hope I shall be able to communicate the results of these experiments to you next summer.⁵

On the contraction of roots my observations have but a slow progress; I observed the phenomenon with a large number of plants; it seems to occur very generally. The roots of *Iris pallida* show it brilliantly, also the roots of the hyacinth, cultivated on waterglasses.⁶

With many thanks for your kind interest in my researches, I remain | dear Sir |
Yours sincerely | Hugo de Vries

DAR 209.3: 336

CD ANNOTATION

2.4 in isolated ... I employed. 2.6] *double scored red crayon*

¹ In his letter to De Vries of 13 February 1879, CD said that in his experiments all cotyledons and young leaves had turned towards lateral light, which seemed to contradict De Vries's published statements in *Arbeiten des botanischen Instituts in Würzburg* (Vries 1872, p. 261).

² *Clematis* is a genus of climbing vines in the family Ranunculaceae (buttercup), *Corylus* is the genus of hazelnuts, *Inula* is the genus of yellowheads in the family Asteraceae (daisy), *Polygonum* is the genus of knotweed, and *Sedum* is the genus of stonecrops. CD observed the movements of seedling plants of *Corylus* (see *Movement in plants*, pp. 55–6).

³ De Vries used the terms hyponasty and epinasty to denote the greater longitudinal growth along the lower or upper side of a plant part that caused upward or downward bending respectively (Vries 1872, p. 252). CD later adopted the terms because they were so often used in Germany (see *Movement in plants*, p. 6).

⁴ For De Vries's methodology for the experiments, see Vries 1872, pp. 244–8.

⁵ See letter to Hugo de Vries, 13 February 1879 and n. 5.

⁶ In 1878, CD and De Vries had discussed contractility in roots; see *Correspondence* vol. 26, letter from Hugo de Vries, 17 August 1878. De Vries published his observations in Vries 1880. *Iris pallida* is sweet iris.

To Francis Darwin [before 25 February 1879]¹

I cannot find (& want much) the tool with hollow handle full of bradalls & other tools.— My old finely pointed pincers for dissection have also disappeared.— Nor can I find your fine pincers— Can you tell me where to look— I have searched your table in vain.² C. D.

I do hope my dear old fellow that you will soon feel good effects from so complete a change.— Bernard gets more charming every day—³ Love to old George. Tell him I am awfully perplexed how big a sum to subscribe to Clifford.— They have put me on the Committee, which is already gigantic.⁴

C. D.—

DAR 271.4: 12

¹ The date is established by the relationship between this letter and the letter from Francis Darwin, [c. 25 February 1879].

² CD misspelt 'bradawl'. Francis was CD's secretary and assistant; he had gone to visit George Howard Darwin in Algiers on 4 February 1879 (Emma Darwin's diary (DAR 242)).

³ Francis's son, Bernard Darwin.

⁴ A public testimonial fund for the gravely ill mathematician William Kingdon Clifford had been set up by the senate of University College, London; see letter to John Tyndall, 14 February 1879 and n. 1. Thomas Henry Huxley, William Spottiswoode, and John Tyndall were other prominent members of the committee, a partial list of whose members appeared in *Nature*, 13 February 1879, pp. 349–50.

From Francis Darwin [c. 25 February 1879]¹

Villa Beau Séjour | Colonne Voirol | Algiers

My dear Father,

I am very sorry you have been hunting for the thing with the hollow handle. I am afraid I can't tell anything about it. All the rough tools of that kind I put in the 2nd draw from the left in that sort of table behind the balance table in my room: you will find 2 sizes of bradawls there but I am afraid not the hollow thing. I brought one fine pincers here as I meant to put litmus on leaves if there was heavy dew: the other one is (in) a wooden box in the dark cupboard which Lettington knows.² I am very sorry you have had a bother about it— There are 3 wire forceps hanging up on nails on the right of the fireplace if you want them.

Thank you for your kind words. I am getting on very well, I can get along with doing nothing pretty well.³ I haven't had energy to take lessons in French, as it involves going in nearly 4 miles & out again. I have been looking at some compositæ which have rosettes of leaves, (as you were).⁴ They don't seem to care about geotropism for they make perfect rosettes with the outer leaves all flat against the ground even when they grow on vertical surfaces of earth of which there are many here at the sides of the lanes. I forget what Dr Vries says about them.⁵ I found wasps going to an Agave in flower; & cutting it open I found the inside of the flower lined with aphides & some of them sticking to the honey—they don't often go inside do they. These aloe leaves where they overlap and press against one another in the bud make perfect impressions of the edge of one leaf on the surface of the next, & the formation of bloom seems affected as there is a thicker layer where the pressure has been, & this helps to define the impression.⁶ I have been out a Sunday herborisation with old Durando there were 20 or 30 French people & they seemed quite interested about the flowers, writing down the names & putting specimens in tin boxes; he gave very good little jaws about them I am going to meet him today in the Jardin d'Acclimatisation where he will take me round I suppose—⁷ I have been there for a

short time but G was tired & we came away—it is the place Dyer⁸ meant & is very interesting with all sorts of things growing out of doors. I forget to say that the Klein meeting was pretty well attended & it is agreed to give him a testimonial not as a lump of money but as an expression of sympathy—so I suppose it is not necessary to give very large subscriptions. I think I shall give £5; if you subscribe before I come back will you pay 5£ for me saying that I am away—but I don't know that there is any hurry—The secretary is

Malcolm Morris Esq
63 Montague Sq⁹

Please thank mother & Bessy¹⁰ for their letters—I am glad poor Ubbadubba¹¹ has got some nice dirt to play with instead of my saw dust Give him my best love & say I will bring him a little red cap with blue tassel like the little ubbadubbas here were—I forgot that new caps are rather painful to him so perhaps it had better not be mentioned.

Goodbye dearest father | Your affec son | Frank Darwin

It was very good of Henrietta to write to me about vaccination but I dont think it is necessary¹²

DAR 274.1: 60

¹ The date is established by the reference to the subscription to the Klein testimonial; see n. 9, below.

² See letter to Francis Darwin, [before 25 February 1879] and n. 2. CD's gardener was Henry Lettington.

³ Francis had gone to rest and visit George Howard Darwin in Algiers; see letter to W. T. Thiselton-Dyer, 3 February 1879 and n. 4.

⁴ 'Rosettes' are circular arrangements of leaves in which either the upper foliage dies back with the remaining vegetation protecting the plant, or internodes along a stem are shortened, bringing the leaves closer together; this leaf structure is common in the Compositae (daisy family).

⁵ No work by Hugo de Vries on these structures has been identified.

⁶ The genera *Agave* and *Aloe* both have fleshy leaves arranged in a rosette pattern, but they are native to Central and South America and Africa, respectively. However, *Agave* species have been naturalised in Africa since the sixteenth century and were grown commercially in Algeria, so when Francis refers to aloe leaves he probably means *Agave* leaves. CD began studying bloom (the waxy coating on the leaves and fruit of many plants) in 1873 (see *Correspondence* vol. 21, letter to J. D. Hooker, 13 August 1873). He suspended his work on the subject in 1874 (see *Correspondence* vol. 22, letter to W. T. Thiselton-Dyer, 28 [June 1874] and n. 7), and began again in 1877 (*Correspondence* vol. 25, letter to Fritz Müller, 14 May 1877). CD never published on bloom, but in 1878 Francis followed up Julius Sachs's suggestion about the relation of bloom to distribution of stomata (see *Correspondence* vol. 26, letter from Francis Darwin, 24 and 25 July 1878); Francis published some of the results of these experiments in F. Darwin 1886.

⁷ Gaetano Durando was a correspondent of CD's and had provided him with seeds; see letter to Francis Darwin, [4 February – 8 March 1879] and n. 4. The Jardin d'acclimatation (originally Jardin d'essai or experimental garden, now Jardin botanique du Hamma) was in the Hamma district (now Belouizdad) of Algiers.

⁸ William Turner Thiselton-Dyer.

⁹ In December 1878, Edward Emanuel Klein had followed other staff at the Brown Institution, London, in resigning his position. After the Cruelty to Animals Act was passed in 1876, the institution had become a prominent target of attack and its research plans were severely restricted (see *Nature*, 19 December 1878, pp. 151–2). Malcolm Morris lived at 63 Montagu Square, London. An entry for 'Klein's Test' in CD's Classed account books (Down House MS) dated 25 February 1879 records a payment of £5 5s.

¹⁰ Elizabeth Darwin.

¹¹ Bernard Darwin.

¹² Henrietta Emma Litchfield's letter has not been found in the Darwin Archive–CUL.

From W. E. Darwin 25 February [1879]¹

Basset
Feb 25th:

My dear Father,

Sara and I were extremely surprised by your most pleasant circular.²

It is most kind of you and Mother to think of and agree upon this way of increasing all our incomes. Just a hundred or two beyond one's natural income makes all the difference about feeling rich, and makes the margin for saving very considerable.

I am sure we must all feel that no Father or Mother can have been more thoughtful for ones good or more kind in every conceivable way, and it is a comfort to think that none of us have shewn many symptoms of gambling tendencies in our blood.

I am sure practise in saving must be a wholesome thing, and I entirely agree as to what you say about moderate interest and judging by common sense, and I feel it more strongly every year.

I shall certainly save it myself as these last Banking troubles show the necessity for Bankers to have larger private reserves in available securities.³

I send on the letter to George.⁴

Sara sends her love to you & Mother and thanks you both. We both wonder how you can resist the fun of seeing your savings continue to grow.

I am, dear Father | your affectionate son | W. E. Darwin

Cornford Family Papers (DAR 275: 71)

¹ The year is established by the relationship between this letter and the letter to the Darwin children, 21 February 1879.

² Sara Darwin. See letter to the Darwin children, 21 February 1879, in which CD said that he would divide the overplus of his income annually amongst his children and urged his children to invest in safe securities paying low rates of interest.

³ The banking crisis that started in October 1878 with the collapse of the City of Glasgow Bank had emphasised the need for banks to maintain greater cash or near-cash reserves; see Collins 1989, p. 525.

⁴ George Howard Darwin was in Algeria at this time (letter from G. H. Darwin, 3 March 1879).

To Karl Höchberg 25 February 1879

Down, | Beckenham, Kent.
Feb. 25th 79

Dear Sir

I have so many letters to answer that I must write briefly; but this does not signify as I have never attended specially to the subject of vegetarian diet.—¹ The sole evidence which in my opinion would be of real value, would be statistics & amount of work performed in countries where the inhabitants live on widely different diets. I have always been struck with the fact that the hardest workers, whom I ever saw, namely miners in Chile, lived exclusively on vegetable diet including much seeds of the Leguminosæ. On the other hand the Gauchos are very fine active men, who live almost exclusively on meat. Again there seems good evidence that in Tropical

Africa there is an extraordinary craving, almost amounting to a necessity, for meat at intervals; & yet I suppose that they eat largely of the seeds of Leguminosæ, for the *Arachis hypogæa* is largely cultivated.²

Dear Sir | Yours faithfully | Ch. Darwin

American Philosophical Society (560)

¹ In his letter of 21 February 1879, Höchberg had set out arguments for a vegetarian diet, including one that invoked the Darwinian thesis of the relatedness of humans and anthropoid apes, and asked CD for his views.

² CD described the diets of Chilean miners and gauchos in *Journal of researches*, pp. 136 and 317. *Arachis hypogæa* (peanut) was a member of the Leguminosæ (a synonym of Fabaceae, the family of peas and beans).

To C. A. Lindvall 25 February 1879

Down, | *Beckenham, Kent.* | *Railway Station* | *Orpington. S.E.R.*

Feb. 25th 1879

Dear Sir

I honour your zeal for Science & admire the excellent English which you can write.

I am so much overworked & have so many letters to answer, that I cannot discuss the various points in your long letter.¹ I am, however, sorry to say that I differ widely from you on many points. It seems to me that you confine your attention too exclusively to Scandinavia. It would be of no use to present your letter to the Geological Society, as it would be rejected as being too speculative with no new & detailed observations given.—²

I remain | Dear Sir | Yours faithfully | Ch. Darwin

Centrum för vetenskapshistoria, Kungl. Vetenskapsakademien (MS C. A. Lindvall)

¹ See letter from C. A. Lindvall, 16 February 1879.

² In his letter of 16 February 1879, Lindvall had argued against glacial theory based on his observations on Scandinavian geology; he had asked whether CD would communicate the letter to the Geological Society of London.

To W. T. Thiselton-Dyer 25 [February 1879]

From Mr. C. Darwin, Down, Beckenham.

Very many thanks for the Book received safely yesterday.— I see that there is not much to read, but it has told me something— It shall be returned soon.¹

C.D.

25th.

pc

Postmark: FE 26 79

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: f. 162)

¹ In his letter of 21 February [1879], CD had asked to borrow a copy of Pierre Etienne Simon Duchartre's *Éléments de botanique* (Duchartre 1867).

To G. H. Darwin [after 25 February 1879]¹

Frank found a *Trifolium* or Clover very remarkable for bloom, & it was not in flower & so could not get name.— If you know where it grows, (you c^d recognise it by basal half of lower surface of the 2 lateral leaflets being partially wetted when immersed) & would take trouble to dig up whole plant, it is highly probable that Durando would recognise it by its general appearance, & this w^d be of service to us.²
C. D.

I hope you received the Circular about overplus of my Income.—³

DAR 210.1: 76

¹ The date is established by the relationship between this letter and the letter to the Darwin children, 21 February 1879, which was sent first to William Erasmus Darwin, to be forwarded to George and Francis. William wrote in his letter of 25 February [1879] that he was forwarding the letter to George.

² Francis Darwin was in Algiers visiting George Howard Darwin; he had been observing bloom on the leaves of plants there and had gone plant-hunting with the botanist Gaetano Durando, a correspondent of CD's (see letter from Francis Darwin, [c. 25 February 1879]). *Trifolium* is the genus of clovers.

³ See letter to the Darwin children, 21 February 1879.

To E. K. Blyth 26 February [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Feb 26th

Dear Sir

My son's paper is in the *Journal of Statistical Soc^y* June 1875 p 153.— He published shortly afterwards in (I am almost sure) the *Contemporary R.* (though possibly it was the *Fortnightly R.*) a popular account & more intelligible of his conclusions.— He is abroad so I cannot ask him²

Dear Sir | yours faithfully | Ch. Darwin

Maggs Brothers (dealers) (catalogue 1432, 2009)

¹ The year is established by the sales catalogue's statement that the envelope was postmarked 1879, and by George Howard Darwin's being abroad (see n. 2, below). The recipient is established by the address on the envelope.

² George's paper 'Marriages between first cousins in England and their effects' was published in the *Journal of the Statistical Society of London*; a shorter version appeared in the *Fortnightly Review* (G. H. Darwin 1875a and 1875b). George was in Algeria (letter from G. H. Darwin, 3 March 1879).

To S. J. Pozzi 26 February 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Feb. 26th 1879

My dear Sir

I am much obliged to you for your kindness in having sent me your fine work on the Skull,¹ & I remain | My dear Sir | Yours faithfully & obliged | Charles Darwin

Nicholas Bourdet (private collection)

¹ An extract from the *Dictionnaire encyclopédique des sciences médicales* entitled *Du crâne: anatomie descriptive et chirurgicale, développement* (Pozzi 1879) is in the Darwin Library—Down.

From E. P. Wright 26 February 1879

Trinity College Dublin
26 Feby 1879.

Dear Sir

It is with very great diffidence that on this occasion I write to you— It is an easy matter to me to write to you on Nat History subjects, a very difficult one to write about myself—

I am a Candidate for the vacant chair of Botany in Edinburgh—a very great prize.¹ I do not at all know who may be the Candidates—but in such a race, it will be far from ignoble to be beaten—

I would most highly value & esteem, an expression of your opinion as to my general fitness for such a post—

To no one living, can I justify myself, so well as to you—for having, after a ten years spent in the investigation of animals, turned my attention to plants— I did so in 1869—in the hopes of advancing the teaching of biology in this place, where the students of Botany were 10 to one who studied Zoology—

This I feel confident is not a demerit in your eyes.²

While writing these lines, the thought has struck me, that perhaps your Son³ may be a Candidate for this very post—& to my mind, judging from his work done, there could scarcely be a more gifted or a more worthy Candidate— but as I can, by no means, be sure of this—I will venture to send this as it is written—asking you in every case to excuse it all and still to believe me | Most Sincerely yours | Ed Perceval Wright—

Charles Darwin | &c &c—

DAR 181: 176

CD ANNOTATION

6.1 While ... believe me 6.5] *scored red crayon*

¹ The chair of botany at the University of Edinburgh had become vacant with the retirement of John Hutton Balfour in 1879.

² From 1858 to 1868, Wright had been lecturer in zoology at Trinity College, Dublin; in 1869, he was appointed professor of botany and keeper of the herbarium there (*ODNB*).

³ Francis Darwin.

From Frederick King 27 February 1879

“Holly Lodge” | S: John’s Hill | New Wandsworth S.W.
February 27th 1879.—

Cha: Darwin Esq: D.C.L. | &c— &c— &c—

Sir,

In conversation the other day with D: Bennett (Brother of Sir John Bennett) he suggested that you might somewhat appreciate and perhaps utilize my views on one or two subjects.—¹

First I should tell you that I am largely indebted to you for your theories; and many years ago wrote that all our short woolled or Down Breeds of sheep, can only

be kept in perpetuity upon our Chalk formations; our long woolled Breeds upon the Oolitic Series; whilst our Hereford Beasts (with white faces) can only be kept upon one Red Sandstone formation and our Devon Beasts (without white faces) upon the other Red Sand stone formation; and with sheep, particularly, the finest wool, flesh, and bone, is found nearest the sea level; increasing in coarseness with the various zones of altitude.—² Even the Pigs also in the South of England, are Black; in the Middle of England pied; and in the North White: each Geological Strata having its flora and fauna in a remarkable degree and it seems to me, not too much to say that there is little difference upon an Analysis of the soils; the vegetable life growing thereon; or the Animals belonging to each strata.—

All this I have advised through my Life to my Agricultural friends without making much way, but it occurs to me that something might be done, just at this moment, to enlighten the Public upon the occasion of the approaching meeting of the Royal Agricultural Society at Kilburn; of which Society I am one of the oldest members having been elected in 1839, the year it was founded.—³

I am grieved at so much ignorance amongst my Agricultural friends and would gladly aid in their improvement, if a few friends could be found to attack them in their stronghold the Council of the Society: but what would better please me would be to put in practice my theory upon the Estate of some large Landowner which as a Land Agent I have long striven to do but without success.—

The practice of Agriculture upon Scientific principles, has long been my object; and it is sad to know that we have Cattle diseases, Potato diseases &c, all of which are preventible but in the eyes of leading Agriculturist are put down as Chronic.—

With much respect | Believe me; Yours faithfully | Frederick King.—

DAR 169: 19

¹ William Cox Bennett was the brother of the watchmaker and politician John Bennett.

² No publication by King on sheep and geological formations has been identified. The Hereford breed is the Ryeland (so-called because they were grazed on rye pastures); it is a short-wool breed. Down breeds include Southdown, Hampshire Down, and Wiltshire; the South Devon and Devon Longwool are both longwool breeds. For more on the development of sheep breeds in different parts of Britain at this time, see Wrightson 1898. Downs are ranges of chalk hills in several southern and eastern counties of England, oolites are found in the Cotswolds, the Isle of Portland and parts of south Wales and the North Yorkshire moors, and red sandstone is mainly in the north east and the central parts of Scotland, western England, and south Wales.

³ King's name appears on the 1839 list of members of the Royal Agricultural Society of England (*Journal of the Royal Agricultural Society of England* 1 (1839): cl). In 1879, the Royal Agricultural Society of England's annual show took place at Kilburn, London, from 30 June to 7 July 1879 (*ibid.* 2d ser. 15 (1879): vii).

From A. S. Wilson 27 February 1879

North Kinnmundy, | Summerhill, | by Aberdeen.

27 Feby. 1879.

Charles Darwin, Esq. F.R.S. | Down | Beckenham | Kent.

Dear Sir,

I have now the pleasure of submitting to you my first years experiments with the two Russian wheats you were good enough to send me last April.¹ You will see that

as yet I have found no alteration taking place on the forms of these wheats; and that I think the explanation of the observed change of crop is to be found in that principle of your great Theory by which the strongest and most fertile push aside the weaker and less fertile—

If you approve of the publication of the report, with any alterations you may be kind enough to make, the suggestion of the best medium would be a much esteemed obligation. I am so much out of the world here.²

Of course I intend going on with the experiment this season, using the seed of my own crop and endeavouring to take some measures against the red rust.³ I do not think that any of the seeds I planted in autumn have ever come through the ground; and as the (s)now is still lying several inches deep, I have not got another trial made—

I may mention that I did not think it necessary to write to Dr. Asher, the matter being put before me in your letter in such a way as to give all the information I thought required.⁴

I am | Dear Sir, | yours very truly, | A. Stephen Wilson.

DAR 181: 114

¹ CD had sent varieties of Russian wheat (locally known as Kubanka and Saxonka) with his letter to Wilson of 24 April 1878 (*Correspondence* vol. 26). In the regions where these varieties were grown, Kubanka was thought to degenerate into Saxonka with no intermediate types after two years.

² Wilson's manuscript has not been found but his report was published in *Gardeners' Chronicle*, 24 May 1879 (Wilson 1879); a proof copy is in the Darwin Pamphlet Collection–CUL.

³ In wheat, the leaf rust known as red or brown rust is caused by a fungus, *Puccinia triticina*; it produces orange-brown uredina (fruiting bodies), primarily on the upper surface of the leaves, which cause early loss of affected leaves.

⁴ Georg Michael Asher had arranged for the Russian wheat seeds to be sent to CD; see *Correspondence* vol. 26, letter from G. M. Asher, 16 February 1878.

From A. F. Batalin¹ 28 February 1879

St Petersburg,
16 / 28 Febr. 1879²

Sehr geehrter Herr!

Auf Ihr geehrten Schreiben von Febr. 18. beeile ich mich Ihnen mitzuthemen, dass die Blätter von *Polygonum aviculare* des Nachts sich erheben, die von *Sida Napaea*—sich senken.³ Es that mir sehr leid, dass ich nicht ganz correct geschrieben habe.

Meine Untersuchungen über die Bedeutung der Blattbewegungen für die Lebenserscheinungen der Pflanzen, wie ich Ihnen geschrieben habe, blieben meistens erfolglos. Als sicheres kann ich Ihnen nur folgendes mittheilen. Die Blättchen von *Oxalis Acetosella*, wenn die Pflanze dem directen Sonnenschein ausgesetzt ist, leiden von dem starken Lichte nicht, sie senken sich blos, wie des Nachts; in solcher gesunkenen Lage können die Blätter mehrere Wochen bleiben—und sie leiden doch gar nicht. Wenn aber die Senkung der Blättchen unmöglich gemacht ist (ohne sie zu wunden), so entfärben sich und austrocknen die Blätter,

auf dem directen Sonnenscheine, im Laufe von 2–3 Tagen. Im zerstreuten Lichte aber, vegetirten die Blätter, ohne die Bewegungen zu machen, zwei Monate ganz normal; ganz kleine und junge Blätter (in anderen Versuchen) hatten unter solchen Bedingungen sogar augenscheinlich dieselbe Grösse erreicht, wie die übrigen Blätter, frei sich bewegende.⁴

Über Mimosa habe ich Ihnen geschrieben.⁵

Meine Untersuchungen beabsichtige ich im nächsten Sommer fortzusetzen und ich werde für die Ehre halten meine weitere Resultate Ihnen mitzutheilen.⁶

Mit besonderer Hochachtung | Ihr ganz ergebener | A Batalin

[Contemporary translation]

Highly honoured Sir.

After your much valued letter of the 18th Feb. I hasten to inform you that the leaves of *Polygonum aviculare* lift themselves up in the night—those of *Sida Nassaea* sink down. I am very sorry that I did not write quite correctly.

My investigations about the importance of the movements of the leaves for the life appearances of the plants, remained as I have already written to you mostly without any result. As certain I can only inform you of the following.

The leaves of *Oxalis Actosella* when the plant is exposed to the direct rays of the sun do not suffer from the strong light, they only sink as in the night; in such a sunk position the leaves can remain for many weeks—& they do not suffer at all. If however the sinking of the leaves is made impossible (without injuring or wounding them) then they lose their colour & the leaves dry up in direct sunshine, in the course of 2 to 3 days. In however a dispersed light the leaves vegetate without making the movement quite normally two months; quite young & small leaves (in other experiments) had in such conditions apparently reached the same size as the other leaves which moved freely. I have written to you about Mimosa.

I intend to continue my observations next summer, & I shall have the honour of informing you of my further results.

DAR 209.14: 179, 180

CD ANNOTATIONS

Contemporary translation:

0.1 Highly ... following 2,3] *crossed red crayon*

3.2 do not ... night;] *scored red crayon*

¹ For a translation of this letter, see Appendix I.

² Batalin gives both the Julian (16 February) and Gregorian (28 February) calendar dates.

³ The letter from CD has not been found. However, in his letter of 29 January 1879, Batalin had written about the movement of the leaves of, amongst other plants, *Polygonum aviculare* (prostrate knotweed) and *Sida napaea* (an unresolved name, possibly a synonym of *Sida hermaphrodita*, Virginia mallow). CD cited Batalin for these observations in *Movement in plants*, pp. 322 and 387.

⁴ CD mentioned Batalin's observations on *Oxalis acetosella* (wood sorrel) in this letter in *Movement in plants*, p. 447.

⁵ In his letter of 29 January 1879, Batalin gave a brief account of his inconclusive experiments, the purpose of which had been to ascertain whether *Mimosa* and similar plants derived any advantage from the movements of their leaves.

⁶ No later correspondence with Batalin has been found.

To E. P. Wright 28 February [1879]¹

6. Queen Anne St | Cavendish Sqe | London
Feb. 28th

My dear Sir

I thank you for your very kind expressions about my son, who would not presume at present to look to so high a post. Nevertheless what you are so good as to say has pleased me much.

It would me a real pleasure to give you a useful testimonial, but I labour under several difficulties.² Firstly I have already given one to M^r M^cNab, & it seems almost absurd to give 2 testimonials for the same office.³ Secondly I know nothing of systematic botany, & this clearly forms a highly important part of the duties of a Professor on Botany. Nor can I judge except on some few points of physiological Botany & on general Biology. I am writing this away from home (nor do I know when I shall return there) & cannot call to mind what I have read of yours relating to Botany.⁴ All that I could say w^d be that I had a general impression that you have shown much ability & zeal in Science.— Considering that I have already given a testimonial, I really think such remarks w^d be of no use.—

I trust therefore that you will excuse me & believe me | Yours very faithfully |
Ch. Darwin

P.S. On reflection it will perhaps save you trouble, if I enclose what I can say, but I strongly advise you to throw it into fire.—⁵

Uppsala University Library: Manuscripts and Music (Waller Ms gb-00525)

¹ The year is established by the relationship between this letter and the letter from E. P. Wright, 26 February 1879.

² In his letter of 26 February 1879, Wright had asked CD for a testimonial for his application for the chair of botany at the University of Edinburgh and had wondered whether Francis Darwin was applying for the post.

³ No correspondence between William Ramsay McNab and CD regarding the position has been found. In the event the appointment went to Alexander Dickson.

⁴ CD was at his brother Erasmus Alvey Darwin's house in London from 27 February to 5 March 1879 on account of 'Elizabeth's illness' (Sarah Elizabeth Wedgwood, Emma's sister, who lived in Down; CD's 'Journal' (Appendix II)). Although Wright's research was mainly in marine zoology, CD was aware of his work on the flora of the Seychelles (E. P. Wright 1868a); see *Correspondence* vol. 15, letter from J. D. Hooker, 19 November 1867. Wright's articles on the double coconut, a species of red algae, and the flora of the islands of Arran (E. P. Wright 1866b, 1868b, and 1878) are in the Darwin Pamphlet Collection–CUL.

⁵ For the enclosure, see letter to curators of patronage of Edinburgh University, 28 February 1879.

To the curators of patronage, Edinburgh University 28 February 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Feb. 28—1879

I have read at different times several papers written by Professor E. Perceval Wright, & they have impressed me with a high opinion of his abilities & great zeal for Natural Science.—¹

Charles Darwin

Kenneth W. Rendell (dealer) (July 1994)

¹ CD enclosed this testimonial for Edward Perceval Wright's application for the chair of botany at the University of Edinburgh with his letter to Wright of 28 February [1879]. The chair was awarded by the curators of patronage, Edinburgh University.

To Francis Galton [1 March 1879?]¹

6. Queen Anne St
Saturday

My dear Galton

If it would not bore you, can you come to luncheon here on Monday at 1 o'clock; as it will be my best chance of seeing you.—² I have been extremely sorry to hear that you have not been well of late, & that you are soon going abroad—³

Yours very sincerely | Ch. Darwin

UCL Library Services, Special Collections (GALTON/3/2/1/26)

- ¹ The date is conjectured from the placement of this letter in Pearson 1914–30, 2: 193, between letters dated 22 March 1879 and 30 April 1879, and by the dates of CD's spring 1879 visit to his brother (see n. 2, below). The only Saturday during this visit was 1 March.
- ² CD visited the home of Erasmus Alvey Darwin at 6 Queen Anne street, London, from 27 February to 5 March 1879 (CD's 'Journal' (Appendix II)).
- ³ No other mention of a trip abroad by Galton or a visit by him to CD in London around this time has been found. Galton's next recorded visit to CD was on 26 April 1879 at Down (Emma Darwin's diary (DAR 242)).

From Francis Darwin 3 March [1879]¹

Blidah
Monday Mar 3rd

My dear Father,

I was very much astonished at the circular, & I think it is very good indeed of you; I will certainly take you sermon to heart & not consider it as increased income. I will go in for 3 per cents & risk those revolutions which drive George to foreign investments.² Investing money will be a new & pleasant sensation.

It is getting near the end of my time here which has gone by very quick & has been a very good holiday, I shall have been a lunar month from sailing to sailing.³ This is an untidy looking town with bare hills about & rather dismal snowy mountains near; the streets have an uncomfortable dirty dusty look but are amusing from the lots of arabs about There are some women dressed all in scarlet with only one eye peeping out who look very bright— The hills have wild oleanders growing over them which looks very tropical—⁴ Please thank Bessy for her nice letter. I liked Ubbadubbas letter very much. I will write to Bessy & answer Ubbadubba too next letter—⁵ I have no intellec(t) tonight—

Your Affectionate son | Frank Darwin

DAR 274.1: 59

- ¹ The year is established by the relationship between this letter and the letter to the Darwin children, 21 February 1879.

- ² See letter to the Darwin children, 21 February 1879. CD advised investing in safe securities paying low interest. No information on George Howard Darwin's foreign investments has been found.
- ³ Francis had been visiting George in Algeria, having left Down on 4 February 1879 (Emma Darwin's diary (DAR 242)). He arrived back at Down on 12 March 1879, departing from Algiers on 8 March (letter from G. H. Darwin, 3 March 1879; letter from Emma Darwin to W. E. Darwin, [12 March 1879] (DAR 219.1: 130)). By Francis's calculation of a lunar month between sailings, he would have sailed to Algiers on 7 February 1879.
- ⁴ Blidah (now Blida) is an Algerian city, situated south-west of Algiers at the foot of the Tell Atlas mountains. Wild oleander (*Nerium oleander*) is native to the region.
- ⁵ The letters from Elizabeth Darwin have not been found, nor have Francis's replies. Ubbadubba was a pet name for Francis's son, Bernard Darwin.

From G. H. Darwin 3 March 1879

Hotel d'Orient | Blidah

Mar. 3. 79.

My dear Father,

We received your circular yesterday morning & were surprized at its contents. You are wonderfully good to all of us—and that is more than the money.¹ As to myself I don't know that I shall want to do anything with it except invest it. At any rate the loss of my fellowship will make *no* difference to me now, tho' I hardly think it would in any case.²

We came here this morning in a most tedious train which took $2\frac{1}{2}$ hours for 30 miles. We went along a fertile plain all the way, which is however I think very malarious— Here we are close under the mountains which have still got snow on them from the late bad weather.³ Yesterday was the most lovely day I ever saw & tho' the Sun was very hot the air was cool. Today it has been overcast & dead calm, with a sweltering heat like the inside of a hot house. About 5 o'clk this evening it turned quite cold & we are now sitting before as good a fire as can be made out of wood. Tomorrow we are going to drive to a gorge in the mountains about 10 miles away, which is said to be beautiful, and where also are wild monkeys in the woods.⁴

This town looks commonplace & dirty, with straight streets because it is continually being destroyed by earth-quakes & has been so restored by the French. The hillside is channelled by extraordinarily deep ravines & geology seems to go on so fast that the grass has'nt time to grow much on the sides of them. This & the half-snowed covered hills makes it look rather dismal. The most interesting part of the place is the fact that it is almost entirely Arabic. A good many of the women are dressed from head to foot in scarlet with only one eye visible, which is different from the Algerians who show both eyes.⁵ From here we are going to Hammom Rira about 30 miles further on thro' the mountains. It is a hot mineral baths & said to be a pretty place.⁶ We, or at least Frank, will return to Algiers on Friday (7th) to sail on Saturday.⁷

I am much too unwell to feel at all in humour for touring but I was sure that if I did'nt go now I sh^d'nt go at all

I return to the M^rL's to stay 2 or 3 weeks more⁸

Your affectionate son | G. H. Darwin

DAR 210.2: 73

- ¹ See letter to the Darwin children, 21 February 1879. CD had decided to divide the surplus of his income annually among his children.
- ² George had been a fellow of Trinity College, Cambridge, from 1868 to 1878, when his fellowship expired (G. H. Darwin 1907–16, 5: xvi). He was re-elected a fellow of the college in 1884 (*Alum. Cantab.*).
- ³ Blidah (now Blida) is an Algerian city, situated south-west of Algiers at the foot of the Tell Atlas mountains.
- ⁴ The Chiffa Gorge is about five miles south-west of Blida in the Tell Atlas mountains. A ravine known as the Ruisseau-des-singes (Stream of monkeys) was famous for its large population of Barbary macaques (*Macaca sylvanus*); it was described by the French writer Guy de Maupassant in 1884 (Maupassant 2008, pp. 33–4).
- ⁵ The garments described were local variants of the traditional haik (on Arab dress, see Stillman 2000).
- ⁶ The geothermal waters of Hammam Rirha were known from Roman times, when they were referred to as ‘Aquae Calidae’ (hot water, or baths); they are in the north-central part of Algeria, in Aleppo pine (*Pinus halepensis*) forests (*Columbia gazetteer of the world*).
- ⁷ See letter from Francis Darwin, 3 March [1879] and n. 3.
- ⁸ John Ferguson McLennan spent winters in Algeria because of poor health; his wife was Eleanora Anne McLennan (*ODNB*).

From W. D. Fox 3 March [1879]¹

Broadlands | Sandown. I. W
March 3

“Long years have pass’d, old friend, since we
First met in lifes young day;
And friends long lov’d by thee and me,
Since then have dropp’d away;—
But enough remain to cheer us on” &c

Dear old Darwin

How you will laugh at the above, and think it a proof of my dotage—to send them.² They however so exactly express my thoughts, when I enter my little study, and see your dear Fathers happy face, as Caroline coloured the lithograph for me—years, years ago, when she and dear Susan & Catherine filled your old Shrewsbury home, and when you and I, were really in “lifes young day”—as happy as creatures could be.³ By your Fathers lithograph, (which is as *like* as a daughters loving hand could make it)—I have your Sons Photograph of you, as you now are—no longer in lifes young day, but looking very grave and sedate—widely different from a fellow photo—of you which I always call you “in your rollicking days”—sitting on your chair, just beginning to feel your strength.⁴ Well! Well! We are both old fellows now, but somehow I fancy that last Photo: must have made you older and graver than you really are. I shall try to get a half hour with you this Summer, if I can manage it and you will have me. I am just emerging from my Winter Chrysalis having kept the house all the winter, and feel rather like the Imago creeping out of it with my wings undried and rather shivery.

But as *my* Narcissus obvallaris (our earliest daffodil) began to shew colour yesterday—⁵ I quite hope for 8 months flutter (with other Butterflies this Summer. But, what a fool you will think me—and a nuisance to boot—if I go on in this way.

My reason for writing is to ask for a few lines from you telling me how you have past thro' this trying winter, and how your excellent little wife is. I hope also your children are better than in the last account you gave me of some of them.⁶ I hope we shall induce W^m and his wife to come to us for a few days soon, when the spring opens a little. I like so much the little I have seen of him, that I should much like to see more. I fear they have no children, as I have never heard of any—but for all that, they may have some.⁷

What are you about now? for I feel sure that you are busy about something. I have all your Books within a yard of my Study Chair always, & dip into them with much satisfaction.

We get smaller and smaller, in our numbers. I have only three daughters left now,—and one of those leaves us this Summer.⁸ Our seven boys join us in the holiday Season—but they are only ephemerals.⁹ I am just reminded (by a *scratch*) that I have a most lively family that I am now watching—A lot of Harvest Mice (M: Messorius). They are *very* pretty little creatures—quite distinct from any group of English Mice— Their tails prehensile and reminding one of a Monkey in a small way, they are always *feeling* with the extremity & catch hold of a wire or straw beautifully.¹⁰ These with a flock of *Larus ridibundus* black headed Gull—and a lot of Mole crickets—form my Menagerie at present. I wish I had a wall Garden for my Gulls, as I feel sure they would breed if they had space enough.

I am watching for the black heads to come on now.¹¹

I see a “Rev^d Richard Lubbock” mentioned as observing their habits by Yarrow—I conclude he is some relation of your *wonderful* neighbour—whom I should be delighted to know.¹²

Well, It is time I set you at liberty—that is supposing you have not long since set yourself so by throwing my letter into the fire, as it deserves.— Commend my wife and self to M^{rs} Darwin—¹³ we often talk of her—and wish we could see her sometimes and Believe me, old friend of some 56 years standing, | Yours always W D Fox.

If you were without a subject—you might write a Book upon the little German Badger hound.¹⁴

The way in which every part of the frame—is adapted from their underground life—is extraordinary— The skeleton must be very curious. One would imagine that these dogs must have been very much more used for subterraneous work than they now are—as it must have taken long to form their skeleton. I sometimes almost wish my Sons would die that I might examine the frame work. Of course you must have a well bred one to shew their peculiarities— Ours is from the Emperor of Germanys particular breed— The Princess Royal having given hers to my 3^d Son Gerard.¹⁵ I wish we could have a ten minutes examination & talk over him— | farewell.

DAR 99: 172–4

¹ The year is established by the reference to the trying winter and the upcoming wedding of Fox's daughter (see nn. 6 and 8, below).

² Fox quotes the first five lines of the poem 'Long years have pass'd', by Thomas Moore (see T. Moore 1840–1, 5: 310–11).

- ³ The lithograph of CD's father, Robert Waring Darwin, has not been found, but a mezzotint by Thomas Goff Lupton after a portrait by James Pardon was made in 1839 (see *Correspondence* vol. 4, facing p. 188). Both the engraving and the portrait are at Down House, Downe, Kent. Fox refers to CD's sisters Caroline Sarah Wedgwood, Susan Elizabeth Darwin, and Catherine Langton.
- ⁴ Fox probably refers to a photograph of CD taken by Leonard Darwin in 1878 (DAR 225: 119) and to an earlier one taken around 1857 by Maull & Fox (DAR 225: 175; see also *Correspondence* vol. 8, frontispiece).
- ⁵ *Narcissus obvallaris* (a synonym of *N. pseudonarcissus* ssp. *obvallaris*) is the Tenby daffodil.
- ⁶ The winter of 1878–9 was one of the coldest on record for England (Manley 1974, p. 396); Emma Darwin's diary (DAR 242) for this period records long spells of below-freezing weather. The latest extant letter to Fox is that of 10 July 1878 (*Correspondence* vol. 26), but CD did not mention his children's health. In CD's letter to Fox of 14 February 1878, he mentioned the health of family members.
- ⁷ William Erasmus and Sara Darwin did not have any children.
- ⁸ Fox's unmarried daughters were Agnes Jane, Julia Mary Anne, Gertrude Mary, and Edith Darwin Fox. Gertrude was married on 10 September 1879 (*The Times*, 12 September 1879, p. 1). Agnes may not have been living at home (Census returns of England and Wales 1881 (The National Archives: Public Record Office (RG11/4815/56/13)).
- ⁹ Samuel William Darwin, Charles Woodd, Robert Gerard, Frederick William, Erasmus Puleine, Reginald Henry, and Gilbert Basil Fox.
- ¹⁰ *Mus messorius* is a synonym of *Micromys minutus*; CD had mentioned the animal's prehensile tail in *Origin* 6th ed., p. 189, in response to the argument that an incipient tendency to grasp could not be an advantage to an organism (see *Correspondence* vol. 19, letter to J. D. Hooker, 23 July [1871] and n. 6).
- ¹¹ *Larus ridibundus* is a synonym of *Chroicocephalus ridibundus*; the very dark brown head is characteristic of its summer (breeding) plumage, while in winter most of the dark colour disappears, leaving two small dark spots on either side of its pale grey head. The mole cricket found in Britain is the European mole cricket, *Gryllotalpa gryllotalpa*.
- ¹² Richard Lubbock's observations on the black-headed gull, made at Scoulton Mere, Norfolk, are in R. Lubbock 1845, pp. 122–3. William Yarrell recorded information received from Lubbock in 1841 on the habits of this species in his *History of British birds* (Yarrell 1843–56, 3: 436–7). CD's neighbour John Lubbock was not related to Richard Lubbock.
- ¹³ Fox's wife was Ellen Sophia Fox.
- ¹⁴ The German badger hound is now more commonly known as the dachshund.
- ¹⁵ Robert Gerard Fox was English tutor to Crown Prince Wilhelm of Prussia (later Wilhelm II), whose mother was Victoria Adelaide Mary Louise, the princess royal and wife of Wilhelm I, the German emperor (Larkum 2009, p. 410).

From A. R. Leeds 4 March 1879

New York Academy of Sciences, | *New York* | *Late* | *Lyceum of Natural History in the City of New York*,
March 4th 1879

Sir:

*I have the pleasure to announce to you that at the meeting of the ACADEMY, held March 3rd, you were elected an Honourary Member of the Society.*¹

Albert R. Leeds

CORRESPONDING SECRETARY.

Charles Darwin, F.R.S. etc.

EXTRACT FROM BY-LAWS, CHAPTER V III., §2., *footnote*.— *Honorary and Corresponding Members are exempt from initiation fees and annual dues.*

DAR 230: 73

¹ For the diploma, see Appendix III.

To J. N. Lockyer 4 and 6 March [1879]¹

6. Queen Anne St | Conduit Sq^r
March. 4th

My dear Sir

The enclosed letter *eminently* deserves to be published in *Nature*.² It ought to be divided into 4 paragraphs, as marked by me.—

The first relates to a curious, but not quite new case: You must decide whether the Photograph of the Frog with the mass of tadpoles on its back can be given as a wood block.—³

The sketch relating to the 3^d paragraph *certainly* ought to be engraved. I have written a few words of introduction to the letter, which you can print if you think fit or burn if too long.—⁴

I am puzzled about reading & spelling the families of certain insects mentioned. If you were to send a proof M^r M^cLachlan at Lewisham, he w^d at once be able to correct the spelling.—⁵

I am not well & I know not in the least when I shall return home. Therefore if you can get proof corrected without my aid, I sh^d be glad.— Perhaps here & there a few words will require being Englefied.⁶

My dear Sir | Yours sincerely | Ch. Darwin

Will you kindly send me a duplicate copy of *Nature* that I may forward to F. Müller— So you see I boldly assume that you will publish letter.—

March 6th

I have returned home.— Pray excuse me for not rewriting this note.

I think the best plan will be to send me proof **with original letter** after the woodcut, or the wood-cuts have been made, & I will forward proof & original letter to M^r M^cLachlan.⁷ This will save you trouble.— C. D

University of Exeter Library Special Collections (EUL MS 110)

¹ The year is established by the relationship between this letter and the letter from Fritz Müller, 21 January 1879.

² CD enclosed the letter from Fritz Müller, 21 January 1879.

³ The letter as published in *Nature* had a woodblock of the dorsal view of the egg-brooding frog; the original photograph has not been found (see letter from Fritz Müller, 21 January 1879 and nn. 1 and 2).

⁴ See letter from Fritz Müller, 21 January 1879. The sketch showed an adaptation of the tarsus of a species of bromeliad-dwelling caddisfly (family Leptoceridae), compared with the same feature in another species that inhabited rivulets. For CD's introductory comments, see the letter to *Nature*, [before 20 March 1879].

⁵ Robert McLachlan had written a monograph on British caddisflies (McLachlan 1865).

⁶ 'Englefied': anglicised (CD's own word). CD was in London from 27 February to 5 March (CD's 'Journal' (Appendix II)).

⁷ See letter to Robert McLachlan, 12 March [1879].

To Fritz Müller 4 March 1879

Down, | Beckenham, Kent.
March 4th 1879

My dear Sir

I thank you cordially for your letter.¹ Your facts & discussion on the loss of the hairs on the legs of the caddis-flies seem to me the most important & interesting

thing which I have read for a very long time.—² I hope that you will not disapprove, but I have sent your letter to *Nature*, with a few prefatory remarks, pointing out to the general reader the importance of your view & stating that I have been puzzled for many years on this very point.—³

If, as I am inclined to believe, your view can be widely extended, it will be a capital gain to the doctrine of evolution. I see by your various papers that you are working away energetically, & wherever you look, you seem to discover something quite new & extremely interesting.—⁴ Your Brother, also, continues to do fine work on the fertilisation of flowers & allied subjects.—⁵

I have little or nothing to tell you about myself. I go on slowly crawling on with my present subject the various & complicated Movements of Plants.—⁶ I have not been very well of late & am tired today so will write no more.

With the most cordial sympathy in all your work, believe me | Yours very sincerely
| Charles Darwin

I will send you a copy of *Nature*.—

British Library (Loan MS 10 no 48)

¹ See letter from Fritz Müller, 21 January 1879.

² Müller had discussed an adaptation of the tarsi of a species of bromeliad-dwelling caddisfly (family Leptoceridae). The tarsi had lost the hair-like projections that enabled new hatchlings of river-dwelling species to swim to the surface.

³ See letter to J. N. Lockyer, 4 and 6 March [1879]. For CD's prefatory remarks, see the letter to *Nature*, [before 20 March 1879].

⁴ Müller's most recent work had focused on scent organs in butterflies (F. Müller 1878a), the cases of caddisflies (F. Müller 1878b), sexual dimorphism in *Epicalia acontius* (a synonym of *Catonephele acontius*, the Acontius firewing; F. Müller 1879a), and the morphology of caddisflies (F. Müller and Müller 1879).

⁵ Hermann Müller had written an introduction to Fritz's observations on caddisflies (F. Müller and Müller 1879), but his own research continued to focus on insect adaptations that aided the fertilisation of flowers (H. Müller 1878). CD received the periodical *Kösmos*, to which the Müllers frequently contributed.

⁶ CD and his son Francis Darwin were experimenting on the physiology of movement in different plant organs; the results were later published in *Movement in plants*.

To L. A. Errera 5 March 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

March 5— 1879

Dear Sir

I have just returned home after a week's absence, & found your & M. Gevaert's kind present lying here.¹ Before long I will find time to read it, & feel sure that it will interest me greatly.

From our former correspondence I am well convinced that I shall find very much more in your book & papers than a "vulgarisation" or popularisation of the subject, as you have modestly described your work in the kind words written on the Title-page.—²

Pray accept my thanks & believe me Dear Sir | Yours faithfully | Charles Darwin

American Philosophical Society (561)

- ¹ CD visited London from 27 February until 5 March 1879 (CD's 'Journal' (Appendix II)). Errera sent an offprint of his and Gustave Gevaert's work on flower morphology and fertilisation (Errera and Gevaert 1878). The work first appeared in the *Bulletin de la Société royale de botanique de Belgique* in 1878; the offprint was published in 1879.
- ² CD's offprint of Errera and Gevaert 1878 has not been found, but a copy with the title page inscribed to Francis Darwin from Errera is in the Darwin Pamphlet Collection–CUL.

To A. S. Wilson 5 March 1879

Down
March 5, 1879

My dear Sir

I have just returned home after an absence of a week, and your letter was not forwarded to me; I mention this to account for my apparent discourtesy in not having sooner thanked you.¹ You have worked out the subject with admirable care and clearness, and your drawings are beautiful.² I suspected that there was some error in the Russian belief, but I did not think of the explanation which you have almost proved to be the true one.³ It is an extremely interesting instance of a more fertile var. beating out a less fertile one, and in this case one much more valuable to man. With respect to publication I am at a loss to advise you, for I live a secluded life and do not see many periodicals or hear what is done at the various societies. It seems to me that your paper should be published in some agricultural journal; for it is not simply scientific and would therefore not be published by the Linnæan or Royal Societies.

Would the R. Agricultural Soc^y be a fitting place? Unfortunately I am not a member and could not myself present it. Unless you think of some better journal, there is the *Agricult. Gazette*; I have occasionally suggested articles for publication to the Editor (though personally unknown to me) which he has always accepted⁴

Permit me again to thank you for the thorough manner in which you have worked out this case; to kill an error is as good a service as, and sometimes even better than, the establishing a new truth or fact.

Believe me, my dear Sir | Yours very faithfully | Charles Darwin

Copy
DAR 148: 367

- ¹ See letter from A. S. Wilson, 27 February 1879.
- ² No drawings have been found in the Darwin Archive–CUL, but drawings made by Wilson accompany his article 'Experiments with *kubanka* and *saxonica* wheat', which was published in *Gardeners' Chronicle*, 24 May 1879 (Wilson 1879, p. 653).
- ³ Wilson had enclosed the results of his experiments on the Russian wheat varieties with his letter of 27 February 1879, but the manuscript has not been found in the Darwin Archive–CUL. A proof copy of Wilson 1879 is in the Darwin Pamphlet Collection–CUL.
- ⁴ John Chalmers Morton was the editor of the *Agricultural Gazette*. No letters from CD to Morton have been found, but see the letter from J. C. Morton, 19 March 1877 (*Correspondence* vol. 25). In the event, Wilson's research was published in *Gardeners' Chronicle* (see n. 2, above).

From E. A. Darwin 8 March [1879]¹

8 March

Dear Charles

I have read the life & think it will make a very interesting book for all who are interested in Darwinismus that is to say for every body.² It is very easy German bating³ the great numbers of technical words some not in dictionary Krause for example was bothered by (?Daisy) printed thus & the name he gives might be translated back half a dozen ways.⁴

As for size it would make about 60 or fewer pages of Bagehots Physics⁵ which was the only book I could lay my hand but would easily swell out into something bigger

Do you take in Kosmos? The title page rather perplexes me. Kosmos Zeitschrift für einheitliche Weltanschauung auf Grund der Entwicklungslehre.⁶ This I translate 'Cosmos a Periodical for the uniformitarian view of the world on the Evolution Theory'

Is this title of Kosmos generally or for this one & if for this one number why a Periodical. At first I thought Zeitschrift meant an occasional paper, but dictionary only gives periodical & dictionaries are apt to be right.

He gives due honor to Frank & George⁷ I should like to keep it a few days to read your life. When this monument has been erected to D: D you should set about erecting your own in the shape of a really handsome Edition of the Origin that a gentleman could read⁸

EAD

DAR 92: B2; DAR 105: B105, B110

¹ The year is established by the reference to Krause 1879a (see n. 2, below).

² Ernst Krause published 'Erasmus Darwin, der Großvater und Vorkämpfer Charles Darwin's: ein Beitrag zur Geschichte der Descendenz-Theorie' (Erasmus Darwin, Charles Darwin's grandfather and forerunner: a contribution to the history of descent theory; Krause 1879a) in the periodical *Kosmos* in February 1879.

³ 'Bate': to omit, leave out of count, except (*OED*).

⁴ See Krause 1879a, p. 416; Krause had translated the German common name *Maßliebchen* as '(?daisy)'. The species referred to was *Bellis perennis* (common or English daisy). Other common names for the flower in German are *Gänseblümchen*, *Margarethenblümchen*, *Angerblümchen*, *Monatsröserl*, and *Tausendschön*.

⁵ Walter Bagehot and Bagehot 1872.

⁶ CD had a subscription to *Kosmos*; his copies are in the collection of unbound journals in the Darwin Library–CUL. The full title was *Kosmos: Zeitschrift für einheitliche Weltanschauung auf Grund der Entwicklungslehre in Verbindung mit Charles Darwin und Ernst Haeckel* (Kosmos: journal for uniform world-view based on the theory of development as proposed by Charles Darwin and Ernst Haeckel).

⁷ Krause alluded to George Howard Darwin's research on cousin marriages (Krause 1879a, pp. 419–20). No reference to Francis Darwin has been identified.

⁸ The last edition of *Origin* published during CD's lifetime was the 1876 reprint of *Origin* 6th ed., and had some corrections and additions to the text (Freeman 1977). This edition was produced in a cheaper form than previous ones, with small type and a relatively small page; a 'gentleman's' edition usually had larger type and page size, with wider margins.

To Ernst Krause 9 March 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)
March 9th 1879

My dear Sir

My Brother & self have read with great interest your sketch of the life of my Grandfather.—¹ The idea has crossed our minds to get a translation made & publish it, in order to do honour to our grandfather. But before thinking any more on the subject, I should be greatly obliged, if you would inform me whether you or the other Editors of *Kosmos* would object to our bringing out a translation.— If you grant your permission, & we decide to do so, we would endeavour to get M^r Dallas (who translated F. Müller 'Fur Darwin') to translate your essay, as he is an excellent German Scholar.—²

We sh^d *perhaps* offer the translation to M^r Morley for the *Fortnightly Review* (one of the best of our English Journals) but we doubt whether it would suit him.³ In this case we would publish it at our own expence as a separate little book.⁴

I hope that you will forgive me for troubling you with this request, & with cordial thanks for the honour which you have conferred on my grandfather, I remain | My dear Sir | Yours very faithfully | Ch. Darwin

The Huntington Library (HM 36175)

¹ See letter from E. A. Darwin, 8 March [1879]; Krause published 'Erasmus Darwin, der Großvater und Vorkämpfer Charles Darwin's: ein Beitrag zur Geschichte der Descendenz-Theorie' (Erasmus Darwin, Charles Darwin's grandfather and forerunner: a contribution to the history of descent theory; Krause 1879a) in *Kosmos* in February 1879.

² The other editors of *Kosmos* were Otto Caspari and Gustav Jäger. William Sweetland Dallas had translated F. Müller 1864 (W. S. Dallas trans. 1869).

³ John Morley was the editor of the *Fortnightly Review*.

⁴ In the event, the book was published by John Murray, CD's publisher; it consisted of a 130-page 'Preliminary notice' by CD and a translation of a reworked version of Krause 1879a (*Erasmus Darwin*).

From C. H. Browning 10 March 1879

Lake Point Hotel, Great Salt Lake | Tooele Valley, Utah Ter.
March 10th 1879.

Mr. Charles Darwin

Dear Sir:

While reading your work on the *Origin of Species* I came to that part, in which you treat of inherited effects and thinking that the following curious fact might be of some little interest to you I have taken the liberty of writing to you.¹

Several years ago a gentleman in Washington through sickness, became completely bald, after his recovery he married and has now five children, three sons and two daughters. At a corresponding age the three sons successively became as bald as their father while the daughters do not show the slightest signs of losing their hair.

Do you not think this an astonishingly good example of inherited effects?
Resp't'f'ly Yrs. | C.H. Browning

DAR 160: 333

¹ In *Origin* 6th ed., pp. 108–9, CD had noted that the evidence that accidental mutilations could be inherited was not decisive. Browning has not been identified.

To W. T. Thiselton-Dyer 10 March [1879]¹
Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
March 10th

Dear Dyer

I have received another copy of Duchartre, which I suppose you have very kindly sent me, as being the 2^d Edit.² It shall be returned in a few days or week.— It is almost split (& so arrived) into 2 parts, & I hope that this accident was not caused by its journey.—

Ever yours sincerely | Ch. Darwin

The other copy was returned about a week ago.—

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: f. 163)

¹ The year is established by the relationship between this letter and the letter to W. T. Thiselton-Dyer, 25 [February 1879].

² Thiselton-Dyer had sent CD a copy of the second edition of Pierre Étienne Simon Duchartre's *Éléments de botanique* (Duchartre 1877). He had already sent a copy of the first edition (Duchartre 1867; see letter to W. T. Thiselton-Dyer, 25 [February 1879]).

From E. A. Darwin 11 March [1879]¹

11 March

Dear Charles

I think you might send *Kosmos* at once to M^r Dallas as Krause is quite sure to give his permission with thanks.² I dont think being published in *Fortnightly* would have the same monumental effect as an independent book & I'm afraid that it is not large enough for one of Morley's series even if it suited him.³ Have I only dreamt or have I seen that Huxley is undertaking a series of *Lives of Men of Science*?⁴

What I wanted to know about the *Kosmos* title page was whether that about the *Weltanschauung* was peculiar to this number as I thought *Kosmos* was Science generally without any special application to the Evolution Theory.⁵

E A D

DAR 105: 108–9

¹ The year is established by the relationship between this letter and the letter to Ernst Krause, 9 March 1879.

- ² See letter to Ernst Krause, 9 March 1879; CD had requested Krause's permission to have William Sweetland Dallas translate Krause's sketch of the life of Erasmus Darwin published in *Kosmos* (Krause 1879a).
- ³ John Morley, the editor of the *Fortnightly Review*, often serialised longer works over several issues of the periodical (see, for example, Bagehot 1867–72, later published as Bagehot 1872).
- ⁴ Thomas Henry Huxley had recently written a biography of David Hume (T. H. Huxley 1879) for a series edited by Morley on English men of letters; he then contemplated editing a similar series on men of science but the project never materialised (see A. Desmond 1994–7, 2: 118).
- ⁵ See letter from E. A. Darwin, 8 March [1879] and n. 6. The journal *kōsmos* had been founded with a view to promoting research related to Darwinian evolutionary theory; for more on the founding of the journal, see Daum 1998, pp. 359–69 (see also *Correspondence* vol. 25, letter from Ernst Krause, 11 March 1877).

To W. S. Dallas 12 March [1879]¹

March 12th

Dallas

My dear Sir,

I do not know whether your many corrections ever allow you now to bring out translations, or whether, if you have the time, you would think it worth while to translate the life of my G. F. in the accompanying number of *Kosmos*.²

My brother & self think the sketch interesting & we wish to publish it as a separate very little book in honour of our grandfather.³ In case you would undertake it, we sh^d wish you to correct the proofs & that your name sh^d appear on the title page as translator, for this w^d guarantee to everyone that it has been faithfully done. I wd endeavour to get Murray to publish it on commission, for I suppose only a few copies w^d be sold.—⁴ I sh^d state that I have written to E. Krause for permission, & cannot doubt that this I shall receive.—⁵ After looking at the article, will you kindly inform me what compensation w^d make it worth while for you to undertake the work soon. If you are not willing to translate it can you tell us of anyone, though I have no doubt I c^d easily find out from [6 words illeg]

very truly C. D.

ADraftS

DAR 202: 39

- ¹ The year is established by the relationship between this letter and the letter from W. S. Dallas, 14 March 1879.
- ² In addition to his position as assistant secretary to the Geological Society of London, Dallas was also editor of *Annals and Magazine of Natural History* and *Popular Science Review* (*Geological Magazine* n.s. decade 3, vol. 7 (1890): 335). Ernst Krause had published 'Erasmus Darwin, der Großvater und Vorkämpfer Charles Darwin's: ein Beitrag zur Geschichte der Descendenz-Theorie' (Erasmus Darwin, Charles Darwin's grandfather and forerunner: a contribution to the history of descent theory; Krause 1879a) in *Kōsmos* in February 1879.
- ³ Erasmus Alvey Darwin had suggested that a translation of Krause 1879a would make an interesting book (see letter from E. A. Darwin, 8 March [1879]).
- ⁴ John Murray was CD's publisher. With books published on commission, all publication expenses were paid by the author; CD's other books were published under a profit-sharing model in which the publisher paid the initial cost of printing and advertising and these expenses were repaid from sales.

- ⁵ See letter to Ernst Krause, 9 March 1879. Krause gave his permission for a translation to be made in his letter of 12 March 1879.

From Alexander Dick-Cunyngham 12 March 1879

Karachi, Sind,
12th March 1879

Dear Sir,

In your *Variation of Animals and Plants*, Vol II p 190—you say:—

According to Varro, the wild ass was formerly caught and crossed with the tame animal to improve the breed—¹

It may interest you to know that this plan is still carried out in this part of the country. A wild ass, caught in the Runn of Kutch, was kept for many years by the late Khan Bahadoor Murad Khan at his estate on the Hubb river 20 miles from here, and a large number of donkeys were bred by him— He also got some very fine mules out of Beloochee mares—² He was very savage and if ever he got loose he at once killed all the he asses about the place

A female wild ass was lately caught near Bawalpur, and on Murad Khan's death they were both sent to the Calcutta Zoological Gardens, where they are still—³

Apologising for intruding upon you, | I am, | yours faithfully | A, Dick-Cunyngham

DAR 161: 279

- ¹ See *Variation* 2d ed. 2: 190–1. CD referred to Pallas 1777 as his source for the statement of Marcus Terentius Varro.
- ² The Rann of Kutch is a large area of salt marshes, mostly in Gujarat, India, extending into the southern tip of Pakistan. The Hubb (Hab) river is in south-east Baluchistan, Pakistan, and is the source for the Karachi water supply. Khan Bahadoor (Bahadur) was a formal title conferred on Muslim subjects of the British Indian Empire; Khan Bahadur Murad Khan received a large tract of land bordering the Hab river from the British government in 1859 (Hughes comp. 1876, p. 183). The Baluchi horse is a breed native to Baluchistan and Sind, noted for its turned-in ears (Hendricks 2007, pp. 61–2).
- ³ Bawalpur (now Bahawalpur) is a city in the south Punjab province of Pakistan, formerly in the princely state of Bahawalpur in British India. The Alipore Zoological Gardens in Calcutta (now Kolkata) had opened in 1876 (S. Walker 2001).

From Ernst Krause¹ 12 March 1879

Berlin N.O. Friedenstrasse 10. II
den 12.3.79.

Hochverehrter Herr!

Ihre freundlichen Zeilen vom 9 h., welche ich soeben empfang, bereiten mir eine grosse Freude, sofern ich daraus ersehe, dass Sie die kleine Gelegenheits-Schrift über Ihren Grossvater nicht ungünstig aufgenommen haben.² Ich hatte darüber, wie ich gestehen muss, einige Besorgnisse, denn die Idee dazu war erst spät (im Januar) entstanden, so dass Vorarbeiten und Druck schnell betrieben werden mussten, woraus sich die Lücken und Druckfehler der Arbeit erklären. Namentlich war es mir

nicht möglich, das Buch von Miss Anna Seward zu erhalten, und ich habe mich mit den Auszügen aus demselben begnügen müssen, die ich in der Edinburgh Review und an einigen andern Stellen fand. Es war kein Grund vorhanden, diese Angaben für unzuverlässig zu halten, allein ich würde Sie herzlich bitten, auf diese und alle Theile des Artikels ein wachsames Auge zu richten, da bei meinem unvollständigen Quellen-Material leicht Irrthümer untergelaufen sein könnten.³ Namentlich habe ich nicht feststellen können, wann die erste Ausgabe des Botanic Garden erschienen ist? Meine Quellen schwankten zwischen 1780, 81, u. 89!⁴

Ich brauche wohl kaum zu sagen, dass es mir eine grosse Ehre und Freude sein würde, wenn Sie eine englische Uebersetzung des Essay's veranlassen wollten, und ich werde mir erlauben, Ihnen nach einigen Tagen, einen verbesserten und mit einigen Zusätzen versehenen Abdruck zu diesem Zwecke einzusenden.

Da ich die Unvollständigkeit der kleinen Arbeit sehr wohl kenne, so habe ich gleich anfangs eine spätere Erweiterung derselben ins Auge gefasst, um sie etwa später einmal als kleines Buch herauszugeben. Ich habe zu diesem Zwecke Herrn Alberts⁵ gebeten, in England nach dem obigen Buche forschen zu lassen, allein er scheint in dieser Beziehung keinen Erfolg gehabt zu haben, und ich möchte daher die Bitte an Sie richten, mir obiges Buch, falls Sie es besitzen, auf einige Zeit leihen zu wollen. Bessern Erfolg haben wir in der Nachforschung nach einem Portrait Ihres Grossvaters gehabt, mit welchem wir die projektierte Buchausgabe ev. schmücken wollten. Ich weiss nicht, ob dasselbe aus einer Buchausgabe oder sonstwoher stammt, da ich kürzlich erst die briefliche Nachricht erhalten habe, dass mein Verleger, das Portrait aus Amsterdam erhalten hat.⁶ Es war meine Absicht, Ihnen dasselbe einsenden zu lassen, mit der Bitte, uns sagen zu wollen, ob es getreu und der Reproduction würdig ist. Vielleicht würden Sie uns alsdann eine bessere Vorlage oder Zeichnung freundlichst geben oder anfertigen lassen. Weil aber diese Publication möglicherweise noch längere Zeit auf sich warten lassen wird, so würde es mir eine grosse Freude machen, wenn die Fortnightly Review oder eine andere englische Zeitschrift eine Uebersetzung der vorläufigen Skizze veröffentlichen wollte; die Uebersetzung würde nur sehr wenig Arbeit verursachen, da ja der grösste Theil aus wörtlichen Citaten besteht, welche keine Rückübersetzung erfordern.⁷ Vor Allem bitte ich Sie, vor dem Abdruck, Ihre bessernde und ergänzende Hand daran zu legen, und den Abdruck, den ich Ihnen einsenden werde, nur wie ein Manuscript zu betrachten, welches Ihnen mit der Bitte, seine Fehler zu verbessern, zugeht.

Mit den herzlichsten Grüssen und Wünschen für Ihr Wohlbefinden zeichne ich,
hochverehrter Herr | Ihr | mit ganzer Seele ergebener | Ernst Krause

DAR 92: B15-16

CD ANNOTATION

1.12 Namentlich ... 89! 1.14] *scored pencil*

¹ For a translation of this letter, see Appendix I.

² See letter to Ernst Krause, 9 March 1879. CD had asked for Krause's permission to have an English translation made of Krause 1879a.

- ³ Anna Seward's *Memoirs of the life of Dr. Darwin* was published in 1804 (Seward 1804); an essay review of the book was published in the *Edinburgh Review*, 4 (1804): 230–41 ([T. Thomson] 1804). The unsigned review was written by Thomas Thomson, a private teacher of chemistry in Edinburgh (*Wellesley index; ODNB*). On the controversy surrounding the book, see King-Hele 1999, pp. 26, 327.
- ⁴ For the publication history of Erasmus Darwin's *The botanic garden; a poem in two parts* (E. Darwin 1789–91), see King-Hele 1999, p. 401.
- ⁵ Karl Alberts was the publisher of *Kosmos*, in which Krause 1879a had been published.
- ⁶ The portrait has not been identified; an engraving made from a portrait of Erasmus Darwin by Joseph Wright was used for the frontispiece of the translation (*Erasmus Darwin*).
- ⁷ In the event, the work was not serialised in the *Fortnightly Review*, but appeared as a book (*Erasmus Darwin*).

To Robert McLachlan 12 March [1879]¹

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)
March 12th

My dear Sir

I hope that you will kindly oblige me by looking at all the proper names in the enclosed proof of a letter from Fritz Müller to be published in *Nature*.² I have no book to look to see whether the names of the Trichoptera are correctly spelt.—³ I hope that you will agree with me that the case is an interesting one.— Please return the proof to me, & forgive me for troubling you.—

Yours very faithfully | Ch. Darwin

Superior Galleries (dealers) (28–31 January 1990)

- ¹ The year is established by the relationship between this letter and the letter from Fritz Müller, 21 January 1879.
- ² See letter to J. N. Lockyer, 4 and 6 March [1879]; Lockyer had evidently sent CD a proof of Müller's letter according to CD's instructions.
- ³ McLachlan was an expert on Trichoptera, the order of caddisflies.

From E. A. Darwin 13 March [1879]¹

March 13

Dear Charles

I have nothing to say against a Prologue but I should like to see two lines that *you* obtained permission from the author to have a translation made.² How would a note at the end look by GHD just to give the children correctly & I should like to bring in that Francis Galton author of &c is the son of one of the Daughters. It piles up the glory & would please Francis³

E A D

DAR 92: B1

- ¹ The year is established by the relationship between this letter and the letter to Ernst Krause, 14 March 1879.
- ² In a now missing letter, CD had evidently suggested that a prologue might be added to the proposed translation of Krause 1879a; Krause gave his permission for the translation to be made in his letter of 12 March 1879.

- ³ George Howard Darwin had written on consanguineous marriages and was interested in genealogy (G. H. Darwin 1873, 1875a, and 1875b). Francis Galton, CD's half-cousin, was the son of Erasmus Darwin's daughter Violetta Galton. Francis Galton was interested in heredity and had written *Hereditary genius*, in which the Darwins were included in the chapter on men of science (see Galton 1869, pp. 209–10).

To L. A. Errera 13 March 1879

Down, | Beckenham, Kent.
March 13th 1879

Dear Sir

I have now read your book, & I hope that you will allow me to have the pleasure of thanking you sincerely for the very great interest which I have felt in reading it. There are quite a large number of new, original & ingenious views in your book. The case of the staminoid of *Pentstemon* & your observations on insects rarely visiting some varieties, seem to me excellent.—¹

Long may you & M. Gevaert² continue your labours in the good cause of Science is the earnest wish of one who is too old to do much more himself.—

My dear Sir | Yours faithfully | Charles Darwin

The engraving of *Primula* is inimitably good.—³

P.S. If you have a photograph of yourself & can spare a copy, I sh^d like to add it to my album.—⁴

American Philosophical Society (562)

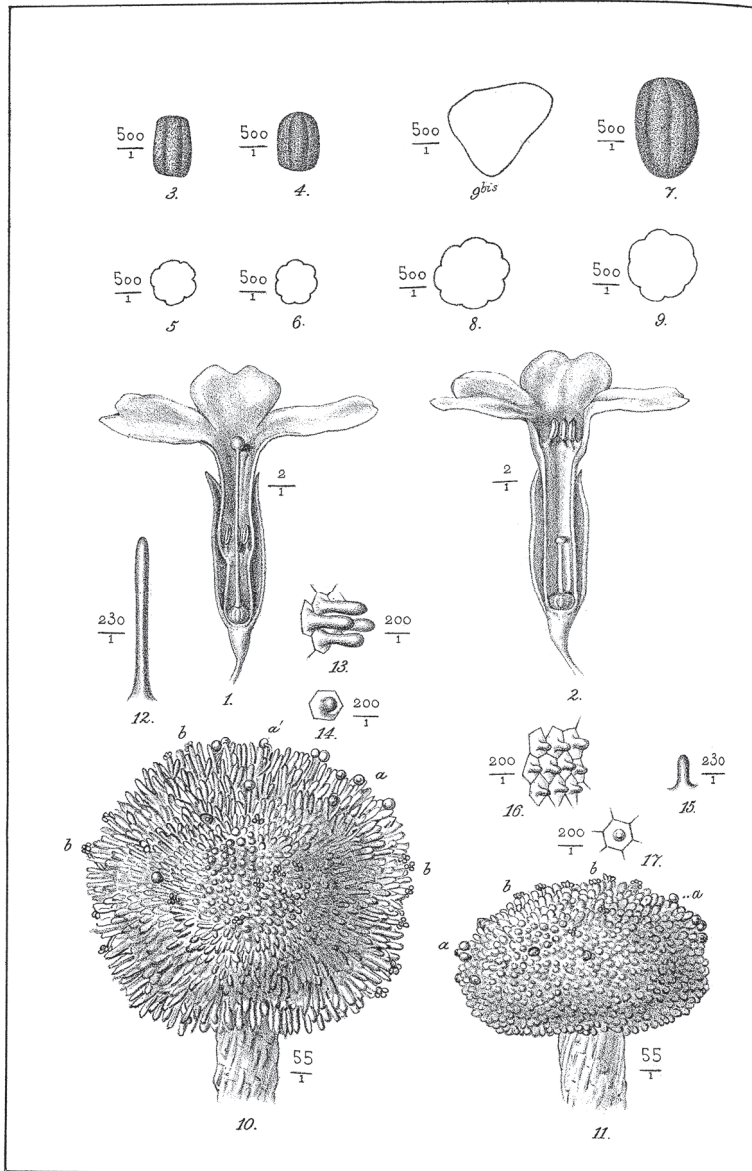
- ¹ See letter to L. A. Errera, 5 March 1879 and n. 1. In an appendix on *Pentstemon gentianoides* (gentian beardtongue) and *P. hartwegii* (a synonym of *P. hartwegii*, Hartweg's beardtongue), Errera had discussed the function of the stamens (sterile stamens) in these species and recorded his observation that syrphid flies and bees preferentially visited one variety whose nectar was more accessible owing to differences in the distance from the base of the corolla to the point where the staminode curved inwards (Errera and Gevaert 1878, pp. 182–91).
- ² Gustave Gevaert co-authored the main part of Errera and Gevaert 1878; Errera had written the appendix on *Pentstemon*.
- ³ See plate on p. 108 (Errera and Gevaert 1878, facing p. 179); the illustration included detailed depictions of the pollen grains and stigmatic surfaces of the different stylar forms of *Primula elatior* (oxlip).
- ⁴ CD's 'Scientific Album', which he started in 1864, has not been found (see *Correspondence* vol. 12, letter to T. H. Huxley, 5 November [1864]).

From J. D. Hooker 13 March 1879

Royal Gardens Kew
March 13/79.

My dear Darwin

Dyer has kept me informed of the steps he took regarding Frank's appointment to the Examinership at Cambridge; from the conversation he had with Horace onwards: & I must plead guilty of having given him every encouragement, in the belief that Horace's wishes were Frank's & your's too.¹



Est. D. a. n. s. d. d.

Lith. par G. Severeyns

Pollen grains and stigmatic surfaces of the different stylar forms of
Primula elatior (oxlip).

Errera and Gevaert 1878, plate facing p. 179.

By permission of the Syndics of Cambridge University Library.

I now write to back his suggestion, that Frank should reconsider the matter of his non-acceptance; & at the risk of appearing intrusive I would urge it for his own sake, primarily—for I cannot but think that a little public duty is an excellent thing for any man who has health energy & acquirements enough to perform it—and I think I am not wrong in surmising that in Frank's case such a duty would be eminently beneficial. I well remember my own extreme aversion to undertake public duties, & your affectionate encouragement on very many occasions, when I would fain have held back.² I now know how good it has been for me—and how grateful I am to you for your encouragement I only know.

Then again Frank's holding back will be a great disappointment to Cambridge; not only on account of his being the best man, & a Cambridge man,³ & your son; but because I do not know where they are to get another fit man *at all!*

I need not add that of Frank's entire competency there cannot be a question—were it to conduct a hack examination of medical students in the shape of system, morphology, pharmacy, & physiology, that they had picked up in the course of the so called “Botany class”—it would be a different matter, but the functions of the Cambridge Examiners are of another order altogether—and the amount of Morphology & system required from the Examiner & candidate are what the ordinary text books supply.⁴

No doubt there may be cogent reasons for Frank's reluctance—and of which I know nothing—if there are such pray forgive me for going so far as I have; & believe my dear old friend that I think only (& as much) of Frank as of Cambridge in this matter; & nothing at all of the disappointment to Dyer & myself.

We are all well—and, as usual, it seems an age since we have had any communication.

Shall you be coming to Town soon? Smith's illness keeps me pretty close here.⁵

Ever affy Y^{rs} | Jos. D. Hooker.

DAR 104: 125–7

¹ See letter to W. T. Thiselton-Dyer, 13 March 1879. William Turner Thiselton-Dyer had evidently written in a now missing letter to encourage Francis Darwin to reconsider his decision not to accept nomination as one of the examiners in the natural sciences tripos at the University of Cambridge. Horace Darwin also wanted Francis to reconsider and wrote to Francis Maitland Balfour, who was himself a candidate for examinership, to see whether this would be possible (letter from Horace Darwin to Francis Maitland Balfour, 14 March 1879; National Archives of Scotland (GD433/2/103B/95–6)). Balfour was an examiner from 1879 to 1881 (*Cambridge University Reporter*, 25 March 1879, p. 475; *Alum. Cantab.*).

² CD had encouraged Hooker to accept the presidency of the Royal Society of London (see *Correspondence* vol. 21, letter from J. D. Hooker, 7 January 1873, and letter to J. D. Hooker, 9 January 1873).

³ Francis had received his BA from Cambridge in 1870 (*Alum. Cantab.*).

⁴ On changes in the teaching of botany at Cambridge during this period, particularly on the reduction of systematics and greater emphasis on physiological botany in the curriculum, see Walters 1981, pp. 70–2.

⁵ CD had visited the home of his brother, Erasmus Alvey Darwin, in London from 27 February to 5 March 1879; aside from a brief visit in June to receive the Baly medal, his next visit was from 2 to 11 December 1879 (CD's 'Journal' (Appendix II)). John Smith was the curator of the Royal Botanic Gardens, Kew.

From Robert McLachlan 13 March 1879

39, Limes Grove, | Lewisham, S.E.
13 March 1879

My dear Sir

I return the proof: it required only the slightest correction in the points you specially allude to.¹

The occurrence of caddis-worms between the leaves of *Bromeliæ* is of great interest: the subject was brought before a recent meeting of the Entomol. Soc., & is mentioned (with some details) in the Proceedings, which you no doubt have.²

I have a lot of interesting facts & specimens from Fritz Müller in *Trichoptera*. They only arrived a week or two ago, & I have not yet completed my observations on the materials.³

With regard to the fringed legs of the pupæ. The fringes exist chiefly in those families & genera that inhabit *still* or *slowly-moving* water. I have just been writing on the subject for Pt. viii of my work on European *Trichoptera*, which treats on the genus *Rhyacophila* & others—*Rhyacophila* frequents the most rapid torrents & waterfalls.⁴ The legs of the pupæ are *not* fringed—fringes would be useless. The pupa must reach the surface by some method other than by swimming, for if it attempted the latter, it would be swept down by the torrent. I imagine that it contrives to crawl along the rocks &c, until it reaches the surface, in which it is aided by very strong tarsal claws. In *all* Families of *Trichoptera* I should say the pupæ with unfringed legs are the most numerous.

D: Müller is doing good work on the habits of Brazilian *Trichoptera*; he naturally suffers from incomplete works of reference.⁵ He appears to fall in with my views as to the near relationship of *Trichoptera* & *Lepidoptera*, as opposed to the American school which disposes of all difficulties in the Linnean Order *Neuroptera* by calling it a collection of “synthetic types”, whatever that may mean!⁶

Yours very faithfully | R. McLachlan

C. Darwin Esq. FRS. &c &c

DAR 171: 2

¹ See letter to Robert McLachlan, 12 March [1879]; CD had submitted the letter from Fritz Müller, 21 January 1879, to *Nature* for publication and wanted to ensure that the names of the Trichoptera (the order of caddisflies) mentioned were spelled correctly.

² Fritz Müller had sent several larvae cases to McLachlan, who exhibited them at a meeting of the Entomological Society of London on 4 December 1878 (see *Transactions of the Entomological Society of London (Proceedings)* (1878): lv–lvi).

³ McLachlan exhibited the cases and specimens of sixteen species of Brazilian caddisflies sent to him by Müller at a meeting of the Entomological Society of London on 2 April 1879; excerpts from Müller’s letter to McLachlan with notes on his observations and some comments by McLachlan were published in *Transactions of the Entomological Society of London (Proceedings)* (1879): vi–viii.

⁴ See letter from Fritz Müller, 21 January 1879, for Müller’s explanation of the function of fringes in larval caddisflies. The eighth part of McLachlan’s *Monographic revision and synopsis of the Trichoptera of the European fauna* (McLachlan 1874–80) was published in May 1879.

⁵ Müller had published a paper ‘Sobre as casas construidas pelas larvas de insectos Trichopteros da provincia de Santa Catharina’ (On the cases constructed by the larvae of Trichoptera insects of the province of Santa Catharina; F. Müller 1878b); his joint paper ‘Phryganiden-Studien’ (Studies on

Phryganeidae; F. Müller and Müller 1879) and his paper 'Notes on the cases of some south Brazilian Trichoptera' (F. Müller 1879b) were published in 1879.

- ⁶ In F. Müller and Müller 1879, p. 388, in a section that compared the wing neuration of Trichoptera to that of Lepidoptera, Müller had quoted from McLachlan 1870, p. 100, in which McLachlan objected strongly to the wide separation of these groups suggested by the American entomologist Alpheus Spring Packard Jr, who placed them within the Linnaean order Neuroptera. Müller noted that both the number and the branching pattern of the veins in the wings of Trichoptera and Lepidoptera matched precisely (F. Müller and Müller 1879, pp. 388–9).

To W. T. Thiselton-Dyer 13 March 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

March 13th 79

My dear Dyer

I thank you cordially for all your kindness about Frank. Your letter has gratified me much.¹ Frank will write this afternoon & explain his reasons for acting as he intends to do.²

Yours very sincerely | Ch. Darwin

I am glad to get the seeds of the Mimosa. Before very long I shall have to give for about the 100th time trouble about some new plants & seeds for experiments.³

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: f. 165)

¹ The letter has not been found; Thiselton-Dyer had evidently written to either CD or Francis Darwin urging that Francis allow his name to be put forward for the post of examiner in the natural sciences tripos at the University of Cambridge. See also letter from J. D. Hooker, 13 March 1879.

² In a letter to Thiselton-Dyer dated 13 March 1879 (Directors Correspondence English Letters COO–DEW 1866–1900 volume 83 f.230–231, Archives, Royal Botanic Gardens, Kew), Francis explained that he had received a telegraph while still in Algiers asking whether he would accept the place, but because it was unclear what the place was, he had telegraphed Cambridge University refusing it. After thanking Thiselton-Dyer for his offer to help, Francis refused on the grounds that he was not sufficiently qualified. Thiselton-Dyer's offer evidently had been made in the now missing letter (see n. 1, above).

³ *Mimosa* is the genus of sensitive plants; most of CD's experiments for *Movement in plants* were performed on *M. pudica* (shame plant). CD had requested and received many seeds and plants from Thiselton-Dyer since beginning his research on plant movement (see *Correspondence* vols. 25 and 26).

From W. S. Dallas 14 March 1879

Geological Society, | Burlington House, W.

14 March 1879

My dear Sir

I shall be very glad to translate for you the biography of Erasmus Darwin if my time will suit you, as I cannot well touch it for a few days.—¹ I think, however, I can finish it so as to get the whole in type by the end of the present month, & if this will be early enough I will with pleasure undertake the work.—

As regards remuneration, I cannot, unfortunately, offer to do the work for nothing, as I should have liked to do, for I find it necessary to turn as much as possible of my time to account.— Taking the columns as equal to pages of an ordinary

book, I think £10 will pay well for the translation, especially as I see that there are several passages quoted from Erasmus Darwin's works & these will only have to be copied.—² Please let me know your decision in the matter, so that, if necessary, I may get to work next week, when I shall be pretty free after Monday.— I don't know whether it is in accordance with strict etiquette to thank you for so kindly signing my certificate for the Royal Society,— if it is proper to offer such thanks will you be so good as to accept the best that I have to offer for a kindness to which, I fear, I have but little claim,— if I am violating the proprieties please regard the last part of this letter as *non avenue*³

With kind regards | Believe me | Yours very truly | W. S. Dallas

C. Darwin Esq

DAR 99: 99–100

¹ See letter to W. S. Dallas, 12 March [1879] and n. 2.

² Throughout Krause 1879a, Ernst Krause quoted passages from Erasmus Darwin's *The botanic garden* (E. Darwin 1789–91; Krause refers to the two parts of the work separately), *Zoonomia* (E. Darwin 1794–6), and *The temple of nature* (E. Darwin 1803).

³ *Non avenue*: void (French). Dallas was proposed for fellowship of the Royal Society of London on 27 February 1879 and his name put on the list of candidates on 6 March; he was on the list on 4 March 1880, 3 March 1881, and 2 March 1882, but never on the list of candidates recommended for election (Journal Books of the Royal Society [JBO/50 and JBO/51]).

To Ernst Krause 14 March 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Mar 14/79

My dear Sir,

I thank you for your most kind agreement to my request. I am delighted to hear that you intend your sketch a little, & I feel sure that it will be our best plan to wait until this is done.¹ Before hearing from you we had decided that it would be useless to apply to the Fortnightly.² I hope that you will be so good as to send us the sheets as they are printed off, so that the translation may be making progress. Unfortunately I have no copy of Miss Seward's life, I have sent for one from a public library but I could not lend this copy.³ I will order a search for a second-hand copy, & if I succeed will send it you. But please to observe that I distinctly remember my father saying that this life was not only grossly incorrect, but maliciously false. When it appeared he threatened to publish some letters injurious to her Miss Seward's fame if she did not publicly retract some of her statements, & I believe that she did so.⁴ A well known physician in London Dr Richardson, several years ago told me that he had collected materials for the life of Dr Darwin, but afterwards gave up the intention. I will write to him and ask whether he has any materials which he could put at your disposal.⁵ I am myself wholly & shamefully ignorant of my grandfathers life & I can be of no assistance to you in correcting your M.S; moreover I am a very poor German scholar, often make mistakes & read the language slowly. My brother has

a good picture of Eras Darwin & we thought of getting autotype (photographic) copies made of it for the translation. I will get one of my sons who understands photography to see about it, & I will send you a specimen.⁶ My copy of the Bot Garden which seems to be the first edit was published in 1791.⁷

Believe me, my dear Sir | Yours faithfully | & obliged | Charles Darwin

LS(A)

The Huntington Library (HM 36176)

¹ See letter from Ernst Krause, 12 March 1879. CD had asked for permission to have a translation of Krause 1879a made. He accidentally omitted the words 'to enlarge'.

² CD and his brother Erasmus Alvey Darwin had earlier considered having a translation of Krause 1879a published in the *Fortnightly Review*, but Erasmus advised publishing the essay as a book (see letter to Ernst Krause, 9 March 1879, and letter from E. A. Darwin, 11 March [1879]).

³ In his letter of 12 March 1879, Krause had asked whether CD could lend him Anna Seward's biography of Erasmus Darwin (Seward 1804).

⁴ For more on Seward's retraction of her allegation that Erasmus Darwin's second son (also Erasmus Darwin) had committed suicide, see King-Hele 1999, pp. 326–7, and Barnard 2009, pp. 141–3. The younger Erasmus had drowned after falling or throwing himself into the river at the bottom of the garden of Breadsall Priory, his recently purchased home in Derby. CD's father was Robert Waring Darwin.

⁵ No earlier correspondence with Benjamin Ward Richardson on the subject of Erasmus Darwin has been found, but see the letter to B. W. Richardson, 14 March 1879.

⁶ E. A. Darwin's picture of Erasmus Darwin has not been identified; for more on the portraits of Erasmus Darwin, see Keynes 1994. An engraving made from a portrait of Erasmus Darwin by Joseph Wright was used for the frontispiece of the translation (*Erasmus Darwin*). Autotype, a kind of carbon printing process for the monochrome facsimile reproduction of images, was patented in 1868 by the Autotype Company of London (*OED*). Leonard Darwin was an instructor in photography at the School of Military Engineering, Chatham.

⁷ Krause had asked for the correct publication date of *The botanic garden; a poem in two parts* (E. Darwin 1789–91); the second part of the work (*The loves of the plants*) was published in 1789 and the first (*The economy of vegetation*) in 1791. For the complete publication history, see King-Hele 1999, p. 401. CD's annotated copy of E. Darwin 1789–91 is in the Darwin Library–CUL.

To B. W. Richardson 14 March 1879

Down, | *Beckenham, Kent.* | *Railway Station* | *Orpington. S.E.R.*

Mar 14. 79

My dear Sir,

Several years ago you told me that you had thought of writing a life of Eras Darwin.¹ An interesting sketch of his life by E. Krause had just appeared in 'Kosmos'; & the author tells me that he means to enlarge it a little & publish it separately.² He wants more materials, & if you have any which are useless to yourself, do you feel inclined to lend them to me for Krause's use?

I am more especially interested on this head, because my brother & I intend to have a translation published.³

Pray forgive me for troubling you & believe me | Yours faithfully | Charles Darwin

LS

Royal College of Physicians of London (ALS/D10)

¹ No letter from Richardson mentioning a plan to write a biography of Erasmus Darwin has been found.

² See letter from Ernst Krause, 12 March 1879; Krause's sketch of the life of Erasmus Darwin had appeared in *Kosmos* in February 1879 (Krause 1879a).

³ See letters from E. A. Darwin, 8 March [1879] and 13 March [1879].

From W. S. Dallas 15 March 1879

Geological Society, | Burlington House, W.
15 March 1879

My dear Sir

My letter of yesterday will be a sufficient answer to your inquiry whether I will translate M. Krause's biography of Erasmus Darwin,— I shall be very happy to do so, & in fact it will suit me better to have it later than at present.—¹ I sent the *Kosmos* by book post.—²

Believe me | Yours very truly | W. S. Dallas

C. Darwin Esq

DAR 99: 101

¹ See letter from W. S. Dallas, 14 March 1879. CD had evidently written to warn Dallas that the translation would be delayed by Ernst Krause's work on the original text; his letter has not been found. Krause's 'Erasmus Darwin' was published in *Kosmos* in February 1879 (Krause 1879a).

² CD had sent Dallas his copy of the issue of *Kosmos* including Krause 1879a.

To J. D. Hooker 16 March [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
March 16th

My dear Hooker

I thank you much for your most kind letter.² It has pleased me greatly; & Frank desires me to say how grateful he is for the interest which you have shown about him. Frank desired earnestly to accept the office, & we consulted long about him. The sole point which determined him was that he thought that he had not knowledge enough on morphology & systematic botany, especially on the enormous field of the lower forms, to justify him in pretending to judge on the merits of the answers given by any superior students. In this I could not but agree with him. After reading your & Dyers letters, I confess, however, to being somewhat staggered; but it is now too late as the office has been offered to some one else.³ Frank from the first hoped that the office might be hereafter offered again to him, & he thought then that he might accept it.⁴ Another point somewhat influenced me (though F. decided quite for himself) namely that he is a slow & almost too conscientious a worker, & I am very anxious that he sh^d do more original work; but this may have been a mistake on my part. I beg you to thank also Dyer very much for his long letter which has gratified both Frank & me much. I will not answer it separately, as I could only repeat what I have here said:

Farewell my dear & kind old Friends | yours | Charles Darwin

DAR 95: 481-2

- ¹ The year is established by the relationship between this letter and the letter from J. D. Hooker, 13 March 1879.
- ² See letter from J. D. Hooker, 13 March 1879.
- ³ See letter from J. D. Hooker, 13 March 1879 and nn. 1 and 4. The letter from William Turner Thiselton-Dyer to CD or Francis Darwin encouraging Francis to accept nomination as examiner in the natural sciences tripos at the University of Cambridge has not been found, but see the letter to W. T. Thiselton-Dyer, 13 March 1879. The person offered the office instead of Francis has not been identified; eight examiners were appointed, of whom four were new appointees, including Francis Maitland Balfour (*Cambridge University Reporter*, 25 March 1879, pp. 474–5; on Balfour's appointment, see the letter from J. D. Hooker, 13 March 1879, n. 1).
- ⁴ In a letter to Hooker of 17 March 1879 (DAR 95: 483–4), Francis wrote that, having received a letter on the subject from Michael Foster (praelector in physiology at Trinity College, Cambridge), he telegraphed his reply that he would accept; however, his name was not among the the examiners announced in the *Cambridge University Reporter*, 25 March 1879, pp. 474–5. Francis became an examiner in 1884 (*Cambridge University Reporter*, 4 December 1883, p. 249).

From Ernst Krause¹ 17 March 1879

Berlin N.O. Friedenstrasse 10. II.
den 17 Maerz 79.

Hochverehrter Herr!

Während ich eben im Begriffe war, die kleinen Zusätze abzuschliessen, welche theils eine bessere Gruppierung des Stoffes, theils einige Ergänzungen bezwecken, traf Ihr freundliches Schreiben vom 14^{ten} C. ein, welches mir eine grosse Befriedigung gewährt.² Ich hatte nämlich alsbald bei der Lecture des ausführlichen Auszuges aus dem Buche der Miss Seward, welchen die Edinburgh Review von 1804 heraus brachte, zu bemerken geglaubt, dass die Verfasserin unlautere Nebenzwecke verfolgt habe, und manche ihrer Geschichten auf Klatschereien beruhen müssten, so namentlich eine Anecdote über einen Rausch, die wenn überhaupt wahr, nicht der Erwähnung werth war, und Aehnliches.³ Es scheint mir daher um so weniger nothwendig, dieses Buch zu lesen, als es bei diesem Essay viel weniger darauf ankommt, Einzelheiten ueber Erlebnisse aufzufrischen, als vielmehr einen Beitrag zur Geschichte der Naturphilosophie und des Evolutions-Gedankens zu geben. Deshalb erlaube ich mir nun Ihnen den nur wenig erweiterten Aufsatz einzusenden, insbesondre auch, weil ich befürchte, dass eine noch weitere Text-Vermehrung die Aufnahme in eine Revue erschweren würde. Sollte mir später, sei es durch Ihre gütige Vermittlung, sei es sonstwoher weiteres zuverlässiges Material zu Händen kommen, so liesse sich jederzeit auf eine englische und deutsche Buchausgabe zurückkommen und dieselbe könnte durch längeres Sammeln nur gewinnen. Ich dachte darin als weitem Hintergrund die Anschauungen Linné's, Buffon's u. der französischen Encyclopädisten, sowie ferner diejenigen von Leibnitz, Haller, Göthe, also der ganzen Epoche vor Lamarck wiederzugeben.⁴ Aber die Verwirklichung dieses Planes wird noch mancherlei Vorstudien erfordern.

Nachdem ich von Ihnen nun eine Bestätigung meines Eindruckes von der Seward'schen Arbeit erhalten habe, scheint es mir nothwendig, dieselbe in einer Anmerkung zu discreditiren, und habe ich sogleich ein Paar diesbezügliche Worte

hinzugesetzt.⁵ Noch wirksamer würde es natürlich sein, wenn Sie diese Anmerkung selbst machen und unterzeichnen wollten. Doch überlasse ich diese, wie alle sonstigen Anordnungen völlig Ihrem Ermessen, ebenso, wie ich Sie herzlich bitte, die englische Uebersetzung, falls sie zu Stande kömmt, vor dem Druck noch einmal eingehend prüfen zu wollen. Den botanischen Garten besitzt die hiesige Königliche Bibliothek in einer Ausgabe, wobei der erste Theil (in zweiter Ausgabe) die Jahreszahl 1791 trägt, während der zweite Theil schon 1790 in zweiter Ausgabe erschienen ist. Es wäre nun möglich, dass der zweite Theil der zuerst gedichtete wäre, von welchem einzelne Nachrichten angeben, dass er schon 1781 vorgelegen habe.⁶ Mancherlei innere Gründe scheinen mir dafür zu sprechen, dass, wie ich auch im Texte erwähnt habe, “the loves of plants” nicht im unmittelbaren Anschlusse an den ersten Theil verfasst seien, vielleicht erklärt sich das so, dass sie gleichsam als eine poetische Bearbeitung von Linné’s *nuptiae plantarum*⁷ früher vollendet wurden, als der später hinzugefügte erste Theil. Da das aber nur eine Vermuthung und ohne weitere Wichtigkeit ist, so habe ich davon nichts erwähnt, und nur die unsichere Jahreszahl 1781 weggestrichen.

Indem ich Sie, hochverehrter Herr, noch bitte, mir falls die Uebersetzung zu Stande kommt, einen Abdruck sichern zu wollen, zeichne ich | Mit den herzlichsten Wünschen für Ihr Befinden | Ihr | dankbar ergebener | Ernst Krause

DAR 92: B17–18

¹ For a translation of this letter, see Appendix I.

² See letter to Ernst Krause, 14 March 1879.

³ An essay review of Anna Seward’s *Memoirs of the life of Dr. Darwin* (Seward 1804) was published in the *Edinburgh Review* 4 (1804): 230–41. No anecdote concerning a bout of drunkenness is recorded in this review, but Seward did write of Erasmus Darwin’s drunkenness on a boating trip to Nottingham, during which he allegedly stepped overboard, swam to shore, and walked into the town, where he addressed working men on the benefits of fresh air and sobriety (Seward 1804, pp. 64–8).

⁴ Carl von Linné (Linnaeus), Georges Louis Leclerc (comte de Buffon), Gottfried Wilhelm Leibniz, Albrecht von Haller, Johann Wolfgang von Goethe, Jean Baptiste de Lamarck. The French encyclopaedists were the authors who contributed to the *Encyclopédie* edited by Denis Diderot and Jean le Rond D’Alembert (Diderot and Alembert eds. 1751–65).

⁵ Krause did not include a footnote to discredit Seward in the published version of *Erasmus Darwin*.

⁶ The earliest publication date for the second part (*The loves of the plants*) of E. Darwin 1789–91 was 1789. For the complete publication history, see King-Hele 1999, p. 401.

⁷ *Nuptiae plantarum*: marriages of plants (Latin); the term was used by Linnaeus in *Systema Naturae* in his key to the sexual system of plants (Linnaeus 1758–9, 2: 837).

From W. B. Tegetmeier 17 March 1879

The Field. | 346, Strand, | London, W.C.
March 17 1879.

My dear Sir

I have not troubled you with a letter for a long time and now I am afraid you may think that I only write because I want to ask a favour.— I am about reprinting Blyth’s useful monograph on the Cranes, which is in some demand, and our numbers containing it are out of print but to save myself from loss I want 100 subscribers at 5^s/— per copy— I want the honour of your name on the list.¹

I am reminded of you every morning, for as I breakfast a splendid remarque copy of Rajons etching looks down benignantly upon me.— I was so much impressed with it that I subscribed for 4 copies and I think I shall have no reason to blame my judgment.² I was much pleased to hear of the Darwinian number of *Kōsmos*³

Pray excuse this garrulous letter but my recollection of the time when it was my priviledge to help you, however slightly, is so pleasant that I cannot help babbling on⁴

Believe me | Very truly & sincerely yours | W B Tegetmeier

C Darwin Esq

DAR 178: 84

*CD note:*⁵

I thank you for your very friendly letter. & can assure you that I often look back with pleasure to the old days when I attended to pigeons & fowls & when you assisted me with such undeserved kindness.— As it may help you to get up your number to 100, please to put my name down for 2 copies, but you [*after del 'on'*] need send only one—I heartily wish you success in all your undertakings & remain | yours very faithfully | C. D

- ¹ The last-known correspondence between CD and Tegetmeier was in August 1875 (see *Correspondence* vol. 23, letter to W. B. Tegetmeier, 15 August [1875]). Edward Blyth's article on the known species of cranes was published in the *Field*, 28 June, 5 July, and 19 July 1873 ([Blyth] 1873). Tegetmeier was the natural history editor for the periodical.
- ² Paul-Adolphe Rajon had made an etching after an 1875 portrait of CD by Walter William Oules. CD had written that in the picture he looked like 'a very venerable, acute melancholy old dog' (see *Correspondence* vol. 23, letter to J. D. Hooker, 30 March [1875]). See plate on p. 119.
- ³ In February 1879, to celebrate CD's 70th birthday, *Kōsmos* published a special issue devoted to him (see letter from Karl Alberts, 9 February 1879).
- ⁴ Tegetmeier had assisted CD with his research for *Variation and Descent*, providing pigeons, undertaking experiments, and publishing requests from CD to readers of the *Field* for information on various topics, such as the proportion of sexes in different animals (see *Correspondence* vols. 6–17).
- ⁵ CD's pencil note is a draft of his reply (letter to W. B. Tegetmeier, 20 March 1879).

To Hendrik Weyenbergh 18 March 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Dear Sir

I beg leave to acknowledge the receipt of the very handsome Diploma of your Society, & to repeat my thanks for the honour conferred on me.¹ According to your request I enclose my photograph, & I have directed my publisher to send a copy of my *Origin of Species*² to the Society as I suppose that this is the best of my works.

I have the honour to remain, | Dear Sir | Yours faithfully | Charles Darwin

Mar 18. | 1879 | To the President | D^r H. Weyenbergh

LS

Academia Nacional de Ciencias, Argentina

- ¹ For the diploma from the Academia Nacional de Ciencias of Argentina, dated 21 September 1878, see *Correspondence* vol. 26, Appendix III.
- ² CD probably sent *Origin* 6th ed.

To Ernst Krause 19 March 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

Mar 19. 79

My dear Sir,

I send by this post a duplicate copy of a lecture published in 1861, which I remembered after writing to you. I have not yet succeeded in getting a copy of Miss Seward for you.¹ I have now reread it, & it is a wretched production. I have also read the correspondence which passed between my father, other members of the family & Miss Seward, they are unanimous that it is full of inaccuracies even to his age when he died. Unfortunately they do not give particulars with the exception about one malignant account of my grandfather's behaviour on hearing of his son's death; & this they prove by witnesses to be absolutely false.²

Miss Seward published a retraction, but this seems to have been universally forgotten.³ In order to have an opportunity of contradicting Miss Seward, I intend to publish a short preface to the translation of your essay; & in this I will give a few particulars about the family, together with a few remarks by my father with respect to Eras Darwin, & possibly two or three letters.⁴ I do not think you could work up these scanty materials in your account, because I must give them on my own authority. I doubt whether my preface will be worth translating into German, but when written I would of course send it to you, if you so wish, either to read or to have translated.⁵ I have written to two gentlemen for the chance of getting more materials, and intend to consult one or two likely books.⁶ For these reasons & from being very busy at present, I have thought of not writing the preface until I leave home towards the end of April.⁷ My son is going to take steps as soon as he can about the photograph of the picture⁸

Dear Sir | Yours faithfully | Ch. Darwin

P.S | There is one little error in your essay. My grandfather's house was *within* Lichfield & it was a sort of villa & botanic garden which were at the distance of about one or two miles out of the town.⁹

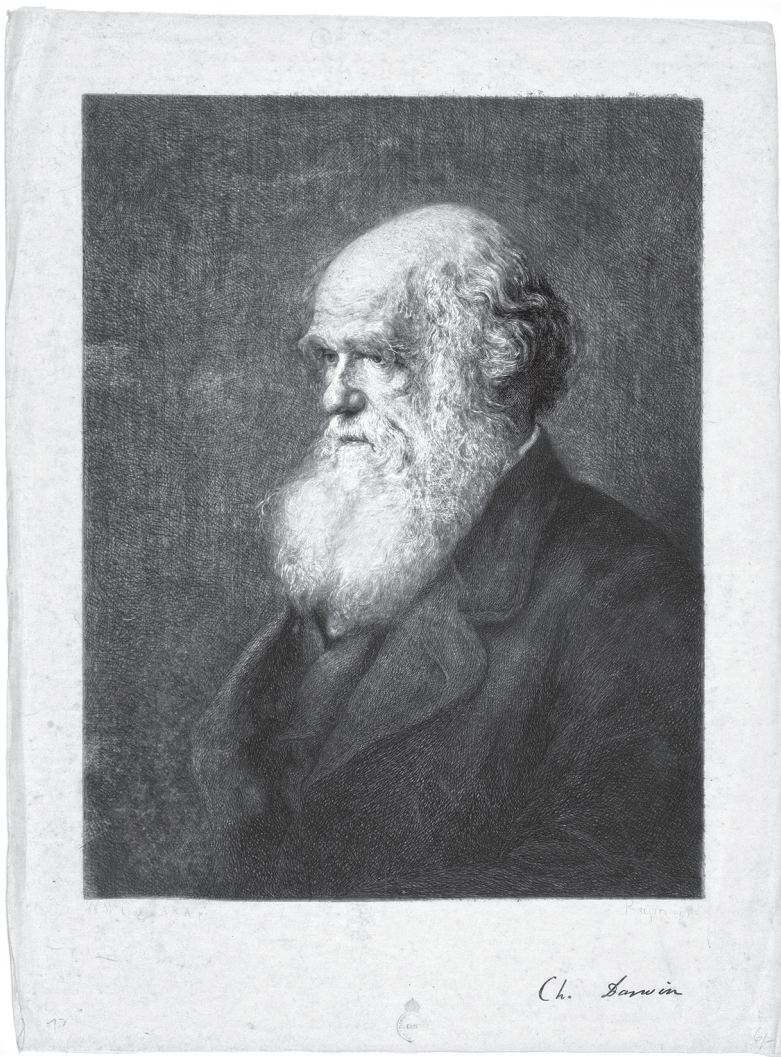
The above was written before your kind letter of 17th arrived. The story about the drunkenness is quite incorrect.¹⁰

The Botanic Garden was written in due order, but he thought that the second part would be more popular than the first, & therefore published the second first.¹¹

I will look to M.S of translation before it goes to press; & I am glad that you are not in a hurry.

From what you say I have thought that you would allow me to strike out the note about Miss Seward.¹² You are the best & sole judge, but I should think that if you discuss the writings of all the predecessors of Lamarck, the Essay would cease to be a life of Dr Darwin.¹³

Would it not be better to reserve this discussion for a separate essay? Small books for some reason never sell well in England, but should your Biography pay more than the expenses of publication, which is very unlikely, the balance will of course be handed over to you.¹⁴



Charles Darwin (1875).
Etching by Paul Adolphe Rajon after Walter William Oules.
NPG D34689.
© National Portrait Gallery, London.

I must apologise for the unreasonable length of this letter, but I must trouble you on one other point, for I do not quite understand whether the sheets with the footnotes received yesterday are in their final state & ready for the translator.¹⁵ Will you kindly inform me on this head, & then I hope to cause you no more trouble.

My dear Sir | Yours sincerely | Charles Darwin

LS(A)

The Huntington Library (HM 36177)

CD ANNOTATIONS

4.2 a sort of] *above del 'his' in CD's hand*

4.3 one or two] *over 'a' in CD's hand*

4.3 miles] *altered from 'mile' in CD's hand*

¹ CD sent John Dowson's lecture to the Literary and Philosophical Society of Whitby *Erasmus Darwin: philosopher, poet, and physician* (Dowson 1861); no copy has been found in the Darwin Archive–CUL. CD was trying to find a copy of Anna Seward's biography of Erasmus Darwin (Seward 1804) for Krause (see letter to Ernst Krause, 14 March 1879).

² See letter to Ernst Krause, 14 March 1879 and n. 4.

³ Seward's retraction appeared in a footnote to the essay review of her book in the *Edinburgh Review* ([T. Thomson] 1804, pp. 236–7 n.).

⁴ In his introductory sketch of the life of Erasmus Darwin, CD quoted from Seward's account of his grandfather's behaviour and from that by Emma Georgiana Elizabeth Darwin, who was with Erasmus when he heard the news of his son's death (*Erasmus Darwin*, pp. 70–4). CD's published introduction ran to 127 pages, while Krause's expanded essay on the scientific works of Erasmus Darwin was 87 pages long.

⁵ A German translation of *Erasmus Darwin* appeared in 1880, titled *Erasmus Darwin und seine Stellung in der Geschichte der Descendenz-Theorie von Ernst Krause. Mit seinem Lebens- und Charakterbilde von Charles Darwin* (Krause 1880). Krause expanded his part of the work, adding a section on precursors to Erasmus Darwin (*ibid.*, pp. 78–124).

⁶ See letter to B. W. Richardson, 14 March 1879, and letter to Francis Galton, 22 March 1879. No published references other than Seward 1804 and Dowson 1861 are mentioned in the preface to *Erasmus Darwin*.

⁷ In the event, CD was away from home from 6 to 26 May 1879 visiting friends and family (CD's 'Journal' (Appendix II)).

⁸ See letter to Ernst Krause, 14 March 1879 and n. 6. The son was probably Leonard Darwin; the picture was a portrait of Erasmus Darwin by Joseph Wright.

⁹ CD evidently refers to a now missing revision of Krause 1879a (see n. 15, below); in the published version, Krause had only noted that Erasmus Darwin settled in Lichfield (*ibid.*, p. 398).

¹⁰ See letter from Ernst Krause, 17 March 1879 and n. 3.

¹¹ See letter from Ernst Krause, 17 March 1879 and n. 6; the reference is to E. Darwin 1789–91.

¹² Krause had added a footnote to his revised version of Krause 1879a discrediting Seward 1804 (see letter from Ernst Krause, 17 March 1879).

¹³ Krause suggested adding an account of the views of several predecessors of Jean Baptiste de Lamarck (see letter from Ernst Krause, 17 March 1879 and n. 4).

¹⁴ Krause added a section on Erasmus Darwin's precursors to the German translation of *Erasmus Darwin* (Krause 1880; see n. 5, above). CD's prediction about sales was accurate; in his 'Recollections', p. 419, he stated that by 1881 only 800 or 900 copies of the book had been sold.

¹⁵ Krause had evidently sent a revised version of Krause 1879a; CD had asked for sheets to be sent as they became available (see letter to Ernst Krause, 14 March 1879).

To *Nature* [before 20 March 1879]¹

FRITZ MÜLLER ON A FROG HAVING EGGS ON ITS BACK—ON THE ABORTION OF THE HAIRS ON THE LEGS OF CERTAIN CADDIS-FLIES, &C.

SEVERAL of the facts given in the following letter from Fritz Müller, especially

those in the third paragraph, appear to me very interesting.² Many persons have felt much perplexed about the steps or means by which structures rendered useless under changed conditions of life, at first become reduced, and finally quite disappear. A more striking case of such disappearance has never been published than that here given by Fritz Müller. Several years ago some valuable letters on this subject by Mr. Romanes (together with one by me) were inserted in the columns of *NATURE*.³ Since then various facts have often led me to speculate on the existence of some inherent tendency in every part of every organism to be gradually reduced and to disappear, unless in some manner prevented. But beyond this vague speculation I could never clearly see my way. As far, therefore, as I can judge, the explanation suggested by Fritz Müller well deserves the careful consideration of all those who are interested on such points, and may prove of widely extended application. Hardly anyone who has considered such cases as those of the stripes which occasionally appear on the legs and even bodies of horses and apes—or of the development of certain muscles in man which are not proper to him, but are common in the *Quadrumana*—or again, of some peloric flowers—will doubt that characters lost for an almost endless number of generations, may suddenly reappear. In the case of natural species we are so much accustomed to apply the term reversion or atavism to the reappearance of a lost part that we are liable to forget that its disappearance may be equally due to this same cause.

As every modification, whether or not due to reversion, may be considered as a case of variation, the important law or conclusion arrived at by the mathematician Delbœuf, may be here applied;⁴ and I will quote Mr. Murphy's condensed statement ("Habit and Intelligence," 1879, p. 241) with respect to it: "If in any species a number of individuals, bearing a ratio not infinitely small to the entire number of births, are in every generation born with any particular variation which is neither beneficial nor injurious to its possessors, and if the effect of the variation is not counteracted by reversion, the proportion of the new variety to the original form will constantly increase until it approaches indefinitely near to equality."⁵ Now in the case advanced by Fritz Müller the cause of the variation is supposed to be atavism to a very remote progenitor, and this may have wholly prevailed over any tendency to atavism to more recent progenitors; and of such prevalence analogous instances could be given.

CHARLES DARWIN

Nature, 20 March 1879, pp. 462–3

¹ The date is established by the date of publication of this letter in *Nature*. See also letter to J. N. Lockyer, 4 and 6 March [1879].

² See letter from Fritz Müller, 21 January 1879.

³ Two letters from George John Romanes on the topic of use and disuse of organs appeared in *Nature*, 9 April 1874, pp. 440–1, and 2 July 1874, p. 164 (Romanes 1874a and 1874b). CD had written to *Nature* discussing the rudimentary males of some barnacles and the diminution of unused organs (*Correspondence* vol. 21, letter to *Nature*, 20 September [1873]).

⁴ Joseph Delboeuf had applied a mathematical formula to show the relative instance of a variation in a population over time (Delboeuf 1877, p. 676).

⁵ Joseph John Murphy restated Delboeuf's conclusion in the second edition of *Habit and intelligence* (Murphy 1879, pp. 241–2).

To W. B. Tegetmeier 20 March 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Mar 20 /79

My dear Sir

I thank you for your very friendly letter, and can assure you that I often look back with pleasure to the old days when I attended to pigeons & fowls, & when you assisted me with such unwearied kindness.¹ As it may help you to get up the required number of 100, please to put my name down for two copies, but you need send me only one.²

I heartily wish you success in all your undertakings, & remain yours sincerely. | Charles Darwin

LS

Archives of the New York Botanical Garden (Charles Finney Cox collection)

¹ See letter from W. B. Tegetmeier, 17 March 1879 and n. 4.

² See letter from W. B. Tegetmeier, 17 March 1879 and n. 1. In the event, Tegetmeier greatly enlarged Edward Blyth's original text and the book was published as *The natural history of cranes* (Blyth 1881). CD's copy is in the Darwin Library–CUL.

To Francis Galton 22 March 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Mar 22./79

My dear Galton,

D^r Krause has published in Germany a little life of D^r Eras Darwin, chiefly in relation to his scientific views; & to do our grandfather's honour, my brother Eras & myself intend to have it published in English.¹ I intend to write a short preface to it, chiefly for the sake of contradicting the chief of Miss Seward's calumnies; & this I can do from having a letter from your aunts written at the time, & from my father's correspondence with Miss Seward. But I further intend to add a few facts & add a few remarks about our grandfather.² Can you aid me with any information or documents?

I have one nice & curious letter to Miss Howard which I will publish.³ Also many letters to Josiah Wedgwood and to the famous Reimarus, but I doubt whether any of these will be worth publishing.⁴ Do you know whether there are any letters in the possession of any members of the family which might be worth publishing; & would you take the trouble to assist me by getting the loan or copies of them?

Several years ago I read the memoirs of your aunt M^{rs} Schimmel-Penninck and as far as I can remember many of the stories about D^r Darwin seemed very improbable.⁵ Did you ever hear your mother speak of this book, and can you

authorise me to contradict any which are injurious to his good name. I am sure you will forgive me for troubling you on this head as we have a common interest in our grandfather's fame.

Yours very sincerely | Charles Darwin

LS

UCL Library Services, Special Collections (GALTON/1/1/9/5/7/25)

- ¹ Krause 1879a; see letter from E. A. Darwin, 13 March [1879], and letter to Ernst Krause, 14 March 1879.
- ² For examples of Anna Seward's negative portrayal of Erasmus Darwin, see Seward 1804, pp. 64–8 and 406. See also letter from Ernst Krause, 17 March 1879 and n. 3, and letter to Ernst Krause, 19 March 1879 and n. 4. CD's published introduction to *Erasmus Darwin* ran to 127 pages. Galton's aunts, Harriot Maling and Emma Georgiana Elizabeth Darwin, were Erasmus Darwin's daughters from his second marriage. CD's father, Robert Waring Darwin, had written to ask Seward to retract some of her statements (see *Erasmus Darwin*, p. 74).
- ³ The letter from Erasmus Darwin to Mary Howard, written shortly before their marriage, is published in *Erasmus Darwin*, pp. 21–4.
- ⁴ Letters exchanged by Erasmus and Josiah Wedgwood I, dated between 1765 and 1794, are in DAR 227.1 and DAR 227.3. Erasmus and Johann Albert Heinrich Reimarus met as students in Edinburgh in 1754; for more on their friendship, see King-Hele 1999, pp. 17–20. CD had made copies of six letters from Erasmus Darwin to Reimarus that he was sent in 1877 by Edward Henry Sieveking (the copies are in DAR 227.1: 12–13; see *Correspondence* vol. 25, letter to E. H. Sieveking, 11 December 1877).
- ⁵ In her autobiography (Hankin ed. 1858), Mary Anne Schimmelpenninck had insinuated, in recounting memories from her childhood, that Erasmus Darwin was a glutton and a non-believer, who scoffed at conscience and morality (*ibid.*, 1: 152–4, 178–80, and 237–48).

To Wilhelm Pfeffer 23 March 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Mar 23. 1879

Dear Sir,

I hope that you will excuse me for taking the liberty to trouble you with a question. I wish to make a list of so called sleeping plants, and I should consequently be very much obliged if you could inform me at about what angle either above or beneath the horizon the leaves of *Siegesbeckia flexuosa*, *Wigandia rosea* and *Malva sp* (p 29) stand during the night. These plants are mentioned by you in your *Periodische Bewegungen* (the latter at p 29) but you do not specify the position occupied by their leaves at night.¹ I could not procure seeds of *S. flexuosa*, nor can I discover any such name;² but I sowed seeds of *S. orientalis*³ and its leaves did not sleep, but this may have been owing to the plants not having been healthy, & I will sow more. If you have by chance observed, since the publication of your valuable work, other plants the leaves of which assume a vertical or nearly vertical position at night, I should be grateful for the information. In case you are so kind as to answer this letter I should be much obliged if you would write in Italian character as I do not read the German handwriting⁴

I remain with much respect | dear Sir, | Yours faithfully | Charles Darwin.

LS

Tenri Central Library, Tenri University, Nara

- ¹ *Siegesbeckia flexuosa* is an unknown combination ('Siegesbeckia' is a common misspelling of 'Sigesbeckia', the genus of St Paul's-wort); *Wigandia rosea* is an unknown combination, but CD probably meant *W. urens* (Caracus wigandia). *Malva* is the genus of mallows. Pfeffer had mentioned leaf movements in *Siegesbeckia flexuosa*, *Wigandia urens*, and *Malva* sp. in *Die periodische Bewegungen der Blattorgane* (The periodic movements of foliage organs; Pfeffer 1875, p. 29).
- ² CD had tried unsuccessfully to acquire seeds or plants of *Siegesbeckia flexuosa* and *Wigandia urens* from the Royal Botanic Gardens, Kew (see *Correspondence* vol. 26, letter to W. T. Thiselton-Dyer, 24 October [1878] and n. 7).
- ³ *Siegesbeckia orientalis* is common St Paul's-wort.
- ⁴ Some of CD's German correspondents used *Kurrentschrift*, a form of cursive writing that is the written counterpart of black-letter typefaces such as Fraktur. Most educated Germans at this time would be able to write in Roman cursive as well as *Kurrentschrift*, as the occasion demanded (e.g. species names would be written in Roman cursive).

To C. M. C. Darwin 24 March 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Mar 24/1879

Dear M^{rs} Darwin,

I am going to beg a little favour of you. A German has published a short life of D^r Erasmus Darwin, chiefly in relation to his scientific work.¹ My brother & I mean to have a translation of it published, and I intend to write a short preface with a few words about the family.² We shall give a photograph from a picture of him by Wright; and I have thought that it would ornament the little book if we could give a photograph or woodcut of Elston or Elston Hall (for I do not know which it ought to be called) as his birth place.³ Now could you give or lend me a photograph of the house, with permission to have it reproduced? If so, I should be greatly obliged. I fear that is not probable that M^r Darwin⁴ or yourself possess any documents about D^r Darwin or letters from him; for if you have any & would not object to my using them they might be of much service. I possess a good many of his letters, but hardly more than one or two are worth publishing, so that I am not hopeful on this head.

I beg leave to remain | Dear M^{rs} Darwin | Yours sincerely | Charles Darwin

LS(A)

The late Mrs Vivien Kindersley (private collection)

¹ Ernst Krause had published a biography of CD's grandfather Erasmus Darwin (Krause 1879a).

² CD's brother was Erasmus Alvey Darwin. See letters from E. A. Darwin, 8 March [1879] and 11 March [1879].

³ CD planned to use a photograph of a portrait by Joseph Wright of Erasmus Darwin as the frontispiece to *Erasmus Darwin* (see letter to Ernst Krause, 19 March 1879 and n. 8). Elston Hall, Nottinghamshire, was the seat of the senior branch of the Darwin family and the birthplace of Erasmus Darwin.

⁴ Francis Rhodes Darwin.

From Ernst Krause¹ 24 March 1879

Berlin N.O. Friedenstrasse 10. II.

den 24.3.79.

Hochverehrter Herr!

Soeben habe ich Ihren freundlichen Brief vom 19 c. und die Lebensschilderung von Dr. John Dowson erhalten und sage Ihnen für Beides meinen herzlichsten Dank.²

Diese letzere Schrift enthält so Manches, was mir verwerthbar erscheint, namentlich was die Beurtheilung des Dr. Darwin als Arzt und medizinischen Autor betrifft. Um ein einigermaßen abgerundetes Lebensbild zu geben, erscheint es mir daher angemessen, dass ich diese Angaben meiner Skizze noch einfüge und ebenso Einiges über die literarischen Verhältnisse zu Lichfield. Wenn Sie mir noch 1–2 Wochen Aufschub gestatten wollten, so würde ich Ihnen eine auf Grund dieses Materials erweiterte Lebensskizze senden, welche durch Ihre gütige Controlle und Einleitung zu einem authentischen Berichte werden würde. Derselbe erscheint mir mehr u. mehr wünschenswerth, denn einerseits mischen die älteren Biographien allzusehr Wahrheit u. Dichtung, andererseits verrathen sie einen Mangel an Hingebung, vor Allem aber fehlt demselben die Erkenntniss dessen, was in den Schriften des Dr. Erasmus Darwin wirklich divinatorisch erscheint. Ich bin inzwischen ebenfalls zu der von Ihnen ausgesprochenen Ansicht gelangt, dass es zweckmässiger ist, diese Biographie für sich zu geben, und den andern Vorgängern Lamarcks eine besondere Studie zu widmen.³ Die kleine Arbeit macht mir so viele Freude, und Ihre Antheilnahme an derselben belohnt mich so reichlich, dass ich durchaus keinen andern Vortheil von derselben erwarte, als höchstens Ihre freundliche Erlaubniss, nachher auch eine deutsche Ausgabe mit Ihrer ergänzenden und autorisirenden Einleitung schmücken zu dürfen.⁴

Mit dem herzlichsten Wunsche, dass diese Zeilen Sie im besten Wohlsein antreffen mögen, hochverehrter Herr, | Ihr | aufrichtig ergebener | Ernst Krause

DAR 92: B19–20

¹ For a translation of this letter, see Appendix I.

² See letter to Ernst Krause, 19 March 1879 and n. 1. CD had sent a copy of Dowson 1861.

³ Krause had considered adding a section to his essay on Erasmus Darwin (Krause 1879a) that discussed views of naturalists prior to Jean Baptiste de Lamarck; CD thought such a discussion inadvisable (see letter from Ernst Krause, 17 March 1879 and n. 4, and letter to Ernst Krause, 19 March 1879).

⁴ A German translation of *Erasmus Darwin* appeared in 1880 (Krause 1880; see letter to Ernst Krause, 19 March 1879 and n. 5).

To W. T. Thiselton-Dyer 24 March 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Mar 24th/79

Dear Dyer,

I am going to give you a frightful amount of trouble. I have made many observations on the Cassia sent by Post at same time & much want its name. It grows on sea shores in S^t Catherina Brazil; I suppose it is an annual for on a former occasion several seedlings flowered when only a little larger than that now sent. If it should prove a new species could you get any body to name it, as I have to refer to it so often.¹

Secondly I received several years ago from Kew a Sida, and as far as I can read the name on the label it is *S. corylifolia*.² Is this the name of the enclosed branch? At the same time I received a plant under the name of *Sida retusa* (since dead) but I can find no such name in Steudel: did you ever have a *Sida retusa*?³

Can you tell me the native country of *Pharbitis nil*.⁴

There are several plants and seeds which I want for experimental purposes; but on several former occasions, when I have asked for such things, you have taken far too much trouble in endeavouring to get them. *Pray* do not do so on this occasion, but if you happen to have them at Kew I should be grateful for the loan of the plants & for any of the seeds in the accompanying list.

I well know it must be a chance whether you can aid me.—

Ever yours sincerely | Ch. Darwin

Plants

<i>Passiflora punctata</i>	}	These I had several years ago from Kew ⁵
<i>Clematis viticella</i> var <i>venosa</i>		
<i>Lonicera brachypoda</i>		
<i>Phyllanthus niruri</i>		
<i>Anoda Wrightii</i>		
<i>Gossypium maritimum</i>		
—“— <i>Brasiliense</i> ⁶		

Seeds

Ipomœa jocunda
 Marvel of Peru or any *Mirabilis*
Pharbitis nil
 Nankeen cotton (I had formerly seeds from Kew)⁷
Medicago maculata
Trifolium any species **except**,—
T. subterraneum, strictum, resupinatum panicum, rubens, repens, pratense, & incarnatum,
 for I have observed all these.⁸

LS(A)

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: ff. 166–8)

¹ CD had received seeds of a species of the leguminous genus *Cassia* from Fritz Müller (see *Correspondence* vol. 25, letter to Fritz Müller, 13 November 1877).

² *Sida corylifolia* is a synonym of *S. subcordata*, a Malaysian species of *Sida*, the genus of fanpetals. Thiselton-Dyer's reply has not been found, but in an undated note in DAR 209.14: 124 CD wrote, 'Sida called by me corylifolia is *rhombifolia*'; CD's notes on sleep in this species, under the name *Sida corylifolia*, dated from June 1878 to May 1879, are in DAR 209.14: 114–25. *Sida rhombifolia* is arrowleaf sida.

³ The Linnean name *Sida retusa* was synonymised by Joseph Dalton Hooker as *S. rhombifolia* var. *retusa* (Hooker 1872–97, 1: 323–4). Ernst Gottlieb Steudel did refer to *Sida retusa* in his *Nomenclator botanicus*; see Steudel 1841, p. 579. CD's copy of Steudel 1841 is in the Darwin Library–CUL.

⁴ *Pharbitis nil*, a synonym of *Ipomoea nil* (white-edge morning-glory or Japanese morning-glory), is a pantropical species that originated in Central or South America but was naturalised in China and Japan by the tenth century (Austin *et al.* 2001).

⁵ *Passiflora punctata* was one of the species of passionflower that CD had observed for 'Climbing plants' (see *ibid.*, pp. 90–1). He had also observed *Clematis viticella* (Italian leather flower; see *ibid.*, pp. 30–2) and *Lonicera brachypoda* (a synonym of *L. japonica*, Japanese honeysuckle; see *ibid.*, pp. 9, 19, 23).

⁶ *Phyllanthus niruri* is gale of the wind; *Anoda wrightii* is a synonym of *A. lanceolata* (lanceleaf anoda); *Gossypium maritimum* and *G. brasiliense* are both synonyms of *G. barbadense* (creole cotton).

- ⁷ *Ipomoea jucunda* is a species of morning-glory native to Sri Lanka. Marvel of Peru is a common name for *Mirabilis jalapa*; *Mirabilis* is the genus of four-o'clocks. Nankeen cotton was the common name given to *Gossypium nanking* (a synonym of *G. arboreum*, tree cotton), a naturally yellow-to-brownish-coloured cotton. No record of CD's obtaining seeds of this cotton has been found, but records of experiments with seedlings (with alternative spelling 'Nankin'), dated between 1878 and 1879, are in DAR 209.4: 276–92, DAR 209.9: 15, and DAR 209.14: 5.
- ⁸ *Medicago maculata* is a synonym of *M. arabica* (spotted medick). *Trifolium subterraneum* is subterranean clover; *T. strictum* is upright clover; *T. pannonicum* ('panonicum' is a misspelling) is Hungarian clover; *T. rubens* is red trefoil; *T. repens* is white clover; *T. pratense* is red clover; *T. incarnatum* is crimson clover.

From L. A. Errera 25 March 1879

6^A, Rue Royale | Bruxelles
March 25 1879

Dear Sir

I hope you will excuse me for not answering your exceedingly kind letter earlier, especially as you honor me with a request for my photograph; but I had not one left.¹ I have just received the first copy of a new one, of which I respectfully beg your acceptance. Were it not too presuming, I would venture to ask for yours; this favor I hope you will grant.

Your very kind words are a great encouragement for my friend Gevaert and self, and we feel most proud to receive this consecration of yours on our first steps in Science.²

Yours gratefully | Leo Errera

DAR 163: 29

¹ See letter to L. A. Errera, 13 March 1879 and n. 4. The photograph of Errera has not been found.

² CD had praised Errera and Gevaert 1878; Gustave Gevaert was the paper's co-author (see letter to L. A. Errera, 13 March 1879).

From E. S. Galton 25 March 1879

5, Bertie Terrace | Leamington
March 25th 1879

A copy of what was written many years ago by me on one of the leaves, inside the cover of the book I have of M^{rs}. Schimmelpenninck's life¹

E. S. Galton

"As this book gives a false impression of many things, I intend to copy out a letter I wrote to D^r. Dowson on D^r. Erasmus Darwins life, as he quotes largely from M^{rs}. Schimmelpenninck— E. S. Galton

"(Grand-daughter to D^r. Erasmus Darwin & niece of M^{rs}. Schimmelpenninck)²

"Feb^y 20th. 1871. to D^r. Dowson of Whitby"

"Sir, as recently as last week, having had sent to me a copy of your lecture at Whitby in 1861, on D^r. Erasmus Darwin, I must apologize for troubling you with this letter.³ As his Grand-daughter, I have been much interested in reading your lecture upon his life and works, and as I see you are preparing a fuller account, I cannot refrain from expressing our satisfaction that you do not agree entirely with

M^{rs}: Schimp^k— So far from D^r: Darwin being an atheist, I enclose a beautiful poem of his, against atheism.⁴

“M^{rs}: Schimp^k had the habit of coloring her facts, till they almost ceased to be true—

“Her eldest Brother, Samuel Tertius Galton (my Father) married D^r: Erasmus Darwin’s eldest daughter, by his second wife, M^{rs}: Pole—(who is my Mother)—⁵

“An unfortunate quarrel between M^{rs}: Schimp^k & her family, caused a complete cessation of intercourse with them since 1810—and her feelings towards them, which she shewed on various occasions, has evidently influenced her in her description of D^r: Darwin—such as his coarseness and gluttony &c—so *very* different from the character given him by her Father, Mother Brothers & Sisters, all of whom had so great a veneration for him—

“With respect to her account of the Upas tree Page 207—what may have been said as a joke, between very *intimate* friends, I know not, but as a child, I was often told of the Upas tree as a fact, & it has been proved to be true (see M^{rs}: Somerville’s *Molecular Science* Vol 1. Page 426)⁶ M^{rs}: Schimp^k was only 24. years of age when D^r: Darwin died. Her life was not published till after my Father’s death, as she outlived him for 12. years—⁷

“My Aunt, M^{rs}: Brewin (née Sophia Galton)⁸ who was only a few years younger than her sister Mary Anne Schimp^k made this remark to me, when I asked her opinion as to M^{rs}: Schimp^{ks} life ‘*They are facts distorted, & give a false impression*’

“I would rather see my Grandfather’s character drawn by his intimate friends— Watt, Boulton, Edgeworth & Wedgewood,⁹ who were his co-temporaries & knew him, & spoke of him as he was, than from Miss Seward¹⁰ & M^{rs}: Schimp^k, who for private reasons speak of him so differently—” “Miss Seward was well known to be much disappointed, at not being the second M^{rs}: Erasmus Darwin— I well remember my Grandmother M^{rs}: Darwin, a sensible & agreeable person

“At the time Miss Seward’s life of D^r: Darwin came out, the family were so angry with the false accounts put in, that my mother says, D^r: Robert Darwin (of Shrewsbury) obliged her to contradict many things she had written, in the Reviews of the day— Those reviews are forgotten, & her book remains—¹¹

“I well remember seeing the life of D^r: E Darwin at my Uncle’s (D^r: Robert Darwin of Shrewsbury) many passages were marked by himself, as “*false*” “*Utterly false*” &c—

“This book, I fear is lost, or mislaid, as I asked one of the family some years ago, if they had it when D^r: Richardson mentioned, he was collecting anecdotes of D^r: E Darwin—¹²

“My Mother (née Violetta Darwin) the last surviving child of D^r: E Darwin still lives* & has nearly attained her 88th. year. Her mind is perfectly clear, & would gladly answer any questions—

I remain yours very truly | Emma Sophia Galton

To D^r: Dowson”

*that was Feb^y 20th. 1871 | She died—Feb^y 12th. 1874— b. 23rd. April 1783— wed March 30th. 1807

PS. I ought to add, my Mother never saw M^{rs}. Schimmelpennings life— We purposely kept it from her—knowing how it would distress her—& she never expressed a wish to have it to read—tho' she read a great deal during the day—

DAR 210.14: 15

CD ANNOTATIONS

- 7.1 M^r? ... true— 7.2] *scored red crayon*
 9.1 An ... 1810— 9.2] *double scored red crayon*
 9.2 and ... Darwin 9.4] *scored red crayon*
 12.4 "Miss ... Darwin— 12.5] *scored red crayon*
 20.1 We ... to read 20.3] *scored red crayon*

¹ *Life of Mary Anne Schimmelpenninck* (Hankin ed. 1858).

² John Dowson had written a biography of Erasmus Darwin (Dowson 1861). Schimmelpenninck had depicted Erasmus Darwin as a glutton and a non-believer (see Hankin ed. 1858, 1: 152–4, 178–80, and 237–48).

³ Dowson may have also sent a copy of his lecture to CD in 1871; CD's copy, in the Darwin Library–CUL, has '6 Dec 1871' written on the title page.

⁴ The enclosure was Erasmus Darwin's poem 'The folly of atheism. An ode.' The poem was published in an anthology of British poetry in 1823 (Scott ed. 1823, pp. 299–301). CD quoted the first four lines of it in *Erasmus Darwin*, p. 44.

⁵ Violetta Darwin was a daughter of Erasmus Darwin and his second wife, Elizabeth; she married Samuel Tertius Galton in 1807 (*Darwin pedigree*).

⁶ See Hankin ed. 1858, 1: 247. Schimmelpenninck implied that Erasmus Darwin had knowingly included false accounts about the upas tree (*Antiaris toxicaria*) in his notes to *The loves of the plants* (E. Darwin 1789–91, 2: 89, 149–60). Mary Somerville had described the source of the poison of the upas tree as its milky juice, which contained strychnia (Somerville 1869, 1: 426).

⁷ Schimmelpenninck's memoirs (Hankin ed. 1858) were published two years after her death in 1856. Samuel Tertius Galton had died in 1844. Erasmus Darwin had died in 1802.

⁸ Sophia Brewin.

⁹ James Watt, Matthew Boulton, Richard Lovell Edgeworth, and Josiah Wedgwood I.

¹⁰ Anna Seward.

¹¹ Robert Waring Darwin was CD's father. Seward retracted her allegation that Erasmus Darwin's second son (also Erasmus Darwin) had committed suicide (see, for example, *Edinburgh Review* 4 (1804): 236–7 n.).

¹² Benjamin Ward Richardson had contemplated writing a life of Erasmus Darwin (see letter to B. W. Richardson, 14 March 1879).

From Frederick King 25 March 1879

Holly Lodge | St John's Hill | New Wandsworth S.W.

March 25th 1879.—

Cha^s Darwin Esq^r L.L.D.

Dear Sir,

I feel honoured by your favour of the 2nd Instant.—¹

With regard to the White faces of the Hereford Cattle.—

No one can keep them off their natural soil long, they degenerate so quickly: they lose size and Dairying properties and in a few years the white faces become mottled and I have no doubt if kept long enough would become completely Red though on some soils they rather incline to go back to the Black Breeds.—²

Of course their Bullocks can be brought on to any of our rich Grazing Districts and fattened off: but my remarks apply to the effect upon them if an attempt were made to perpetuate the Breed.—

There is another excellent illustration of my theory:

Take Oxfordshire Down Sheep: foolishly recognized by the Royal Agricultural Society as a distinct Breed.—³

This Breed is the result of a Cross made about 35 years ago by friends of mine, by crossing Hampshire Down Ewes with Cotswold Rams, and never taking a cross from either side since. But remove any one of the best flocks of this mongrel (called pure) Breed to the proximity of the Oolites and in 3 or 4 years they again become long wools, with white faces; and on the other hand, remove them near to the Chalk formation they as soon become Downs.—⁴

Zones of altitude have also a great influence upon the South Down Breeds

The first Breeders on the South side of the Downs The Duke of Richmond, M^r. Rigden⁵ &c: their flocks degenerate and the size can only be maintained by crossing with flocks at colder higher altitudes Jonas Webbs, Lord Walsingham, Sir W. Throckmorton⁶ &c whose flocks get coarser; and they in their turn keep down the coarseness of their flocks by getting Rams from the former Breeders.

I could multiply these errors to any extent and point out the blundering system that prevails amongst our leading Agriculturists both in the Animal & Vegetable Kingdom.—

I am Dear Sir, | yours faithfully | Frederick King.

DAR 169: 20

¹ CD's letter has not been found, but was evidently a reply to the letter from Frederick King, 27 February 1879.

² Hereford cattle were developed as a meat breed in the eighteenth century, but some breeders did develop the breed's dairy potential in the nineteenth century (Housman 1902, p. 99).

³ The Oxfordshire Down breed was recognised as a distinct breed by the Royal Agricultural Society in 1862 (Wrightson 1898, p. 66).

⁴ The Cotswold was an old longwool breed, but unlike other longwool breeds, was native to upland hills; the Hampshire Down was an improved shortwool breed developed from the 1820s. The Oxfordshire Down originated in the early 1830s, when Samuel Druce crossed a Cotswold ram and Hampshire Down ewe (Wrightson 1898, p. 67). For more on the history and development of these breeds, see Wrightson 1898. Oolites are sedimentary rocks, usually limestone, formed during the Jurassic; they are characteristic of the Cotswolds of south-west central England. Downs are ranges of chalk hills in several southern and eastern counties of England.

⁵ Charles Henry Gordon-Lennox was the sixth duke of Richmond. William Marsh Rigden was a well-known breeder of Southdown sheep (Wrightson 1898, p. 51).

⁶ Jonas Webb, Thomas de Grey, sixth Baron Walsingham, and Nicholas William George Throckmorton were well-known breeders of Southdown sheep (Wrightson 1898, pp. 51–2).

From E. A. Wheler 25 March 1879

3 Bertie Terrace Leamington
25 M^{ch} 1879

My dear Cousin,

Francis has sent your letter to me, & I am *very* glad you are going to add a preface to my g^dfather Darwin's life & undo Miss Seward & M^{rs}. Schimmelpenigs untrue remarks.¹ How pleased my dear Mother would have been, had she been living!²

I have no letters, & fear I can help you but little. Reginald Darwin must have several, & I should think Keir Moilliet Esq^r: Cheyney court, Bishops Frome. Bromyard, would have many, written to his g^d grandfather, M^r: Keir, who was one of the Lunar Society.³ Also Lord Belper must have some written to M^r: W^m: Strutt.⁴

My Mother always spoke of her Father with the utmost reverence & affection, his refined & agreeable manner & his kindness to his children. He had no teeth in his head, & was very fond of milk & any thing made of milk cream cheese & such like, but I am sure my Mother would have been shocked at M^r: Schimmelpenigs account of his *greediness*, & would have contradicted it at once. He stammered very much. M^r: Edgeworth in his life speaks of my grandfather in a very gratifying way, & corroborates much my mother has told us of him.⁵ The letter he was writing when he was taken ill & died, was to M^r: Edgeworth. I can tell you a few anecdotes which may amuse you, tho' I fear of no other use.

My grandfather M^r: Galton who had the *highest* opinion of D^r: Darwin in *every* way, requested him to go to Margate to see his eldest Daughter who was ill.⁶ He went, & on his way slept at Newmarket where the races were going on, the Inn very full & noisy. In the middle of the night he heard his door open softly, & a man entered, came to his bedside & made him a sign to be silent. He then said "D^r: Darwin I am the Jockey who is to ride the favourite Horse tomorrow, & upon whom large bets are laid, you once saved my wife's life when very ill with a fever, & I can now shew you my gratitude, make any bets you please against the favourite Horse, for we Jockies have settled he shall not win. My g^dfather thanked the man & requested him to leave the room. He continued his journey to Margate the next day, & on his return thro' Newmarket he asked which Horse had won, & was told that, to the surprise of everyone, the Horse that was thought sure to win, & on whom thousands had been bet, had failed just at the last, & come in third or fourth.

Another time D^r: D. was riding on a lonely road to Nottingham to see a Patient late in the Even.^g A suspicious looking man rode past him, & then went slowly for D^r: D to pass him. This happened once or twice. At last D^r: D said "A fine Even.^g Sir" or something of that sort. The man made a short reply & rode away. The next day a man was taken up on that very spot for robbing some Traveller. D^r: D. had the curiosity to go to the prison & found it was the very man who had passed him the day before. & on asking why he had not robbed him the man replied "I had intended to do so, but thought it was you, & when you spoke I was sure. you saved my life many years ago, & nothing would induce me to rob you."⁷

My g^dfather used to drive in his "Sulky" & an old Horse "Doctor" used to follow behind with a saddle on, without being fastened in any way, & when the road was too bad for the carriage, he got out & rode upon Doctor. This Horse lived to a great age & was buried at the Priory."

When my g^dfather was a young man he & his three Brothers all went to Cambridge at the same time—a great expense to their Father. These young men lived as carefully as they could, They each attended different Lectures & then repeated them to their Brothers. They also mended their own clothes & my g^dfather often boasted to my

mother that if she cut the heel out of a stocking he could put a new one in without missing a stitch.⁸

Last year some alterations were made in Breadsall Church & the Darwin coffins were exposed⁹ My g^dfather's coffin had burst open & his remains were visible & in perfect preservation He was dressed in a purple velvet dressing gown & his features unchanged.

One more anecdote I have heard my Mother tell. When my g^dFather took his son (your Father)¹⁰ to settle him at Shrewsbury, when taking leave of him he remembered he had forgotten to give him any money. He gave him £20 which was all he had about him & said, "Let me know when you want more & I will send it to you" your Father got into practice immediately & never wrote to his Father for more money.—

M^s: Schimmelpening was my Aunt. She had the unfortunate habit of distorting what was true & making a false impression on those about her. & this is very evident in what she says of D^r: Darwin. My g^dfather & g^dmother M^r: & M^{rs}: Galton had the *highest* respect & esteem for D^r: Darwin & thought him perfect in every way. The two families were very intimate with each other Both my g^dfathers belonged to the Lunar Society.¹¹

I hope you are well & with kind remembrances to your wife & Daughter¹² Believe me | y^{rs}: very truly, | Elizth: Anne Wheler

DAR 210.14: 16

CD ANNOTATIONS

1.1 Francis ... M^r: W^m: Strutt. 2.4] *crossed red crayon*

4.1 My grandfather M^r: Galton] *scored red crayon*

7.2 These young men ... stitch. 7.6] *crossed ink; '1878' added pencil*

¹ See letter to Francis Galton, 22 March 1879 and nn. 2 and 5; Mary Anne Schimmelpenninck was Wheler's aunt. Her remarks on Erasmus Darwin were made in her autobiography (Hankin ed. 1858). CD's long introduction to *Erasmus Darwin* (a translation of Ernst Krause's revised version of his essay, Krause 1879a) contradicted Anna Seward's negative portrayal of Erasmus Darwin in Seward 1804.

² Violetta Galton was a daughter of Erasmus Darwin.

³ Reginald Darwin was a grandson of Erasmus Darwin. James Keir Moilliet was a great-grandson of Erasmus Darwin and also of James Keir. Darwin and Keir had met as medical students at Edinburgh and became lifelong friends (*ODNB* s.v. Keir, James). They were members of the Lunar Society of Birmingham, a small club of pioneering natural philosophers, doctors, and manufacturers (for more on the Lunar Society, see Schofield 1963 and Uglow 2002).

⁴ Edward Strutt, first Baron Belper, was the son of William Strutt, who, with Erasmus Darwin, was a founder member of the Derby Philosophical Society (*ODNB* s.v. Strutt, Jedediah).

⁵ For Schimmelpenninck's remarks about Erasmus's gluttony, see the letter to Francis Galton, 22 March 1879 and n. 5. Richard Lovell Edgeworth had mentioned Erasmus Darwin frequently in his memoirs, describing him as intelligent and benevolent (R. Edgeworth and Edgeworth 1820, 1: 164).

⁶ Wheler's paternal grandfather was Samuel Galton; Galton's eldest daughter was the future Mary Anne Schimmelpenninck. Margate, a town on the Isle of Thanet in north-east Kent, was a popular seaside resort for convalescents (Walton 1983, pp. 11–20).

⁷ Both the story of the jockey's tip and the story of the robber were included in *Erasmus Darwin*, pp. 63–5.

⁸ Erasmus Darwin and his brother John Darwin matriculated at Cambridge in June 1750; their eldest brother, Robert Waring Darwin (1724–1816), had matriculated in 1743 (King-Hele 1999, p. 10). CD included the stocking anecdote in *Erasmus Darwin*, p. 12.

⁹ Erasmus Darwin was buried at All Saints' Church, Breadsall, under the nave floor; alterations to the church were carried out in 1877 (Redman 2005, p. 369).

¹⁰ Robert Waring Darwin (1766–1848).

¹¹ Samuel Galton and Erasmus Darwin were both members of the Lunar Society (see also n. 3, above); Galton's wife was Lucy Galton. Wheler later recalled the anecdotes in this letter in her manuscript memoir, which she wrote in 1905 at the age of 97 (CUL MS Add.8691, pp. 5, 12–14).

¹² Elizabeth Darwin.

To C. S. Wedgwood 26 March 1879

Down
March 26, 1879

Many thanks.¹ Artesian wells seem to have been known in France (Artois) from time immemorial.² I have heard that there is now an inscription on a pump in Derby about D: D. and I will see to this and to Phil. Transact.³ I remember now, but had forgotten the Triple saying of D: D.⁴ What I shall use I cannot yet tell, but I am glad to hear of anything.

C.D.

Copy

DAR 148: 304

¹ The letter to which this is a reply has not been found.

² In Roman times the town of Artois was known as Artesium; the first recorded artesian well was drilled there in 1126 by Carthusian monks using a percussion method. Water from an artesian well does not need to be pumped because the water rises naturally from the pressure exerted in the confined aquifer (Cech 2010, p. 118).

³ In *Erasmus Darwin*, pp. 122–3, CD described the artesian well that Erasmus Darwin made at Derby and gave the Latin inscription on a plaque on the garden wall commemorating the well. CD also referred to his grandfather's paper in *Philosophical Transactions of the Royal Society of London* (E. Darwin 1784).

⁴ The triple saying was probably one CD quoted in *Erasmus Darwin*, pp. 42–3:

common sense would be improving, when men left off wearing as much flour on their heads as would make a pudding; when women left off wearing rings in their ears, like savages wear nose rings; and when firegrates were no longer made of polished steel.

To E. A. Wheler 26 March 1879

Down, | Beckenham, Kent.
Mar 26 | 1879

My dear Cousin

I thank you cordially for your very interesting letter. That is a most curious story about the jockey, & which I shall be much tempted to use. The one about the highway man I had utterly forgotten, but now vaguely remember my father having told it.¹

Several other points may come in to be of use, but I fear that my preface may grow longer than the sketch by the German.² Perhaps I may write to Mr Moilliet & to R. Darwin; but I doubt whether any of D^r D's letters would be worth publishing. I know M^r Edgeworth's memoirs.³

I beg you also to thank my cousin Emma very much for her letter & enclosure. I will certainly quote parts of her letter to D^r Dowson, who I hear is very old & has lost his memory.⁴

It is not likely that either of you know whether my Grandfather reached Edinburgh in time to see Charles die; & pray do not take the trouble to write unless you happen to know.⁵

I have read a sketch of the short life of Charles somewhere, but cannot remember where.⁶

Miss Seward's book is in the possession of my sister Caroline, & is marked just as Emma describes.⁷

Pray once again accept my thanks & believe me | yours very sincerely | Charles Darwin

LS

Josh B. Rosenblum (private collection)

¹ See letter from E. A. Wheeler, 25 March 1879; CD included the anecdotes in *Erasmus Darwin*, pp. 63–5.

² In the event, CD's preface was 127 pages long, while the sketch by Ernst Krause was 90 pages (see *Erasmus Darwin*).

³ CD later wrote to Reginald Darwin and to James Keir Moilliet, but the letter to Moilliet has not been found and was evidently not answered (see letter to Reginald Darwin, 8 April 1879). Richard Lovell Edgeworth had mentioned Erasmus Darwin frequently in his memoirs (R. Edgeworth and Edgeworth 1820).

⁴ See letter from E. S. Galton, 25 March 1879; Emma Sophia Galton had copied a letter she wrote in 1871 to John Dowson about his lecture on the life of Erasmus Darwin (Dowson 1861).

⁵ Erasmus Darwin's eldest son, Charles, was a nineteen-year-old medical student at Edinburgh when he died from the effects of a wound received while dissecting (see *Erasmus Darwin*, p. 80).

⁶ Erasmus wrote a short biography of Charles, which he published together with Charles's medical writings; see E. Darwin ed. 1780, pp. 127–34.

⁷ See letter from E. S. Galton, 25 March 1879; Emma Galton had mentioned the copy of Anna Seward's life of Erasmus Darwin (Seward 1804) that had been annotated by Robert Waring Darwin (1766–1848). CD's sister was Caroline Sarah Wedgwood.

To *Nature* [before 27 March 1879]¹

Rats and Water-Casks

MR. NICOLS says, in *NATURE*, vol. xix. p. 433:—

“A ship's carpenter told me that, in the old days, before the use of iron tanks on board ship became general, the rats used to attack the water-casks, cutting the stave so thin that they could suck the water through the wood without actually making a hole in it. If any one could substantiate this it would have an important bearing on the question under consideration.”²

Capt. Wickham, when First Lieutenant on board H.M.S. *Beagle*,³ told me that when he was a midshipman it was his duty, on one of the king's ships to see that certain vessels on deck were always kept full of water, in order to prevent the rats gnawing holes through the water casks, and that through such holes nearly all the water in a cask would leak away.

CHARLES DARWIN

Nature, 27 March 1879, p. 481

- ¹ The date is established by the date of the issue of *Nature* in which the letter appeared.
- ² Arthur Nicols had written to *Nature* about animal intelligence, as shown by rats gnawing through water pipes to get water (*Nature*, 20 February 1879, p. 365); his second letter on the topic, cited here by CD, was in response to objections (*Nature*, 13 March 1879, p. 433). Nicols had corresponded with CD on the subject in 1875 (see *Correspondence* vol. 23, letter from Arthur Nicols, 10 November 1875).
- ³ John Clements Wickham was first lieutenant on HMS *Beagle* from 1831 to 1836.

From C. M. C. Darwin 27 March 1879

Creskeld, | *Otley*.
March 27th 1879.

Dear M^r: Darwin,

I so much wish in answer to your letter that I could send you any of D^r: Darwin's but I do not think we have ever possessed any. they will all be with the other branch of the Family.¹ I have great pleasure in lending the two enclosed Photographs, if you can make any use of them in ornamenting the book you name, and I have ordered another view of the North front of the house at Elston of which we beg your acceptance.² I was there last summer, and it was looking very nice indeed—

My eldest son had last year given him by an old gentleman a portrait of D^r: E. Darwin from the *European Magazine* engraved 1795—and it appears to be copied from Wright's picture.³ Would you like to see it? I have placed it opposite his Life in Miss Meteyard's "Group of Englishmen" which we have—published 1871.⁴ I dare say you know it—

With kind regards from M^r: Darwin⁵ and myself. | Believe me | Y^{rs}: sincerely |
C. M. C. Darwin

DAR 99: 136–7

- ¹ See letter to C. M. C. Darwin, 24 March 1879. CD had wondered whether Charlotte had any documents of Erasmus Darwin (1731–1802). Charlotte was the granddaughter of Erasmus's brother William Alvey Darwin.
- ² The photographs of Elston Hall have not been found; a drawing of Elston Hall as it was before 1754, made by Violetta Harriot Darwin, was reproduced in *Erasmus Darwin*, p. 3.
- ³ Charlotte's eldest son was Francis Alvey Rhodes Darwin. A portrait of Erasmus Darwin engraved by William Bromley appeared in the *European Magazine* for February 1795, facing p. 75. The caption to the engraving indicated it was made from an 'original drawing', but it resembles the painting of Erasmus at the age of 38 made by Joseph Wright (see King-Hele 1999, plate 4a).
- ⁴ Eliza Meteyard and Meteyard 1871.
- ⁵ Charlotte's husband was Francis Rhodes Darwin; he had inherited Elston Hall, Nottinghamshire, from her brother, Robert Alvey Darwin.

To Reginald Darwin 27 March 1879

Down, | *Beckenham, Kent*. | (*Railway Station* | *Orpington, S.E.R.*)
March 27th 1879

Dear Cousin

A German has published a sketch of the life of our grandfather, which my Brother & self intend to have translated, & I mean to add a preface about his character & c

&c; but my chief object is to contradict flatly some calumnies by Miss Seward.¹ Now if you possess any documents about him or letters written by him, & would be so very kind as to lend them to me for a time (they sh^d be returned registered) they might prove very useful, though judging from letters in my possession I fear that few would be worth publishing.—

It is very many years since we met, & I hope that you retain your health & strength.²

I am growing a very old man, but keep as yet my mental faculties tolerably clear.—

Pray believe me | Dear Cousin | Yours sincerely | Ch. Darwin

P. S | Did you ever happen to hear whether D^r D reached his son Charles in Edinburg in time to see him die?³

Forum Auctions (dealers) (28 March 2019, lot 173)

¹ CD and Erasmus Alvey Darwin were arranging a translation of Ernst Krause's sketch of the life of Erasmus Darwin (Krause 1879a; see letter to Ernst Krause, 9 March 1879, and letter from Ernst Krause, 12 March 1879). Anna Seward had published a biography of Erasmus Darwin in 1804 (Seward 1804).

² CD last met Reginald Darwin in 1839 (letter from Reginald Darwin, 29 March 1879).

³ Erasmus Darwin's eldest son, Charles, was a nineteen-year-old medical student at Edinburgh when he died from the effects of a wound received while dissecting (see *Erasmus Darwin*, p. 80).

To Ernst Krause 27 March 1879

Down, | Beckenham, Kent.

Mar 27. 1879

My dear Sir

There is not the least hurry; for I should be very unwilling to begin writing the preface for the next 5 or 6 weeks. Indeed I could hardly do so until I have got all my materials together, & I have written to many members of the family for letters from D^r D. &c I am somewhat afraid of my preface & your work interfering with each other; but I shall not say one word about evolution & pure science—nor about D^r D's poetry.¹ I shall almost confine myself to his character, anecdotes about him, & letters from him.

But I have begun to make some enquiries as to how far he influenced medical practice in this country. Would it not be a good plan for you to wait until my preface is written, of which I would send you a copy *in good hand-writing*, & you could then better determine what to add? In the meantime I could have the translation of your present essay begun by M^r Dallas, & passages could easily be added afterwards to it—²

We have not yet decided which of three pictures of D^r D. to have photographed.³ If you bring out a German edition, my brother & myself w^d be very glad to supply you with as many copies of the photograph as you require without any expense—

If I do not hear to the contrary I will send your essay in a week or two to Mr Dallas for translation.

My dear Sir | yours sincerely | Charles Darwin

LS

The Huntington Library (HM 36178)

- ¹ See letter from Ernst Krause, 24 March 1879. Krause wanted to add material to his essay on Erasmus Darwin (Krause 1879a). CD was gathering material from family members for his preliminary notice to the planned English translation of Krause 1879 (see, for example, letter to E. A. Wheler, 26 March 1879).
- ² William Sweetland Dallas was going to translate Krause 1879a (see letter from W. S. Dallas, 14 March 1879).
- ³ For the three portraits of Erasmus, see Keynes 1994, pp. 70–9.

From E. A. Wheler 28 March 1879

3 Bertie Terrace
28 M^{ch}. 1879

My dear Cousin,

Emma will send you a book written by our Uncle Charles Darwin, & which gained him a name as a *very* clever & promising young man. At the end, you will see a short account of his life. His Father D^r Darwin was *not* with him at his death. There would not have been time in those days to get there. He felt his son's death *most acutely*, & his friends said he never recovered it, but was a different man after. Charles was sent at that early age to France on account of his stammering as he never stammered when speaking french.¹

When D^r Darwin married M^rs. Pole, he left Lichfield, & lived about two years at Radbourne, till her son M^r Pole came of age, & my Mother was born there also our Uncle Edward her elder Brother.² They then lived in the Full St in Derby, & the garden was just over the river Derwent, which they crossed in a ferry boat. D^r D. had all his children taught to swim when they were four years old, & all were capital swimmers. My Mother twice saved a young friend's life who was drowning in a swimming bath. I suppose you know that D^r D. never took wine, & recommended all his Patients & friends to abstain & in my earlier days I can remember, among those of my Mothers standing, how few I knew in Derbyshire who took wine. I have seen some of my g^dfather's letters. I think Reg^d Darwin must have lent them to us—they were clever, playful & witty. Reg^d has a sort of day book of his, which interested us, with cases of his patients, verses, remarks &c³

with kind remembrances | Yours very sincerely | E A Wheler

With regard to that tale about my g^dfather & the Jockey I find he went to Margate to see my aunt in 1793 & his fee was 100 guineas.⁴ The month July.

Emma reminds me my g^dfather left Radbourne because of the inconvenience to his practice, that his step son was not then of age⁵ She will like to have C Darwin's book returned when you have *quite* done with it.

DAR 210.14: 17

CD ANNOTATIONS

- 1.6 Charles ... to France] *double scored pencil*
2.4 D^r ... swimmers. 2.6] *scored pencil*

¹ Emma Sophia Galton was Wheler's sister and neighbour. Erasmus Darwin's son Charles was a nineteen-year-old medical student at Edinburgh when he died; Erasmus wrote a short biography of

him, which he published together with an English translation of Charles's dissertation 'An account of the retrograde motions of the absorbent vessels of animal bodies in some diseases', which was originally written in Latin, and his dissertation 'Experiments establishing a criterion between mucaginous and purulent matter' (E. Darwin ed. 1780). In his letter to Wheler of 26 March 1879, CD had mentioned he remembered reading a sketch of the life of his uncle Charles. According to CD, Erasmus did reach Edinburgh before Charles died (see *Erasmus Darwin*, p. 83).

- ² Erasmus's second wife, Elizabeth, was the widow of Edward Sacheverel Pole; her son from her first marriage was Sacheverell Pole (later Chandos-Pole). Edward Darwin and Violetta Darwin (later Galton), children of Erasmus and Elizabeth, were born at Radbourne Hall. Violetta was Elizabeth Wheler's mother.
- ³ Wheler refers to Erasmus Darwin's Commonplace book (see letter from Reginald Darwin, 29 March 1879 and n. 2).
- ⁴ Wheler's aunt was Mary Anne Schimmelpenninck. See letter from E. A. Wheler, 25 March 1879 and nn. 6 and 7.
- ⁵ Elizabeth agreed to marry Erasmus Darwin on condition that he left Lichfield; after their marriage in 1781 they resided at Radbourne Hall, the property of the Pole family. They moved to Derby in the autumn of 1783 and rented out Radbourne Hall until Sacheverell came of age (see King-Hele 1999, pp. 170 and 177–91).

From Reginald Darwin 29 March 1879

Fern, | Buxton.
March 29 | 1879

My dear Cousin

The receipt of your letter has given me very sincere pleasure— It has been delayed a day in consequence of the address "Matlock" instead of "Buxton"— I am much interested in what you say as to the sketch of our grandfather's life & shall look anxiously for the appearance of the translation— I do not know that I can help you in your praiseworthy desire to vindicate his character.¹ I will however send you his "Common Place Book" in which I have placed such letters &c as I had in my possession— The lines on "Atheism" you probably possess, probably also the lines on "Prosperity" &c respecting which you will find a letter from Emma Galton—²

There are various lines by other Authors, lines which were favourites with my Father, & which are mostly in my mother's & sister's hands—³

You will see that I have desecrated the old Book with newspaper cuttings, & regret that I ever did so. You must however kindly disregard this— I cannot tell you whether our Grandfather reached Edinburgh before the death of his son Charles, but in those days of tardy mails I should think the probability is that he did not—⁴ I saw his Tomb in 1840, the old Book contains a copy of the inscription. Breadsall Church is, like many others at this day, undergoing the process of restoration, & the graves of some of those who have gone before us have been disturbed; I name this as you will see a letter (recent) to me from one of my sisters on the subject—⁵ It is indeed long since we met— never but once since your return from your five years voyage,⁶ about 1839, your name however is so completely before the world that I seem to hear of you constantly, & always with pride— My son is more fortunate than myself, for he already has made the acquaintance of your son George, & has had a kind invitation from your son at Southampton—⁷ I trust they may meet some

day, when my son may be at Portsmouth— He is now Commander of the “Lord Warden” in the Firth of Forth—⁸ tho’ several years your junior, I also am getting old, but am thankful for good health & vigour—

Pray offer my best regards & those of M^{rs} Darwin⁹ & my son (who is home on a few days leave) to your family & believe me | always affect^{ly} yours | Reginald Darwin

DAR 99: 146–9

CD ANNOTATION

Top of letter: ‘New Market Jockey Story’¹⁰ *pencil*

- ¹ See letter to Reginald Darwin, 27 March 1879; CD and Erasmus Alvey Darwin were arranging a translation of Ernst Krause’s sketch of the life of Erasmus Darwin (Krause 1879a). Matlock and Buxton were spa towns in Derbyshire. CD had written that he wanted to contradict some of the statements made by Anna Seward in her biography of Erasmus Darwin (Seward 1804).
- ² Erasmus Darwin’s *Commonplace book* (Down House MS) was written between 1776 and 1787; for more on the book and its contents, see King-Hele 1999, pp. 133–4, 136–8, and *passim*. Reginald also refers to Erasmus Darwin’s ‘The folly of atheism’; Emma Sophia Galton had sent the poem to John Dowson (see letter from E. S. Galton, 25 March 1879 and n. 4). The poem on prosperity has not been identified.
- ³ Reginald’s father was Francis Sacheverel Darwin; his mother was Jane Harriett Darwin. His sisters were Mary Jane Worsley, Emma Elizabeth Wilmot, Frances Sarah Huish, Georgiana Elizabeth Swift, Violetta Harriot Darwin, Anne Eliza Darwin, and Millicent Susan Oldershaw.
- ⁴ See letter to Reginald Darwin, 27 March 1879 and n. 3. Erasmus Darwin’s son Charles was nineteen when he died. ‘Tardy mails’: slow mail coaches.
- ⁵ The letter has not been found. Erasmus Darwin was buried in Breadsall church in Derbyshire (*ODNB*). The church was restored between 1878 and 1883 under the direction of the architect Frederick Josias Robinson.
- ⁶ The HMS *Beagle* voyage of 1831–6.
- ⁷ Reginald’s son, Sacheverel Charles Darwin, was an officer in the Royal Navy. Reginald also refers to George Howard Darwin and to William Erasmus Darwin, who lived in Bassett, Southampton.
- ⁸ S. C. Darwin was commander of HMS *Lord Warden* from September 1878 until December 1879 (Admiralty: Officer’s service records (series III), National Archives, ADM 196/15/167).
- ⁹ Mary Anne Darwin.
- ¹⁰ For the story about the jockey, see letter from E. A. Wheeler, 25 March 1879 and n. 7.

To Friedrich Hildebrand 29 March 1879

Down, Beckenham, Kent.

Mar 29/79

My dear Sir,

I am much obliged to you for your new book, which I am sure will interest me greatly like everything else which you have written.¹

With many thanks | Yours sincerely | Charles Darwin

P.S. Very many thanks for the list of seeds, which I will remember; but I do not want any at present.²

What you say about my works suggesting new lines of research, I consider one of the greatest compliments you c^d possibly pay me—³

LS

Klaus Groove (private collection). Sold by Venator and Hanstein, Cologne (dealers), 16 March 2018.

- ¹ Hildebrand sent a copy of *Die Farben der Blüten in ihrer jetzigen Variation und früheren Entwicklung* (The colours of flowers in their present variation and earlier development; Hildebrand 1879); CD's annotated copy is in the Darwin Pamphlet Collection–CUL.
- ² Hildebrand's list has not been found. Hildebrand was director of the Freiburg im Breisgau botanic garden, which moved to new premises in 1878; in 1879 he opened the Botanical Institute (Correns 1916, pp. 31–2).
- ³ Hildebrand's letter praising CD's works has not been found; no such comments were made in Hildebrand 1879.

From Ernst Krause¹ 30 March 1879

Berlin N.O. Friedenstrasse 10.II.
den 30.3.79.

Hochverehrter Herr!

Als Ihr freundliches Schreiben vom 27ⁿ. c. heute in meinen Besitz kam, war ich schon so weit vorgeschritten in einer neuen Bearbeitung des Lebens von Dr. Darwin, dass ich Sie herzlich bitten möchte, mich dieselbe vollenden zu lassen, bevor Herr Dallas die Uebersetzung beginnt, da er sonst doppelte Arbeit haben würde.² Ich wünsche nur noch einige Punkte in Betreff des literarischen Lebens in Lichfield festzustellen und zu diesem Zwecke die Correspondence von Dr. Johnson nachzusehen, ebenso die Werke von Blackmore und Broocke (*On universal Beauty*); von denen man gesagt hat, dass sie dem Dr. Darwin als Vorbilder gedient hätten.³

Alle diese Punkte werden, glaube ich, nicht mit Ihren Feststellungen collidiren, und sollte das irgendwo der Fall sein, so bitte ich Sie, jedenfalls den betreffenden Passus aus meinem Essay herauszustreichen. Ich hoffe Ihnen diese Neubearbeitung in acht oder spätestens vierzehn Tagen senden zu können, so dass Herr Dallas Ihnen die Uebersetzung bequem zu der Zeit wird fertigstellen können, in welcher Sie selbst beginnen zu können glauben.

Für Ihr gütiges Anerbieten uns für die deutsche Ausgabe eine Anzahl von Lichtdruck-Portraits ueberlassen zu wollen, sage ich Ihnen vorläufig herzlichsten Dank; ich werde demnächst mit dem Buchhändler Rücksprache nehmen, um zu erfahren, eine wie hohe Auflage derselbe zu veranstalten denkt, aber ich sollte meinen, die Herstellungskosten könnten recht wohl von dem betreffenden Buchhändler getragen werden.⁴

Wahrscheinlich würden Sie wünschen, dass die deutsche Ausgabe bei Herrn E. Koch in Stuttgart erschiene.⁵ Allein ich habe schon im vorigen Monat (Februar) über eine Separat-Ausgabe der Lebens-Beschreibung mit Herr Carl Alberts verhandelt, und es würde vielleicht nicht gut gehen, dies nachträglich zu ändern. Herr Preyer in Jena hatte ursprünglich die Absicht, seine Biographie zu erweitern und sie in demselben Bändchen mit abdrucken zu lassen.⁶ Diese Idee ist aufgegeben worden, seit wir erfahren haben, dass Herr Rade in Münster Vorbereitungen für eine ausführlichere und gründlichere Beschreibung Ihres Lebens macht.⁷

Mit den herzlichsten Wünschen für Ihr Wohlbefinden zeichne <ich> | Hochverehrter Herr | Ihr | treulich ergebenster | Ernst Krause

DAR 92: B21

- ¹ For a translation of this letter, see Appendix I.
- ² See letter to Ernst Krause, 27 March 1879. CD had suggested that William Sweetland Dallas might begin translating Krause's original text from Krause 1879a and add Krause's new material later.
- ³ Erasmus Darwin's philosophical poetry was said to have been inspired by Henry Brooke's poem 'Universal beauty', which, in turn, was thought to imitate Richard Blackmore's physico-theological poem 'Creation' (Hunt *et al.* 1806–7, 1: 215). The reference to Brooke as a model for Erasmus Darwin's poetry is in *Biographie universelle* 10: 558. Krause also refers to Samuel Johnson.
- ⁴ In his letter of 14 March 1879, CD told Krause that he hoped to have autotype copies made of a portrait of Erasmus Darwin owned by his brother, Erasmus Alvey Darwin. Autotype, a kind of carbon printing process for the monochrome facsimile reproduction of images, was patented in 1868 by the Autotype Company of London (*OED*).
- ⁵ CD's German publisher was E. Schweizerbart'sche Verlagsbuchhandlung; Eduard Koch was head of the firm.
- ⁶ Karl Alberts was the head of Ernst Günther's Verlag, Leipzig, which published *Kosmos*; the German version of *Erasmus Darwin* was published by his firm (Krause 1880). William Preyer, who was professor of physiology at Jena, had contributed a biographical sketch of CD to a special number of *Kosmos* published in February 1879 in celebration of CD's 70th birthday (Preyer 1879).
- ⁷ Emil Rade had organised the production of an album of photographs of German and Austrian scientists made in honour of CD, which was presented to CD in 1877 (see *Correspondence* vol. 25, letter from Emil Rade, [before 16] February 1877, and Rade 1877). Rade never published a biography of CD.

From A. G. Butler 31 March 1879

10 Avington Grove, Penge
31st March 1879

Dear D: Darwin

You will be glad to hear that I have been successful in obtaining the Post of Assistant-Keeper in the Zool. Dept. of the British Museum, for which you were so kind as to give me a testimonial.¹

I have lately (i.e. for the last year or two) had an opportunity of studying the Heterocerous Lepidoptera much more closely than formerly, and I find the scent-fans spoken of by Fritz Müller extremely common, particularly upon the legs of moths: strigillating organs occur in all parts in the form of drums, bladders, rasps, and in all sorts of forms: most of the *Zygenide* have a drum-like apparatus at the base of the abdomen, somewhat as in *Cicada*; this is probably an organ of sound.²

The Genus *Sphingomorpha*, among the Noctuites, has a bladder-like organ upon its legs which are also provided with enormous radiating fans of hair.³

For anybody who had the time to devote to the study of these structures and their modifications in allied species, there would be an almost endless field for interesting research: perhaps after all no new facts would be brought to light however.

With many thanks for favours past, and the hope that I may yet live to be in some measure useful to you or at anyrate to the Science which you have done so much to advance | Believe me to be | Very sincerely yours | Arthur G Butler

DAR 160: 390

¹ CD's testimonial has not been found, but see the letter to A. G. Butler, 20 February [1879].

² Heterocera was a former higher taxonomic classification that included all moths. Butler probably meant to refer to stridulating organs; some insects, like crickets and grasshoppers, stridulate by the use of specialised organs on their wings, legs, or other body parts, which they rub against each other

to produce sound. Fritz Müller's 'Notes on Brazilian entomology: Odours emitted by butterflies and moths' (F. Müller 1878a) had been read at the meeting of the Entomological Society of London on 5 June 1878. In the discussion following the reading, some scepticism had been voiced as to whether the organs described were really scent organs (see *Correspondence* vol. 26, letter from Raphael Meldola, 13 June 1878). Zygaenidae is the family of burnet and forester moths. Male cicadas (family Cicadidae) make sounds by vibrating the tymbal, a drum-like structure in the abdomen; some moths also possess tymbals in the sternal region of the abdomen. For genera and species included by Butler in the Zygaenidae, see A. G. Butler 1875.

³ *Sphingomorpha* is the genus of fruit-piercing moths in the family Erebiidae.

From E. S. Galton 31 March 1879

5, Bertie Terrace | Leamington

March 31st. 1879

My dear Cousin,

My Sister M^{rs}. Wheler having shewn me your letter—I will send by Railway, two views of the Priory at the time of our Grandfather's death where he had made it, his *regular* residence only three weeks before—¹ I send you a Drawing of the Priory—given to me by Violetta Darwin (Reginald's *sister*) of what it was before it was sold, after my Uncle's death—²

Also I thought you might like a drawing of the House in Full Street, Derby—where our Grandfather lived for so many years,— My sister in law, M^{rs}. Francis Galton made a sketch of it for my Mother when passing through Derby in 1871—³

Reginald Darwin (who is our first Cousin & Grandson of D^r. Eras: Darwin) has many papers, especially the "Common place book" & others of interest, which I am sure he would be very pleased to lend you, as he always has sent us anything we wanted to see, of the Darwin family—⁴ This reminds me of an anecdote, that my Father, & also M^r. Leonard Horner used to tell, that when our Uncle, Sir Francis Darwin went to Edinburgh to study— He was told, he must make up his mind to hear of some of his Father's (D^r. E Darwin's) theories roughly handled— Sir Fra^r. immediately stood up in the Hall, & in a loud voice said— He wished everyone to understand, that the first Person who said a word against his father (D^r. E Dⁿ.) or his works, he would knock him down at once— His height being above 6 feet & a very powerful frame— All tongues at once were silenced!—⁵

Last year, we had some Photographs taken from Reginald Darwin's family pictures at his House at Buxton—of D^r. Eras: Darwin's Father & Grandfather— I send them also, for you to look at— Also a book with remarks on the Darwins—⁶

My mother,⁷ being only nineteen years of age when her Father died, had no letters of his—

M^{rs}. Rhodes Darwin (Charlotte) of Creskeld—Otley—to whom Elston belongs also Sarah, M^{rs}. Noel—of Clanna Falls Lydney—Gloucestershire—would probably have many family papers—⁸ M^{rs}. Noel evidently takes much interest in the Darwin Genealogy—as she asked us to help her—about a part of it she did not know—

With kind love to M^{rs}. Darwin | Believe me | Yours sincerely | Emma S Galton

The parcel shall be directed to the care of the Station Master | at Orpington | S. E. R.

I also send a Print of our Grandfather Darwin⁹

I should think Violetta Darwin could send you a good Draw^g of Breadsall Church if you wanted it—. She Lythographs well—¹⁰ My view is fⁿ: an old draw^g lent me years ago—

I forget if there is anything in Smiles life of Boulton & Watt of D^r E Darwin¹¹

DAR 99: 181–2

CD ANNOTATIONS

Top of letter: ‘Parcel | acknowledged | by P. C.’ *pencil*; ‘D^r Warren’¹² *ink*

- ¹ See letter to E. A. Wheler, 26 March 1879. Elizabeth Anne Wheler was Galton’s sister and neighbour. Breadsall Priory was an estate near Derby, purchased by Erasmus Darwin’s son Erasmus shortly before his death in 1799 and left to his father. The elder Erasmus and his family moved to Breadsall Priory in the last week of March 1802; Erasmus died on 18 April 1802 (King-Hele 1999, pp. 330, 341).
- ² Violetta Harriot Darwin and Reginald Darwin were children of Francis Sacheverel Darwin (Galton’s uncle), a son of Erasmus Darwin and his second wife Elizabeth. Francis had lived at Breadsall Priory from 1846 until his death in 1859 (King-Hele 1999, p. 369). Violetta’s drawing of Breadsall Priory was reproduced in *Erasmus Darwin*, p. 125. See plate on p. 171.
- ³ The sketch of the house at Full Street, Derby, made by Louisa Jane Galton for Violetta Galton has not been found; Erasmus Darwin and his family lived there from the autumn of 1783 until March 1802 (a photograph of the house before its demolition in 1933 is in King-Hele 1999, plate 10B).
- ⁴ See letter from Reginald Darwin, 29 March 1879 and n. 2; Reginald had sent the *Commonplace book* (Down House MS) to CD.
- ⁵ The anecdote concerned Francis Sacheverel Darwin. Galton’s father was Samuel Tertius Galton.
- ⁶ Erasmus’s father was Robert Darwin; his grandfather was William Darwin (1655–82). The photographs have not been found; the book has not been identified.
- ⁷ Violetta Galton.
- ⁸ Charlotte Maria Cooper Darwin was the wife of Francis Rhodes Darwin, who had inherited Elston Hall, Nottinghamshire, from her brother, Robert Alvey Darwin. The property was let; the Darwins lived at Francis’s estate, Creskeld Hall, Otley, West Yorkshire. Sarah Gay Forbes Noel was Charlotte’s sister.
- ⁹ The print has not been identified; for more on the portraits of Erasmus Darwin, see M. Keynes 1994.
- ¹⁰ Violetta Harriot Darwin had published a lithograph showing details of Breadsall Church and Priory in 1858 (*Anastatic Drawing Society* (1858): 4, XIX).
- ¹¹ Samuel Smiles included some quotations from correspondence between Erasmus Darwin and Matthew Boulton, and between Darwin and James Watt, in *Lives of Boulton and Watt* (Smiles 1865, pp. 184, 201, 369, 509–10).
- ¹² CD’s annotation refers to his acknowledgment by postcard of receipt of the parcel containing the pictures of Breadsall Priory (see n. 2, above). Richard Warren was physician to George III, and the most sought-after society doctor in London. When suffering from a terminal illness he travelled to Lichfield to consult Erasmus Darwin, whom he thought ‘the greatest physician in world’ and the person most qualified to tell him truthfully when he might expect to die. CD recounted the story in *Erasmus Darwin*, pp. 105–6.

To E. A. Wheler 31 March [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
March 31st

My dear Cousin

I want to trouble you on one very little point. I looked on map to see how far it was from Derby to Margate & to my surprise found that Newmarket was quite

out of the line. I suppose that you are sure that it was Margate where your Aunt was.— If indeed our grandfather went to Harwich & thence a short Voyage by sea to Margate, the route w^d be intelligible.² But it seems odd that a Doctor sh^d have chosen even short sea transit before the time for steam-ships.

Owing to your most useful suggestion, I wrote to R. Darwin & have an extremely kind answer from him, & he will send the Journal with some letters.³ I am now trying to find out how far the *Zoonomia* influenced medical practice in England, but doubt whether I shall succeed.⁴

My dear Cousin | Yours sincerely obliged | Charles Darwin

P.S. I have got a photograph of Elston Hall,— but I think I mentioned this before.—⁵

I will post the life of Ch. Darwin tomorrow & will register it.⁶

DAR 185: 105

¹ The year is established by the relationship between this letter and the letters to E. A. Wheler, 25 March 1879 and 28 March 1879.

² See letter from E. A. Wheler, 25 March 1879 and n. 7. Wheler had recounted a story that took place when Erasmus Darwin stopped at Newmarket on his way to Margate. At the time (1793; letter from E. A. Wheler, 28 March 1879), he was living in Derby; Wheler's aunt was Mary Anne Schimmelpenninck. Harwich is the northernmost coastal town in Essex; Newmarket, in west Suffolk, lies in a direct line between Derby and Harwich. Margate is on the Isle of Thanet in north-east Kent.

³ See letter from Reginald Darwin, 29 March 1879 and n. 2. The journal was Erasmus Darwin's Commonplace book (Down House MS).

⁴ *Zoonomia; or, the laws of organic life* (E. Darwin 1794–6) contained observations on anatomy, diseases, and treatment, as well as presenting a theory of organic evolution; CD's annotated copy is in the Darwin Library–CUL. For CD's remarks on its influence, see *Erasmus Darwin*, pp. 105–9.

⁵ Charlotte Maria Cooper Darwin had sent CD two photographs of Elston Hall with her letter of 27 March 1879.

⁶ Emma Sophia Galton, who was Wheler's sister and neighbour, had sent CD a book compiled by Erasmus Darwin containing the medical writings of his son Charles Darwin (1758–78), together with a brief biography (see letter from E. A. Wheler, 28 March 1879 and n. 1).

To Reginald Darwin 1 April 1879

Down,
April 1, 1879.

My dear Cousin

I write only to thank you for your most kind letter and to say that the great book arrived safely last night.¹ I will begin at once to look through it, and whether or not I find anything to use, I shall be particularly glad to see it, as throwing some light on our grandfather's character.²

Yours sincerely obliged | Charles Darwin

I will write again hereafter.

P.S. I thought of giving woodcuts of the house in which Dr. D. was born, and have got a photograph of Elston Hall from Mrs. Darwin of Creskeld.³ Could you give or lend a photograph of the Priory, as the scene of his death? I possess a drawing,—a

poor copy in pencil of a *lithograph*, made from a drawing by some member of the Family, but I cannot exactly make out by whom.⁴

Copy
DAR 153: 96

- ¹ See letter from Reginald Darwin, 29 March 1879; CD had received Erasmus Darwin's *Commonplace* book (Down House MS) and some of his letters.
- ² CD was preparing a biographical sketch of his grandfather Erasmus Darwin to accompany an English translation of Ernst Krause's account of Erasmus Darwin's scientific work (Krause 1879a).
- ³ Elston Hall, Nottinghamshire, was the seat of the senior branch of the Darwin family and the birthplace of Erasmus Darwin. Charlotte Maria Cooper Darwin of Creskeld Hall, Otley, Yorkshire, had sent CD two photographs of Elston Hall in March 1879 (see letter from C. M. C. Darwin, 27 March 1879).
- ⁴ Erasmus Darwin died at Breadsall Priory, near Derby. The copy was made by Ann Boott; it was copied from a lithograph that had been made by Violetta Harriot Darwin (see letter to Reginald Darwin, 4 April 1879).

From Alfred Newton 1 April 1879

Magd. Coll.
1 April 1879.

Dear Mr Darwin

I should be very glad if you would add your signature to those of Flower and Huxley at the foot of the memorial I enclose.¹ I am aware that you would have to take on trust a good many of the statements therein made, but that you may see that some of the more important of them are not made without good grounds I enclose also a sheet (taken quite at random) from Dr. Coues's 'Bibliographical Appendix.'²

Dr. Coues has been for a long while collecting materials for a general *Ornithological Bibliography* but it is quite evident that he will never be able to complete it for publication without coming to England. His profession (a U.S. Army Surgeon) renders that impossible unless he can get special leave of absence & from correspondence I have had with him he seems to consider that his chance of obtaining that leave would be materially improved by some such memorial as the enclosed, if it received a sufficient number of influential signatures. The notion of the Memorial did not however originate with Coues but with Salvin here.³

If you consent to sign it I propose to leave it to professed ornithologists who will, I feel sure, cordially support it.

The specimen of his bibliography that I enclose shews how thorough his work is. There is nothing indeed like it in the whole range of Zoological literature & should he be able to bring the whole thing out it could not fail *as an example* to have an excellent effect on all branches of Natural History— It is on this account that I venture to ask for your signature. The part he has published as an Appendix to the 'Birds of the Colorado Valley' merely takes in the "Faunal Publications" relating to N. American Ornithology.

In any case be so good as to return me both the enclosures, and if you can do so *tomorrow* pray address them to

44 Davies Street
Berkeley Square
London, W

whither I am now going for a few days.⁴

I am very sorry Frank's diffidence made him decline acting as Examiner in Botany—I am sure he would have done better than the man we have had to appoint in his place will do.⁵ With kindest regards to all, believe me | Yours very truly
Alfred Newton

DAR 172: 52

¹ William Henry Flower and Thomas Henry Huxley had evidently signed a memorial in support of allowing Elliott Coues to travel to England to complete his work on an ornithological bibliography.

² The first part of Coues's universal bibliography of ornithology ('List of faunal publications relating to North American ornithology') had been published as an appendix to his *Birds of the Colorado Valley* (Coues 1878, pp. 567–784). Coues published four more instalments of his bibliography between 1878 and 1880, but much of his work remained in manuscript (J. A. Allen 1909, pp. 413–15). His fourth instalment comprised titles relating to the birds of Great Britain, but it seems unlikely that Coues travelled to England; in the preface, dated 20 January 1880, he mentioned the difficulties of access in America to certain British books (Coues 1880, p. 360).

³ Osbert Salvin.

⁴ This was the address of Newton's brother Robert Milnes Newton (*Post Office London directory* 1878).

⁵ Francis Darwin had been asked to allow himself to be nominated as an examiner in botany at Cambridge University (see letter from J. D. Hooker, 13 March 1879). Francis later changed his mind, but the post had already been given to another person, who has not been identified (see letter to J. D. Hooker, 16 March [1879] and nn. 3 and 4). He would have been one of the eight official examiners appointed for 1879, none of whom had specialised botanical expertise (*Cambridge University Reporter*, 25 March 1879, pp. 474–5).

To W. T. Thiselton-Dyer 1 April [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

April 1st

My dear Dyer

The plants arrived all save & will be very useful.² They are kinds which, as I formerly ascertained, move much quicker to than from the light, but I suspect do not change their centre of rotation (i.e. do not bend towards light), & this is a curious point, which I am anxious to ascertain.³ The Anoda will also be very useful, & you have sent me a prodigious supply of *Trifolium* seeds—⁴

Many thanks | Ever yours sincerely | Ch. Darwin

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: f. 169)

¹ The year is established by the relationship between this letter and the letter to W. T. Thiselton-Dyer, 24 March 1879.

² The plants requested by CD were listed in the letter to W. T. Thiselton-Dyer, 24 March 1879.

³ In *Movement in plants*, pp. 451–2, CD discussed plants in which the speed of rotation was faster when moving towards the light than when moving away from it, attributing this to a vestige of heliotropism.

⁴ CD had requested seeds of *Anoda wrightii*, probably in order to observe the movement of the cotyledons (letter to W. T. Thiselton-Dyer, 24 March 1879; *Movement in plants*, pp. 302–3). *Anoda wrightii* (a synonym of *Anoda lanceolata*) is a species of mallow; *Trifolium* is the genus of clover.

From Reginald Darwin 2 April 1879

Fern | Buxton
April 2 | 1879

My dear Cousin

I do not know whether any Photograph of the Priory has been taken, & it has been so much altered by the present possessor that a picture as it is could be almost worthless to you.¹ I will however consult my sister—Violetta,² who will know more about it than I do, & if possible I will procure an engraving of the old place—I have a Photograph of the house in Full St Derby, where our grandfather lived from the time he left Lichfield, until he removed to the Priory, (some 20 years).³ I will gladly send *that* for your inspection, if you think it of consequence—

With best regards | Most sincerely yours | Reginald Darwin

DAR 99: 150–1

CD ANNOTATIONS⁴

1.6 I ... consequence— 1.7] *scored red crayon*

Top of letter: 'Newmarket story | *Full Street | I have drawing of Priory [*bracketed pencil*] | [*'will keep big' del pencil*] book on acct of | George | I was much amused by Scraps at End' *ink*

¹ CD had asked for a photograph of Breadsall Priory, where Erasmus Darwin died (see letter to Reginald Darwin, 1 April 1879).

² Violetta Harriot Darwin.

³ Erasmus Darwin had a medical practice in Lichfield, Derbyshire; he retired in 1781 and moved to Radbourne Hall, near Derby. In 1783, he moved his family into a house on Full Street, Derby. He moved to Breadsall Priory in 1802, just a month before his death. (King-Hele ed. 2003, pp. 138–9.)

⁴ CD made these notes for his reply of 4 April, in which he mentioned that George Howard Darwin was interested in 'old things' (see letter to Reginald Darwin, 4 April 1879).

To E. S. Galton 2 April [1879]¹

From Mr. C. Darwin, Down, Beckenham.

The precious parcel of drawings, M.S. &c arrived quite safely last night.²

Everything shall be safely kept.

Many thanks. C. D.

April. 2^d

ApcS

UCL Library Services, Special Collections (GALTON/3/3/4/3)

¹ The year is established by the relationship between this letter and the letter from E. S. Galton, 31 March 1879.

² Emma Galton had sent materials relating to the life of Erasmus Darwin, CD's grandfather.

To Ernst Krause 2 April 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Ap 2. 1879

My dear Sir,

I entirely agree with all you propose.¹ I should not think of striking out anything that you might write, but would alter my own notice in accordance with what you may write. My materials are increasing a good deal, and I hope that I shall be able to give some sort of picture of what the man was. I am quite indifferent as to who publishes the German edition & it is entirely your affair. Pray understand that you will have to decide whether my preface or preliminary notice is worth translating.²

I am sure that you need not hunt for any correspondence between my grandfather & D^r Johnson, for I have always heard that they met only once & then hated each other.³ In the only catalogue of English books which I possess there is no entry of 'Blackmore on Beauty'. Henry Brooke published in 1789 a poem entitled 'Universal Beauty' I could borrow this book (but could not send it to you) & if you desire could search whether there is anything about D^r Eras Darwin in it. My son has just told me that he saw, (he thinks in the *Biographie Universelle*) that Eras Darwin was supposed by some to have taken Brooke for a model.⁴

My dear Sir | Yours sincerely | Charles Darwin

LS

The Huntington Library (HM 36179)

¹ Krause had proposed finishing the revisions to his essay on Erasmus Darwin (1731–1802) (Krause 1879a) before William Sweetland Dallas started translating the work into English (see letter from Ernst Krause, 30 March 1879). CD was preparing a biographical sketch of Erasmus Darwin as a preliminary notice to the translation (*Erasmus Darwin*).

² Krause had assumed that CD would like the German edition of Krause's work on Erasmus Darwin to be published by Eduard Koch, who was publishing a German edition of CD's works (see letter from Ernst Krause, 30 March 1879; Freeman 1977). Instead, the German edition, which included CD's preliminary notice, was published by Karl Alberts of the publishers Ernst Günther of Leipzig (Krause 1880, pp. 1–72).

³ Samuel Johnson had grown up in Lichfield, Derbyshire (where Erasmus Darwin had his medical practice), and later made visits to friends there (*ODNB*).

⁴ In his letter of 30 March 1879, Krause had suggested that Erasmus Darwin modelled his poetry on that of Henry Brooke and Richard Blackmore. (See *Biographie universelle* 10: 553.) It is not clear which of CD's sons is being referred to. The catalogue of English books has not been identified; there is now no such title in the Darwin Library.

From Nicolai Mengden¹ 2 April 1879

Hochgeehrter Herr!

Da ich vor einem Jahre an mir selber erfahren habe, wie gütig Sie den Bitten, die man an Sie zu richten wagt erfüllen, da Sie ja die Sendung Ihrer werthen Namensunterschrift nicht verweigern, so wage ich jetzt wiederum mit einer unbescheidenen Bitte an Sie heranzutreten, um deren Erfüllung ich Sie inständig zu bitten wage.²

Ich habe Einiges in Ihren Schriften gelesen, die ich als 17-jähriger Mensch natürlich nicht verstanden habe, und durch Haeckels Wort: “Die Entwicklungsgeschichte ist der wahre Weg zur Erkenntnis”. Und durch seine “natürliche Schöpfungsgeschichte, und durch das Gerede vieler, die Sie sicher nicht verstehen könne, bin ich an mir selber irre geworden, und Zweifel sind in mir aufgestiegen, und daher wage ich es Sie zu fragen, ob bei dem festen Glauben an Ihre Theorie ein Gott bestehen kann, oder ob man nur die Wahl hat zwischen Ihrer Theorie und dem Glauben an Gott, und ob diejenigen die an Ihre Theorie glauben auch an Gott glauben können und müssen?³

Wohl merke ich das meine Bitte sehr anmaßend ist und dennoch bitte ich Sie mir doch antworten zu wollen.

Da ich mir vorgenommen habe Ihrem Rathe gemäß mich zu handeln, um mich vollkommen nach dem, was Sie mir schreiben werden zu richten.

Wenn Sie aber die Frage für zu unverschämt halten und nicht beantworten wollen, so bitte ich Sie mir wenigstens Verzeihung zu geben. Ich wollte Wahrheit haben und da ich nicht Jemanden kannte außer Ihnen der mir Auskunft geben konnte habe ich dieses Gesuch gewagt.

Mit der Versicherung meiner grössten Verehrung | Ihr dankbar ergebener
N. Mengden

Dresden den 2 III. 79.

P.S. Da es mir unmöglich war englische Marken zu erhalten so bitte ich Sie mir die Antwort unfrankirt zukommen zu lassen, da sie dann auch wohl sicherer an mich gelangen würde.

[Contemporary translation]

Having found a year ago how kindly you comply with requests addressed to you, as you did not refuse me your valued autograph, I venture once again to trouble you with a request, compliance with which I ask particularly.

I have read some things in your writings which as a youth of 17 years I have naturally not understood; and through Hæckel's saying that the Evolution Record (Entwicklungsgeschichte) is the true way to knowledge, & through his “Natural History of Creation”, and through the talk of many who surely cannot understand you, I have got bewildered, & doubts have risen up, & therefore I venture to ask you whether, with a firm belief in your theory, a God can exist; or whether one has only the choice between a belief in your theory, and a belief in God, or whether those who believe in your theory can and must believe in a God?

I am quite aware that my request is a very presumptuous one, nevertheless I beg that you will answer me. I have made up my mind to act according to your advice, and to be directed by what you say.

If however you should consider my request too presumptuous, and should not be willing to answer, I beg you will at least forgive me. I desire truth, and as I know no one except yourself who can tell me what I ask, I venture to prefer this request to you.

With the assurance of | My highest respect | your gratefully devoted (signed)
M. Mengden.

P.S. As it was impossible for me to procure English Stamps, I beg you will send the answer unstamped, as it would in that way be more sure to reach me.

DAR 171: 151

CD ANNOTATION

Verso of last page: 'quite compatible with a belief in God; but then you must remember that different persons have widely different definitions of what they mean by God.—' *ink*

- ¹ For a translation of this letter, see Appendix I.
- ² Neither Mengden's earlier letter nor CD's reply have been found. Mengden corresponded with Francis Darwin after CD's death and mentioned these earlier letters, noting he had written in early 1878 and received CD's reply, dated 7 February 1878, eight days later (letter from Nicolai Mengden to Francis Darwin, June 1882; DAR 139.12: 14).
- ³ The source of the quotation from Ernst Haeckel has not been identified. Haeckel's popular book *Natürliche Schöpfungsgeschichte* (Natural history of creation; Haeckel 1868) had been through seven editions, the most recent published in 1879 (Haeckel 1879f). As an alternative to church-based religions, Haeckel proposed a monistic natural religion, which he referred to as the religion of the future (Haeckel 1879, pp. 681–2; for more on the development of Haeckel's monism, see T. H. Weir 2012).

To Alfred Newton 2 April [1879]

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
April. 2^d

My dear Professor Newton

I have signed the enclosed with pleasure.¹

Many thanks for your kind expressions about Frank.—²

In Haste catch Post | Yours | Ch. Darwin

Endorsement: 'April 2/79'

Cambridge University Library (MS Add. 9839/1D/64)

- ¹ The enclosure was a memorial recommending that Elliott Coues be allowed leave from his duties in the US Army in order to complete his bibliography of ornithology; Newton had sent it to CD the previous day (see letter from Alfred Newton, 1 April 1879).
- ² Newton expressed regret that Francis Darwin had declined to be nominated as an examiner in botany at Cambridge University (see letter from Alfred Newton, 1 April 1879).

From Henry Reeks 3 April 1879

Thrupton, | n^r Andover—
April 3. '79

Dear M^r Darwin.

Enclosed you will find a sample of seeds of *Onobrychis sativa* containing a few seeds also of *Poterium muricatum*.¹ By this post I also send you some young plants of each of the above species found growing intermixed this morning. I fancy that it is such a perfect case of mimicry among plants that I have much pleasure in calling your attention to the following facts:—

Commencing with the seed you will observe (of course setting aside the botanical eye) how very difficult they are to separate by appearance. The burnet seeds are even “pitted”; and, although “angled”, only one angle catches the eye at the same time. I may here say that I have purposely left in more seeds of *Poterium* than are usually found in a carefully winnowed sample of sanfoin seed: the average would scarcely be three burnet seeds in half a pint of sanfoin seed, which would of course make the seeds of the useless plant more difficult to detect. Coming now to the young plants you will observe how wonderfully they still resemble each other; and it is next to impossible for any save the botanist, or experienced agriculturalist to weed out the burnet from the sanfoin: because we must bear in mind that we have not got the plants in our hands for separation: they are growing together at our feet! When viewed from a distance of five or six feet I know of no leaves so dazzling, or difficult to grasp the outline of as those of pinnated form, especially when walking over a large surface of ground—like a field of sanfoin—carpeted with them. One would, however, naturally suppose that, as the plants belong to different natural orders the difference could be easily detected by the merest tyro when the plants are in bloom, but such is not the case,—far from it—the long pendulous *pink* stamens make it resemble, to a remarkable degree, the heads of flowers of *Onobrychis*² I should be very delighted to hear your valued opinion as to its being a case of mimicry.

and with kind regards, | Believe me, very truly y^s. | Henry Reeks—

C. Darwin, Esq^{re} F.R.S. &c.

DAR 176: 83

¹ *Onobrychis sativa* is a synonym of *Onobrychis vicifolia*, the perennial legume sainfoin. *Poterium muricatum* is a synonym of *Sanguisorba minor* ssp. *balearica*, the small burnet.

² Sainfoin is in the order Fabales, and burnet in the order Rosales.

To W. T. Thiselton-Dyer 3 April [1879]¹

From Mr. C. Darwin, Down, Beckenham.

Many thanks for your memoranda about Seeds & for all your trouble—² I thought that I received *Ipomœa jucunda* formerly from Kew, but I certainly received them from some one under this name.—³

C.D.

Ap. 3^d

ApcS

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: f. 172)

¹ The year is established by the relationship between this letter and the letter to W. T. Thiselton-Dyer, 24 March 1879.

² The memoranda, which have not been found, concerned the list of seeds that CD had requested from Kew (see letter to W. T. Thiselton-Dyer, 24 March 1879).

³ CD had asked for seeds of *Ipomœa jucunda* in his letter to W. T. Thiselton-Dyer, 24 March 1879. *Ipomœa jucunda* is in the family Convolvulaceae; it is a species of morning-glory native to Sri Lanka.

To Reginald Darwin 4 April 1879

Down,
April 4, 1879.

My dear Cousin,

I have been deeply interested by the great book which you have so kindly lent me.¹ Reading and looking at it is like having communication with the dead. I will venture to keep the book for a week or 10 days longer, as my son George is greatly interested about all old things and will return it in a few days from Algiers.² The book has taught me a good deal about the occupations and tastes of our grandfather. I have copied out the address to an atheist,—the hymn,—part of a letter about a case of infanticide,—the agreement with Bolton which I suppose was a joke,—professional income at Lichfield and some doggrel verses about a hare hunt. I cannot tell at present what I shall like to insert in my preliminary notice; but if at the time it seems desirable should you object to my using any of the above specified extracts? I fear it would be too absurd to use the doggrel verses, which bring in Erasmus when 9 years old.³ I have two questions to ask:—

The Galtons have told me a curious story about a jockey coming to our grandfather at night in Newmarket, did you ever hear Sir Francis tell this story?⁴ Our grandfather was certainly on the road to Margate and I cannot make out why he should have passed through Newmarket; can you throw any light on this?

I suppose you do not know whether our Grandfather went to Edinburgh when Charles died there: I ask because late in life he sent to my Father a cypher woven out grass collected on Charles' tomb; and I want to know whether he gathered the grass himself.⁵ Many thanks for your offer of a photograph of the house in Full St.; but I think it would be sufficient to give the two drawings before alluded to.⁶ I have a rough drawing of the Priory copied by Mrs Bort from a lithograph by Miss V. Darwin; and if I could borrow this lithograph, it could be reduced and engraved and would do very well.⁷ I have been much amused by many of the scraps at the end of the book which you depreciate: I was once at Sydnop and this makes me feel all the more interest about the place.⁸

With many thanks. | Yours affectionately | Charles Darwin

P.S. What a curious story that is about the Cotton M.S. I will get George to go to the Br. Mus. and try to discover the entry.⁹

Copy
DAR 153: 97

¹ Erasmus Darwin's Commonplace book (Down House MS; see letter to Reginald Darwin, 1 April 1879).

² The copyist probably made a slip and wrote 'return it' rather than just 'return'; George Howard Darwin arrived back from Algiers, where he had been since late January, before 17 April, when he left Down for Cambridge (Emma Darwin's diary (DAR 242)).

³ CD included all these items in the first version of his sketch of Erasmus Darwin's life; three copies of these first proofs exist in DAR 210.11: 45–7, and this version is reproduced in King-Hele ed. 2003. However, Henrietta Emma Litchfield edited this version before publication, and only the extracts from Erasmus's ode on the folly of atheism, his letter about infanticide, the humorous agreement with Matthew Boulton, and the records of his income from his medical practice in Lichfield, appeared in *Erasmus Darwin*, pp. 25–6, 28–9, 43–4, and 121.

- ⁴ The story of Erasmus Darwin being woken at night in a Newmarket hotel to be given a betting tip by a jockey whose seriously ill mother had been treated kindly by Erasmus was published in *Erasmus Darwin*, pp. 63–4. Elizabeth Anne Wheler, a sister of Francis Galton, first told CD the story in her letter of 25 March 1879; Francis Sacheverel Darwin was Reginald's father.
- ⁵ Erasmus Darwin did travel to Edinburgh and reached the city before his eldest son, Charles Darwin, died (*Erasmus Darwin*, p. 83; King-Hele ed. 1981, p. 87). It was probably his second son, Erasmus, who collected the grass from Charles's tomb to make a plaited cross; it was found in his possession at the time of his death in 1799, and given to CD's father, Robert Waring Darwin, in April 1802 (*Erasmus Darwin*, p. 76; King-Hele ed. 1981, p. 89).
- ⁶ See letter from Reginald Darwin, 2 April 1879. In the letter to Reginald Darwin, 1 April 1879, CD had mentioned that he thought he would include woodcuts of Elston Hall and Breadsall Priory (the birth and death places of Erasmus Darwin) in his biographical account.
- ⁷ The lithograph was made by Violetta Harriot Darwin. The copy was made by Ann Boott (née Haden), who, before her marriage, was a neighbour of Erasmus Darwin in Full Street, Derby. The copyist wrote 'Boot' in the margin opposite the mention of 'Mrs Bort'.
- ⁸ Sydnoppe Hall near Matlock, Derbyshire, was purchased by Francis Sacheverel Darwin, Reginald Darwin's father, in the 1820s, and sold after his death in 1858 ('Sydnoppe Hall', Historic England, <https://historicengland.org.uk/listing/the-list/list-entry/1001273> (accessed 9 August 2017)). CD had visited Sydnoppe with his cousin William Darwin Fox when they were Cambridge undergraduates (see *Correspondence* vol. 7, letter to W. D. Fox, 31 January [1858] and n. 9). Among the newspaper clippings stuck in the back of the Commonplace book by Reginald Darwin, there are two taken from the *Derby Mercury* of 25 March and 8 April 1874, describing Francis Sacheverel Darwin's life at Sydnoppe Hall and the hunt he organised in 1837 to kill the last wild boar of his herd. Reginald Darwin felt that he had 'desecrated' Erasmus Darwin's Commonplace book by pasting in later newspaper cuttings (see letter from Reginald Darwin, 29 March 1879).
- ⁹ At the beginning of the proofs of the first version of the preliminary notice of Erasmus Darwin, CD mentioned in a footnote that a rare book on the history of Lichfield, found by a Mr Darwin in the thatch of a house and presented to the antiquary Robert Bruce Cotton (according to an inscription by Cotton), was in the Cotton collection in the British Museum (DAR 210.11: 45–7; King-Hele ed. 2003, p. 7). George Howard Darwin visited the British Museum to transcribe Cotton's inscription (King-Hele ed. 2003, p. 100). In DAR 210.11: 45, the sections to be omitted are marked in red crayon, but the footnote about Cotton's book and the paragraph to which it refers has not been marked; evidently CD decided to leave them out later.

From V. H. Darwin 4 April 1879

2. Park Villas | North St^e | Derby.
Fr. Apr. 4. 79.

My dear Cousin,

I am much interested to hear that you are bringing out another Life of D^r Darwin, I write to say that as there is no Photogr^{ph} of Breadsall Priory, and as I am an artist in a small way, I shall be delighted to make as good a drawing in pen & ink as I can, and with the judicious emendations which are generally made by such woodengravers as your publisher w^d employ, I am sure it would be a pretty view.¹

You must not trouble yourself to answer this unless you have some suggestion or wish to express—(much as I sh^d value a line from you), and I will forward the drawing before the end of this month, if that will do.²

I wish much that the plate of that beautiful little engraving of Wright's portrait c^d be found—I only lately discovered that it was by one of the M^r Wedgwoods, in purchasing it at a chance sale here. I believe it was originally made for "Seward's

Anecdotes”.—³ It would photograph perfectly though, as all prints do. The photos from the original picture are very poor & blotched, & are therefore out of the question.

It is remarkable how the word “benevolent” has always been associated with D: Darwin by his friends (almost like the “*judicious* Hooker!”)⁴ There is a fine & unusual instance of it in M: Edgeworth’s *Memoirs*. V. 1. p 163–4 and V. 2. p 198—⁵ Also in the Mem: of *Miss* Edgeworth, published privately— She says, describing a visit to the Priory after D: D’s death—“There was a charming picture of him in the room, in which his generous soul appeared, and his penetrating *benevolent* genius”.—⁶ vol. 1 p 112 His great Temperance is well known—from the anecdote of his addressing the Nottingham people on the subject⁷

I must not trespass further, & with kind regards | believe me | yours very sincerely
Violetta H. Darwin—

DAR 210.14: 20

CD ANNOTATIONS

4.1 It is ... his friends 4.2] *scored red crayon, pencil cross*

4.1 associated] *underl pencil*

4.2 There is ... privately— 4.4] *scored red crayon*

4.5 “There was ... genius”.— 4.7] *scored pencil*

¹ CD was preparing a character sketch of his grandfather Erasmus Darwin to accompany an English translation of Ernst Krause’s discussion of the works of Erasmus Darwin (Krause 1879a). Anna Seward had published a biography of Erasmus Darwin in 1804 (Seward 1804). CD wished to include a woodcut of Breadsall Priory, Erasmus Darwin’s death place, in his sketch (see letter to Reginald Darwin, 1 April 1879). Violetta Darwin was a book illustrator and member of the Anastatic Drawing Society, the purpose of which was to ‘delineate remains of antiquity’ (*Anastatic Drawing Society* (1858): iii and vi). In 1858, when she was still living at Breadsall Priory, she published a drawing of parts of Breadsall Church and the Priory (*ibid.*, plate 19).

² Violetta Darwin’s drawing of Breadsall Priory was used in *Erasmus Darwin*, p. 125. See plate on p. 171.

³ Joseph Wright of Derby painted several portraits of Erasmus Darwin (see M. Keynes 1994). The engraving, probably by John Allen Wedgwood, was taken from a portrait painted in 1770 (see letter from Reginald Darwin, 7 April 1879); no portrait is reproduced in Anna Seward’s *Memoirs of the life of Dr. Darwin ... with anecdotes of his friends*, but she commented on the 1770 painting (Seward 1804, p. 21). CD used an engraving, published by John Raphael Smith in 1797, of one of two versions of a later portrait by Wright of Erasmus Darwin holding a quill as the frontispiece to *Erasmus Darwin*.

⁴ CD gave several examples of Erasmus Darwin’s benevolence in *Erasmus Darwin*, pp. 34–5 and 60–5. The sixteenth-century theologian Richard Hooker was referred to as *judicious* by his later followers, who admired his moderation (*ODNB*).

⁵ Richard Lovell Edgeworth recalled Erasmus Darwin’s rescue from a ditch of a drunken man, whom he brought back to his home to care for overnight, only to discover that it was his brother-in-law (R. L. Edgeworth and Edgeworth 1820, 1: 163–4). Edgeworth also mentioned in 1798 that Erasmus Darwin’s expression in a recent portrait obscured his benevolence (R. L. Edgeworth and Edgeworth 1820, 2: 198). CD referred to both stories in *Erasmus Darwin*, pp. 60–1 and 69.

⁶ Maria Edgeworth visited Breadsall Priory in September 1802; Erasmus Darwin had died in April 1802, and the household was in deep mourning (F. A. Edgeworth ed. 1867, 1: 112). The portrait was probably Wright’s 1770 painting, which was sold to CD in 1877 (see *Correspondence* vol. 26, letter from E. A. Greaves, 3 January 1878; M. Keynes 1994, pp. 70–2).

⁷ According to Seward 1804, pp. 64–8, Erasmus Darwin, having uncharacteristically indulged in alcohol during a boating trip with friends to Nottingham, stepped overboard, swam to shore, and walked into the town, where he addressed working men on the benefits of fresh air as well as sobriety; he then

returned to his friends and resumed the boat trip. This anecdote appeared in *Erasmus Darwin*, pp. 58–9, but CD considered the address published by Seward to be her own invention, and suggested that Erasmus Darwin might have been tricked into taking strong drink by his friends.

From Raphael Meldola 4 April 1879

Offices, | 50, Old Broad Street, | E.C. | Atlas Works, | Hackney Wick, | London, E.
April 4th: 1879

My dear Mr. Darwin,

I enclose a specimen just received from Fritz Müller which you may perhaps like to see—a *branchiated Trichopteron*! You will see from his letter the special interest which attaches to the insect. The branchiæ can be seen projecting from between the segments. I must beg you to return the specimen as I will exhibit it at the next meeting of the Entom. Soc.¹

Weismann's book is getting on—² The 1st essay (Seasonal dimorphism) is nearly ready for publication & about $\frac{1}{2}$ the 2nd essay roughly translated.

I sent an abstract of the article in *Kosmos* on *Epicalia Acontius* to *Nature* a long time ago but suppose it has been 'crowded out' as it has not yet appeared.³ It would have been very appropriate in this week's *Nature* as a check upon Wallace's restrictions upon sexual selection in his review of Grant Allen's "Colour in Nature".⁴ In this review Wallace states "We may also remark that the sexual allurements of a peculiar odour given out by special patches of scales on butterflies' wings has been discovered by Fritz Müller in the genera *Mechanitis*, *Dircenna*, & *Thecla*, all very brilliantly coloured groups, a clear indication that colour is not a sexual allurements **or we should find it most developed, not in conjunction with, but in the absence of, the attraction of odour.**"⁵ The words which I have italicised are open to criticism—in fact I venture to think the argument totally fallacious. It does not follow that because colour has been acquired through Sexual Selec. the same agency should not have added other attractions in the same species. Do you concur in this?

Yours very faithfully, | R. Meldola.

Ch. Darwin Esq^{re}. LLD. F.R.S. &c.

DAR 171: 135

¹ Trichoptera is the order of caddisflies. In a paper read to the Entomological Society of London on 7 May 1879, Müller stated that he had not observed branchiæ in any Brazilian species of Trichoptera (F. Müller 1879b, p. 132). At the same meeting, an insect from the family *Leptoceridae* (order Trichoptera) with tracheobranchiæ, discovered in Brazil by Müller, was exhibited. Müller's description of the insect was published in the proceedings of the society; it was probably taken from his letter to Meldola, which has not been found (*Transactions of the Entomological Society of London (Proceedings)* 58 (1879): xiii–xiv). Tracheobranchiæ are the gill-like breathing organs in certain insect larvae (*OED*).

² Meldola was translating August Weismann's book *Studien zur Descendenz-Theorie* (Studies in the theory of descent; Weismann 1875–6). CD's annotated copy of Weismann 1875–6 is in the Darwin Library–CUL. Meldola's translation appeared in three parts; the first part, on the seasonal dimorphism of butterflies, was published in 1880 (Weismann 1880–2).

³ Meldola's note 'Butterflies with dissimilar sexes', published in *Nature*, 24 April 1879, pp. 586–8, was based on Müller's article on sexual dimorphism in *Epicalia acontius* (a synonym of *Catonephele acontius*, the Acontius firewing), published in *Kosmos* in January 1879 (F. Müller 1879a).

⁴ Alfred Russel Wallace's review of Grant Allen's book on colour in nature (G. Allen 1879a) was published in *Nature*, 3 April 1879, pp. 501–5. Wallace had long been a critic of sexual selection (see, for example, *Correspondence* vol. 24, letter to A. R. Wallace, 17 June 1876 and n. 18).

⁵ *Nature*, 3 April 1879, p. 504.

From H. G. Zeuthen¹ 5 April 1879

Det Kongelige Danske | Videnskabernes Selskab. | Kjøbenhavn.

5 avril 1879

Monsieur,

Au nom de l'Académie Royale Danoise j'ai l'honneur de vous informer que vous avez été nommé, dans la séance du 4 avril, membre ordinaire de notre Académie.

L'Académie a désiré vous exprimer par cette nomination sa reconnaissance et son admiration pour vos profondes et assidues recherches sur toutes les parties de l'Histoire Naturelle, et pour le jour tout nouveau que votre génie a jété sur cette science.

Je ne tarderai pas à vous envoyer par la poste votre diplôme de membre.² Vous recevrez nos Bulletins publiés en numéros et accompagnés de résumés en français. S'il se trouve parmi nos Mémoires quelqu'un que vous désiriez posséder je vous prie de m'en informer sans hésitation; je suis certain que l'Académie se fera un plaisir de vous l'offrir.

Veillez agréer, Monsieur, l'expression de mes sentiments les plus distingués
H G Zeuthen, | Secrétaire de l'Académie R. Danois

DAR 230: 74

¹ For a translation of this letter, see Appendix I.

² For a transcription and translation of the diploma, see Appendix III.

To C. M. C. Darwin 6 April 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

April 6th 1879

My dear M^{rs} Darwin

I had intended writing to you the day before your kind note to my wife arrived.¹ I sh^d be sorry to make any mistakes in the few words which I shall say about the Darwins of the past. Will you kindly read the enclosed written by my son George, & endeavour to explain our difficulty?²

My son Leonard of the R. Engineers now has charge at Chatham of the Photographic department; & he often takes a party of Sappers & miners to different parts of England to practise them in Photography, & he feels almost sure that before long he will be able to go to Elston & take a Photograph of your House; so that I sh^d. want no other copy.—³ Would you therefore be so very kind as to send for him (Lieut. Darwin R.E) the briefest line of introduction to your tenant at Elston.— He thinks he will also go to Cleatham. Is the estate there still in your possession? & do you know anything of the clergyman, so as to aid him in [hunting] the Registers or any old tombs &c.—⁴

Since writing to you before I have made an odd discovery. I had a very large box, marked “old settlements & deeds” from my Father, & never thought it worth opening; but now I have done so, & found instead of deeds hundreds of letters from D^r Erasmus Darwin & other odd old letters, one very curious one from Susannah Darwin sister of Erasmus.⁵ Also a rough drawing of Elston before it was altered about year 1750; & this I think that I will have engraved & give it as well as your House in its present state.⁶

I hope that I have not wearied you with this long note & remain | yours truly obliged | Charles Darwin

The late Mrs Vivien Kindersley (private collection)

¹ This letter to Emma Darwin has not been found.

² George Howard Darwin's enclosure has not been found. It probably related to whether Robert Darwin (1682–1754) had owned the Elston Estate in Nottinghamshire (see letter from C. M. C. Darwin, 14 April 1879).

³ Leonard Darwin was in the Royal Engineers, and an instructor in chemistry and photography at the School of Military Engineering at Chatham in Kent. Sappers: private soldiers in the Royal Engineers. Charlotte Maria Cooper Darwin's husband, Francis Rhodes Darwin, inherited Elston Hall from Charlotte's brother, Robert Alvey Darwin, in 1850 (*Darwin pedigree*, p. 28). She had sent CD photographs of Elston Hall taken in the summer of 1878 (see letter from C. M. C. Darwin, 27 March 1879).

⁴ The Cleatham Estate in north Lincolnshire had been owned by Charlotte and CD's great-great-uncle William Darwin of Cleatham (1681–1760). Cleatham is in the parish of Manton; the rector of Manton was John Winfield Hallam (*Post Office directory of Lincolnshire 1885*).

⁵ CD's father, Robert Waring Darwin, was Erasmus Darwin's youngest son from his first marriage. Susannah Darwin was Erasmus Darwin's sister. A transcription of the 'curious' letter (DAR 227.3.1) in which Susannah wondered whether hog flesh could be regarded as fish and therefore eaten during Lent was published in *Erasmus Darwin*, p. 7. The contents of the 'settlements & deeds' box are probably now in DAR 227.

⁶ CD included only the engraving of Elston before 1754 in *Erasmus Darwin*, p. 3.

From Reginald Darwin 7 April 1879

Fern, | Buxton.
April 7 | 1879.

My dear Cousin

I am truly pleased that you have found interest in the old Book, & pray do not hurry to return it. I only hope that your son may also derive pleasure from it—¹ The absurd verses about the Hare Hunt show us, at least, that our grandfather was not the first poet in the family! that his Brother John stammered, & that, beautiful as was his handwriting in his old age, (see his letter to my grandmother) he was, in his youth, sadly deficient both in his writing & in his spelling!—²

I cannot help you as to the Jockey story. I have often heard my Father tell it; but when it happened, & who the gentleman was, who owned the Horse that was to lose, I have no recollection—³ I do not know whether D^r D went to Edinburgh when Charles died: but I have this day found amongst my Fathers papers the scrap which I enclose. It is in my Father's writing, & from it I should collect, as you probably will, that, knowing that his Father could never see his son again, D^r Duncan, or

some loving friend, had the picture taken—⁴ I have no means of seeing the life of Sir H Rayburn.⁵ D^r Duncans vault, or burying place, when I saw it in 1840, was, like many others in Edinburgh & the neighbourhood before the “Anatomy Act”, an inclosure strongly railed in with Iron Rails, & the tablet to Charles was against the wall facing you—⁶ If you require an engraving of our Grandfather I may be able to help you, as I have the picture by Wright of Derby, mentioned in Miss Seward’s life of D^r D. page 21, painted about 1770, when he would be under 40; & after waiting many years I have obtained the little engraving of the picture size 3 inches by 4—engraved by J. A. Wedgwood.⁷ I only know of two other copies—probably however you may have one.

I have also the picture by Rawlinson painted about 1800, & the engraving of it—⁸ I have but few articles which belonged to our Grandfather—the chair in which he always sat in his Library—His Library ladder, which shuts up into a plain pole, & which he invented—His Cheese Scoop, & Apple scoop, (made of Bone) which he always used—his silver repeater watch, & his two seals, one “E. D.” & the other, the one I have used for years with his adopted motto, & which motto I manage to avoid.⁹

Do you possess a small book printed for private circulation in 1859, “Sketch of the life of James Keir?”. It was sent me by the compiler, James Moilliet, & contains¹⁰

Incomplete

DAR 210.14: 21

CD ANNOTATIONS

1.1 I am ... from it— 1.2] *crossed red crayon*

1.4 that his ... spelling!— 1.6] *scored red crayon*

2.1 I have ... it;] *scored red crayon*

2.1 Father tell it;] *underl red crayon*

2.2 & who ... was, 2.8] *crossed red crayon*

2.9 like ... you— 2.11] *crossed pencil*

2.12 as ... 40; 2.13] *scored red crayon*

2.13 1770.] *underl red crayon*

2.14 engraving ... copies— 2.15] *scored red crayon*

3.1 I ... Bone) 3.4] *crossed red crayon*

3.4 which he always ... James Moilliet, 4.2] *crossed pencil*

4.1 Do ... Keir?" 4.2] *scored red crayon*

Top of letter: 'about | Father of Erasmus'¹¹ pencil; 'R. Darwin' red crayon

¹ CD had asked to keep Erasmus Darwin’s Commonplace book (Down House MS) until George Howard Darwin returned from Algiers (see letter to Reginald Darwin, 4 April 1879).

² ‘A new Song in praise of two young Hunters’ was written by Erasmus and John Darwin’s older brother, Robert Waring Darwin (1724–1816). John’s stammer may be indicated in the poem by his calling ‘war, war, war’ while Erasmus was calling ‘war dead’ (‘ware (beware) dead’, a hunting cry; King-Hele ed. 2003, p. 17). Reginald Darwin’s grandmother was Elizabeth Darwin, Erasmus Darwin’s second wife; CD’s grandmother was Mary Darwin, Erasmus’s first wife. The letter was probably among the loose letters sent by Reginald Darwin with the Commonplace book (see letter from Reginald Darwin, 29 March 1879).

³ Reginald Darwin’s father was Francis Sacheverel Darwin. CD had heard the jockey story from Elizabeth Anne Wheler (see letter from E. A. Wheler, 25 March 1879 and n. 7).

⁴ The enclosure in Francis Sacheverel Darwin’s hand has not been found.

⁵ Andrew Duncan was Erasmus Darwin’s son Charles’s Edinburgh professor. Erasmus Darwin did travel to Edinburgh when he heard that Charles was dying (see letter to Reginald Darwin, 4 April 1879,

- n. 5). Duncan evidently had a portrait of Charles made, but this has not been found. Duncan himself recorded that he cut off a lock of Charles's hair, and that this was set into a trinket for his watch chain as a memorial by Henry Raeburn, who was then apprenticed to a jeweller (Duncan 1824, pp. 11–12).
- ⁶ Charles Darwin (1758–87) was buried in the Duncan family vault in the Chapel of Ease, St Cuthbert's Church (now Buccleuch Parish Church), Edinburgh (E. Darwin ed. 1780, p. iv and 135). The city was notorious for grave robbers who supplied cadavers to medical schools. In 1832, the Anatomy Act made it legal to use the unclaimed corpses of paupers for dissection in medical schools, instead of, as previously, the bodies of executed murderers (R. Richardson 2000, p. xv). The inscription on the memorial tablet to Charles Darwin was written by his father, Erasmus Darwin (*Erasmus Darwin*, p. 82). For the text on the tablet, see 'Charles Darwin 1758–78', <http://www.findagrave.com> (accessed 18 August 2017).
- ⁷ Joseph Wright of Derby painted a portrait of Erasmus Darwin around 1770; Anna Seward described it as a 'contemplative portrait, of the most perfect resemblance' (Seward 1804, p. 21). The engraving was probably made by John Allen Wedgwood.
- ⁸ The portrait by James Rawlinson was painted in 1802, shortly before Erasmus Darwin's death (M. Keynes 1994, p. 78). The engraving was done by James Heath and published in 1804 (National Portrait Gallery, D34687).
- ⁹ Erasmus Darwin's motto was 'E conchis omnia' (everything from shells); the motto used by his elder brothers was 'Cave et aude' (beware and dare). See King-Hele ed. 2003, pp. xiii–xvi.
- ¹⁰ The *Sketch of the life of James Keir* (Moilliet and Moilliet 1859) contained correspondence with Erasmus Darwin, who was a close friend of Keir. The book comprises a biography written by Keir's daughter Amelia Moilliet and a selection of Keir's correspondence edited by her grandson James Keir Moilliet.
- ¹¹ Erasmus Darwin's father was Robert Darwin (1682–1754).

From Henry Reeks 7 April 1879

Thruxton, n^o: Andover—
April 7.79

My dear Sir,

Thanks for your kind note, but I take it that the burnet may have other enemies besides slugs, &c.—e.g., man, for it costs a lot of money annually among high class farmers to eradicate the burnet by “spudding” out the plants, from among the sanfoin; therefore, I should fancy that those plants, which so closely resembled the sanfoin, as to escape the eyes of the men employed to “spud” them out, would stand a far greater chance of reproducing its form, and so on *ad libitum*.¹ So also with the seed. A farmer's first question on buying sanfoin seed is—or should be, “has it burnet amongst it”? If, by chance there should be some seed (as there often is) that so closely resemble the sanfoin seed, as to escape detection in a large sample, surely it would be to the advantage of the plant.

Then again when the burnet was in bloom, those which bore heads of flowers most resembling in shape and color the blooms of sanfoin, would certainly stand a better chance of escaping being pulled up, and thus the mimetic form would surely reproduce itself—

With renewed thanks, | Believe me, dear Sir, | Yours very truly, | Henry Reeks—

C. Darwin, Esq^r., M.A., F.R.S. | &c— &c—

DAR 176: 84

¹ CD's note has not been found. Reeks had suggested that the similarity between sainfoin and burnet was a case of plant mimicry (see letter from Henry Reeks, 3 April 1878).

April 1879

From Emma Darwin to Nicolai Mengden 8 April 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Ap. 8 | 1879

Dear Sir

Mr Darwin begs me to say that he receives so many letters that he cannot answer them all.¹ He considers that the theory of evolution is quite compatible with the belief in a God; but that you must remember that different persons have different definitions of what they mean by God—.

Dear Sir | Yours faithfully | E. Darwin

Dr Mirko Majer (private collection)

¹ See letter from Nicolai Mengden, 2 April 1879.

To Reginald Darwin 8 April 1879

Down,

April 8, 1879.

My dear Cousin

Every word in your letter shows that you believe in the good Scotch saying “that blood is thicker than water.”¹ Before receiving your letters we had resolved to beg you if you ever passed through London to pay us a visit; though unfortunately my head never allows me to enjoy a talk with anyone, except for a short time. Since my last letter I have made a strange discovery; for an old box from my father marked ‘Old Deeds,’ and which consequently I had never opened, I found full of letters—hundreds from Dr. Erasmus—and others from old members of the family: some few very curious. Also a drawing of Elston before it was altered, about 1750, of which I think I will give a copy.² Your sister Violetta writes to me in the kindest manner, and she says that the engraving by Wedgwood would be much better to have photographed than a Picture.³ She has a copy, but I did not feel sure whether she meant to offer to lend it me. Would you lend me your copy and then my son Leonard, R.E., who is at the head of the Photographic Department at Chatham could judge whether it could be well reproduced.⁴ Your sister will kindly make drawing of The Priory, so I am now splendidly well off.⁵ George has come home and has been greatly interested by your big book.⁶ What an odd story in the Cotton M.S.; but George remarks that there is no evidence that this Mr. Darwin was W. Darwin of Cleatham.⁷ We are much puzzled whether Robert Darwin of Lincoln’s Inn and Father of Dr. Erasmus was ever *owner* of Elston as he died before his elder brother, and yet I have always understood that Dr. Erasmus was born at Elston.⁸ I have also written to Mrs. Darwin of Creskeld to ask about this point.⁹

By the way in the pile of old letters just discovered I have found out that our Grandfather did get to Edinburgh before Charles died.¹⁰ The more I read of Dr. D. the higher he rises in my estimation. At the suggestion of Emma Galton I wrote to Mr. Moilliet to know whether he had any letters of my Grandfather, but he has not answered me. Would you lend me the Memoir to which you refer?¹¹

Pray *forgive* this very untidy letter, but I am very tired to death with writing letters; half the fools throughout Europe write to ask me the stupidest questions.—

Yours cordially obliged | Charles Darwin

P.S Very many thanks about the Seal; but we sh^d not particularly value it.—¹²

Please sometime answer about address to “atheist”—¹³

Copy and ALS

DAR 153: 98; Lawrences Auctioneers, Crewkerne, Somerset (dealers) (2009); *LL* 3: 219¹⁴

¹ See letter from Reginald Darwin, 7 April 1879.

² The section ‘Since ... a copy.’ was cut out of a copy of the letter in DAR 153, but was published in *LL* 3: 219. CD also mentioned his discovery of letters from Erasmus Darwin and others, and the drawing of Elston Hall in Robert Waring Darwin’s deeds box in his letter to C. M. C. Darwin, 6 April 1879.

³ On the engraving by John Allen Wedgwood, see the letter from V. H. Darwin, 4 April 1879 and n. 3.

⁴ Leonard Darwin of the Royal Engineers was an instructor in chemistry and photography at the School of Military Engineering at Chatham in Kent.

⁵ Violetta Harriot Darwin had offered to make a drawing of Breadsall Priory, Erasmus Darwin’s death place (see letter from V. H. Darwin, 4 April 1879).

⁶ George Howard Darwin had been in Algiers for several months; he was, as CD had anticipated, interested in Erasmus Darwin’s *Commonplace book* (Down House MS; see letter to Reginald Darwin, 4 April 1879).

⁷ Robert Bruce Cotton had recorded that a rare book on the history of Lichfield in his collection in the British Library had been found by a Mr Darwin (see letter to Reginald Darwin, 4 April 1879 and n. 9). William Darwin (1681–1760) was Erasmus Darwin’s uncle.

⁸ Robert Darwin (1682–1754) was Erasmus Darwin’s father; his brother was William Darwin (1681–1760). Their mother, Anne, lived at Elston Hall with her mother, Anne Lascelles, who had a life interest in the hall after the death of her son, John Lascelles of Elston. After Anne Lascelle’s death, Robert Darwin bought Elston Hall from the Lascelles (Elston Heritage Project, elstonheritage.org.uk (accessed 23 November 2018)).

⁹ See letter to C. M. C. Darwin, 6 April 1879.

¹⁰ Erasmus Darwin’s eldest son, Charles, died in 1778, while a student at Edinburgh University. Erasmus arrived in Edinburgh shortly before Charles died (see letter to Reginald Darwin, 4 April 1879, n. 5).

¹¹ It was Elizabeth Anne Wheler not her sister Emma Sophia Galton who suggested that CD write to James Keir Moilliet (see letter from E. A. Wheler, 25 March 1879). CD wished to borrow *Sketch of the life of James Keir* (Moilliet and Moilliet 1859), mentioned by Reginald Darwin in his letter of 7 April 1879.

¹² Reginald Darwin had mentioned that he had Erasmus Darwin’s two seals (see letter from Reginald Darwin, 7 April 1879).

¹³ CD had asked Reginald Darwin whether he would mind if Erasmus Darwin’s poem on the folly of atheism was published (see letter to Reginald Darwin, 4 April 1879). The first four lines appeared in *Erasmus Darwin*, p. 44.

¹⁴ The text from ‘Europe write’ is from a facsimile in the sale catalogue; the letter was described as being three pages long but incomplete. The rest of the text is from a copy and the published extract (see n. 2, above).

From Reginald Darwin 9 April 1879

Derbyshire Club
April 9 | 1879.

My dear Cousin

I have found amongst some Medical Pamphlets which belonged to my Father, one relating to Charles Darwin, which was previously unknown to me— It was printed at Lichfield in 1780, & consists of a beautiful letter of dedication from D^r Darwin

to D^r Duncan, the Thesis translated into English, & a sketch life of Charles, with a short account of his last illness—¹ I see he lived at least a fortnight after receiving the virus when dissecting the Brain of a Child— The title page has an engraving of the Medal gained by him—² If you have not got this Pamphlet I shall be most happy to send it to you— I am here for the day on Sessions business, & have seen my sister, who is deeply interested in your work.³ She has done a charming little picture of the Priory for you, & has found two early records of D^r Darwin: one, some verses to a Chesterfield school fellow about 1749; & another, a long letter & verses to D^r Burrows the Schoolmaster, & written from St John's College, Cambridge, in 1750.⁴ She proposes sending you these, with a Manuscript book of D^r D.'s.—⁵

Affectly yours | R Darwin—

DAR 99: 152–153

- ¹ Erasmus Darwin (1731–1802) wrote a short biography of his eldest son, Charles (CD's uncle), which he published together with Charles's dissertations 'An account of the retrograde motions of the absorbent vessels of animal bodies in some diseases' (translated into English from its original Latin) and 'Experiments establishing a criterion between mucaginous and purulent matter' (E. Darwin ed. 1780). Andrew Duncan had taken care of Charles during his fatal illness and had buried him in the Duncan family vault in Edinburgh (see letter from Reginald Darwin, 7 April 1879 and n. 5).
- ² Charles Darwin had been awarded the first gold medal given by the Aesculapian Society in Edinburgh for his dissertation on the distinction between pus and mucus (E. Darwin ed. 1780, pp. [i], 135).
- ³ The *Derby Mercury*, 9 April 1879, p. 8, recorded that Reginald Darwin was present at the Derbyshire April Sessions. Sessions are periodical court sittings held by justices of the peace, who have jurisdiction over minor offences and certain civil and administrative matters (*OED*). Violetta Harriot Darwin lived in Derby.
- ⁴ Violetta Darwin's drawing of Breadsall Priory was reproduced in *Erasmus Darwin*, p. 125. Erasmus Darwin attended Chesterfield School from 1741 to 1749 before being admitted to St John's College, Cambridge, in June 1750. In *Erasmus Darwin*, p. 21, CD mistakenly stated that the 1749 letter was addressed to an undermaster at Chesterfield School, instead of Erasmus's school-friend Samuel Pegge (King-Hele ed. 2003, p. 106). The 1750 letter was to William Burrow, headmaster of the school from 1722 to 1752.
- ⁵ The manuscript book has not been identified.

From V. H. Darwin 9 April 1879

2. Park Villas. | North Stt | Derby.
Wed. Ap. 9./79

My dear Cousin.

⟨7 lines excised⟩ to M^r. Burroughs. and the "College exercises"—written at 17. & 18 y^{rs}. old— Pray keep the books as long as is quite convenient— the larger one is in my father's writing—and I think there are some in it that are not in the parchment book—¹

I must copy out a few lines from a poem (an imitation of Horace) addressed to D^r. D. by his friend Sir Brooke Boothby because they are an eloquent testimony to his kindness of heart.²

⟨7 lines excised⟩

This is printed in Boothby's "Sorrows"— also the following Sonnet

Darwin! had mortal science e'er availed
 To save from Fate's irrevocable doom;
 Death had not cropped the pride of beauty's bloom
 Nor I my loss with ceaseless tears bewailed—
 When the last efforts of thy art had failed
 And all my thoughts were wedded to the tomb
 Thy mild philosophy repelled the gloom
 And bade me bear the ills on life entailed—
 Not with vain precepts, which th'unwounded breast
 Dictates, at ease, to sufferings never known,
 But lenient charms, that calm'd thy soul to rest
 When the dire pangs I felt were once thine own,
 "That she from woes like mine was ta'en away
 And few the sorrowing days I here shall stay"³

This kindness is exemplified also in Wright's great picture of the "Air Pump", now in the S. Kensington Mus.: The wise men are intent on their experiments, M^r: Whitehurst is exhausting the receiver, a child hides her face from the pigeon's distressing fate—and it is D^r: Darwin who reaches a kind hand across the table to pat her shoulder, & points to the bird as if to say it will recover—⁴

It is curious that Miss Seward's sh^d be the only biography we have.⁵ I know nothing more wonderful than the *variety* of his genius. Many would have been bewildered by such a compound gift, and in trying everything, w^d have done nothing, but he made his mark in all that he undertook, and his great closely printed Quartos show an almost superhuman energy, written as they were during such a medical career—and he combined with all this learning & labour an uncommon fund of wit—and a great fondness and aptitude for society.⁶

I shall post this today, but shall not be able to forward the books till tomorrow, for it is a *pouring day*, and I live some distance from the R^y. Office.⁷ The view of the Priory is compressed into the size you sent me—and will be very nice when finished & printed.⁸

Believe me | yours very truly | Violetta H Darwin.

I think that in the Sonnet, where Sir B. B refers to D^r: D's own experience of sorrow, he must be alluding to the death of his son Charles—the dates bear this out. and we know of no other great sorrow of his—⁹

Incomplete

DAR 210.14: 22

CD ANNOTATIONS

2.2 because ... heart 2.3] *triple scored pencil*

5.1 Miss Seward's] '(not sole)' *added pencil*

5.1 I ... society. 5.7] *scored pencil*

6.2 The ... printed. 6.3] *double scored pencil*

Top of letter: 'Charity, Sympathy' *pencil*

End of letter: 'Ask Hen. old view of Elston—¹⁰ old letter old Book' *pencil*

¹ Violetta enclosed letters and verses written by Erasmus Darwin to William Burrow and Samuel Pegge, as well as a manuscript book belonging to Erasmus Darwin (see letter from Reginald Darwin, 9 April 1879 and n. 4). Her father was Francis Sacheverel Darwin.

- ² The lines were from the poem by Brooke Boothby (1744–1824), ‘The first satire of the first book of Horace imitated. To Erasmus Darwin’, published in *Sorrowes. Sacred to the memory of Penelope*, Boothby’s commemoration of his 6-year-old daughter, who had died in 1791 (Boothby 1796, pp. 66–72, lines from p. 71). The poem suggests that Erasmus Darwin treated Boothby’s daughter and it also expands on his regard for the poor as a doctor. CD evidently cut out the lines from the letter in order to quote them in *Erasmus Darwin*, p. 63. On the importance of the Roman poet Horace in the eighteenth century, see Money 2007.
- ³ The lines come from the fourth sonnet in *Sorrowes* (Boothby 1796, p. 10).
- ⁴ Joseph Wright’s painting ‘An experiment on a bird in the air pump’ depicts a demonstration of a vacuum; the removal of air by the pump is indicated by the collapse of a cockatoo in the receptacle. The painting has been owned by the National Gallery, London, since 1863, but it may have been on show in the South Kensington Museum (now the Victoria and Albert Museum) in 1879 to accompany a display of scientific apparatus (Burton 1999, p. 120). Wright was a close friend of both John Whitehurst and Erasmus Darwin. See plate on p. 165.
- ⁵ Anna Seward’s memoir of Erasmus Darwin had been published in 1804 (Seward 1804). A later account of Erasmus Darwin had been given by Mary Anne Schimmelpenninck as part of her autobiography (Hankin ed. 1858), but because of the aspersions this cast on Erasmus’s character, the work had been kept from Violetta (see letter from E. S. Galton, 25 March 1879).
- ⁶ Erasmus Darwin’s poetry was published in quarto volumes (E. Darwin 1789–91 and E. Darwin 1803).
- ⁷ Railway office.
- ⁸ Violetta’s drawing of Breadsall Priory (Erasmus Darwin’s death place) was used in *Erasmus Darwin*, p. 125.
- ⁹ Charles Darwin, CD’s uncle, died in 1778.
- ¹⁰ No letter to Henrietta Emma Litchfield on this subject has been found. Elston Hall was Erasmus Darwin’s birthplace.

To H. G. Zeuthen 9 April 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
April 9th 1879

Sir

I hope that you will be so good as to present to the R. Danish Academy my most sincere thanks for the distinguished honour conferred on me by my election as Member.¹ This honour is the more gratifying to me from the number of illustrious naturalists which Denmark has produced & still possesses. Permit me further to thank you cordially for the very kind expressions towards me in your letter, announcing my election.

I beg leave to remain, Sir, | Your obliged & obedient servant | Charles Darwin

To the Secretary | &c &c &c

Rigsarkivet (Det Kongelige Danske Videnskabernes Selskab)

¹ See letter from H. G. Zeuthen, 5 April 1879. Royal Danish Academy: Kongelige Danske Videnskabernes Selskab.

To Reginald Darwin 10 April [1879]¹

Down,
April 10

My dear Cousin

One word to thank you and to say that the Galtons have lent me the essay written by and about Charles.² I shall be glad to see the Keir-Moilliet memoirs, for I have just



A philosopher shewing an experiment on the air pump (1769).
Mezzotint by Valentine Green after Joseph Wright of Derby.
AN92079001.

© The Trustees of the British Museum.

come across long and excellent letter to my Father from Mr. Keir about character of our grandfather.³

I have always thought that there is one golden rule for Biographers, that is, not to insert anything which, as far as one can judge, would interest only the members of the Family. This necessitates much brevity, but it seems to me that it is no use whatever to publish, unless one can make what is published in some degree interesting to the public.

God knows whether I shall succeed, but no man can do more than his best.

I have had another most kind letter from your sister⁴

Yours affectionately | Ch. Darwin

Copy

DAR 153: 99

¹ The year is established by the relationship between this letter and the letter from Reginald Darwin, 9 April 1879.

² Reginald Darwin had offered to lend CD an edition of medical works by Erasmus Darwin's son Charles (E. Darwin ed. 1780; letter from Reginald Darwin, 9 April 1879). CD had already received a copy from Emma Sophia Galton (see letter from E. A. Wheler, 28 March 1879).

³ See letter from Reginald Darwin, 7 April 1879. Amelia Moilliet and James Keir Moilliet had published a life and letters of James Keir (Moilliet and Moilliet 1859). In *Erasmus Darwin*, pp. 13–14, 35–6, 49–50, and 68, CD quoted from the letter from Keir to Robert Waring Darwin, 12 May 1802 (DAR 227.6: 76). CD marked Keir's letter with red and blue crayon to indicate the sections he quoted.

⁴ See letter from V. H. Darwin, 9 April 1879.

From V. H. Darwin 12 April [1879]¹

2. Park Villas. | North St^r. | Derby—
Sat. Apr. 12.

My dear Cousin.

How kind you are to write to me so much at length.² I am anxious to spare you trouble, and assure you that the merest Postcard will be enough if necessary— It must be quite distracting to have to arrange all the letters from your various clients on the subject in hand—but it is curious how facts and documents come forth when really wanted, and I am charmed to hear you found that box, and also that you have a family Photographer.³

The print of D^r Darwin belongs to Reginald, not to me. I bought it *for* him last year, and I thought that of course, as it is by a Wedgwood, you would possess one at least of the engravings.⁴

Wright made three portraits of D^r D. & all were engraved—but *it* stands first for beauty of execution and faithful pleasing likeness—⁵

Thank you much for so kindly wishing to see me— I am one of those home keeping country mice that hardly ever go to London— If I should do so, it would be the greatest pleasure to call on you and I would make a point of it.

With kind regards to M^{rs}. Darwin | Believe me | Your affect^e. Cousin—
Violetta H. Darwin

DAR 99: 166

- ¹ The year is established by the relationship between this letter and the letter from V. H. Darwin, 9 April 1879.
- ² CD's letter has not been found.
- ³ CD had found letters from Erasmus Darwin (1731–1802) and others in Robert Waring Darwin's deeds box; Leonard Darwin was a photographer (see letter to Reginald Darwin, 8 April 1879 and nn. 2 and 4).
- ⁴ CD had asked to borrow Reginald Darwin's copy of the print of Erasmus Darwin engraved by John Allen Wedgwood (see letter to Reginald Darwin, 8 April 1879 and n. 3).
- ⁵ For Joseph Wright's portraits of Erasmus Darwin, see M. Keynes 1994.

From B. W. Richardson 12 April 1879

9 Wellington Terrace | Sandgate
April 12th 1879

My dear Sir,

I am afraid I have nothing at all, in shape, respecting Erasmus Darwin that I can send you for Krause's book.¹ I have been so engaged in other matters I have not been able to keep at the work and for years past it has gone out of my mind. I am very sorry not to oblige you.

We are down here for a few days rest & like the place very much.² At one of my lectures in Birmingham, to an immense audience, your name brought up a cheer I shall never forget. It was electrical bolt. I could not get on for some minutes.

Always yours | B W Richardson

C. Darwin Esq. F.R.S.

I think of going into Parliament next general election if I can get returned and am invited already by two barristers.³ Does it strike you that work there may be of use.

DAR 99: 196

¹ See letter to B. W. Richardson, 14 March 1879.

² A railway to Sandgate on the Kent coast had opened in 1874; Wellington Terrace was on the esplanade.

³ A general election was called in 1880, but Richardson did not stand; he stood as the Liberal candidate for Walton, Liverpool, in 1892, but lost the election to the Conservative candidate (Craig ed. 1974 and Craig ed. 1989).

To E. A. Wheler 12 April 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)
April 12th 1879

My dear Cousin

I have been very neglectful in not having sooner thanked you & your sister Emma for all the very valuable assistance which you have given me.—¹ But my excuse is that experiments in progress have kept me at extra hard work.

I am particularly glad to hear the curious story about Dr Warren, as it shows how Dr D was esteemed by his contemporaries. I return it now instead of hereafter with your other property: a copy has been made of it.—²

Reginald D. has been most kind & has lent me the great book; & Violetta has likewise helped me & has made a drawing of Priory for wood cut.³

I wrote to M^r Moilliet, but he has not answered me.⁴ I made a few days ago a curious discovery of two Boxes marked “Deeds, Settlements” & which I had never opened since my Father’s death.⁵ I have now done so & they contain many scores, hundreds, I believe, of D^r: D^s letters & other odd old letters about the Family. Also a drawing of Elston before it was altered about the year 1750.⁶ This discovery has been of considerable use, but I have not yet looked through all the letters. But yesterday I found a very long one from M^r Keir to my Father with an excellent character of D^r: Erasmus.—⁷

Whether I shall succeed in making my Preliminary sketch of his life & character of any interest I am sure I do not know; but I will do my best.⁸

Yours affectionately obliged | Charles Darwin

UCL Library Services, Special Collections (GALTON/1/1/9/1/1)

¹ Emma Sophia Galton was Elizabeth Anne Wheler’s sister. For Emma Galton’s assistance, see the letters from E. S. Galton, 25 March 1879 and 31 March 1879.

² Richard Warren was physician to George III, and the most sought-after society doctor in London. When suffering from a terminal illness he travelled to Lichfield to consult Erasmus Darwin, whom he thought ‘the greatest physician in world’ and the most qualified person to tell him truthfully when he might expect to die. CD recounted the story in *Erasmus Darwin*, pp. 105–6.

³ Reginald Darwin had lent Erasmus Darwin’s *Commonplace* (Down House MS) book to CD, and Violetta Harriot Darwin made a drawing of Breadsall Priory (Erasmus Darwin’s death place) for use in *Erasmus Darwin* (see letter from Reginald Darwin, 29 March 1879, and letter from V. H. Darwin, 9 April 1879 and n. 8).

⁴ Wheler had suggested that CD ask James Keir Moilliet whether he had the letters written by Erasmus Darwin to James Keir (see letter from E. A. Wheler, 25 March 1879 and n. 3. The letter to J. K. Moilliet has not been found.

⁵ CD’s father, Robert Waring Darwin, was Erasmus Darwin’s youngest son from his first marriage.

⁶ CD included an engraving made from this drawing of Elston Hall (Erasmus Darwin’s birthplace) in *Erasmus Darwin*, p. 3.

⁷ The letter from James Keir to Robert Waring Darwin, 12 May 1802, is in DAR 227.6: 76. See also letter to Reginald Darwin, 10 April [1879].

⁸ CD’s biography of Erasmus Darwin was intended as a preliminary sketch to the English translation of Ernst Krause’s essay on Erasmus Darwin’s scientific work (Krause 1879a).

From V. H. Darwin 13 April [1879]¹

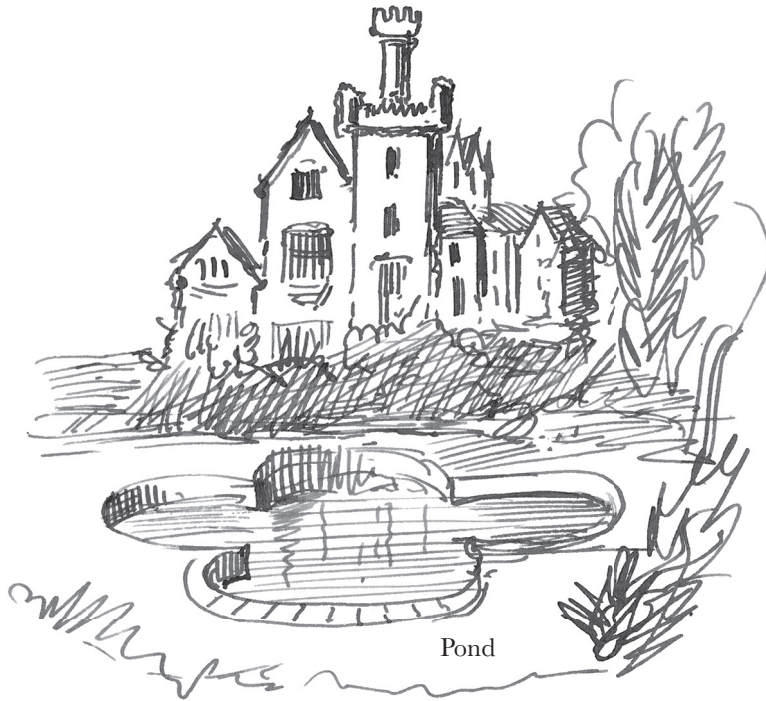
2. Park Villas | North S^r | Derby
Sunday Apr. 13.

My dear Cousin.

I send you the view of the Priory within the prescribed limits. All my people, and Reginald too, who has been here, pronounce it correct & a faithful likeness. I have in fact done it so often, that I could make this view without a “copy”—²

I forgot to say in my last, that if you would wish the old view of Elston to be reduced, I shall be most happy to try my hand—³

Your affectly. | V. H. Darwin



This is just an idea of the Priory as it is now— The present owner has spent thousands on it, and has made it into a non-descript. It *was* considered gabled Elizabethan—⁴

DAR 99: 167–8

¹ The year is established by the relationship between this letter and the letter from V. H. Darwin, 9 April 1879.

² Violetta Darwin's drawing of Breadsall Priory (Erasmus Darwin's death place) was used in *Erasmus Darwin*, p. 125. See plate on p. 171. Reginald Darwin was Violetta's brother.

³ Elston Hall, Nottinghamshire, was the birthplace of Erasmus Darwin; a drawing of Elston Hall as it was before 1754, made by Violetta, was reproduced in *Erasmus Darwin*, p. 3. See plate on p. 233.

⁴ The Elizabethan house had been constructed on the ruins of Breadsall Priory (a priory of the Augustinian order), and given the same name. Several alterations were made in the eighteenth century. After Francis Morley purchased the house in 1860, it was altered and extended in the Victorian Gothic style by the architect Robert Scrivener. See Redman 1998, pp. 6, 8, and 15. Violetta's published drawing (see n. 2, above) gives a view of the house presumably as it was before the 1860 alterations.

To Fanny Kellogg 13 April 1879¹

Down, Beckenham, Kent,

[Sending thanks for ‘... communicating the curious case of a habitual gesture, like that which I have treated as inherited. I may add that since I write, the action has been transmitted to another generation. Your case shall be sent to Mr. Galton who’] gave me the information.²

Dear Madam | Yours faithfully | & obliged | Charles Darwin

Incomplete³

Charles Hamilton (dealer) (28 May 1981)

¹ The addressee and the date are taken from the sale catalogue.

² In *Expression*, pp. 33–4 n. 8, CD had quoted Francis Galton on the inheritance of a characteristic arm gesture: the habit, when sleeping, of placing the forearm across the top of the head, whence it would fall onto the bridge of the nose, was exhibited in three generations of a family. In his correspondence, Galton had revealed that the individuals were his father-in-law, George Butler; Butler’s son, Henry Montagu Butler; and his granddaughter, Agnes Isabel Butler (see *Correspondence* vol. 19, letter from Francis Galton, 22 December 1871).

³ The original letter is complete (with original holograph envelope, flap missing) and is described in the sale catalogue as being two pages long.

From C. M. C. Darwin 14 April 1879

Creskeld, | Otley.

April 14th: 1879

Dear M^r: Darwin,

I have to thank you for a long kind letter, and will endeavour as far as I can to reply to your question about our mutual ancestor, Robert Darwin of Lincoln’s Inn—¹

My Husband and I have looked over the Pedigree, and have come to the conclusion that the said Robert *never was* owner of Elston, he is described as of Balderton, and died 1754— his cousin William Morgan Darwin (who died in 1762.) being then owner of Elston— Rob^t: Waring Darwin his son, then got the Elston Estate—²

Robert Darwin of Lincoln’s Inn was buried at Elston, and we have a portrait of him by Richardson, if you would like it photographed—³ Our solicitor M^r: Dunning also, of Parliament S^t: has a number of old Darwin deeds & papers, which might throw some light upon the subject—⁴

I cannot but imagine however, as your son says, that it is a misconception of his descendants, to call him “of Elston”—⁵

I have great pleasure in enclosing a note of introduction for your son M^r: Leonard Darwin to our Tenant at Elston who I am sure will be most glad to shew him every attention.⁶ In regard to Cleatham, we have no property there at all now, nor do we know the name of the clergyman there—⁷ What an interesting discovery you must have made, in finding all those old letters, and the view of the house before it was restored & spoilt—⁸



Breadsall Priory.

Woodcut from a drawing by Violetta Harriot Darwin.

Erasmus Darwin, p. 125.

By permission of the Syndics of Cambridge University Library.

We have seen lately mentioned that such an admirable portrait of yourself has been published, an etching, but that it is most difficult to procure, and we shall esteem it a great favour if you could kindly tell us, where one may be obtained—⁹

With kind regards, | Believe me | Y^{rs}. sincerely | Charlotte M C Darwin

DAR 99: 138–41

CD ANNOTATION

2.2 he ... 1762.) 2.3] *scored blue crayon*

- ¹ See letter to C. M. C. Darwin, 6 April 1879 and n. 2. Robert Darwin (1682–1754) was Erasmus Darwin's father.
- ² See letter to Reginald Darwin, 8 April 1879, n. 8. William Morgan Darwin had no sons. Robert Waring Darwin (1724–1848) was Robert Darwin's son and Erasmus Darwin's eldest brother. (*Darwin pedigree*.)
- ³ Jonathan Richardson's portrait depicted Robert Darwin in his 'great wig and bands' and looking, according to CD, like a 'dignified doctor of divinity' (*Erasmus Darwin*, p. 4).
- ⁴ Simon Dunning, solicitor, had an office at 27 Parliament Street, Westminster, London (*Post Office London directory* 1878).
- ⁵ George Howard Darwin had made this suggestion (see letter to C. M. C. Darwin, 6 April 1879 and n. 2).
- ⁶ CD had asked whether Leonard Darwin could photograph Elston Hall (see letter to C. M. C. Darwin, 6 April 1879 and n. 3). The letter of introduction has not been found.
- ⁷ See letter to C. M. C. Darwin, 6 April 1879 and n. 4.
- ⁸ CD had found letters from Erasmus Darwin and a drawing of Elston Hall from around 1750 in a box owned by Robert Waring Darwin (1766–1848) that had been labelled 'old settlements & deeds' (see letter to C. M. C. Darwin, 6 April 1879).
- ⁹ Paul-Adolphe Rajon had made an etching after an 1875 portrait of CD by Walter William Oules. See also Browne 2002, p. 424. CD had written that in the painting he looked like 'a very venerable, acute melancholy old dog' (see *Correspondence* vol. 23, letter to J. D. Hooker, 30 March [1875]. See plate on p. 119.

To C. M. C. Darwin 15 April 1879
Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
 April 15th 1879

My dear M^{rs} Darwin

I thank you much for your kind note & for all the trouble which you have taken & for the note of Introduction. I do not know when my son will be able to go to Elston.—¹

Since writing to you, in wading through the old letters, I have come across one to my Father from R. W. Darwin who says "I suppose you know my Father was a **Barrister** at Law, took his Degree at Lincoln's Inn, & practised in Chambers there for several years, but left London at the time he married & resided at Elston."²

This seems conclusive, but how he could have been rich enough is now my puzzle: perhaps his elder brother allowed him to live rent-free, or he must have made much money by the law; for he sent up 3 sons at the same time to Cambridge.—³

I do not think it w^d be worth while to give a portrait of the said Robert Darwin.⁴ Will you have the kindness to tell me what was acreage of the land at Cleatham, formerly belonging to the Darwins?⁵

The engraving by Rajon from a picture of me by Owless is greatly admired by judges of etching; but my family do not think it very like. Every peculiarity in my features is exaggerated,—or to speak in plain English every feature is made uglier even than it was made by nature. Rajon sent me 8 copies, & my 7 children have each seized on one. I shall be very happy to give you & Mr Darwin the remaining one, & will despatch it in a few days after getting a big board.⁶ I am told that a good copy cannot be purchased now, except for a fabulous price & I am very sure that so ugly a production is not worth a great price.—

Pray believe me | yours very truly obliged | Ch. Darwin

The late Mrs Vivien Kindersley (private collection)

- ¹ A letter of introduction (now missing) to the tenants of Elston Hall, requesting that Leonard Darwin be allowed to photograph it, had been enclosed with the letter from C. M. C. Darwin, 14 April 1879.
- ² Robert Waring Darwin of Elston (1724–1816) was an uncle of Robert Waring Darwin (1766–1848), CD's father, and the son of Robert Darwin (1682–1754). The letter has not been found.
- ³ CD was trying to establish whether Robert Darwin owned Elston Hall (see letter to Reginald Darwin, 8 April 1879 and n. 8). Three of Robert Darwin's four sons attended Cambridge University, but only Erasmus Darwin (1731–1802) and John Darwin were there at the same time; Robert Waring Darwin (1724–1816) had been there seven years earlier and William Alvey Darwin studied law in London.
- ⁴ See letter from C. M. C. Darwin, 14 April 1879 and n. 3.
- ⁵ In *Erasmus Darwin*, p. 1, CD referred to the Cleatham Estate as small even before the greater part of it was sold in 1760.
- ⁶ The etching by Paul-Adolphe Rajon was after an 1875 portrait of CD by Walter William Oules. See also plate on p. 119, and Browne 2002, p. 424. Charlotte Darwin's husband was Francis Rhodes Darwin.

From W. D. Fox to G. H. Darwin 15 April [1879]¹

Broadlands | Sandown | I. W
April 15

My dear Darwin

I fear I cannot give any information of Dr Darwin. I am a generation too late.

My Father and Mother abounded with remembrances of him. He was most kind and useful to my dear Mother when a girl and thro life.²

When in her teens the Med: Man at Stamford feared she was going into a decline, and recommended great care as to diet &c— The Dr heard of her illness and invited her to pay him a visit. To her great surprise, he encouraged her to take all sorts of forbidden food—giving her after dinner a large Bowl of rich cream and strawberries, & repeating the same treatment at breakfast. A most liberal diet completely set her up and she returned to her Mother a strong healthy lassie.³

He was always most kind to her. I will try to recollect some of the many anecdotes I have heard from my Father and Mother, but fear I shall remember none worth narrating. I fear we have next to no letters of his. My Mother never kept letters on principle.

Of course the Wedgwoods must have many letters of his.⁴

I have always thought him a very great man— & compared him in my mind with Dr Johnson.⁵ In those days Men of Mind did not exist by the million as they do now.

I hope your Father will take time in his work, & probably things may turn up when it is known that he is looking out for letters &c

The D^r once got me into a great mess. I was travelling as a Boy & rather a shy one, when a lady in the Coach with me, my only fellow passenger—found out my name was Darwin. She attacked me with great vehemence asking if I was related to that Brute D^r D. On my acknowledging the crime, she told me with much impetuosity & anger—“that she was a young lady with beautiful teeth, when that Brute had them all taken out, to cure some nervous pains.” I remember I was much alarmed & feared she would attack me. I rejoice to hear your Father is strong—

Ever yours | W D Fox

DAR 99: 175–6

¹ The year is established by the references to collecting materials for *Erasmus Darwin*. George Howard Darwin was helping CD with this research (see letter to G. H. Darwin, 19 April [1879]).

² Fox's father, Samuel Fox (1765–1851), was a founding member of the Derby Philosophical Society, formed by Erasmus Darwin in 1783 (Larkum 2009, p. 4). He married Ann Darwin (1777–1859), a niece of Erasmus Darwin, in 1799 (*ibid.*, p. 503).

³ Ann Darwin's mother was Jane Darwin (1746–1835).

⁴ Erasmus Darwin and Josiah Wedgwood I were close friends for thirty years, and Erasmus's son Robert Waring Darwin (1766–1848) married Wedgwood's daughter Susannah Wedgwood (1765–1817) (King-Hele 1999, pp. 54–9, 294, 302).

⁵ Samuel Johnson.

From C. M. C. Darwin 16 April [1879]¹

Creskeld, | Otley.
April 16th.

Dear M^r Darwin,

Your letter has reached me this evening and as we are leaving home tomorrow for a week or two, I write at once to express our thanks to you for so kindly proposing to present us with one of your portraits, and to say the value of the gift will even be increased if you will attach to it your *signature*, and the date you sent it us—² At present neither Mr Darwin nor I can give *any* intelligence about Cleatham, but we know that M^r Dunning the Solicitors has *piles* of old Darwin Papers and if any one could have the patience to get them out, there would be I doubt not some light thrown on past generations—³

Our portrait represents your grandfather as a handsome, fresh coloured man, in flowing wig, Barrister's gown and bands, and the crest & arms are on the back of the picture—⁴

believe me | Y^{rs}. very truly | C. M. C. Darwin

DAR 99: 142–3

¹ The year is established by the relationship between this letter and the letter to C. M. C. Darwin, 15 April 1879.

² In his letter to C. M. C. Darwin, 15 April 1879, CD promised to send a copy of the etching by Paul Adolphe Rajon after an 1875 portrait of CD by Walter William Oules.

³ CD had enquired about the acreage of the Cleatham Estate (see letter to C. M. C. Darwin,

- 15 April 1879). Charlotte's husband was Francis Rhodes Darwin. The solicitor was Simon Dunning (see letter from C. M. C. Darwin, 14 April 1879 and n. 4).
- ⁴ Charlotte Darwin probably refers to the portrait of Robert Darwin (1682–1754), CD's great-grandfather (see letter from C. M. C. Darwin, 14 April 1879 and n. 3).

To Reginald Darwin 16 April 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Ap. 16th 79

My dear Cousin

In looking through the piles of old letters I have come across 7 from your Father to mine; & I have thought that you would like to add them (especially one from Smyrna) to your collection in your big book when this is returned to you.—¹

Yours very sincerely | Ch. Darwin

University of California Santa Barbara, Davidson Library, Special Collections

¹ Reginald Darwin had lent CD Erasmus Darwin's *Commonplace book* (Down House MS), to which he had added newspaper clippings relating to his side of the Darwin family (see letter to Reginald Darwin, 4 April 1879 and n. 8). The letters from Francis Sacherevel Darwin to his half-brother Robert Waring Darwin (1766–1848) are not in the *Commonplace book*, but there is a note by Reginald Darwin recording that CD gave him the letters in 1879, and that they provided the main record of his father's life between 1804 and 1818. Francis Sacherevel Darwin visited Smyrna (Izmir, Turkey) in 1809 and 1810 during a tour of the Mediterranean (F. S. Darwin 1927).

From Wilhelm Breitenbach¹ 17 April 1879

Verehrtester Herr Darwin!

Vor einigen Wochen machte ich eine kleine Beobachtung an Canarienvögeln, die mir interessant genug zu sein scheint, Sie Ihnen mitzutheilen. Da ich im Augenblick die nöthige Literatur nicht zur Hand habe, so weiss ich allerdings nicht, ob sie ganz neu ist. Die Beobachtung ist folgende:

In einem Käfig befanden sich zwei weibliche und ein männlicher Canarienvogel. Das Männchen interessirte sich wie es schien, für beide Weibchen gleichmässig. Als dann eins der beiden Weibchen aus dem Käfig und in einen andern, aber in demselben Zimmer befindlichen gebracht wurde, war bald ein bedeutender Unterschied bemerkbar. Um das im Käfig gebliebene Weibchen kümmerte sich das Männchen gar nicht; im Gegentheil, er biss das Weibchen fortwährend, so dass dieses zuletzt ganz ängstlich in einer Ecke des Käfigs sass und augenscheinlich grosse Furcht hatte. Das zweite Weibchen dagegen lockte es fortwährend, indem es nach dem Streit mit dem ersten Weibchen immer sehr hübsch sang.²

Keiner von meinen Bekannten, welche Canarienvögel besitzen, hatte je eine solche Beobachtung gemacht. Wie mag nun aber wol das sonderbare Verhalten des Männchen zu erklären sein? Wesshalb behandelte das Männchen das Weibchen nicht ebenso schlecht, als das zweite Weibchen auch noch im Käfig war? Ich habe nie gesehen, dass es vorher das Weibchen gebissen hat und auch keiner von meiner Familie hatte es jemals gesehen.

Sollte Sie diese kleine Beobachtung interessiren, so würde es mich sehr freuen; wenn Ihnen dieselbe schon bekannt sein sollte, so bitte ich die Mittheilung meinem Interesse an der Sache zu Gute halten zu wollen.

Hochachtungsvoll | ergebenst | Ihr | Wilhelm Breitenbach, | *cand. rer. nat.*³

Unna 17. April. 1879.

DAR 160: 293

¹ For a translation of this letter, see Appendix I.

² In *Descent* 1: 270, CD had noted that canary-birds usually paired in a state of nature, but that breeders often put one male to four or five females. In this case, the male treated only one of the females as a 'wife', feeding her and her young, while the other females were treated as 'concubines'.

³ *Candidatus rerum naturalium*: Breitenbach was studying natural sciences at Jena.

From C.-F. Reinwald¹ 17 April 1879

C. Reinwald & C^{ie} | Libraires-Éditeurs | Commissionnaires pour L'Étranger
15, Rue des Saint-Pères | Paris
17 Avril 1879.

Cher Monsieur

Depuis notre lettre du 8 Octobre de l'année dernière, nous avons eu l'honneur de recevoir la vôtre du 11 Octobre et de nous conformer aux désirs que vous y avez exprimés.² La vente des traductions de vos ouvrages, sans être extrêmement rapide, nous donne cependant de la satisfaction. Nous sommes près d'épuiser la Seconde édition de l'*Origine des Espèces*, revue par M Barbier, et de mettre sous presse la troisième édition de ce livre.³ Nous ne savons pas encore si nous pouvons faire cette édition dans un format plus petit, à cause de la collection de vos autres ouvrages que nous avons tous publiés en 8°.

Une nouvelle édition des *Variations*, revue et presque entièrement retraduite par M. Barbier est actuellement sous presse. Si vous avez quelques observations nouvelles à ajouter à cette traduction, qui a été revue d'après la dernière édition anglaise de M. Murray, Mr Barbier serait heureux d'en tenir compte, car l'impression n'est guère plus avancée qu'au tiers du premier Volume.⁴

Nous sommes également sur le point d'épuiser la 2^e édition de la "*Descendance de l'Homme*" et nous chargeons M. Barbier d'en revoir encore une fois la traduction d'après la dernière édition anglaise.⁵ Nous sommes entièrement à vos ordres, si vous croyez devoir introduire quelques changements dans cet ouvrage. L'impression de ces divers ouvrages sera menée avec rapidité et nous vous serions bien reconnaissant de nous faire savoir de suite s'il en est ainsi.

Vous voyez, cher Monsieur, que nous ne pouvons pas nous plaindre par rapport à la vente de vos ouvrages, et afin de tenir notre compte au courant de nos diverses réimpressions nous avons l'honneur de vous remettre avec la présente un chèque de £20./-/- que nous vous prions d'appliquer au Pourcentage de la 2^e édition des *Emotions* trad. par M Pozzi, car quoique nous n'ayons pas encore vendu le nombre de 700 ex de cette nouvelle édition, nous croyons cependant être certains d'atteindre bientôt ce chiffre.⁶

Vos deux derniers ouvrages de Botanique: *Fertilization croisée et directe* et *Différentes formes de Fleurs* n'ont pas encore produit une vente assez importante pour pouvoir vous faire payer le *Percentage* proportionel. Nous vous demandons donc de vouloir bien nous permettre d'en différer encore le règlement jusqu'à l'achèvement de nos diverses reimpressions.⁷

Dans l'espoir d'être bientôt favorisés de votre réponse nous avons l'honneur d'être, Monsieur, vos très humbles et très dévoués serviteurs | C Reinwald & C^{ie}

To Charles Darwin E^{sq} | Down Beckenham | Kent

DAR 176: 109

¹ For a translation of this letter, see Appendix I.

² See *Correspondence* vol. 26, letter from C.-F. Reinwald, 8 October 1878. CD's letter of 11 October 1878 has not been found.

³ The third edition of the French translation of *Origin* by Edmond Barbier was published in 1880 (Barbier trans. 1880).

⁴ The first volume of Barbier's French translation of *Variation* was published in 1879, the second in 1880 (Barbier trans. 1879–80). Barbier translated *Variation* 2d ed., published by John Murray in 1875.

⁵ A third French edition of *Descent*, translated by Barbier from Murray's 1879 issue of the augmented second English edition, was published in 1881 (Barbier trans. 1881).

⁶ *Expression* had been translated into French by Samuel Pozzi and René Benoît, and published in 1877 (Pozzi and Benoît trans. 1877).

⁷ *Cross and self fertilisation* and *Forms of flowers* had been translated into French by Édouard Heckel and published in 1877 and 1878 respectively (Heckel trans. 1877, Heckel trans. 1878).

From E. A. Wheler 17 April 1879

3 Bertie Terrace
17 Ap^l 1879

My dear Cousin,

I wrote last week to my Cousin M^{rs} Nixon, & enclose you her reply.¹ She is Daughter to the late M^r & M^{rs} John Gisborne, & her mother was Millicent Pole, my grandmother's youngest Daughter, by her first marriage.² M^{rs} Gisborne was nine years older than my mother, & was very fond of talking over old times with her Daughter M^{rs} Nixon. You will see she gives a different version of the cause which drew D^r D. to Newmarket, & which certainly sounds more probable tho' my mother *always said* it happened on his way to Margate.³ M^{rs} Nixon spoke to me once about my Uncle Erasmus Darwin's sad death, & said it was M^{rs} Pole of Radbourne (Daughter in law to my g^dmother) who by her impatience to have some law matters settled caused him to overwork his brain.⁴

Another anecdote came into my mind the other day, shewing how much my grandfather was appreciated. Lady Charlotte Finch, governess to Queen Charlotte's Daughters, had two granddaughters, the Miss Fieldings, who were much at court.⁵ M^{rs} Fielding brought one of her Daughters to Derby to consult D^r D. & the Miss Fieldings staid some little time at the House on a visit to my g^dmother. When they returned home, they visited their g^dmother Lady C Finch, & thro' her, George the 3^d heard of Dr Darwin's fame, & said "Why does not D^r D come to London. He shall be my Physician if he comes", & repeated this in his usual way. My mother said that

he & my g^dmother disliked the thought of a London life so much, that the hint was not acted upon.⁶ I was talking to Emma about this, & she perfectly remembers my mother telling us this, & yesterday, on looking into Baroness de Bunsen's memoirs, which we have just received, in page 68 she mentions M^{rs}: Fielding consulting D^r: D for her Daughter, & in page 38 she mentions paying a call at the Priory & being so struck with the beauty of the three Miss Darwins.⁷

You need not return M^{rs}: Nixon's letter & with my kind remembrances to M^{rs}: Darwin
Believe me | very truly yours | E A Wheler

DAR 210.14: 23

CD ANNOTATIONS

2.4 the ... fame, 2.7] *scored pencil*

2.13 & being ... Darwins 2.14] *double scored pencil*

Top of letter: 'The King | D^r not vain | **Not ambitious** | the King often has expressed surprise of his not having gone to London | Beauty of the Miss Darwins' *pencil*

- ¹ Emma Nixon's letter has not been found; Wheler later asked for it to be returned (see letter from E. A. Wheler, 18 April 1879).
- ² Millicent Pole married John Gisborne in 1792; she was the daughter of Elizabeth Pole, who later became Erasmus Darwin's second wife (King-Hele ed. 2003, p. 142).
- ³ CD noted that there were extreme variations in the details of the story about Erasmus Darwin's being tipped off about a winning horse at Newmarket by a jockey whose mother had been treated kindly by Darwin during her illness (see *Erasmus Darwin*, pp. 63–4). Wheler's mother was Frances Anne Violetta Galton.
- ⁴ Erasmus Darwin's second son, Erasmus, was a lawyer. He had drowned in 1799 after falling or throwing himself into the river at the bottom of the garden of Breadsall Priory, his recently purchased home in Derbyshire. Mary Pole, wife of Sacheverell Pole of Radbourne Hall, Derbyshire, was Elizabeth Darwin's daughter-in-law.
- ⁵ Charlotte Finch was the royal governess at the court of George III and Queen Charlotte; there were six princesses under her care. Charlotte Finch had three granddaughters, Sophia Charlotte Fielding, Matilda Fielding, and Augusta Sophia Fielding; their mother was Finch's daughter Sophia Fielding.
- ⁶ CD quoted from this paragraph in *Erasmus Darwin*, pp. 69–70.
- ⁷ Emma Sophia Galton was Elizabeth Anne Wheler's sister. Both the mention of Sophia Fielding's consulting Erasmus Darwin about her daughter, and the visit to Breadsall Priory, occur on p. 38 in volume 1 of *The life and letters of Frances Baroness Bunsen* (Hare 1879); Elizabeth Wheler must have written p. 68 in error. The Miss Darwins were the three daughters of Erasmus and Elizabeth Darwin: Frances Anne Violetta Darwin, Emma Georgiana Elizabeth Darwin, and Harriot Darwin. According to Frances Bunsen, 'the daughters of Dr. Darwin had a right to the inheritance of beauty from their mother' (Hare 1879, p. 38).

From Reginald Darwin 18 April 1879

Fern | Buxton
April 18 | 1879

My dear Cousin

Most gratefully do I acknowledge your kindness & thoughtful generosity— The letters are most valuable to me, having next to no records of my Fathers early days; beyond a few sketches of his school days, the history of his life until the Journal of his Travels, (which I have,) it was almost a blank—¹

All the letters are most interesting, as confirming the true regard & affection he always expressed towards your Father—²

They contain also the earliest records of the birth of Erasmus, of yourself, & of my own appearance in the world—³

With best regards & repeated thanks | affec^{dy} yours | R Darwin

DAR 99: 154–5

- ¹ See letter to Reginald Darwin, 16 April 1879 and n. 1. CD had given Reginald some letters from Francis Sacherevel Darwin to Robert Waring Darwin (1766–1848). These letters have not been found. Francis had taken a tour of the Mediterranean from 1808 to 1810 (F. S. Darwin 1927).
- ² Robert Waring Darwin, CD's father, was twenty years older than his half-brother Francis Sacherevel Darwin. On the death of their father, Erasmus Darwin, in 1802, Robert became Francis's guardian (note at the end of Erasmus Darwin's Commonplace book (Down House MS)).
- ³ The letters covered the period from 1804 to 1818 (see letter to Reginald Darwin, 16 April 1879 and n. 1). Erasmus Alvey Darwin, CD, and Reginald Darwin were born in 1804, 1809, and 1818, respectively.

From Raphael Meldola 18 April 1879

Offices, | 50, Old Broad Street, | E.C. | Atlas Works, | Hackney Wick, | London, E.
April 18th. 1879

My dear Mr. Darwin,

In reply to the question in your last esteemed letter I regret to say that I can only give you a *conjectural* reply as Fritz Müller does not furnish any information on the habits of the branchiated Trichopteron which I sent to you.¹ You wish to know how the insect keeps its branchiæ moist. Many years ago Newport described I believe a branchiated Trichopteron which frequented the rocks near waterfalls—² F. Müller's insect may have a similar habit, I do not exactly know where to lay my hands on Newport's memoir but I will look up the matter before the next meeting of the Entom. Soc. at which the specimen will be exhibited.³ I may add that so far as I remember Newport comes to the conclusion that the supposed branchiæ are really external spiracles.⁴ When we bear in mind how injurious it is to insects to have their spiracular openings stopped with water (which owing to the capillary nature of the spiracular tubes would be most obstinately retained) & connect this with the fact that the larvæ & pupæ of the Trichoptera are aquatic & that the imagos must consequently be often exposed to death by drowning unless provided with some special means of aquatic respiration, we see how natural selection would take advantage of any modification of the spiracles in the direction required for this purpose.

With respectful compliments, | Yours very sincerely, | R. Meldola.

DAR 171: 136

- ¹ CD's letter has not been found, but see the letter from Raphael Meldola, 4 April 1879 and n. 1.
- ² In 1844, George Newport had described the rare occurrence of a branchiated neuropterous insect from Canada, *Pteronarys regalis*, adding further observations in 1851, when he reported that the insect was constantly washed by the spray from a waterfall (see Newport 1844 and Newport 1851, pp. 432–3). Neuroptera is the order of lacewings and antlions.
- ³ Müller's trichopterous insect with tracheobranchiæ was exhibited at the meeting of the Entomological Society of London on 7 May 1879 (see letter from Raphael Meldola, 4 April 1879 and n. 1).

- ⁴ Branchiae or gills enable aquatic respiration, and spiracles are breathing holes in the trachea located along the sides of the body. Newport supposed that damp conditions led to the persistence in the adult insect of the branchiae found in its pupal stages, and that their function was equivalent to that of spiracles (Newport 1844, pp. 23–4).

From E. A. Wheler 18 April 1879

3 Bertie Terrace
18 Ap^l 1879

My dear Cousin,

I send enclosed which came this morn^g from M^{rs}. Nixon.¹ When *quite* done with, please return it, & I think I should like to have the one from her I sent yesterday, but pray keep them till you have no further use for them²

yours very sincerely | E A Wheler

Lord George Cavendish whom Emma Nixon mentions was Godfather to our Aunt Emma Darwin, who was named Georgiana after him.³ He was therefore a personal friend of D^r. D. He left her & all his Godchildren £100 apiece at his death.

DAR 210.14: 24

CD ANNOTATION

3.1 Lord ... death. 3.3] *scored blue crayon*

¹ Emma Nixon's letter has not been found.

² See letter from E. A. Wheler, 17 April 1879 and n. 1.

³ In *Erasmus Darwin*, p. 53, CD mentioned that Erasmus Darwin was badly injured in an explosion when he and George Augustus Henry Cavendish were playing with gunpowder. CD and Elizabeth Wheler's aunt was Emma Georgiana Elizabeth Darwin.

To G. H. Darwin 19 April [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Ap. 19th

My dear George

You have been **very** good. The letter to D^r. Okes is the one which I most cared about.—² I cannot think who the calumnious article c^d have been about 1802.—³

I am not well so no more.

Yours affect | C. Darwin

DAR 210.1.3

¹ The year is established by the reference to Okes's letter (see n. 2, below).

² Thomas Okes was a medical student and a friend of Erasmus Darwin at Cambridge. The letter addressed to him was published in *Erasmus Darwin*, pp. 14–15.

³ Probably a reference to an anonymous article in the *Monthly Magazine, or, British Register* 13 (1802): 457–63, in which Erasmus Darwin was described as vain and susceptible to flattery, and his literary pursuits were said to be motivated only by the wealth they produced (p. 463). CD referred to the article in *Erasmus Darwin*, p. 65.

To T. H. Huxley 19 April 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Ap. 19th 79

My dear Huxley

Many thanks for the book.¹ I have read only the Preface & am convinced that is worth more than the whole of the book. It is capital, & I enjoyed the tremendous rap over the knuckles which you give Virchow at the close.² What a pleasure it must be to write as you can do.—

Ever yours | Ch. Darwin

Imperial College of Science, Technology and Medicine Archives (Huxley 5: 335)

¹ Huxley had sent a copy of the English translation of Ernst Haeckel's *Freedom in science and teaching* (Haeckel 1879c). CD's copy is in the Darwin Library–Down.

² The preface was written by Huxley, who condemned Rudolf Carl Virchow for suggesting in 'grim earnest' that evolutionary speculations generated 'revolutionary schemes in Socialist brains' (Haeckel 1879c, p. xx). Virchow had opposed the teaching of evolution in schools and called for moderation with respect to speculation in science; Haeckel and Virchow had clashed on this point at the 1878 meeting of the German Association of Naturalists (see *Correspondence* vol. 26, letter to Karl von Scherzer, 1 April 1878 and n. 2).

To E. A. Wheler 19 April 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
April. 19th 1879

My dear Cousin

How good you are to take so much trouble.¹ I have marked in pencil the two letters "to be returned to you"; but it will save me some copying so I will accept your offer of keeping them for about 6 or 8 weeks—I have not yet written a word, & shall not till I leave home.—² I greatly fear that you will be sadly disappointed with my "Preliminary notice"; but no man can do better than his best.

yours very sincerely Ch. Darwin

Chiswick Auctions (dealers) (10 October 2018, lot 19)

¹ See letter from E. A. Wheler, 18 April 1879.

² Wheler had sent two letters from Emma Nixon about Erasmus Darwin. CD began writing his biographical sketch of Erasmus Darwin while away from Down from 6 to 26 May ('Journal' (Appendix II)). It was published as a preliminary notice to the English translation of Ernst Krause's essay on Erasmus Darwin's scientific work (*Erasmus Darwin*).

From C. M. C. Darwin 21 April [1879] ¹

The Queen's Hotel | Cheltenham
April 21st

Dear Mr Darwin,

My Husband writes me word that the beautiful engraving you so kindly sent has arrived safely, and he would have written himself, but was not quite sure of your

address— Please accept our united thanks for your present, which I quite *long* to see.² I am down here with three of my children for a wedding, & then go on to my sister M^{rs} Noel near the Forest of Dean.³

With kindest regards | Believe me | Y^{rs} sincerely | C. M. C. Darwin

DAR 99: 144–5

- ¹ The year is established by the relationship between this letter and the letter from C. M. C. Darwin, 16 April [1879].
- ² CD had sent Charlotte and her husband Francis Rhodes Darwin a copy of the etching by Paul-Adolphe Rajon after an 1875 portrait of CD by Walter William Oules (see letter from C. M. C. Darwin, 16 April [1879]). See plate on p. 119.
- ³ Charlotte Darwin had nine children; it is not known which three accompanied her to Cheltenham, or whose wedding they were attending. Her sister was Sarah Gay Forbes Noel. The Forest of Dean is in Gloucestershire.

From W. D. Fox to G. H. Darwin 21 April [1879]¹

Broadlands | Sandown | I. Wight
Ap 21

My dear Darwin

As I feared was the case, I have no letters or papers of your G^t Grandfather of any interest.² They have been kept merely for the handwriting—and one for Hooping Cough.

I think there is an interesting paper upon D^r Dⁿ in the Encyclopædia Britannica which yr Father might like to look over.³ D^r E Darwin has so freely been called an Atheist &c that some of his Poems may be cited in answer. Do you know this ode—entitled “The Folly of Atheism” Beginning

“Dull Atheist! could a giddy dance
Of atoms lawless hurled,
Construct so wonderful, so wise
So harmonized a World”⁴

It is not one that would quite suit the *German* Mind.

It is said that Coleridge, after an interview with him, said, “he was a wonderful man—and every thing but a Christian”—or some such expression.⁵

I wish much I could be of any use to your Father, but I am a generation too late.

I have often heard my Father & Mother talk of him.⁶ There is one very remarkable story which I have often heard from my Father, as shewing the D^{rs}. great sagacity & Daring.

I believe my Father was of the party. At M^r Joseph Strutts a Dinner party was assembled at which the D^r was present—when M^r Strutt asked him to see his Butler who was said to be dying;⁷ He found him on the point of suffocation from Lung disease—and fast dying— He sent for a Kettle of Boiling water—bared the mans breast & poured it over Lungs. The effect was magical at the time—and the man got well.

I dont know what our Modern D^{rs} would say to this *mild* practise.

I hope your Father will give himself time to really look into the D^rs life. There are many works which touch upon it more or less—many very unfairly.

In much haste Yours very truly | W D Fox

We are just off into Warwickshire for a fortnight.⁸

DAR 99: 177–8

- ¹ The year is established by the reference to CD's collecting materials for a biographical sketch of Erasmus Darwin, which was published in 1879 (*Erasmus Darwin*).
- ² See letter from W. D. Fox to G. H. Darwin, 15 April [1879]. Erasmus Darwin (1731–1802) was George's great-grandfather.
- ³ The article on Erasmus Darwin is in *EB* 7th ed.
- ⁴ Erasmus Darwin's poem had been published in 1823 under the title 'The folly of atheism. An Ode' in *Specimens of English poetry* (Scott ed. 1823, pp. 299–300).
- ⁵ After visiting Erasmus Darwin in Derby in 1796, Samuel Taylor Coleridge reported,

Derby is full of curiosities; the cotton and silk mills; [Joseph] Wright, the painter, and Dr Darwin, the every thing but christian! Dr Darwin possesses, perhaps, a greater range of knowledge than any other man in Europe, and is the most inventive of philosophical men. He thinks in a new train on all subjects but religion

(Cottle 1847, pp. 85–6.)
- ⁶ For more on Ann and Samuel Fox's recollections of Erasmus Darwin, see the letter from W. D. Fox to G. H. Darwin, 15 April [1879].
- ⁷ Joseph Strutt lived in St Peter's Street, Derby; his butler has not been identified.
- ⁸ Fox probably went to Warwickshire with his wife, Ellen Sophia Fox.

To ? 21 April 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)
April 21st 1879

Dear Sir

I am much obliged for your courteous letter & for the gift of your articles, which I will soon read.¹ It is very gratifying to me to hear that agriculturists attend at all to my works.—

I beg leave to remain | Dear Sir | yours faithfully | Charles Darwin

P.S | As I have great difficulty in reading German letters, I have been compelled to gun your address to the envelope of this note.—

RR Auction (dealers) (July 2006)

- ¹ The correspondent was probably the author of the article 'Die Darwinische Theorie und die Landwirtschaft' (The Darwinian theory and agriculture), which was published in several issues of the magazine *Reunion*; in January 1880, the editor of the magazine invited CD to comment on the essay (see *Correspondence* vol. 28, letter from Oskar von Giesl, 29 January 1880). The author and the magazine have not been identified.

To W. E. Darwin 22 April [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Ap. 22^d

My dear Gulielmus²

Thanks for all that you have done for me.— I have looked to *Phytologia* & the passage is nothing.³

It has just occurred to me that I ought to say a word or two about D^r: D^s political opinions, if I could discover them.—⁴ He was strong against the American war, is all that I can remember; but it is possible that the address to D^r: Priestly might indirectly show his political opinions.— Please read it under this point of view.— Is the book your own; if so, I could see it when we come to you; otherwise could you copy any likely passages, with dates &c &c on folio paper, written only on one side.⁵

yours affect | C. Darwin

P.S. I am a good deal overworked & it is possible that we may go to Leith Hill before going to you; but this will only be if I fail so that I cannot work.—⁶

Please give Title of Priestly's Book, volumes & *date*⁷

DAR 210.6: 154

¹ The year is established by the references to material relating to Erasmus Darwin; CD's biography of his grandfather Erasmus was published in 1879 (*Erasmus Darwin*).

² Gulielmus: the Latin version of William.

³ CD quoted from *Phytologia, or the philosophy of agriculture and gardening* (E. Darwin 1800) several times in *Erasmus Darwin*, pp. 111–15 and 117–18.

⁴ In *Erasmus Darwin*, pp. 45–6, CD stated that Erasmus Darwin rarely mentioned politics, but held radical views in that he believed in American independence, welcomed the early stages of the French Revolution, and despised slavery.

⁵ Following the Birmingham riots in 1791, philosophers such as Joseph Priestley, who were thought to be supporters of French liberty and opposed to the Church and the monarchy, were attacked and their homes destroyed. Erasmus Darwin, on behalf of the Philosophical Society of Derby, wrote a sympathetic address to Priestley in which he expressed the hope that Priestley would leave the 'unfruitful fields of polemical theology' and devote himself to natural philosophy alone (King-Hele 1999, p. 257). The address was published by Priestley in his *Appeal to the public on the subject of the riots in Birmingham* with a reply in which Priestley asserted his determination to continue both his philosophical and his theological studies (Priestley 1791, pp. 179–80).

⁶ CD was away from Down from 6 to 26 May 1879; he visited William and Sara Darwin in Southampton before travelling to Leith Hill Place ('Journal' (Appendix II)).

⁷ See n. 5, above.

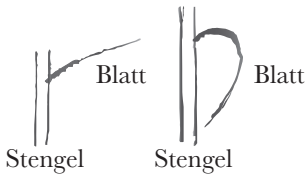
From Wilhelm Pfeffer¹ 22 April 1879

Tübingen
d 22 April 1879

Geehrtester Herr!

Gestern aus Italien zurückgekehrt beeile ich mich Ihr werthes Schreiben vom 23 März zu beantworten.² Leider muss ich bedauern Ihnen nicht in dem Maasse Auskunft geben zu können, wie ich es selbst wünschte, da ich bei meinen Untersuchungen über periodische Bewegungen auf die habituellen Erscheinungen des Schlafens, sowie auf Verbreitung dieses Phänomens nur nebenbei geachtet habe.

Was zunächst *Siegesbekia flexuosa* anbelangt, so habe ich mich hier auf die angeblich richtige Bestimmung des Marburger Gartens verlassen; vielleicht ist die Pflanze identisch mit *Siegesbekia jorullensis*.³ Wie bei anderen Pflanzen ist auch bei dieser mit dem Alter der Blätter Tag und Nachtstellung variabel. Für noch nicht ganz zu voller Grösse gelangte Blätter ist nach meinen Skizzen die Stellung der Blätter am Tage und bei Nacht durch nebenstehende Skizzen veranschaulicht.



Aeltere Blätter nähern sich mehr der Horizontalen während des Tages und erreichen in Nacht eine weniger weit gehende Senkung.

Die Blätter von *Wigandia urens* führen überhaupt nur mässige Amplitude der Bewegung aus.⁴ Die Neigung mittelalter Blätter am Tage ist



etwa wie nebenstehend.

Dabei sind die Blätter am Tage öfters (in Blattstiel und Lamina) schwach concav nach Unterseite und werden Abends mit der Hebung mehr oder weniger eben.

Bei der unbestimmten *Malva* (aus Verwandtschaft von *Malva sylvestris*)⁵ stander



am Tage Blätter etwa so

und erhoben sich theilweise so weit, dass

sie trichterförmig zusammenneigten; so dass Stellung des einzelnen Blattes etwa



wurde:

Der Variabilität der Stellung halber, wie sie bei Nutationsbewegungen sich immer mit Alter der Objecte abspielt, habe ich die Neigungen gegen Verticale und Horizonte nicht näher bestimmt, sondern gewöhnlich nur die Stellungsänderungen an entsprechend angebrachten Gradbogen abgelesen.⁶ Einige andere nicht publicirte Beobachtungen will ich, Ihrem Wunsche entsprechend, hier noch kurz anschliessen; sie beziehen sich auch auf Nutationsbewegungen.

Silybum Marianum. Die noch wachsenden Cotyledonen spreizen Tags in spitzem Winkel nähern sich Nachts und können sich eventuell aneinanderlegen.— Aehnliches gilt für Cotyledonen von *Mimulus tigrinus* und *Brassica Napus*.⁷

Schwächer ist Erhebung und Annäherung der Cotyledonen bei *Cucurbita Pepo* und *Mirabilis Jalapa*.⁸

Bei allen diesen Pflanzen zeigen auch andere *junge* Blätter merkliche, doch theilweise schwache Erhebungen am Abend. Gleiches gilt auch für die Blätter von *Petunia* und *Celosia cristata*;⁹ Verticalstellung wird normalerweise von diesen Blättern nicht erreicht.

In den Literaturangaben welche sich auf periodisch bewegliche Blätter beziehen ist, soviel ich weiss, nicht viel zu den in meiner Arbeit (p 161) citirten Angaben hinzugekommen.¹⁰ Eine Beobachtung Chatin's (*Compt. rendus* 1876, Bd 82, p. 171) über Nadeln von *Abies Nordmanniana* wird Ihnen wohl ohnedies bekannt sein.—¹¹ Einige faktische Angaben finden sich auch bei C. Kraus in *Flora* 1879, p. 11 ff., in einer Arbeit die sonst wie die anderen Publicationen dieses Autors besser nicht geschrieben wäre.¹²

Mit dem Bedauern Ihnen nicht reichlicher Notizen mittheilen zu können
verbleibe ich mit ausgezeichnete Hochachtung | Ihr | ergebenster | Dr W Pfeffer

DAR 209.14: 187

CD ANNOTATION

Top of letter: 'Sleep | All used' ink

- ¹ For a translation of this letter, see Appendix I.
- ² See letter to Wilhelm Pfeffer, 23 March 1879.
- ³ See letter to Wilhelm Pfeffer, 23 March 1879 and n. 2. *Siegesbeckia flexuosa* is an unknown combination ('Siegesbeckia' is a common misspelling of 'Sigesbeckia', the genus of St Paul's-wort); *S. jorullensis* is an accepted name. CD added Pfeffer's information, referring to the plant as '*S. jorullensis*?' in *Movement in plants*, p. 385. Pfeffer refers to the University of Marburg arboretum and botanical garden at Pilgrimstein.
- ⁴ *Wigandia urens* is the Caracus wigandia; CD cited Pfeffer for information on its leaf movements, but used only the genus name in *Movement in plants*, p. 248.
- ⁵ Pfeffer had not identified the species of *Malva* he had observed in *Die periodische Bewegungen der Blattorgane* (The periodic movements of foliage organs; Pfeffer 1875, p. 29). *Malva sylvestris* is common or high mallow (see *Movement in plants*, p. 324).
- ⁶ For Pfeffer's experimental protocol and an image of the apparatus used to measure changes, see Pfeffer 1875, pp. 32–3.
- ⁷ *Silybum marianum* is blessed milk-thistle; *Mimulus tigrinus* is tiger monkey-flower; *Brassica napus* is rape.
- ⁸ *Cucurbita pepo* is squash or pumpkin; *Mirabilis jalapa* is marvel of Peru.
- ⁹ *Celosia cristata* is crested cock's-comb.
- ¹⁰ See Pfeffer 1875, pp. 161–70; Pfeffer had reviewed the literature on leaf movement from ancient times up to his contemporaries.
- ¹¹ Joannes Chatin's note on the movement of leaves in *Abies nordmanniana* (Chatin 1876a) had been translated into English in *Annals and Magazine of Natural History* (Chatin 1876b). CD's notes on this species, referred to by a synonym, *Picea nordmanniana* (Caucasian fir), dated from 14 July 1879 to 26 January 1880, are in DAR 209.6: 1a–1b.
- ¹² Carl Kraus's work 'Beiträge zur Kenntniss der Bewegungen wachsender Laub- und Blütenblätter' (Contributions to the understanding of the movements of growing foliage leaves and petals; Kraus 1879) was published in instalments in *Flora, oder allgemeine botanische Zeitung* between 1 January and 21 February 1879. Pfeffer had dismissed as simplistic Kraus's earlier explanation of the mechanical cause of geotropic movements (see Pfeffer 1877, p. 215, n. 1).

To W. T. Thiselton-Dyer 22 April [1879]¹

Down. Beckenham
April 22^d

My dear Dyer.

The enclosed was raised from seed from Kew, under name of *Oxalis colorata*, & you were so kind as to say when it flowered you w^d give me true name, as you did not know what this name signified.—²

Yours very truly | Ch. Darwin

Natural History Museum (General Special Collections MSS DAR 62)

¹ The year is established by the relationship between this letter and the letter from W. T. Thiselton-Dyer, 22 April 1879.

² See letter from W. T. Thiselton-Dyer, 27 January 1879.

From W. T. Thiselton-Dyer 22 April 1879

Royal Gardens Kew

Ap^l 22. 79

Dear M^r Darwin

Prof. Oliver has had your oxalis examined at the herbarium and he pronounces it to be *O. floribunda*, Lehm.¹

Yours very sincerely | W. T. Thiselton Dyer

DAR 209.9: 111

CD ANNOTATIONS

1.1 oxalis] 'colorata' interl ink

End of letter: 'Cots. of O.' ink del ink

¹ CD had asked for an identification of the plant sent to him as *Oxalis colorata* (see letter to W. T. Thiselton-Dyer, 22 April [1879]). Daniel Oliver was keeper of the Royal Botanic Gardens, Kew. *Oxalis floribunda* is abundant flowering wood sorrel.

To T. L. Brunton 25 April 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Ap 25/79

My dear Sir,

I hope that you will forgive me for begging a favour of you. I intend writing a preliminary notice to a short life of my grandfather D^r Eras: Darwin published in Germany, & I want to say something about him as a doctor.¹ My father thought that he had influenced to a certain extent the practice of medicine in England, but he was of course a partial judge.² Can you give me any information on this head, for I know that you have attended specially to the subject. I have some curious evidence of eminent contemporary doctors thinking highly of him; but this does not go for much. The Zoonomia it is certain was formerly much studied.³ My father thought that his father's advice not to mechanically restrain the insane, except when quite necessary, had a beneficial influence on their treatment.⁴ Again that he was the first who advised the use of stimulants in fever if they lowered the pulse.⁵ If you can aid me in any way on this subject I shall be very grateful, but it is probable that you have not paid any attention to the Zoonomia.

Any how I trust that you will forgive me for troubling you, & I remain | my dear Sir | Yours faithfully | Charles Darwin

LS

McGill University Library, Rare Books and Special Collections (Manuscript Collection: Folio A.L.S. Charles Darwin)

¹ CD was writing a biographical preface to an English translation of Ernst Krause's essay on the scientific work of Erasmus Darwin (Krause 1879a).

² Robert Waring Darwin (1766–1848) had followed his father into the medical profession.

³ In *Zoonomia*, Erasmus Darwin attempted to form a theory of diseases by classifying animal life (E. Darwin 1794–6, 1: 1).

⁴ By the later eighteenth century, madness was increasingly regarded as an illness rather than as demonic possession, and some medical men and asylum keepers began to advocate techniques that minimised

physical coercion, arguing that this produced outward conformity but not the internalisation of moral standards (Scull 2011, p. 44). Erasmus Darwin supported this view in *E. Darwin 1794–6*, 2: 352.

- ⁵ Erasmus Darwin argued that the lowering of the pulse in a fever patient by the administration of wine or beer was an indication that the correct dose of stimulant had been ascertained (*E. Darwin 1794–6*, 1: 99). In advocating the use of stimulants Erasmus was following John Brown (bap. 1735 d. 1788), whose methods required close monitoring of pulse, temperature, and general condition during the critical phases of illness (Reinarz and Wynter 2014, p. 130). In *Erasmus Darwin*, p. 107, CD acknowledged that Erasmus was not the first to advocate such treatment.

From T. L. Brunton 26 April [1879]¹

50, Welbeck Street, | Cavendish Square, W.
April 26th.

My dear Sir

I regret that I have not paid as much attention to the *Zoonomia* as the work certainly deserves and that I cannot at present give the information you wish² I think I may learn something within the next few days. As it is for a German work you may be interested to notice that Dr Darwin seemed to be acquainted with the discovery made by Rosenthal in 1872 of the paralysis of vessels by exposure to heat.³ I send a copy of the *British Medical Journal* containing an article I wrote on Rosenthal's discovery. When you have finished with it I should like it back as I have no other copy. I should mention however that the passage in *Zoonomia* to which I refer is not perfectly clear.⁴

Yours very truly | T Lauder Brunton

DAR 99: 183

¹ The year is established by the relationship between this letter and the letter to T. L. Brunton, 25 April 1879.

² CD had asked about the influence of Erasmus Darwin's *Zoonomia* (*E. Darwin 1794–6*) on medical practice (letter to T. L. Brunton, 25 April 1879).

³ CD's biographical sketch was intended as a preliminary notice to an English translation of Ernst Krause's account of Erasmus Darwin's scientific work (Krause 1879a). Isidor Rosenthal had published his discovery in *Zur Kenntniss der Wärmeregulirung bei den warmblütigen Thieren* (Understanding heat regulation in warm-blooded animals; Rosenthal 1872, p. 12).

⁴ Brunton had published an article on 'catching cold', in which he used Rosenthal's discovery to explain why sudden changes of temperature, particularly from higher to lower than normal blood temperature, resulted in a cold (*British Medical Journal*, 28 June 1873, p. 735). In a passage in *Zoonomia*, Erasmus Darwin had stated that the 'sensorial power of irritation' of cutaneous capillaries was exhausted by heat, and not regained for some time after being subjected to a lower temperature (*E. Darwin 1794–6*, 2: 570). CD mentioned this anticipation of a modern discovery in *Erasmus Darwin*, p. 109.

To T. L. Brunton 28 April 1879

Down | Beckenham Kent.
Ap. 28 1879

My dear Sir

I thank you cordially for your note & the journal & return it by this same post.¹ I have copied out the passage marked, & have looked to the *Zoonomia*: It certainly

seems a good instance of D^r: D's acute power of observation.² Should you have anything further to communicate I shall be truly obliged.

My Dear Sir | yours very faithfully | Ch. Darwin

P.S. I have been out of luck in not finding you at home when I called there two times when last in London—³ But I called only for the pleasure of 10 minutes conversation—

Copy

DAR 143: 167

¹ See letter from T. L. Brunton, 26 April [1879] and n. 4.

² Brunton had pointed out that Erasmus Darwin appeared to have anticipated a modern discovery in a passage in his medical work *Zoonomia* (see letter from T. L. Brunton, 26 April [1879] and n. 4). CD referred to this and Brunton's discussion of the modern discovery in *Erasmus Darwin*, p. 109.

³ CD was in London from 27 February to 5 March 1879 (CD's 'Journal' (Appendix II)).

From W. E. Darwin 29 April [1879]¹

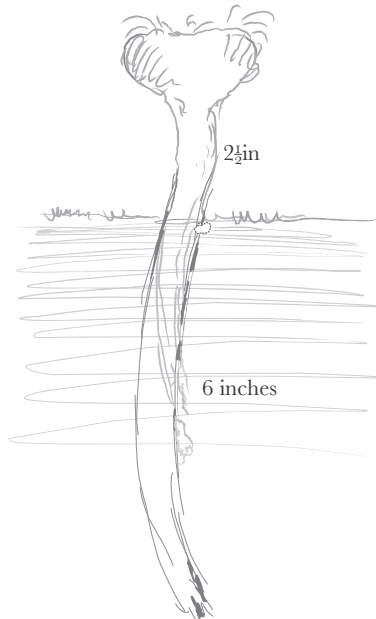
Bank, Southampton,

Ap 29th

Dear Father,

This is a hyacinth growing downwards in Hankinson's garden.² It had to be dug out and a flower was developed underground though small & bleached. I have the hyacinth. I enclose a letter from Leslie Stephens, perhaps Frank could look to Cradocks Memoirs.³

Your affect son | W.ED⁴



[Enclosure]

13, Hyde Park Gate South. | S.W.
25.4.79

My dear Mr Darwin,

I am ashamed of having left your note so long unanswered.⁵ My wife was unwell for a day or two & then I was unwell & consequent idleness has left a legacy of business.⁶ I am getting free again & I mean to go to the Club in a day or two & see whether I can hunt up anything for you.

I am afraid, however, that I am not likely to find anything worth while. My own knowledge of your great-grandfather comes from Miss Seward chiefly & I presume that you know all that she had to say—a spiteful old *précieuse* as she seems to have been.⁷

I have been trying to think of any other probable sources; but I have so far beaten my brains to no purpose. However as I have said I will have a look round & let you know if anything occurs worth notice. It would be a real pleasure to me to help your father in any way. You know the remarks upon D^r Darwin in Lewes's history of philosophy of course.⁸

Your's very truly | Leslie Stephen

I hope that if you are coming to town again at any time, you will let us know. We should be very glad to see you here.

There are, I have just found, 2 or 3 trifling anecdotes of D^r Darwin & a letter from him in Cradock's *Memoirs* Vol IV pp. 143, 198, 270.⁹ They are hardly worth turning to.

Cornford Family Papers (DAR 275: 73); DAR 177: 254

CD ANNOTATIONS

*Enclosure:*6.2 143,] *tick above pencil*6.2 Cradock's ... to. 6.3] *triple scored in margin pencil*

¹ The year is established by the date of the enclosure.

² Robert Chatfield Hankinson was a partner with William in the Town and County Bank.

³ Francis Darwin (see the enclosure from Leslie Stephen and n. 9, below).

⁴ The diagram is reproduced here at 50 per cent of its original size.

⁵ CD's note has not been found.

⁶ Julia Prinsep Stephen was Stephen's second wife.

⁷ Anna Seward had written a memoir of Erasmus Darwin, CD's grandfather (Seward 1804). CD thought the book a 'wretched production' (see letter to Ernst Krause, 19 March 1879). 'Précieuses' was a term that had been applied to the witty and educated women who attended female salons in seventeenth-century Paris, and who were seen by many as affected, over-refined promoters of fastidious standards of behaviour. Molière mocked them at the time in his play *Les Précieuses ridicules* (1659). See Gaines ed. 2002, pp. 389–90.

⁸ George Henry Lewes discussed Erasmus Darwin in his *History of philosophy* because he considered him to be 'one of the psychologists who aimed at establishing the physiological basis of mental phenomena' (Lewes 1867, 2: 356).

⁹ The fourth volume of Joseph Cradock's memoirs, compiled after his death by John Bowyer Nichols, contained a letter from Erasmus Darwin praising Cradock's book *Village memoirs* (Cradock [1774?]) as well as anecdotes about Erasmus's views on religion and his stutter (Cradock 1828, 4: iii, 143–4, 198, 270–1).

To Ernst Haeckel 29 April 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
April 29th 1879

My dear Häckel

I have just finished reading the English Translation (for from want of time I had deferred reading the French Translation) of your “Freedom in Science &c”, & you must let me have the pleasure of saying how much I admire the whole of it.¹ It is a *most* interesting essay, & I agree with all of it. Virchow’s conduct is shameful & I hope he will someday feel shame.² What an amazing Preface that by Huxley is.³

With all good wishes | Yours ever sincerely | Charles Darwin

Ernst-Haeckel-Haus (Bestand A-Abt. 1: 1-52/47 [A 9901])

¹ Both English and French translations of Haeckel’s *Freedom in science and teaching* were published in 1879 (Haeckel 1879b and Haeckel 1879c). Copies of the English translation and the original German edition (Haeckel 1878) are in the Darwin Library–Down. Thomas Henry Huxley had sent CD the English translation (see letter to T. H. Huxley, 19 April 1879).

² Rudolf Carl Virchow held that evolution should not be taught in schools and that speculation should be curbed in science (see letter to T. H. Huxley, 19 April 1879 and n. 2).

³ Huxley had written the preface to Haeckel 1879c (see letter to T. H. Huxley, 19 April 1879 and n. 2).

From Richard Okes to G. H. Darwin 29 April 1879

King’s Coll: Lodge
29th April 1879

Dear Sir

I am sorry I was not able to see you when you called upon me yesterday—I was thoroughly fatigued with y^c proceedings of y^c previous ten days and was afraid I had taken cold—

The Letters about which you enquire I remember seeing when I was a lad and they were in my father’s possession—¹ I have an impression that my Father gave them to D^r. E. Daniel Clarke for preservation in the Univ^y. Library—and that, when I was an Undergraduate, I saw them there.² But since my return in 1850 I have been too much engaged with things new to care, as I should like to do, for things old.³ My Grandfather, who has been a Fellow of this College, finally practised at Exeter, where he died, and was buried in y^c Cathedral.⁴ The two names of his Correspondents of which I have y^c clearest recollections are “Meade” and “Boerhave”—⁵

But M^r Bradshaw, our present Librarian, could tell you in a moment, whether my impression that my Grandfather’s collection of Letters is in y^c Univ^y. Library, is correct or not—⁶ I wish I could help you better—

Y^r. Very truly | Rich^d. Okes

George Darwin Esq^{re}

DAR 99: 192–3

¹ CD wished to locate a letter written to Okes’s grandfather Thomas Okes by Erasmus Darwin (see letter to G. H. Darwin, 19 April [1879] and n. 2). Okes’s father was Thomas Verney Okes.

² Edward Daniel Clarke was librarian of Cambridge University Library from 1817 to 1822 (*ODNB*). Okes had been an undergraduate at King’s College, Cambridge.

- ³ Okes became provost of King's College, Cambridge, in 1850.
⁴ Thomas Okes was a fellow of King's College, Cambridge, in 1753; there is a monument to him in Exeter Cathedral (*Alum. Cantab.*).
⁵ Probably Richard Mead and Hermann Boerhaave. However, Thomas Okes would have been about 8 years old at the time of Boerhaave's death; he was about 24 when Mead died.
⁶ Henry Bradshaw. Thomas Okes's letters are not in Cambridge University Library.

From G. H. Darwin to Emma Darwin [30 April 1879]¹

Trin. Coll.
Wedn.

Dear Mother,

I send a heap of papers for Father about old Eras.² I have searched for the D's in the heraldic visitation of 1562 but do not find them.³

I also send some copy of my own M. S. which I sh^d like put into my room.⁴

I go to Lond. today to the R. S Soirée;⁵ tomorr. I shall perhaps go to the Brit. Mus. & anyhow I must go to the dentist.

I think it is just possible I may come home in the afternoon without luggage— I shall either do so or else go to a theatre.

I have been very unwell but am getting better now.

Yours affec. | G H Darwin

DAR 210.2: 78

- ¹ The year is established by the reference to papers on Erasmus Darwin; the date is established by the reference to the Royal Society of London soirée (see nn. 2 and 5, below).
² CD was writing a biographical sketch of Erasmus Darwin, his grandfather (*Erasmus Darwin*).
³ Heraldic visitations were made to validate claims of armigers (persons entitled to bear heraldic arms) by investigating their pedigrees; the collection of pedigrees was housed at the College of Arms. Many of the original manuscripts are in the Harley collection at the British Library, and copies are held at other institutions. George may have seen the copy of the *Visitation of the county of Lincoln, in 1562–4* in Gonville and Caius College, Cambridge (MS 545) or at the British Museum. A version of it was published in 1881 (Metcalfe ed. 1881). The Darwin family is not listed.
⁴ The manuscript has not been identified, but was probably George's paper 'The determination of the secular effects of tidal friction by a graphical method' (G. H. Darwin 1879); the paper was read before the Royal Society on 19 June 1879.
⁵ The Royal Society soirée was held on Wednesday 30 April 1879 (see *Nature*, 8 May 1879, p. 35).

To Francis Galton 30 April [1879]¹

From Mr. C. Darwin, Down, Beckenham.

Many thanks. The extract will come in capitally.² You are very good to take so much trouble. M^{rs} Sch. received all safe, & shall soon be returned.³ I much enjoyed my talks with you.—⁴

C.D.—

Ap. 30th

ApcS

UCL Library Services, Special Collections (GALTON/3/2/1/28)

- ¹ The year is established by the relationship between this letter and the letter to Francis Galton, 22 March 1879.

- ² CD was collecting materials for his biographical sketch of Erasmus Darwin (*Erasmus Darwin*). Galton's letter has not been found.
- ³ CD had asked to borrow Mary Anne Schimmelpenninck's autobiography (Hankin ed. 1858), in which she had made negative comments about Erasmus Darwin (see letter to Francis Galton, 22 March 1879 and n. 5).
- ⁴ According to Emma Darwin's diary (DAR 242), Francis and Louisa Jane Galton visited Down on 26 April 1879.

From Anthony Rich 30 April [1879]¹

Heene, Worthing
April 30—

My dear Mr Darwin

When yours of yesterday reached me² I was being bewildered with an architect over plans, measurements, changes, charges likely to be brought upon me by the perverse conduct of a kitchen boiler! which has given me unceasing cause of trouble during its struggle for existence, and has been at last condemned as a survival of the unfittest. When he left for the rail I was wearied out. Otherwise I would not have allowed a single post to pass without writing to say how pleased I shall be to see you, and make your personal acquaintance, at Worthing at the time you mention, or indeed any other which may suit you.³ What reconciles me to the thought of your going to the Hotel is the knowledge that a disabled kitchen makes it impossible for me to suggest even that the hotel should be the Chappell Croft—..⁴

It is more than probable that you may be fatigued with travelling when you reach Worthing on Tuesday. Pray do not think of going out again that afternoon if you should find yourself in any way unequal to the exertion. But I would go down and call on you if you would send up a message upon your arrival to say you would like to see me, otherwise I shall not leave home for fear of missing you on the way—

As I do not wish to loose another post I close this at once— with a reiteration of the pleasure I anticipate in meeting you next week—and remain | Very truly yours
Anthony Rich.

DAR 176: 135

¹ The year is established by the date of CD's visit to Worthing (see n. 3, below).

² CD's letter has not been found.

³ According to Emma Darwin's diary (DAR 242), she and CD travelled to Worthing on 6 May 1879 and had lunch with Rich on 7 May.

⁴ Chappell Croft was Rich's home in Worthing.

From James Torbitt 30 April 1879

Belfast
30th April 1879

Charles Darwin Esqr. | Down.

My dear Sir.

With profound respect, if anything could stimulate me to energetic action it would be your approval, but I have no energy, only some tenacity of purpose.

To report—I have had an account of my experiments published, have got rid of the varieties of 1875, excepting a few which are too good to be destroyed, these and the crossed varieties of 1877/8 I have planted to the extent of ten acres.¹

The varieties of last season (1878) crossed in the second generation, are now growing healthily from selected heaviest and largest seed, and I am at present pricking out from the seed beds into boxes 7000 of the most vigorous. For cost of these your remittance is amply sufficient, I having had all the appliances necessary for their growth on hand previously² I am pushing the principle of selection much farther, and protecting the seedlings more carefully than ever before:

On yesterday I had the honor and the pleasure to send to you some specimens—first a whole variety of last season once crossed—second some tubers of a once crossed variety of 1877 which seems to be good—third a few tubers of a variety of 1876, not known whether crossed or not, this variety is exceedingly strong in the stems and produces tubers of the size of the specimens, the “runner” then continues a few inches beyond this tuber (not through it, the tuber being evidently an enlargement of the runner) and produces a second tuber of about an inch in diameter, and in every instance which I have observed the first tubers have been free from the parasite and in many instances the second tubers have been infested.³ Of the varieties of 1877 I have many like this.

Lastly in the large bags are two differentiated specimens of one variety of 1875 marked respectively Black 75 No 1 and Black 75 No 2, with a description of the behaviour of which, I shall venture to trouble you tomorrow, and I am satisfied it will be found interesting, at least as being curious.⁴

I am My dear Sir | Most respectfully & faithfully yours | James Torbitt

DAR 178: 152

*CD note:*⁵

My dear Sir— | I am very [*pencil above del pencil* ‘hearty’] glad to hear a good report of your experiments; & I shall *some time [*transposed from after ‘see’ pencil*] like to see your published report. I have no practical [*interl*] knowledge [‘of’ *del*] about potatoes but the specimens which you have sent seem to me very fine & healthy.—*(The curious case) [*square brackets in ms*] *about the [black var seems very] & I suppose was [*6 words illeg*] the crossing. I presume the [‘great’ *del*] extraordinary variation from the tubers is from the true crossed parents [*added pencil before del pencil* ‘Bees very surprising’] | bud-variation [*pencil*] | I will plant— Kew no use.—*It wd be no use to send the specimens to Kew. [*pencil*] | I have been working rather too hard of late & leave home on Tuesday for 3 weeks for some rest & therefore [*4 words illeg*] 5th | No one can wish [‘you’ *del*] more *more heartily for your complete success [*pencil below del pencil* ‘success’] than I do

¹ Torbitt was attempting to produce a blight-resistant potato; he destroyed his earlier seeds because he believed that even healthy varieties tended to degenerate after a few years (see *Correspondence* vol. 26, second letter from James Torbitt, 24 March 1878; DeArce 2008, pp. 209 and 211). He published an account of his experiments in the *Field* in March 1879 (Torbitt 1879).

² CD had funded some of Torbitt’s experiments in 1878 (see *Correspondence* vol. 26, letter from James Torbitt, 3 April 1878).

³ The potato-blight fungus, *Phytophthora infestans*, infects the leaves of the potato before moving down to the tubers.

⁴ On the Black 75 potato, see the memorandum from James Torbitt, 1 May 1879.

⁵ CD’s note is a draft of his reply (letter to James Torbitt, 3 May 1879).

From James Torbitt 1 May 1879

Description of the behaviour of a variety of the potato during the third and fourth years of its life, a variety which I have named Black Seventy Five.¹

“Black Seventy Five” being a description of the life of a variety of the potato during its third and fourth years of life by J. Torbitt | Belfast.

It first attracted my attention in the summer of 1877. It was growing among some hundreds of varieties each like itself, the the product of a seed sown in the spring of 1875. It came first into bloom, the flowers being very large, petals pale lilac, it gave out a rich perfume and was assiduously visited by the humble bee, the insect always passed along the line of plants never omitting one, and never visiting more than one flower—on each plant. The leaves were dark green and very large compared with old varieties, very long and very broad compared with their length, the stems were very thick, of a rather pale green tinged with brown on the lower parts. It produced a large crop of berries and of tubers neither of which was weighed. When ripe I had it raised, and for purpose of crossing, kept it under lock, and planted it last season (1878) When it came up and as it was growing I found here and there, a plant of a different character from the original; smaller, narrower leaves, stems smaller and browner, and as the plants grew, more and more of them so changed, until at last about one half of the whole variety was so affected. On coming into bloom the changed plants produced small flowers with red petals, had no perfume, the flowers dropped off and the crop of fruit was absent. The tubers were smaller and of less aggregate weight than the tubers of the less changed plants of the variety. The specimens marked Black seventy fives No 2 are tubers of these so changed plants.

The unaltered plants of the variety produced a crop of berries at the rate of 13 tons per acre, and of tubers 11 Tons. The specimens marked Black seventy fives No 1 are the produce of these plants.

Now I would respectfully suggest that, if possible, these black seventy fives No 1, be grown at Kew year after year (say 10 tubers each year) and the result noted.²

Signed | James Torbitt

Belfast 1 May 1879

AMemS

DAR 178: 153

CD note:

July 25th 1879. Row of Black 75 all true very large white & numerous flowers—I cannot perceive odour much—Hardly any *Bombus* about this year.³ The Row of the var. very untrue 3 Plants quite like Black 75. Several monsters with small crumpled leaves—The greater number alike with smaller & rougher leaves than 75. & purple smaller flowers. I suspect a tendency to abn. /monstering / cause of variation.

¹ Torbitt had promised CD a report on this variety in his letter of 30 April 1879.

² There is no evidence that any trial of Black 75 potatoes was carried out at the Royal Botanic Gardens, Kew. The Royal Agricultural Society had commissioned Anton de Bary in 1875 to study the development of the parasitic fungus (see Bary 1876 for his report), but no long-term trial was attempted at that time.

- ³ *Bombus* is the genus of humble-bees (bumble-bees); potato flowers have no nectar and are specialised for pollination by some species of bumble-bee whose vibrations (buzzing) cause the pollen to be released from specially shaped anthers. Christian Konrad Sprengel had described the behaviour in Sprengel 1793, p. 129.

To Grant Allen 2 [May] 1879¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

April 2^d 79

My dear Sir

I have just read with *much* interest your article in the Fortnightly & your views seem to me very probable.² But my judgment is worth nothing, as I have of late been attending to other subjects. The sole source of doubt which crossed my mind relates to the faces of some monkeys, which, *as far as I remember*, are nearly hairless & yet can hardly have been subjected to rubbing. Is not the hairless condition of the feet of animals due to the thickening of the skin? would the hair disappear if the skin was not thickened? But my object in writing was solely to send enclosed, in case you have not seen the later edition of the *Descent of man*.³

It is something wonderful to me to hear of anyone defending Sexual Selection, which, such is my stock of conceit, I have still full confidence in.⁴

Believe me | My dear Sir | Yours very faithfully | Ch. Darwin

LS

American Philosophical Society (B/D25.361)

- ¹ The month is established by the reference to Allen's essay (see n. 2, below). CD evidently wrote April by mistake.
- ² Allen's essay 'A problem of human evolution' was published in *Fortnightly Review* on 1 May 1879 (G. Allen 1879b). Allen argued that the hair on some parts of the body was initially worn away by long-continued pressure or friction; after this, he suggested, individuals with less hair would have appeared more attractive to their mates, and thus sexual selection completed the process of denudation. He considered the fact that women were less hairy than men as evidence for this argument.
- ³ CD discussed hair as a sexual characteristic in *Descent* 2d ed., pp. 601–4; he remarked that the hairless faces of monkeys allowed the colour of their skin to be more fully displayed during the breeding season.
- ⁴ Many men of science, including St George Jackson Mivart, William Boyd Dawkins, and August Weismann, disagreed with CD's notion of sexual selection, but Alfred Russel Wallace was one of the strongest critics (see E. Richards 2017, pp. 466–91; see also Wallace 1877 and *Correspondence* vol. 25, letters from A. R. Wallace, 23 July 1877 and 3 September 1877). Wallace also attacked sexual selection in his review of Allen's book on colour in nature (G. Allen 1879a; letter from Raphael Meldola, 4 April 1879 and n. 4).

To Reginald Darwin 2 May 1879

Down,
May 2, 1879.

My dear Cousin

I leave home on the 6th for 3 week's rest and will then begin my preliminary notice and continue it after my return home.¹

My object in writing is to say that I hope you will not consider me very unreasonable in keeping your various books for so long a time. I had intended to return them before leaving home, but one of my sons who understands mechanics has not yet had time to investigate how far some of the mechanical suggestions in the M.S. folio have since been improved or utilized.² I have locked up all your books in an iron fire-proof Plate chest, so that they will be safe.

So pray forgive me and believe me | Yours very sincerely | Ch. Darwin

Copy

DAR 153: 100

- ¹ Between 6 and 26 May 1879, CD visited Worthing, Southampton, and Leith Hill Place (CD's 'Journal' (Appendix II)). He was preparing to write the biographical account of Erasmus Darwin that would serve as a preliminary notice to the English translation of Ernst Krause's account of Erasmus Darwin (Krause 1879a; *Erasmus Darwin*, pp. 1–127).
- ² Reginald Darwin had lent CD several books, including Erasmus Darwin's *Commonplace book* (Down House MS; see letter from Reginald Darwin, 29 March 1879). Erasmus Darwin's more ambitious mechanical ideas were recorded in this book (see King-Hele 1999, pp. 136–8, 151–2, 162–3, 184–5, 204, and 216–17; *Erasmus Darwin*, pp. 118–24). The son was probably Horace Darwin.

To Ernst Krause 2 May 1879

Down, | Beckenham, Kent.

May 2 1879

My dear Sir

I leave home on May 6th for 3 weeks rest; & I inform you of this fact in case you shd have finished your life of D^r Darwin within this time.¹ If so, it would be the safest plan to address your M.S to

“W. S. Dallas Esq
Geological Society
Burlington House
London—²

Will you further have the kindness to write him a few lines, telling him that you have despatched the M.S in accordance with my request, & asking him to begin the translation as soon as he can.

When away from home I will begin my preliminary notice; but fear I shall not do much, as I require rest—but as soon I return home, I will do nothing else.³

My dear Sir | yours very faithfully | Charles Darwin

LS

The Huntington Library (HM 36181)

- ¹ Between 6 and 26 May 1879, CD visited Worthing, Southampton, and Leith Hill Place (CD's 'Journal' (Appendix II)). Krause was revising his account of Erasmus Darwin (Krause 1879a).
- ² William Sweetland Dallas was assistant secretary of the Geological Society of London; he had agreed to translate Krause's work on Erasmus Darwin (see letter from W. S. Dallas, 14 March 1879).
- ³ CD was preparing a biographical account of Erasmus Darwin as a preliminary notice to the translation of Krause's work (*Erasmus Darwin*, pp. 1–127).

From G. H. Darwin [before 3 May 1879]¹

New University Club. S. James's Street, S.W.

Dear Father,

I have looked up the enclosed in the Lond. Lib. No mention of D^r D. in the index to Month. Mag. for 1802–3–4, but I went thro' 3 vols for 1802 & only found the enclosed.²

London. Mag. for 1751 not in Library³

Y^{rs} | G H D.

DAR 210.2: 74

- ¹ The day and month are established by the relationship between this letter and the letter to George Darwin, 3 May [1879]; the year is established by references to the research for *Erasmus Darwin*, which was published in 1879.
- ² The London Library is a membership library, established in 1841. George was looking for a biographical article about Erasmus Darwin (1731–1802) that was published in the *Monthly Magazine, or, British Register*, 1 June 1802 (Anon. 1802); a reference does appear in the index to the volume (*Monthly Magazine* 13 (1802): 716). The enclosure sent has not been identified, but may have been copied from the *Monthly Review*, which George had looked at instead of the *Monthly Magazine* (see letter from G. H. Darwin, 5 May 1879); there are brief references to Erasmus Darwin in *Monthly Review* 37 (1802): 132 and 38 (1802): 156 and 163.
- ³ CD may have asked George to find the published version of Erasmus Darwin's first poem on the death of Frederick Lewis, prince of Wales, written in 1751; it was not published until 1795 (*Erasmus Darwin*, p. 12).

To G. H. Darwin 3 May [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
May 3^d

My dear G.

I have come across again M^r Keir's statement in a letter to my Father, dated June 18th 1802, in which he twice refers to some malicious calumny about D^r D. in the "Monthly magazine".² Will you have another look in the Cambridge Library. It may have been at close of 1801; but this is not likely.

Can the calumny be in some brief obituary notice at end of volume? It must have been some baddish calumny as it is said by M^r Keir, "that D^r Fox & M^r Hadley have printed a declaration contradicting the falsehood".³ Can there be *two* Monthly Magazines, slightly differing, such as the "Gentlemen's Monthly Magazine" or "London Monthly Mag", &c & that the first half of Title was dropped as my Father knew to what magazine M^r Keir referred. See what you can do to help me.—

Yours affect | C. Darwin

DAR 210.1: 78

- ¹ The year is established by the references to research for *Erasmus Darwin*, which was published in 1879.
- ² 'Biographical memoir of the late Dr. Darwin' had been published anonymously in the *Monthly Magazine, or, British Register*, 1 June 1802 (Anon. 1802). James Keir had been a close friend of Erasmus Darwin; his letter to CD's father, Robert Waring Darwin (1766–1848), is in DAR 227.6: 81.

- ³ The article in the *Monthly Magazine* claimed that Erasmus Darwin's death had been hastened by 'a violent fit of passion' directed towards a servant (Anon. 1802, p. 458). In the draft, but not the published version, of *Erasmus Darwin*, CD stated that this had been denied by Erasmus's medical attendants, Francis Fox and Henry Hadley (King-Hele ed. 2003, pp. 69 and 127). The denial by Fox and Hadley was published in the *Derby Mercury*, 10 June 1802, p. 4.

To James Torbitt 3 May 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

May 3/79

My dear Sir,

I am extremely glad to hear a good account of your experiments; & I shall much like to see your published report, whenever you can send me a copy. I have no practical knowledge about potatoes, but the specimens which you have sent seem to me & my gardener very fine & healthy ones. The case of the black potatoes is very curious, & I am particularly surprised at the flowers being odoriferous & being visited by many humble-bees, for this according to my experience is a rather unusual event.¹ I presume the extraordinary amount of bud variation (as I call all non-sexual variation) is due to the parents having been recently crossed.² It would be of no use to send the potatoes to Kew, for they have so many subjects to attend to they will not undertake anything fresh of such a nature.³ But I have today planted & labelled the two varieties & will hereafter report the result to you. I have been working rather too hard of late & leave home on May 6th for 3 weeks rest.⁴ No one can wish more heartily than I do for your complete success

my dear Sir | Yours sincerely | Charles Darwin

LS

National Botanic Gardens of Ireland Library, Glasnevin (DSS/DM/1/1/16)

- ¹ See letters from James Torbitt, 30 April 1879 and 1 May 1879 and nn. 2 and 3. CD's gardener was Henry Lettington. Potato flowers are scented but have no nectar; pollen can only be released by vigorous vibrating of the anthers by some species of *Bombus* (humble-bees or bumble-bees; the technique is now referred to as buzz pollination).
- ² CD had discussed bud variation in *Variation* 1: 373–411; he had defined this type of variation as 'all those sudden changes in structure or appearance' that occasionally occurred 'in full-grown plants in their flower-buds or leaf-buds' (*ibid.*, p. 373).
- ³ In his letter of 1 May 1879, Torbitt had suggested trials of the 'Black 75' potato might be carried out at the Royal Botanic Gardens, Kew.
- ⁴ Between 6 and 26 May 1879, the Darwins visited Worthing, Southampton, and Leith Hill Place in Surrey (CD's 'Journal' (Appendix II)).

To C. S. Wedgwood [3 May 1879]¹

Down

My dear Caroline

I distinctly remember my father saying that Lady Charlemont or Charleville remarked that our grandfather was one of the most agreeable persons she had ever

met; and my father added that she had constantly met the most agreeable persons in London. I *think* it was the lady who drew Shelton oak. Now do you know whether it was Charlemont or Charleville; if the former she certainly must have lived with the pleasantest people in London.²

Is your memory distinct about R. Darwin (who must have been the father of Erasmus) pulling down the mill because his horse shyed. It seems almost incredible; more especially as tho' he lived at Elston he was not the owner of the property, tho' his son ultimately came into possession of it. How he was rich enough to live at Elston and send 3 sons to Cambridge at the same time is a mystery to me which no inquiry has solved.³ Will you be so good as to write to Bassett, Southampton.⁴

Yours affectionately | C. Darwin

Copy

DAR 153: 4

¹ The date is established by an annotation in an unknown hand on the copy and by CD's request for information about his grandfather Erasmus Darwin and his instruction to send the reply to Bassett (see n. 4, below). CD worked on his biography of Erasmus in 1879 (CD's 'Journal' (Appendix II)).

² Robert Waring Darwin (1766–1848) referred to Hester Moore, Lady Charleville (*Erasmus Darwin*, p. 40). The Shelton oak was a long-lived oak tree in Shropshire that the Welsh prince Owain Glyn Dŵr was said to have climbed in order to see the Battle of Shrewsbury in 1403 (Miles 2013).

³ The story about the mill was not recorded in *Erasmus Darwin*. CD was trying to establish whether Robert Darwin (1682–1754) owned Elston Hall. Three of Robert Darwin's (1682–1754) sons attended Cambridge University, but only Erasmus Darwin and John Darwin were there at the same time; Robert Waring Darwin (1724–1816) had been there seven years earlier and William Alvey Darwin studied law in London.

⁴ CD left Down on 6 May 1878 and spent two days in Worthing before travelling on 8 May to Bassett, Southampton, where he stayed until 21 May (CD's 'Journal' (Appendix II)).

To E. A. Wheler 3 May 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

May 3. 1879

My dear Cousin

I return with very sincere thanks all your various precious documents by Rail this day.—¹ We leave home on the 6th & I hope then to make a beginning of my Preliminary notice of the life of D^r. D.²

Believe me Yours truly obliged | Charles Darwin

P.S I have retained the letter from M^{rs} Nixon³

UCL Library Services, Special Collections (GALTON/1/1/9/5/7/26)

¹ Wheler had sent CD anecdotes concerning Erasmus Darwin (1731–1802), as well as a copy of a letter sent by her sister Emma Sophia Galton in 1871 to John Dowson about his lecture on the life of Erasmus Darwin (Dowson 1861); Wheler also sent a copy of Erasmus Darwin's translations of the medical works of his son Charles, loaned by Emma Sophia Galton (see letter to E. A. Wheler, 26 March 1879, and letter from E. A. Wheler, 28 March 1879).

² CD was on holiday from 6 to 26 May 1879 (CD's 'Journal' (Appendix II)). He intended to start writing the biographical account of Erasmus Darwin that would serve as a preliminary notice to the English translation of Ernst Krause's study of Erasmus's work (Krause 1879a; *Erasmus Darwin*).

³ Emma Nixon had sent two letters to Wheler; initially Wheler had not wanted the first letter returned to her, but later requested that both letters be sent back (see letters from E. A. Wheler, 17 April 1879 and 18 April 1879).

From T. H. Farrer 4 May 1879
Abinger Hall, | Dorking. | (Gomshall S.E.R. | Station & Telegraph.)
 4 May/79

My dear Mr Darwin

If you have not got your Coronilla it is not poor Paynes fault who has been laid up like every one else with influenza, and danger of worse—¹ However I hope he will now soon be about again. The place does not seem itself without him. We leave tomorrow just as the skies are brightening

I am struck this year by the amazing variations of the hardy primulas—of which we have a great number— From polyanthus and cowslip to primrose there is every gradation—² Umbel and no umbel, often on the same plant: large flowers & small ones some: every gradation of colour from deepest browns & reds to palest yellow: sometimes even the dusty auricula tone: calyx changing into corolla: and corolla and calyx changing into leaf— they seem to confound every attempt at definition or description.

I suppose this is the bees work amongst our native primroses & imported polyanthuses— I suppose too this is a disturbance we have effected with our new polyanthuses; and that in course of time all would settle again into the stable equilibrium of natural species.

But it is curious to see what a variable race the primulas are.

Sincerely yours | T H Farrer

DAR 164: 92

¹ George Payne was Farrer's gardener. No previous correspondence about Farrer's sending CD a *Coronilla* has been found. At CD's urging, Farrer had published his research on fertilisation in *Coronilla*, the genus of crown vetch (Farrer 1874; see *Correspondence* vol. 22, letter to T. H. Farrer, 10 April 1874). On a visit to Farrer in August 1877, CD had observed the sleep movements of *Coronilla minima* and *C. glauca* (a synonym of *C. valentina* subsp. *glauca*). Notes on these species, dated 21 and 22 August 1877, are in DAR 209.1: 36–7. CD's notes on sleep movements in *Coronilla rosea*, dated from 14 to 17 September 1879, are in DAR 209.10: 21–3.

² Polyanthus is the common name of a hybrid group derived from some species of the genus *Primula*; CD discussed experiments with polyanthus and *Primula auricula*, another popular nursery flower, in 'Dimorphic condition in *Primula*'. The primrose is *Primula vulgaris* and the cowslip is *Primula veris*. Hybrids of the two species occur naturally; these resemble the true oxlip (*Primula elatior*) and are known as false oxlips. CD discussed hybridity in these species in 'Specific difference in *Primula*'.

To G. H. Darwin 5 May [1879]¹

From Mr. C. Darwin. Down, Beckenham.

Will you look in public Library & see if there is a life of Sir H. Rayburn, a Scotch painter, who is spoken of as famous & who painted Charles Darwin when dead.²

There is no such book in L. Library. Was he a friend of Ch. D. & why did he paint the corpse? There is said to be some reference about C. D. in Rayburns life.—³

May 5th

Apc

DAR 210.1: 79

¹ The year is established by the relationship between this letter and the letter from Reginald Darwin, 7 April 1879.

² Cambridge University Library was known as the public library; in this context, 'public' was used in the sense of 'Belonging to ... the whole university (as distinguished from the colleges or other constituents)' (*OED*). Andrew Duncan had published a memoir of Henry Raeburn, in which he made clear that Raeburn had not painted a portrait of Erasmus Darwin's eldest son, Charles Darwin (1758–78), but had made a trinket in which he set a lock of Charles's hair (Duncan 1824, pp. 10–12). L. Library: London Library. There was a copy of *Portraits by Sir Henry Raeburn* (1876) with a biographical essay by John Brown (1810–82) in Cambridge University Library, but this made no mention of Charles Darwin (Brown 1873). The *Life of Sir Henry Raeburn, R.A.* was not published until 1886 (Andrew 1886).

³ Reginald Darwin had given this reference to CD (see letter from Reginald Darwin, 7 April 1879).

From G. H. Darwin 5 May 1879

Trin Coll.

May 5. 79

My dear Father,

I have found the article— at least I believe so. The book I looked at in London was something different from the one in our Library & I think must have been the Monthly Review whilst this is the Monthly Magazine. It is a biographical sketch of E.D.. I have not read it but am having it copied. I saw something about a £100 promissory note given by Col. Pole to his wife, which I guess is the calumny.¹ I daresay I shall have the copy tomorrow.

Jackson has given me a copy of Eras. D.'s book about female education. Do you see the advertisement of the Miss Parker's at the end— was it written as a puff of their school—& is'nt there some story of their being his natural daughters. I think old M^{rs} Greaves of Cheltenham told us something about it.² Her letters to me are in the tin pedigree box in my bedroom, perhaps you might look at them.³

Bradshaw says he knows nothing of any letters of D^r Okes' in the University Library & so we shall not find them—⁴ The Provost of King's was one of 23 children & so the letters may be in possession of the other 22 or their descendants—for the old fellow is over 80.⁵

Has a book come for me at Down, for I have received a post card forwarded from Down saying that a presentation copy of Thomson & Tait's Nat. Philos. has been sent me.⁶ I shd. like to have it forwarded if it has come & *to know at once if it has not.*

I am very much pleased that Thomson sh^d have thought me worthy of a copy.

I believe I have made a little astronomical discovery as to a correction which ought to be applied on taking observations of the Sun— I had never seen it in text books but I cdn't conceive that it was new, until I found two astronomers here who had never heard of it. One of them a M^r Knobel is going to ask a M^r Marth who

was the great Bessel's assistant if it is known & to let me know.⁷ It would be very funny if I have really hit on anything new in such a very old subject—and moreover it is founded on such very simple considerations I can't however think it is new as yet.

If it is so, however I shall sent a note to a German Astron. Journal to try to stir up the German Astron^{rs}. to examine the Solar observations to search for the theoretical inequality in the Sun's motion

I have begun doing arithmetic in my work & my first attempt (which is always wrong however) makes it look as though the results would fit to a T into what I thought might be the case & if they do I think my theory w^d. be almost established.

Your affectionate Son | G. H. Darwin

DAR 210.2: 75

- ¹ CD had asked George Darwin to find an article in the *Monthly Magazine* in which Erasmus Darwin (1731–1802) had been maligned (see letter to G. H. Darwin, 3 May [1879]). In the 'Biographical memoir of the late Dr. Darwin', the anonymous author stated that when Erasmus married Elizabeth Pole, he made sure that a £100 promissory note to his wife from her deceased former husband was valid (Anon. 1802, p. 458). However, the calumny was the claim that Erasmus's death had been hastened by 'a violent fit of passion' directed towards a servant (see letter to G. H. Darwin, 3 May [1879] and n. 3).
- ² Henry Jackson, like George, was a fellow of Trinity College, Cambridge. Erasmus Darwin had purchased some property and wrote out his ideas on the education of women in order to help his illegitimate daughters, Susanna Parker and Mary Parker, establish a girls' school in Ashbourne, Derbyshire, in 1794. After taking account of comments from parents, Erasmus published his enlightened views on education under the title *A plan for the conduct of female education in boarding schools* (E. Darwin 1797). The main text was followed by an advertisement for the school (*ibid.*, p. 128). Elizabeth Anne Greaves was the niece of Henry Hadley; after Hadley married Susanna Parker, Elizabeth Greaves was brought up in their household (King-Hele 1999, p. 357).
- ³ For one of Elizabeth Greaves's letters, see *Correspondence* vol. 26, letter from E. A. Greaves to G. H. Darwin, 26 June 1878.
- ⁴ George was hoping to find a letter to Thomas Okes from Erasmus Darwin (see letter from Richard Okes to G. H. Darwin, 29 April 1879). Henry Bradshaw was the librarian at Cambridge University Library.
- ⁵ Richard Okes (grandson of Thomas Okes, 1730–97) was provost of King's College, Cambridge; he was the nineteenth of Thomas Verney Okes's twenty children (*ODNB*).
- ⁶ The first volume of a new edition of William Thomson and Peter Guthrie Tait's *Treatise on natural philosophy* was published in 1879 (W. Thomson and Tait 1879–83). Thomson had been impressed by George's work the previous year; see *Correspondence* vol. 26, letter from G. J. Romanes, 17 August 1878, letter to G. H. Darwin, 29 October [1878] and n. 3, letter from G. H. Darwin, 7 November 1878, and letter to G. H. Darwin, 8 November [1878].
- ⁷ Edward Ball Knobel was on the council of the Royal Astronomical Society of London. Albert Marth was briefly the last student of Friedrich Wilhelm Bessel at Königsberg University. George's correction on taking observations of the sun has not been identified in his publications.

To Ernst Krause 5 [May] 1879¹

Down, | Beckenham, Kent. (Railway Station | Orpington. S.E.R.)

April 5th 79

My dear Sir

I forgot to say one thing in my former note.—² I formerly offered to have an M.S. copy made of my "Preliminary Notice"; but I think it will be a better plan for you to wait till I get the first proof-sheets. For the man whom I employ to copy has

only a short time daily for the work, & I did not intend to have the letters & some extracts copied at all. Moreover I always correct my M.S. & the proofs heavily. For these various reasons I think it w^d be the best plan for you to wait till I can send you corrected proofs. I may repeat that I am quite doubtful whether the Preliminary Notice will be worth translating, as it is written for the English Public.— If, however, you much wish it I will have a second copy of the M.S made.³

I suppose that you will not object to a French Translation of the little book, for I mentioned incidentally to Reinwald what I was doing & he said that he w^d. bring out a French Translation.⁴

I advised him to wait to see whether it is worth translating. I daresay M^{ess} Appleton of New York will wish for an American edition, & I presume you will not object.—⁵ Pray let me hear your decision. about the second copy.

My dear Sir | Yours sincerely | Ch. Darwin

As there has been a break in my experimental work I have begun the Preliminary & Notice & written a dozen pages.—⁶

The Huntington Library (HM 36180)

¹ The month is established by the relationship between this letter and the letter from Ernst Krause, 8 May 1879. CD evidently wrote April instead of May by mistake.

² See letter to Ernst Krause, 2 May 1879.

³ CD was preparing a biographical sketch of Erasmus Darwin (1731–1802) as a preliminary notice to the English translation of Krause's work (Krause 1879a; *Erasmus Darwin*). Ebenezer Norman was CD's copyist. CD's notice was included in the German edition (Krause 1880, pp. 1–72).

⁴ No French translation was published. Charles-Ferdinand Reinwald was CD's publisher in Paris.

⁵ D. Appleton & Co. brought out a US edition in 1880, using the stereotypes of *Erasmus Darwin* (*Erasmus Darwin* US ed.).

⁶ In his 'Journal' (Appendix II), CD recorded that he spent the whole of 1879 'on circumnutating movements of plants, except about 6 weeks on Life of Erasmus Darwin'.

From Ernst Krause¹ 5 May 1879

Berlin N.O. Friedenstrasse 10. II.
den 5.5.79.

Hochgeehrter Herr!

Es war mir sehr schmerzlich, meinem Versprechen, Ihnen das beiliegende Manuscript eher zu schicken, nicht nachkommen zu können, da mich das ungewöhnlich kalte Frühjahrs Wetter dieses Jahres mittelst einer tüchtigen Erkältung vierzehn Tage arbeitsunfähig gemacht hatte.² Ich bitte Sie, diese Verzögerung freundlichst entschuldigen zu wollen, die Fortsetzung hoffe ich nun schneller liefern zu können. Das beifolgende Manuscript enthält nämlich nur die Einleitung, eine kurze Lebensskizze und eine Betrachtung der philanthropischen Verdienste des Dr. E. Darwin; es fehlt noch die Analyse der poetischen und wissenschaftlichen Arbeiten desselben, die ich ebenfalls etwas zu erweitern wünschte. Es liegt mir dabei besonders daran, ihn von dem an vielen Stellen ihm gemachten Vorwurfe zu reinigen, er sei ein blosser Nachahmer von Sir Richard Blackmore oder Brooke:

ich habe deren in Betracht kommende Werke nun gelesen und kann daraufhin bestimmt sagen, dass davon keine Rede sein kann.³

In der Lebensbeschreibung habe ich freilich nicht viel mehr geben können, als was ich in den Werken von Miss. Seward u. Dr. Dowson vorfand, aber einige Bemerkungen im Jahrgange 1802 des *Gentleman's Magazine* und Anderes dienen zur Ergänzung. Auch den Widerruf der Miss. Seward habe ich noch glücklich gefunden; er steht in dem vierten Bande des Jahrgangs 1806 der *Edinburgh Review*.⁴ Über Miss. Seward selbst fand ich einige sehr interessante Urtheile in *Lockhardt's Memoirs of the Life of Sir Walter Scott*, die sehr geeignet sind, die Unzuverlässigkeit ihrer Nachrichten zu illustriren.⁵ Ich habe deshalb eine kleine Einleitung hinzugefügt, und darin die Quellen über das Leben des Dr. E. D. zu charakterisiren.⁶

Obwohl nun die neue Lebensbeschreibung nicht viel Neues bringt, so finde ich doch, dass sie durch eine bessere Gruppierung der einzelnen Daten ganz erheblich an Wirkung gewinnt; nicht allein das Buch der Miss. Seward, sondern auch die kleine Schrift von Dr. Dowson geben ihre Nachrichten so bunt durcheinander, dass sie keinen Genuss bei der Lecture aufkommen lassen. Mein Manuscript wird nun im Ganzen etwa 100 Octavseiten Druck umfassen; eine Veröffentlichung in einer *Review* wird dann allerdings wohl ausgeschlossen sein. Ich bitte Sie nun, hochverehrter Herr, vor Allem, dass Sie mein Manuscript nur wie eine Vorlage ansehen wollen, und daran ändern, was Ihnen falsch oder nur irgendwie bedenklich erscheint. Im Nachfolgenden möchte ich mir erlauben, Ihnen einige solcher Punkte namhaft zu machen, die mir zweifelhaft geblieben sind, und die mir der Ergänzung bedürftig erscheinen.

1. Wann wurde Dr. Darwin mit Watt, Boulton u. Edgeworth bekannt?⁷
2. Wohnte Edgeworth, ehe er nach Irland übersiedelte, in der Nähe von Lichfield?⁸
3. Wer waren die mehrfach von Dr. Dowson citirten Mr. Galton und Mrs. Schimmelpenninck?⁹
4. Zu welcher Zeit kaufte Dr. Darwin die Priorei bei Derby?¹⁰
5. War Dr. Darwin durch seine erste Frau mit dem Philanthropen John Howard verwandt?¹¹
6. War Dr. D.'s Vater ein Gelehrter, Gutsbesitzer, ?¹²
7. Wie ist sein Sohn, Sir Francis D. zu dem Adelstitel gekommen?¹³
8. Möchte ich mir die Anfrage erlauben, ob Ihnen über die Herkunft Ihrer Familie oder des Familiennamens etwas Positives bekannt ist? Im *Gentleman's Magazine* finde ich (Vol. LXXII.II p 653) ein Gedicht von Mr Rainsfold auf den Tod von Dr. E. D. abgedruckt, in welchem in den Namen *Darwin*, *Derwent* offenbar Beziehungen vorausgesetzt werden.¹⁴ Nun sagt mir ein Sprachkundiger Freund die Sylbe *Der*, *Dar* sei keltisch und heiße Wasser, die Sylbe *wen*, *went* sei normännischen (dänischen) Ursprungs und heiße ebenfalls das Wasser, der Fluss, und er vermuthe, Ihre Familie müsse aus Wales stammen. Dabei ist mir der Ortsnamen *Darwen* in *Lankastershire*¹⁵ aufgefallen, und der Umstand, dass die Ortschaft, in welcher Edgeworth seinen Wohnsitz hatte *Edgeworthstown* heisst, gab mir die Idee, dass es mit *Darwen* und *Darwin* ähnlich sein könnte.

Ich erschrecke, Sie mit solchen Fragen zu quälen. Nehmen Sie, bitte, dieselben lieber für ungethan. Da Sie einige Briefe von Dr. E. D. mitzutheilen beabsichtigen, was höchlichst das Interesse der kleinen Schrift erhöhen würde, so habe ich Ihrem Plane wahrscheinlich vorgegriffen, indem ich den Brief, welchen Dr. D. eine Stunde vor seinem Tode an Mr. Edgeworth schrieb, in die Lebensbeschreibung aufnahm. Es schien mir dies deshalb passend, weil ich vorher den Bericht des G.'s Magaz., über seine letzten Lebensstunden, der von einem Verwandten oder Hausfreunde herzurühren scheint, wiedergegeben hatte, so dass die Ausführlichkeit an dieser Stelle motivirt erscheint. Wenn Sie den Brief aber lieber in dem Zusammenhange der übrigen geben wollen, so kann an jener Stelle leicht ein Hinweis auf die Sammlung eingeschaltet werden.¹⁶

Ebenso habe ich die mir zugänglichen kurzen Notizen über die drei Söhne Charles, Erasmus und Robert, eigentlich nur in der Voraussetzung hinzugefügt, dass Sie dieselben vielleicht durch ausführlichere Nachrichten ersetzen würden.¹⁷

Während ich eben im Begriffe war, diese gestern angefangenen Zeilen zu schliessen, traf Ihr freundliches Schreiben vom 2ⁿ Mai ein, woraus ich ersehe, dass Sie Ihre Erholungsreise morgen antreten wollen. Von ganzem Herzen wünsche ich Ihnen das angenehmste Wetter und einen guten erfrischenden Aufenthalt. Ich werde nun das Manuscript Ihrem Wunsche gemäss, noch heute direct an Herrn Dallas senden und ihn in Ihrem Namen bitten, sobald es seine Zeit erlaubt, mit der Uebersetzung zu beginnen.¹⁸ Er wird keine grosse Mühe haben, da ich alle Ausführungen aus Miss. Seward, D^r Dowson, Mr. Edgeworth, Lockhardt u. A. englisch copirt habe. Für die Analyse von Dr. D.'s Werken dürfte es wohl am einfachsten sein, wenn der Drucker einfach die Belagstellen aus der Zoonomia, dem Botanic Garden us.w. als Vorlagen erhielte?¹⁹ So sehr ich mich allezeit freue, wenn ich von Ihnen einige Zeilen erhalte möchte ich Sie doch bitten, Ihre kurze Erholungszeit nicht durch Correspondenz zu beeinträchtigen; es wäre mir viel erfreulicher, *nachträglich* von Ihnen zu erfahren, dass Sie mit dem Erfolge der Arbeitsunterbrechung vollkommen zufrieden zu sein, Ursache haben.²⁰

Inzwischen zeichne ich, hochverehrter Herr, mit den herzlichsten Grüßen und Wünschen | Ihr | treulich ergebenster | Ernst Krause

DAR 92: B22–3

¹ For a translation of this letter, see Appendix I.

² CD evidently thought Krause was closer to finishing his revisions to his account of Erasmus Darwin (1731–1802) than he was (see letter to Ernst Krause, 2 May 1879).

³ Erasmus Darwin's philosophical poetry was said to have been inspired by Henry Brooke's poem 'Universal beauty', which, in turn, was thought to imitate Richard Blackmore's physico-theological poem 'Creation' (Hunt *et al.* 1806–7, 1: 215). CD had offered to look at Brooke's poem for Krause (letter to Ernst Krause, 2 April 1879 and n. 4).

⁴ CD had sent Krause a copy of John Dowson's lecture on Erasmus Darwin (Dowson 1861; letter from Ernst Krause, 24 March 1879). Anna Seward later retracted some of the comments she made in her memoir of Erasmus Darwin (Seward 1804). The retraction appeared in a footnote to the essay review of her book in the *Edinburgh Review* ([T. Thomson] 1804, pp. 236–7 n.). An obituary of Erasmus Darwin was published in the *Gentleman's Magazine*, May 1802, pp. 473–4.

- ⁵ John Gibson Lockhart included several references to Anna Seward in the first two volumes of his seven-volume memoir of Walter Scott (Lockhart 1837–8).
- ⁶ This plan was abandoned in the final version of *Erasmus Darwin*.
- ⁷ James Watt, Matthew Boulton, and Richard Lovell Edgeworth.
- ⁸ Edgeworth often visited Lichfield for periods of time but he did not live there (R. L. Edgeworth and Edgeworth 1820, 1: 111, 162, 165, 184, 204, 240, 247, 255–6, 325–6).
- ⁹ Samuel Galton and his daughter Mary Anne Schimmelpenninck are referred to in Dowson 1861 on p. 47, and pp. 16, 23, 47, 52, respectively.
- ¹⁰ Erasmus Darwin had inherited Breadsall Priory after the death of his son Erasmus in 1799, but did not move in until March 1802, just a month before his own death (King-Hele 1999, pp. 330, 341).
- ¹¹ John Howard was not related to Mary Darwin, née Howard. Erasmus Darwin had expressed his admiration of John Howard in his poem *The botanic garden* (E. Darwin 1789–91, pt. 1: 105, pt. 2: 89–90).
- ¹² Robert Darwin (1682–1754) was a lawyer.
- ¹³ Francis Sacheverel Darwin was knighted in 1820.
- ¹⁴ Marcus Rainsford's 'Lines, on the death of the late truly benevolent and great Doctor Darwin, of Derby' in the *Gentleman's Magazine*, July 1802, p. 653, referred to the Darwent (also known as the Derwent) in Derbyshire, on the banks of which river he had spent many happy hours (*ibid.*, p. 653 n.). Darwin is a market town in Lancashire.
- ¹⁶ In Krause 1879a, p. 399, Krause had quoted the statement that Erasmus Darwin's death was peaceful and painless, as stated in the obituary in the *Gentleman's Magazine*, May 1802, p. 473. In *Erasmus Darwin*, Krause made no reference to the letter from Erasmus Darwin to Edgeworth; CD referred to it on p. 62.
- ¹⁷ Charles Darwin (1758–78), Erasmus Darwin (1759–99), and Robert Waring Darwin (1766–1848).
- ¹⁸ See letter to Ernst Krause, 2 May 1879. William Sweetland Dallas had agreed to translate Krause's account of Erasmus Darwin.
- ¹⁹ See E. Darwin 1794–6 and E. Darwin 1789–91.
- ²⁰ CD was on holiday from 6 to 26 May 1879 (see letter to Ernst Krause, 2 May 1879).

From W. S. Dallas 7 May 1879

21 Alma Squire | N. W.
7 May 1879

My dear Sir

I have received from Dr. Krauss the first half of the MS. of his enlarged notice of Erasmus Darwin, & will set to work upon it once, but I fear that my progress will be comparatively slow, seeing that the MS., although not in German *Cursivschrift*, is in a very small Germanic-English handwriting.—¹ The remainder he will send in two or three weeks,— but he says that you wish to have the first part as soon as possible as you propose to make some additions to it.— I will accordingly send you the MS. translation in portions as I can get it done, *i.e.* the work of two or three days at a time, & if I do not find the small cramped handwriting a very great obstacle, I hope to get all this part finished in a week, or ten days at most— Please send a line to say whether this arrangement will suit you— So far as I can judge from a cursory inspection of part of the MS. I don't think the translation will present any particular difficulties,— where idiomatic phrases & twists occur I will do my best to keep near to the original.—

Believe me | Yours very truly | W. S. Dallas.

Charles Darwin Esq.

DAR 99: 102–3

¹ CD had asked Krause to send his manuscript on Erasmus Darwin directly to Dallas to be translated into English (see letter to Ernst Krause, 2 May 1879). *Cursivschrift*: italics (German); Dallas probably intended *Kurrentschrift*, a form of cursive writing that is the written counterpart of black-letter typefaces such as Fraktur. The manuscript was based on Krause 1879a, published earlier in 1879, and the translation formed part of *Erasmus Darwin*.

To G. H. Darwin 7 May [1879]¹

Western Hotel | Heene
May 7th

My dear George

A **big** book *8vo* did arrive on Monday evening; & I think I told F. to forward it, but am not sure. I had intended opening it, but forgot in the hurry-skurrys.— I hope that it is Thompson & Tait, for it does show what they think of you.—² It is will be grand if you have made a correction about such an old sinner as the Sun; & I trust that your arithemetick may turn out right on your old subject—³

I am particularly obliged about the M. Magazine: please send copy to Basset.—⁴ I have the education book of D^r. D. & it a very sensible production, written, certainly, to aid his two illegitimate daughters. After much reflection I mean to touch on this subject.⁵

I have had two long talks with Anthony & like him *very much*. I think he is very agreeable.— Your mother & I are going very soon to lunch with him.⁶ He sent all sorts of kind messages to you, & trusts if ever you are in this part of the world that you will pay him a visit

Goodbye my dear George | I hope that all will “fit to a T”⁷

Your affect Father | C. Darwin

Off early tomorrow morning to Basset.⁸

DAR 210.1: 80

¹ The year is established by the relationship between this letter and the letter from G. H. Darwin, 5 May 1879.

² George had asked whether the first volume of a new edition of William Thomson and Peter Guthrie Tait’s *Treatise on natural philosophy* had arrived for him (see letter from G. H. Darwin, 5 May 1879 and n. 6). Francis Darwin may have forwarded it from Down.

³ See letter from G. H. Darwin, 5 May 1879.

⁴ George had located an article CD wanted on Erasmus Darwin in the *Monthly Magazine* (see letter from G. H. Darwin, 5 May 1879 and n. 1). CD travelled to Bassett, Southampton, the home of Sara and William Erasmus Darwin, on 8 May 1879 (Emma Darwin’s diary (DAR 242)).

⁵ Erasmus Darwin had published *A plan for the conduct of female education in boarding schools* after setting up a school for his two illegitimate daughters, Susanna Parker and Mary Parker, to run (E. Darwin 1797). CD described the book in *Erasmus Darwin*, pp. 115–17, but did not name the Parker sisters; he said that Erasmus gave his illegitimate daughters a good education, and that his practice as a physician did not suffer by his openly bringing them up (*ibid.*, p. 88 n.).

⁶ CD and Emma Darwin had arrived in Heene, Worthing, on 6 May 1879 to visit Anthony Rich; they had lunch with him on 7 May (Emma Darwin’s diary (DAR 242)). Rich proposed to leave Darwin a large bequest in his will (see *Correspondence* vol. 26).

⁷ A reference to George’s discovery about the sun (see letter from G. H. Darwin, 5 May 1879).

⁸ CD and Emma stayed at Bassett from 8 to 21 May 1879 (Emma Darwin’s diary (DAR 242)).

From Leonard Darwin 7 May 1879

Brompton Barracks | Chatham

7—5—79

Dear Father

I am afraid that I have not been very successful in the weighing. In the first place the little bits had stuck rather firmly to the paper; it was difficult to get them off and in doing so a bit fell off the scale pan, but I am almost certain that I picked it all up. As to the weight I can only say that it was less than $\frac{1}{100}$ of a grain.¹ The scale turned fairly well to the $\frac{1}{100}$ but hardly shewed any movement with the bits on it.

I enclose two sets of D: D's letters, as a spare one might be useful.² I have plenty more. Sorry not to have done better in the weighing.

Your affec son | Leonard Darwin

DAR 186: 35

¹ The substance that Leonard was trying to weigh has not been identified, but in *Movement in plants*, p. 147, CD noted that specks of shellac removed from the tips of two radicles of broad beans (*Vicia faba*) together weighed less than one hundredth of a grain. This small coating of shellac on one side of the tip of the radicle had been sufficient to cause deflection. A grain is equal to approximately 64.8 milligrams.

² Leonard probably photographed the letters from Erasmus Darwin that CD had found in Robert Waring Darwin's deeds box (see letter to Reginald Darwin, 8 April 1879 and n. 2). In *Erasmus Darwin*, p. 16 n., CD noted that he had other letters photographed.

To John Fordyce 7 May 1879

Down Beckenham | Kent [Heene, Worthing.]

May 7th 1879

Private

Dear Sir

It seems to me absurd to doubt that a man may be an ardent Theist & an evolutionist.—¹ You are right about Kingsley.² Asa Gray, the eminent botanist, is another case in point—³ What my own views may be is a question of no consequence to any one except myself.— But as you ask, I may state that my judgment often fluctuates. Moreover whether a man deserves to be called a theist depends on the definition of the term: which is much too large a subject for a note. In my most extreme fluctuations I have never been an atheist in the sense of denying the existence of a God.— I think that generally (& more and more so as I grow older) but not always, that an agnostic would be the most correct description of my state of mind.⁴

Dear Sir | Yours faithfully | Ch. Darwin

Linnean Society of London (Quentin Keynes Collection)

¹ CD wrote this letter in reply to a now missing letter from Fordyce, in which Fordyce had enclosed a newspaper clipping of a letter by himself, dated 30 April 1879, that was published in the *Grimby News* on 2 May 1879. Fordyce's letter took issue with an earlier communication to the paper that argued that

CD's work revealed him to be an atheist (see Fordyce 1883, pp. 189–90). CD's copy of the newspaper clipping is in DAR 226.2: 47.

- ² In his letter to the *Grimsby News*, Fordyce mentioned Charles Kingsley as someone who reconciled CD's theory with the conception of a deity. CD had added a comment by Kingsley to *Origin* 2d ed., p. 481 (see *Correspondence* vol. 7, letter from Charles Kingsley, 18 November 1859 and n. 4).
- ³ Asa Gray was a strong supporter of CD's work; he had written an influential and favourable review of *Origin* and an article on the implications of the theory for natural theology (A. Gray 1860a and 1860b).
- ⁴ The term 'agnostic' had been coined in 1869 by Thomas Henry Huxley (for more on the meaning of agnosticism in the context in which the term was coined, see P. White 2014, p. 222).

From W. S. Dallas 8 May 1879

Geological Society, | Burlington House, W.
8 May 1879

My dear Sir

D: Krauss in his letter to me says he is unaccustomed to what he calls “das Englischschreiben” & asks me to look to the orthography of his English quotations.—¹ On looking a little further into his MS. last night, after sending off my letter to you, I found that it is not only the orthography that is defective, but that he every now & then omits important words.— The principal work quoted from, I think, is Miss Seward's life of D: Darwin,— have you a copy of this? & could you oblige me with the loan of it for the time while this translation is in progress—² I don't know where I can get it, or I would not trouble you.

Believe me | Yours very truly | W. S. Dallas

C. Darwin Esq.

DAR 99: 104–5

- ¹ *Das Englischschreiben*: English writing (German); Ernst Krause meant the standard script of the English language, commonly known as Latin script.
- ² Dallas was translating Krause's revised version of his work on Erasmus Darwin, CD's grandfather (Krause 1879a), for publication as part of *Erasmus Darwin*. CD's copy of Anna Seward's memoir of Erasmus Darwin (Seward 1804) is in the Darwin Library–Down.

From John Fordyce 8 May 1879

Abbey R^d | Grimsby
8th May 1879.

Dear Sir.

I thank you for your very kind note. With private and personal reservations and difficulties I of course have no concern— I felt sure from a study of the works to which I referred that Atheism was not Your position.¹ Of course much depends on definitions, and I often hope and try to believe that these definitions conceal as well as reveal the real position of many.—

I am glad to hear you speak so decidedly about the *absurdity* of Theism—and Evolution not being compatible. It has always seemed to me in studying your writings that—a belief re *Xstity* as taught in the New Test. might be held consistently by any one—following you.—

I am anxious as a Xstian Teacher to—say nothing but truth and your kind note, which I had no right to expect, shows that so far as your Views have been expressed—I have not misrepresented them²

I can only say that with all its difficulties, and they are many—there seems to me light for every truth-seeker in Xst's teachings which you seek elsewhere but never find.

Again I thank you for your note | Ever yours faithfully | J Fordyce

D^r C. Darwin

DAR 164: 152

¹ See letter to John Fordyce, 7 May 1879.

² Fordyce was the independent minister of Spring Church, Grimsby. He later published a book, *Aspects of scepticism*, in which he included CD's letter to him of 7 May 1879 (Fordyce 1883, p. 190).

From Ernst Krause¹ 8 May 1879

Berlin N.O. Friedenstrasse 10. II.
d. 8.5.79.

Hochverehrter Herr!

Ihre freundlichen Zeilen vom 5^t habe ich soeben empfangen, und danke Ihnen herzlichst dafür.² Da es meines Erachtens gar nicht darauf ankommen kann, ob die deutsche Ausgabe einige Wochen früher oder später herauskommt, so ziehe ich wohl besser vor, die Druckabzüge Ihrer Präliminar-Notiz abzuwarten, da diese erst den endgültig festgestellten Text enthalten werden.³ Aber ich rechne auch ferner auf Ihre freundliche Vermittlung bei dem Buchhändler, dass er mir auch die übrigen Bogen gleich nach der Fertigstellung sendet, damit ich auch in diesen Theilen *den von Ihnen berichtigten Text* der deutschen Ausgabe zu Grunde legen kann. Die Mittheilung Ihrer Präliminar Notiz erscheint mir als *Hauptsache* auch für das deutsche Publicum, denn erst diese wird dem kleinen Essay für die Leser Werth verleihen, und wenn man an meiner Arbeit etwas Verdienstliches finden sollte, so wird es in erster Linie darin bestehen, Sie, hochverehrter Herr, veranlasst zu haben, den bisher cursirenden und vielfach falschen Nachrichten über Dr. E. D. etwas Authentisches hinzugefügt zu haben.

Über ein Zustandekommen französischer und amerikanischer Ausgaben würde ich mich sehr freuen, obwohl ich mich einigermaßen beschämt fühle, für die Neubearbeitung eines einer so grossen Verbreitung entgegengehenden Opusculum's nicht mehr gethan zu haben resp. thun zu können.⁴ Aber meine Hülfsmittel waren hier recht beschränkt, denn unsre öffentlichen Bibliotheken sind weder so reich ausgestattet, noch so bequem zu benützen, wie ich von den englischen höre.

Was die Fragen anbetrifft, die ich in meinem vorgestern an Sie gerichteten Briefe gethan habe, so wollte ich Ihnen hauptsächlich damit andeuten, an welchen Stellen mich meine Hülfsmittel völlig im Stiche gelassen haben, und wo ich deshalb ganz besonders auf Ihre gütige Nachhülfe rechnen muss.⁵

Sehr lieb wäre es mir, wenn ich die deutsche Ausgabe bis Ende Juli druckfertig haben könnte, da ich August und September in der Schweiz zubringen gedenke. Ich hoffe

Herrn Dallas die zweite Hälfte der Arbeit nun ziemlich bald senden zu können; es werden im Ganzen vielleicht 100 Seiten eines mässigen Octavformates werden.⁶ Aus den drei Seiten der ursprünglichen Lebensbeschreibung sind nun c. 40 geworden; es schien mir, dass ich hier den ganzen Stoff zusammenfassen musste, der mir zugänglich war, wenn dieser Theil überhaupt bestehen bleiben sollte, andererseits hoffte ich Ihnen dadurch einige Arbeit abzunehmen.⁷ Mitunter kommt es mir voreilig vor, dass ich überhaupt hier in Berlin ein solches Wagniss angefangen habe, dann denke ich aber wieder, sollte jemand sich nunmehr angeregt fühlen das Leben und Wirken der Dr. E. D. so ausführlich zu schildern, wie er es verdient, so wird die neue Anregung ihren Zweck völlig erfüllt haben. Vorläufig genügt mir, darauf hingewiesen zu haben, dass hier die Nachwelt einige Unterschätzung gut zu machen hat.

Mit den innigsten Wünschen für Ihre Frühlings-Erholung⁸ zeichne ich,
hochverehrter Herr | Ihr aufrichtig ergebenster | Ernst Krause

DAR 92: B24-5

¹ For a translation of this letter, see Appendix I.

² See letter to Ernst Krause, 5 [May] 1879.

³ CD had proposed waiting to send his biographical sketch of Erasmus Darwin until he had proof-sheets (see letter to Ernst Krause, 5 [May] 1879). It was a preliminary notice to an English translation of Krause's revised essay on Erasmus Darwin (Krause 1879a; *Erasmus Darwin*). A German edition was published in 1880 (Krause 1880).

⁴ CD had mentioned the possibility of such editions in his letter to Ernst Krause, 5 [May] 1879.

⁵ See letter from Ernst Krause, 5 May 1879.

⁶ William Sweetland Dallas had agreed to translate Krause's account of Erasmus Darwin (see letter to Ernst Krause, 2 May 1879). Krause's revised text was eighty-five pages long when published in *Erasmus Darwin*, pp. 131–216.

⁷ Krause's original account of Erasmus Darwin had been published as an article in *Kosmos* (Krause 1879a).

⁸ CD was on holiday from 6 to 26 May 1879 (CD's 'Journal' (Appendix II)).

From W. S. Dallas 9 May 1879

Geological Society, | Burlington House, W.
9 May 1879

My dear Sir

Have you seen a small work just published by Hardwicke & Bogue, entitled "Evolution, old & new" by Samuel Butler? I have read but a little way in it, but the author seems to be writing the panegyric of D^r. Erasmus Darwin & his Philosophy—¹ There are over 20 pages of the life of D^r. Darwin & 40 of exposition of his views & quotations from the "Zoonomia".—² Does not this rather take the wind out of our sails?

Believe me | yours very truly | W. S. Dallas

C. Darwin Esq G

DAR 99: 106

¹ Samuel Butler discussed Erasmus Darwin, CD's grandfather, in S. Butler 1879, pp. 173–234. Dallas was translating Ernst Krause's revised essay on Erasmus Darwin (Krause 1879a) for publication as part of *Erasmus Darwin*.

² Erasmus Darwin had published his evolutionary views in *Zoonomia* (E. Darwin 1794–6).

From K. P. von Kaufman¹ 9 May 1879

Le Président Honoraire de la Société des Amis des Sciences à Tachkent

Monsieur,

Ayant appris par les journaux, que Vous êtes occupé actuellement de l'étude des différentes variétés du froment, afin d'élucider la question de leur origine, j'ai pensé, qu'il Vous serait probablement intéressant d'avoir à Votre disposition les différentes races de cette plante, cultivées dans les provinces du Turkestan russe.² L'isolement presque complet dans lequel ce pays s'est trouvé depuis grand nombre de siècles, notre climat essentiellement continental, l'irrigation artificielle, pratiquée sur une grande échelle, toutes les conditions enfin, auxquelles notre agriculture doit se conformer, et qui sont bien distinctes de celles, que l'on trouve en Europe, me font croire que l'étude de nos variétés du *Triticum vulgare*, pourrait offrir quelques points intéressants et nouveaux.³

J'ai fait faire une collection de graines de froment dans différentes parties du Turkestan, notamment à *Tachkent*, *Samarcande*, *Aoulié-Ata* et *Vernoyé*; j'y ai fait joindre une collection de cette plante en gerbes, afin qu'il soit possible de juger de la longueur, qu'atteignent ici les tiges. Dans quelques semaines Vous recevrez les boîtes renfermant ces collections, que j'envoie en même temps que cette lettre. Il me manque quelques variétés cultivées à Khiva et dans le Ferghana, dès que je les aurai reçues, je me ferai un plaisir de Vous les faire parvenir.⁴

Tout en espérant que ces matériaux pourront Vous être utiles, je Vous prie, Monsieur, de vouloir bien agréer l'assurance de la haute considération, avec laquelle j'ai l'honneur, d'être, | Votre très dévoué serviteur | C. de Kaufmann, I.

Tachkent | 27 Avril/9 Mai 1879⁵

à M^r Charles Darwin etc etc

DAR 169: 1

¹ For a translation of this letter, see Appendix I.

² The source of the report has not been identified, but in 1878, CD had received wheat specimens from Mikhail Nikolaevich Galkin-Vraskoi, the Russian governor of Saratov, a province in the south-east of European Russia; Russian newspapers may have reported on this (see *Correspondence* vol. 26, letter from G. M. Asher, 14 February 1878).

³ Turkestan became a Russian province in 1867 and its territory was extended by further conquests, led by Kaufman, of Bukhara, Khiva, and Kokand between 1868 and 1875, so that it extended from the Caspian Sea to Afghanistan. For more on Kaufman's administration see Brower 1997. *Triticum vulgare* is a synonym of *T. aestivum* (common wheat).

⁴ The collection was made between 1868 and 1872 by the Russian botanist Olga Aleksandrovna Fedchenko, who participated in the expedition organised by Kaufman to explore the newly conquered region of Turkestan. For more on Fedchenko's work and the areas visited by the expedition, see Creese 2015, pp. 71–4. Tashkent, Samarkand, Khiva, and Fergana are now in Uzbekistan. Aulie-Ata is now the town Taraz in Kazakhstan; Vernoye is in Russia.

⁵ Kaufman gives both the Julian (27 April) and Gregorian (9 May) calendar dates.

To Ernst Krause 9 May [1879]¹

Bassett, Southampton
May 9th

My dear Sir

I am happy to answer your questions as well as I can.² D^r Darwin knew well during many years Boulton & Watt, for they were all members of the Lunar Soc^y; but I cannot say when he first became acquainted with them.³

Edgworth lived for a time at Lichfield, partly, I believe on account of the health of his wife & partly for the sake of my grandfather's society: He then lived on his Estates in Ireland.—⁴

Old M^r. Galton was a rich Banker in Birmingham & a friend of my grandfather; one of his sons, Tertius Galton, married Violetta Darwin, daughter of Erasmus.—⁵ M^{rs} Schimmelpenninck was sister of Tertius Galton; but she was, *as I hear from her own nieces & nephews*, quite untrustworthy: she, also, expressly says she give in extreme old age her recollections as a *child*.—⁶

The Priory was left to my grandfather by his son Erasmus, who committed suicide, when insane.⁷ I shall show how false Miss Seward's account is of my grandfather's conduct—*absolutely false*.⁸

I shall enter into this subject in some detail.

My grandmother Mary Howard was *no* relation to the Philanthropist.—⁹

The father of Erasmus (Robert) was a Barrister or Lawyer, but he lived in the house of his elder brother; & the eldest son of Robert (ie the elder brother of Erasmus) ultimately inherited the estate of Elston.¹⁰ Sir Francis was merely knighted on presenting an address to the King, & I wonder that he condescended to accept so paltry an honour.¹¹ He was in no sense a member of our nobility.— There is no **known** connection between Darwin & Derwent or Darwen.—¹² But I strongly advise you to let me tell what is known about the family of the Darwins from the materials in my possession.

I intend to give an engraving of the Priory, (which was a curious old House) & had intended to quote D^r. D^r description, but will refer to the latter, as you intend to give it.—¹³

It is very kind of you to offer to allow me to alter your M.S, but this I cannot accept, for I sh^d never have thought of writing about my grandfather, had it not been for your essay.¹⁴

I much fear that there will be too much repetition in our two little essays; but as we shall view the subject from different points perhaps this will not much signify.— I cannot work in my materials without going through his whole life, & at present cannot see what will be the best plan.— We shall both be able to judge best when we have seen each other's M.S.— Possibly you might like to take my M.S & cut it up & work it into your essay or give them as a Preface or as a supplement.; & I take parts of yours & work them into the English edition, or give them as a supplement.

This plan w^d waste a good deal of both our times; but it is useless to speculate what w^d be best till we have seen each other's essays.

My dear Sir | Yours very sincerely | Ch. Darwin

P.S. I am inclined to think I must have 2 copies made in M.S of my essay & send one to you. This, however, will waste time.—

P.S. | If you approve or disapprove of my notice appearing *after* yours as a Supplement, please tell me: if I do **not** hear, I will understand that you are indifferent.— But please observe I have not yet thought enough, about it. Perhaps M^r Murray would object vehemently, & say that my name w^d help sale!!¹⁵

But I would overrule this if we think this of “supplement” w^d be the best plan.— I shall be able to judge better when I can read rapidly in Translation **whole** of your article.—

The Huntington Library (HM 36182)

¹ The year is established by the relationship between this letter and the letter from Ernst Krause, 5 May 1879.

² See letter from Ernst Krause, 5 May 1879.

³ The Lunar Society was established in Birmingham around 1765; Erasmus Darwin, CD’s grandfather, had known Matthew Boulton from the late 1750s, and had met James Watt in 1767 (Schofield 1963, pp. 17, 19, 67–8).

⁴ Richard Lovell Edgeworth moved from Ireland to Shropshire in 1778 so that his wife, Honora, who had become incurably ill with tuberculosis, could be treated by Erasmus Darwin; when Honora died in 1780, Edgeworth followed her advice and married her sister Elizabeth Sneyd before returning to his Irish estate (*ODNB*).

⁵ Samuel Galton, Samuel Tertius Galton, and Violetta Galton.

⁶ Mary Anne Schimmelpenninck had criticised Erasmus Darwin in her autobiography (Hankin ed. 1858).

⁷ See letter from Ernst Krause, 5 May 1879 and n. 10. The younger Erasmus Darwin died by drowning in the river at the bottom of the garden at Breadsall Priory.

⁸ Anna Seward had accused Erasmus Darwin of being indifferent to his son’s death (Seward 1804, pp. 406, 408–9).

⁹ See letter from Ernst Krause, 5 May 1879 and n. 11. Mary Darwin, née Howard, was CD’s grandmother; ‘the philanthropist’ was John Howard (no relation).

¹⁰ Robert Darwin of Elston’s elder brother was William Darwin (1681–1760), and his eldest son was Robert Waring Darwin (1724–1816). See letter to Reginald Darwin, 8 April 1879, n. 8.

¹¹ Francis Sacheverel Darwin was knighted in 1820.

¹² See letter from Ernst Krause, 5 May 1879 and n. 15. Darwen is a town in Lancashire.

¹³ The engraving of Breadsall Priory and Erasmus Darwin’s description of it appeared in CD’s section of *Erasmus Darwin*, pp. 124–6.

¹⁴ See letter from Ernst Krause, 5 May 1879. Krause’s account of Erasmus Darwin had been published in *Kosmos* (Krause 1879a). He was revising his essay for translation into English.

¹⁵ CD was preparing a biographical sketch of Erasmus Darwin for publication by John Murray (1808–92) together with the translation of Krause’s revised essay. In *Erasmus Darwin*, CD’s biographical sketch preceded Krause’s essay; this was also the case in the German edition (Krause 1880).

From H. A. Pitman 9 May 1879

Royal College of Physicians | London S.W.
May 9th 1879

Sir,

I have the honour to inform you that at a Meeting of the College held this day to award the “Baly Medal” “to the person who shall be deemed to have most distinguished himself in the science of Physiology” the Medal has been unanimously awarded to yourself.¹

It has been customary for the President of the College to present the Medal after the Harveian Oration which will be delivered on the 26th of June, and it is hoped that it will be convenient to you to be present on that occasion²

I have the honour to be | Your obedient Servant | Henry A Pitman | Registrar

Charles Darwin Esq

DAR 174: 46

CD ANNOTATION

Top of letter: 'Keep' pencil

¹ The Baly medal, a biennial award, was founded from a gift received in 1866 from Frederick Daniel Dyster (*British Medical Journal*, 4 November 1911, p. 1222). The award memorialised William Baly, a physician who had died in a train accident in 1861 (*ODNB*).

² The Harveian oration, established by William Harvey in 1656, was an annual lecture held at the Royal College of Physicians of London (*ODNB*). The president of the Royal College of Physicians in 1879 was James Risdon Bennett.

From Robert Tachau¹ 9 May 1879

Sr. Wohlgeboren | Herrn Herrn Charles Darwin | in | *London*

Euer Wohlgeboren werden wohl entschuldigen, wenn ich es wage durch meine einfältigen Zeilen einem so hochberühmten Manne die kostbare Zeit zu rauben, doch ich muß meinem innern Drange nachgeben, der mich bestimmt Euer Wohlgeboren mit einer Frage zu belästigen.— Ich muß um nicht Unwillen zu erregen folgendes vorausschicken: Als Schüler der Oberrealschule und eifriger Student der Naturwissenschaften, hatte ich in Prag jede Gelegenheit, die sich mir darbot, benützt mein Wissen auf diesem Felde zu bereichern.² Herr Dr Corda als auch Herr D^r. Brehm, deren Vorträge ich besuchte, thaten durch das Interessante ihres Stoffes Bedeutendes um meinen Eifer für das Naturhistorische noch mehrzusteigern; nicht minder war ich angeregt durch einen Vortrag des H D^r Smita, vortragenden Professors, an unserer Anstalt, der letztgenannte Herr that bei seinem Vorlesungen öfter Erwähnung des “großen englischen Gelehrten”— und dies war der Beweggrund zu meinem Schreiben—³

Nach Vorhergehendem wage ich nun meine Frage zu stellen, indem ich glaube meine Dreistigkeit entschuldigt zu haben.—

Ich ersuche nochmals mir gütigst Aufklärung zu geben ob alle Modificationen des Baues des *menschlichen* Körpers und auch der Geisteskräfte allein der *natürlichen Zuchtwahl* zuzuschreiben seien, oder ob nicht darin veränderten äusseren Bedingungen Rechnung getragen werden müße?⁴

In der Beziehung bitte ich inständigst um Aufklärung, da mir diese aus keinem Werke zu Theil werden kann.

Euer Wohlgeboren werden gewiss nicht aufgebracht sein über einen eifrigen Liebhaber der Naturgeschichte, wenn er in seinem Wahne das Dreisteste wagt und sich an einen so berühmten Mann wendet und um Aufklärung bittet; ich habe

bisher mein ganzes Taschengeld verwendet zum Ankaufe naturhistorischer Werke aber keines gab mir Aufschluss.

Um gutige Antwort bittet | mit aller Hochachtung | Robert Tachau | Schüler der V Kl. | an der I^d. Staatsoberrealschule Prag | unter dieser Adresse bitte um Antwort!

Prag, den 9 Mai 1879

DAR 178: 1

¹ For a translation of this letter, see Appendix I.

² At this time, an *Oberrealschule* was a type of secondary school that focused on science and modern languages, as opposed to a *Gymnasium*, where classics formed the core of the curriculum. The school Tachau attended was the Erste deutsche Staats-Oberrealschule in Prag (First German State Oberrealschule in Prague; *Sechzehntes Programm der ersten deutschen Staats-Oberrealschule Prag*, p. 77).

³ August Joseph Corda had been the curator of the National Museum in Prague and wrote or contributed to several works on botany. Alfred Edmund Brehm was a German zoologist and traveller; the lecture series given by Brehm in Prague was made some time in the winter of 1877 (*Carinthia I* 74 (1884): 166; *Popular Science Monthly* 27 (1885): 267). Johann Smita was a professor at the school Tachau attended and also the curator of the school's natural-history cabinet.

⁴ CD had discussed the direct action of the environment in *Variation 2: 272–92*, but concluded that it was doubtful whether well-marked races had often been produced 'by the direct action of changed conditions without the aid of selection either by man or nature' (*ibid.*, p. 292). In *Origin* 6th ed., pp. 106–7, CD allowed that direct action might lead to modification but argued, 'we may safely conclude that the innumerable complex co-adaptations of structure, which we see throughout nature between various organic beings, cannot be attributed simply to such action.'

From G. H. Darwin 10 May 1879

Trin Coll.
Sat May 10. 79

My dear Father,

I send another batch of extracts which I found by looking thro' the indexes to the Monthly Mag. for 6 or 7 years. There were a number of other references but they were only about his poetry & science & did not seem of interest.¹ I also send the enclosed from Prof. Mayor, but there is nothing new in it.²

I am very glad to hear that your visit to M^r. Rich was so prosperous & that you liked him.³

Leo & Horace⁴ come here today for the Sunday, its horrid cold weather for them.

I have been exceedingly unwell lately & have hardly done any work. These bitter winds have aggravated my cold & I have it in chest & throat as well as its more usual situation. I hope very much I shall be a little better for Glasgow.⁵

My work is not going nearly so swimmingly as I thought & I have a big difficulty, tho' when I get thro' it I fancy the results will be better than ever.⁶

The book wh. came was Thomson & Tait, but I am much puzzled. It is published by the Camb. Univ. Press & the copy has in it "From the Syndics of the C.U. Press" I wrote to thank Thomson for it, which was something of a *faux pas*, if he did'nt give it me.⁷ But I am almost certain that it is as broad as its long & that they give presentation copies, the names of the persons being suggested by the authors.

It must have been Thomson who sent it to Down, otherwise it w^d have come here
Yours affec | G H Darwin

DAR 210.2: 76

- ¹ George had already found one article that CD wanted on Erasmus Darwin in the *Monthly Magazine, or, British Register* (see letter from G. H. Darwin, 5 May 1879 and n. 1). The extracts have not been found.
- ² John Eytton Bickersteth Mayor. The enclosure has not been found.
- ³ From 6 to 8 May 1879, the Darwins visited Worthing to meet Anthony Rich, whom they lunched with on 7 May (see letter to G. H. Darwin, 7 May [1879]). George had met Rich in January (see letter to W. E. Darwin, 10 January [1879] and n. 2)
- ⁴ Leonard Darwin and Horace Darwin.
- ⁵ George was probably planning to visit William Thomson in Glasgow. Thomson's wife, Frances Anna Thomson, had told Horace Darwin that they would be in Glasgow until 20 May 1879 and would be glad to see George any time before then (letter from Horace Darwin to G. H. Darwin, [19 April 1879]; DAR 258: 868).
- ⁶ In his letter of 5 May 1879, George mentioned having made an astronomical discovery relating to taking observations of the sun.
- ⁷ The first volume of W. Thomson and Tait 1879–83, published by Cambridge University Press, had been sent to Down, rather than to Trinity College, Cambridge, where George lived (see letter from G. H. Darwin, 5 May 1879 and n. 6).

To G. H. Darwin [11 May 1879]¹

From Mr. C. Darwin, Down, Beckenham.

For several reasons I am particularly obliged for copy of Edgeworth's letter & for the other documents.—² I am sorry that you are so bad³ Keep memorandum of expence of copying.—

C. D.

Sunday Bassett.

ApcS

Postmark: MY 12 79

DAR 210.1: 81

- ¹ The date is established by the postmark. In 1879, the Sunday before 12 May was 11 May.
- ² See letter from G. H. Darwin, 10 May 1879 and n. 1. George had been copying extracts from the *Monthly Magazine, or, British Register* about CD's grandfather Erasmus Darwin. A letter by Richard Lovell Edgeworth dated 13 July 1802 was published in the *Monthly Magazine*, 1 September 1802, pp. 115–16. In the letter, Edgeworth took issue with some of the negative statements about Erasmus that had been made by an anonymous writer in the June issue (see letter from G. H. Darwin, 5 May 1879 and n. 1).
- ³ George had been suffering from a very bad cold, exacerbated by the cold weather (see letter from G. H. Darwin, 10 May 1879).

To J. S. Burdon Sanderson 13 May 1879

Bassett | Southampton
May 13. 79

My dear Sanderson,

I have been astonished by the announcement yesterday that the R. Coll of Phys^{ns} has awarded me the Baly Medal; & I am asked to attend to receive it after the

Harveian Oration.¹ I mention this because I have thought that you could give me some idea how long the oration lasts, & at what hour it takes place; for I am not a little afraid of the exertion. Am I expected to make any speech & if so would a few words suffice? Any information would be gratefully received. Who was Baly was he the translator of Müller?²

Pray forgive me for applying to you in my perplexity.

Yours very sincerely | Charles Darwin

LS(A)

University of British Columbia Library, Rare Books and Special Collections (Darwin - Burdon Sanderson letters RBSC-ARC-1731-1-23)

- ¹ The Baly medal was awarded biennially by the Royal College of Physicians of London. See letter from H. A. Pitman, 9 May 1879 and nn. 1 and 2.
- ² William Baly had translated Johannes Müller's *Handbuch der Physiologie des Menschen für Vorlesungen* (J. Müller 1833–7) into English as *Elements of physiology* (J. Müller 1838–42). CD's annotated copy of the translation is in the Darwin Library–CUL.

To Ernst Krause 13 May 1879

Bassett | Southampton

May 13. 79

My dear Sir,

I write a line to thank you for your extremely kind letter & to assure you that I will lose no time.¹ Perhaps I may be able to send my rough MS to the printers which would greatly expedite matters.² I see announced a book about Erasmus Darwin & Lamarck by Sam^l Butler & I will write to the booksellers & tell them to send you a copy.³

my dear Sir, | Yours sincerely | Ch. Darwin

LS(A)

The Huntington Library (HM 36183)

- ¹ In his letter of 8 May 1879, Krause asked to be sent proof-sheets of CD's biographical sketch of Erasmus Darwin, CD's grandfather, in order to prepare a German edition of *Erasmus Darwin* (Krause 1880).
- ² CD had contemplated having fair copies of his draft made for Krause and the printer even though this would waste time (see letter to Ernst Krause, 9 May [1879]).
- ³ Samuel Butler's book discussed the evolutionary theories of Georges Louis Leclerc, comte de Buffon; Jean Baptiste de Lamarck; and Erasmus Darwin (S. Butler 1879). William Sweetland Dallas had mentioned the book in his letter of 9 May 1879; it was announced in an advertisement in *Nature*, 8 May 1879, p. x.

To H. A. Pitman [13 May 1879]¹

[Bassett, Southampton.]

Sir

Absence from my home has prevented me from sooner acknowledging your letter May 9th, received yesterday Evening.² The honour which the R. C of Physicians has

conferred on me by the award of the Baly medal is a very great one, & it is as deeply gratifying as it is surprising to me.³

I hope to be able to attend on June 26th to receive the medal, but my health is very doubtful & I may not be equal to the exertion. I will however, have the pleasure of communicating with you nearer to the time.

With my thanks for your obliging letter | I have the honour to remain | Sir
Your obdt servant | C. D

ADraftS

DAR 174: 46

¹ The date is established by the relationship between this letter, the letter from H. A. Pitman, 9 May 1879, and the letter to J. S. Burdon Sanderson, 13 May 1879.

² See letter from H. A. Pitman, 9 May 1879. Between 6 and 26 May 1879, the Darwins visited Worthing, Southampton, and Leith Hill Place; CD would have received Pitman's letter in Southampton, where they stayed from 8 to 21 May (CD's 'Journal' (Appendix II)).

³ On the Baly medal, awarded biennially by the Royal College of Physicians of London, see the letter from H. A. Pitman, 9 May 1879 and n. 1.

From J. S. Burdon Sanderson 14 May 1879

26, Gordon Square. | W.C.
May 14th 1879

Dear M^r Darwin

I have this morning received your note. It would have arrived yesterday had it not been addressed to Queen Anne Street.¹

The Baly in whose memory the Medal was instituted was the Translator of Müllers Physiology. The donor of the Medal Fund is M^r Dyster, a friend of Balys and a man much interested in physiology, though not himself a naturalist.²

The Medal bears the words "Ob physiologiam feliciter exultam".³ It is given every other year. The last recipient was Ludwig, the previous one Bernard & the previous one Sharpey.⁴

If you feel that it w^d be too fatiguing to attend at the College, it is not by any means indispensable that you should do so. Neither Bernard nor Ludwig were present. If you do come it will be a great pleasure to your friends. The only penalty that you would have to pay would be that of having to listen for an hour to the Harveian Orator. My neighbour D^r Pitman the Registrar of the College assures me that it could be easily arranged that you should come in at the end of the hour, in case you feel that this would be too fatiguing.⁵

It is not necessary (I again write on the authority of the Registrar) for the Medallist to say anything in acknowledgment. The Medal is presented immediately after the oration.

I may add that M^r Dyster has expressed his extreme gratification at the selection the College have made on the present occasion.

I am, Dear M^r Darwin | Yours truly | J B Sanderson

University of British Columbia Library, Rare Books and Special Collections (Darwin - Burdon Sanderson letters RSBC-ARC-1731-1-41)

- ¹ See letter to J. S. Burdon Sanderson, 13 May 1879. Burdon Sanderson used to live in Queen Anne Street, London (*Correspondence* vol. 23, letter from J. S. Burdon Sanderson, 23 May [1875]). Gordon Square is about a mile away.
- ² On William Baly's translation of Johannes Müller's work, see the letter to J. S. Burdon Sanderson, 13 May 1879 and n. 2. Frederick Daniel Dyster, a physician in Tenby, Pembrokeshire, Wales, had founded the medal in 1866 in memory of Baly, who had died in a train accident in 1861 (*ODNB*). Dyster was also an amateur naturalist; his principal interest was in annelid worms (Daves 1981, p. 18).
- ³ *Ob physiologiam feliciter exultam*: for successfully advancing physiology (Latin).
- ⁴ Carl Ludwig, Claude Bernard, and William Sharpey were recipients of the Baly medal in 1877, 1875, and 1873, respectively.
- ⁵ In 1879, the Harveian oration was delivered by Samuel Wilks (Wilks 1879a). Henry Alfred Pitman was the registrar of the Royal College of Physicians of London; he had written to inform CD of the award of the Baly medal (letter from H. A. Pitman, 9 May 1879).

To Ernst Krause 14 May 1879

Bassett, Southampton

May 14th: 79

(Home on May 25th.)¹

My dear Sir

If after seeing my proof-sheets you keep of same mind & are willing to give your consent, *assuredly* I shall not change my mind, but shall be *grateful* to bring out a translation of your article, in nearly the same state as it appeared in *Kosmos*.² It shall be entitled your life with Preliminary notice by me.—³ The work is wholly due to you.— It is rather unfortunate that M^r Butler sh^d have published at the present time, but it makes no difference in my determination.⁴ I have only glanced at what he says. He is a very clever man, knows nothing about science & turns everything into ridicule. He hates scientific men.

I cannot understand his views. Even if we grant memory & the power of wishing to cells, & this is an enormous admission, I do not see how cells are to modify themselves chemically & structurally either by wishing or remembering.—⁵ I sh^d like to hear whether he supposes that the crop (or œsophagus) of a Pouter pigeon or the leaves of a cabbage became modified by wishing & memory.— But I did not intend to scribble on this subject.

I forgot to say that you have my *complete* consent to do anything you like with my Preliminary Notice, to print it at beginning or at end of your article,—to cut it up or use the facts or insert parts *anywhere* you like.⁶

yours very sincerely | Ch. Darwin

The Huntington Library (HM 36184)

- ¹ The Darwins returned home on 26 May 1879 (CD's 'Journal' (Appendix II)).
- ² Krause's essay on Erasmus Darwin had been published in German in the periodical *Kosmos* (Krause 1879a). He was revising it before translation for publication in *Erasmus Darwin* (see letter from Ernst Krause, 8 May 1879).
- ³ Krause had stated that CD's biographical sketch of Erasmus Darwin would be the most important part of a German edition of their work (see letter from Ernst Krause, 8 May 1879).
- ⁴ Samuel Butler had published a book on the evolutionary theories of Georges Louis Leclerc, comte de Buffon; Jean Baptiste de Lamarck; and Erasmus Darwin (S. Butler 1879).

⁵ CD alludes to ideas about cell memory discussed in Butler's previous book, *Life and habit* (S. Butler 1878, pp. 186–7).

⁶ CD refers to Krause's preparation of a German edition of their work on Erasmus Darwin (Krause 1880; see letter from Ernst Krause, 8 May 1879).

To G. H. Darwin 15 May [1879]¹

Basset.
May 15th

(We go on 21st to Leith Hill & home on 26th)

My dear G.—

When you return will you be so kind as to call on M^r Mayor(?) & thank him very much for me for his very useful assistance.— Also ask him what evidence there is that D^r D was “an excellent scholar”. (see enclosed)² Also can he tell me *date & author* of “Pursuits of Literature” (see enclosed, which please return) The “Sweet tetrandryan” line amuses me.³ Thirdly can you find out in Public L. whether there was an 8^{vo} edit. of the Botanic Garden about year 1800. There was in 1806 an 8^{vo} edit. in 3 vols of all D^r D's poetical works.—⁴

I shall be very curious to hear about your Glasgow visit.⁵

Yours affect | C. Darwin

DAR 210.1: 82

¹ The year is established by the relationship between this letter and the letter from G. H. Darwin, 10 May 1879 (see n. 5, below).

² John Eyton Bickersteth Mayor (see letter from G. H. Darwin, 10 May 1879 and n. 2). The enclosure has not been found.

³ *The pursuits of literature, or what you will* was a poem in four parts satirising contemporary authors; it was published anonymously by Thomas James Mathias. CD probably copied out Mathias's parody of Erasmus Darwin's poetry, including the lines: 'In sweet *tetrandryan*, *monogynian* strains / Pant for a *pystill* in botanic pains' ([Mathias] 1794–7, 1: 15). The work was first published between 1794 and 1797, and went through many editions.

⁴ The 'public' library was Cambridge University Library (see letter to G. H. Darwin, 5 May [1879] and n. 2). The fourth edition of *The botanic garden* was published in a cheaper octavo format in 1799 (E. Darwin 1799); *The poetical works of Erasmus Darwin* was published in octavo in three volumes in 1806 (E. Darwin 1806). Neither work was in the University Library.

⁵ George was probably planning to visit William Thomson in Glasgow (see letter from G. H. Darwin, 10 May 1879 and n. 5).

From Ernst Krause¹ 15 May 1879

Berlin N.O. Friedenstrasse 10. II.
den 15 Mai 79.

Hochverehrter Herr!

Zunächst sage ich Ihnen herzlichsten Dank für Ihre gütige Auskunft auf meine Fragen.² In Bezug auf die Lebensschilderung sehe ich die Schwierigkeit, Wiederholungen zu vermeiden, völlig deutlich, und ich würde es für das Beste halten, wenn Sie die Ihrige *allein* gäben, und dazu vielleicht nur meinen Essay über

die wissenschaftlichen und poetischen Arbeiten von Dr. E. D. hinzufügen wollten. Indem ich die Lebens-Skizze nochmals überarbeitete, hatte ich nur den Wunsch, Ihnen dadurch vielleicht Mühe zu sparen, und die Idee, dass sich Manches vielleicht anstandsloser und unbefangener von einem Dritten sagen liesse, so z. B. die Misscrediting der Nachrichten von Miss. Seward und Mrs. Schimmelpenninck.³

Das Buch von Mr. Butler habe ich vor einigen Tagen angezeigt gesehen und sogleich bestellt.⁴ Vielleicht kann ich noch davon Nutzen ziehen, aber vielleicht macht es auch meinen Essay völlig überflüssig. Sollte dies der Fall sein, so würde ich Sie bitten, Ihre neuen Feststellungen für sich zu publiciren; ich würde vielleicht dann meinen erweiterten Abriss nur deutsch, und mit der Uebersetzung Ihrer Präliminar-Notiz herausgeben.⁵

Im Voraus versichere ich Sie, hochverehrter Herr, dass ich mit jeder Anordnung, die Sie in dieser Angelegenheit treffen werden, völlig einverstanden bin, und zeichne
| Verehrungsvoll | Ihr | ergebenster | Ernst Krause

DAR 92: B26

CD ANNOTATION

2.1 Mr. Butler] *underl pencil*

¹ For a translation of this letter, see Appendix I.

² See letter to Ernst Krause, 9 May [1879].

³ CD considered Mary Ann Schimmelpenninck's recollections of Erasmus Darwin to be untrustworthy and parts of Anna Seward's book to be false (see letter to Ernst Krause, 9 May [1879] and nn. 6 and 8).

⁴ CD had mentioned Samuel Butler's book in his letter to Ernst Krause, 13 May 1879; Butler discussed Erasmus Darwin's life and evolutionary views in S. Butler 1879, pp. 173–234.

⁵ CD was writing a biographical account of his grandfather Erasmus Darwin as a preliminary notice to Krause's expanded essay on Erasmus Darwin; both were published in English and German (*Erasmus Darwin*; Krause 1880).

From Charles Moore 15 May 1879

Cambridge Place. Bath
May 15th 1879

Ammonites, Aptychi, Balani?

My dear Sir

I have sent you a fragment of an ammonite from the Upper Lias attached to which are some Barnacle-like bodies—¹ In the midst of your other scientific work I would not have troubled you but that they are part of a very interesting study not yet exhausted, some particulars of which I think you may like to know— Some of these little bodies are *slightly* larger, others still smaller. They do not appear to have the true shell structure of *Balanus* and in every instance the opercular valves are ancylosed and without a slit— Possibly they are young forms, but, although I have had 40 years experience of these beds I have never found them in a more advanced condition.²

In the Upper Lias there is a wonderfully *conservative* bed, a few inches thick, containing saurians, fish, Ammonites, &c, &c From this I have a slab 18 inches long

with a piece of wood with many *Mytilidæ* and above them a colony of *Pollicipes*, but without trace of their peduncles— (I have *Pollicipes* also in the Rhætic Beds.)³

The same bed contains numerous Ammonites with their Aptychi in position often far back in their outer chambers some of them being almost microscopic. Years ago I wrote a short paper pointing out that there was never more than one Aptychus to an Ammonite, & that being too small for an outer operculum I thought it might perform some office connected with the siphuncular tube—⁴

When Ammonites of 4 to 8 in. in diameter are found in the above bed they usually lie on the surface, or rather the shell has been very gradually denuded, or dissolved away, leaving clear & sharp impressions or moulds of where they lay.— The small ostræa & other shells that were attached to the exterior of the ammonite still lie in the stone below but above these is to be traced the original internal smooth surface of the shell to which they were attached⁵

Curiously enough, the Aptychus, sometimes very perfect still lies in the impression of the outer chamber, and in addition to this portions of the siphuncular tube still remain

But the remarkable fact is this that the tube, or the hollow that represents it appears to have been surrounded by thick membranous layers, in one instance passing round the various whorls for nearly 18 inches in length, the largest part being half as big round as my little finger— Seemingly like the peduncle of cirripedia it was an ovæ-bearing tube, & it had even suggested itself to me, Why might not Aptychus be a parasitic male to the Ammonite?!⁶

But these Balani? now bother me— A few days ago on examining more closely one of these ammonite impressions I found to my great surprise that the surface was covered with very small globular ovæ, but becoming larger & more disc like towards the outer chamber— Then I found strings of them lying together—like little Nodosarian shells— Next bivalve-looking entomostracan-like bodies presented themselves, sometimes hollow, sometimes pointed at one end, undistinguishable from the horn sheaths containing the antennæ you have referred to in connexion with some of the larvae of the cirripedes⁷

There appear to be several stages of development before they pass into the pyramidal barnacle like forms I have now sent, but I need not now refer to them minutely If these are Cirripedes it will be wonderful to find on a single Ammonite so many points of interest which it took you so much labour & research to determine—⁸

I have these points shewn more or less on about 12 ammonites— If I could brush off from the surface of one specimen, all the ovæ carapaces, &c &c they would about half fill a tumbler!

Some of my Aptychi are in very perfect condition & there is something more to be said of them. Whatever they may be there is no doubt D'Orbigny was mistaken when he figured his specimen, making the cirripedal antennæ project through a membrane which united the two valves together⁹

I remain My dear Sir | Yours faithfully | Ch^s Moore

DAR 171: 233

- ¹ The fragment of the ammonite has not been found. In stratigraphy, the Lias is the lower Jurassic period. Ammonites are an extinct group of marine cephalopods of the Triassic, Jurassic, and Cretaceous periods; their closest living relative is the nautilus.
- ² *Balanus* is a genus of sessile cirripedes commonly known as acorn barnacles; in adults, the opercular valves or terga open like hinged doors to reveal a thick opercular membrane through which cirri can be extended and withdrawn. Anchylosed valves are those which have fused together.
- ³ Mytilidae is a family of mussels (marine bivalve molluscs); *Pollicipes* is a genus of pedunculate cirripedes, known as goose-neck barnacles. The Rhaetic was a geological stage in the late Triassic period.
- ⁴ Aptychi are calcitic plates, occurring singly or in pairs in the body chamber of ammonites; in the mid nineteenth century, some naturalists believed they were separate animals while others argued they were ammonite valves. Alcide d'Orbigny maintained that *Aptychus* was a pedunculate cirripede (Orbigny 1849–52, 1: 254–7), but CD had argued against this (see *Correspondence* vol. 4, letter to S. P. Woodward, 21 March [1850] and n. 2, and *Fossil Cirripedia* (1851), pp. 3–5). In 'On the Aptychus' (C. Moore 1851), Moore argued that the Aptychus was part of the body of the ammonite rather than a parasite and further suggested that its attachment to the siphuncular tube indicated that it had some connection with the function of that organ. The siphuncle is a small tube that fills the chambers of the ammonite with gas and water to control buoyancy.
- ⁵ *Ostraea* is a genus of oysters (bivalve molluscs); one valve of their shell is slightly concave where the shell attaches to a substrate.
- ⁶ In 1848, while working on cirripedes, CD discovered that some species had developed what he later termed 'complemental males' attached to hermaphrodite individuals (see *Correspondence* vol. 4, letter to J. D. Hooker, 10 May 1848 and n. 12; see also *Living Cirripedia* (1851), pp. 281–93, and *Living Cirripedia* (1854), pp. 23–30). Moore probably speculated that ammonites could be analogous.
- ⁷ *Nodosaria* is a genus of Foraminifera characterised by shells composed of globular chambers. The name Entomostraca was formerly used to refer to all crustaceans other than Malacostraca (Leftwich 1973). CD wrote that the antennae of larval *Scalpellum vulgare* first appeared within an envelope or horn (*Living Cirripedia* (1854), p. 105).
- ⁸ Cirripede larvae have up to six naupliar stages plus a cyprid stage before becoming adults.
- ⁹ See Orbigny 1849–52, 1: 255; Orbigny figured side by side images of the largest valve of the pedunculate barnacle *Anatifa laevigata* (a synonym of *Lepas anatifera*, the pelagic goose-neck barnacle) and the valve of what he termed *Aptychus sublaevis*, together with images of what he imagined the *Aptychus* would have looked like when living, complete with projecting cirri. Orbigny supposed that the valves of *Aptychus* were analogous to the largest of the five valves of the *Anatifa*.

From W. T. Winn 16 May 1879

Law Office of W. T. and W. J. Winn, | Marietta, Ga., | U.S.A.
May 16th 1879

M: Charles Darwin:

Allow me to greet you, as a prophet of the understanding, and send you a clipping from the "Field and Fireside", published here.¹ It is gratifying to a great mind to know that its work is appreciated. Your name will go sounding down the ages, despite the ridicule and denunciation with which you have been assailed.

Respectfully | W. T. Winn

[Enclosure]

Taken from a Lady's Album.

Charles Darwin has given us a true interpretation of nature, beautiful and new.

Robert J. Ingersoll has applied it truthfully to man, with force and elegance.²

*Byron,*³ *king of poets and monarch of thought, was true to nature and man.*
Benevolent and brilliant Byron!
 Ecce Homo!!⁴

DAR 181: 131

¹ The *Field and Fireside* was a weekly newspaper published in Marietta, Cobb, Georgia, from 1877 until at least 1879 (<https://chroniclingamerica.loc.gov/> (accessed 16 May 2018)). The newspaper clipping was pasted to the letter.

² Robert Green Ingersol was an orator known for his atheist views (*ANB*).

³ George Gordon Noel Byron.

⁴ *Ecce homo*: behold the man (Latin). These words occur in John 19:5, spoken by Pontius Pilate as he presents a scourged Christ to the hostile crowd.

From C. Harris 20 May 1879

100 Grundy St | Poplar
 20.5.79

D: Darwin

D: Sir,

Chancing to hear of your kindness, in supplying the public with tickets for Sunday visits to the Zoological Gardens, I have on two separate occasions taken the liberty of writing (enclosing a stamped envelope each time) to ask you if you would kindly oblige me with 3 or 4 tickets for myself and friends, but in each case have received no answer.¹

As I am on the point of leaving England, I shall esteem it a kindness if you will oblige me with 3 or 4 tickets for Sunday next 25th inst, and shall | Ever remain
 Yours gratefully | C. Harris

DAR 201: 13

¹ No earlier letters from Harris have been found. Harris has not been identified. Poplar is a district in East London. Admission to the Zoological Gardens of the Zoological Society of London on Sundays was restricted to fellows and their guests; by mid-century, paid public admission was available on other days. As a fellow of the Zoological Society, CD was entitled to sign an order of admission to allow guests admission, but these were not valid on Sunday, when only fellows were admitted; in practice, however, the regulations were often ignored and guests would be admitted with an order, without an accompanying fellow. For more on admission policies of the zoo and debates about Sunday admission, see Ito 2014, pp. 81–106.

From E. J. Collings 21 May 1879

27 Hampden St. | Bolton.
 May 21st 1879.

Sir;

A debating society to which I have the honour to belong is about to discuss “that reason is not confined to man” and I have been appointed to second the opener of the dis-cussion.¹ But on consideration I find I know of so very little material

available for the preparation of the discussion, that I take the liberty of asking if you can kindly recommend me to any sources of information which would be of service under the circumstances.

I should be especially obliged if you would recommend me to any work or portion of a work of your own.²

Any suggestion you may be pleased to make as to any particular line of evidence, for or against the thesis or any hints you may be disposed to give would be gratefully accepted.

Apologising for thus troubling you

I have the honour to be | Sir. | Yours Very respectfully. | Edward:J: Collings.

DAR 201: 8

CD ANNOTATION

Top of letter: 'Cool' red crayon

¹ The society has not been identified.

² CD had compared the mental powers of animals and humans in *Descent* 1: 34–69, and proposed to show that there was 'no fundamental difference between man and the higher mammals in their mental faculties' (*ibid.*, p. 35).

From W. M. Hacon 22 May 1879

18, Fenchurch Street. | London | E. C.
22nd May 1879

My dear Sir

I have your letter of yesterday.— It is at all events not improbable that the contents of the will of William Darwin, who died Sept^r 24th 1682, or of the will of his widow Anne (née Waring) who died May 22nd 1722, would remove your doubt as to how Robert, the younger son of William acquired Elston Hall, when it would be expected to have gone to William the elder son.—¹ I was therefore disappointed to learn to-day at the Record office that there are no duplicates or copies of wills proved, in either the Lincoln or the York registry, at any period prior to 1858.

Upon the chance of the wills, desired to be consulted, having been proved (as they might have been) in the Registry of the Prerogative Court of Canterbury I had searches made to-day in that Registry for a few (four) years after the dates of the two deaths given in your letter. But neither of the wills was proved in *that* registry.

The searches I made to-day in the Prerogative Registry of Canterbury might at a small expence be repeated in the registries of Lincoln and of York: one of them being the Registry of the *diocese* and the other the Prerogative Registry of the *Province* of York. If you would like to have such searches made, I shall be glad to instruct local solicitors to make them: and the cost ought not to be considerable.

Do you know that Robert Darwin took Elston Hall upon—i.e. *immediately* after his fathers or his mothers demise?²— And are you sure that it did not go, upon the father's or the mothers death, to William, the elder son, and *from him* by devise or descent if he died childless to his brother Robert?

If you have no information as to this do you know the date of William's (the Eldest son's) death and might it not be worth while to have his will looked at?—

Have you looked at the County History, if any, in the British Museum?— It was suggested to me that there is a book called “Upcott's depository” or some such name,—at the Museum containing a kind of index to the histories and books upon the halls &c in Great Britain?²

I am | My dear Sir | Yours very truly | W^m M Hacon

Charles R. Darwin Esq^{re} | Down | Beckenham | Kent

DAR 166: 20

¹ CD's letter to Hacon has not been found. Elston Hall, Nottinghamshire, was the birthplace of CD's grandfather Erasmus Darwin (see letters to C. M. C. Darwin, 24 March 1879 and 6 April 1879 and n. 2). The estate had belonged to Anne Waring's stepfather, George Lassells (or Lascelles). Her elder son, William Darwin (1681–1760), inherited Cleatham, Lincolnshire, from his father, William Darwin (1655–82); their younger son, Robert Darwin (1682–1754), lived at Elston. CD assumed that Robert acquired the estate through inheritance from his mother (*Erasmus Darwin*, pp. 2–3), but it seems to have been by purchase from his mother's stepfamily (Elston Heritage Project, <http://elstonheritage.org.uk>, accessed 3 July 2018).

² *A bibliographical account of the principal works relating to English topography* (Upcott 1818). There is no mention of Elston in the book.

From Ernst Krause¹ 23 May 1879

Berlin N.O. Friedenstrasse 10. II.
den 23.5.79.

Hochverehrter Herr!

Nachdem ich das Buch des Herrn S. Butler, welches Sie die Güte hatten, mir senden zu lassen, nunmehr gelesen habe, freue ich mich doppelt, dass Sie dasselbe nicht als Hinderniss betrachten.² Herr Butler hat sich in der That nach seiner gewöhnlichen Art, die Sache sehr leicht gemacht, und wie mir scheint, nicht einmal die Mühe genommen, die Werke von Dr. Erasmus Darwin selbst zu lesen. Er citirt nur, was Dr. Dowson und Fräulein Seward citirt haben, und ist auf den “Tempel der Natur” ebensowenig wie auf den botanischen Garten näher eingegangen, trotzdem der letztere so reich an fruchtbaren Gedanken war, und der erstere doch als die reifste Darstellung seines Systems nothwendig berücksichtigt werden musste.³ Fast scheint es mir daher, dass eine gründliche Darstellung nach Erscheinen des Butler'schen Buches nothwendiger geworden ist, als sie vorher war.

Was die deutsche Ausgabe anbelangt, so denke ich Ihre Praeliminar Notice *unbedingt unverändert* dem Buche voranzustellen, denn dieselbe wird naturgemäss für den deutschen Leser den Mittelpunkt des Interesses bilden.⁴ Vielleicht wird es geeignet sein, über einzelne Persönlichkeiten und Dinge, die Sie bei dem englischen Leser als bekannt voraussetzen dürfen, meinerseits in Anmerkungen, die an den Schluss des Bändchens zu stellen sein würden, einige Ausführungen hinzuzufügen; so über die Personen, an welche seine Briefe gerichtet waren, u.s.w.⁵ Über den letzteren

Punkt werde ich natürlich einen bestimmten Entschluss erst durch die Ansicht Ihrer Druckbogen gewinnen. Für die Uebersetzung der poetischen Citate in's Deutsche habe ich einen in solchen Arbeiten sehr geschickten Freund gewonnen, und ich dachte deshalb diese Citate noch etwas zu vermehren, durch die bezeichnenden Stellen über die französische Revolution, die Philanthropie und vielleicht auch durch Mittheilung einiger Gelegenheitsgedichte, wie desjenigen an Dr. Boulton in Betreff der Theevase u.s.w.⁶

Butler's "Life and habit" ist, wie ich nun selbst gesehen habe, durch Dr. Hermann Mueller im "Kosmos" viel zu günstig beurtheilt worden.⁷ Es ist eine auf manche Fälle vielleicht anwendbare Idee, die aber in ihrer Tragweite überschätzt wird, wenn man in ihr die Lösung aller Räthsel sucht, und ich habe mich schon gewundert, keine Opposition aus dem Kreise der deutschen Leser u Mitarbeiter des Kosmos darüber vernommen zu haben. Ich würde allerdings sehr glücklich darüber sein, wenn Sie über solche oder ähnliche Differenzpunkte Ihre Ansichten für unsere Zeitschrift einmal niederschreiben wollten, oder uns eine Notiz über den Stand Ihrer jetzigen Experimente zukommen lassen wollten, aber ich will Sie ganz gewiss auch *nicht* bitten, aus blossem Wohlwollen, eine Arbeit zu beginnen, die Ihnen vielleicht nicht sympathisch wäre. Nur das möchte ich betonen, dass unsre Leser, mit den höchst vereinzelt Ausnahmen etlicher Gegner, die das Journal nur aus Politik lesen, alle Ihre begeisterten Verehrer sind, für die irgend eine kleine Notiz oder Zuschrift von Ihnen ein freudiges Ereigniss wäre.

Verzeihen Sie, hochverehrter Herr, wenn in diesen Zeilen unversehens der Redacteur des Kosmos durchgeblickt hat | Ihrem treulich ergebensten | Ernst Krause

DAR g2: B28

¹ For a translation of this letter, see Appendix I.

² CD had arranged to have a copy of Samuel Butler's book *Evolution, old and new* (S. Butler 1879) sent to Krause (letter to Ernst Krause, 13 May 1879). S. Butler 1879 included a discussion of the evolutionary theories of CD's grandfather Erasmus Darwin. Krause and CD were working on a joint publication on Erasmus (*Erasmus Darwin*). Although CD had only glanced at Butler's book, he informed Krause it would not deter him from publication (see letter to Ernst Krause, 14 May 1879).

³ Krause refers to John Dowson and Dowson 1861, and Anna Seward and Seward 1804. The *Temple of nature* (E. Darwin 1803) and the *Botanic garden* (E. Darwin 1789–91) were two of Erasmus Darwin's principal works. For Butler's treatment of the life and views of Erasmus Darwin, see S. Butler 1879, pp. 173–234.

⁴ CD's 'Preliminary notice' for *Erasmus Darwin* was unchanged in the German translation (Krause 1880).

⁵ In Krause 1880, CD's own notes remained within the text of his 'Preliminary notice', but notes added by Krause were numbered and appeared at the end of the book.

⁶ In Krause 1880, p. vi, Krause thanked Johann H. Becker and Karl Kösting for translating the poetry in the volume. Among several additional quotations of poetry by Erasmus Darwin, Krause included the first verse of Erasmus's short poem 'Directions for a tea vase', addressed to Matthew Boulton, in English and German translation (Krause 1880, pp. 185–6). The poem had appeared posthumously in the *Gentleman's Magazine*, June 1802, p. 543.

⁷ Hermann Müller had published an essay review of Butler's book *Life and Habit* (S. Butler 1878) in *Kosmos* (H. Müller 1879c). Müller's review was generally favourable; he did not view Butler's theory as opposed to natural selection, rather he concluded that it was an important complement to CD's theory (*ibid.*, p. 38). Krause had become sole editor of *Kosmos* in April 1879.

May 1879

To E. J. Collings 25 May [1879]¹Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
[Leith Hill Place, Surrey.]May 25th

Dear Sir

I cannot spare the time to answer your letter fully, & as I am writing away from home, I cannot give full references.—² You will find something on the subject in my *Descent of Man*, but you yourself must judge whether it is of any value—M^r Romanes gave last year at Dublin, before Brit. Assoc. an excellent lecture on the mind of animals, & this was published in the *Nineteenth Century* or *Fortnightly Review*,—I think the former.³ An *admirable* article on same subject by Prof James appeared within about a year in the *N. American Journal of Speculative Philosophy*, or some such title; but it is not likely that you c^d see this in Bolton.⁴ Nor do I possess a copy.

Wishing you success in the discussion, I remain | Dear Sir | yours faithfully
Ch. Darwin

Fitzwilliam Museum

¹ The year is established by the relationship between this letter and letter from E. J. Collings, 21 May 1879.

² See letter from E. J. Collings, 21 May 1879. Collings had asked for material on animal reasoning. CD was staying with his sister and brother-in-law, Caroline Sarah Wedgwood and Josiah Wedgwood III, at Leith Hill Place, Surrey.

³ In *Descent* 1: 34–69, CD compared the mental powers, including reasoning (*ibid.*, pp. 46–8) of humans and animals. George John Romanes's article 'Animal intelligence' (Romanes 1878b) was a version of his lecture to the British Association for the Advancement of Science (Romanes 1878a). It was published in the October 1878 issue of *Nineteenth Century*.

⁴ William James's article 'Brute and human intellect' was published in the July 1878 issue of the *Journal of Speculative Philosophy* (James 1878).

To Grant Allen 26 May [1879]

From Mr. C. Darwin, Down, Beckenham.

Have you seen an article on you by a great man, Delboeuf, in *Revue Scientifique* no—17th May 24th 79?^{2—1} It has pleased me **greatly** on your account.— I suppose you c^d easily see it in London; otherwise I could lend it you.—

C.D

No answer necessary

May. 26th

ApcS

Postmark: MY 27 | 79

Cleveland Health Sciences Library (Robert M. Stecher collection)

¹ In his article 'Le sens des couleurs chez les animaux d'après M. Grant-Allen' in *Revue scientifique de la France et de l'étranger*, 24 May 1879 (Delboeuf 1879), Joseph Delboeuf had reviewed Allen's book on the colour sense (G. Allen 1879a).

From Albin Gaertner¹ 27 May 1879

Wien,
27. Mai, 1879.

Hochverehrter Herr!

Nachdem ich die meisten Ihrer Werke in deutscher Übersetzung gelesen, war mir eine ganz neue Welt erstanden.² Heute wage ich es in die Zahl Ihrer Correspondenten zu treten und ein Beispiel von Vererbung mitzuteilen.

Der Wiener Advokat D^r Mikosch hat in hohem Maasse die Unart die Fingernägel zu beissen. Er kann sie auf keine Weise ablegen. Seine noch lebende Mutter kaut ebenfalls an den Nägeln herum, aber nicht so häufig. Wie diese erzählt hatte ihr verstorbener Vater dieselbe Unart bis zum Tode in hohem Grade besessen. Das Interessanteste aber ist, dass das Kind des Advocaten, ein Mädchen, im Alter von 9 Monaten bereits an den Fingerspitzen in einem fort herumnagte, so dass der Arzt zu Rate gezogen wurde und niemand zweifelt, dass diese Unart vererbt worden ist und sehr schwer abzulegen sein wird.³

In der Hoffnung, dass diese Notiz auch Ihr Interesse erregt, | verharre ich mit Ehrfurcht | als Ihr ergebenster Diener | D^r Albin Gaertner

Wien, I. Nibelungeng, N^o 1, 4. Stiege

DAR 165: 1

CD ANNOTATION

Verso: 'This contains rather curious account of strong tendency to bite nails for 4. generations.

C. Darwin May 31st—' *ink*

¹ For a translation of this letter, see Appendix I.

² Most of CD's works were translated into German soon after they appeared in English; CD's German publisher, Eduard Koch, the head of E. Schweizerbart'sche Verlagsbuchhandlung, had also decided to bring out a collected edition of CD's works, translated by Julius Victor Carus (see *Correspondence* vol. 23, letter from J. V. Carus, 5 February 1875).

³ Ignaz Mikosch. CD had discussed inherited habits in *Variation, Descent, and Expression*.

To Ernst Krause 27 May 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

May 27th 1879

My dear Sir

When the time comes I will give any information in my power about the persons connected with D^r D.; but I have found very few letters out of the pile which I have looked through worth publishing.¹

I am sorry to say that my notice cannot be finished so soon as I had expected, as I could not *possibly* refuse to sit to a Painter for my portrait for the University of Cambridge.²

With respect to Kosmos I can truly say that I would much more willingly contribute to it than to any other Journal; but I am not able to work many hours per diem like most men, & I particularly dislike changing my work, as nothing fatigues me so much. Therefore I have made it a rule, which I have very rarely broken, never

to write in Periodicals. Nor do I feel that I could write short articles with skill & spirit. So pray excuse & forgive me, for I know that I *ought* to aid in your good work of spreading a belief in Evolution & of discovering new truths in regard to it.³

My dear Sir | yours sincerely | Ch. Darwin

The Huntington Library (HM 36185)

- ¹ See letter from Ernst Krause, 23 May 1879. Krause mentioned that he might have to add supplementary notes on some of the people connected to Erasmus Darwin for the German edition of *Erasmus Darwin* (Krause 1880).
- ² CD was writing a 'Preliminary notice' for *Erasmus Darwin*. A portrait had been commissioned by the Cambridge Philosophical Society to commemorate the honorary doctorate of laws (LLD) awarded to CD by the University of Cambridge in 1877; the portrait showed CD in his red doctor's robes (see also Browne 2002, p. 451). The artist was William Blake Richmond. The portrait now hangs in the Department of Zoology, University of Cambridge. See frontispiece.
- ³ In his letter of 23 May 1879, Krause had asked CD to write an article for the journal *Kósmos*, which he edited.

From V. H. Darwin 28 May [1879]¹

2. Park Villas. | North St^r | Derby
Wed. May 28—

My dear Cousin

I shall be glad to make the drawing of Elston, though it will not be easy, as the perspective is all wrong, and it is such a "birds'-eye" view— That country is so very flat, that unless they took the view from the top of the Church Tower, I do not know how they managed it— The Farm buildings must be left out, and I must be allowed to put in some judicious bushes in the foreground to break the line of that fatal wall— also I cannot in conscience take it from the exact centre, like an *elevation*,

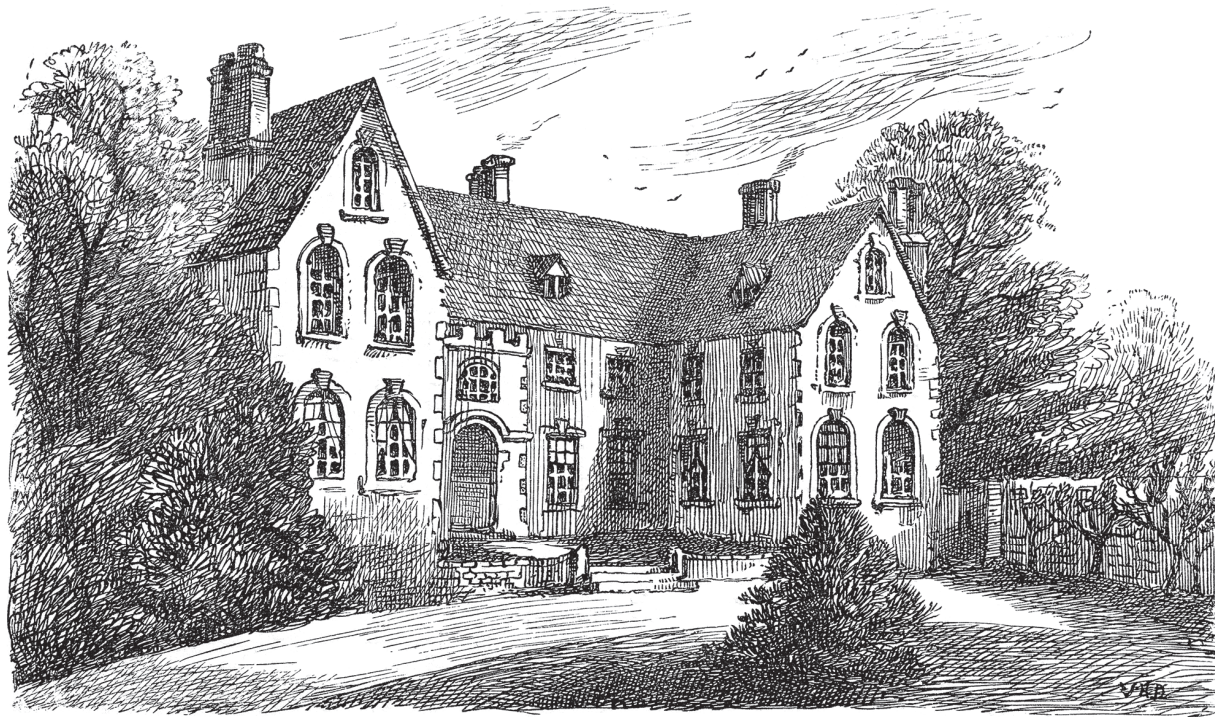
If my drawing does not turn out satisfactory I can but copy the old drawing with just a few corrections—²

I will take it for granted you agree to all this, and if I can make out anything in answer to your questions about D^r. Darwin will write again. I am but a poor rememberer of stories, and do not even *know* the Highway robber story— M^{rs}. Nixon must tell it me—she is a near neighbour—& she has the enviable talent of recollecting these things with the when & the where, & the who—³

I remain | Yours very affect^{ly} | V. H. Darwin

DAR 99: 169–70

- ¹ The year is established by the references to the illustrations for *Erasmus Darwin*, which was published in 1879.
- ² Violetta Harriot Darwin was preparing a drawing of Elston Hall using two 'pretty views' (possibly photographs taken by Leonard Darwin) as well as an old sketch of Elston Hall made around 1750 (see letter from V. H. Darwin, 30 [May 1879]). CD had found the old sketch among letters from Erasmus Darwin and others (see letter to C. M. C. Darwin, 6 April 1879 and n. 6). A woodcut of Violetta's drawing of Elston Hall was published in *Erasmus Darwin*, p. 3. See plate on facing page.
- ³ CD's letter to Violetta has not been found. Emma Nixon was Violetta Darwin's cousin. For the highway robber story, see the letter from E. A. Wheler, 25 March 1879 and n. 7.



Elston Hall before 1754.
Woodcut from a drawing by Violetta Harriot Darwin.
Erasmus Darwin, p. 3.
By permission of the Syndics of Cambridge University Library.

May 1879

To G. G. Stokes 28 May 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

May 28 | 1879—

Sir

Mr Prestwich's paper on the Parallel Roads of Lochaber seems to me a very valuable contribution to this long disputed subject, & I strongly recommend it to be printed in extenso in the Transactions; for although the abstract is remarkably clear, the full details are necessary for any final judgment & would be indispensable to any one hereafter revisiting the district.¹ There are also many valuable, incidental discussions on glacial action. It is to be regretted that the author does not explain how it was (considering the height of the surrounding mountains) that during the second glacial period the valleys were not swept clear of their detritus, including the parallel roads. With respect to illustrations, Map I is indispensable: Map II does not seem necessary, but only advantageous.² Of the wood-cuts Fig. 3 (viz a sketch of Glenroy) is hardly necessary, & perhaps two or three of the smaller diagrams might be omitted, but their cost would be trifling.³

Finally, I ought perhaps to caution the Council, that from having formerly attended to the Parallel Roads, I may over-estimate the interest of the present memoir.⁴ On the other hand every one will admit that so unique a phenomenon deserves the fullest consideration, standing as it does, in intimate connection with one of the most remarkable of all the epochs in the earth's history, namely the Glacial Period.

I remain, Sir | Your obedient servant | Charles Darwin

To the Sec^y | R. Soc^y

P.S. Paper despatched today by Rail

LS(A)

The Royal Society (RR8: 183)

¹ Joseph Prestwich's paper 'On the origin of the parallel roads of Lochaber and their bearing on other phenomena of the glacial period' was read on 1 May 1879 and an abstract was published in *Proceedings of the Royal Society of London* 29 (1879): 6–21. The paper was published in full in *Philosophical Transactions of the Royal Society of London* (Prestwich 1879).

² In the event, only map 1 was published (Prestwich 1879, plate 46).

³ The figure mentioned was published; see Prestwich 1879, p. 673.

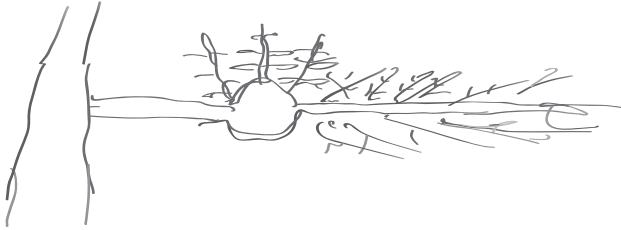
⁴ In 1839, CD had written 'Parallel roads of Glen Roy', suggesting a marine origin for the three terraces that run parallel to one another along the sides of Glen Roy in Lochaber, Scotland, but later accepted the theory that they were the result of glacial lakes (see *Correspondence* vol. 10, letter to Charles Lyell, 14 October [1862] and n. 3).

To Francis Darwin [before 29 May 1879]¹

My dear F.

Try & find out & read account of the fir-trees affected by some fungus & which produce upright shoots.— I want to know whether case is same with that *common*

here with Silver fir. (*A. pectinata*?);² the branches produce huge *solid hard* knobs with very rugged bark; & from these knobs shoots arise which are quite upright, but afterwards produce horizontal branchlets— The leaves are produced on them precociously. Can this be case described by German?³



Main Trunk

Incomplete?

DAR 271.4: 13

¹ The date is established by the relationship between this letter and the letter from Francis Darwin, 29 May 1879.

² *Abies pectinata* (a synonym of *A. alba*) is the silver fir.

³ Francis was working in the laboratory of Julius Sachs at the Botanical Institute, Würzburg.

From Grant Allen 29 May 1879

22 Bonchurch Road. | North Kensington. W.

May 29. 79.

My dear Sir,

I had seen Delboeuf's review already.¹ I was very pleased at it, but much more so at your kindness in calling my attention to it, and at the interest which you are good enough to take in it on my account. I feel far more proud of your postcard than of any number of reviews.²

Yours very sincerely, | Grant Allen.

DAR 159: 45

¹ Joseph Delboeuf had reviewed Allen's book on the colour sense (G. Allen 1879a; letter to Grant Allen, 26 May [1879]).

² See postcard to Grant Allen, 26 May [1879].

From Francis Darwin 29 May 1879

Bot. Institut | Würzburg

May 29/79

My dear Father,

Stahl knows about the growth on *A. pectinata*; & I think the thing you saw must certainly be it: he says if you sent 2 or 3 leaves or a tiny twig in a letter he could tell at once as the fungus grows all through the leaves: it is an *Æcidium*; I will find out

whether there is anything to be read about it.¹ De Bary has written about it but I think only about the fungus part of it:²

The Porliera in the bed is rather unhappy looking but there are two pot plants in good state & I will look to the leafstalk.³ I have got 5 or 6 Anthurium & Aroids which are put between double windows with a big tin pan filling up the whole bottom & filled with water, & if the weather only gets hot they will sprout—but they have been wretchedly cared for & are unhealthy; the gardener is very bad—⁴ Stahl
(*sheet missing*)⁵

the houses hospitals. I shall have plenty for the caustic experiments after I have measured them Sachs seems interested by the caustic stopping Geotropism.⁶ Sachs seems to have completely changed his ideas about the cause of heliotropism & quite given up the idea that it is merely the shaded side growing quicker: he spoke as if these experiments of mine were hardly worth doing because it was so certain that the heliotropism does not depend on the mere difference of light on the two sides. He has lent me Wiesner's big paper on Heliotropism 69 pp 4¹⁰—'Heliotropische Erscheinungen in Pflanzenreiche', from the XXXIX B^d of the Vienna Denkschriften 1878 it can be bought.⁷ I will read it any how; Sachs doesn't think much of it partly because it is all done by gas light. I will see what Sachs says in his last edition⁸ I was quite staggered when he spoke of "the old fashioned view of heliotropism which Wiesner still holds"

Stahl told me a little about A. B. Frank. He says he has a great respect for him & admires his work & especially likes his way of looking at the use things are to plants & not simply considering them as machines with epinasty &c like so may springs pressing them in various directions Frank is about 40 & still a Docent, & has probably lost all chance of being a professor.⁹ He had a great dispute with Hofmeister in which he was impertinent to Hofmeister, he has also been squashed by Sachs & this has thrown him out in the struggle for life.¹⁰ The other night I went to see an Englishman named Thorne¹¹ who is lecture-assistant in the Chemical Laboratory—I went to have a lesson in the spectroscope, I had a good go at Potash & I think I shall do some drop experiments here; Sachs wont hear of it being a secretion but says it comes out a gland bearing leaf because it increases the surface & gives a delicate surface &c &c which strikes me as bosh but I dont know how to disprove it. Sachs admired my little spectroscope so much I have had to order one for him. I have been doing interesting microscoping Chara, Marchantia, Vaucheria & various funguses.¹² I went out to dinner at a Herr Merckens¹³ but it was wearisomely long—we waited for a man $\frac{1}{2}$ an hour to start with till 8 o'clock, & then after dinner sat in big circle till past 12, no one could get up & go because Sachs didn't.

I have had very nice letters from Mother & Bessy & I will write to them: I will keep or send G's letter. Give Ubbadubba my love & say I should a letter in bool & red [picus]. I am glad to hear that he doesn't let Ubbady get into mischief.¹⁴ I have been cultivating Mucor spores in drops of sugary water hanging under a cover glass; they send out a long one-celled tube which grows very quick¹⁵ I have been trying to see nutation in the plane of the glass; but the floor of the laboratory shakes too

much for good observations, so that the growing tip is quite jogged away from the micrometer scale. Elving the Finn knows all about pollen tube growing¹⁶ I will try whether they are negatively heliotropic

Good by dear Father | Your affec | FD

Incomplete

DAR 274.1: 54

CD ANNOTATIONS

2.1 The Porliera ... Stahl 2.5] *crossed pencil*

3.1 Stahl ... negatively heliotropic 4.9] *crossed pencil*

3.2 especially ... plants] *pencil cross in margin*

3.3 like so may ... 40 3.4] *pencil cross in margin*

¹ See letter to Francis Darwin, [before 29 May 1879]. Ernst Stahl had been an assistant of Julius Sachs at Würzburg from 1874 until 1877 (*NDB*). *Abies pectinata* is a synonym of *A. alba*, the silver fir. *Aecidium* is a widespread genus of rust fungi.

² Anton de Bary had published a paper 'Ueber den Krebs und die Hexenbesen der Weisstanne (*Abies pectinata* DC.)' (On the canker and witches' brooms of the silver fir (*Abies pectinata* DC.); Bary 1867), in which he characterised the fungus infecting silver firs and also described the affected parts of the tree as the disease progressed.

³ In the summer of 1878, Francis had observed plants identified as *Porliera hygrometrica* at Würzburg; he recorded the movements of two specimens, one in the garden, the other in a pot. CD had also observed the movement in a specimen thought to be the same species, but which behaved differently. In taxonomic literature, *Porliera* is considered an incorrect subsequent spelling of *Porlieria*; the name *Porliera hygrometrica* is unresolved, but is likely to be an error for *P. hygrometrica*; the name was sometimes applied to specimens later identified as *P. chilensis* (see, for example, Johnston 1938, pp. 253–4). Based on Francis's comparison of the Würzburg plants with a twig of the plant CD had received from Kew, the German plants were probably *P. chilensis* while CD's specimen was *P. hygrometrica* (see *Correspondence* vol. 26, letter from Francis Darwin, [after 7 July 1878] and n. 3).

⁴ *Anthurium* is the genus of laceleaves in the family Araceae (arums); aroid is a colloquial term referring to plants in this family. The gardener has not been identified.

⁵ Francis evidently failed to send one manuscript sheet of his letter, as CD noted in his reply of 2 June [1879].

⁶ CD had recently begun to study the effects of applying lunar caustic (silver nitrate) to the tips of radicles (embryonic roots) as part of a series of experiments investigating the sensitivity of the root apex that he had begun the previous year (see, for example, *Correspondence* vol. 26, letter to W. T. Thiselton-Dyer, 9 May [1878]).

⁷ The first part of Julius Wiesner's monograph on heliotropic phenomena in plants (Wiesner 1878–80) appeared in *Denkschriften der kaiserlichen Akademie der Wissenschaften, mathematisch-naturwissenschaftliche Classe*. CD had read an abstract of the work the previous summer in *Anzeiger der Kaiserlichen Akademie der Wissenschaften in Wien* 15 (1878): 137–40 (see *Correspondence* vol. 26, letter to Francis Darwin, 17 July [1878] and n. 5). CD's offprint of Wiesner 1878–80 is in the Darwin Library–CUL.

⁸ In the most recent edition of Sachs's textbook of botany (Sachs 1874, p. 727), Sachs had noted that only higher wavelengths of light produced bending and slowed growth. Wiesner had reported that all wavelengths except yellow produced heliotropism (Wiesner 1878–80, p. 190).

⁹ Albert Bernhard Frank had, in fact, become a professor extraordinarius of botany at Leipzig in 1878. Frank had originated the concept of symbiosis (*Symbiotismus*) in his 1876 paper on crustose lichens (see Frank 1876, pp. 196–7). On the term epinasty, see the letter from Hugo de Vries, 24 February 1879, n. 3.

¹⁰ Wilhelm Hofmeister and Frank had disagreed about the nature of heliotropism and geotropism in articles published in *Botanische Zeitung* between April and June 1868. Frank had argued against Hofmeister's explanation of these phenomena in his book *Beiträge zur Pflanzenphysiologie* (Contributions to plant physiology; Frank 1868).

¹¹ Leonard Temple Thorne.

¹² *Chara* is a genus of stoneworts (an order of green algae); *Marchantia* is a genus of liverworts; *Vaucheria* is a genus of yellow-green algae.

- ¹³ Herr Merkens has not been identified.
- ¹⁴ None of the letters from Emma Darwin, Elizabeth Darwin, or George Howard Darwin have been found. Ubbadubba was a pet name for Francis's son Bernard Darwin; Ubbady was Bernard's name for Elizabeth Darwin (see F. Darwin 1920b, p. 46). 'Bool and red [picus]' was probably Bernard's mispronunciation of 'blue and red pictures'.
- ¹⁵ *Mucor* is a genus of filamentous fungi; sporangia in species of this genus are typically spherical with well-developed columellae.
- ¹⁶ Fredrik Elfving was a student in Sach's laboratory. Following adhesion of a pollen grain to the stigma, the grain exerts a tube through which sperm cells are delivered to the ovule. The formation of tubes can be artificially induced with acid (see Fritzsche 1832, p. 2).

To Reginald Darwin 29 May [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
May 29th

My dear Cousin

I overlooked the enclosed, which you will like to add to the others—² Pray do not take trouble to acknowledge it—

Yours very sincerely | Ch. Darwin

P.S. Did you ever hear your father tell a story about a high-way robber & our grandfather.³ The Miss Galtons say that he visited the man in prison and heard why he did not rob our grandfather. Mrs. Nixon seems to know nothing of this latter part of story, and thinks that our grandfather only suspected that the man intended to rob him.⁴

If I receive no answer I shall understand that you know nothing about it. I am sure that my father told some story on subject, but my memory is utterly vague.

ALS and Copy⁵

Kobunso (dealer) (1977); DAR 153: 101

- ¹ The year is established by the references to the life of Erasmus Darwin, which CD started writing in May 1879 (see letter to Reginald Darwin, 2 May 1879).
- ² On 16 April 1879, CD had sent Reginald Darwin some letters from Francis Sacheverel Darwin to Robert Waring Darwin (1766–1848); the enclosure, which has not been found, was another of these letters (see letter from Reginald Darwin, 31 May 1879).
- ³ Reginald's father was Francis Sacheverel Darwin; Reginald and CD were grandsons of Erasmus Darwin. CD gave the story of the robber in *Erasmus Darwin*, pp. 64–5.
- ⁴ See letter from E. A. Wheeler, 25 March 1879; by 'the Miss Galtons' CD means Emma Sophia Galton and Elizabeth Anne Wheeler, née Galton. Emma Nixon's version of the story (now missing) was forwarded to CD with the letter from E. A. Wheeler, 17 April 1879.
- ⁵ The letter is transcribed from a photograph of the original in the sale catalogue down to 'The Miss Galtons say that'; the rest is from the copy in DAR 153.

From V. H. Darwin 30 [May 1879]¹

17. North S^u | Derby.
Friday 30.

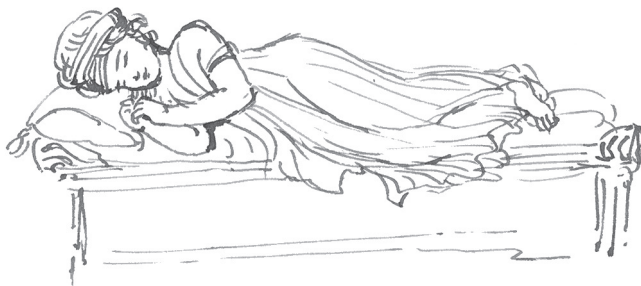
My dear Cousin.

You must not apologize for giving trouble, for I can only assure you that it is both a pride & a pleasure to assist your work—and if I descanted a little on what had to

be done to the view of Elston, it was only to prepare you for a very different looking drawing, which you might imagine almost a different *place*, only that I shall do it by rule.² I have two pretty views of Elston as it is now, and they are some assistance as they show the real proportions, wh³ are not trustworthy in the old drawing—

Sir Brook Boothby lived at Ashbourne Hall, & he & his wife were “Cat & Dog”, & only kept together by their one little daughter—6 years old, and a perfect beauty. It died of brain-fever—and, after the funeral, Sir B and Lady Boothby drove off in different directions, and never met again. The sonnets he composed on the child’s death are most hopeless and melancholy—³ The epitaph on the monument says “*The unfortunate Parents ventured their all on this frail bark, and the wreck was total*”

He had a beautiful recumbent figure done by Banks⁴ the sculptor wh³. is in Ashbourne Church, and of wh³. this gives some little idea, I have often sketched it.



It is represented with bandages round the head. I believe there were faults on both sides, as regards the conjugal differences. Sir B B was *elegantly literary* and a dilettante and he was so extravagant as to spend three fortunes and to die poor after all.⁵

Believe me | yours very affect^y— | V. H. Darwin

May I ask you to observe that my address is altered. A man came yesterday and put new numbers on all the doors in the street. I am glad to have done with Park Villas, for, I assure you there was neither Park nor Villa to be seen!.

DAR 210.14: 27

CD ANNOTATIONS

1.1 You must ... different *place*, 1.4] *crossed pencil*

Top of letter: ‘Only about Sir B. B loss of daughter of whom beautiful monument’ *pencil*

¹ The month and year are established by the relationship between this letter and the letter from V. H. Darwin, 28 May [1879]; CD’s reply to her letter has not been found.

² Violetta Harriot Darwin was making a drawing of Elston Hall for *Erasmus Darwin* (see letter from V. H. Darwin, 28 May [1879]).

³ Brooke Boothby and his wife, Susanna, separated after the death of their six-year-old daughter Penelope in 1791; Boothby published *Sorrows sacred to the memory of Penelope* to honour his daughter’s memory (Boothby 1796). In *Sorrows*, Boothby paid tribute to Erasmus Darwin’s medical expertise and kindness (see letter from V. H. Darwin, 9 April 1879 and n. 2).

⁴ Thomas Banks.

⁵ The three fortunes mentioned were that of Boothby's uncle, William Boothby, father, Brooke Boothby (1710–88), and wife (for more on Boothby's financial situation, see Zonneveld [2003], pp. 140–3, 265–7).

From Anthony Rich 30 May 1879

Heene, Worthing
May, 30— 1879.

My dear Mr. Darwin,

Next to the pleasure which it would give me to see you sitting in the chair *vis-à-vis* to me, is the satisfaction I feel at seeing your hand writing on the table before me.¹ That assures me at least that you have got safely home again, after your late course of “dissipation”, without any unpleasant drawback; but, let us hope, with much benefit to mind and body.² Surely it is good for man, and bird, and beast to break bounds sometimes and migrate for a season!— I hope that your son who resides at Southampton³ entertains that opinion; and that he will attest the sincerity of his belief by paying me a visit, long or short as suits him best, sometime during the present summer. An old acquaintance whom you have heard me speak of, Mr. Fred. Hand, is coming here on Saturday for a few days, in order to bring with him for my signature the lease of one of the premises on that sacred mount in the heart of the City which grows bricks instead of olives, and sprouts with “Shekels” and golden “Bezants” instead of coins. Here the entire block of 4. houses will be advantageously let for seven years from Lady day last past—⁴

On the 10th June my brother's widow⁵ will pass a day and night here on her return from Bishopstoke, where she has been for the last few weeks arranging matters, as she has let her house for three years—never I fancy to return there— With those exceptions the gates of my hermitage will be thrown wide open at any time to the hoped for visitor from Southampton.—

Thanks, many, for what you say about the photographs. I will acknowledge the receipt of them, directly to the sender, if I discover his proper address. For it would never do to convert a Colonel into a Lieutenant—otherwise your son would be saying—“What fool is this my father has picked up, who has not got the Army list at his finger's ends?”—⁶ I really do sometimes [reflect] that the Chinaman must have been thinking of myself when he called some one an “outside barbarian”.—⁷

I will now have mercy upon you, and relieve you from any further button-holding; excepting only to beg that you will present my compliments to Mr. Darwin; and assure yourself, if such assurance were needed, of the very great delight it has been to me to meet in personal intercourse a gentleman whose scientific labours and commanding intellect have long since engaged my respectful admiration, and to find how kind, and genial, and indulgent he could be in actual converse with—a mere school boy in all but years & thoughtlessness—⁸

Very truly yours | Anthony Rich

DAR 210.12: 10

¹ CD's letter has not been found.

- ² CD and Emma had been away from Down from 6 to 26 May 1879; they spent 6 and 7 May in Worthing in order to visit Rich (Emma Darwin's diary (DAR 242)).
- ³ William Erasmus Darwin.
- ⁴ Frederick James Hand was a solicitor who helped lease four London properties owned by Rich and bequeathed, in part, to CD (see *Correspondence* vol. 26, letter from Anthony Rich, 10 December 1878). Lady Day (25 March) was one of the quarter days on which rents were collected and tenancies begun and ended.
- ⁵ Fanny Ricarda Rich was the widow of Rich's brother Francis Henry Rich.
- ⁶ Rich may be referring to photographs taken by Leonard Darwin, who was an instructor of photography at the School of Military Engineering at Chatham. Leonard held the rank of lieutenant (see letter to C. M. C. Darwin, 6 April 1879).
- ⁷ The Chinese often referred to foreigners as 'outside barbarians' (Gützlaff 1838, 2: 542).
- ⁸ CD had visited Rich for the first time on 6 May and both CD and Emma Darwin had lunch with him on 7 May; Emma was disappointed in the lack of 'any superiority' about Rich (letter from Emma Darwin to H. E. Litchfield, [7 May 1879] (DAR 219.9: 194)).

To G. H. Darwin 31 May [1879]¹

Down
May 31st

My dear G.

Read enclosed & please return pretty soon.—² You will see that writer seems a scientific man.— I mention case, because you might think it worth while to give instructions about Tides.

I have not yet received the paper, so cannot judge of his observing powers.—

I cannot tell you how I rejoice over your friendship with Sir W. Th.—³ All that you say shows what a grand vein of research you have struck on.— I do heartily rejoice.—

Floreat the name of Darwin, of which, however, I am awfully sick, but have now nearly finished first rough copy of old D: D' Life.—⁴

your affect | C. Darwin

DAR 210.1: 83

¹ The year is established by CD's reference to the draft of his biographical account of Erasmus Darwin, which he began writing in May 1879 (see letter to Reginald Darwin, 2 May 1879).

² The enclosure has not been found; it was possibly the abstract of a paper submitted for publication.

³ George Darwin had been planning to visit William Thomson in Glasgow (see letter from G. H. Darwin, 10 May 1879 and n. 5).

⁴ CD spent about six weeks writing his biographical account of Erasmus Darwin (*Erasmus Darwin*; CD's 'Journal' (Appendix II)).

From Reginald Darwin 31 May 1879

Fern, | Buxton.
May 31 1879

My dear Cousin

I have again to thank you for your generous thought of me, & am very glad to add the letter which you send me to my collection—¹ The quaint style & "respectability"

of a young man's correspondence in those days, even with a near relative, is interesting, & shows in strong contrast with the letter of an ordinary collegian of the present day, who would have had a "narrow squeak" of being "spun"²—who had "gone in" for Boating &c, & who found it "quite too awfully jolly"—

I seem to know there *was* a story about the Robber, but cannot call it to mind—³
I hope very much that your change has done you good—⁴

Believe me, with best regards, Yours | affect' & gratefully | Reginald Darwin

DAR 99: 156–7

¹ See letter to Reginald Darwin, 29 May [1879]. CD had sent Reginald Darwin a letter from Reginald's father, Francis Sacheverel Darwin, addressed to his half-brother Robert Waring Darwin (1766–1848). Francis Sacheverel Darwin had been admitted to Emmanuel College, Cambridge, in 1807 (*Alum. Cantab.*).

² Spun: failing an exam (slang; *OED*).

³ CD was investigating different versions of an anecdote about Erasmus Darwin and a highway robber (see letter to Reginald Darwin, 29 May [1879], and *Erasmus Darwin*, pp. 64–5).

⁴ CD had been away from 6 to 26 May 1879 (CD's 'Journal' (Appendix II)).

To G. S. Ffinden 31 May 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

May 31st 1879

My dear Sir

I have completely forgotten all the details about the purchase of the land from my sister-in-law, Miss Wedgwood; but I have no doubt that you are correct in saying that she agreed to sell it at 80£ per acre.¹ The letter from the solicitor, of which you have sent a copy, does not appear to show that any second measurement of the land was made, proving that the first measurement was erroneous.² It seems probable that the omission of the 19 perches was merely a clerical error.³ Nevertheless Miss Wedgwood authorises me to say that she is quite willing to refund the 10£, if the Ecclesiastical Commissioners will write to her saying that in their opinion she ought to do so, either to them or to you as they may direct.⁴

Or again she will refund the money to the Commissioners, if it be proved by a qualified Surveyor that the first measurement was erroneous to the extent of 19 perches.— If you desire any further communication with me or Miss Wedgwood on the subject, will you be so good as to write to me, for I have observed that when persons differ on any point in conversation, they are liable unintentionally to differ in their belief as to what passed between them.—

I remain, my dear Sir | Yours faithfully | Charles R. Darwin

To the Rev G. S. Ffinden.

Bromley Central Library, Local Studies Library and Archives (P123/3/4)

¹ No earlier correspondence with Ffinden on the subject of the land sale has been found, but see *Correspondence* vol. 17, letter from J. B. Innes, 20 October 1869 and n. 5. CD's sister-in-law, Elizabeth Wedgwood, resided at Tromer Lodge, Down (*Post Office directory of the six home counties 1878*).

- ² The copy of the letter has not been found.
- ³ A perch is an old measurement of area roughly equal to 30.25 square yards. There are 160 perches to an acre. (*OED*.)
- ⁴ The Ecclesiastical Commissioners determined the distribution of revenues of the Church of England.

From G. S. Ffinden 31 May 1879

Darwin. May 31— '79

I am obliged to you for y^r letter I am not aware that any *first* measurement of the land was made, & I am at a loss to a/c for the means whereby I arrived at the erroneous measurement: *1.2.19*¹ however, since writing to you I have consulted the parish tithe map, which is an *official* authority, & this makes the case, as to the quantity of the land even worse. Thus with the long meadow was included the adjoining field Jumping rail the total quantity being

deduct Jumping rail as measured by the late <i>M. Abr: Smith</i> ³	}	a. r. p. ²	
		6: 0: 32	
		2. 3: 3	
		3: 1: 29	
		2: 0: 0	sold by Miss W. <i>first</i> —
		1: 1: 29	
		⟨37	retained by Miss W⟩
		a. r. p	
		1: 0: 32	

(instead of. a. r. p
1: 2: 9)

& this quantity at £80 p acre wld cost £**96:0:0**, & not £**111:10** as paid to Miss W. The tithe map referred to can be inspected by you it is at Mr. H. Osbornes⁴ if Miss W. is willing to abide by its measurement, I will write to the Ecc Comm^{rs}.⁵ to authorize the paym^t. of the money **£15:10:0** but if Miss W. wld. prefer to have the land measured (wh: seems to me unnecessary) I am willing to pay one half of the expense if my share wld. not exceed £[1]: but of this I am *doubtful*— It is clearer than ever to me now that, too much has been paid, at the rate agreed upon of **£80** p acre

Draft
Bromley Central Library, Local Studies Library and Archives (P123/3/4)

- ¹ See letter to G. S. Ffinden, 31 May 1879. The dispute concerned land sold by CD's sister-in-law, Elizabeth Wedgwood. Notes on the acquisition of vicarage property with prices paid, measurements, and calculations, are filed with Ffinden's draft letter.
- ² 'a. r. p.': acres, rods (or roods), perches. Units of area: 1 perch = 30.25 square yards; 40 perches = 1 rod; 4 rods = 1 acre.
- ³ Abraham Smith.
- ⁴ Henry Osborne.
- ⁵ The Ecclesiastical Commissioners (see letter to G. S. Ffinden, 31 May 1879 and n. 4).

To Albin Gaertner 31 May 1879
Down, Beckenham, | Kent. | (Railway Station | Orpington. S.E.R.)
 May 31st 1879

Dear Sir

I am much obliged for your courteous notes & for the curious case of inheritance.¹
 I remain | Dear Sir | Yours faithfully | Ch. Darwin

Photocopy
 DAR 249: 81

¹ See letter from Albin Gaertner, 27 May 1879.

To Francis Darwin [2 June 1879 or earlier]¹

Try & find out something about D^r. Ernst Krause— what sort of man?— What has he written under the pseudonym of Carus Sterne? Is he well-known in Germany?—²

DAR 211: 51

¹ The date is established by the relationship between this note and the letter from Francis Darwin, [after 2 June 1879].
² CD was working on a biographical sketch to introduce an English translation of Ernst Krause's essay on Erasmus Darwin (Krause 1879a). Most of Krause's longer publications were published under the pseudonym Carus Sterne.

To Francis Darwin 2 June [1879]¹
Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
 June 2nd

My dear old F.

Your letter has interested me greatly in many ways. It is a real good job to get some microscope work under an experienced man.—²

I have been particularly glad to hear about Frank & [rather] a man like Stahl says various plants being treated like mere machines— you know that what I have long been saying.³

It is funny about Sachs giving up so completely about growth & this also I am glad to hear.⁴ I think you omitted to send one page of your letter, for I cannot join on two parts.

I have finished the first time of going over old D^r D^s life: it has run to 130 pages. I am now wading through it again & am heartily sick of the job, from not knowing whether it is worth anything.—⁵

I forgot about the Silver-fir: I brought home one **very** old & dead & *small* swelling— Perhaps Stahl will recognise whether this is the case. The apogootropism of the shoots produced at their hypertrophic places alone interests me.—⁶ I am not very well, so no more today— Abberdubby is very flourishing & cocket.—⁷

Your affect. father | C. Darwin

DAR 271.4: 15

- ¹ The year is established by the relationship between this letter and the letter from Francis Darwin, 29 May 1879.
- ² See letter from Francis Darwin, 29 May 1879.
- ³ Francis had asked Ernst Stahl about Albert Bernhard Frank. Stahl admired Frank's approach in studying plant movement (see letter from Francis Darwin, 29 May 1879 and n. 9). In *Movement in plants*, pp. 571–3, CD noted similarities in plant and animal movement, in particular the localisation of sensitiveness and transmission of an influence from an excited part to another part, which then moved.
- ⁴ Francis reported that Julius Sachs had given up his earlier belief that heliotropism depended on the mere difference of light on two sides of any plant (see letter from Francis Darwin, 29 May 1879).
- ⁵ CD had spent several weeks working on a biographical sketch to introduce an English translation of Ernst Krause's essay on Erasmus Darwin (Krause 1879a). The translation appeared in November 1879 (*Erasmus Darwin*).
- ⁶ In his letter of [before 29 May 1879] CD had asked Francis to find and read an account of fir trees affected by fungus. The 'hypertrophic places' are cankers or swellings from which abnormal shoots are produced in fungus-infected silver fir trees. The shoots, usually produced on lateral branches, are strongly apogeotropic, that is, bend or turn away from the ground. CD's notes on affected branches of silver fir, dated 22 May 1879, are in DAR 209.5: 225; the branch was collected at Leith Hill Place, Surrey, where CD visited from 21 to 26 May 1879.
- ⁷ Abberdubby was a pet name for Francis's son, Bernard Darwin. 'Cocket': pert, saucy; brisk; merry (*OED*).

To John Murray 2 June 1879

Down, | Beckenham, Kent.

June 2 | 1879

My dear Sir

I intend to publish a translation of a sketch of the life of Erasmus Darwin by D^r Krause; & I shall prefix to it a preliminary notice by myself, consisting of about 130 folio M.S. pages.¹

I intend to have rather large type on thickish paper with cut gold edges—

There will be three wood-cuts & a photograph of D^r D.

The book therefore will be for its size rather expensive.²

I should guess that it w^d be about 200 pages. I have endeavoured to make my notice interesting to the public, but whether I have succeeded is quite doubtful. D^r Krause's part relates chiefly to my grandfather on evolution. I have written to Mess^{rs} Clowes to ask them whether they can oblige me by setting up the whole of my preliminary notice in slips.³ You can then if you please see a copy; & decide whether you will publish it on commission for me, or on our old terms of $\frac{2}{3}$ profit.⁴

I am quite incapable of forming any judgement of the chance of the little book selling fairly well.

My dear Sir | yours very sincerely— | Ch. Darwin

LS(A)

National Library of Scotland (John Murray Archive) (Ms. 42152 ff. 356–7)

- ¹ CD had written a biographical sketch of his grandfather Erasmus Darwin to accompany an English translation of Ernst Krause's essay (Krause 1879a).
- ² In the event, the published book contained a portrait of Erasmus Darwin as the frontispiece and two woodcuts, one of Elston Hall, where Erasmus was born, and one of Breadsall Priory, where he died (*Erasmus Darwin*, pp. 3, 125); it was sold for 7s. 6d. (see letter from R. F. Cooke, 25 October 1879).

³ The letter to William Clowes & Sons, printers to John Murray, has not been found.

⁴ Murray usually published CD's books at his own expense and paid CD a percentage of the profits on publication (an advance against royalties).

From Francis Darwin [after 2 June 1879]¹

Dear Father,

Here is an abstract about the firs: Stahl says it is impossible to be certain about your piece of wood but he thinks a little fir tree growing on a branch out of such a lump can be nothing but the Hexenbesen; there is mycelium in the wood you sent but that alone is not enough.² He says there are lots of affected trees near Strassbourg & he could easily send us a young tree with a hexenbesen on it in the autumn. Have you noticed the young shoots of scotch fir how vertically they grow up, while spruce buds curve downwards slightly like hazel buds. The Finlander is experimenting on the horizontal underground shoots of Scirpus &c & finds they have just the same instinct to grow horizontally as an ordinary shoot has to grow vertically—which is the much abused “transversal-geotropismus” of Frank only his transverse: geotropism was with above ground things which are affected by light—³ I will ask more about Krause—Stahl who is not usually severe called him an “abscheulicher Mensch” but Stahl as $\frac{1}{2}$ French hates Berliners: every one hates Kosmos I think as the organ of “uncultivated materialism”—⁴

Hermann Müller has been christened Kohlenstoff Müller because he was complained of for teaching the boys in school that they should not believe “in the beginning was the word” but “in the beginning was Carbon”!⁵

I have got two good Porlieras in a room where I can do what I like & I will keep one in damp earth & one in dry &c & make careful observ^{ns}⁶ I am very glad you are done with old Eras⁷

I am very sorry about poor Jimmys pit & also for Pouts' horse⁸ yrs affec | FD

[Enclosure]

Bot Zeitung 1867 p257

A de Bary Ueber den Krebs und die Hexenbesen der Weisstanne *Abies pectinata*⁹

The Krebs consists of a lump on the stem or branches, the swelling is about twice the diameter of the stem above & below it. Remarkable for very thick bark which is externally deeply cracked. Ultimately the bark comes off the & wood rots extensively. The wood & especially bark is crowded with mycelium which is continued into the branches that grow out of the swellings & reproduces itself in the young leaves. The branches growing out of the swellings are the little upright trees or Hexenbesen. He speaks also of hexenbesen growing out of the stem— {for Hexenbesen he quotes De Bary Ann Sc Nat 4 Sér, Tom XX p 90}.¹⁰ The fungus is *Aecidium elatinum*:¹¹ he speaks of the mycelium growing from a swelling into “side branches” without producing reproductive organs, which latter are only in the true

hexenbesen. The hexenbesen is only formed when the mycelium grows from the swelling into a *bud* beginning to elongate. If it grows into already unfolded though still young shoots it does not produce a hexenbesen, only another swelling. One and the same swelling may produce hexenbesen and normal branches. Normal shoots free from mycel may come from hexenbesen. The hexenbesen are found all over the tree, most rarely at the summit of a young tree. The hexenbesen-shoots may either grow from the very first vertically up, or bend upwards with a bent piece. The first year they are simple shoots, & form a winter bud at the top. The branches which grow from the main hexenbesen axis are like the primary branches of a young fir tree & grow out on all sides.

Hexenbesen—

The leaves fall off in autumn & are rather smaller than normal, “Krautartig-fleischig”¹² & light yellow green in colour. If the fungus does not fructify which is very rare they the leaves live over the winter. “The hexenbesen sits on the branches like a strange looking bush in winter bare, in summer light green” Imitating a little fir tree if it grows regularly or looking like a confused bush if it has grown irregularly. The hexenbesen are usually more regular in growth when only one grows out of a swelling. They usually die in a few years but may live in one case 16 years. In the hexenbesen, as in the swellings, the bark is very thick. “Very rarely one finds side shoots on the hexenbesen free from mycelium which then assume all the properties of normal fir branches”¹³

(I dont understand this as I thought the side branches of the hexenbesen were always like normal branches of a young fir tree. F D)

DAR 209.5: 230–2

CD ANNOTATIONS

1.4 He ... Pouts' horse 4.1] *crossed blue crayon*

Enclosure:

3.12 *bud ... elongate*] *underl red crayon*

¹ The date is established by the relationship between this letter and the letter to Francis Darwin, 2 June [1879].

² CD had sent Francis a twig of *Abies pectinata* (a synonym of *A. alba*, silver fir) with a small swelling (see letter to Francis Darwin, 2 June [1879]). Ernst Stahl, an assistant of Julius Sachs at Würzburg, had worked on lichens and experimentally demonstrated their fungal character (see Cittadino 1990, pp. 83–4). *Hexenbesen*: witches' broom (German); a clump of densely branched small shoots that can result from various tree parasites, such as fungi, mistletoe, insects, or viruses (for more on the cause of witches' broom in silver firs, see Schweingruber 2007, pp. 215–18). Mycelium is the vegetative part of a fungus, characterised by fine branching threads or hyphae.

³ Scotch fir (Scots pine) is *Pinus sylvestris*; spruce trees are in the genus *Picea*. Fredrik Elfving was studying a problem suggested to him by Sachs, the tendency of the rhizomes of many plants to take up a horizontal position in the ground (Collander 1965, p. 44). *Scirpus* is the genus of bulrushes. Albert Bernhard Frank had proposed that there were special forms of growth in plant organs, characterised by an inherent tendency to be horizontal or to be placed at a right angle to the direction of gravity or a light source; he referred to these as ‘Transversal-Geotropismus’ and ‘Transversal-Heliotropismus’ (Frank 1870, p. 77). Frank's thesis had been challenged by Hugo de Vries, who argued the phenomenon could be explained as a sort of equilibrium between opposing heliotropic and geotropic forces in conjunction with epinastic and hyponastic movements (the bending down and up of an organ due

- to greater longitudinal growth on one side; Vries 1872, p. 277). Frank had responded to De Vries's criticisms with a more detailed experimental study of differences in movement that resulted from different tropic forces (Frank 1873).
- ⁴ *Abscheulicher Mensch*: odious man (German). Ernst Krause was the editor of the journal *Kosmos*, which promoted an evolutionary perspective in natural science.
 - ⁵ *Kohlenstoff*: carbon (German). Hermann Müller was a senior teacher of natural sciences at the Realschule in Lippstadt. Müller had briefly explained the case in a letter to CD and sent two articles written by Krause in his own and Müller's defence (see letter from Hermann Müller, 14 February 1879 and n. 3).
 - ⁶ On the identification of plants as *Portiera hygrometrica*, see letter from Francis Darwin, 29 May 1879 and n. 3. In 1878, Francis had noted changes in movement that seemed dependent on the amount of water a specimen received (see *Correspondence* vol. 26, letter from Francis Darwin, [after 7 July 1878] and n. 3).
 - ⁷ See letter to Francis Darwin, 2 June [1879]. CD had spent several weeks working on a biographical sketch to introduce an English translation of Ernst Krause's essay on Erasmus Darwin (Krause 1879a). The translation appeared in November 1879 (*Erasmus Darwin*).
 - ⁸ Jimmy was a nickname for Horace Darwin; Pout was a nickname for Leonard Darwin. The pit and the horse have not been identified.
 - ⁹ Anton de Bary's paper 'Ueber den Krebs und die Hexenbesen der Weisstanne (*Abies pectinata* DC.)' (On the canker and witches' brooms of the silver fir (*Abies pectinata* DC.); Bary 1867) identified *Aecidium elatinum* (a synonym of *Melampsorella caryophyllacearum*, fir broom rust) as the pathogen that caused cankers and brooms in *Abies pectinata* (a synonym of *Abies alba*, silver fir) and described the progression of disease in infected trees.
 - ¹⁰ See Bary 1867, p. 260; Bary referred to his paper in the *Annales des sciences naturelles*, 'Recherches sur le développement de quelque champignons parasites' (Researches on the development of some parasitic fungi; Bary 1863). Bary noted that it was probable that in certain members of the Uredinales (the order to which *Aecidium elatinum* belonged) the fungus alternately infested two types of host (Bary 1863, pp. 90–1).
 - ¹¹ See n. 9, above.
 - ¹² *Krautartig-fleischig*: herbaceous-fleshy (German); see Bary 1867, p. 262.
 - ¹³ See Bary 1867, p. 262. Bary noted that the infected needles of a witches' broom were small, yellow, herbaceous-fleshy, and shed in late autumn, but in rare cases when the fungus had not fructified the branches might have normal needles.

To Francis Darwin 3 June [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

June 3^d

My dear Frank.

We were extremely glad to get your letter, which shows us your life.² I write chiefly as a memorandum: when time allows remember I want much to know whether there is chlorophyll in the cots. of the Canary grass (*Phalaris*) & Oat. Also remember to learn about cutting thin sections of soft leaves &c.— Lastly the instrument for making marks at equal distances on stems &c.—³

I have been working very hard at circumnutation of leaves (& all hitherto tried thus behave), but more especially on sleeping plants to see by tracing movement on vertical glass how clearly the sleep movement is exaggerated circumnutation.— I have got one fine case with *Erythrina*, in which the leaf is incessantly going up & down, all day & in the evening merely increases a movement of exactly the same kind & then nutates at night at its lower level.—⁴

Drosera circumnutates well, but *C. of Ammonia*, does not produce any marked difference.—⁵

The Teazles look magnificent in the orchard, & I hope next year you will grapple with the subject again, for I am sure that it is worth it.—⁶

Bernard⁷ has been very charming: today he has been gabbling all the words he knows into a confused mess together, as quick as he could gabble them.—

I am now waiting for that confounded club on the lawn,⁸ & yesterday we had a bothering photographer, but Leonard, who was here all day, saved me much bother.⁹ Lady L. is going to write *another* life of me for the University Mag.¹⁰ She must be mad.—

Ever yours my dear old fellow | C. Darwin

DAR 211: 25

¹ The year is established by the reference to the meeting of the Down Friendly Society (see n. 8, below).

² See letter from Francis Darwin, 29 May 1879.

³ Francis was working in Julius Sachs's laboratory at the Botanical Institute in Würzburg, Germany (see letter from Francis Darwin, 29 May 1879). CD was trying to establish whether the bending in cotyledons of canary grass (*Phalaris canariensis*) and oats (*Avena sativa*) was due to their movement towards light. Sachs had invented the self-registering auxanometer between 1869 and 1870 and described and illustrated it in an article on the influence of temperature and light on hourly and daily changes in the length of internodes (Sachs 1872b, pp. 112–13). See plate on p. 250.

⁴ Richard Irwin Lynch had observed the sleep of *Erythrina crista-galli* (the cockspur coral tree) for CD; see *Correspondence* vol. 25, letter from R. I. Lynch, [28 August 1877]. CD's experimental notes, dated 7 to 10 June 1878, on five species of *Erythrina* are in DAR 209.2: 27–37; see also *Movement in plants*, pp. 366–7.

⁵ CD's experimental notes, dated 7 to 9 June 1878, on the circumnutation of *Drosera rotundifolia* (common or round-leaved sundew), including the effects of applying carbonate of ammonia, are in DAR 209.3: 173–8; see also *Movement in plants*, pp. 237–9.

⁶ In 1877, Francis had published his research on the protoplasmic filaments of the common teasel (*Dipsacus sylvestris*); see F. Darwin 1877a and 1877b.

⁷ Francis's baby son, Bernard Darwin.

⁸ CD was treasurer of the Down Friendly Society. Its annual general meeting was held on the lawn in front of Down House on Whit Tuesday (Rules of the Down Friendly Society, National Archives, FS1/232), which in 1879 was 3 June.

⁹ The photographer has not been identified but was likely to have been taking photographs of CD's plant experiments. Leonard Darwin was also taking photographs of plants for CD; see, for instance, *Correspondence* vol. 26, letter from Leonard Darwin, 25 April 1878.

¹⁰ In 1878, Ellen Frances Lubbock had written a piece on CD for a contemporary portraits series for the *University Magazine* ([E. F. Lubbock] 1878); see *Correspondence* vol. 26, letter to E. F. Lubbock, 18 July [1878]. No later article on CD by Lubbock has been found; she died in October 1879.

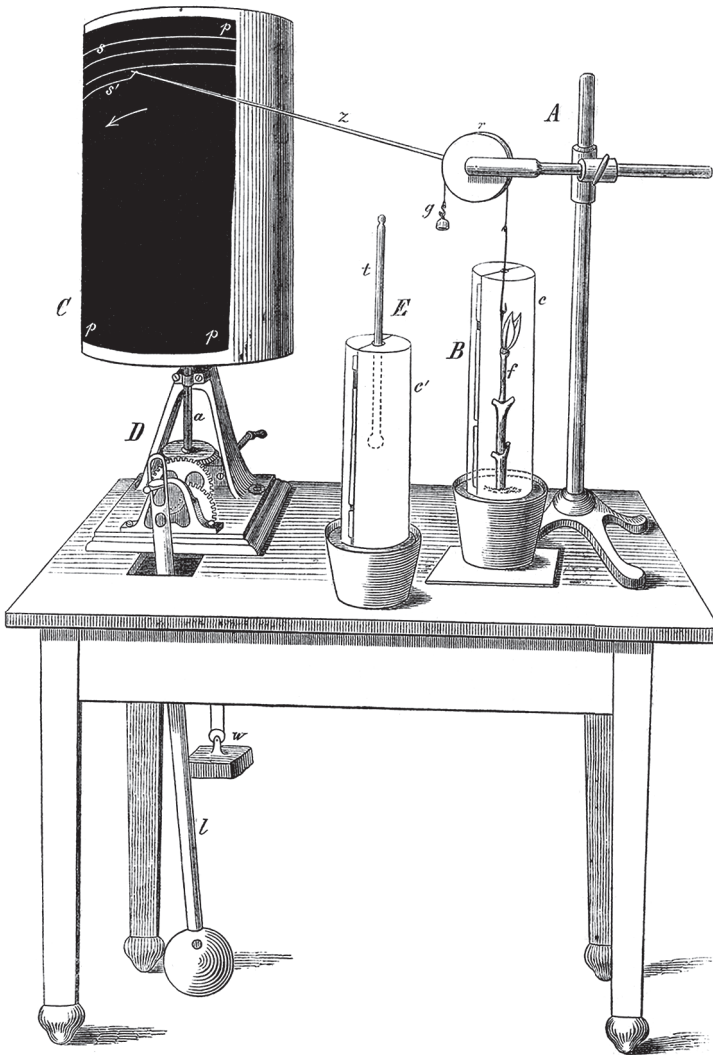
From Nicolai Mengden¹ 3 June 1879

Sehr verehrter Herr.

Bitte haben Sie die große Güte mir zu verzeihen, daß ich erst so spät Ihnen für Ihre freundliche Antwort meinen wärmsten Dank sage.²

Ich habe dieselbe aber mehrfach durchgelesen, und auch während dieser Zeit die Bekanntschaft von E. Häckel³ gemacht, dem ich, als ich in Jena war, dieselbe Frage zu stellen gewagt habe, und er stimmte natürlich vollständig mit Ihnen überein.

Auf meine Frage aber ob er an einen Christus glaube wurde mir die Antwort zu Theil: "Er könne nicht etwas übernatürliches glauben".



Auxanometer.

Arbeiten des Botanischen Instituts in Würzburg 1 (1872): 113.

By permission of the Syndics of Cambridge University Library.

Daher wage ich nun nochmals, zum dritten Male als Bittender und Fragender vor Sie zu treten, damit ich durch Ihre gütige Antwort eine Richtschnur erhalten, die mir sagt was ich zu glauben habe.⁴

Bitte haben Sie die große Güte und stoßen Sie mich nicht von Ihnen weg; wohl weiß ich und fühle ich wie unbescheiden und aufdringlich meine Bitten sind, doch weiß ich nicht wo ich Wahrheit erhalten kann außer bei Ihnen?

Bitte sagen Sie mir kann man an einen Christus glauben wie ihn die Bibel schildert, oder muß man nach Ihrer Meinung, E. Häckel beistimmen? und welche Definition von Gott halten Sie für einen Anhänger Ihrer Theorie für richtig?

Wenn Sie mich aber vollständig mit Ihrer Güte überhäufen wollen, so sagen Sie mir bitte auch, was soll man über dem Leben nach dem Tode denken? und darf man ein Wiedersehen hoffen? Diese Sorge ist mir wiederum gekommen, da ich eben durch den Tod meines besten Freundes zu ernsteren Gedanken veranlasst worden bin.⁵

Nochmals bitte ich Sie mich nicht abzuweißen, sondern so gütig zu sein wie Sie es bisher immer für mich gewesen sind. Nicht ist es Neugirde die mich drängt, sondern ich möchte Ihre Meinung nur wissen um mich nach derselben vollständig zu richten, denn in dieser Angelegenheit kann ich Ihnen nur allein glauben.

Nochmals meinen besten Dank für Ihre Güte, und mit der flehenden Bitte mir zu antworten | bin ich mit | größter Verehrung | Ihr | ehrfurchtsvoll ergebener.
N. Mengden

Nadelwitz b. Bautzen | 3.VI.79.

DAR 171: 152

¹ For a translation of this letter, see Appendix I.

² See letter from Emma Darwin to Nicolai Mengden, 8 April 1879.

³ Ernst Haeckel.

⁴ Mengden's first letter has not been found; he wrote to CD again on 2 April 1879.

⁵ Mengden's friend has not been identified, but the death of another member of the Mengden family, Nikolai von Mengden, is recorded in *Album Dorpat* as occurring at Riga in May 1879.

From John Murray 3 June [1879]¹

50, *Albermarle St* | *W*
June 3—

My Dear Sir

It seems to me that for some years past the Memory of D^r Erasmus Darwin has been reviving & his reputation increasing in Public Estimation—and I sh anticipate a favourable reception for Krauses essay especially if you undertake to fill up its gaps & deficiencies—²

I am well disposed as to publishing it for you & will have pleasure in carrying out your wishes & intentions regarding it.³ Thanking you for your note I remain
My Dear Sir | Yours very faithfully | John Murray

Charles Darwin Esq

DAR 92: B11

- ¹ The year is established by the relationship between this letter and the letter to John Murray, 2 June 1879.
² See letter to John Murray, 2 June 1879 and n. 1. Ernst Krause had written an essay on CD's grandfather Erasmus Darwin (Krause 1879a).
³ See letter to John Murray, 2 June 1879 and nn. 2 and 4.

From W. S. Dallas 4 June 1879

Geological Society, | *Burlington House*, | *W.*
 4 June 1879

My dear M^r: Darwin

I have at last finished the translation of the portion of D^r Kraus' essay on Erasmus Darwin.—¹ It has taken me much longer than I expected, because I found that I could only read the MS. *readily* by daylight, & as all my days are occupied, you will easily understand that I had not much time to give to it until quite lately.—

I finished the translation on Monday, but could not then send it to you as there was a quotation from "Zoonomia" which the author had translated, & it was only this morning that I got to see the work at the Royal Institution.—² You will see that in some places I have put critical remarks & queries, some of which you can perhaps settle at once—

In general I have tried to keep as close to the wording of the original as possible, but in many cases it was impossible to do anything but paraphrase.— I think, however, that in all cases I have stuck very close to the *sense*—

Have you heard anything from the author about the concluding portion of the work.— He said it would come in a fortnight or three weeks; but a good deal more delay has taken place & no copy has arrived.— If you have heard nothing from him, I had better write, as I am anxious to get all work cleared off by about the middle of July so as, if possible, to get a good holiday.— I should like to know what your intentions are with regard to publication.— I ought to see the proofs, as in translating there are always sure to be points which can be improved by very slight alterations when one sees the matter in type.— My present intention (or hope) is to get away about the 20th. July, & to stay away until the end of August,— if you publish in October, the printing can be done in September,—Otherwise I must make some special arrangement.— Will you kindly write me a few lines to let me know about this.—

Yours very truly | W. S. Dallas.

I should like to have the German MS. when I read the proofs.

DAR 99: 107–8

CD ANNOTATION

4:3 If ... possible, 4:5] *scored pencil*

- ¹ Dallas was translating a revised version of Ernst Krause's essay on Erasmus Darwin (Krause 1879a).
² *Zoonomia; or, the laws of organic life*. (E. Darwin 1794–6). Dallas refers to the Royal Institution of Great Britain, Albemarle Street, London.

To G. S. Ffinden 4 June 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
June 4th 1879

My dear Sir

Your last note contains much about measurement &c of which I know nothing & do not feel competent to form any judgment.¹ But I have asked my son-in-law, Mr Litchfield,² who is conversant with such matters, to look into the case, & he will call on you some evening before long to discuss the subject.—

My dear Sir | Yours faithfully | Ch. Darwin

American Philosophical Society (564)

¹ See letter from G. S. Ffinden, 31 May 1879. Ffinden and CD had corresponded about a possible overpayment for land bought by the Ecclesiastical Commission from CD's sister-in-law, Elizabeth Wedgwood, who resided at Tromer Lodge, Down (*Post Office directory of the six home counties* 1878).

² Richard Buckley Litchfield.

From Raphael Meldola 4 June 1879

21 John Street, | Bedford Row, W.C.
June 4/79

My dear Mr. Darwin,

I read to the Entom. Soc. this evening a translation of Fritz Müller's admirable paper from *Kosmos* &, as might have been expected, it was severely criticised by many of our members the majority of whom are as you know nothing more than species describers. In fact I do not think anyone fairly grasped the line of argument through inability to follow the simple algebraical reasoning which F.M. has adopted to express the state of affairs with regard to the action of Natural Selection on 2 allied species *both* possessing distasteful qualities.¹ However the paper will appear in full in our Proceedings & my object in writing to you is to ask you if you could kindly assist me in getting the loan of the wood-blocks from the publishers of *Kosmos*— it would save us the expense of having them recut & this is a matter for consideration in the present state of our funds.²

I must beg your kind forgiveness for thus troubling you. If you let me know to whom I can apply it will be sufficient.

Yours very truly, | R. Meldola.

DAR 171: 137

¹ Fritz Müller's paper '*Ituna* und *Thyridia*. Ein merkwürdiges Beispiel von Mimicry bei Schmetterlingen' (*Ituna* and *Thyridia*; a remarkable example of mimicry in butterflies) had appeared in *Kosmos*, May 1879 (F. Müller 1879c). Müller had shown the similarity in the wing patterns of *Ituna ilione* (a synonym of *Lycorea ilione*) and *Thyridia megisto* (a synonym of *Methona megisto*). Müller reasoned that two distasteful species that shared similar colour patterns would both benefit since any predator, having tasted one, would reject both species in future. Müller further noted that the gain to either species, in mathematical terms, would be the ratio of the two populations squared (*ibid.*, p. 108).

² In a note to the English version of Müller's paper, Meldola thanked Ernst Krause, the editor of *Kosmos*, for providing electrotypes of the woodcuts (F. Müller 1879d, p. xx n.).

To A. S. Wilson 4 [June] 1879¹

Down
Jan: 4. 1879

My dear Sir

Your excellent article in the *Gardeners Chronicle* has led, I have no doubt, to my receiving the enclosed letter, from a very great man, the Governor General of Turkestan, and he encloses his letter in an envelope worthy of his lofty position!—² I should hope and think that a collection of the varieties of wheat from such little known regions might possess some interest. Shall I send them to you to describe or to do whatever you may think fit, whenever I receive them? If so, will you kindly make any memoranda which may be required, from the enclosed letter, which *be so good as to return*, as I must thank his Excellency for his gracious act.³

Pray believe me, my dear Sir | Yours sincerely | Charles Darwin

Copy

DAR 148: 366

¹ The month is established by the relationship between this letter and the letter from K. P. Kaufman, 9 May 1879. The copyist wrote 'Jan' in error.

² See letter from K. P. von Kaufman, 9 May 1879. Konstantin Petrovich Kaufman mentioned having read in the newspapers that CD was studying different varieties of wheat. CD had received a large box of wheat from the governor of the Russian province of Saratov, Mikhail Nikolaevich Galkin-Vraskoi (see *Correspondence* vol. 26, letter from G. M. Asher, 14 February 1878). Kaufman could not have read Wilson's article on the Russian wheat, since it was published in *Gardeners' Chronicle*, 24 May 1879, after Kaufman wrote to CD (Wilson 1879).

³ CD's letter to Kaufman has not been found, and the wheat specimens never arrived (see letter to A. S. Wilson, 30 December [1879]).

To Francis Darwin [before 5 June 1879]¹

My dear F.

I begin to think that I shall prove that tip of radicle is its brain, as far as geotropism is concerned.—² I touched 4 tips with lunar caustic³ so as blacken only for $\frac{1}{2}$ to $\frac{2}{3}$ of m.m.— *They grew in length during 24 hrs 9 mm.* Now only 1 of the 4 became at all curved in the 24 h.— There were 4 other radicles in your jar, to which nothing had been done, & of these 3 after 24^{hrs} pointed *vertically downwards* & one for some unknown reason was not acted on.— I showed George⁴ the jar & the contrast between the 4 which had been touched with L. Caustic & 4 which had not been touched, he thought most striking.

C. D.

I must try & retry many more radicles.—

DAR 211: 53

- ¹ The date is established by the relationship between this letter and the letter to W. T. Thiselton-Dyer, 5 June 1879.
- ² CD was studying the movement of radicles (embryonic roots) and had already done many experiments relating to the sensitivity of the apex to touch (see, for example, *Correspondence* vol. 26, letter to W. T. Thiselton-Dyer, 9 May [1878]).
- ³ Lunar caustic is silver nitrate (AgNO₃); it was used in medicine as a cauterising agent.
- ⁴ George Howard Darwin.

From V. H. Darwin 5 June [1879]¹

17. North St^r | Derby
Th. June 5—

My dear Cousin

I send back the view of Elston, and my own attempt to show it in a better point of view. (The reason they are separate is that mine must go flat, as it is on cardboard, and the old one is more than the regulation width).²

Two little explanations.

One is, that though the old view does not show the stone coigns, they are really there—as I see in the modern drawing I have—and Mr. W^m. Darwin could not have put them in, when he did so much to the house—³

The other is that I have just moved a dormer window from one side of the Hall-door to the other, as the roof wanted the break—

All roughnesses will I hope be improved away by the wood Engraver—

Believe me | yours very affect^{ly} | V. H. Darwin

DAR 99: 171

- ¹ The year is established by the relationship between this letter and the letter from V. H. Darwin, 30 [May 1879].
- ² Charlotte Maria Cooper Darwin had sent CD two more recent photographs of Elston Hall with her letter of 27 March 1879. CD later found a rough drawing of Elston before it was altered around 1750 (see letter to C. M. C. Darwin, 6 April 1879). Violetta's drawing of Elston was based on both the old drawing and two recent views (see letter from V. H. Darwin, 30 [May 1879]).
- ³ The coigns (coins or corner stones) are clearly visible in the drawing that appears in print (*Erasmus Darwin*, p. 3). William Brown Darwin inherited Elston Hall in 1816 and made an addition to the building in 1837 (*Burke's landed gentry, Darwin pedigree*, Pevsner 1979, p. 122).

To Ernst Krause 5 June 1879

Down, | Beckenham, Kent.
June 5 | 1879

My dear Sir

I received this morning from Mr Dallas a translation of the first part of your M.S.; it seems to me very good, tho' I have only slightly read it over. Mr Dallas wants much to know, on account of his holidays, when he will receive the second part; so be so kind as to inform us.¹

I have this day sent my M.S. to the printers, & they promise that they will soon set up the whole, & when I receive a copy, it shall be sent to you—² I am far more

perplexed than ever as to what is best to be done. If both the M.S. are printed there will be two distinct biographies of the same man in one volume. I believe that yours is much the best.

There would not have been so much difficulty, if your Essay had been left as it first appeared, but I am unwilling to strike out all your biographical part.³ I wish that I had sent you all the materials; tho' there would have been great difficulty in doing this. But as the case now stands, I am almost bound to publish, as so many of my relations have taken trouble to aid me.⁴

After you have read my uncorrected proof sheets, I shall be anxious to hear what you think will be best to do.

Your best plan would be to intercalate any of my materials which may appear useful to you in your Biography.

I remain my dear Sir | yours very sincerely | Charles Darwin

LS

The Huntington Library (HM 36186)

¹ See letter from W. S. Dallas, 4 June 1879. William Sweetland Dallas was translating a revised version of Krause 1879a (see n. 3, below).

² William Clowes & Sons were printers to John Murray, CD's publisher. No letter from the printers has been found, but see the letter to John Murray, 2 June 1879.

³ Krause was revising his original essay, published in *Kösmos* (Krause 1879a). CD was preparing a biographical sketch of his grandfather to accompany the English translation of Krause's account, which focused on Erasmus Darwin's scientific work; the two essays were published in *Erasmus Darwin*.

⁴ CD had sent Krause some additional material (see, for example, letter to Ernst Krause, 19 March 1879); he had received papers, letters, and other material from various family members (see, for example, letter to Reginald Darwin, 1 April 1879).

To Nicolai Mengden 5 June 1879

Down, | *Beckenham, Kent.* | (*Railway Station* | *Orpington. S.E.R.*)

June 5th 79

Dear Sir

I am much engaged, an old man & out of health, & I cannot spare time to answer your questions fully,— nor indeed can they be answered. Science has nothing to do with Christ, except in so far as the habit of scientific research makes a man cautious in admitting evidence. For myself, I do not believe that there ever has been any Revelation. As for a future life every man must judge for himself between conflicting vague probabilities.¹

Wishing you happiness | I remain Dear Sir | yours faithfully | Charles Darwin

David W. Bowerman (private collection)

¹ See letter from Nicolai Mengden, 3 June 1879. For more on CD's religious beliefs, see Secord ed. 2008, pp. 391–6.

To W. T. Thiselton-Dyer 5 June 1879

Down, | Beckenham, Kent. | {Railway Station | Orpington. S.E.R.}

June 5th 1879

My dear Dyer

I have not troubled you or Hooker for a long time, as I have been on a holiday & writing life of D^r Darwin, which is abominable work as one does not know what to believe or what is worth telling.¹

I now want you to get M^r Lynch or some one to look out for any plant with aerial roots which are either heliotropic or apoheliotropic; *but not a precious plant*, as I shall be in constant fear with it & must injure many of the roots.² If I knew what to order I would buy any that would serve. I am very anxious to experimentise on such roots with reference to light, because I have proved, wonderful as the fact is, that the apex of a root acts functionally like a brain & commands the nature of the flexure in the upper part. This applies to touch, some other stimulants & geotropism; & I now want to know about light. It is pretty to see the effect of a touch of lunar caustic on extreme tip of radicle, how it annuls the effect of geotropism, *though the radicle goes on growing quite well*.³

If you are able to send me any plants, I must be told what temperature to keep them in. I believe that the roots of some Aroids are affected by light.⁴ Help me if you can, but I am not very sanguine.—

I hope that you are all well & flourishing at Kew.

Ever yours sincerely | Ch. Darwin

Frank seems happy & working hard at Würzburg.—⁵

Do you remember getting me seed of *Drosophyllum* from Portugal; alas not one germinated. If you have plants at Kew & they sh^d flower could you get me some *fresh* seed.—⁶

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: ff. 173–4)

¹ The Darwins were away from home between 6 and 26 May 1879; they visited Anthony Rich at Worthing, William Erasmus and Sara Darwin in Southampton, and Caroline Sarah Wedgwood and Josiah Wedgwood III at Leith Hill Place in Surrey (see 'Journal' (Appendix II)). CD had been working on a biographical sketch of his grandfather Erasmus Darwin since March 1879, and had just sent his manuscript to the printers (see letter to Ernst Krause, 5 June 1879). The most recent extant letter from CD to either Thiselton-Dyer or Joseph Dalton Hooker is the letter to W. T. Thiselton-Dyer, 22 April [1879].

² Richard Irwin Lynch was foreman of the propagation department at the Royal Botanic Gardens, Kew. Aerial roots are found in many plants, notably epiphytes (plants growing on other plants with no roots in the soil), rainforest and swamp trees, and some vines. A note on the letter reads, 'Sent | June 17-79 | *Chlorophytum orchidastrum* | *Philodendron hastatum* | *Anthurium violaceum* | *Dendrobium Pierardi* | *Catasetum* sp. | *Pistia Stratiotes*'. *Chlorophytum orchidastrum* is the fireflash or orange spider plant (family Asparagaceae). *Philodendron hastatum* is the silver sword philodendron; *Anthurium violaceum* (a synonym of *A. scandens*) is the pearl laceleaf; *Pistia stratiotes* is water lettuce (all are in the family Araceae). *Dendrobium pierardii* (a synonym of *D. aphyllum*) is the leafless dendrobium; *Catasetum* and *Dendrobium* are genera in the family Orchidaceae.

³ See letter to Francis Darwin, [before 5 June 1879] and nn. 2 and 3. Lunar caustic is silver nitrate.

- ⁴ Aroid is the common name for members of the Araceae family, such as the genus *Philodendron*, most of which are epiphytic or hemiepiphytic (plants which grow as epiphytes for part of their life).
- ⁵ Francis Darwin was spending a second summer in the laboratory of Julius Sachs.
- ⁶ Thiselton-Dyer had evidently sent seeds of the monotypic genus *Drosophyllum* (Portuguese sundew or dewy pine) in January 1879 (see letter from W. T. Thiselton-Dyer, [20 January 1879] and n. 1).

To ? 5 June 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

June 5 1879

Dear Sir

I thank you cordially for your kind letter & offer to send me the *Calliandra*; but I am much engaged on another subject, & have very little strength to spare, & therefore I cannot at present take up a new subject.—¹ I looked, however, casually at the leaves & could see no signs of the absorption of animal matter, & therefore believe that the insects are caught only accidentally.—² I am sorry to say my advice or opinion w^d be of no service about the grafting, as I have had no experience.

I sh^d. very much like to pay you a visit but want of strength will prevent me.—

Again thanking you for your kindness, I remain | Dear Sir | Yours faithfully
Ch. Darwin

Sotheby's New York (dealers) (5 December 2013)

- ¹ No letter offering to send CD a plant of *Calliandra* (the genus of stickpea) has been found.
- ² *Calliandra* is a leguminous genus characterised by leaves that are bipinnate with one to many pairs of pinnae; the leaves close up at night.

To Francis Darwin 6 and 7 June [1879]¹

June 6th

My dear F.

I have tried your experiment with Cucurbita seeds buried in Peat.— 10 radicles with upper side of apex cauterised & all soon became splendidly geotropic; & 10 on lower side.² Of the latter 4 slightly geotropic—3 remained quite horizontal & 3 bowed **upwards**, in opposition to Geotropism, & *from* the cauterised side of apex.— This latter case very good— I also cut off rectangularly 1 m.m. of apex of 6 radicles, & they grew much, but did not in 24 h. become at all geotropic.³

I shall try Peas with tips touched above & below with Caustic.⁴

C. D.—

If you can bring home some White Mustard seed, perhaps ours is not right species—⁵

Many thanks for your **most** interesting letter just received (7th)⁶

DAR 211: 54

- ¹ The year is established by CD's mention of experiments using caustic on radicles of peas (see n. 4, below). CD began coating the tips of radicles with lunar caustic (silver nitrate) from July 1878, but most of his experiments using caustic were performed in 1879; CD's notes on the application of caustic are in DAR 209.5.

- ² No letter from Francis mentioning this experiment has been found. *Cucurbita* is the genus of gourds.
- ³ CD evidently refers to radicles lying horizontally and to cutting the tips at an angle. Only when the tip was cut perpendicular to the ground was there no relative geotropic movement in either direction.
- ⁴ CD's notes on experiments applying caustic to peas, dated from 8 June 1879, are in DAR 209.5: 143.
- ⁵ White mustard is *Sinapis alba*; CD recorded an experiment using caustic on the tip of the radicle of *S. alba* on 29 December 1878 (DAR 209.5: 118).
- ⁶ See letter from Francis Darwin, [after 2 June 1879].

To Raphael Meldola 6 June [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
June 6th

My dear M^r: Meldola

Your best plan will be to write to "D^r: Ernst Krause Friedenstrasse. 10. II. Berlin."

He is one of Editors, with whom I have corresponded.—²

You can say that I sent you the Journal & called your attention to the paper; but I cannot take the liberty of advising the supply of clichés.—³ He is a very obliging man. Had you not better ask for permission to translate, saying that source will be fully acknowledged.—

F. Müller's view of the mutual protection was quite new to me⁴

Yours sincerely | Ch Darwin

Imperial College of Science, Medicine and Technology Archives (Essex Naturalists Field Club, Meldola papers)

- ¹ The year is established by the relationship between this letter and the letter from Raphael Meldola, 4 June 1879.
- ² See letter from Raphael Meldola, 4 June 1879 and n. 1. Ernst Krause became sole editor of *Kosmos* in April 1879. The other editors of the first four volumes were Otto Caspari and Gustav Jäger.
- ³ Meldola was planning to publish a translation of Fritz Müller's article on mimicry in butterflies (F. Müller 1879c) in the *Proceedings of the Entomological Society of London* (F. Müller 1879d), and hoped that woodcuts for illustrations to the article could be supplied by the publishers of the original article in *Kosmos* (see letter from Raphael Meldola, 4 June 1879 and n. 2).
- ⁴ In F. Müller 1879c, Müller proposed a new theory of mimicry (later known as Müllerian mimicry), in which he attempted to demonstrate how two species of distasteful butterflies could both benefit by having a similar colour pattern.

From Douglas Fox to W. de W. Abney 7 June 1879

Brighton—
June 7— 1879—

My dear Nephew

I know little about the late D^r: Darwin the grandfather of the present M^r: Darwin except a few anecdotes told to me by my Father D^r: Fox of Derby, who was a physician in Derby at the same time D^r: Darwin lived there—¹ They were very intimate— I never knew him, he having died at the end of the last century or just at the beginning of this— I need hardly say my Father & others always looked up to him as a man of great mental power— He had a great dislike to the unnecessary use of all alcoholic beverages, long (of course) before Teetotalism or Temperance Societies— My Father

told me the D^r was seized suddenly one morning after drinking freely of buttermilk, & died shortly afterwards— My Father made a post-mortem examination of his body, but as far as I remember he did not find any cause from malady to account for his death—

The D^r had a great appetite for cream,—which he took freely— My Mother² had at all times, when he spent an evening at my Father's house to supply him with a pint basin of cream at tea— He had a summer house in his garden in the Full Street in Derby made of an old coach body— I will now give you a few anecdotes which my Father related at times to us as youths.—

Your's most affec^{ty}. | Douglas Fox—

Capt. W. De W. Abney

I state the above, & the following, in answer to your letter to me on the subject asking for any information relative to D^r Darwin³

A gentleman when consulting D^r Darwin was asked how he lived, & especially what he drank, he said he took a certain quantity of wine when he dined, the D^r said what do you drink that for, the patient replied, for the good of my constitution, the D^r said you are a liar, you drink it because you like it—

On another occasion a gentleman consulted D^r Darwin, he asked the patient whether he took any stimulus at dinner, his answer was he and his son drank a certain quantity of stimulus, the D^r then said oh, you are initiating your son in drinking are you— That son died the death of an inveterate drunkard years afterwards—

The patient was so greatly offended at the D^r's remark that he never consulted him again or let him enter his house—

D^r Darwin was called into consultation with a Medical attendant on a man in high position, on arriving at the patient's house the Butler met him, he then at once asked the Butler how his master had lived, & especially what he took as stimulus, he was informed the patient never took any thing except genuine Madeira— When the D^r returned from seeing the patient the Butler asked with much earnestness, what he thought of his master's state, the answer was your master's genuine Madeira has killed him— The Butler doubtless thought if the wine was genuine no harm could arise from it—

The D^r being at Lincoln one day, a large crowd was passing through the Street which caused him to walk into a book-seller's shop & he ask permission to be there till the people had passed, he then asked the book-seller what was going on, who informed him the principal lawyer was being taken to his burial, The D^r who liked a little fun, said bury a lawyer, I never heard of such a thing before, the astonished book-seller said why what could be done otherwise, the D^r replied we never bury a lawyer in our part of the country, we place a lawyer when dead in an arm chair on the stairs opposite a window, & leave him there for the night, and he is always gone in the morning—

The D^r related the following anecdote— An elderly gentleman lived with his sister, one day he said to the sister I shall go on a visit to-morrow to an old friend some miles distant, he accordingly started on the following day on horse-back having his servant on another horse following him, when he had got half way over a common

he stopped suddenly, & called to his servant John, who rode up to him, & said what is the matter, his master said matter, why I am dying, dying Sir his servant said, yes I am dying, for my bowels have come out, his servant said. impossible, his master replied is it impossible, see here I have got them in my hands, on looking; the man said sure enough you have got them in your hands— The gentleman ordered him to help him in alighting from his horse, & he laid his master carefully on the grass on the side of the road, still holding the bowels, and set off full speed to fetch a doctor, who soon arrived— On seeing the patient he said what is matter with you, matter, why I am dying, but what ails you,² why see my bowels have come out, nonsense was the D^r's reply, the poor sufferer then exhibited the bowels in his hands— The D^r then said well they are out sure enough, and I must put them in again—therefore let me unbutton your coat &c— upon doing so out fell a shirt his sister had provided for him, & without telling her brother she had put into the shirt a little present to their friend of a pound of sausages, which had slip^d out of the shirt, & was what he thought were his own bowels—

This was a case proving that any one should not decide upon having any malady by only one symptom let it be ever so marked a one—

One day the D^r was called to Ashbourn, & he travelled in his close carriage, on leaving the house a lady friend sent by him a present to M^{rs} Darwin of a cream cheese, as he was on his road home he thought he would break off a little just to taste it, but that was not enough, he kept tasting it till on arriving at home all the cheese was eaten—⁴ This was another instance of his fondness for cream—

The above are but little matters & probably of no use, but they are all I remember—

DAR 210.14: 29

¹ Douglas Fox's father was Francis Fox, a Derby physician. Erasmus Darwin lived in Derby from late 1783 until shortly before his death in 1802, when he moved to Breadsall Priory, a few miles from the town.

² Fox's mother was Charlotte Fox.

³ Abney had probably been asked to make the request by Leonard Darwin; Abney had earlier supplied Leonard with information for CD's research (see *Correspondence* vol. 22, letter from Leonard Darwin to W. de W. Abney, [before 27 June 1874] and letter from W. de W. Abney to Leonard Darwin, [before 27 June 1874]).

⁴ Ashbourne is a market town about thirteen miles north-west of Derby. The story relates to Erasmus's second wife, Elizabeth Darwin. CD did not use any of these anecdotes in *Erasmus Darwin*.

From Francis Galton 7 June 1879

42 Rutland Gate
June 7/79

My dear Darwin

My sister Emma is with us & I have enquired and learnt about D^r Darwin's second wife (my grandmother), various small facts, which are worth sending.¹ I had myself heard them before, but they had dropped out of memory; now I recollect them.

She was an illegitimate daughter of the then Duke of Portland & bore the family name of Collier, & was strikingly like his legitimate children.² She was brought up in

thoroughly good society under the charge of a lady M^{rs}: Manwaring (?Mainwaring) who lived at Farnham, whom my mother knew, & once visited in company with her mother (my grandmother), & of whom my grandmother always spoke with great affection.³ The best surviving authority is M^{rs}: Harriet Bromley (your *whole* cousin).⁴ Her mother told the story to my mother;⁵ (there were many other corroborations of it).

We have at last an opportunity of getting a photo of her likeness for Emma has heard this very morning from Derby (from M^{rs}: Woollett Wilmot)⁶ that the original study for the Radbarn picture of her, exists among the numerous scraps & sketches made by Wright the painter, and now in possession of his great grand-daughter—It is a rough affair, partly in oil partly in water colour—We have permission to get it photographed & I write by this post to order 2 for myself, one of which you shall have, (besides I have made a bid for the sketch itself.)⁷

The photo of D^r: Darwin ordered long since at S. Kensington, has not even yet reached me—this is the picture that was in the *Loan* Collection, & which belongs to my sister M^{rs}: Wheler.⁸

I have not yet contrived to see T. L. Brunton.⁹

Ever y^{rs}: sincerely | Francis Galton

DAR 210.9: 14

¹ Galton's sister Emma Sophia Galton lived in Leamington Spa, Warwickshire. Elizabeth Darwin was Erasmus Darwin's second wife.

² Charles Colyear, second earl of Portmore, was Elizabeth Darwin's father; her mother has not been conclusively identified, but, for possible candidates, see King-Hele 1999, p. 126. Galton evidently confused Colyear's title with that of the duke of Portland.

³ Susan Mainwaring was Elizabeth Darwin's foster mother. Violetta Galton, daughter of Elizabeth and Erasmus Darwin, was Francis Galton's mother.

⁴ Harriet Bromley may be an error for Henrietta Bromley, who was not a cousin of CD's, but was related to Galton as they shared the same grandmother, Elizabeth Darwin. Henrietta was unmarried.

⁵ Henrietta Bromley's mother was Elizabeth Ann Bromley.

⁶ Emma Elizabeth Wilmot.

⁷ Joseph Wright painted Elizabeth and her son Sacheverell Pole at Radbourne Hall in 1770–1 (see King-Hele 1999, pl. 8a). Wright's great-granddaughter has not been identified. Wright's sketch for the portrait, in gouache, was evidently purchased by Galton. It was among a lot obtained by the National Portrait Gallery from the 'Galton sale in Warwick' in 1954, and subsequently acquired by Derby Museums for their collection, in which it is now held. A plate of the sketch is on p. 264.

⁸ Galton had ordered a photograph of a picture of Erasmus Darwin in the Loan Collection at the South Kensington Museum (now the Victoria and Albert Museum); the picture belonged to Elizabeth Anne Wheler and was probably made by James Rawlinson in 1802 (see Keynes 1994, p. 79).

⁹ Thomas Lauder Brunton had sent CD information regarding Erasmus Darwin's anticipation of a medical discovery (see letter from T. L. Brunton, 26 April [1879]).

From Ernst Krause¹ 7 June 1879

Berlin N.O. Friedenstrasse 10. II.
den 7.6.79.

Hochverehrter Herr!

Ich bitte Sie tausendmal um Entschuldigung, nicht früher über den Fortgang meiner Arbeit berichtet zu haben; ich glaubte nämlich den zweiten Theil bald

schicken zu können; allein unvorhergesehene Hindernisse haben dies bis heute verhindert. Jedenfalls hoffe ich den Schluss der Arbeit bis zum 12. Juni Ihnen senden zu können.²

Dass Ihnen der vorliegende Theil Verlegenheiten macht, ist mir sehr leid, und ich bedaure nun doppelt, Ihre Arbeit nicht abgewartet zu haben. Allein, es wäre wenig daran verloren, wenn Sie diesen Theil einfach bei Seite legen, und allein den Ihrigen geben wollten. Vielleicht liesse sich auch ein solches Arrangement treffen, dass Sie einzelne Theile meiner Darstellung, die Ihnen zutreffend erscheinen, mit Cursivschrift in Ihren Text aufnahmen, resp. als fortlaufende Anmerkung unter dem Text, resp. als Noten gäben. Im Voraus versichere ich Ihnen, dass ich mit jedem Arrangement, welches Sie treffen könnten, völlig einverstanden sein werde.

Was die zweite Abtheilung betrifft, so habe ich doch auf meine alte Idee zurückgegriffen, gleichzeitig eine kurze Darstellung der Entwicklung des Evolutionsgedankens *vor* Dr. Erasmus Darwin zu geben.³ Dieselbe schien mir schon früher unumgänglich nothwendig, um die ausserordentlichen Verdienste Dr. Er. Darwin's um die Weltanschauung in das rechte Licht zu setzen. Das Buch Butler's, welches eine grenzenlos flüchtige und fehlerhafte Arbeit ist, macht eine solche Einführung gradezu unentbehrlich.⁴ Mr. Butler hat Buffon's Ansichten auf das Höchste überschätzt und missverstanden; und da dies in Verbindung mit der Biographie und Würdigung Dr. E. Darwin's geschieht, so konnte ich mir die Mühe nicht sparen, ihn eingehend zu widerlegen. Buffon's Ansichten waren grösstentheils nicht originell, sondern bereits vor ihm Gemeingut einer grossen Partei, seinen Lieblingsausdruck "dégénération" hat Butler ganz missverstanden, wenn er ihn "Descent with modification" übersetzt, und die Idee, dass Buffon's Werk ironisch gemeint sei, ist einfach absurd.⁵ Alles dies und manches Andere musste widerlegt werden, und wird, da ich mich sehr knapp gefasst habe, nicht mehr als c. 30 Druckseiten erfordern. Ich glaube, dass das Ganze dadurch wesentlich gewonnen hat, so dass die Vermehrung des Umfanges um 2–3 Bogen sich verlohnt.

Um den Brief möglichst noch mit dem Abendzuge nach Cöln gehen lassen zu können, schliesse ich eilig, hochverehrter Herr als | Ihr herzlich ergebener | Ernst Krause

DAR 92: B27

¹ For a translation of this letter, see Appendix I.

² See letter to Ernst Krause, 5 June 1879. Krause was working on revisions to his essay on the scientific work of Erasmus Darwin (Krause 1879a).

³ See letter from Ernst Krause, 17 March 1879 and letter to Ernst Krause, 19 March 1879. CD wrote that he thought a discussion of earlier views of evolution should be reserved for a separate essay.

⁴ Samuel Butler's book *Evolution, old and new* (S. Butler 1879) was published in May 1879 (*Publishers' Circular*, 16 May 1879, p. 375).

⁵ For Butler's definition of the term 'dégénération', see S. Butler 1879, pp. 72, 153, et passim. Butler devoted a whole chapter of his book to the ironical character of the work of Georges Louis Leclerc, comte de Buffon (S. Butler 1879, pp. 78–96). For Krause's initial response to S. Butler 1879, see letter from Ernst Krause, 23 May 1879. Krause later published a negative review of S. Butler 1879, in which he elaborated his views on Butler's misunderstanding of Buffon (Krause 1879c).



Study for a portrait of Elizabeth Pole and her son Sacheverell (c. 1771)
by Joseph Wright of Derby, gouache and brown wash on paper.
© 2019 Derby Museums Trust.

To Francis Galton 8 June [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

June 8th

My dear Galton

Many thanks for your note.² I have lately been staying with my sister, Caroline, & she says my memory is in error about the mysterious visitor.³ She believes his name was Brand, & that it was in the time of Colonel Pole; I cannot but doubt about the latter point. My sister feels pretty positive that the gentleman stayed at the house of a neighbour (name forgotten) & never visited M^{rs} Pole or M^{rs} D., but sent her respectful & very friendly messages. Nevertheless she was never at ease till he had left the country.⁴

Thanks for all your help.— I have fixed a photograph of D^r D.⁵

Ever yours | C. Darwin

PS | If you sh^d come across D^r Lauder Brunton see if he has anything more to communicate about D^r D. for I shall soon go to press.—⁶

UCL Library Services, Special Collections (GALTON/3/2/1/28)

¹ The year is established by the relationship between this letter and the letter from Francis Galton, 7 June 1879.

² Letter from Francis Galton, 7 June 1879.

³ The Darwins visited Caroline Sarah Wedgwood and Josiah Wedgwood III at Leith Hill Place, Surrey, from 21 to 26 May 1879 (see 'Journal' (Appendix II)). No letter mentioning a mysterious visitor has been found, but the topic may have been discussed when Galton visited Down on 26 April 1879 (Emma Darwin's diary (DAR 242)).

⁴ The visitor has not been identified. Edward Sacheverel Pole was the first husband of Elizabeth Darwin (1747–1832).

⁵ See letter from Francis Galton, 7 June 1879 and n. 8. On the portrait used for the frontispiece of *Erasmus Darwin*, see the letter from V. H. Darwin, 4 April 1879, n. 3.

⁶ Thomas Lauder Brunton; see letter from Francis Galton, 7 June 1879 and n. 9.

From Francis Galton 9 June 1879

Mem: about D^r Erasmus Darwin's bequests

When D^r Eras: Darwin died, he appears to have left no money to D^r Robert Darwin who was the sole surviving issue of his first marriage with Miss Howard, but to have bequeathed the whole to the issue of his second marriage, with M^{rs} Poole, by whom he left six children all under age, and to two illegitimate daughters M^{rs} H. & Miss P.—¹ This seemed unfair, and to have created some soreness on the part of D^r Robert D.— What may be pleaded in extenuation is this.

D^r Robert D. w^d have the whole of the fortune that was settled on his mother at her marriage who it is believed was wealthy

He had married early in life (æt 24 about) a lady of considerable fortune for those days, viz it is said £ 30,000.² On the other hand, D^r Erasmus Darwin left comparatively very little money & a very large young family. He was able only to

leave £3000 for certain, to each of his six children by his second marriage, plus a share in what he then thought a hopeless debt to him, by a M^{rs} Archdale³ (? who was she); which however was ultimately paid and yielded £3000 more to each. His widow, formerly M^{rs} Poole, had of her own a jointure for her life only, of £800 a year;—together with a house, for a time, and it is supposed that D^r. E. Darwin was enabled to save what he did by living chiefly on this jointure, so that the money bequeathed to the second family may fairly be considered as capitalised from the jointure of their mother, & therefore justly their own.

If it c^d be shewn that D^r. Robert D's fortune through *his* mother was not less than £3000 there would appear to remain no fair cause of complaint so far as the *bequests* are concerned.

As regards the giving no money to him D^r. R. D when he first settled at Shrewsbury;—that is another matter about which I can learn nothing new⁴

F. Galton

June 9/79.

1stly. M^{rs} Eras: Darwin (néé Collier) had a jointure f^m. Col^l. Pole of £800 a year I think it was— Also Radbourne House, till her Son, Sacheverell Pole came of age.

She had 3. Children—Sacheverell—Elizth who married Col^l Bramley & Millicent—who married the Rev^d John Gisborne—⁵

2ndly. D^r. E Darwin lived at Radbourne after his marriage to M^{rs} Pole Edw^d was born there—& Violetta. He then found Radbourne too far off f^r. his medical practice—that he went to live at Derby, & Radbourne was let—till M^r. Pole was of age—⁶

M^{rs} Erasmus Darwin having £800-a year, besides the rent of Radbourne House—whilst her son M^r. Pole was under age—£800-a year, (then going much further in those days,) would be able to pay all Household Expences—& the D^r. could save all his earnings for the 21. years of married life—It would amount to £16,800—besides the Radbourne Let

3rdly. D^r. Eras: Darwin has to educate & place out at Ashbourne, M^{rs} Hadley & Mary Parker—& probably pay a sum to their Mother, M^{rs} Day—⁷

4thly.— D^r. E Darwin lent several thousands, or I think there was an Insurance on M^{rs} Archdall's life—but it was feared, he would never get the money—but if ever paid—that money was left in his will to M^{rs} Era^s Darwin, (his 2nd. Wife) & her Children—& it was rep^d after M^{rs} Archdall's death.

5th. When D^r. E Darwin died—he left by his second marriage 6. Children Edw^d was nearly of age—Sach.^l Francis ab^t. 15—John much younger Violetta 19. Emma 17. Harriet—ab^t. 12.

Each of these children, on attaining the age of 21. was to have £3,000— All the three Son's education was sadly neglected— They were sent to cheap Schools in Derby—& their Father never attended to their education—so they were hardly fitted for any Profession—

If the Archdall money was ever p^d. M^{rs}. Darwin was to have it, & the second family at M^{rs}. Darwin's death—& so they did receive £ 5 to £6,000—each fⁿ. first to last—

Had M^{rs}. Eras^s. Darwin died soon after her Husband—the Pole Jointure wd. have ceased at once—& the second family have the interest of £3,000 each, to educate & maintain themselves—unless M^{rs}. Archdall's money cd. be paid which was very uncertain—

Old M^r. Darwin of Elston—left his Property—some to his Heir William Darwin—& some to the *issue* of his (M^r. Darwin's) youngest Brother D^r. Eras. Darwin—⁸

Did Issue mean, D^r. Eras Darwin's children—or children & grandchildren— This much excited Emma Darwin—as D^r. Rob^{ert}. had 6. children—& Violetta Galton also 6— So there was an amicable lawsuit—as 12. extra claimants must much lessen the sum received—The Chancellor decided against the grandchildren⁹

M^{rs}. Darwin had only 2 children living at her death Violetta & Francis-Sacheverell

Memorandum

DAR 210.14: 30

CD ANNOTATION

End of memorandum: '(I must alter about income & say perhaps he made more in interest) | Strike not justly'¹⁰ *pencil, square brackets in ms*

¹ Robert Waring Darwin (1766–1848) was the sole surviving child of Erasmus Darwin and his first wife, Mary Howard. Elizabeth Darwin's first husband was Edward Sacheverel Pole; her six children by Erasmus Darwin, still living at the time of his death, were Edward, Violetta (later Violetta Galton, 1783–1874), Emma Georgiana Elizabeth, Francis Sacheverel, John (1787–1818), and Harriot (later Harriot Maling). Susanna Hadley and Mary Parker Jr were the illegitimate daughters.

² Robert Waring Darwin married Susannah Wedgwood (1765–1817) in 1796. Her father, Josiah Wedgwood I, had a substantial fortune (*ODNB*).

³ Mrs Archdale or Archdall has not been identified.

⁴ According to CD's introductory sketch, Robert Waring Darwin received £20 from Erasmus when he set up practice in Shrewsbury (*Erasmus Darwin*, p. 85).

⁵ The Poles had four children: Sacheverell, Elizabeth Ann, Millicent, and German (German died in infancy). Elizabeth Ann married Henry Bromley; Millicent married John Gisborne, who, although noted for his piety, was not a clergyman (*ODNB*).

⁶ Radbourne Hall, the estate of the Pole family, a few miles west of Derby, was rented out by the Darwins for most of the time until Elizabeth Darwin's son Sacheverell Pole reached his majority at 21 (King-Hele 1999, pp. 177–91).

⁷ Erasmus bought a house in Ashbourne, Derbyshire, for his daughters Susanna and Mary Parker to set up as a school (see King-Hele 1999, pp. 281–4). Their mother, Mary Parker Sr, who later married Joseph Day, had been employed by Erasmus as a nursemaid for Robert Waring Darwin (see King-Hele 1999, pp. 106–7).

⁸ Robert Waring Darwin (1724–1816), who died unmarried, was the elder brother of William Brown Darwin, who then inherited Elston Hall, and of Erasmus Darwin.

- ⁹ Emma Georgiana Elizabeth Darwin never married. CD's father, Robert Waring Darwin, had five other children: Marianne Parker, Caroline Sarah Wedgwood, Susan Elizabeth Darwin, Erasmus Alvey Darwin, and Catherine Langton. Violetta Galton's eight children were Elizabeth Anne Wheler, Lucy Harriot Moilliet, Millicent Adele Bunbury, Agnes Jane Galton, Darwin Galton, Erasmus Galton, Violetta Galton, and Francis Galton; Agnes Jane and Violetta died in infancy.
- ¹⁰ In the published version of the life of his grandfather, CD did not discuss Erasmus Darwin's legacies to any of his children; CD mentioned that Erasmus had given his son Robert Waring Darwin £20 when he first set up his medical practice in Shrewsbury and that aside from a similar sum given him by his uncle, John Darwin (1730–1805), it was the sole pecuniary aid that Robert ever received (*Erasmus Darwin*, p. 85).

To Ernst Krause 9 June [1879]¹

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

June 9th

My dear Sir

I am glad to hear of your short historical discussion on evolution, & I think it will be an improvement. I hope that you will not expend much powder & shot on M^r Butler, for he really is not worthy of it. His work is merely ephemeral.—² I send a Review, which you may like to see & then burn.—³

Whenever your M.S is complete, you had better send it direct to M^r Dallas, Geological Soc^y Burlington House London.—⁴

From all that you so *very kindly* say, I daresay I shall see some way out of my perplexity.⁵

My dear Sir | Yours sincerely | Ch. Darwin

The Huntington Library (HM 36187)

- ¹ The year is established by the relationship between this letter and the letter from Ernst Krause, 7 June 1879.
- ² See letter from Ernst Krause, 7 June 1879 and nn. 4 and 5. CD refers to Samuel Butler and S. Butler 1879 (*Evolution, old and new*).
- ³ CD sent Krause an unsigned review of S. Butler 1879 from the *Saturday Review* (see letter from Ernst Krause, 13 June 1879). It was later revealed to have been written by Frederick Pollock ([Pollock] 1879a; for the attribution see *Correspondence* vol. 28, second letter from R. B. Litchfield, 1 February 1880). Several reviews of S. Butler 1879 had appeared by this time (see S. Butler 1882, p. 385, and Pauly 1982, pp. 167–9). Grant Allen had written a review in the *Academy* (G. Allen 1879c); one appeared in the *Examiner* (Anon. 1879), which Butler later assumed was also by Allen (see S. Butler 1882, p. 386). These reviews were all unfavourable.
- ⁴ William Sweetland Dallas was translating Krause's essay on Erasmus Darwin; see letter from W. S. Dallas, 4 June 1879.
- ⁵ CD was worried that some of his biographical sketch might duplicate material used by Krause in his revised essay for *Erasmus Darwin* (see letter to Ernst Krause, 5 June 1879).

From B. J. Sullivan 9 June 1879

Bournemouth

June 9/79

My dear Darwin

I send you this month's S.A. mag because I think you will like to see the Bishops account, at the Meeting, of the Fuegians.¹ It seems strange to read of one man

having a *dairy* and selling *butter*, to passing vessels. I hope you and yours have got through this cold winter better than we did. My wife and I were laid up for nearly all Jan^y and February with bad colds & coughs, and since then at one time our whole party, of four, were unable to walk.² I have had occasional pain & weakness in right leg since last summer—and a Lady near us sent in one day to say, her husband had died suddenly and asking me to come to her. It was a trying scene, and the next morning my leg had given way again—and I was laid up for a fortnight; about the same time my wife was forbidden to walk for six weeks, my eldest daughter has till lately been four months unable to walk through a bad knee, & the other again hurt the foot, that through an accident in Northerland three years since, put her fourteen months on crutches: so we have been a lame party: though now I trust all right again.³

You will perhaps have heard that when M: Langtons grand children had Hooping cough, though slightly, he had a slight attack of it also.⁴ They are all right now. I was glad to hear from him of Miss Wedgwood being quite well again.⁵ My youngest son's wife, at Newcastle, gave us our first grand^{son}. three months since.⁶ My eldest still at Cowes in Command of the gun boat.⁷ I suppose he must be promoted soon, as he is only about six from the top of the list of those eligible for promotion; & though he was the first of all the senior 150 to get Greenwich honours & which he did in six subjects, they have not allowed it to give the least advantage for promotion. and as he is now 35. and 13 $\frac{1}{2}$ years a Lieut he can never rise to the higher ranks, or look forward to any thing but one day being a *Retired Captain*.⁸

I have not heard from any of our old party for some months. Mellersh⁹ was very unwell and going for a change to Brighton. I hope to see Usborne¹⁰ in July—as my wife and I hope to go to Cornwall, after some visits in Devon; & shall be some days at Plymouth.

I hear of you all now & then from M: Langton. My wife joins me in very kind regards to M^r: Darwin & yourself and all your party.

I hope your dear little grandchild¹¹ that I saw is flourishing.

Believe me dear Darwin | yours most sincerely | B. J. Sullivan

DAR 177: 309

¹ The address of Waite Hockin Stirling, bishop of the Falklands, was printed in the *South American Missionary Magazine*, 2 June 1879, pp. 125–36. For CD's interest in cattle-raising in Tierra del Fuego, see *Correspondence* vol. 26, letter to B. J. Sullivan, 5 November [1878].

² The winter of 1878–9 was one of the coldest on record for England (Manley 1974, p. 396); Emma Darwin's diary for this period records long spells of below-freezing temperatures (DAR 242). Sullivan's wife was Sophia Sullivan.

³ Sullivan's eldest daughter was Sophia Henrietta Sullivan; his other unmarried daughter was Frances Emma Georgina Sullivan.

⁴ Charles Langton also lived in Bournemouth. His grandchildren were Mildred, Stephen, Mary, and Diana Langton.

⁵ Elizabeth Wedgwood, Emma Darwin's sister, had been ill from around February until April 1879 (CD's 'Journal' (Appendix II); letter from Emma Darwin to H. E. Litchfield, [17 March 1879] (DAR 219.9: 193)).

- ⁶ Henry Norton Sullivan and his wife Grace Mary Sullivan had their first son, Norton Allen Sullivan, in March 1879 (*England, select births and christenings, 1538–1975* (Ancestry.com, accessed 23 November 2017)).
- ⁷ James Young Falkland Sullivan served on HMS *Britomart* from October 1876 until November 1879 (National Archives, ADM 196/15/439).
- ⁸ J. Y. F. Sullivan served as lieutenant until 1889 and retired with the rank of commander in that year (National Archives, ADM 196/15/439).
- ⁹ Arthur Mellersh.
- ¹⁰ Alexander Burns Osborne.
- ¹¹ Bernard Darwin.

To John Fiske 10 June 1879

*Down, | Beckenham, Kent. | (Railway Station | **Orpington. S.E.R.**)*

June 10th 1879

My dear M^r Fiske

Would it suit you best to come here on the 18th. either to luncheon or to dinner & for a bed, returning after breakfast next morning; for we are not likely to be in London for some time.¹ Pray do whichever suits your arrangements best.— If you come for luncheon you must leave Charing Cross by the 11^o 25' Train; if for dinner by the 4^o 12' Train.— If we can (but our house will be very full on most days for the next month) we will send to Orpington Station to meet you: but if we cannot send a carriage you must take a fly—distance 4 miles.—

I hope what I propose will be convenient & that we may have the pleasure of seeing you here

I remain | Yours very faithfully | Ch. Darwin

I have not been very well of late & am up to but small exertion of any kind.—

An artist, M^r Richmond is coming here on the evening of the 18th, as he is making a portrait of me, but he is a pleasant man & I do not think that you will dislike meeting him.—²

The Huntington Library (HM 8265)

¹ Fiske visited on 18 June 1879; he recorded a short account of the visit (J. S. Clark 1917, 2: 133–4). The Darwins went to London on 26 June 1879 (Emma Darwin's diary (DAR 242)). Fiske had arrived in England from America on 4 June 1879 in order to deliver a series of public lectures at University College, London (J. S. Clark 1917, 2: 115, 126).

² The portrait had been commissioned from William Blake Richmond by the Cambridge Philosophical Society to commemorate the honorary doctorate of laws (LLD) awarded to CD by the University of Cambridge in 1877; it showed CD in his red doctor's robes (for more on the portrait, see Browne 2002, p. 451). See frontispiece.

To Francis Galton 10 June [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

June 10th

My dear Galton

Very many thanks for your notes. I am uncommonly glad to hear of any & every justification of our grandfather.²

I never heard a word or saw any expression on my Father's countenance, showing that he expected his father to leave him a farthing of his own earnings; but he certainly thought that he had not been treated fairly about his *share* of his mother's fortune.³ Why that was not settled, passes my comprehension, considering that M^r. Howard was a solicitor.⁴ But the subject is not worth another thought & I shall make no allusion to it in my short notice.— It is very surprising that our grandfather, considering how hard he worked, did not make more money.— I have found one memorandum in my Fathers handwriting of his Father having lost at least 1500[£] in some iron-works.⁵ Perhaps he made other bad speculations.—

Ever yours very truly | Ch. Darwin

UCL Library Services, Special Collections (GALTON/1/1/9/5/7/27)

¹ The year is established by the relationship between this letter and the memorandum from Francis Galton, 9 June 1879.

² Galton had given reasons why Erasmus Darwin had not bequeathed anything to CD's father, Robert Waring Darwin (see memorandum from Francis Galton, 9 June 1879).

³ Robert Waring Darwin's mother was Mary Darwin.

⁴ Mary Darwin's father was Charles Howard. At her marriage, Howard settled £1000 on Mary. Mary predeceased her father; Howard left £1000 in trust to Erasmus's sons (King-Hele 1999, pp. 31, 104–5).

⁵ Erasmus had borrowed some money from Howard to invest in the Wychnor Ironworks; Howard added it to the sum owed to him by Erasmus in his legacy to Erasmus's sons (King-Hele 1999, pp. 52, 105). Erasmus's loss when the ironworks were sold was £1500, according to Robert Waring Darwin (*ibid.*, pp. 108, 177).

To B. J. Sullivan 10 June 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

June 10th 79

My dear Sullivan.

The progress of the Fuegians is wonderful, & had it not occurred would have been to me quite incredible. Many thanks for the magazine.—¹

You have all been in a lamentable state & I am very sorry to hear it; though you now seem all fairly well again.—² I have not been very well of late & my scientific work tires me more than it used to do; but I have nothing else to do, & whether one is worn out a year or two sooner or later signifies but little. Farewell my old friend—I have had to answer an abominable number of letters, so will say no more, except to beg you to remember us very kindly to Lady Sullivan.³

My dear Sullivan | Yours very truly | Ch. Darwin

Sullivan family (private collection)

¹ With his letter of 9 June 1879, Sullivan had sent CD a copy of the *South American Missionary Magazine* that included an account of developments at the mission station in Ushuaia, Tierra del Fuego.

² See letter from B. J. Sullivan, 9 June 1879.

³ Sullivan's wife was Sophia Sullivan.

From W. T. Thiselton-Dyer 10 June 1879

Royal Gardens Kew
June 10. 79

Dear M^r Darwin

We are looking up plants for you and I will write again about them.¹

When you were interested in sleep did you examine *Crotalaria*. It is a monophyllous Leguminous plant which turns its leaves *up* against the stem.² The under side of the leaves is covered with bloom and the aspect of the sleeping plants is singular—something like this.

I also venture to send you a note extracted from the Gardeners' Chronicle about the meal on Auriculas which strikes me as curious but which doubtless you know all about.³

We all went last night to hear M^r Ball at the Geographical Society on the Alpine Flora.⁴ The gist of his story was that the Alpine Flora is the direct and continuous descendant of that which existed on the Palæozoic alps when the vallies were filled with an atmosphere too highly charged with Carbonic acid to allow of any thing



AL incomplete

DAR 209.10: 85

CD ANNOTATIONS

2.1 When ... *Crotalaria*.] *scored red crayon*; 'What Tribe' *red crayon*; 'Tribe II Genisteeae comes before Lupinus' *ink*; 'Put after Lupinus'⁵ *pencil*

4.2 The ... thing 4.6] *scored red crayon*; 'Yes Like Sir W. Thomson'⁶ *red crayon*
End of letter: 'I agree to all your many criticisms— It is a pity— it is enough to make GD⁷ a laughing stock [to]' *blue crayon*

¹ See letter to W. T. Thiselton-Dyer, 5 June 1879 and n. 2.

² *Crotalaria* is the genus of rattlebox.

³ The note, reporting a preliminary chemical analysis of the meal suggesting it was probably an alkaloid, was in a printed extract from *Gardeners' Chronicle*, 31 May 1879, p. 700, and is in DAR 68: 5. The leaves and flowers of many varieties of auricula (*Primula auricula*) and other species of *Primula* have a coating of meal or farina produced by glandular hairs that secrete an opaque waxy substance composed primarily of flavones.

⁴ John Ball's paper 'On the origin of the flora of the European Alps' was published in *Proceedings of the Royal Geographical Society and Monthly Record of Geography* (Ball 1879).

⁵ In *Genera plantarum* (Bentham and Hooker 1862–83, 1: 434–600), the natural order Leguminosae was divided into suborders and tribes. Genisteeae was tribe II of the suborder Papilionaceae (*ibid.*, p. 439–42). In CD's list of plants that sleep, *Crotalaria* appears before *Lupinus* under the heading 'Leguminosae Tribe II' (*Movement in plants*, p. 320). *Lupinus* is the genus of lupine.

⁶ CD's annotation is a note for his reply (see letter to W. T. Thiselton-Dyer, 18 June 1879 and n. 5). William Thomson's calculations of the age of the earth, based on estimates of heat loss, were at odds with those of geologists, based on estimates of gradual erosion and deposition; Thomson had criticised CD's estimate in *Origin*, pp. 285–7, of 300 million years for the denudation of the Weald (see W. Thomson 1862, pp. 391–2).

⁷ GD: geographical distribution.

From F. B. White 11 June 1879

Memorandum. | From | *F. Buchanan White, M.D., F.L.S.,* | *Editor of the Scottish Naturalist,*
A Magazine of Scottish Natural History | *Annat Lodge, Perth,*

June 11 1879

Dear Sir

I do not know whether you ever give “testimonials” but, being at present a candidate for the chair of Zoology in Owens College, & having in remembrance yr very kind letter regarding my paper on St Helena, I venture to ask you for one.¹

Pray pardon me for troubling you & | Believe me to be | Yrs very truly
F Buchanan White.

P.S. I take this opportunity of sending you a copy of a paper of which I have lately received copies.²

DAR 202: 129

¹ Owens College, Manchester, founded in 1851, became a science-based university on the German model during the 1860s. In 1877, the college council decided to divide the chair in natural history and create separate departments of zoology and botany; the first professor of zoology, appointed in 1879, was Arthur Milnes Marshall (*ODNB*). CD had praised White’s paper ‘Contributions to a knowledge of the hemipterous fauna of St. Helena, and speculations on its origin’ (F. B. White 1878; see *Correspondence* vol. 26, letter to F. B. White, 23 September [1878]).

² White sent a copy of the July 1879 issue of *Scottish Naturalist*; it contained the first part of his article ‘The mountain Lepidoptera of Britain: their distribution and its causes’ (F. B. White 1879). CD’s copy is in the Darwin Pamphlet Collection–CUL.

To F. B. White [after 11 June 1879]¹

Dear Sir—

I have a strong opinion that no man ought to give a Testimonial, without a full knowledge of the acquirements of the person whom he recommends. Now I do not at all know how far you are acquainted with the intern & extern & of the Vertebrata, or which it is perhaps still more important of the lower invertebrate classes, with the exception of Insects.²

Therefore, though I think very highly of your paper on St Helena,³ & I do not doubt about the value of your Entomology work, I do not feel justified in sending you a testimony, though I I can truly say that you have my good wishes for your success

Pray excuse me & believe me | Yours faithfully | C. D.

ADraftS

DAR 202: 129v

¹ The date is established by the relationship between this letter and the letter from F. B. White, 11 June 1879.

² See letter from F. B. White, 11 June 1879 and n. 1.

³ F. B. White 1878.

From Paul Aussant-Carà¹ 13 June 1879

Pise (Italie)— | Lungarno Regio—5—3° piano.
13 Juin 1879.

Monsieur

C'est peut-être une grande témérité de ma part d'adresser au plus illustre des naturalistes modernes la demande qui est le but de cette lettre, mais j'ose espérer que la haute admiration que je ressens pour lui, et la vénération profonde en laquelle je tiens ses ouvrages me serviront d'excuse, car ma hardiesse a du moins l'avantage d'être mue par un des plus nobles sentiments de l'homme, celui de l'admiration pour le génie.

Depuis longtemps, bien que mes études ne soient pas précisément ceux des sciences naturelles, j'ai lu vos célèbres ouvrages, et, j'ose le dire, j'en ai été fanatisé.

"L'Origine des Espèces" et la "Descendance de l'homme" ainsi que "l'expression des émotions chez l'homme et les animaux" qui est en même temps un ouvrage d'un grand naturaliste et d'un profond psychologue; ont surtout frappé mon imagination;² ces livres qui selon l'opinion des naturalistes plus compétents ont produit la grande révolution des sciences naturelles dans la seconde moitié de notre siècle, sont destinés à former la base de la science de l'avenir.

Depuis longtemps j'avais le désir de connaître les traits de l'homme illustre qui honore le siècle, et je cherchais vainement le moyen d'avoir son portrait. Enfin, malgré que je sache que vous vivez complètement retiré pour vos chères études, et que votre santé met en appréhension le monde savant qui attend encore des travaux de votre génie, malgré cela dis-je, je surmonte ma timidité en vous priant de me faire l'honneur de m'envoyer votre portrait avec votre signature.

Probablement vous me trouverez bien hardi de vous faire une semblable demande, mais quel que soit la décision que vous prendrez à mon égard, je vous prie vivement de vouloir accepter mes sincères excuses, et de bien vouloir me pardonner un acte au quel j'ai été entraîné par ma vénération envers vous.

Agréé, illustre savant, mes sentiments de haute considération et de profond respect. | Paul Aussant-Carà | Etudiant en Physique et Mathématique à l'Université de Pise. | Adresse= "Lungarno Regio n° 5—"

DAR 159: 128

¹ For a translation of this letter, see Appendix I.

² Aussant-Carà refers to the French translations of *Origin*, *Descent*, and *Expression* (Moulinié trans. 1873, Moulinié trans. 1872, and Pozzi and Benoît trans. 1877).

From Ernst Krause¹ 13 June 1879

Berlin N.O. Friedenstrasse 10. II.
den 13.6.79.

Hochverehrter Herr!

Gerade, als gestern Ihre freundlichen Zeilen eintrafen, war ich so weit, den Schluss des Manuscriptes einpacken zu können, und habe ich denselben, Ihrem

Wunsche gemäss, direct an Herrn Dallas gesendet.² Ich danke Ihnen herzlichst für die Mittheilung der Kritik der "Saturday Review", die ich mit Vergnügen gelassen habe, und mir sehr angemessen erscheint; ich werde dieselbe an Herrn Dr. Hermann Müller weitergeben, um denselben von seinem Butler-Enthusiasmus zu curiren.³ Er ist bereits wieder auf seinem Beobachtungsfelde in den Alpen. Was mich betrifft, so habe ich Butlers Angriffe gegen die Selections-Theorie vollkommen unberücksichtigt gelassen, weil sie mir *lächerlich* erscheinen; nur hielt ich es für nöthig, mit einigen Zeilen seine Phantasien, dass Buffon ironisch geschrieben habe, und dass Göthe erst durch die Zoonomia auf verwandte Ideen geführt worden sei, abzuweisen.⁴

In Betreff der Anordnung bin ich längst zu der Überzeugung gekommen, dass es das Beste sein wird, wenn meine Lebensbeschreibung von Dr Erasmus Darwin *ganz* wegbleibt. Sollten darin einige kleine Parteen sein, die Ihnen mittheilenswerth erscheinen, so wäre ich Ihnen sehr dankbar, wenn Sie dieselben als Citat Ihrem Texte an geeigneter Stelle einverleiben wollten. Es scheint mir ferner das Richtige, die deutsche Ausgabe der englischen möglichst conform zu halten und höchstens am Ende einige erläuternde Noten hinzuzufügen, die Ihnen für englische Leser vielleicht überflüssig erscheinen.⁵

Andererseits könnten einzelne Abschnitte meiner Lebensbeschreibung, falls Sie dieselben nicht schon berücksichtigt haben, z.B. der Passus über die Entstehung des Botanic Garden einfach in den Abschnitt über die poetischen und wissenschaftlichen Arbeiten verpflanzt werden.⁶ Dasselbe könnte mit der Kritik des Bot. Gard. geschehen. Eine andre Frage wäre es, ob es sich nicht vielleicht empfehlen möchte, meine Einleitung mit einigen kleinen textuellen Aenderungen, und ebenso das Capitel über die humanitären Verdienste für sich bestehen zu lassen.⁷ Die Beibehaltung der Einleitung würde mir darum nützlich erscheinen, weil darin die Nothwendigkeit einer zuverlässigeren Biographie, und warum eine solche für unsere Zeit von Interesse ist, auseinandergesetzt wird. Das Ganze könnte dann ganz passend, folgende, wie mir scheint, die Hauptschwierigkeiten lösende Anordnung erhalten:

I. 1, Ihre Präliminar-Notiz.

II. 1, Die Einleitung, als integrierender Theil des Essay's gedacht.

?2. Über Dr Darwins ärztliche/ und humanitäre Thätigkeit.

3. Geschichtlicher Abriss der Evol. Theorie vor Dr. Darwin's Zeit.

4. Analyse seiner poetischen und wissenschaftl. Werke.

Ich wäre sehr froh, wenn Sie die kleinen Aenderungen, die diese Anordnung erheischen würde, an meinem Manuscript resp. Herrn Dallas' Uebersetzung vornehmen wollten. Ich war leider anfangs in dem Wahne, dass Sie nur einige Zusätze und Verbesserungen zu dem Seward'schen Buche machen wollten, desto mehr freue ich mich, dass Sie statt dessen lieber ein ganzes Lebensbild gegeben haben, und ich werde nun meine Compilation unter keinen Umständen in die deutsche Ausgabe nehmen.⁸

Sehr dankbar wäre ich Ihnen, wenn Sie mir später von Ihrem Herrn Verleger, die Aushängebogen gleich nach der Fertigstellung im Reindruck senden lassen wollten.

Auch möchte ich Sie bitten, mir zur Zeit freundlich mittheilen zu wollen, an welche Firma sich Herr Alberts wegen des Lichtdruck's-Portraits wenden soll, damit er diese Angelegenheit, ohne Ihnen Umstände zu machen, dort erledigen kann.⁹ Jedenfalls scheint mir, dass es in der Ordnung ist, wenn *er* die Herstellungskosten trägt.

Ich wünschte sehr, Ihnen die Mühen abnehmen zu können, welche die Inscenirung des Ganzen Ihnen noch verursachen wird, aber andererseits scheint mir doch wieder das Beste, wenn Sie die nöthigen Umstellungen vielleicht unter Ihren Augen von einem Dritten machen liessen. Es ist mir eine sehr freudige Aussicht, Ihre ersten Bogen bald lesen zu können.

Inzwischen zeichne ich, hochverehrter Herr, | Mit dem herzlichsten Danke
Ihr treulich ergebenster | Ernst Krause

DAR 92: B29–30

CD ANNOTATION

4.13 I. 1, ... Werke. 4.17] *double scored red crayon*

¹ For a translation of this letter, see Appendix I.

² See letter to Ernst Krause, 9 June [1879] and n. 4. William Sweetland Dallas was translating Krause's essay on Erasmus Darwin.

³ See letter to Ernst Krause, 9 June [1879] and n. 3. CD had sent a copy of [Pollock] 1879a, which was highly critical of Samuel Butler's *Evolution old and new* (S. Butler 1879).

⁴ See letter from Ernst Krause, 7 June 1879 and n. 5. Georges Louis Leclerc, comte de Buffon, and Johann Wolfgang von Goethe were contemporaries of Erasmus Darwin, the author of *Zoonomia* (E. Darwin 1794–6). Goethe had read German translations of *Zoonomia* and the *Botanic garden* (E. Darwin 1789–91), and had written to a friend that he had been helped on his scientific paths by Darwin (see King-Hele 1986, pp. 170–1). In *Erasmus Darwin*, pp. 136–7, Krause attributed similarities between Darwin's and Goethe's work to their both having studied Buffon and Linnaeus (Carl von Linné).

⁵ In the German translation of *Erasmus Darwin*, Krause reinstated a longer section on precursors of Erasmus Darwin and added over one hundred pages of notes (see Krause 1880, pp. 78–124, 180–286).

⁶ The section discussing how Erasmus Darwin came to write the *Botanic garden* is in CD's biographical sketch (*Erasmus Darwin*, pp. 89–92).

⁷ The published version of *Erasmus Darwin* contained a short introduction to the part by Krause, but this was not featured as a separate section (*ibid.*, pp. 131–7); in the German version it became the first section of three in Krause's portion of the book (Krause 1880, pp. 75–8).

⁸ Krause put most of his additional material on Anna Seward and Seward 1804 into his lengthy note section in the German version (Krause 1880, pp. 183ff.).

⁹ Karl Alberts was Krause's publisher.

To John Fiske 14 June [1879]¹

From Mr. C. Darwin, Down, Beckenham.

I will send to Orpington St. to meet the Train leaving Charing X at 5° 2' on the 18th.²
C.D

Jun 14th

ApcS

The Huntington Library (HM 8266)

¹ The year is established by the relationship between this letter and the letter to John Fiske, 10 June 1879.

² See letter to John Fiske, 10 June 1879 and n. 1.

From Thomas Comber 15 June 1879

Redclyffe, | *Newton-in-the-Willows.*

15 June 1879

My dear Sir

I do not know whether your attention has ever been drawn to a gyno-dioecious condition of *Plantago lanceolata*—¹ If not, the few specimens I send you herewith may be of interest, as showing what I meet with in this neighbourhood— There is a pretty regular gradation, on different plants, from the state of the specimen marked H, in which the stamens are extruded, almost as in the normal condition but are apparently barren, for they seem to me to contain no pollen—to the state of specimens marked C. & D. in which the anthers are only just extruded from the flower— next to that of specimen marked B., in which they are not extruded at all— & lastly to that of specimen marked A, in which, so far as I can make out, there are no stamens, at any rate in some of the flowers; but the corolla is 8=cleft— In the rough sketch enclosed, I have endeavoured to represent the corolla in the dissection contained in the tissue paper—

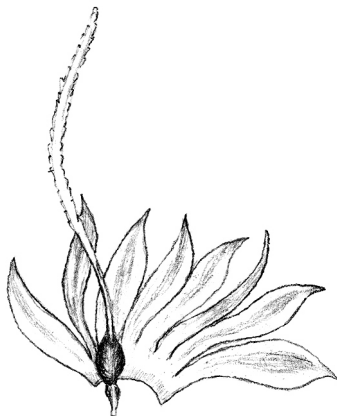
You will see that in the two last states, A & B, the styles are longer & more persistent than is usual, not withering, as they ordinarily do in the normal form, on the extrusion of the stamens—

The plants from which the specimens have been gathered have all their spikes alike, and I find no plants producing at the same time normal and functionally ♀ flowers. The plants producing specimens A. & C. are isolated, in a good position for observation; and I shall watch whether, at a different stage of growth, they produce flowers differing from those they now bear: and, if they ripen seed, I will try to secure a supply for sowing—

Believe me | yours truly | Thomas Comber

Charles Darwin Esq^r | Down | Beckenham | Kent

[Enclosure 1]



Corolla of A

[Enclosure 2]



[Enclosure 3]



DAR 161: 215

CD ANNOTATION

On cover: 'Plantago' pencil

¹ *Plantago lanceolata* is ribwort plantain. Species that are gynodioecious have hermaphrodite and pistillate (female) flowers on separate plants. In 1878, CD had received specimens of several forms of *P. lanceolata* from Friedrich Ludwig (see *Correspondence* vol. 26, letter to Friedrich Ludwig, 29 May 1878). CD added information from Ludwig on the graduated forms of *P. lanceolata* to *Forms of flowers* 2d ed., p. ix; he did not mention Comber.

To Francis Galton 15 [June 1879]¹

From Mr. C. Darwin, Down, Beckenham.

One line to thank you for Photograph.² My little Biography has turned out, alas, very dull & has disappointed me much.³ May your tour turn out pleasant under a better sky than our detestable one.—⁴

C.D.

15th—

ApcS

UCL Library Services, Special Collections (GALTON/3/3/4/3)

¹ The month and year are established by the relationship between this letter and the letter from Francis Galton, 7 June 1879.

² Galton had ordered a photograph of a picture of Elizabeth Darwin (1747–1832) (see letter from Francis Galton, 7 June 1879 and n. 7).

³ CD had written a biographical sketch for the English translation of Ernst Krause's essay on Erasmus Darwin (Krause 1879a; *Erasmus Darwin*).

⁴ Emma Darwin's diary (DAR 242) recorded rain on 15 June 1879 and for two other days in that week.

From Hermann Otto 15 June 1879

Göttingen,
15. June 1879.

Sir,

My joy at the beautiful present of

“The Descent of Man”

and my zeal for penetrating in it are so great that I almost had forgotten there-at to thank my benevolent author;¹ you will therefore kindly excuse my negligence and not take off me your high favour by which I am so inexpressibly happy.

With glad heart I thank you for your exceeding kindness to which I shall also show myself thankful and worthy for my all life.

I remain, Sir, | in all duty | your most obedient servant | Hermann Otto,
stud. rer. nat.

DAR 173: 41

¹ No other correspondence with Otto has been found. CD sent a copy of *Descent*.

From W. S. Dallas 16 June 1879

Geological Society, | Burlington House, W.
16 June 1879

My dear Mr. Darwin

I have just got the rest of D^r Krause's MS., so he was not so long after his promised time after all.—¹ I will get to work at it as soon & as hard as I can, but for a few days I have other things that must be attended to.— He refers to many quotations from

your grandfather's works which must be taken from the originals & the "Zoonomia" I can't get either at the Linnean or the Royal— They have it at the Royal Institution, but I am not a member, & I don't know whether they let books go out.—² However, I suppose it can be managed by some means or other.—

Believe me | Yours very truly | W S Dallas

DAR 99: 109

¹ Ernst Krause had sent the second half of his revised manuscript on Erasmus Darwin directly to Dallas (see letter from Ernst Krause, 13 June 1879). Dallas was translating it for the English edition, *Erasmus Darwin*.

² Dallas had evidently looked for a copy of *Zoonomia* (E. Darwin 1794–6) in the libraries of the Linnean Society, the Royal Society of London, and the Royal Institution of Great Britain.

To Francis Darwin 16 June [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
June 16th

My dear old F.

I like very much hearing what you & the others are doing.— I suppose Sachs w^d not care to hear but I have given my reasons in the Climbing book for not believing that the twisting of the stem has anything to do with the circumnutation: I tried several experiments on this head. Tendrils circumnutate beautifully, & do not often become twisted.—²

It is a great bore that Porliera does not act; yet I can see no reason to doubt your observations last year.³

I wonder whether "helic" & "aphelic" are classically correct.⁴ I despatched Photos of self in Bessy's letter.—⁵

They are going to send me from Kew aerial heliotropic roots.⁶

My work has been almost exclusively writing, & I am now finishing Summary on Sleeping Plants, which has been excessively difficult, but the result is, I think, satisfactory & makes a good essay.⁷

I have done very little experimentally, but have tried a vast number of radicles of Beans, left to grow perpendicularly down, half with tips touched with caustic, & the result is that these grow wildly in all sorts of directions; but there is, alas, nothing definite about Sachs' curvature.—⁸

I have begun cauterizing tips of cotyledons of Phalaris & I **think**(?) this acts in same manner as black caps, ie. stops basal part bending to light.⁹ I have been much below par of late, & work comes very hard, & sitting for that accursed picture still harder.¹⁰

Abbadubba¹¹ is more charming than ever, but his soul is so full of drums, trumpets & soldiers that he has no time to look at me or say a word to me, but it is pleasure enough to look at his earnest sweet little face

your affectionate Father | C. Darwin

DAR 211: 55

- ¹ The year is established by the reference to experiments cauterising tips of cotyledons of *Phalaris* and by the reference to the picture (see nn. 9 and 10, below).
- ² In *Climbing plants*, p. 6, CD had discussed the cause of axial twisting of the stem, concluding that twisting resulted from inequalities in the support or lack of support, and that the function of twisting was to strengthen the stem. Julius Sachs had explained revolving nutation as a result of unequal growth around the axis of the stem (Sachs 1874, p. 827).
- ³ No letter describing Francis's recent work on *Portiera* (a synonym of *Portiera*) has been found, but in his letter of 29 May 1879, Francis mentioned that the condition of some of the specimens at Würzburg was not good, but that he planned to investigate the leafstalk of two plants in pots. On Francis's observations on *Portiera* in 1878, see the letter from Francis Darwin, 29 May 1879, n. 3.
- ⁴ CD was evidently considering using the terms 'helic' and 'aphelic' to denote movement towards and away from the sun, but in *Movement in plants* he used 'heliotropic' and 'apheliotropic'.
- ⁵ The letter from Elizabeth Darwin to Francis has not been found; she left for a trip to Switzerland with a relation by marriage, Mary Elizabeth Atkin, the next day (Emma Darwin's diary (DAR 242)). Francis had probably asked for photographs of CD for some of his Würzburg colleagues.
- ⁶ CD was sent six plants with aerial roots from the Royal Botanic Gardens, Kew, on 17 June 1879 (see letter to W. T. Thiselton-Dyer, 5 June 1879 and n. 2).
- ⁷ CD summarised his views on sleep in cotyledons (seed leaves) and mature leaves in *Movement in plants*, pp. 311–16 and 394–417.
- ⁸ 'Sachs' curvature' was a term used by CD to refer to the movement of the hypocotyl (stem supporting the cotyledon) and radicle (embryonic root) away from a perpendicular position within twenty-four hours of seed germination (see *Movement in plants*, pp. 91–2). The movement had first been described by Sachs in a paper on the growth of primary and adventitious roots (Sachs 1873–4, p. 403). CD's notes on this movement in beans (*Phaseolus* and *Vicia*), dated between 4 May 1879 and 26 March 1880, are in DAR 209.6: 14–37.
- ⁹ CD's notes, dated between 11 and 17 June 1879, describing his experiments cauterising the tips of cotyledons of *Phalaris* (canary grass), are in DAR 209.8: 121–2.
- ¹⁰ CD's portrait was being painted by William Blake Richmond (see letter to John Fiske, 10 June 1879, n. 2).
- ¹¹ Abbadubba was a pet name for Francis's son, Bernard Darwin, who was almost 3 years old at this time.

To Ernst Krause 16 June [1879]¹

I will keep your letter & attend to your suggestions as far as possible—I can judge of nothing till I have seen the translation of your M.S. & you have seen my Proof-sheets. There is plenty of time, as M^r Dallas translates slowly—² My publisher, Murray, generally objects strongly to bring out any book before the beginning of November—³ Pray excuse brevity, as I have many letters to write

C Darwin

June 16th—Down

New York Medical College

- ¹ The year is established by the relationship between this letter and the letter from Ernst Krause, 13 June 1879.
- ² See letter from Ernst Krause, 13 June 1879. Krause had revised his essay on Erasmus Darwin (Krause 1879a); it was being translated by William Sweetland Dallas for the English edition, *Erasmus Darwin*.
- ³ *Erasmus Darwin* was published in November 1879 (letter from Reginald Darwin, 12 November 1879). On John Murray's November sale dinners, see Murray 1908–9, p. 540.

From Francis Darwin [after 16 June 1879]¹

Bot Institut | Würzburg

My dear Father,

Thank you for your letter. I am very glad to hear what you are doing— I am sorry the confounded beans have not acted better.² Sachs wants to see the caustic experiment so I am going to do it & have got beans in sawdust; I don't think it is much use going on measuring the Aroid roots much longer so I will use them for caustic as they are still growing well: there are also roots now coming in the greenhouse which will do for caustic.³ Sachs wants the bean caustic experiment done in loose earth as he seems to suspect abnormalities in air experiments & I suppose thinks earth better than water. I have had good success with mustard roots, they are strongly apheliotropic in a N window where there is no question of roasting with sunlight, & they grow much quicker in darkness without a shadow of doubt.⁴ I haven't had so much time for microscoping as these roots though they haven't produced much have taken up time. I have had some tremendous talks with Sachs about climbing plants and I cannot quite make out what he is driving at. I don't think he understands what really occurs, but he is reading *Climbing Plants* again & perhaps he will come to his senses. I have formed a slightly new theory of revolving nutation which I cannot get him to see. I almost think I must wait to show you with a model what I mean: the only difference from your theory of nutation is that the lines of quickest growth are slightly spiral instead of straight lines. I can write it out if once I had shown what I mean by the model. I believe it is impossible to explain revolving nutation unless the lines are slightly spiral⁵

I have just got mother's nice letter, I am v glad the boys are so prosperous & good I think a letter of mine has missed or else I have never been told how Ubbadubba liked some gorgeous Prussian paper soldiers with tumpets & dums. I send some soldiers with this letter for him— & please say Dada liked Ubbadubba's last letter very much.⁶ My orchids with air roots have come & Veitch is such a swell he makes me a present of them—⁷ I have written to thank adding butter about Sachs admiring the beauty of the specimens which is true: but I rather doubt whether they will act well. I have written out some of the Down notes I said I would but not all yet. I had a horrid bother with my lodgings I found out the house was disreputable so I went, & the people wanted me to pay more than was fair, I went to a lawyer & he said I was right but it would be much less bother to pay, it all depended on what I had said when I took the lodgings & the people would swear one thing & I another & no witnesses. The old "Advokat" wouldn't take any fee except getting me to translate an English letter into German. I have got a very good room with respectable people now

I will write to Bessy next. My love to Dor & Robert & a Finland stamp for Dor—⁸
Goodbye dear Father | Your affec | FD

Goebel who knows Greek well & reads it for pleasure says helic & aphelic are correct but thinks proshelic & aphelic better as giving the idea of direction in both names⁹

DAR 274.1: 53

- ¹ The date is established by the relationship between this letter and the letter to Francis Darwin, 16 June [1879].
- ² See letter to Francis Darwin, 16 June [1879] and n. 8.
- ³ Francis was working in the laboratory of Julius Sachs. CD had been performing experiments cauterising the tips of roots with lunar caustic (silver nitrate) and had reported his initial results on the sensitivity of the apex to Francis (see letter to Francis Darwin, [before 5 June 1879] and nn. 2 and 3).
- ⁴ Francis was experimenting with white mustard (*Sinapis alba*; see also letter to Francis Darwin, 6 and 7 June [1879] and n. 5).
- ⁵ See letter to Francis Darwin, 16 June [1879] and n. 2. For CD's description of the revolving nutation of a shoot, see *Climbing plants*, pp. 7–8.
- ⁶ Ubbadubba was a pet name for Francis's son, Bernard Darwin. No letter mentioning the boys or the Prussian paper soldiers has been found, but see the letter to Francis Darwin, 16 June [1879], in which CD mentions Bernard's head being full of 'drums, trumpets & soldiers'. On paper soldiers, see Ryan 1995. The boys were Bernard's cousins Walter Stewart George Davenport Atkin and Robert Laurence Atkin (Dor and Robert). Their mother, Mary Elizabeth Atkin, had travelled to Switzerland with Elizabeth Darwin on 17 June 1879; they returned to Down on 18 July 1879 (Emma Darwin's diary (DAR 242)).
- ⁷ Francis had evidently ordered orchids with aerial roots from Veitch & Sons, probably dealing with Harry Veitch, director of the Chelsea branch of the firm, who was known for his interest in orchids (see Shephard 2003, pp. 178–83).
- ⁸ Elizabeth Darwin had written to Francis around 16 June 1879 (see letter to Francis Darwin, 16 June [1879] and n. 5). Francis probably got a Finnish stamp from Fredrik Elfving, a Finnish botanist who was studying at Würzburg under Sachs.
- ⁹ Karl Goebel was a botanist in Sachs's laboratory (see letter to Francis Darwin, 16 June [1879] and n. 4).

To H. A. Pitman 17 June 1879

Down, | *Beckenham, Kent.* | *Railway Station* | *Orpington. S.E.R.*
June 17th 1879

Dear Sir

I have not been very well of late & fear that I could not sit out the Harveian oration on the 26th.¹ Would there be any objection to my coming in quietly a little before 6 o'clock & sitting down at the end of the Hall near the entrance, & when the President is ready to confer the great honour of handing me the medal, advancing to receive it? Ought I to return thanks for the medal in a few words, for I am quite incapable of making a speech, or ought I to receive it silently, as is (or at least was) the fashion at the Royal Socy.—²

Living in the country & seeing few persons, I am ashamed to say that I do not know who your President is, & should be much obliged if you would inform me.³

Pray excuse me for asking so many questions & I remain Dear Sir | Yours faithfully | Charles Darwin

P.S. I may possibly be prevented from attending by giddiness to which I am liable, & without the possibility of giving notice; but I trust that this may not occur.

Royal College of Physicians of London (ALS/D11)

- ¹ The Harveian oration, established by William Harvey in 1656, was an annual lecture held at the Royal College of Physicians of London; it was delivered on 26 June 1879 by Samuel Wilks, and the topic was searching out the secrets of nature by experiment. For the text of the oration, see Wilks 1879a.
- ² CD was awarded the Baly medal, a biennial award in physiology, on the occasion of the Harveian oration (CD's 'Journal' (Appendix II)). See letter from H. A. Pitman, 9 May 1879.
- ³ James Risdon Bennett was the president of the Royal College of Physicians.

From Raphael Meldola 18 June 1879

21 John St. | Bedford Row, | London W.C.
June 18/79

My dear Mr. Darwin,

Herewith I return the No. of *Kosmos* which you were good enough to lend me—accept my best thanks for the loan of it.¹ I have transferred Fritz Müller's paper *in extenso* to our 'Proceedings' having obtained (as you suggested) permission to do so from Dr Ernst Krause who is also going to be so kind as to send me galvanoplasts of the wood-cuts.² Fritz M's arguments for the production of mimicry between two butterflies *both protected by distastefulness* appear to me very ingenious & I beg to call your special attention to the concluding portions of his paper as you say it is new to you. You will see that his proof rests upon the belief that young birds & other insect persecutors do not come into the world with a knowledge of what species to eat & which to avoid, so that a certain number of distasteful individuals have to fall victims to this inexperience.

Unfortunately for the argument F. M. adduces no facts in support of this view. Can you recall any observations on this subject? Jenner Weir says that in his aviary a distasteful caterpillar was always *recognized at once*, but it appears to me that the case is hardly analogous, inasmuch as such caterpillars always hang out danger signals in the way of brightly coloured stripes, hairs or spines.³ To suppose that young birds can at once distinguish among the myriad insect forms by which they are surrounded the palatable from the unpalatable is to credit them with an instinctive knowledge of species that might be envied by our most ardent Iconographers. I will send you the translation of the paper & the discussion to which it gave rise as soon as it is in type.⁴

Yours sincerely, | R. Meldola.

DAR 171: 138

- ¹ See letter to Raphael Meldola, 6 June [1879]. Meldola had borrowed the May 1879 issue of *Kosmos*.
- ² On Fritz Müller's paper (F. Müller 1879c), see the letter from Raphael Meldola, 4 June 1879, n. 1. Galvanoplasts or electrotypes were a form of stereotype made by electrolytic deposition of a coat of copper on a wax mould of the type-form or woodblock.
- ³ John Jenner Weir had published on the relation between the colour and edibility of butterfly larvae (J. J. Weir 1869 and 1870).
- ⁴ The English translation of F. Müller 1879c was published in *Transactions of the Entomological Society of London (Proceedings)* (F. Müller 1879d); no offprint has been found, but CD's copy of the issue containing it is in his collection of unbound journals in the Darwin Library-CUL.

To W. T. Thiselton-Dyer 18 June 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
June 18th 1879.

My dear Dyer

The plants arrived last night in first-rate order; & it was *very very* good of you to take so much trouble as to hunt them up yourself.¹ They seem exactly what I wanted, & if I fail it will not be for want of perfect materials.— But a confounded Painter (I beg his pardon) comes here to night, & for next two days I shall be half dead with sitting to him;² but after then I will begin to work at the plants & see what I can do, & very curious I am about the results.—

I have to thank you for two very interesting letters. I am delighted to hear & with surprise that you care about old Erasmus D.— God only knows what I shall make of his life,—it is such new kind of work to me.—³

Thanks for case of sleeping *Crotalaria*—new to me.—⁴

I quite agree to every word which you say about Ball's Lecture— it is as you say like Sir W. Thompson's meteorite— It is really a pity— it is enough to make geographical Distribution ridiculous in the eyes of the world.—⁵ Frank will be interested about the Auriculas: I never attended to this plant, for the powder did seem to me like true "bloom".—⁶

This subject, however, *for the present* only, has gone to the dogs with me.—

I am sorry to hear of such a struggle for existence at Kew; but I have often wondered how it is that you are all not killed outright.—⁷

I can most fully sympathise with you in your admiration of your little girl.— There is nothing so charming in this world, & we all in this house humbly adore our grandchild, & think his little pimple of a nose quite beautiful^B

with hearty thanks, yours very sincerely Ch. Darwin

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: ff. 176–7)

¹ Thiselton-Dyer had sent several species of plants with aerial roots for CD's research on their tropic movements (see letter to W. T. Thiselton-Dyer, 5 June 1879 and n. 2).

² CD's portrait was being painted by William Blake Richmond (see letter to John Fiske, 10 June 1879, n. 2).

³ The only extant letter from Thiselton-Dyer at this time is his letter of 10 June 1879, which is incomplete. In that letter, Thiselton-Dyer promised to write again when he sent the plants with aerial roots, but that letter has not been found. The incomplete letter or the missing letter evidently contained Thiselton-Dyer's comments on CD's research on his grandfather Erasmus Darwin.

⁴ See letter from W. T. Thiselton-Dyer, 10 June 1879 and n. 5. *Crotalaria* is the genus of rattlebox.

⁵ Part of the letter of 10 June 1879, in which Thiselton-Dyer discussed John Ball's paper on the origin of alpine flora (Ball 1879), is missing. Ball had argued that flowering plants first evolved in alpine regions and challenged the theory of glacial migration that was part of CD's theory of geographical distribution (see *Origin*, pp. 367–70). Thiselton-Dyer had evidently referred to William Thomson's theory that the sun's energy was continually topped up by meteors and asteroids falling into it at a regular rate (see W. Thomson 1862). Thomson's suggestion that life on earth could have originated from meteorites had also been heavily criticised (W. Thomson 1871, pp. civ–cv; see *Correspondence* vol. 19, letter from J. D. Hooker, 5 August 1871).

⁶ Thiselton-Dyer had sent CD an extract about the meal or farina found on many varieties of auricula (*Primula auricula*; see letter from W. T. Thiselton-Dyer, 10 June 1879 and n. 3).

⁷ The information about the Royal Botanic Gardens, Kew, was in the incomplete or the now missing letter (see n. 3, above).

⁸ Thiselton-Dyer's daughter, Frances Harriet, was a year old. Bernard Darwin was almost 3.

To Raphael Meldola 19 [June 1879]¹

Down | Beckenham | Kent
19th

Dear M^r. Meldola

When I read the F. M Paper your doubt occurred to me and I must say this, I would rather have expected that the knowledge of distasteful caterpillars would have been inherited, but I distinctly remember an account (when Wallace first propounded his—warning colors) published of some birds, I think turkeys, being experimented upon and they shook their heads after trying some caterpillars as if they had a horrid taste in their mouths.² I fancied this thing was published by M^r. Weir or could it have been by M^r. Butler?³ It would be well to look in M^r. Belt's "Nicaragua" as he tried some experiments.⁴ I am not sure that there is not some statement of the kind in it.

Yours faithfully | Charles Darwin

I daresay M^r. Wallace or Bates would remember the statement of some birds shaking their heads to which I refer.⁵

Copy

Oxford University Museum of Natural History (Hope Entomological Collections 1350: Hope/Westwood Archive, Darwin folder)

¹ The month and year are established by the relationship between this letter and the letter from Raphael Meldola, 18 June 1879.

² See letter from Raphael Meldola, 18 June 1879. On Fritz Müller's paper (F. Müller 1879c), see the letter from Raphael Meldola, 4 June 1879, n. 1. Alfred Russel Wallace mentioned the incident with the young turkeys in a letter to CD of 24 February [1867] (*Correspondence* vol. 15). The incident was originally related by Henry Tibbats Stainton during a discussion at the Entomological Society on 3 December 1866 (see *Transactions of the Entomological Society of London (Journal of Proceedings)* 3d ser. 5 (1865–7): xlv–xlviii). The insect rejected by the turkeys was an adult moth of *Spilosoma menthastri* (a synonym of *S. lubricipeda*, the white ermine moth).

³ John Jenner Weir and Arthur Gardiner Butler. See letter from Raphael Meldola, 18 June 1879 and n. 3.

⁴ In his book *The naturalist in Nicaragua* (Belt 1874, p. 321), Thomas Belt described a duck throwing a brightly coloured frog out of its mouth and then jerking its head as if trying to throw off some unpleasant taste.

⁵ Henry Walter Bates was vice-president of the Entomological Society of London at this time; both he and Wallace were long-standing members.

To C. W. von Nägeli 21 June 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
June 21st 1879

Dear Sir

I am much obliged to you for the honour which you have done me by kindly sending your new work, 'Theorie der Gärung'.¹

I remain with the greatest respect | Dear Sir | Yours faithfully & obliged
Charles Darwin

On permanent loan to KULTURAMA, Zurich (Inv. 5109_L)

¹ CD's copy of *Theorie der Gärung* (Theory of fermentation; Nägeli 1879) has not been found.

To W. D. Crick 24 June [1879]

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
June 24th

Dear Sir

I do not think that there w^d be any particular interest in the abnormality in question; but I have looked at several flowers & can see no trace of it. Can you have mistaken the upwardly folded connection between the 2 anther cells for a rudimentary anther-cell? I have somewhere alluded to this fold in comparing the structure of *Ophrys* & *Orchis*.—¹

Dear Sir | yours faithfully | Ch. Darwin

Postmark: JU 24 79

The Huntington Library (HM 36235)

¹ Crick's letter, to which this letter is a response, has not been found. For CD's description of the crest or fold of membrane between the anther cells in *Orchis* and the smooth surface between the two anthers in *Ophrys*, see *Orchids*, pp. 10, 18 (fig. D), 45–6.

To Francis Darwin 24 June [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
June 24th

My dear F.

I have very little to tell you scientifically & nothing about anything else.— I have got a *Philodendron* & a *Dendrobium* from Kew with fine aerial roots & which have turned for the light; but they will not now move; & they do so I suppose only when growing rapidly.—²

I have settled well that the stems of 2 spc. of *Ipomœa* are not in the least Heliotropic, for I have carefully compared 22 semicircles moving to the light with 22 semicircles moving from the light, & on an average they agreed within 3 minutes.³

The only other thing which I have done is proving that the tip of radicle of *Gossypium herbaceum* is very sensitive to touch of caustic & bends from the touched side. This is good for bits of card did not act at all well. Also the tip when blackened for $\frac{1}{2}$ mm stops the geotropism of horizontally extended roots completely.⁴

At some time or another I shall be anxious for you to touch a cell with your point & see if it influences at all the current of protoplasm: I saw lately a notice by Wright (I think in *Mic. Journal*) that passing *without any injury* cells of some Algae caused all the protoplasm to collect up at the further end.⁵

On Thursday we go to London to receive medal & Laura Forster has lent us her house most kindly; & your mother & I go on Saturday there & stay till Tuesday Morning; Laura & Henrietta will stay here to take care of Ubba & the 2 little boys.—⁶ Your mother declares that I want & shall have rest; but it will be very tedious with nothing on earth to do.— I have just asked whether Ubba had any message to you & he gave a most emphatic nod, but I could extract only “I don’t know”. His expression really gets more charming every day.

Your affect Father | C. Darwin



DAR 271.4: 14

- ¹ The year is established by the reference to receiving the Baly medal (see n. 6, below).
- ² CD had received *Philodendron hastatum* (silver sword philodendron) and *Dendrobium pierardii* (a synonym of *D. aphyllum*, leafless dendrobium), as well as four other plants with aerial roots (see letter to W. T. Thiselton-Dyer, 5 June 1879 and n. 2).
- ³ *Ipomoea* is the genus of morning-glory; CD’s notes, dated 17 June 1879, on the movement toward and away from light of the stems of plants of *I. caerulea* and *I. purpurea* are in DAR 209.7: 59–62.
- ⁴ CD’s notes, dated 20 June 1879, on the application of caustic to radicles of *Gossypium herbaceum* (Levant cotton) are in DAR 209.5: 107.
- ⁵ A summary of a paper by Edward Perceval Wright in the *Transactions of the Royal Irish Academy* on the cell structure of *Griffithsia setacea* (a synonym of *Halurus flosculosus*) and the development of its antheridia and tetraspores (E. P. Wright 1878) appeared in the *Journal of the Royal Microscopical Society* 2 (1879): 934.
- ⁶ On 26 June 1879, CD was presented with the Baly medal, a biennial award in physiology, on the occasion of the Harveian oration at the Royal College of Physicians (CD’s ‘Journal’ (Appendix II)). Laura Mary Forster was a close friend of CD’s daughter Henrietta Emma Litchfield; her house was West Hackhurst, Abinger Hammer, near Dorking, Surrey. Ubba was a pet name of CD’s grandson, Bernard Darwin. The other little boys were probably Bernard’s cousins Walter Stewart George Davenport Atkin and Robert Laurence Atkin, who had been staying with the Darwins recently (see letter from Francis Darwin, [after 16 June 1879] and n. 6).

From G. H. Darwin 24 June 1879

6 Qu. A. St
Tuesd. 24. Ju. 79

Dear Father,

I have had 2 days at Record office & have found a great deal—too much to tell in detail.¹

W^m. D. the II was Capt. of horse under Sir W. Pelham for 10 months & I have the particulars of his estate. They refer to Cleatham Hall as the place where his ancestors were accustomed to dwell. He was afterwds a barrister² I am almost sure (& shall verify tomorr.) that the first W^m. D. (d^d. 1644) was Yeoman of the armory at Greenwich & Steward of the Peverel to Jas I & Chas I³ He appears to have died of gout or at least was very ill with it in 1643.

The original paper of W^m. D. the Second is curious & bears his signature.⁴ I can't spare it to send it you.

Yours affec | G H Darwin

DAR 210.2: 77

- ¹ The Public Record Office in Chancery Lane housed government and court records. George's research was for the preliminary notice CD was writing to the English translation of a life of Erasmus Darwin (Krause 1879a, *Erasmus Darwin*; see also letter to C. M. C. Darwin, 6 April 1879).
- ² William Darwin (1620–75) of Lincoln's Inn was CD's great-great-great-grandfather; his father was William Darwin (1573?–1644) of Cleatham Hall, Manton, north Lincolnshire. In May 1660, the younger William petitioned King Charles II for employment on the grounds that his father had served James VI and I, and Charles I, and he himself had fought for Charles I as captain-lieutenant in Sir William Pelham's troop of horse (The National Archives, SP 29/1 f.211).
- ³ By a separate petition, William Darwin of Lincoln's Inn asked to be given 'Stewardship of the Peverell and the office his father enjoyed' (The National Archives, SP 29/6 f.217). The ancient court of the Honour of Peverel (or Peveril) had jurisdiction over parts of Nottinghamshire and Derbyshire; revived under Charles I, it was abolished in 1849 (Godfrey 1882).
- ⁴ George's notes from the records in the State Papers, including his reproduction of the signature of William Darwin of Lincoln's Inn, are in DAR 210.14: 210.

To Francis Darwin [after 24 June 1879]¹

$\langle \frac{1}{2} \text{ line missing} \rangle$ touching too long & $\langle \frac{1}{2} \text{ line missing} \rangle$ orifice to bend $\langle \frac{1}{2} \text{ line missing} \rangle$ m.m. in length) made by $\langle \frac{1}{2} \text{ line missing} \rangle$ remaining $\langle \frac{1}{2} \text{ line missing} \rangle$ Those with caustic $\langle \frac{1}{2} \text{ line missing} \rangle$ actually measured for want $\langle \frac{1}{2} \text{ line missing} \rangle$ takes place in 4h. 30.m.) $\langle \frac{1}{2} \text{ line missing} \rangle$ plants, extended horizontally $\langle \frac{1}{2} \text{ line missing} \rangle$ (helio)tropism,—at least $\langle \frac{1}{2} \text{ line missing} \rangle$ now all just $\langle \frac{1}{2} \text{ line missing} \rangle$ those with extreme $\langle \frac{1}{2} \text{ line missing} \rangle$ the old Darwins. $\langle \frac{1}{2} \text{ line missing} \rangle$ 'P'everel' to James I $\langle \frac{1}{2} \text{ line missing} \rangle$ know not.—²

There is now $\langle \frac{1}{2} \text{ line missing} \rangle$ radicle $\langle \frac{1}{2} \text{ line missing} \rangle$ from $\langle \frac{1}{2} \text{ line missing} \rangle$ reve $\langle \frac{1}{2} \text{ line missing} \rangle$

Incomplete

DAR 211: 57

- ¹ The date is established by the reference to the Peverel (see n. 2, below). The letter was torn in half vertically; the left half is now missing.
- ² George Howard Darwin had been researching the Darwin family history and had informed CD that one of their ancestors had been steward of the Peverel to James VI and I and Charles I (see letter from G. H. Darwin, 24 June 1879 and n. 2).

To Francis Darwin 25 June [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

June 25th

My dearest F.

Your mother forgot to give me your letter of yesterday until the evening after I had written.² Remember to keep beans not above 60° F. if possible.— Would it not be well to show Sachs effect of touching apex once lightly one side.³

If I were you I w^d not try many experiments at Wurzburg, which you could try here.

I am very glad to hear about Mustard seed; for I am very curious to learn how far apex is the governing point for movements relatively to light.— But I think you did try this here.⁴ With aerial roots it w^d be much better to cover tips (& this is easily done) with Gold-Beaters skin (I enclose some in case you like to try it) & coat some with Black paint thickly & leave others with the Gold-beaters transparent.⁵

What-ever Sachs may say, it seems to me important to prove that an aphelic organ grows quicker in dark— it is good concurrent evidence that light is only the regulator & not cause of movement.

I would use proshelic & aphelic.—if substantives can be made— Would *proshelism* do instead of heliotropism, & so with *aphelism*.— If not I think I will stick to Heliotropism & apheliotropism—to heliotropic & apheliotropic.— Ask Goebel about this—⁶

My fir-trees will on our return be ready for ligature of leading & all the lateral shoots but one.—⁷

I shall be curious hereafter to have explained your spiral theory about revolving nutation or circumnutation—⁸ It seems probable;—but remember an ellipse—often very narrow—is usual figure described.

I am getting to hate the work, & wish all radicles were deep in the earth.

Ever yours affect | C. Darwin

Do not forget *Porliera*⁹

DAR 211: 56

¹ The year is established by the relationship between this letter and the letter to Francis Darwin, 24 June [1879].

² See letter to Francis Darwin, 24 June [1879]. The letter from Francis was probably that of [after 16 June 1879].

³ CD found that temperatures above 70°F (21°C) destroyed the sensitivity to irritation of bean (*Vicia faba*) radicles; in experiments where a piece of card was attached to one side of the root tip, CD found that the root bent away from the irritation of the card. Julius Sachs had performed similar experiments, but his beans were kept at high temperatures and he did not detect any sensitivity in the apex (see *Movement in plants*, p. 142).

⁴ See letter from Francis Darwin, [after 16 June 1879] and n. 4. Francis's notes, dated 29 and 30 April, and 7, 12, and 13 September, on the application of caustic to mustard radicles, are in DAR 209.7: 71.

⁵ On CD's use of gold-beater's skin, see letter to ?, 23 January [1879?], nn. 1 and 2.

⁶ Karl Goebel, a botanist in Sachs's laboratory, had suggested the terms proshelic and aphelic to refer to movement towards or away from light (see letter from Francis Darwin, [after 16 June 1879]).

⁷ The Darwins were away from home between 26 June and 1 July 1879, first in London where CD was to be awarded the Baly medal and then at the home of a friend, Laura Mary Forster (CD's 'Journal' (Appendix II); see letter to Francis Darwin, 24 June [1879] and n. 6). On CD's interest in the apogotropism of abnormal shoots found in silver fir trees affected by a fungus, see the letter to Francis Darwin, 2 June [1879] and n. 6.

⁸ See letter from Francis Darwin, [after 16 June 1879] and n. 5. Revolving nutation was the term used by Sachs: CD referred to this movement as circumnutation (see *Movement in plants*, p. 1).

⁹ On Francis's recent work on *Porliera* (a synonym of *Porlieria*), see letter to Francis Darwin, 16 June [1879] and n. 3.

To G. H. Darwin 25 June [1879]¹

June 25th—

My dear George.—

All your astronomical work is a mere insignificant joke compared with your Darwin discoveries.— Oh good Lord that we sh^d. be descended from a ‘Steward of the Peverel’; but what in the name of Heaven does this mean?²—² There is a sublime degree of mystery about the title.— But I write now partly to tell you that we go on Saturday morning to Laura’s House & stay there till Tuesday morning. She has **most** kindly lent us her house for these few days, for your mother says, I believe truly, that I require change & rest.³

Hurrah. | C. Darwin

DAR 210.1: 84

¹ The year is established by the relationship between this letter and the letter from G. H. Darwin, 24 June 1879.

² See letter from G. H. Darwin, 24 June 1879. For George’s recent scientific success, see the letter to G. H. Darwin, 31 May [1879].

³ CD and Emma stayed at the house of Laura Mary Forster in Abinger Hammer, Surrey (CD’s ‘Journal’ (Appendix II)).

To L. M. Forster 25 June 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

June 25th. 1879

My dear Laura

I must write a few words to thank you cordially for lending us your house.¹ It was a most kind thought & has pleased me greatly; but I know well that I do not deserve such kindness from anyone. On the other hand no one can be too kind to my dear wife, who is worth her weight in gold many times over, & she was anxious that I should get some complete rest, & here I cannot rest.— Your house will be a most delightful haven & again I thank you truly

Believe me | Yours affectionately | Charles Darwin

King’s College Library, Cambridge (tipped into N.20.1)

¹ The Darwins stayed at Forster’s house, West Hackhurst, Abinger Hammer, near Dorking, Surrey from 28 June until 1 July 1879 (CD’s ‘Journal’ (Appendix II)).

From Francis Darwin [before 26 June 1879]¹

Bot Institut | Würzburg

My dear Father,

Never mind about Rhagadiolus & Hieracium, I am sorry I bothered you, as I have managed to get some seeds here.² I did the caustic experiment with Faba & Phaseolus in damp earth & by evening they had all grown well & the caustic ones had not bent, but next morning many of the caustic ones were bent—so Sachs doesn’t

believe in it a bit;³ he says the growth is disturbed and that anything that disturbs growth prevents geotropism— as for instance merely growing in damp air in some cases. He also says caustic is not a proper thing for the work because nitric acid will be set free & this will be diffused back into the root & injure it!!!!⁴ It is certain that the true growing cells of the root itself under the root-cap are killed (Göbel⁵ looked at the caustic sections & said so) but one could not cause so slight an injury with a razor, which Sachs thinks would be better, because even if you could confine your slice to the cells so near the surface the water in which the roots would be put to grow in would cause a deeper injury: but with caustic you injure the *surface* & the injury spreads only a little way in. Sachs doesn't believe that in the shellac experiment it is the touching of the little bit of shellacced-glass that makes the root bend, because



he says in his experiments with vessels with sloping walls the root grows down as (a) whereas if the touching had any effect it ought to go as b— Of course the thing is that the bending ceases directly the root has bent away. I said you had done experiments with smoked glass and that the roots grew down sloping surfaces not by pressing hard against them, but only touching in a number of places or at least touching very lightly.⁶ Then he said that the smoke may cause injury to the root! one feels inclined to say— If you say that its no use talking with you. I thought you had observed that a root growing down a *clean* glass slide seemed to go along without touching the glass, but I wasn't sure enough to say so.

I have started some heliotropic caustic experiments but: the roots even without caustic bend so badly in these pitch dark green houses that it is no good I am afraid. I have today started another in better light. I did one pot of mustard roots but alas the caustic ones were apheliotropic. The mustard roots are extraordinarily sensitive. I put some in the middle of this big laboratory in a black box whose opening was covered with thickish writing paper & put it facing the N on a cloudy day & they were clearly bent from light: the cotyledon had not light enough to be properly green

My great difficulty is making the marks. I do it with asphalt varnish. & put the roots on wet blotting paper under a bell for a few minutes while the varnish dries, but this amount of drying seems to hurt the roots, as some do not grow or hardly so,— (but these are only 2 or 3 out of 20 or 30): sometimes I can get the varnish so dry that I can pop the roots str into water & then they grow much better. If I can get a bit of clockwork put to rights I shall measure them with a telescope like Vines did.⁷ I shan't bother about Rhizomorpha as the seedling roots will decide the question.⁸

My love to Mother I will write a decent letter next time | Your affec F.D.

DAR 274.1: 55

CD ANNOTATION

Top of letter: 'Mustard | on floating cork'⁹ ink

- ¹ The date is established by the relationship between this letter and the letter to Francis Darwin, 28 June [1879], in which CD mentioned receiving this letter just before setting off for London. The Darwins left Down on 26 June 1879 (Emma Darwin's diary (DAR242)).
- ² Francis's request for seeds of *Rhagadiolus* (a genus in the daisy family, Asteraceae) and *Hieracium* (the genus of hawkweed) was made on a now missing postcard (see letter to Francis Darwin, [26 June 1879]).
- ³ CD was studying the sensitivity of the apex of the radicle (embryonic root) and had recently begun a series of experiments with caustic to determine how geotropism in the radicle was controlled (see letter to Francis Darwin, [before 5 June 1879]). Francis was working in the laboratory of Julius Sachs in Würzburg; Sachs had also investigated influences on root movement (Sachs 1872a and 1873-4). *Phaseolus* (wild bean) and *Vicia* (vetch) are genera in the family Fabaceae (legumes).
- ⁴ Lunar caustic is silver nitrate (AgNO₃); nitric acid is HNO₃.
- ⁵ Karl Goebel.
- ⁶ CD had used sloping smoked-glass plates to study the movement of radicles of various plants and concluded that the tips of the radicle circumnutated as they moved downwards, leaving serpentine trails along the glass (see *Movement in plants*, pp. 28-31).
- ⁷ Sydney Howard Vines had used a micro-telescope developed by Georg Quincke to measure the growth of unicellular organs. Vines's specimens were rotated by a clockwork mechanism in order to avoid heliotropic curvature when exposed to light (Vines 1878, pp. 134-5; see p. 135 for a diagram of the apparatus).
- ⁸ Rhizomorphs are root-like aggregations of the hyphae or branching filaments that make up the mycelium in fungi.
- ⁹ CD's annotation is a note for his reply (see first letter to Francis Darwin, 2 July [1879]).

From T. L. Brunton 26 June [1879]¹

50, Welbeck Street, | Cavendish Square, W.
June 26

My dear Sir

I regret to say that I have tried in vain to find out the influence of D^r Erasmus Darwin on the administration of stimulants in fever.² After looking through those books which I thought likely to give the information I applied to M^r Bowman as he knew D^r Todd very well & D^r Todd's influence in introducing the stimulating practice has been very great.³ He could not give me any information so I applied to Sir Robert Christison who writes to me this morning to say that he has failed to get what you desire but has given you such information as he has obtained.⁴ I have been reading the *Zoonomia* & have been much struck with the ingenuity both of D^r Darwin's speculations and practice. One case of his was particularly interesting where he cured headache by extraction of a sound tooth.⁵

Believe me | Yours very sincerely | T Lauder Brunton

DAR 99: 184-5

- ¹ The year is established by the relationship between this letter and the letter to T. L. Brunton, 27 June 1879.
- ² See letter to T. L. Brunton, 25 April 1879.
- ³ William Bowman and Robert Bentley Todd had worked together at King's College, London; they co-authored a book on anatomy and physiology that became the standard authority for many years (Todd and Bowman 1845-56). On Todd's pioneering use of stimulants in fever, see Beale 1870, pp. 513-14.

- ⁴ Robert Christison wrote to CD, but his letter has not been found (see letter to T. L. Brunton, 27 June 1879; see also *Erasmus Darwin*, pp. 106–7).
- ⁵ The case Brunton mentions is in *E. Darwin 1794–6*, 1: 447.

To Francis Darwin [26 June 1879]¹

6. Q. Anne St
Thursday

My dear F.

Your P. Card arrived just before we started & was overlooked in a bundle of letters, until we came here We shall return on Monday & I will then see to seeds—² I am *very* glad about Earth, caustic & geotropism.— Remember that, as it seems to me, cases are much more interesting when tips of root are *blinded* with gold-beaters skin—or tin foil, that when cauterised.³

C. D.

DAR 211: 58

- ¹ The date is established by the relationship between this letter and the letter to Francis Darwin, 25 June [1879]. The Thursday following 25 June 1879 was 26 June.
- ² Francis's postcard has not been found, but he evidently requested seeds of *Rhagadiolus* (a genus in the daisy family, Asteraceae) and *Hieracium* (the genus of hawkweed; see letter from Francis Darwin, [before 26 June 1879]). CD was in London on 26 June 1879 to receive the Baly medal at the Royal College of Physicians; the Darwins stayed two days in London then went to the home of Laura Mary Forster, West Hackhurst, Abinger Hammer, near Dorking, Surrey, for three days and returned to Down on Tuesday 1 July 1879 (CD's 'Journal' (Appendix II)).
- ³ See letter to Francis Darwin, 25 June [1879] and n. 5.

To T. L. Brunton 27 June 1879

Down | Beckenham— Kent. [6 Queen Anne Street, London.]
June 27./79

My dear Sir

I wished to see you to-day to tell you that I have just received a very long & interesting letter from Sir R. Christison, & I am truly obliged to you for all your kind assistance.¹ Sir R. C. says that D^r Brown, he believes, preceded D^r Darwin, but as he recommended alcohol for all the diseases under the sun (as Sir J. Paget tells me) his precedence does not seem to me so important as it would otherwise have been—² Could you inform me of the date of D^r Brown's work— that is if it will not cause you much trouble—³ Sir R. C. (to whom I have written to thank) seems to think that it would be a most difficult labour & perhaps impossible task to discover who first recommended alcohol in fever.

Pray believe me with many thanks | yours sincerely | Ch. Darwin

Copy
DAR 143: 168

- ¹ The letter from Robert Christison has not been found, but see *Erasmus Darwin*, p. 107, where CD referred to information received from Christison on the treatment of fever. CD did, in fact, visit

- Brunton that evening; the Darwins had arrived in London on 26 June 1879 (letter to Francis Darwin, 28 June [1879]; Emma Darwin's diary (DAR 242)).
- ² John Brown's system, known as Brunonianism, was based on the idea that health was an equilibrium between stimulus and excitability. His treatments for so-called asthenic diseases, deemed to be the result of insufficient stimulus and thought by Brown to be the most common type, were stimulants like opium and alcohol (*ODNB*; for more on Brunonianism, see Bynum and Porter eds. 1988). CD had also consulted James Paget, whom he visited that day (see letter to Francis Darwin, 28 June [1879]).
- ³ Brown's *Elementa medicinae* was first published in 1780 (Brown 1780).

To T. H. Farrer 27 June [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
[6 Queen Anne Street, London.]

June 27th

My dear Farrer

I have seen your most kind note to Horace, & should much like to have ten minutes conversation with you. Pray do not suppose that I want to argue with you on your determination. I wish only to try to make Horace's conduct appear less presumptuous in your eyes than it must naturally appear to you.²

I would call on you anywhere this evening or as early as you like tomorrow morning, if you will grant me an interview.

Believe me | my dear Farrer | Yours very sincerely | Charles Darwin

DAR 185: 21

¹ The year is established by the reference to Horace Darwin (see n. 2, below).

² Farrer had left a note for Horace the previous day at the home of Erasmus Alvey Darwin, where the Darwins were staying (letter from Emma Darwin to Sara Darwin, [1 July 1879] (DAR 219.1: 123); CD's 'Journal' (Appendix II)). In the note, Farrer had explained his objections to an engagement between Horace and his daughter, Ida Farrer. Farrer had explained that Horace's health and lack of a profession were his main concerns (letter from T. H. Farrer to Horace Darwin, [26 June 1879] (Down House MS, EH 88207899)).

To Francis Darwin 28 June [1879]¹

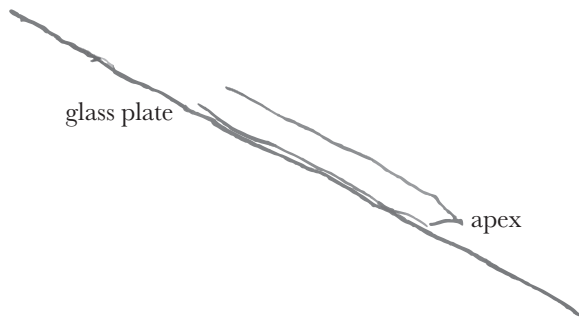
Laura's House
June 28th

My dear Frank

Here we are & remain till Tuesday morning, & George comes down to night.—² I had a very busy day yesterday; first good talk with B. Sanderson who was interested about the circumnutation & starting movement under microscope of *Dionæa* & means to go into it in relation to electric currents:³ then a very pleasant luncheon at Pagets, & in evening a talk with Lauder Brunton, who is reading *Zoonomia* & is enthusiastic about D^r D.—⁴

Your letter arrived just as we were starting for Q. Anne St: I am **very** sorry that Sachs is so sceptical, for I w^d rather convert him than any other half-dozen-Botanists put together; but I expected it.⁵ No doubt something may be said against caustic.

I do not understand why when radicles are pointed perpendicularly down & then tips are cauterised they grow out wildly on all sides, & this does not happen when they are extended horizontally; I **suspect** that ‘Sachs’ curvature’ comes into action only with perpendicular roots, & will set to work & observe this point.⁶ It seems to me a sufficient explanation of geotropism acting after 24 h, though not at first, that some of the cells of the apex regenerate themselves.— I sh^d not at all believe in the sense of geotropism residing in apex, if I did not feel sure about the sense of contact residing there. It was observing radicles of Beans sliding down **un**smoked glass, & the manner in which they turned at right angles (quite unlike any mechanical bending) when their tips encountered a strip of wood or glass cemented across the plate, that made me first suspect sensitiveness & try the little square of card first with *gum* & then shell lac. It is the *side* of *conical* tip which is alone sensitive.— Whenever card got parallel to radicle it did not act.—



In crawling down glass-plate side of conical apex does not touch glass-surface, except just at first, when it first comes into contact & then it rises a trifle & adjusts itself. I wish it were possible to try radicles of mustard with black cap instead of caustic—⁷ Though it is quite possible their sensitiveness may not be confined to tip— nor sh^d I expect it, to be so confined except in cases, as of aerial roots, when it is probably of service to plant.— Great man as Sachs is, I am not even staggered by him.

I am tired— goodbye my dear old fellow | C. Darwin

DAR 211: 59

¹ The year is established by the address; the Darwins stayed at the home of Laura Mary Forster, West Hackhurst, Abinger Hammer, near Dorking, Surrey, from 28 June until 1 July 1879 (CD's 'Journal' (Appendix II)).

² The Darwins had just arrived at West Hackhurst (see n. 1, above). George Howard Darwin had been in London doing research on the Darwin family for CD (see letter from G. H. Darwin, 24 June 1879 and n. 1).

³ John Scott Burdon Sanderson had previously assisted CD with his research for *Insectivorous plants* and had published on electrical phenomena associated with leaf contraction in *Dionaea muscipula* (Venus fly trap; see Burdon Sanderson 1873a, 1873b, 1874a, and 1874b).

⁴ James Paget and Thomas Lauder Brunton were consulted by CD for information about Erasmus Darwin's medical practice; CD was writing an introductory biographical sketch of his grandfather for *Erasmus Darwin*.

- ⁵ See letter from Francis Darwin, [before 26 June 1879]. CD went to London on 26 June 1879; the Darwins stayed at the home of CD's brother, Erasmus Alvey Darwin (CD's 'Journal' (Appendix II)). In his letter from Francis Darwin, [before 26 June 1879], Francis told CD that Julius Sachs was unconvinced by CD's experimental results suggesting that the apex of the radicle was geotropic.
- ⁶ Sachs had suggested that the use of caustic (silver nitrate) interfered with CD's results by causing injury to the root (letter from Francis Darwin, [before 26 June 1879]). On 'Sachs' curvature', see the letter to Francis Darwin, 16 June [1879], n. 8.
- ⁷ CD and Francis were experimenting with *Sinapis alba* (white mustard); Francis had observed strong apheliotropism in the roots of this species (see letter to Francis Darwin, 6 and 7 June [1879] and n. 5, and letter from Francis Darwin, [after 16 June 1879] and n. 4).

To Horace Darwin [28 June 1879]¹

[West Hackhurst, Abinger Hammer, Surrey.]

My dear Horace—

I send the enclosed for you & Ida to read— Please return it, that I may send it to Henrietta & she to William, & then my trouble will be over.²

Good bye dear Jemmy: it is the greatest pleasure which I can have in life that I shall leave you all comfortably provided for. | Yours affect | C. Darwin

[Enclosure]³

In July 1871 William carefully estimated the value of our property, & ascertained that on my & my wife's death, each son w^d receive £30,500. Since then I have saved so much that the sum will be about £33,000. By Erasmus' will each child will receive some thousands & by M^r Rich's bequest several thousand more. Therefore each of my sons will have at least £40,000⁴

At present I allow each son £400 annually, & half a year ago I determined to divide annually the overplus of my income, which if this overplus were only £1900 w^d give £300 to each son, & this will make £700 a year to each son.⁵ But *probably* it will be more, for during the last ten years I have invested on an average £2728 annually; & this w^d give to each son an income of £429 making whole income £829.

But of course my income may fall off a little

June 25—1879—

DAR 185: 5, 20

¹ The date is established by CD's pencil annotation 'June 28th June 1879 Horace' on his draft of both letter and enclosure (DAR 262.11: 17 (English Heritage 88206204)).

² Horace Darwin asked Ida Farrer to marry him in June 1879, although the engagement was not made public until October (letter from T. H. Farrer, 12 October 1879 and n. 1). CD also intended to send the enclosure to his daughter Henrietta Emma Litchfield, and son William Erasmus Darwin.

³ The enclosure is in Emma Darwin's hand.

⁴ William's estimate of CD and Emma Darwin's property was probably carried out in the context of the forthcoming marriage of his sister, Henrietta, which took place in August 1871 (see *Correspondence* vol. 24, Supplement, letter from W. E. Darwin, 15 August 1871 and n. 3). Anthony Rich planned to bequeath some London property to CD in recognition of CD's contribution to human knowledge;

CD accepted on behalf of himself and his children (*Correspondence* vol. 26, letter from Anthony Rich, 7 December 1878, and letter to Anthony Rich, 9 December 1878). The only bequests to CD's children under the terms of Erasmus Alvey Darwin's will at the time of his death in 1881 were £100 each to William and George Howard Darwin, who were his executors; the bulk of his estate was left to CD (*The Times*, 7 October 1881, p. 4).

⁵ On CD's division of his surplus income, see the letter to the Darwin children, 21 February 1879.

To James Paget 28 June [1879]¹

Down [West Hackhurst, Abinger Hammer, Surrey.]

June 28th

My dear Paget

Very many thanks for your kindness. Alas and alas, I fear the case is of no use to me. Your sympathy about the troubles of a Biographer was very consoling to me, and I enjoyed thoroughly my luncheon with you and your family.²

Yours very truly | Ch. Darwin

Copy

DAR 147: 238

¹ The year is established by the relationship between this letter and the letter to T. L. Brunton, 27 June 1879.

² CD had visited Paget the previous day (see letter to Francis Darwin, 28 June [1879]). The case referred to has not been identified but evidently related to Erasmus Darwin's medical practice; CD was writing an introductory biographical sketch of his grandfather for *Erasmus Darwin*.

From Francis Darwin to Emma Darwin 30 June 1879

Bot. Institut | Würzburg

June 30. /79

My dear Mother,

I hope you have had a successful lark at Hackhurst,¹ I don't suppose one can prophecy English weather from this but it has now begun to be baking hot; the hot-houses are kept so dark that they say when it is too hot to exist in the laboratory they go & cool in the hot-house. Last night was the most tremendous thunderstorm I ever saw – one continuous growl & flash & such rain that the windows looked as if one was inside a waterfall, my street had a torrent running down it in a few minutes, it only lasted about 10 minutes I think. It was worse than the rain in Norway which G & I saw & of which the American said "They're not stopping to put it up in drops".² I must disburthen myself of some axles, & then I will return to my senses. I have asked several people about proshelismus (a proshelite would be a nice word too) & apshelismus & they say they would be all right, but I will ask Goebel (who has been away) he is the "philolog" to the Institut.³

I did some beans extended horizontally in damp earth some causticed above others below & the difference was very striking 2 of those causticed above being more geotropic than the control beans, while the under caustic were only faintly geotropic (tho' they were somewhat bent).⁴ I have today started gold beaters skin

& black grease on *Monstera* which are growing well & turn from light.⁵ I will see after Porliera, it is very late in growing well but now it looks healthy—I think the pot plants are no use for as I said I dried one till it withered.⁶ Lastly I will try the point touching a hair here⁷ I am microscoping nearly every afternoon & could do it quite well. I did the caustic beans to show Sachs & he appeared rather staggered; also I explained to him how the root might grow down a sloping surface & he seemed to have glimmers of sense & said it was quite possible. There was once a ridiculous personal row between D^c Vries & a german named Meyer:⁸ Meyer wanted a post in Amsterdam & D^c Vries wrote a furious attack on him saying he was a perfect duffer in everything. Meyer & everybody else thought D^c Vries wanted the place himself though I hope he didn't. Any how Meyer wrote a very severe reply which rather squashed D^c Vries & made Sachs furious: Meyer got the place it said that he lived on the crumbs that fall from his rich masters (Sachs) table; it said that he saw what he was told to see & refuted (or contradicted) what he was told to & so on. I am very sorry D^c Vries is such a wonner for personalities, he pitches into Frank in the same way.⁹ Please tell me Bessy's address so calculated that I can write to her when I hear from you again. S. Mary seems to have missed her letters which were sent to Villars.¹⁰

I have got to know a nice Englishman called Purdy at least rather a nice Englishman with a very nice wife & I go in to their lodgings & hear her play sometimes: he was assistant to Frankland & knew Leo when he was working there; he is now working Chemistry here.¹¹ I have quite given up bicycling & go & bathe nearly every night with the Finlander.¹² What tremendous discoveries of G's about the cavalier ancestors¹³ I am snob enough to like it. Please tell Ubbadubba that I should like very much to see some of Dor's soldiers & I will promise to send them back.¹⁴

Goodbye dear Mother | Yr affec | F. D.

DAR 274.1: 49

CD ANNOTATIONS

2.2 the ... geotropic 2.4] *double scored pencil*

Top of first page. 'See 2^d Page—**very good** Apex of root like gland of *Drosera* or Hair of *Dionæa* specialized points for receiving certain stimulants. But apex of radicle seems brain like, as curve naturally in opposite directions.'¹⁵ *ink*

¹ The Darwins stayed at the home of Laura Mary Forster, West Hackhurst, Abinger Hammer, near Dorking, Surrey, from 28 June until 1 July 1879 (CD's 'Journal' (Appendix II)).

² Francis and his brother George Howard Darwin visited Norway in August 1866 (Emma Darwin's diary (DAR 242)). The American has not been identified.

³ 'Axles' was evidently a family word used to refer to unresolved work-related issues (see also *Correspondence* vol. 26, letter from G. H. Darwin, 7 November 1878). CD wanted to find terminology for referring to movement towards and away from the sun (see letter to Francis Darwin, 25 June [1879] and n. 6). Karl Goebel, although not a philologist, had studied theology and philosophy before switching to botany (*NDB*).

⁴ Francis was experimenting with *Phaseolus* (wild bean) and *Vicia* (vetch; see letter from Francis Darwin,

- [before 26 June 1879]. He was using lunar caustic (silver nitrate) to kill cells on the apex of the radicle.
- 5 On the use of gold-beater's skin, see letter to ?, 23 January [1879?], nn. 1 and 2. *Monstera* is a genus in the family Araceae (arums).
 - 6 On Francis's recent work on *Porlieria* (a synonym of *Porlieria*), see letter to Francis Darwin, 16 June [1879] and n. 3.
 - 7 See letter to Francis Darwin, 24 June [1879]. CD had asked Francis to touch a cell (of the tip of a radicle) in order to see whether it influenced the current of protoplasm.
 - 8 Hugo de Vries was professor extraordinarius of botany at Amsterdam and a former student of Julius Sachs. Meyer has not been identified.
 - 9 'Wonner': variant form of 'oner', a slang word for a person who is particularly keen on or expert at something (*OED*). For Francis's earlier assessment of Albert Bernhard Frank, see the letter from Francis Darwin, 29 May 1879.
 - 10 Elizabeth Darwin and Mary Elizabeth Atkin had travelled to Switzerland on 17 June 1879; they returned to Down on 18 July 1879 (Emma Darwin's diary (DAR 242)). Villars-sur-Ollon is a village in the western Swiss Vaud Alps.
 - 11 Thomas Purdie had been demonstrator in chemistry for Edward Frankland at the Royal College of Science at South Kensington from 1875 until 1878 (*Complete dictionary of scientific biography*). Purdie's wife was Mary Anne Purdie. Leonard Darwin became instructor in chemistry and photography at the School of Military Engineering, Chatham, in 1877 (*ODNB*; see also *Correspondence* vol. 25, letter to Leonard Darwin, 31 March 1877).
 - 12 The Finnish botanist Fredrik Elfving was a student in Sachs's laboratory (see letter from Francis Darwin, [after 2 June 1879] and n. 3).
 - 13 George Howard Darwin had been researching the Darwin family tree and discovered an ancestor had been in the service of James VI and I and Charles I (see letter from G. H. Darwin, 24 June 1879 and nn. 2 and 3).
 - 14 Ubbadubba was a pet name for Francis's son, Bernard Darwin. Dor was Walter Stewart George Davenport Atkin (see letter from Francis Darwin, [after 16 June 1879] and n. 6).
 - 15 See n. 7, above. CD had noted that the glands of *Drosera rotundifolia* (common or round-leaved sundew) did not bend, even when touched with considerable force, if touched momentarily, but bent to the slightest prolonged pressure, while a filament of *Dionaea muscipula* (Venus fly trap) was highly sensitive to momentary touch but less to prolonged pressure (*Insectivorous plants*, p. 289). CD noted that the tips of radicles (embryonic roots) exhibited sensitivity to several different stimuli with different reactions determined by the nature of the stimulus (*Movement in plants*, pp. 572–3).

To G. B. Hill 1 July [1879]¹

DOWN, BECKENHAM, KENT,
July 1st.

DEAR SIR,—

I am much obliged to you for your kindness in writing to me. My notice of the life of my grandfather will be very short, and I doubt whether I shall go into such detail as to justify my using the little fact communicated by you.²

Yours faithfully & obliged, | CH. DARWIN

G. B. Hill 1896, p. 58

¹ The year is established by the reference to *Erasmus Darwin*, which was published in November 1879 (letter from Reginald Darwin, 12 November 1879).

² Hill's letter has not been found, but in his book *Talks about autographs* (G. B. Hill 1896, p. 58), Hill wrote that he had sent CD a passage copied from a book that mentioned a rose tree that grew against the wall of Erasmus Darwin's house in Lichfield; Hill also printed CD's reply.

To H. W. Reichardt 1 July 1879¹

[Sends his autograph to HR for the Galerie internationale (1880).]²

L'Autographe (dealers) (Catalogue 1)

¹ The date and the address (Down) are given in the sale catalogue.

² Reichardt was the editor of the first part of what was planned as a multi-part work, *International gallery, containing the autographs, biographies and portraits of the most eminent men of the day*, but only one part was ever published (Reichardt ed. 1880, p. [13]). The text of the biographies in the first part appeared in English, German, and French; CD did not appear in this part and was not mentioned as a subject for the planned subsequent parts.

From Anthony Rich 1 July 1879

Heene, Worthing.
July. 1. 1879.

My dear Mr. Darwin,

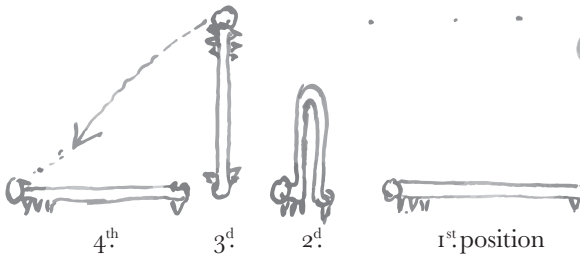
If I had had my “Chesterfield” at my fingers’ ends, or had paid befitting attention to *the Proprieties*, I should have written to you long ago to say that I had received a set of very pretty photographs from your son at Chatham, and to thank you for the interest you made with him in my behalf.¹ I lost no time, however, in making my acknowledgements to him. When I was at Bettwys, (now somewhat about twenty years since) I remember that an artist (with a now forgotten name,) and a chemist, (James of Pall Mall,) came down there to try if the sun could be utilized for the purpose of taking landscapes; which up to that time had never been accomplished. The art was then termed Daguerreotype, not Photography; and the efforts of those two gentlemen were, I believe, only partially successful; for the results and processes were preserved in mysterious secrecy.² To think of what was accomplished at that time, with these views on the table before me, is almost like passing clean out of one lifetime into another: Perhaps, when another twenty years are passed, the Sun will have learnt to paint as well as he now draws—who knows?—

I have been much puzzled of late to explain to myself the conduct of a lot of starlings who come to feed upon my lawn, fourteen or sixteen head at a time, some old and some young, and a like number of each—The old birds occupy themselves in seeking grubs and worms, which they duly deliver as soon as found to their young companions, who are I imagine the nestlings of the present season, sufficiently grown to run and fly well, but not yet strong enough of beak to struggle with a worm in its hole. Each old bird has a single young one in attendance upon it; and only a single one; to which alone it delivers its finds—³ Now my perplexity lies in this: It is inconceivable that each of those seven old birds have only hatched out a single offspring this season;—and therefore many of the old ones must be engaged in nursing children not their own—So that the only interpretation that I can put upon a proceeding which seems contrary to the usual course of nature, is to suppose that birds which live in flocks, as distinguished from such as pair or live isolated, are “communists”, sharing together the toils and gains which ensue in their struggle for existence, as some insects do.—

That word “insect” calls to my remembrance another matter which attracted my attention this Spring; and if I had the good fortune of living within a walk of you I am not certain that you would not have had the misfortune of listening to the narrative long ago— It has reference to a drab coloured caterpillar which lives in ivy; and more especially his peculiar method of locomotion. The one upon the ivy branch my gardener brought to me was about an inch and a half long; but I do not think that he had then attained his full growth, as it was early in the spring when I found him: He has no legs; only a couple of nippers at the nether end, one on each side; and six similar ones close behind his neck, three on each side of it.⁴



When he wants to advance he proceeds to execute three distinct movements. He first brings his nether end up to his neck so that the entire length of the body forms a loop upright;— he then loosens his head piece from the branch, and shoots it with extreme rapidity, bolt upright, as if he was going to leap into the air, but was held back by his tail clips— then he falls forward, like a dead man, and comes down upon the branch just one length of his entire body in advance of his original position.



That seemed to me such an unusual way of progressing that I thought I would mention it to you the first opportunity I had of doing so; my excuse being that caterpillars which live in ivy might very generally escape observation.—

I forgot to mention a droll piece of conduct by one of the young starlings to its parent natural or adopted. When the old bird did not find a worm as readily as the young gourmand required it young greedy, kept drumming with its beak upon the rump of the old one, from behind; and that drove the foraging parent onwards to a wider birth and pastures new— It reminded one of an infant kicking and thumping its nurse when it wanted its luncheon or supper— In truth the whole proceeding was exceedingly droll, and entertaining.—

My conscience hints that that epithet will not apply to this long straggling letter— But to make excuses will only increase the evil, and encroach still further upon your time so much and so well occupied as it is: Please then to forgive the infliction; and permit me to transmit through you my respects to M^{rs}. Darwin while I sign myself | Very sincerely and faithfully yours | Anthony Rich

DAR 176: 136

- ¹ Rich alludes to Philip Dormer Stanhope's letters to his son (Stanhope 1774), which included advice on etiquette. Stanhope was the fourth earl of Chesterfield. Leonard Darwin was an instructor in chemistry and photography at the School of Military Engineering, Chatham; he sent photographs (probably ones he made of CD) to Rich in May 1879 (see letter from Anthony Rich, 30 May 1879).
- ² The artist and chemist have not been identified. Betws-y-Coed is a village in Conwy, North Wales.
- ³ The European starling is *Sturnus vulgaris*; parent birds may feed fledged offspring for a few days.
- ⁴ Moths of the family Geometridae have larvae of the type described by Rich; these are commonly referred to as loopers or inch-worms. Based on Rich's description of the larva and its food plant, ivy (*Hedera helix*), the caterpillar was most likely a late instar of the common *Peribatodes rhomboidaria* (willow beauty).

To Francis Darwin 2 July [1879]¹

Down
July 2^d

My dear F.

We returned home yesterday morning.— Your mother enjoyed her 3 days much & it has rested me.² Abbadubba was gracious to us & looking the perfection of health vigour beauty & good sense.— Herbert Spencer says in his new book 'Data of Ethics', that the ever present idea of causation is the highest point in the evolution of mind, & I am sure that Abbad. has reached the highest point, for his "why"—"what for" &c are incessant.—³ But my object in writing now is to say that it seems to me highly important that cauterising tips of radicles should **not** prevent *apheliotropism* or *aphelism* (N.B. remember to enquire about these substantives), for this shows that it is no absolute consequence of the application of caustic, that the radicles cannot bend (this is an elegant sentence). Do you see what I mean? They do *not* when cauterised bend geotropically & why sh^d we say this is owing to injury, when they do bend when cauterised to darkness & likewise owing to "Sachs curvature".⁴
your affect. | C. D.

P.S. | I have just started some Sinapis seed, jammed in little holes in cork resting on water to see if they will send their roots into the water, for I sh^d like to see their apheliotropism, & will perhaps try gold-beaters' skin & black grease—or very thin tin-foil caps.—⁵

I have been putting ligatures on fir-branches this morning.⁶

DAR 211: 60

- ¹ The year is established by the reference to returning home after three days (see n. 2, below).
- ² The Darwins had stayed at Laura Mary Forster's house, West Hackhurst, Abinger Hammer, near Dorking, Surrey, from 28 June; they returned to Down on 1 July 1879 (CD's 'Journal' (Appendix II)).
- ³ Abbadubba was a pet name for Francis's son, Bernard Darwin, who was almost 3 years old. Herbert Spencer's book *The data of ethics* (H. Spencer 1879) had been published in the second half of June (*Publishers' Circular*, 1 July 1879, p. 506). For Spencer's view on the development of the idea of causation, see H. Spencer 1879, pp. 47–58.
- ⁴ Francis had written that mustard roots to whose tips he had applied caustic (silver nitrate) were still apheliotropic (see letter from Francis Darwin to Emma Darwin, 30 June 1879). For CD's use of the term 'Sachs' curvature', see the letter to Francis Darwin, 16 June [1879], n. 8. CD had asked Francis to inquire whether the substantive (noun) form of 'aphelic' would be 'aphelism' (see letter to Francis Darwin, 25 June [1879] and n. 6).

- ⁵ *Sinapis* is a genus of mustard. CD and Francis were experimenting with *S. alba* (white mustard); Francis had observed strong apheliotropism in the roots of this species (see letter to Francis Darwin, 6 and 7 June [1879] and n. 5, and letter from Francis Darwin, [after 16 June 1879] and n. 4).
- ⁶ CD was planning to remove by ligature all the leading and lateral shoots but one from his silver fir branches (see letter to Francis Darwin, 25 June [1879] and n. 7).

To Francis Darwin 2 July [1879]¹

My dear F.

That was a **splendid** idea of yours in your letter of June 30th about touching upper & lower surface of apex of radicles, extended horizontally in earth. It shows beautifully that caustic at least on one side, does not interfere with the bending—² I have no shade of doubt that the apex is a kind of brain for certain movements, like the gland of *Drosera* for inflection—or the hairs on *Dionæa*—ie a specialised centre for receiving certain irritations³

C. D.

Whilst you remember, make notes about the horizontally extended roots, with caustic above & below.— On your return we will make trial with cutting off 1 mm. on horizontal & vertical radicles.—

July 2^d—

DAR 211: 61

- ¹ The year is established by the relationship between this letter and the letter from Francis Darwin to Emma Darwin, 30 June 1879.
- ² See letter from Francis Darwin to Emma Darwin, 30 June 1879 and n. 4. CD and Francis had been experimenting with lunar caustic (silver nitrate) applied to the tips of radicles (embryonic roots); Francis, who was working in the laboratory of Julius Sachs at Würzburg, had informed CD of Sachs's objections to the use of caustic (see letter from Francis Darwin, [before 26 June 1879] and n. 3). The results Francis described in his letter to Emma of 30 June 1879 seemed to vindicate their experimental protocol.
- ³ CD had observed inflection in the leaves of *Drosera rotundifolia* (common or round-leaved sundew) and *Dionaea muscipula* (Venus fly trap); see *Insectivorous plants*. He concluded that the motor impulse was transmitted from the leaf gland that had been touched to the surrounding glands in a manner comparable to a reflex action in animals; he further noted that in the fly trap, there existed an electrical current that was disturbed by touch in the same manner as in the contraction of muscle in animals (*ibid.*, pp. 276–7, 318).

From Francis Darwin 4 July 1879

Bot Institut | Würzburg
Friday July 4/79

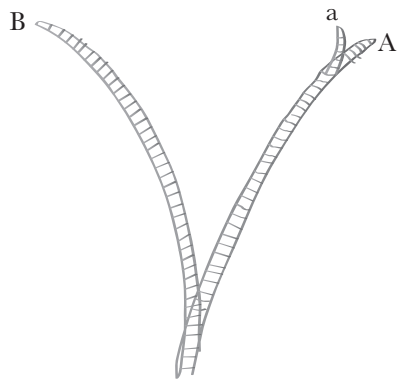
Please ask G to order a copy of “Shakespeare’s C Merry Tales” to be sent to me here. I am not sure of the title— The German Humour man wants to see them¹

My dear Father

Goebel says they ought strictly to be Prosheliism & Apheliism but he thinks there would be no harm in ‘helism’ with one i.² The air roots of *Monstera* didn’t give any

definite results none of them turned well but the best one was one with un-greased gold B's skin³ I see from my notes about mustard roots in the winter, that caustic decidedly stopped aphelism the non-caustic ones all bending. I will try it here again. I sow mustard nearly every day now to have a stock for measuring— I have confirmed the fact that mustard roots grow quicker in darkness, by marking them at 10 mm in the am & measuring in evening as before.⁴ Now I have also mustard on a revolving disc & I measure the growth with a microscope like Vines did the mould & I think it will give neat results.⁵ I am also doing air roots of *Chlorophytum* (which I have cultivated in Nährstofflösung) with a microscope. And I shall tomorrow begin measuring the growing shoots of *Tecoma radicans* with are well (as you were)—aphelic. I have rigged up a tent to keep sun off & have got a dark & light bell & c all ready fitted to put together. If I can do that & the stems of *Tropæolum* I shall have enough for a decent paper.⁶ I quite agree with you that it is well worth while to prove that negative heliotropic things grow quicker in darkness. I am pleased that I have succeeded with mustard roots quite against Sach's advice; first he said O they weren't regularly aphelic, it was only a "pathologische Erscheinung", & then "O you'll never make out a difference in the growth of roots in light & dark Wolkoff worked very industriously at it & couldn't succeed" I don't know whether he will ask me to publish it in his Arbeiten & now I don't care.⁷ I see it is a very good thing to be as independent of him as possible. I came to this conclusion before I heard about D^c Vries. Stahl works entirely in his own room, though many things he could do much better here, simply because he cannot stand being under Sachs in any way. He is very anxious to keep on perfect terms with Sachs & he finds the best way is only to see him when he (Stahl) is not working Stahl says he thinks it absolutely bad for anyone to work under Sachs unless they are of an independent nature⁸ I think you had better not repeat anything about Sachs and Stahl as I see Stahl is very cautious—for instance he said to me "Tell Ward (the Englishman) he ought to work under D^c Bary, he would do much better there, only don't say I said so"⁹

One day I observed the movements of *Oscillaria*, which are Algæ consisting of a row of cells, and which move about by a serpentine squirming movement; they also make the most perfect circumnutation, each circle in about 40"¹⁰ It is very pretty to see the tip bend over before the return movement begins. If A & B represent the two extreme ends of a nutation, then when it has moved from B to A and is going to return, the tip bends first as (a) & then the whole filament swings over. Stahl believes this goes on by a change of tension without growth. I have had



AL incomplete
DAR 209.3: 334

CD ANNOTATIONS

- 0.3 Please ... see them 0.4] *crossed ink*
 1.1 Goebel ... results 1.3] *double scored red crayon*
 2.7 If ... growth. 2.13] *scored red crayon*

- ¹ George Howard Darwin would probably have ordered a copy of *Shakespeare's jest book. A hundred merry talys. from the only perfect copy known* (Oesterley ed. 1866). The title of the work alludes to a line in William Shakespeare's *Much ado about nothing* (2.1) that refers to 'the 100 Merry Tales', a collection of humorous anecdotes. The edited volume used a version of the collection discovered in the Royal Library of the University of Göttingen (Oesterley ed. 1866, p. iii). Francis's German friend has not been identified.
- ² Karl Goebel, a colleague of Francis's at Würzburg with a background in classical languages, had been advising Francis on CD's proposed terms for motion towards and away from the sun (see letter from Francis Darwin, [after 16 June 1879], and letter to Francis Darwin, 25 June [1879]).
- ³ See letter from Francis Darwin to Emma Darwin, 30 June 1879 and n. 5. Francis was covering tips of aerial roots with gold-beater's skin to determine whether the apex controlled the response to light in the root. *Monstera* is a genus in the family Araceae (arums).
- ⁴ In his recent experiments with *Sinapis alba* (white mustard), Francis noted that the roots were strongly apheliotropic and that they grew much quicker in darkness (letter from Francis Darwin, [after 16 June 1879] and n. 4).
- ⁵ On Sydney Howard Vines's use of a micro-telescope to measure growth, see the letter from Francis Darwin, [before 26 June 1879] and n. 7.
- ⁶ CD was also studying aerial roots and had received a plant of *Chlorophytum orchidastrum* (fireflash or orange spider plant; family Asparagaceae) from Kew (letter to W. T. Thiselton-Dyer, 5 June 1879 and n. 2). *Nährstofflösung*: nutrient solution (German). *Tecoma radicans* (a synonym of *Campsis radicans*) is trumpet creeper (family Bignoniaceae); *Tropaeolum* is the genus of nasturtiums (family Geraniaceae).
- ⁷ See n. 4, above. *Pathologische Erscheinung*: pathological phenomenon (German). Alexander Wolkoff's unpublished research on the action of light on negatively heliotropic organs had been described by Julius Sachs in his *Text-book of botany* (Sachs 1875, pp. 756–7). In the event, Francis did publish his paper 'Über das Wachstum negativ heliotropischer Wurzeln im Licht und im Finstern' (On the growth of negatively heliotropic roots in light and in shade; F. Darwin 1880) in Sachs's journal, *Arbeiten des botanischen Instituts in Würzburg*.
- ⁸ Hugo de Vries was professor extraordinarius of botany at Amsterdam, but still spent summers at the laboratory of Julius Sachs in Würzburg. He had been visiting the laboratory since 1871 and had worked there full-time from 1875 to 1877, writing a series of monographs for the Prussian ministry of agriculture, a position obtained for him by Sachs (Berkel *et al.* 1999, p. 155). Ernst Stahl had been Sachs's assistant from 1874 until 1877 (*NDB*).
- ⁹ Harry Marshall Ward was a student at Cambridge University. He worked in Sachs's laboratory in 1880 and in the laboratory of Anton de Bary in Straßburg (Strasbourg) in 1882.
- ¹⁰ Francis evidently refers to the genus of blue-green algae, *Oscillatoria*; it is now classified within the bacterial phylum Cyanobacteria, rather than as a plant. Filaments made up of rows of cells form colonies; these colonies can orient themselves to face the light by means of individual filaments moving against each other.

To Francis Darwin 4 July [1879]¹

Down.—
 July 4th

My dear F.

It will be very important for us to learn whether it is the tips of radicles that perceive & cause them to bend to *damp surfaces*, so learn if you can how Sachs tried Beans.— I know that you tried mustard(?) but I forget result— in fact my Brain is in complete addle about what we have tried.² I think when you are at home we ought

to try one other Graminous plant. viz Wheat— about radicle bending up from surface of water (as Cielecki says Maize does) keeping radicle in very damp air.—³

I was talking yesterday with Ubba about your return, but could not make him understand that it w^d be many days before you returned. He maintained that you w^d come before Aunt Etty. He said “it is likely he will bring me some soldiers”— so a word to the wise.— I said that I sh^d be very glad when poor Dada came back. This he seemed to think very odd & asked me many times “what for?” His little head is as full of soldiers, dums & tumpets as ever it can be stuffed.—⁴

Your affect. C. D.

DAR 271.4: 16

- ¹ The year is established by the relationship between this letter and the letter from Francis Darwin, 4 July 1879.
- ² In his paper ‘Ueber das Wachstum der Haupt- und Nebenwurzeln’ (On the growth of primary and adventitious roots; Sachs 1873–4, pp. 432–4), Julius Sachs had found that roots of *Vicia faba* (broad bean) whose tips had been removed curved in random directions when placed horizontally on moist earth. Francis had been studying the effect of applying caustic to the tips of radicles of white mustard (*Sinapis alba*; see letter from Francis Darwin, 4 July 1879).
- ³ In experiments with *Zea mays* (maize), Theophil Ciesielski had observed that when a root was placed on a wet horizontal surface so that only the underside was wet, it curved upwards away from the surface (Ciesielski 1872, p. 25). Sachs had dismissed Ciesielski’s results, claiming they were due to Ciesielski’s having allowed the roots in his experiments to dry out partially during preparation (Sachs 1873–4, p. 401).
- ⁴ Ubba was a pet name for Francis’s son Bernard Darwin. Francis returned to England at the beginning of August 1879; his sister Henrietta Emma Litchfield and her husband Richard Buckley Litchfield visited Down from 19 to 21 July 1879 (Emma Darwin’s diary (DAR 242)). Francis had already sent Bernard Prussian paper soldiers ‘with tumpets & dums’ (probably Bernard’s words for trumpets and drums; see letter from Francis Darwin, [after 16 June 1879]).

To W. T. Thiselton-Dyer 4 July [1879?]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
July 4th

My dear Dyer

No man has a right to be so goodnatured as you are, for it must make others uncomfortable & ashamed of themselves! But I am *very* glad to have the *Drosophyllum* seeds, though it is but a small point which I wish so much to observe.²

Yours truly obliged | Charles Darwin

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: ff. 65–6)

- ¹ The year is conjectured from the reference to seeds of *Drosophyllum*; CD had asked for seeds in his letter to W. T. Thiselton-Dyer, 5 June 1879. The printed notepaper is of a sort that CD used between 1874 and 1882.
- ² No record of the seeds having been sent from the Royal Botanic Gardens, Kew, has been found; the point CD wished to observe has not been identified. CD’s most recent extant notes on the monotypic genus *Drosophyllum* (Portuguese sundew or dewy pine), made on 1 August 1878, concerned the manner in which the first true leaves broke through the ground (DAR 209.6: 80b).

From Francis Darwin [6 July 1879]

I have been talking about the sieve experiment. It all depends on getting the right degree of dampness of the surrounding air—Phaseolus are said to act well, I will try it here with his sieve in the same place where he does it.¹ At Down I failed with Faba but succeeded with Lepidium.² I am v glad you approve so much of the bean experiment with caustic above & below.³ The air roots dont bend at all even without caps of any kind. I will try caps on Chlorophytum roots in water they are good strong roots.⁴ It has turned so horribly cold I have put on thick things, & the plants are not growing a bit well

Many thanks for Ubbadubba news.⁵ | F.D

Will mother tell Bessy I have written today to the Riffel⁶

ApcS

Postmark: 6 7 79

DAR 274.1: 61

- ¹ See letter to Francis Darwin, 4 July [1879]. Francis performed experiments to determine the sensitivity of the tip of the radicle to damp air; one of the species tested was *Phaseolus multiflorus* (a synonym of *P. coccineus*, scarlet runner-bean). CD described the protocol devised by Julius Sachs (Sachs 1872a, p. 212), in which sieves with seeds germinating in damp sawdust were suspended so that the bottom was inclined at 40° to the horizon, and the tips of the radicles were coated to exclude moisture, in *Movement in plants*, pp. 180–2.
- ² Francis refers to *Vicia faba* (broad bean) and *Lepidium sativum* (garden cress). In his letter of 4 July [1879], CD had mentioned he had forgotten which species he and Francis had already tested.
- ³ See second letter to Francis Darwin, 2 July [1879] and n. 2.
- ⁴ See letter from Francis Darwin, 4 July 1879 and nn. 3 and 6. Plants of *Chlorophytum* (the genus of spider plants) have aerial roots.
- ⁵ See letter to Francis Darwin, 4 July [1879]. Ubbadubba was a pet name for Bernard Darwin, Francis's son.
- ⁶ The Riffelhaus, a hotel built in 1853, is near Zermatt in the Swiss Alps. Elizabeth Darwin was on holiday in Switzerland with Mary Elizabeth Atkin; they arrived at the hotel around 10 July 1879 (letter from Emma Darwin to W. E. Darwin, [10 July 1879] (DAR 219.1: 124)).

To G. H. Darwin 7 [July 1879]

From Mr. C. Darwin, Down, Beckenham.

Frank wants you to get & send by Post to Bot. Int. Würzburg “Shakespeare’s C. Merry Tales”. He says that he is not sure of the proper Title.¹ He wants to give book to some German friend. If you know title, perhaps Williams & Norgate could send it by Post there.—²

C. D.

7th—

ApcS

Postmark: JY 7 79

DAR 210.1: 85

- ¹ See letter from Francis Darwin, 4 July 1879 and n. 1. The book Francis wanted was *Shakespeare's jest book. A hundred merry talys, from the only perfect copy known* (Oesterley ed. 1866). Francis had been working at the Botanical Institute, Würzburg, since late May 1879 (letter from Francis Darwin, 29 May 1879).
- ² Francis's friend has not been identified. The publishers and booksellers Williams & Norgate specialised in foreign scientific literature.

To Ernst Krause 7 July 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)
July 7th 1879

My dear Sir

At last I send you (Registered) the proof-sheets of my Preliminary notice.¹ I am disappointed with it & I fear that you will be greatly disappointed; but I have done my best. The style will require a little more correction, & I shall add a page or two at the beginning about the family in old times, about which we have discovered some curious particulars.² Also perhaps another sentence on his advocacy of temperance—and on his work as a physician. Possibly I may strike out a few passages as too trifling, but this will depend on the judgment of some of my relations.³

The sentences in which I allude to your part, will of course be modified, after I have received & read the Translation, & settled what had best be done with your Biography.⁴ With wood cuts & additions, my notice will make about 150 pages. I feel sure Murray will not be willing to publish until the beginning of November.⁵

Two of my relations who can read German pretty easily have read your Article & like it *much*.⁶

My dear Sir | Yours sincerely | Charles Darwin

The Huntington Library (HM 36188)

- ¹ CD had written an essay on the life and character of Erasmus Darwin as an introduction to the translation of Krause's biographical sketch of Erasmus, which had focused on the Erasmus's scientific thought (Krause 1879a).
- ² For more on George Howard Darwin's discoveries about the Darwin family, see the letter from G. H. Darwin, 24 June 1879.
- ³ CD's proof-sheets were edited by his daughter Henrietta Emma Litchfield; on her deletions and textual changes, see King-Hele ed. 2003, pp. xviii–xx. Other family members also read and commented on the manuscript (see, for example, letter from Leonard Darwin, [before 12 July] 1879).
- ⁴ Krause had revised his biographical sketch, including material that evidently duplicated some of CD's essay (see letter to Ernst Krause, 5 June 1879, and letter from Ernst Krause, 13 June 1879).
- ⁵ *Erasmus Darwin* was published by John Murray (1808–92) in November; it contained a portrait of Erasmus Darwin as the frontispiece and two woodcuts (*ibid.*, pp. 3, 125).
- ⁶ The relations have not been identified, but CD's wife, Emma Darwin, and sons George and Francis knew German. Krause had revised his original *Kösmos* article (Krause 1879a) for *Erasmus Darwin*.

From E. A. Darwin 8 July 1879

8 July 79

Dear Charles

Miss Cobbe called on me the other day & spoke on the way your name was made use of in defence of Vivisection in Denmark especially.¹ I think she is quite aware

of your views of the importance of vivisection but she thought that perhaps you might be willing to say something that might be quoted in limitation of all useless repetitions of experiments. She was speaking in reference to a letter which I enclose (to be returned).² I promised to send you the letter but anything more of course I could not say. The letter comes to me from the Sec^y of the Anti Viv: Soc: & I shall simply have to return it to her if as I think probable you do not wish to make any remarks upon it.³ I'm glad to hear the Life is getting into print⁴

Yours affe.: EAD

DAR 105; B106-7

- ¹ Frances Power Cobbe was a co-founder in 1875 and honorary secretary of the Society for Protection of Animals Liable to Vivisection, familiarly known as the Victoria Street Society (Mitchell 2004, p. 240).
- ² The letter has not been found, but was evidently regarding a petition against vivisection drawn up by the society and presented by Anthony Ashley-Cooper (Lord Shaftesbury); *The Times*, 25 July 1879, p. 6; signatures of many famous people were included (see Kean 1998, p. 108).
- ³ Ann Marston was the founder and honorary secretary of the London Anti-Vivisection Society (*Spectator*, 3 April 1880, p. 15; Cobbe 1904, p. 679). CD did write, giving his reasons for declining to sign the petition (letter to Ann Marston, 20 July [1879]).
- ⁴ CD had received proof-sheets of his introductory essay for *Erasmus Darwin*, which was published in November 1879 (see letter to Ernst Krause, 7 July 1879).

To G. H. Darwin 8 [July 1879]¹

8th:

My dear G.

It has just occurred to me that M^{rs}. D. of Creskeld(?) offered to give me note to her solicitors in London for permission to search *piles of old deeds* about the Family.² Is it possible that Col. Chester might find out something by looking to any of the oldest deeds relating to Cleatham?³ In this case it w^d be necessary to get strong note to solicitor mentioning Col. Chesters name—I know not at all whether this w^d be worth while.

C. D

Horace is just come in after a most delightful talk w. T.H.F—which I consider settles it tho' nothing definite was said he made himself so very nice to H. that I am sure the attraction must have been mutual⁴

DAR 210.1: 86

- ¹ The month and year are established by the relationship between this letter and the letter to G. H. Darwin, 12 July 1879.
- ² Charlotte Maria Cooper Darwin of Creskeld Hall, Otley, Yorkshire, had made the offer in her letter of 16 April [1879]. Her solicitor was Simon Dunning.
- ³ Joseph Lemuel Chester, a genealogist, was helping CD research his family tree (Freeman 1978). The Cleatham Estate in north Lincolnshire had been owned by Charlotte and CD's great-great-uncle William Darwin (1681–1760) (see letter to C. M. C. Darwin, 6 April 1879).
- ⁴ Thomas Henry Farrer had been opposed to an engagement between his daughter, Ida Farrer, and CD's son Horace Darwin (see letter to T. H. Farrer, 27 June [1879] and n. 2).

July 1879

To Reginald Darwin 8 July 1879

Down,
July 8th, 1879.

My dear Cousin

I have kept all your Books &c. longer than I had intended, as I wished to correct the first proofs before returning them.¹ This is now done and all your property dispatched to-day to R. Station. I ought to pay carriage, but this is impossible from our little Station, except to London. Very many thanks for all your kind assistance. Pray send me a P. O. card to say that parcel safely received.²

My little book will not be published, I suppose, till November, when of course a copy will be sent to you.³ I fear that you will be much disappointed with it. I am so in reading over the proofs and thought that I had made it a little more interesting than it is; but I have done my best and no man can do more.

Believe me, my dear Cousin | Yours very sincerely | Ch. Darwin

Copy

DAR 153: 102

¹ Reginald had sent CD Erasmus Darwin's Commonplace book (Down House MS), as well as letters and other items (letter from Reginald Darwin, 29 March 1879).

² The nearest railway station to Down was Orpington, on the South Eastern Railway line; since Reginald lived in Buxton, Derbyshire, the package sent by CD would have been transferred to another company in London, so the carriage would be calculated at the receiving end. Prepaid halfpenny postcards had been in use since October 1870 (C. W. Hill 2007, pp. 4–5).

³ *Erasmus Darwin* was published in early November 1879 (letter from Reginald Darwin, 12 November 1879).

From Francis Darwin 9 July 1879

Bot Institut Würzburg—
July 9. 79

I have tried touching a hair of *Tradescantia* under the microscope but it produces no effect: Then I tried pressing on the cover glass & it requires strong pressure to produce any effect, & then the streaming protoplasm is paralysed & remains still for a few minutes & then goes on again.¹ Hofmeister says the same thing in his *Lehre von der Pflanzenzelle* (*Handbuch Phys Botanik B^d 1 erster Abtheilung p 50*;) the book is in the study on a shelf over the yard measure (it is catalogued I think).² I will try *Drosera* both aggregated & not. If the protoplasm in a cell which lines the cell wall & whose duty it is to look after the tension of the cell is also paralysed one would expect movement to occur—³ Very glad about H have written to him—⁴

F D.

Caustic mustards grew as much as the not caustics & were aphelic again today⁵

ApcS

DAR 162: 61

- ¹ Francis evidently refers to the stamen hairs that characterise flowers of some species of *Tradescantia* (the genus of spiderwort). Ferdinand Julius Cohn, after reading *Insectivorous plants*, had drawn CD's attention to these hair cells, noting that the protoplasm adhering to the cell walls was colourless, while the blue fluid of the central vacuole was not protoplasm. Based on his observation that the pigments were insoluble in protoplasm, Cohn queried whether the red aggregated matter that CD had described in *Drosera* (the genus of sundews) was protoplasm (see *Correspondence* vol. 23, letter from F. J. Cohn, 21 August 1875 and nn. 3 and 7). In the letter to Francis Darwin, 24 June [1879], CD had suggested that Francis try touching a cell to see whether it influenced the current of protoplasm.
- ² Wilhelm Hofmeister had observed individual cells of the stamen hairs of *Tradescantia virginica* (a synonym of *T. virginiana*, Virginia spiderwort); he noted that moderate squeezing of the stamen filament resulted in an immediate cessation of movement of the streams of protoplasm, which then separated and formed little balls or club-shaped masses, sometimes together with protoplasm from the proximity of the nucleus, other times with the primordial utricle (the protoplasm lining the cell wall; see Hofmeister 1867, pp. 50–1).
- ³ In *Insectivorous plants*, p. 43, CD had observed that if the glands of the tentacles of *Drosera* were crushed between pincers the tentacles did not become inflected or exhibit any signs of aggregation, and seemed paralysed.
- ⁴ Horace Darwin had recently met with Thomas Henry Farrer, who had earlier objected to his proposed engagement to Ida Farrer (see letter to G. H. Darwin, 8 [July 1879] and n. 4).
- ⁵ See second letter to Francis Darwin, 2 July [1879]. Francis's results regarding growth in roots of *Sinapis alba* (white mustard) whose tips had been cauterised confirmed that the use of lunar caustic (silver nitrate) did not cause systemic injury to the root as had been suggested by Julius Sachs (see letter from Francis Darwin, [before 26 June 1879]).

To E. R. Lankester 9 July 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
July 9th 79

My dear D^r: Lankester

I hope that you will be so good as to thank the authoress for her kind present & yourself accept my thanks. It is a grief to me that some part of my brain has undergone a new form of degeneration, for though in old days I much enjoyed the higher kinds of poetry, now for several years I have not been able to read a line! Perhaps the 'key-notes' may revive my taste, & I will make the trial, but greatly fear that all the ganglia in my skull have become too prosy.—¹

I am delighted to hear that you will be able to give up more time for original investigations; for I have always thought, if you will allow me to say so, that you could do splendid work.²

Believe me | Yours sincerely | Charles Darwin

We are going to the Lakes for a Holiday soon & I will take the Poem—the place will be propitious.—³

American Philosophical Society (565)

- ¹ No letter from Lankester on this subject has been found, but he evidently sent a copy of *Key-notes* (Bevington 1879), a collection of poems by Louisa Sarah Bevington.
- ² Lankester was professor of zoology at University College, London, and also edited the *Quarterly Journal of Microscopical Science*; in 1879, he moved to Northbank, London, to be closer to University College and also was given assistants who acted as demonstrators for lectures (Lester 1995).
- ³ The Darwins stayed at Coniston in the Lake District from 2 to 27 August 1879 (Emma Darwin's diary (DAR 242)).

July 1879

To W. T. Thiselton-Dyer 9 July [1879]¹Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
July 9th

My dear Dyer

The tendrils are very curious; I have seen something of the kind though not so well marked. How pretty are the affinities of plants, when I glanced at the tendrils, I said that they must belong to some Cucurbitaceous plant, though I knew no more than the man in the moon what *Hodgsonia* was.—² The little white transparent flakes which project from the sides of the tendrils, here & there, where they have been in contact, & which look like flakes of dry gum, are I find under the microscope cellular outgrowths.

Yours very sincerely | Ch. Darwin

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: ff. 178–9)

¹ The year is established by the placement of the letter within Thiselton-Dyer's correspondence in the archives of the Royal Botanic Gardens, Kew.

² No other correspondence relating to *Hodgsonia* (a genus of vines in the family Cucurbitaceae) has been found.

From C. C. Blake 10 July 1879

28 East St' Queen's Square. W.C.
July 10th 1879

My Dear Sir.

I have a favour to ask you, which I hope you will not refuse. You have more than once kindly noticed my past anthropological work (*Descent of Man*. 2nd ed. page 40) and though at one time I may have been opposed to the theory of Natural Selection, I have long since in my public lectures acknowledged the theory.¹ I have given you my support, & do not ask you to buy it.

During the last few years I have been very poor, and subject to a variety of troubles. Owing to the bankruptcy of my wife's brother,² I lost some savings I had accumulated from newspaper work. But since in 1877 I had typhoid fever, I have become very weak, & during the time of my illness I lost most of my press engagements. I have now sold off most of my books, and am in a great state of pecuniary distress & privation, though in the cheapest lodgings, & free from debt. I have made an effort lately to lecture at the British Museum, but in spite of the favourable notices of the press (there was one in the *Times* of Tuesday)³ I regret to say that no one paying has come to the lectures. I had relied on this course at least recouping the money I had advanced for advertisements. It is hard to lecture to no audience at all. Could you lend me five pounds till some brighter days come for me?⁴ I am translating Fau's *Anatomie Artistique*, which will be paid for some day, when finished.⁵ My lectures at Westminster Hospital, though always duly delivered, have never paid, as there are very few medical students who care to work up the subjects of Comparative Anatomy; and Zoology is entirely above their level. I give lessons in Latin, Spanish, & French to pupils, and should be always glad to have more.

You have been very successful as a literary man. Perhaps the influence of South America has been of some effect in this. For my part, I have never quite shaken off the *calentura* which has left acute ague, which has now lasted ten years.⁶ Try to help me if you can. If I should again win back my old position on the press, I shall repay you some day. But in any case, you will have the consciousness that you assist one who has always respected the greatest Biologist of this century.

I am | Yours very truly | C. Carter Blake. | Doct. Sci. | Lecturer on Comparative Anatomy. Westminster Hospital

Charles Darwin. Esq F.R.S

DAR 160: 200

¹ See *Descent* 2d ed., p. 40 n. 45; see also *ibid.*, p. 20, n. 42. CD had referred to Blake's description of the large canine teeth in the jawbone found in a cave at La Naulette, Belgium (Blake 1867). On Blake's opposition to Darwinian theory and subsequent change of view, see G. Dawson 2016, pp. 286–300.

² Blake's wife was Louisa Mary Blake; her brother was Henry Faulkner.

³ Blake's lecture on the character of fishes and their relationship to lower amphibians was described as the first in a series titled 'Classes of fishes, and the modes of preservation of fossils' (*The Times*, 8 July 1879, p. 5).

⁴ On 11 July 1879, CD recorded a payment to Blake of £5 under the heading 'Charities'; another payment of £5 was recorded on 21 December 1880 (CD's Classed account books (Down House MS)).

⁵ Blake's translation of the sixth edition of Julien Fau's *Anatomie artistique élémentaire du corps humain* (Elementary artistic anatomy of the human body; Fau 1880) was published in 1881 (Fau 1881).

⁶ Blake alludes to CD's time in South America while on the *Beagle* voyage and to the *Journal of researches*, which went through several editions. *Calentura*: fever (Spanish). Blake, while on a voyage around the world in 1867–8, explored the territory of the Miskito, a group of Native Americans in Honduras and Nicaragua (*Journal of the Anthropological Society of London* 6 (1868): xv; see also Flandreau 2016, p. 179).

From G. H. Darwin 10 July 1879

T. C. Camb

July 10. 79

Dear Father,

I have written to Col. J. L. Chester to know if he w^d like to see the deeds & he will write to you if he w^d I sh^d think you might describe him as an eminent archæologist introduced to us by

M^r: Edward Peacock F.S.A²
of Bottesford Manor,
Lincolnshire

I sh^d think M^{rs}: D. w^d consent.³ I have just sent her copies of my papers & you will get a copy returned from W^m:⁴ I am getting on with my work tho' seedy with sore throat cough & liver.

Tell Mother to tell Bessy that I believe the Calais Douvres is running in the day every day except Sunday & Monday.⁵

Yours affec. | G H Darwin

"M^{rs}: D | Creskeld | Otley | Yorkshire"

DAR 210.2: 79

- ¹ Joseph Lemuel Chester. See letter to G. H. Darwin, 8 [July 1879] and nn. 2 and 3. The deeds related to the Cleatham estate in North Lincolnshire, formerly owned by Charlotte Maria Cooper Darwin and CD's great-great-uncle William Darwin (1681–1760).
- ² Edward Peacock was a fellow of the Society of Antiquaries of London. CD wanted to give Chester an introduction to Simon Dunning, a solicitor who held records of the Darwin family (letter to G. H. Darwin, 8 [July 1879]).
- ³ Charlotte Maria Cooper Darwin (see letter to G. H. Darwin, 8 [July 1879] and n. 2).
- ⁴ William Erasmus Darwin.
- ⁵ Elizabeth Darwin and Mary Elizabeth Atkin had travelled to Switzerland on 17 June 1879; they returned to Down on 18 July 1879 (Emma Darwin's diary (DAR 242)). George refers to the ferry from Calais, France, to Dover (Douvres is the French for Dover), England.

From Ernst Krause¹ 10 July 1879

Berlin N.O. Friedenstrasse 10. II.
den 10.7.79.

Hochgeehrter Herr!

Ihr gütiges Schreiben vom 7^l und die Druckbogen empfang ich gestern und danke Ihnen für Beides auf das Herzlichste.² Ich habe Ihre Darstellung in einen Zuge durchgelesen und einen grossen Genuss davon gehabt. Wenn man sich eine Zeit hindurch mit den Lebensumständen einer, wenn auch sonst fernstehenden Person beschäftigt hat, so gewinnt man eine ähnliche Zuneigung und Sympathie für dieselbe, wie sie sonst aus persönlichem Umgange entsteht, und es macht uns eine rein menschliche Freude, immer mehr Einzelheiten über dieselbe zu erfahren. Da ich annehme, dass es dem weniger interessirten Leser doch, wenn auch im minderen Grade, ähnlich gehen muss, so wäre ich sehr froh, wenn Sie Ihr Vorhaben einiges zu streichen, *nicht* ausführen wollten. Zwar weiss ich nicht, welche Stellen Sie mit den "trifling passages" meinen, allein ich kann Ihnen versichern, nichts gefunden zu haben, was man nicht in Deutschland mit Behagen lesen würde. Vor Allem wünschte ich, dass Sie dabei nicht an den Brief an Miss Mary Howard gedacht haben möchten; derselbe erscheint mir im höchsten Grade reizend.³

Zu meiner grossen Freude ist es nicht viel, was in den beiden Characterbildern doppelt vorkommt, und ich glaube jetzt, wenn Sie aus meiner Schilderung alles dasjenige herausstreichen wollten, was Sie in der Einleitung bereits berührt haben, so könnten—durch die besondern Umstände ihrer Entstehung entschuldigt,—recht wohl die beiden biographischen Skizzen in demselben Bande nebeneinander gegeben werden. Die meinige giebt eine kurze Zusammenstellung des Hauptsächlichsten, was bereits veröffentlicht war, die Ihrige Zusätze aus noch nicht benutzten Quellen. Für das Ausland, Frankreich, Amerika, Deutschland würde meine zusammenfassende Lebenskizze kaum entbehrlich sein, und auch für England hätte sie vielleicht eine gewisse Berechtigung, sofern sie ein Zurückgehen auf das Buch von Miss Seward für den gewöhnlichen Leser entbehrlich macht, und so gewissermassen die älteren Biographien ersetzt, indem sie deren Inhalt resumirt.⁴ Manche Wendung, wird dem englischen Leser allerdings sonderbar vorkommen, z.B. wenn ich andeute, wer Boulton, Edgeworth u.s.w. waren, allein man wird solcher Wendungen dem Ausländer verzeihen, denn für seine Landsleute und wahrscheinlich auch für Franzosen und Amerikaner dürften sie unerlässlich sein.⁵



Ernst Krause.

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Image by Cambridge University Library.

Auch meine Polemik gegen Miss Seward scheint mir durch Ihre höchst nothwendigen Winke über dieselbe, nicht überflüssig gemacht worden zu sein.⁶ Denn soweit Sie Miss Seward discreditiren, könnte man entgegenen, es geschähe aus Pietät gegen den Grossvater, aber indem ich Walter Scott und andre unbetheiligte Personen in demselben Sinne urtheilend anführe, gewinnt dieses Urtheil eine grössere Objectivität. Sogar der dritte Abschnitt, über die humanitären Bestrebungen Erasmus Darwin's scheint mir, wenn auch mit einigen Kürzungen nothwendig, falls Sie nicht vorziehen, ihn in die Präliminar-Notiz aufzunehmen, denn dem Ausländer dürfte es unentbehrlich sein z.B. zu erfahren, wie die Satire *The loves of the triangles* entstanden ist, und ebenso will mir die kleine Wasserfahrts-Anecdote, wegen der prächtigen Rede an die Arbeiter sehr mittheilenswerth erscheinen.⁷

Ich weiss, hochverehrter Herr, dass Sie mir es gewiss nicht übeldeuten, wenn ich Ihnen meine Auffassung der Sache ganz offen darlege, zumal ich Ihnen ja wiederholt versichert habe, dass ich mit jeder Anordnung, die Sie treffen, vollkommen einverstanden sein werde. Aber ich finde, dass Ihre Präliminar-Notiz gradezu einige weitere Nachrichten voraussetzt. So z.B. sagen Sie über Mrs. Pole gar nichts, und spielen z.B. auf die Wasserfahrt-Geschichte an, ohne Sie zu erzählen.⁸ Für England wäre das gerechtfertigt, für das Ausland nicht.

Ausserdem hätte ich einen ganz äusserlichen, so zusagen aesthetischen Grund, zu wünschen, dass mein Theil an dem Buche nicht gar zu klein, ich meine zu bogenarm, ausfalle. Es würde nicht gut aussehen, fürchte ich, wenn Ihre Einleitung von 150 Seiten, vor einem Buche von kaum 100 Seiten stünde. Aus diesem Grunde erscheint mir jede räumliche Vermehrung meines Antheils, die sich nicht als blosser Wiederholung darstellt, wünschenswerth. Die wirklichen Wiederholungen werden bereits in der jetzigen Gestalt, kaum mehr als 5–6 Druckseiten betragen, und liessen sich noch erheblich vermindern. Es ist auch nicht dieser Umstand, der besonders ins Gewicht fällt, sondern vielmehr der, dass die Lebensbeschreibung überhaupt zweimal *anfängt*. Allein, wenn Sie die Bemerkung im Eingange, über die gegenseitige Unbekanntschaft der Verfasser mit der Skizze des Andern stehen liessen, so würde diese Anomalie, glaube ich, von jedem Leser gebilligt und entschuldigt werden.⁹

Noch möchte ich mir die Frage erlauben, ob ich die corrigirten Druckbogen behalten darf, um sie der Uebersetzung zu Grunde zu legen, oder ob Sie dieselben noch gebrauchen? Im ersteren Falle würde ich Sie bitten, mir die Zusätze über den Ursprung Ihrer Familie gütigst in Abschrift senden zu wollen, im zweiten könnte ich vielleicht die Drucklegung abwarten, und würde dann Mr. Murray bitten, mir jeden Bogen, so wie er fertig wird, zu senden.¹⁰

Ich muss noch einige Worte hinzusetzen über einen Artikel, den ich im letzten Hefte des Kosmos veröffentlicht habe, und der Ihnen vielleicht keinen guten Eindruck machen wird. Er betrifft das Buch des Mr. Grant Allen über den Farbensinn.¹¹ Der Verfasser erklärt darin, meine Artikel im Kosmos über die Gladstone-Geiger-Magnus'sche Theorie gelesen zu haben, erwähnt aber mit keiner Sylbe, dass ich seine gesammte Auffassung der Sache, schon ein paar Jahre früher dargelegt habe, ja im Gegentheile, er sucht den Schein zu erwecken, als ob diese Theorie in Deutschland fast angenommen wäre.¹² Dieses Verfahren empörte mich so sehr, dass ich gleich

in der ersten Hitze jenen etwas heftigen Artikel schrieb, und sogleich drucken liess, obwohl ich jetzt Manches anders gesagt zu haben wünschte. Die Sache ist vielleicht des Lärmens nicht werth, aber ich hoffe, *Sie* sowohl als andre Leser, werden den von mir angeschlagenen Ton entschuldbar finden, wenn Sie erwägen, dass die gesammten Umriss des Allen'schen Buches in jenen von ihm gekannten Artikeln gegeben waren, deren Inhalt er mit völligem Stillschweigen übergeht. Er hat sich dadurch einem Verdachte ausgesetzt, der niemals hätte ausgesprochen werden können, wenn er nur mit zwei Worten angedeutet hätte, dass in meinen Artikeln dieselben Ansichten dargelegt worden seien, wie in seinem Buche.

In der Hoffnung und mit dem herzlichsten Wunsche, dass Sie sich trotz dieses abscheulichen Wetters wohl befinden mögen,¹³ zeichne ich hochverehrter Herr | Ihr treulich ergebener | Ernst Krause

DAR 92: B31–2

¹ For a translation of this letter, see Appendix I.

² See letter to Ernst Krause, 7 July 1879. CD had sent proof-sheets of his introductory essay for *Erasmus Darwin*.

³ CD included the complete text of Erasmus Darwin's letter to Mary Howard shortly before their wedding in *Erasmus Darwin*, pp. 21–4.

⁴ Anna Seward's biography of Erasmus Darwin (Seward 1804) had been strongly criticised by Darwin family members for its inaccuracies (see letters to Ernst Krause, 14 March 1879 and 19 March 1879).

⁵ In the published version of *Erasmus Darwin*, Matthew Boulton and Richard Lovell Edgeworth were not mentioned in Krause's section of the book.

⁶ Krause's polemic against Seward does not appear in the published version of *Erasmus Darwin*.

⁷ CD mentioned Scott only once in *Erasmus Darwin*, p. 91; he quoted from a letter written to Scott by Edgeworth. Krause added a long footnote to the German version, expanding on Scott's evaluation of Seward (Krause 1880, pp. 195–6). The poem 'The loves of the triangles' was a parody of *The loves of the plants* (E. Darwin 1789–91, pt 2; see *Erasmus Darwin*, pp. 95–6). The anecdote about the trip down the Trent river and the extemporaneous speech is mentioned in *ibid.*, pp. 58–9.

⁸ Erasmus Darwin's second wife, the former Mrs Elizabeth Pole, is mentioned in *Erasmus Darwin*, p. 26.

⁹ In the published version of *Erasmus Darwin*, CD's introductory essay ('preliminary notice') was 127 pages long while Krause's section, revised and retitled 'The scientific works of Erasmus Darwin', was 85 pages.

¹⁰ John Murray (1808–92) was CD's publisher. Krause was planning to make a German translation of *Erasmus Darwin* (see letter from Ernst Krause, 30 March 1879). In the event, Krause reinstated parts of his text not included in the English edition as well as adding over one hundred pages of notes (see Krause 1880, pp. 75–124, 180–286).

¹¹ CD had received a copy of Allen's book *The colour-sense: its origin and development: an essay in comparative psychology* (G. Allen 1879a) from the author (see letter to Grant Allen, [before 21 February 1879]). Allen's book was favourably reviewed by Hermann Müller in the July 1879 issue of *Kösmos* (H. Müller 1879b); the review was followed by an article by Krause, 'Nachschrift über Ideen-Adoptiv-Väter' (Postscript on adoptive fathers of ideas; Krause 1879b), in which Krause claimed priority for many of the views expressed in Allen's book.

¹² See G. Allen 1879a, pp. 81–2; for the reference to Krause 1877a and Krause 1877b, see *ibid.*, p. 82 n. 5. The linguist Lazarus Geiger had suggested that the development of colour-related words was connected to physiological development, and proposed that there were two types of colour words, which he called 'natural' and 'artificial'; artificial words were more recent and were derived from objects, while natural words had developed from extremes (light and dark; see Geiger 1867). The ophthalmologist Hugo Magnus's work *Die geschichtliche Entwicklung des Farbensinnes* (The historical development of the colour-sense; Magnus 1877) further developed Geiger's thesis; Magnus was

supported by William Ewart Gladstone (Gladstone 1877). Krause, Allen, and others argued that while languages developed more terms for colours over time, human ability to distinguish colours had not altered. For more on this debate among naturalists, ethnologists, physicists, physicians, and philologists from the late 1870s to early 1880s see Saunders ed. 2007, pp. 7–41.

¹³ The year 1879 saw the wettest summer in Europe, particularly in England, since records began in 1750 (Briffa *et al.* 2009, p. 1897).

From J. L. Chester 11 July 1879

124, Southwark Park Road, | London, | S.E.

11 July 1879

Dear Sir

The enclosed letter from your son will explain why I write.¹

I think that by all means it would be well that the old Deeds he mentioned should be examined, though I do not conceive that they would be likely to throw any light upon the points to which my researches are directed, viz. the identification of the *first* William Darwin of Cleatham & *his ancestors*.² But they would doubtless reveal much that would be of interest to the later history of the family.

I could not myself give the necessary attention to them for some time to come, for the reason that the Literary Department of the Will Office closes early in August for its annual holiday of six weeks, and until then I wish to give every day to an examination of the Wills, which is of primary importance.

If your son has the leisure, he can examine these Deeds &c as well as I can, making a *precis* of each, & it would perhaps be more satisfactory if it were done by a member of the family than by a stranger: I would any day come to his rescue, if he found himself involved in any difficulty. Or, if preferred, & the matter can rest till next month, I would then make the examination myself.

Permit me, as the present opportunity enables me to do so without impertinence, to assure you of my long and earnest sympathy with your invaluable labours, & my profound respect & gratitude, such as a humble disciple may entertain for his revered master.

Believe me | faithfully yours | Jos: L. Chester

DAR 99: 97–8

¹ The enclosure has not been found, but George Howard Darwin had written to CD informing him about the letter he sent to Chester (see letter from G. H. Darwin, 10 July 1879).

² The deeds related to the Cleatham Estate in north Lincolnshire, which had been owned by William Darwin (1681–1760) (see letter from C. M. C. Darwin, 16 April [1879]).

From Reginald Darwin 11 July 1879

Fern, | Buxton.

July 11 | 1879—

My dear Cousin

The Books, &c which it has been my privilege to lend to you, have reached me safely this day; I have also to acknowledge your kind letter—¹ It is a matter of very

sincere gratification to me to think that I have been able in the smallest degree to help you in your work, & let me thank you beforehand for the copy of the book which you generously promise to give me—² I need not say that I look forward with pleasure to the possession— Your son George has again added to my former obligation to him, by sending me a fourth consignment of old family Records of the deepest interest, indeed from the papers which he has sent me, & from those also which I have received from you my knowledge of the Darwins of former times is vastly increased.³

With best regards to you & to your family believe me my dear Cousin | ever sincerely yours | Reginald Darwin

DAR 99: 158–9

¹ Reginald had lent Erasmus Darwin's *Commonplace book* (Down House MS) and other items for CD's research for *Erasmus Darwin*. See letter to Reginald Darwin, 8 July 1879.

² See letter to Reginald Darwin, 8 July 1879 and n. 3.

³ George Howard Darwin had been researching Darwin family history (see letters from G. H. Darwin, 24 June 1879 and 10 July 1879). CD had sent Reginald letters from Reginald's father, Francis Sacheverel Darwin, to CD's father, Robert Waring Darwin (letter to Reginald Darwin, 16 April 1879).

From Leonard Darwin [before 12 July] 1879¹

Brompton Barracks | Chatham

15—11—79

Dear Father

I have read over the proofs pretty carefully, but not with the view of criticism in detail, only for general impressions, and I will give you my opinion as to what is best to be done, though I don't know that it is worth much. I think that a certain amount is not of sufficient interest for publication, but that if reduced by 20 pages or so it would do excellently as either a preface, or concluding remarks or notice, and that this would probably make it of less size than Krause's article, which would be another advantage.² But at present it gives me the impression; that though each sentence is right in itself, that sufficient work has not been bestowed on the general arrangement. You say yourself that you are unwilling to spend much more time on it, and naturally as you have so much more work on hand; but if worth doing at all it is worth doing well. Now could you not allow Henrietta to take one set of proofs, cut them up, and provisionally rearrange them; work which I am sure she could do very tastefully and well, and with little fatigue. It would probably be done by the time you got to the Lakes, and then you could read it over, reject it altogether, or adopt part or all of her rearrangements.³ It would only be necessary to interpolate a few of her own words, and these you could rewrite when you liked.

But what I also strongly feel is that all your children, and children's children will much regret if a few copies are not kept without anything being cut out. You will naturally think of the expense and trouble

I know something of printing and I am certain that you greatly exaggerate both as far as the paging and printing are concerned. Your own work is much more to be

July 1879

considered, but I honestly feel certain that it need not take you five minutes if you will adopt the plan I propose. Let me call on Murray and arrange it.⁴ I should think we could have a simple title page something like the following printed.—

Notes on the Life of
D^r Erasmus Darwin
by
Charles Darwin FRS &c.
Uncorrected Copy
Only printed for circulation
amongst Relatives.

We all want to save you trouble and I think you might often save yourself if would learn to work us a little more.

As to the parts to be cut out I have little to say. I agree with Henrietta that it would be better to leave out all questions of heredity as it is not a scientific notice, and in such a book these allusions will certainly be misunderstood by 99 readers out of a 100. This will cut out the early Darwins who were not after all much above the average if at all; but I think a good deal about the sons is interesting enough to remain in. I should advise omitting the note at the bottom of page 2, the verse on page 10, the last para but one in the book, also the headings such as “Conversation” Religion, Moral Qualities. I think would be well to shorten the calumnies and the defence⁵

I will keep the proofs until you tell me where to send them.

Your affec son | L Darwin.

PS I have had an estimate made and the actual cost of arranging and printing 50 Copies would be about £5¹¹10⁰⁰ or £11. allowing 100 per cent for the various profits.

PS 2 Please tell Mother that I shall not be home next Sat. as I am going to the Frasers at Wimbledon.⁶ Enclosed is note from Coniston.⁷

DAR 92: B7–10

CD ANNOTATIONS

- 1.1 I ... much. 1.3] *crossed blue crayon*
 1.3 I think ... preface, 1.5] *scored red crayon*
 2.1 But ... printed.— 3.5] *crossed blue crayon*
 5.1 As ... all; 5.5] *crossed blue crayon*
 5.5 I should ... 10, 5.6] *scored blue crayon*
 5.6 verse ... 10,] *underl blue crayon*
 5.7 also ... Qualities. 5.8] *double scored blue crayon*
 5.8 I ... defence] *scored blue crayon*
 8.2 allowing ... Coniston. 9.2] *crossed blue crayon*

¹ The date is established by the relationship between this letter and the letter to Leonard Darwin, 12 July [1879]. The date written by Leonard was most likely a slip of the pen, although the ‘11’ is probably correct for the day.

² Leonard was reading proof-sheets of CD’s essay for *Erasmus Darwin*. Ernst Krause had suggested lengthening his own section of the book rather than having CD cut anything (letter from Ernst Krause, 10 July 1879 and n. 9).

³ CD’s daughter Henrietta Emma Litchfield had helped in editing many of his earlier books (see, for example, *Correspondence* vol. 19, letter to H. E. Darwin, 20 March 1871, and *Correspondence* vol. 22, letter

- to H. E. Litchfield, 21 [March 1874]). The Darwins were planning a vacation in the Lake District; they stayed in Coniston from 2 to 27 August 1879 (CD's 'Journal' (Appendix II)).
- ⁴ John Murray was CD's publisher.
- ⁵ CD had asked George Howard Darwin to investigate some of the early Darwin ancestors (see letter from G. H. Darwin, 24 June 1879). For the omitted sections in the published version, see King-Hele ed. 2003.
- ⁶ Leonard planned to visit the home of a fellow officer, Thomas Fraser, at 7 Homefield Road, Wimbledon. Fraser's sister Elizabeth Frances Fraser married Leonard in 1882 (Freeman 1978).
- ⁷ The enclosure has not been found but evidently related to CD's vacation (see n. 3, above).

To J. L. Chester 12 July 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
July 12th 1879.

Dear Sir

I must thank you for your very kind letter & for all your varied assistance.

I will forward your letter to my son, & nothing more had better be done at present in relation to the deeds.¹

Believe me dear Sir | yours faithfully | Charles Darwin

Knox College Library, Galesburg

- ¹ See letter from J. L. Chester, 11 July 1879 and n. 2. George Howard Darwin was researching the Darwin family and had been offered the opportunity to look at deeds related to the Cleatham Estate in north Lincolnshire, which had been owned by William Darwin (1681–1760) (see letter from C. M. C. Darwin, 16 April [1879]).

To G. H. Darwin 12 July 1879

Down,
12th July 1879

My dear G.

I have written to thank Col. Chester & told him that nothing had better be done about the deeds at present.—¹ I sh^d. think that it would be quite useless hereafter to set him to work, but you of course can decide. Oh how your mother sneers at us!—²

C. D.

Here is a bad job; Henrietta thinks my notice of D: D very dull,—almost too dull to publish, & I believe that she is right.— I shall be anxious to hear what Eras. thinks. I suppose I must cut it down largely.³ No one will ever catch me again trying to go beyond my tether.

DAR 210.1: 87

- ¹ Joseph Lemuel Chester; see letter to J. L. Chester, 12 July 1879 and n. 1.
- ² Emma Darwin was probably amused by George's discovery of an illustrious ancestor (see letter from G. H. Darwin, 24 June 1879).
- ³ Henrietta Emma Litchfield had read the proof-sheets of CD's introductory essay for *Erasmus Darwin*. Erasmus Alvey Darwin apparently liked it (see letter to Francis Darwin, 12 July [1879] and n. 9).

July 1879

To Francis Darwin 12 July [1879]¹Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
July 12th

My dear F.

I am glad you have tried touching cells, for I sh^d never have rested until hearing a result of some kind.² Was the point kept in contact for some little time? It rejoices me that the Phys. (I forget name) has looked at *Dipsacus*; I have always thought that you ought to go with that subject.—³ W^d: it worth while to show him aggregated matter in *Drosera* in movement, ie in early stage of aggregation? I doubt whether you will succeed in *Drosera* by contact, as gland only sensitive part & seat of movement chiefly at base of filament.

I have tried in peat radicles of *Pisum* with caustic above & below. There was no difference between the 10 control & 10 touched *above* in their geotropism; but I hardly looked early enough. But of the 10 touched *below*, 3 curved in *opposition* to geotropism—2 or 3 were straight & 5 or 6 geotropic *in slight degree*; so contest wonderfully great.⁴

I can see it will be impossible to try gold-beaters skin on mustard radicles.⁵ It has pleased me that I think I fully understand cause of “Sachs’ curvature” of radicles—too long to explain by letter.⁶

I have finished long chapter on Sleeping Plants & sent it to M^r Norman to copy & diagrams to M^r Cooper.—⁷

I am now looking over piles of notes on Heliotropism. By the way I am becoming frightened at changing so well-known a term as Heliotropism & cannot bring myself yet to write “Helism”. or “Proselism”..⁸

I am more perplexed than ever about life of D: D: Hen thinks it very dull, & wants it much shortened & otherwise arranged. Erasmus likes it. Your mother wants parts shortened.— I shall take it on Aug. 1st to Lakes & finish it there.⁹

I am tired— Ever yours | C. Darwin

(What are your plans, if you have any, you degenerate Darwin.)¹⁰

Abbadabba flourishing & Dumming!¹¹

DAR 211: 62

¹ The year is established by the relationship between this letter and the letter from Francis Darwin, 9 July 1879.

² See letter from Francis Darwin, 9 July 1879 and n. 1.

³ Francis had not mentioned observations by a physician on *Dipsacus* (the genus of teasel), but CD probably refers to Wilhelm Hofmeister’s observation of the cells of the stamen hairs of *Tradescantia virginica* (a synonym of *T. virginiana*, Virginia spiderwort; see letter from Francis Darwin, 9 July 1879 and n. 2).

⁴ CD described these experiments with *Pisum sativum* (garden pea) in *Movement in plants*, pp. 163, 534–5.

⁵ CD and Francis had been investigating apheliotropism in radicles of *Sinapis alba* (white mustard; see letter from Francis Darwin, [after 16 June 1879]). In his investigations with aerial roots, CD had covered the apex of the roots with gold-beater’s skin (see letter to Francis Darwin, 25 June [1879] and n. 5).

⁶ On ‘Sachs’ curvature’, see the letter to Francis Darwin, 16 June [1879], n. 8.

⁷ The long chapter for *Movement in plants* became two chapters in the published version (*ibid.*, pp. 280–417). Ebenezer Norman was CD’s copyist; James Davis Cooper made his woodcuts.

- ⁸ CD had consulted Francis on the use of new terms for plant movement towards or away from the sun (see letter to Francis Darwin, 25 June [1879] and n. 6).
- ⁹ Various members of CD's immediate family had been asked to read the proof-sheets of CD's biographical sketch for *Erasmus Darwin*; among them were Henrietta Emma Litchfield, Erasmus Alvey Darwin, and Emma Darwin. The Darwins stayed at Coniston in the Lake District from 2 to 27 August 1879 (Emma Darwin's diary (DAR 242)).
- ¹⁰ CD jokingly alludes to some of the more illustrious Darwin ancestors discovered by George Howard Darwin while researching Darwin family history (see letter from G. H. Darwin, 24 June 1879).
- ¹¹ Abbadabba was a pet name for Francis's son, Bernard Darwin. 'Dumming': Bernard's mispronunciation of 'drumming' (see letter to Francis Darwin, 4 July [1879]).

To Leonard Darwin 12 July [1879]¹

July 12

My dear old Lenny

...

I am quite ready to shorten or leave out many parts, but at present I cannot agree that it is not worth while to say something about the family—² I know that I myself, and some others, always wish to hear this, and Krause wrote to beg for some information as to family before he knew that I intended to say anything on the subject³

...⁴

Copy incomplete
DAR 153: 93

¹ The year is established by the relationship between this letter and the letter from Leonard Darwin, [before 12 July] 1879.

² In his letter of [before 12 July] 1879, Leonard had suggested omitting the text relating to the ancestry of the Darwin family in CD's preliminary notice to *Erasmus Darwin*.

³ See letter from Ernst Krause, 5 May 1879.

⁴ The ellipses at the beginning and end of the letter are in the copy.

From Ernst Haeckel¹ 12 July 1879

Jena
12 Juli 79

Hochverehrter theurer Freund!

Durch Ihre freundliche Zustimmung zu meinem Essay über "Freedom in Science etc." haben Sie mir eine grosse Freude bereitet und ich danke Ihnen herzlichst dafür.² Unter den vielen zustimmenden Briefen, die ich darüber erhalten habe, ist mir der Ihrige natürlich der weitaus werthvollste, und die beste Compensation für die vielen heftigen Angriffe unserer Gegner.

Seit mehr als einem Jahre arbeite ich an dem Abschlusse meiner Monographie der *Medusen*, die noch in diesem Jahre fertig werden wird.³ Die Hälfte ist bereits gedruckt. Ich habe im allgemeinen Theile viele hübsche Resultate für die Descendenz- u Selections-Theorie erhalten, und hoffe, dass Sie damit zufrieden sein werden. Zu Weihnachten hoffe ich Ihnen das Werk senden zu können.⁴

Anfang August gehe ich (—direct via Hamburg—) nach Edinburgh, um Sir Wyville Thomson und Mr. John Murray zu besuchen und wegen Publication

und Vollendung der Challenger-Radiolarien mit ihnen zu verhandeln.⁵ Diese Arbeit wird noch mehrere Jahre in Anspruch nehmen, da die Zahl der “*novae species*” (— zum Glück meist “*malae*”, wenig “*bonae*” —) *sehr gross* ist.⁶ Ich bin jetzt beim zweiten Tausend! 30 Tafeln sind gedruckt.

Auf der Rückreise von Edinburgh (Ende August) werde ich *vielleicht* London passiren; es ist aber noch unbestimmt, vielleicht muss ich direct nach Hamburg zurückreisen.⁷

Ich hoffe, dass Sie sich recht wohl befinden und mit Ihrer Gesundheit zufrieden sind.

Mit freundlichsten Grüßen an Sie und an Ihre liebe Familie | Ihr treu ergebener
Ernst Haeckel

Die VII. Edition der “Nat. Schöpf.” werden Sie erhalten haben.⁸

DAR 166: 73

CD ANNOTATION

Top of first page: ‘Gigantic undertaking the Radiolaria— took *Incl Vienna [inter] over [illeg] year | health’⁹
pencil

¹ For a translation of this letter, see Appendix I.

² See letter to Ernst Haeckel, 29 April 1879. CD had read the English translation of *Freie Wissenschaft und freie Lehre* (Haeckel 1878), *Freedom in science and teaching* (Haeckel 1879c). For more on the circumstances surrounding Haeckel’s address, see *Correspondence* vol. 26, letter to Karl von Scherzer, 1 April 1878 and n. 2.

³ Haeckel’s *Das System der Medusen* comprised two parts and an atlas, all published in 1879. It formed the first volume of his *Monographie der Medusen* (Haeckel 1879–81).

⁴ CD received a copy of the first volume of Haeckel 1879–81 in January 1880 (*Correspondence* vol. 28, letter to Ernst Haeckel, 21 January 1880).

⁵ Charles Wyville Thomson and John Murray (1841–1914) were the editors of the reports of the scientific results of the voyage of the oceanographic survey ship HMS *Challenger*. The Radiolaria, a diverse group of unicellular protozoans with siliceous skeletons, belong to the class Rhizopoda. Haeckel’s work on the *Challenger Radiolaria* was published in 1887 (Haeckel 1887).

⁶ *Novae species*: new species; *malae*, *bonae*: bad, good (Latin). In taxonomy, *species malae* or ‘bad species’ are those which fail to conform to the criteria normally used to delimit species. In his description of the *Challenger Radiolaria*, Haeckel proposed one of the earliest classification schemes for the group.

⁷ In the event, Haeckel did go via London and stayed at Down House from 5 to 6 September 1879 (Emma Darwin’s diary (DAR 242)).

⁸ CD’s copy of the seventh edition of *Natürliche Schöpfungsgeschichte* (Haeckel 1879d) is in the Darwin Library–Down.

⁹ CD’s annotation is a note for his reply to Haeckel of 15 July 1879. Haeckel had visited Vienna in March 1878 as part of a lecture tour (*Correspondence* vol. 26, letter to Karl von Scherzer, 1 April 1878 and n. 1).

To Ernst Krause 12 July [1879]¹

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

July 12th

My dear Sir

Your letter has been a great relief to my mind, for I had got to *hate* my Notice.² Of 2 relations whom I can trust one says that she thinks it dull & ought to be much shortened with parts omitted & parts differently arranged, & the other (my Brother) thinks it interesting & wants nothing omitted. A third advises me to shorten about M^{rs}. Schimmelpenninck.—³

My plan is to take all materials with me to the Lakes, when we go on August 1st for a month's change & rest, & by that time M^r. Dallas hopes to have *whole* Translation finished.⁴

I am extremely glad that you think much need not be omitted either in mine or your article.

A new idea strikes me on which I will reflect: viz that my notice sh^d appear **after** yours & be called "An or *Supplementary* or *additional* notice" or some such Title.

You can keep the Proofs, & I will send corrected ones, as soon as such are ready.⁵

I will write to U. States to enquire if M^s Appleton will bring out Edition there.—⁶

I am very sorry to hear about Grant Allen: I have not yet read your article.— My memory has grown very poor & I cannot recollect much of what you wrote; but I remember being struck with it,—so much so, that I sent the number to M^r Gladstone to read.⁷ I do not know M^r Grant Allen *personally*, & never saw him but feel inclined to like & respect him from his writings, & I am very sorry for him for he writes under very trying circumstances. Therefore I grieve that he sh^d have been guilty of plagiarism.—⁸

Yours very sincerely | Ch. Darwin

The Huntington Library (HM 36189)

¹ The year is established by the relationship between this letter and the letter from Ernst Krause, 10 July 1879.

² See letter from Ernst Krause, 10 July 1879; CD refers to his preliminary notice for *Erasmus Darwin*.

³ Henrietta Emma Litchfield and Erasmus Alvey Darwin (see letter to G. H. Darwin, 12 July 1879 and n. 3); the person who advised shortening the references to Mary Anne Schimmelpenninck was probably Leonard Darwin, who had suggested that CD should 'shorten the calumnies' (see letter from Leonard Darwin, [before 12 July] 1879).

⁴ The Darwins were planning a vacation in the Lake District; they stayed in Coniston from 2 to 27 August 1879 (CD's 'Journal' (Appendix II)). William Sweetland Dallas was translating Krause's section of *Erasmus Darwin*.

⁵ Krause had asked whether he could keep the proof-sheets; see letter from Ernst Krause, 10 July 1879 and n. 10.

⁶ D. Appleton & Co. published *Erasmus Darwin* US ed.

⁷ See letter from Ernst Krause, 10 July 1879 and nn. 11 and 12. Krause's article, claiming priority for many of the views expressed in G. Allen 1879a, was published in the July 1879 issue of *Kosmos* (Krause 1879b). In October 1877, CD had sent William Ewart Gladstone two issues of *Kosmos*, one of which contained Krause 1877a (see *Correspondence* vol. 25, letter to W. E. Gladstone, 25 October [1877]).

⁸ CD had sent supportive comments on G. Allen 1879a (see letter to Grant Allen, [before 21 February 1879]). Allen was trying to support himself by his writing, contributing popular scientific articles to magazines such as the *Cornhill* and *London* and short fiction to magazines under the pseudonym J. Arbuthnot Wilson (*ODNB*).

From G. H. Darwin 13 July 1879

Trin. Coll.

July 13, 79

My dear Father,

I return Col. Chester's letter, I will look up the deeds sometime myself.¹

I am very sorry to hear what Henrietta thinks of y^r proofs, Tho' I did not read

it critically myself, I can't say I agree with her. It is very hard to imagine oneself as outsider, but I think if it were very dull I cdn't possibly have read it right off at a sitting as I did.² I quite think the old D's sh^d be touched on in the lightest way—in a short note or something of the kind.³

I also felt some doubt about the doggerel about the hare-hunting.⁴ If it is short (as it is already) I believe the world will read it with interest.

I have sent off my papers to the R.S at last thank goodness & have begun to tackle my former difficulty, & the more I work at it the more terribly hard it seems; but I suppose I shall get thro' it somehow.⁵ Perhaps I shall get on better. When I am better—for I don't get rid of my cold at all in fact rather the reverse.

Horace has been very jolly tho' perhaps not very well & has been about with Dew all day.⁶ They went over to Michael Foster's to dinner yesterday. There does'nt seem much hope of decent weather yet.⁷

When does Frank return?⁸

Your affectionate Son | G H Darwin

DAR 210.2: 80

¹ CD had enclosed Joseph Lemuel Chester's letter of 11 July 1879 with his letter to G. H. Darwin, 12 July 1879. The deeds related to the Cleatham Estate in north Lincolnshire, the former home of William Darwin (1681–1760) (see letter from C. M. C. Darwin, 16 April [1879]).

² Henrietta Emma Litchfield; see letter to G. H. Darwin, 12 July 1879 and n. 3.

³ CD had been advised by Leonard Darwin not to publish some of the early family-history material except in a special edition intended for family members (see letter from Leonard Darwin, [before 12 July] 1879).

⁴ The doggerel, a poem by Erasmus's elder brother, Robert Waring Darwin, was not included in the published version; for the omitted text, see King-Hele ed. 2003, p. 17.

⁵ George probably refers to the final version of his paper 'On the precession of a viscous spheroid, and on the remote history of the earth' (G. H. Darwin 1878), which was published in the *Philosophical Transactions of the Royal Society of London*, and to 'The determination of the secular effects of tidal friction by a graphical method' (G. H. Darwin 1879), which was published in the *Proceedings of the Royal Society of London*. The 'former difficulty' was probably George's continuing work on the mathematical modelling of tidal friction in relation to the orbit of the earth.

⁶ Horace Darwin and Albert George Dew-Smith.

⁷ Michael Foster was praelector in physiology at Trinity College, Cambridge. The summer of 1879 was the wettest in England since records began in 1750 (Briffa *et al.* 2009, p. 1897).

⁸ Francis Darwin was spending a second summer working in the laboratory of Julius Sachs at the Botanical Institute, Würzburg.

To Anton Dohrn 13 July 1879

Dowm, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

July 13th 1879

My dear Sir

I suppose that I owe to your great kindness the gift of the three very handsome & valuable Parts of the Mittheilungen.—Zoolog. Stat. zu Neapel.—I thank you much for this gift.¹

Whenever I see, as I often do, references to the splendid work done at your Station, I heartily rejoice at your success & at the great service which you have conferred on Science.

Believe me | My dear Sir | Yours sincerely | Charles Darwin

Bayerische Staatsbibliothek München (Ana 525. Ba 703)

¹ CD's copies of the first three parts of the first volume of *Mitteilungen aus der Zoologischen Station zu Neapel* have not been found; part 1 was published in 1878 and the remaining parts in 1879. Dohrn was the founder of the Zoological Station, Naples.

From J. B. Innes 14 July 1879

Milton Brodie

14 July 1879—

Dear Darwin,

I told you some years ago that I had found a wood pigeons nest on the ground, the first I had ever seen in such a situation. This morning my gamekeeper and I found one on the ground in the middle of a whin bush on the Links.¹ We both saw the bird fly up and found the two eggs laid in a shallow hole scratched in the ground.

There are woods within half a mile on each side— My old game keeper said he had never seen one in such a place before—

Kindest regards | Faithfully Yours | J Brodie Innes

DAR 167: 35

¹ No previous letter from Innes on this subject has been found. The woodpigeon is *Columba palumbus*; whin (also known as furze or gorse; *Ulex europaeus*) is a dense, thorny bush. Links is a Scottish term for the sandy ground near the seashore covered with turf or coarse grass (*OED*). The gamekeeper has not been identified.

To E. H. O'Callaghan 14 July 1879

Down, Beckenham, Kent, Railway Station Orpington S.E.R.

July 14 1879.

Dear Sir,

I will remember your remarks, but I shall never again write on such difficult subjects as that to which you refer.¹ When I look to the future of the world hardly any event seems to me of such great importance as the settling of Australia, New Zealand, &c by the so called Anglo Saxons & it is very doubtful whether this would ever have occurred, had there not been severe pressure on the population. From what I have seen (& from what Belt describes in Nicaragua) in South America I conclude that when men can procure subsistence with great ease they are apt to degenerate.² Indeed wherever this is there is no progress. Decadence seems to follow.

Dear Sir | yours faithfully | Ch. Darwin.—

E H O'Callaghan | &c &c

Copy

DAR 147: 190

- ¹ No letter from O'Callaghan has been found; a note on the copy, made by O'Callaghan, reads: '(In the following copy (the original is before me) the writer refers to population, a question regarding which I had the misfortune to differ from him E.H.O'C)'. O'Callaghan has not been identified.
- ² CD discussed the success of English colonisation in *Descent* 1: 179. Thomas Belt had described the indolence of the inhabitants of Juigalpa, Nicaragua, and commented that no progress would be made in the region until Mexico and Central America became part of the United States (Belt 1874, pp. 177–8).

To James Paget 14 July 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

July 14th 79

My dear Paget.

It was very kind of you to take the trouble to hunt up the enclosed old Book.— I have been glad to see it, as at least showing that D^r: D's views were attended to; & I have read it, as these old views on fever seem curious rubbish.—¹ I fear that my little life of D^r: D. will be a very poor affair, & never again will I be tempted out of my proper work.²

Believe me yours very sincerely | Charles Darwin

Indiana University, Lilly Library (Miscellaneous MSS.)

- ¹ CD had visited Paget on 27 June 1879 and may have borrowed the book at that time (see letter to James Paget, 28 June [1879]). The book was probably *Comparative view of the theories and practice of Drs Cullen, Brown and Darwin* (Baeta 1800), which CD made reference to in *Erasmus Darwin*, p. 107 n.
- ² Henrietta Emma Litchfield had found CD's essay for *Erasmus Darwin* dull, but other family members were more positive in their assessment (see, for example, letter to Francis Darwin, 12 July [1879] and n. 9).

From W. S. Dallas 15 July 1879

Geological Society, | Burlington House, | W.

15 July 1879

My dear Sir

I have to thank you for sending me the volumes of D^r: Erasmus Darwin's works, which arrived safely yesterday.— I am now going steadily on with the Translation of D^r: Krause, &, having cleared everything else out of the way, shall push on rapidly.—¹ Within a fortnight I hope to let you have the whole MS.

I am struggling to get away for my holiday as soon as possible, but hardly expect to succeed before the 27th: or 28th., & then we are condemned to stay at Margate as being the most favourable place for our young daughter who has taken it into her head to get weakly & to have fainting fits, to the great alarm of her mother,—& indeed of all of us.—² I hope the change there will do her good, in which case we must not grumble, & indeed I am told by many people that *in itself* Margate is a very nice place.—

Hoping that you may derive much benefit from your trip to the Lake-district,³

I am, | Yours very truly | W. S. Dallas

C. Darwin Esq

DAR 99: 110–11

- ¹ Dallas was translating Ernst Krause's essay for *Erasmus Darwin* and needed to check the accuracy of the many quotations from works by Erasmus Darwin (see letter from W. S. Dallas, 16 June 1879).
- ² Dallas's daughters were Liliás Mary and Louisa Joanna; his wife was Frances Esther Dallas.
- ³ The Darwins stayed at Coniston in the Lake District from 2 to 27 August 1879 (Emma Darwin's diary (DAR 242)).

To Ernst Haeckel 15 July 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

July 15. 1879

My dear Häckel

On August 1st we all go for a month to the Lakes in Cumberland, as I want a little rest. If your return home is delayed till September & you can possibly spare the time, I hope that you will pay us a visit, as it would be a great pleasure to me to see you.¹

I am astonished to hear what a gigantic undertaking the description of the Radiolarians collected during the Challenger expedition proves to be.²

I am glad to hear that your labours on the Medusæ are drawing to a close.³

For Heaven sake do not overwork your brain, & always remember what a tender organ it is.

My dear Häckel | Yours very sincerely | Charles Darwin

Ernst-Haeckel-Haus (Bestand A-Abt. 1: 1-52/48 [A 9902])

- ¹ The Darwins stayed at Coniston in the Lake District from 2 to 27 August 1879, spending the night of 1 August in London (Emma Darwin's diary (DAR 242)). Haeckel was planning a visit to Edinburgh at the end of August, possibly returning via London (see letter from Ernst Haeckel, 12 July 1879).
- ² Haeckel was going to describe the Radiolaria collected on the HMS *Challenger* expedition (see letter from Ernst Haeckel, 12 July 1879 and n. 5).
- ³ Haeckel's *Das System der Medusen* (the first volume of Haeckel 1879-81) was published in 1879 (see letter from Ernst Haeckel, 12 July 1879 and nn. 3 and 4).

From Ernst Krause¹ 16 July 1879

Berlin N.O. Friedenstrasse 10. II.
den 16.7.79.

Hochverehrter Herr!

Die Idee, der Sie in Ihrem gütigen Schreiben vom 12 Juli Ausdruck geben, dass es vielleicht das Richtigste wäre, wenn Sie Ihre eigenen Mittheilungen als Supplement oder Nachtrag bezeichnen wollten, ist mir in letzter Zeit öfter gekommen, allein ich habe ihn immer wieder verworfen, und zwar aus folgenden Gründen.²

Die deutsche Gewohnheit in solchen Angelegenheiten würde es niemals gestatten, dass Ihr Antheil an dem Buche *hinter* den meinigen gestellt würde; er muss nach meinem Gefühle unter allen Umständen das Buch eröffnen. Es würde mir daher als der beste Ausweg erscheinen, wenn Sie denselben weder als Vorwort noch als Nachwort oder Supplement bezeichnen wollten, sondern lieber einen neutralen Titel, wie z.B. "Familien-Nachrichten" oder "Beiträge zur Charakteristik Dr. E. D.'s aus mündlichen Mittheilungen und Familien-Papieren", oder einen ähnlichen wählen möchten.³

Dagegen würdees vielleicht zweckmässig sein, wenn Sie, sei es nach den ersten einleitenden Sätzen, sei es dort, wo Sie von der Familie auf die Person übergehen, dem Leser rathen wollten, wegen des fragmentarischen und ergänzenden Charakters Ihrer Mittheilungen, lieber erst meine kurze, nach dem schon veröffentlichten Material zusammengefasste Lebens-Skizze zu lesen, damit er wisse, worauf einzelne Ihrer Bemerkungen sich beziehen.⁴ Dadurch würde, wie mir scheint, nach allen Seiten einem unbilligen Tadel hinsichtlich der Anordnung des Stoffes am besten begegnet sein, und ich glaube nicht, dass Sie, diese Bemerkungen vorausgeschickt, etwas zu ändern, oder zu streichen nöthig hätten. Ich habe inzwischen Ihre Mittheilungen wiederholt durchgelesen, finde, dass sie selbst in den einfachsten Brief-Details wohlthuend wirken, und überall Licht auf Personen und Zeitverhältnisse werfen, so dass ich in dem für die Öffentlichkeit bestimmten Drucke ungern irgend etwas davon vermissen und entbehren würde.

In meinem Theile fallen von selbst die Nachrichten über die Söhne fort, dagegen möchte ich fast dafür sein, dass die Jugendgeschichte u. der Bericht über die letzten Stunden dort bliebe, damit es eine vollständige kleine Skizze sei, Sie könnten leicht das etwa Irrthümliche darin ändern, wie ich Sie auch bitten möchte, die falschen Angaben über die Priorei gleich in meinem Texte zu verbessern.

Es ist ein grosser Vorzug Ihrer Einleitung, dass Sie mit allgemeinen Nachrichten über die Familie beginnen konnten, weil dadurch dem ergänzenden Theil der Character einer Einleitung zurückgegeben wird; auf diese Weise, wird, namentlich bei der Wahl eines neutralen Titels, dem Kritiker jede Gelegenheit entzogen, die Anordnung zu tadeln, besonders wenn noch ein besonderes Abtheilungs-Titelblatt den Beginn meines Essay's andeutet.⁵

Auf dem Haupttitel würde es, wie ich glaube, den Absatz sehr erleichtern, wenn dort Ihre Beiträge zu dem Buche als *ausführliche* bezeichnet werden könnten. Ich werde mir erlauben, Ihrem Urtheil einen Titel-Entwurf für die deutsche Ausgabe auf der folgenden Seite zu unterbreiten, mit der Bitte, mir freundlichst sagen zu wollen was Ihnen möglicherweise daran nicht gefallen sollte.⁶

Erasmus Darwin

Der Grossvater Charles Darwin's

Sein Leben und Wirken

als Arzt, Philosoph und Dichter

Ein Beitrag zur Geschichte der Descendenz-Theorie

von

Dr. Ernst Krause.

Mit einem Lichtdruck-Portrait

und ausführlichen Mittheilungen aus Familien-Papieren,

Briefen und andern bisher unbenützten Quellen

von

Charles Darwin.

Leipzig u.s.w.

Vielleicht würden Sie es vorziehen, die zweite Zeile zu streichen; der Buchhändler⁷ würde seinerseits wahrscheinlich für ihre Beibehaltung stimmen. Verzeihen Sie mir, hochverehrter Herr, dass ich mich so unbefangen über alle diese zum Theil delicate Punkte äussere allein ich vertraue darauf, dass Sie meine Absicht, Ihnen einzig Material zur Entscheidung vorzulegen, nicht missverstehen werden, und zeichne

Mit den wärmsten und herzlichsten Wünschen für Ihr Befinden | Ihr | treulich ergebenster | Ernst Krause

DAR 92: B33–4

¹ For a translation of this letter, see Appendix I.

² See letter to Ernst Krause, 12 July [1879].

³ In the published version of *Erasmus Darwin*, p. 2, CD's essay is titled 'Preliminary notice'.

⁴ In a short preface preceding the 'Preliminary notice' in *Erasmus Darwin*, pp. iii–iv, CD explained that his introduction was based on private materials that added to the knowledge of Erasmus Darwin's character; he did not recommend that the reader ought to read Krause's section first.

⁵ In the published version of *Erasmus Darwin*, p. 130, Krause's section is titled 'The scientific works of Erasmus Darwin' on a part title page.

⁶ The full title page of the German version (Krause 1880) reads: 'Erasmus Darwin | und seine Stellung | in der Geschichte der Descendenz-Theorie | von Ernst Krause. | Mit seinem Lebens- und Charakterbilde | von Charles Darwin. | Nebst Lichtdruck-Portrait und Holzschnitten.'

⁷ Krause's publisher was Karl Alberts, the director of Ernst Gunther's Verlag, Leipzig.

To J. V. Carus 17 July 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

July 17th 1879

My dear Sir

I had intended writing to you soon to tell you what I was about. D^r E. Krause published in *Kosmos* an article on my grandfather which seemed to me good, so I asked his permission to bring out a Translation in English.¹ I then determined to add about 100 pages, as a Supplementary notice, on the life & character of my grandfather. D^r Krause then asked my consent to translate my notice & bring it out in German together with his article enlarged as a separate little book. Of course I could not hesitate to give my consent.²

I have never even dreamed of publishing my own auto-biography. Together with my son Francis, I am preparing a rather large volume on the general movements of Plants, & I think that we have made out a good many new points & views.³ I fear that our views will meet a good deal of opposition in Germany; but we have been working very hard for some years at the subject. I do not suppose that the M.S will be sent to the Printers for 4 or 5 months, but I am having very many simple wood-blocks cut.⁴

I shall be **much** pleased if you think the book worth translating & proof-sheets shall be sent you, whenever they are ready.⁵

I most sincerely rejoice at the fairly good account of your health. I am myself rather worn out, & on Augt 1st we all go to the Lakes for a month's rest & change.⁶

Yours very sincerely | Ch. Darwin

Staatsbibliothek zu Berlin – Preußischer Kulturbesitz (Slg. Darmstaedter Lc 1859 Darwin, Charles, Bl. 172–173)

- ¹ CD had asked to have a translation of Krause 1879a made in his letter to Ernst Krause, 9 March 1879.
- ² On CD's plan to add an introduction to Krause's essay, see the letter to Ernst Krause, 19 March 1879. Krause first mentioned the possibility of a German edition of *Erasmus Darwin* in his letter of 24 March 1879. For the German edition, Krause reinstated parts of his text not included in the English edition as well as adding over one hundred pages of notes (see Krause 1880, pp. 75–124, 180–286).
- ³ CD did not publish an autobiography in his lifetime but he wrote about his life for his family and an edited version of this was posthumously published by Francis Darwin in *LL* 1: 26–107. CD began research for *Movement in plants* in the summer of 1877. Francis Darwin assisted him both at Down and working in the summers of 1878 and 1879 at the Botanical Institute, Würzburg, in the laboratory of Julius Sachs.
- ⁴ CD and Francis disagreed with Sachs on many points about the nature of plant movement, notably regarding the location of root sensitivity (see, for example, letter to Francis Darwin, 28 June [1879]). *Movement in plants* contained 196 woodcuts.
- ⁵ *Movement in plants* was published on 6 November 1880 (Freeman 1977); the German translation by Carus appeared in April 1881 (Carus trans. 1881; letter to Eduard Koch, 30 April 1881, *Calendar* no. 13141).
- ⁶ No recent letter from Carus has been found. Carus frequently suffered from bronchial problems, particularly during the winter (see, for example, *Correspondence* vol. 25, letter from J. V. Carus, 20 January 1877 and n. 11).

To Ernst Krause 18 July [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
July 18th

My dear Sir

It is very kind of you to give me hints.— I can decide on nothing as yet, but I get more & more inclined to publish my notice after yours—leaving your Part unaltered or very little altered.²

I think that I shall condense & omit parts of my notice, & perhaps alter arrangement, so that you had better not waste time in Translating at present.—³ In England we like a simple Title—perhaps as follows.

Life of
Erasmus Darwin
by
D^r Ernst Krause

with a supplementary notice

by
Charles Darwin⁴

If after due reflexion it seems to me & my family the best plan that my notice should *follow* your article, surely no one can blame you for translating in same order as it appears in England.—

As soon as I receive the whole translation from M^r Dallas, I will set to work & get corrected proofs of my part & send them to you.⁵

My dear Sir | Yours sincerely | Ch. Darwin

P.S. I feel sure that your article is much more interesting than mine & this is another good reason for its precedence.

The Huntington Library (HM 36190)

- ¹ The year is established by the relationship between this letter and the letter from Ernst Krause, 16 July 1879.
- ² CD had written a biography of his grandfather Erasmus Darwin to accompany an English translation of an essay by Krause on Erasmus's scientific work (*Erasmus Darwin*). In his letter of 16 July 1879, Krause had argued that it would be in accordance with German convention for CD's biographical sketch to appear first. In the published English version, CD's section appeared first.
- ³ Krause was hoping to bring out a German edition of *Erasmus Darwin* (Krause 1880).
- ⁴ The full title page of the published version reads: 'Erasmus Darwin. | By Ernst Krause. | Translated from the German by W. S. Dallas. | With a preliminary notice | by Charles Darwin. | Portrait and woodcuts.'
- ⁵ William Sweetland Dallas had written that he hoped to finish the translation of Krause's section of *Erasmus Darwin* by the end of the month (see letter from W. S. Dallas, 15 July 1879).

From Felix Marchand¹ 20 July 1879

Halle a/S,
den 20^{sten} Juli 1879.

An | Herrn Charles Darwin, | Beckenham, Kent.

Indem die Naturforschende Gesellschaft zu Halle sich die Ehre giebt, Euer Hochwohlgeboren unter die Zahl ihrer Mitglieder aufzunehmen, und zahlreichen grösseren Ehren auch ihrerseits eine bescheidene Anerkennung hinzuzufügen, so erlaubt sie sich dies mit Rücksicht auf die seltene Gelegenheit der Feier ihres hundertjährigen Bestehens, welcher sie hierdurch eine besondere Weihe zu geben gedachte.² In diesem Sinne giebt sich die Gesellschaft der Hoffnung hin, dass Euer Hochwohlgeboren es nicht verschmähen werden, in den Kreis einer Gesellschaft zu treten, welche seit nunmehr hundert Jahren, anfangs in engerem Kreise, später in weiterem Umfange das Bestreben gehabt hat, die Naturwissenschaften nach Kräften zu foerdern.

Gleichzeitig mit der Uebersendung des Diploms (vom 3^{ten} Juli, als dem Stiftungstage der Gesellschaft) erlaubt sich die Gesellschaft die Bitte um Ihr photographisches Bildniss für ihr Album auszusprechen—³

I. A. | D: F. Marchand | Schriftführer.

DAR 202: 115

CD ANNOTATIONS

o.1 Halle] *triple underl ink*

Top of letter: 'I have promised Photograph. | Sec. Die Naturforschende Gesellschaft' *ink*

¹ For a translation of this letter, see Appendix I.

² For a list of others elected on 3 July 1879, at the same time as CD, see *Abhandlungen der Naturforschenden Gesellschaft zu Halle (Sitzungsberichte)* 14 (1878–80): 37.

³ For the diploma, see Appendix III.

To Ann Marston 20 July [1879]¹

July 20

To the Hon. Sec. Anti-vivisection Soc.

Sir—

I must decline signing the petition to which you refer, as to do so would be in my judgment a crime against mankind.² No one, who is not quite ignorant of science

can deny that the further progress of physiology depends altogether on experiments on living animals, or can doubt that physiology will lead to a great diminution of human suffering. I will at the same time add that I yield to no man in my adhorrence of any useless suffering to animals.³

C. Darwin

ADraftS

DAR 202: 22

¹ The year is established by the relationship between this letter and the letter from E. A. Darwin, 8 July 1879.

² See letter from E. A. Darwin, 8 July 1879. CD had been asked to comment on a petition calling for the total abolition of vivisection. The petition was signed by several thousand people and presented to the House of Lords by Anthony Ashley-Cooper (Lord Shaftesbury) on 24 July 1879 (*The Times*, 25 July 1879, p. 6). For more on the several anti-vivisection petitions presented this time, see *The Times*, 16 July 1879, p. 6. For CD's earlier involvement in formulating the 1875 bill to regulate vivisection, see *Correspondence* vol. 23.

³ CD and Emma Darwin had been involved in a campaign against steel vermin-traps in 1863 (see *Correspondence* vol. 11, Appendix IX). For more on CD's interest in the humane treatment of animals, see Atkins 1974, pp. 78–84; see also *Correspondence* vol. 23, Appendix VI, p. 580.

To J. D. Hooker 22 July [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
July 22^d

My dear Hooker

If my memory serves me rightly Dyer has left Kew for his holidays, & so I write to you to ask you if by any chance you have seeds of *Lathyrus aphaca* or any young seedlings 2 or 3 of which could be potted.² If I receive no answer I shall understand that you cannot aid me.— I want to try whether the tendrils are apheliotropic, for I record that they revolve very little, I conjecture that they may find a support by bending towards any dark object.—³

Our book on the movements of Plants will, I think, contain a good deal of new matter, but will be intolerably dull.⁴ I have been working pretty hard of late & want rest & change, so we all go on August 1st to Coniston for a month.⁵ It is an awful journey to me.— It is a long time since I have heard any news of you & yours, & what you are doing & intending to do. Frank comes back in the beginning of next month from Würzburg, where he has been working pretty hard on various subjects & practising dissection, cutting slices &c.—⁶

I have just read Balls' essay. It is pretty bold. The rapid development, as far as we can judge, of all the higher plants within recent geological times is an abominable mystery. Certainly it w^d be a great step if we could believe that the higher plants at first could live only at a high level; but until it is experimentally that Cycadeæ, Ferns &c can withstand much more carbonic acid than the higher plants, the hypothesis seems to me far too rash.⁷ Saprota believes that there was an astonishingly rapid development of the higher plants, as soon flower-frequenting insects were developed & favoured intercrossing.⁸ I sh^d like to see this whole problem solved.

I have fancied that perhaps there was during long ages a small isolated continent in the S. hemisphere, which served as the birth place of the higher plants; but this is a wretchedly poor conjecture. It is odd that Ball does not allude to the obvious fact that there must have been alpine plants before the Glacial period, many of which w^d have returned to the mountains after the glacial period when the climate again became warm. I always accounted to myself in this manner for the Gentians &c.—

Ball ought also to have considered the Alpine insects common to the Arctic regions. I do not know how it may be with you, but my faith in the Glacial migration is not at all shaken.⁹

Ever my dear old friend yours truly | Ch. Darwin

P.S. I shall have to return some plants to Kew when we leave home.— Your plant of *Smilax aspera* has been injured by scale insects which were only lately detected.—¹⁰ Is this worth returning? It is a large bush.

DAR 95: 485–8

¹ The year is established by the relationship between this letter and the letter from J. D. Hooker, 26 July 1879.

² William Turner Thiselton-Dyer had not left Kew (see letter from J. D. Hooker, 26 July 1879). *Lathyrus aphaca* is yellow pea.

³ In a note dated 2 September 1879, CD wrote that he could detect no apheliotropism in tendrils of *Lathyrus aphaca* (DAR 209.7: 65).

⁴ *Movement in plants* was published in 1880.

⁵ The Darwins stayed at Coniston in the Lake District from 2 to 27 August 1879; they were in London on 1 August (Emma Darwin's diary (DAR 242)).

⁶ Francis Darwin joined the Darwins at Coniston on 4 August 1879 (Emma Darwin's diary (DAR 242)).

⁷ John Ball's paper 'On the origin of the flora of the European Alps' was published in *Proceedings of the Royal Geographical Society and Monthly Record of Geography* (Ball 1879). Cycadeae (a synonym of Cycadaceae, the family of cycads) were the dominant plants of the Mesozoic period. Ball hypothesised that higher plants emerged at high altitudes, where there was a lower concentration of carbonic acid in the atmosphere (Ball 1879, pp. 581–3).

⁸ Gaston de Saporta discussed the sudden appearance of many angiosperms (flowering plants) in the Upper Cretaceous in 'Les anciens climats de l'Europe et le développement de la végétation' (Ancient climates of Europe and the development of vegetation; Saporta 1878). In a letter to CD of 16 December 1877 (*Correspondence* vol. 25), Saporta argued that many flowering plants and insects, particularly sucking insects, must have evolved together.

⁹ The theory of glacial migration was part of CD's theory of geographical distribution (see *Origin*, pp. 367–70).

¹⁰ CD had received a plant of *Smilax aspera* (rough bindweed) from Kew on 16 December 1878 (*Outwards book*, p. 486, Archives, Royal Botanic Gardens, Kew). Scale insects are sap-sucking bugs of the superfamily Coccoidea.

From Carl Hensgen¹ 23 July 1879

Leiden, Holland

23.7.79.

Hochgeehrter Herr!

Wenn ich mich mit einigen Zeilen an Sie wende so muss ich dies, sofern es einer Entschuldigung bedarf, vor Allem dem Einflusse, den die in Ihren Werken entwickelten Folgerungen und Ideen auf mich ausgeubt haben, zuschreiben; es sei daher verzeihlich sich an den Autor desselben gewandt zu haben.

Von Beruf Chemiker bin ich dadurch zugleich in der glücklichen Lage meinem Lieblingsstudium, den Naturwissenschaften, in einem Zweige thätig dienstbar sein zu können. Immer bin ich mir aber auch des innigen Zusammenhangs aller naturwissenschaftlichen Disciplinen klar bewusst geblieben, deren angenommene Theilung ja lediglich dem so fördernden Principe der Arbeitstheilung entspringt.

Meine Mussestunden waren daher den verwandten Fächern, hauptsächlich der Botanik, Zoologie etc. zugewandt und es immer ein Wunsch von mir, auch auf jenen Gebieten, wenn auch in bescheidenem Maasse fördernd thätig sein zu können, ohne meine Arbeitskräfte und Zeit zum Schaden meiner hauptsächlichlichen Arbeiten zu zersplittern.

Ich suchte speciell nach einem Arbeitsfeld, das auf der Grenze der Chemie und Zoologie stehend unter hauptsächlichlicher Verwendung ersterer eine Untersuchung gestattete und von verschiedenen derartigen Thematas glaube ich durch nähere Verfolgung eines solchen keinen Missgriff gethan zu haben.

Die Arbeit mit der ich mich seit längerer Zeit beschäftige dürfte auch vielleicht Ihr Interesse erregen, als sie mir für die Lehre der Anpassung nicht ohne Erfolg sein dürfte.

Aus dem allgemeinen kurz gefassten Programm, das ich separat beilege wird Ihnen das Nähere klar werden über den von mir zu verfolgenden Zweck.

Als Arbeitsobjecte benutze ich die *Helix pomatia*, da mir diese leicht zugänglich und zugleich ein sehr zähes und elastisches Versuchsmaterial sind—²

Herr Professor Dr. Haeckel in Jena,³ den ich bereits im vorigen Jahre davon unterrichtete, antwortete mir gleichfalls in sehr günstigem Sinne und glaubt das die Verfolgung sicher interessante Resultate liefern werde. Nach vielseitigen Vorarbeiten, theils der Litteratur, Sammlung geeigneter Versuchsobjecte, sowie einer Anzahl chemischer Analysen, habe ich mich hiermit entschlossen auch Ihre mir so schätzenswerthe Meinung freundlichst einholen zu wollen. Wohl bewusst, dass wenige bisher erlangte Resultate nicht sofort zu verallgemeinern sind, sondern dass viele Versuchsreihen nöthig sind um eine allgemeine Schlussfolgerung auszusprechen, haben mich meine Vorarbeiten bis jetzt immer nur ermuthigen können fortzufahren, wozu auch eine gefällige Antwort Ihrerseits nicht unwesentlich beitragen würde. Schliesslich muss ich noch um Verzeihung bitten, dass ich mich in deutscher Sprache an Sie wende, die fehlende Uebung hätte jedoch, wenn ich englisch geschrieben, manches unklar erscheinen lassen, obwohl mir sonst das Englisch nicht unverständlich ist.

Mit Hochachtung | C. Hensgen | Assistent zur Zeit am Chemisch. Laboratorium d. Universitä(t)

[Enclosure]

Dispositionen
zu einer Arbeit

über die Möglichkeit der Substitution des Calciumcarbonates in den Molluskenschaalen durch seine ihm isomorphen rhomboëdrischen Carbonate, vorzüglich des Magnesiums⁴

Soweit die bisherigen Untersuchungen über die Zusammensetzung der Moluskenschaalen reichen, ergibt sich:

A. Die Zusammensetzung ist vorwiegend *anorganischer* Natur, darunter herrschen die *Carbonate* vor und unter diesen das *Calciumcarbonat*.

B. Gleichzeitig ergeben die Resultate früherer Forscher sowie einer Reihe eigener Analysen, daß bei Thieren *derselben Art* das Verhältniß dieser Bestandtheile erheblich variiert und zwar:

1. sowohl das Verhältniß der *organischen Substanz* zu der *anorganischen*, als auch
2. in letzterer das Verhältniß *des Kalkes* zu den *anderen* mit ihm zusammen vorkommenden *Metallen*.⁵

Ein Zusammenhang dieser Erscheinungen mit der *jeweiligen Bodenbeschaffenheit* ist als *sehr sicher* anzunehmen.

Untersuchung.

I. Welchen Einfluss hat eine *theilweise* oder *gänzliche* Entziehung der *Kalknahrung* auf die Gehäusebildung

II. Sind die Thiere im Stande in Ermangelung des Kalkes *andere Carbonate* aufzunehmen und als Ausscheidung bei dem Bau des Gehäuses zu verwenden.

DAR 166: 147

¹ For a translation of this letter, see Appendix I.

² *Helix pomatia* is the Roman or edible snail, an air-breathing (pulmonate) gastropod mollusc.

³ Ernst Haeckel.

⁴ Eilhard Mitscherlich had reported his discovery that chemically similar substances possessed similar crystalline forms (isomorphism), in 1819 (Mitscherlich 1819). Calcium and magnesium are in the same group in the periodic table (alkaline earth metals) and have similar chemical properties.

⁵ Calcium carbonate (CaCO_3) in mollusc shells is found in two principal crystalline forms, calcite (rhombohedral lattice) and aragonite (orthorhombic lattice); see Rose 1858 for more on the crystal structure, additional metals such as magnesium, and proportion of these minerals in various shells.

To G. J. Romanes 23 July 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

July 23^d/79

My dear Romanes.

I take great interest in Grant Allen & am much grieved at what you say. I thank you for telling me about the subscription & send a cheque for 25£.¹ Should more be urgently required I shall be glad to give more.— Poor fellow it is a most melancholy case.—

We were very sorry that you could not come to us before your northern migration; but we hope at some future time to see M^{rs} Romanes & you here.—² I have not had a very good time of late & have been compelled to knock off work occasionally. On Augt 1st. we all go to Coniston for a month, & a nice treat it will be if the weather keeps as it is!³

I enclose paper in case you care about such cases: M^r Meehan, however, I look at as a very inaccurate observer.⁴ I wish you all good fortune with the Medusæ.⁵

Pray present my kind compliments to M^{rs} Romanes & believe me | Yours very sincerely | Ch. Darwin

American Philosophical Society (566)

- ¹ No letter from Romanes mentioning Grant Allen has been found. Allen had been suffering from overwork and illness; Romanes and George Croom Robertson together raised £202 to send Allen and his family to the Riviera for the winter of 1879–80 (Morton 2005, p. 55). CD recorded a payment, dated 23 July 1879, of £25 under the heading ‘Romanes for subscription for Grant Allen’ in his Account books—cash account (Down House MS).
- ² Romanes spent summers at his family’s home in Dunskaith, Ross-shire, where he carried out most of his research on the nervous system of medusae (the sexual form of individuals of the phylum Cnidaria; see, for example, Romanes 1876–7, a study of some species of Cnidaria native to Scotland). Romanes’s wife was Ethel Romanes.
- ³ The Darwins stayed at Coniston in the Lake District from 2 to 27 August 1879 (Emma Darwin’s diary (DAR 242)). The reference to the weather was ironic; the summer of 1879 was the wettest in England since records began in 1750 (Briffa *et al.* 2009, p. 1897).
- ⁴ The paper by Thomas Meehan has not been identified, but may have been Meehan’s report on his success in producing a graft-hybrid apple (Meehan 1876). On CD’s estimation of Meehan, see *Correspondence* vol. 26, letter to Asa Gray, 21 [and 22] January 1878.
- ⁵ See n. 2, above. Romanes’s final observations on the nervous system of medusae were summarised in the *Proceedings of the Royal Society of London* 28 (1879): 266–7, and published in full in the *Philosophical Transactions of the Royal Society of London* (Romanes 1879).

From W. E. Gladstone 24 July 1879

Dear Mr Darwin

As my collection of the facts of colour from the Homeric Poems fell within the wide circle of your observation, I am desirous to place in your hands another like collection, made at any rate without prepossession of any kind, on the Homeric epithets of motion—¹

The conclusion to which I am led in this case is the precise opposite of the former one— The epithets indicate ideas of motion more precisely and if I may so speak scientifically adjusted than so far as I know they can be shown to be in the works of any other author—²

Pray do not take the trouble to acknowledge this note and believe me | with much respect | Faithfully yours | W E Gladstone

73 Harley St | July 24. 79

DAR 165: 51

- ¹ CD had written to Gladstone after reading Gladstone’s article on colour vocabulary and its usage in Homeric texts, a supplement to Gladstone’s earlier book on the topic (Gladstone 1877 and Gladstone 1858; see *Correspondence* vol. 25, letter to W. E. Gladstone, 2 October 1877). Gladstone sent a copy of his recent article ‘On epithets of movement in Homer’ (Gladstone 1879); the offprint has not been found in the Darwin Archive–CUL.
- ² In Gladstone 1877, Gladstone had concluded that the sense of colour was not very well developed in the ancient world, based on the paucity of colour vocabulary and its imprecise usage in the texts he analysed. He had further argued that many words associated with colour referred, in fact, to lightness or darkness.

From T. M. Coan 25 July 1879

New York,
25th July 1879.

My dear Sir,

I take pleasure in sending you an article of mine, briefly summatory of the main causes of decline in the Hawaiian population.¹ It contains little or nothing that is new; but it seems to me that the *intellectual* perturbation of savages under civilization, as a possible cause of their infertility, has not yet, perhaps, been sufficiently studied.

Let me say that I am in frequent correspondence with my father, the Rev. Titus Coan of Hilo, & that he would be happy to answer, either directly or through me, according to the best of his observations, any questions about the Islanders that you might take interest in asking.²

Very sincerely yours, | T. M. Coan.

Dr. Charles Darwin.

DAR 161: 185

¹ Coan sent his article 'The decay of the Polynesian' ([Coan] 1879); CD's copy is in the Darwin Pamphlet Collection-CUL.

² Coan's father, Titus Coan, was a missionary based at Hilo, Hawaii, since 1835.

From James Paget 25 July 1879

1, Harewood Place, | Hanover Square, | W.
July 25, 1879.

My dear Darwin

I am very sorry that I cannot send you the promised volume—I saw it at the Library of the College of Surgeons and thought it certain that a copy of it would be in the Library of the Medico Chirurgical Society from which I can take-out books. But it appears that their *Biographie Médicale* is a very rare book, and the Librarian of the Society has long been trying in vain to get a copy.¹

What shall I do? Is there a chance that you or either of your sons will be able to go to the College?² Flower will in a few minutes get the book to his own room; for the Librarian knows it—³ Or shall I send you an abstract of the biography? My son will think it real happiness to make it for you—⁴

Sincerely your's | James Paget.

DAR 99: 194

CD ANNOTATIONS

1.1 I am ... copy 1.5] '(vol. [3^d del] III. 1821' ink

2.1 What ... you— 2.4] 'W. S. Dallas 21. Alma Sq. N.W' ink above 'Dr Ernst Krause Friedenstrasse 10— II. Berlin'⁵ ink del pencil

Top of letter: 'Abstract' blue crayon

¹ No letter to James Paget on this subject has been found, but see the letter to James Paget, 14 July 1879. CD was working on a biography of his grandfather Erasmus Darwin, to be published with Ernst

- Krause's essay on his scientific works (*Erasmus Darwin*). A biography of Erasmus Darwin was published in *Biographie médicale* 3: 384–93.
- ² The Royal College of Surgeons of England had premises at Lincoln's Inn Fields, London. Paget probably refers to George Howard Darwin and Francis Darwin.
- ³ William Henry Flower was curator of the Hunterian Museum at the Royal College of Surgeons. The librarian was John Chatto.
- ⁴ Paget probably refers to his youngest son, Stephen Paget, who was a student at St Bartholomew's Hospital medical school (*ODNB*).
- ⁵ William Sweetland Dallas was translating Ernst Krause's essay for *Erasmus Darwin*; it was a revised version of Krause 1879a.

From J. D. Hooker 26 July 1879

Kew
July 26/79.

Dear Darwin

I have just returned from the funeral of my niece in Glasgow—whither Dyer sent me your letter of 22^d. He has I understand sent the *L. Aphaca* & told you that we do not want *Smilax aspera* back.¹

I was surprized to hear from Horace the other day that you were going to the Lakes & I do hope it will do you good.² Our little Scotch tour, included 3 days on the Clyde, where my Niece had been staying, & which did my wife a world of good, not undone by the return to London which was accomplished in 12½ hours from door to door, & this included 6 miles of carriage drive, two railways & a journey right across Glasgow by Cab!³ we do live in wonderful times.

We are going to Scotland for our holiday, to Sir James & Lady Colviles my Indian friends who have a big house in a lovely spot on the Firth of Forth (Fifeshire)—they hospitably take ourselves 3 children & 2 nurses!—& our stay will be for a month from 15th. August.⁴ I must tell you that Brian has come out First Class in Chemistry at the School of Mines: he is a steady worker though not very clever & won it by hard work.⁵ I shall get him on to the B.Sc. of L. University & have sent him to a Mathematical coach at Cambridge who lives next to Horace—who again has kindly offered to look up Brian.⁶

I was very anxious to hear what you had to say to Ball's lecture which I think is very unsatisfactory in more ways than one. Firstly it was quite unsuited to the occasion—& not profitable for Geographers—I strongly urged him to send it to a Magazine instead, or a Society where it could be discussed.—⁷ But what is of far greater moment I think his positive theory respecting the Carbonic acid gas in the air at the Carboniferous Epoch as inconclusive as his negative one regarding the Alpine plants not having been at the Poles.

Granting that there was the enormous percentage of CO₂ in the air, he has no grounds for assuming that it would not be equally diffused— That it formed as he supposes a layer at low levels only is only tenable on the hypothesis that there was no motion in the air which requires that the world should not have revolved on it's axis!

Then the putting aside without excuse even, all the evidence of glacial migration is quite inadmissible. But the funniest idea of all is, (if I understood him aright) that the Alpine plants have remained unchanged in kind & position since & from before carboniferous times, whilst lowland plants progressed from *Lepodendron*⁸ & so to the existing Flora!—

I think too Ball attributes to us assumptions which we have nowhere put forward, & certainly would not subscribe to:—as that all or even any of the Arctic plants common in the Alps originated in the former region—

Another assumption is that because there was an increased proportion of C.O₂ in the air at the Carboniferous epoch, they therefore took it up— I know of nothing in Vegetable life that supports this theory—

I must break off to race the post—. & I am sure you have had enough of Ball whom we will discuss when we meet.

Ever yr affec | J D Hooker

DAR 104: 128–30

¹ See letter to J. D. Hooker, 22 July [1879] and n. 3; the letter was forwarded by William Turner Thiselton-Dyer. Hooker's niece was Willielma Campbell. *Lathyrus aphaca* is yellow pea; *Smilax aspera* is rough bindweed.

² Horace Darwin. The Darwins stayed in Coniston in the Lake District from 2 to 27 August 1879 (CD's 'Journal' (Appendix II)).

³ Hooker's wife was Hyacinth Hooker.

⁴ James William Colvile and Elinor Colvile had an estate, Craigflower, near Dunfermline, Fife (*ODNB*). The children were probably Reginald Hawthorn Hooker, Grace Ellen Hooker, and Joseph Symonds Hooker. The nurses have not been identified.

⁵ Brian Harvey Hodgson Hooker studied at the Royal School of Mines, London, from October 1878 (letter from J. D. Hooker to Asa Gray, 22 August 1878; Joseph Dalton Hooker Correspondence, JHC 172).

⁶ According to the University of London General Register, part 1 (University of London Archives, UoL/UP/2/1/1), Brian matriculated there in June 1878. The coach may have been Edward John Routh.

⁷ CD had commented on John Ball's paper 'On the origin of the flora of the European Alps' (Ball 1879) in his letter to Hooker of 22 July [1879]. Ball's lecture was delivered at an evening meeting of the Royal Geographical Society on 9 June 1879.

⁸ Hooker probably intended *Lepidodendron*, an extinct genus of tree-sized plants related to club mosses (family Lycopodiaceae).

From Samuel Wilks 26 July 1879

77, Grosvenor Street, Grosvenor Square, | W.
July 26. 1879

My dear Sir

I am sending you by this post a copy of the oration I lately delivered at the College of Physicians— I should scarcely have ventured to have done so, had I not been honoured by your presence on that occasion—¹ I shall always regard it on this account one ⟨of⟩ the most memorable days of my life—

I am only too pleased to have this excuse to enable me to say that I am one amongst a multitude ⟨ ⟩ you have never heard,—who have been your devoted

disciples— As far as any scientific work can be done in my own profession I have endeavoured though in a very minor degree to follow the methods you have so well pursued.—

My oration though imperfect was intended to speak in a like spirit.²

Believe me | My dear Sir | With profound esteem & most affectionate regards
Yrs Sincerely | Samuel Wilks

To Charles Darwin Esq

DAR 181: 103

¹ On 26 June 1879, CD had received the Baly medal, a biennial award in physiology, on the occasion of the Harveian oration (see letter to H. A. Pitman, 17 June 1879 and nn. 1 and 2). CD's copy of Wilks's oration (Wilks 1879a) has not been found.

² In his lecture, Wilks had stressed the relation between disease and physiology and cited the work of CD and Thomas Henry Huxley in this context (see Wilks 1879a, p. 16).

To W. T. Thiselton-Dyer [after 26] July [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
July

My dear Dyer

I have left instructions for the plants to be returned to Kew & I hope not much the worse for their residence here.— I have kept one of the 2 plants of *Bignonia capreolata*, as I believe these are not very precious.² The date will be put outside this note when the plants are despatched. I have failed with the aerial roots: I have no doubt that they are apheliotropic, but they move so slowly that sources of error creep in.—³

Very many thanks for yours & for Sir Joseph's long letters about Ball's article, which interested me greatly. It is a pity that the substances of these letters were not given as a review, but I daresay that you w^d dislike reviewing his article severely.⁴

I wish that my holiday were over & that I was safe at home again.⁵

Yours very sincerely | Ch. Darwin

P.S. I find *Anthauerium Violaceum* is just beginning to make numberless aerial roots, so will keep this plant, for chance of success on our return home.—⁶

This is not one of the more precious plants, as I gather from your letter.⁷

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: ff. 180–1)

¹ The date is established by the relationship between this letter and the letter from J. D. Hooker, 26 July 1879.

² In his letter to J. D. Hooker, 22 July [1879], CD had written that he would send plants back to Kew. Some plants had been sent to him on 16 December 1878 and 17 June 1879, but the last record of a plant of *Bignonia capreolata* (crossvine) being sent was on 16 May 1878; there is an undated record of the return of the plants sent on 17 June 1879 (*Outwards book*, Archives, Royal Botanic Gardens, Kew, pp. 459, 486, and 503; *Inwards book*, p. 164).

³ The plants sent on 17 June 1879 from Kew had been requested so that CD could study tropic movements in their aerial roots (see letter to W. T. Thiselton-Dyer, 5 June 1879 and n. 2).

- ⁴ Thiselton-Dyer's observations on John Ball's paper on the origin of alpine flora (Ball 1879) are now missing; see letter to W. T. Thiselton-Dyer, 18 June 1879 and n. 5. Joseph Dalton Hooker's comments on the paper are in his letter of 26 July 1879.
- ⁵ CD was about to leave for a holiday in the Lake District; the Darwins stayed in Coniston from 2 to 27 August 1879 (CD's 'Journal' (Appendix II)).
- ⁶ *Anthurium violaceum* (a synonym of *A. scandens*, pearl laceleaf), an epiphytic vine of the family Araceae, has aerial roots along the stem; it was one of the plants sent on 17 June 1879 (see n. 3, above).
- ⁷ Thiselton-Dyer probably sent a letter with the plants that were sent on 17 June 1879 in which he mentioned which of them were more valuable, but that letter has not been found (see letters to W. T. Thiselton-Dyer, 5 June 1879 and n. 2, and 18 June 1879 and n. 3).

From Anthony Rich 27 July 1879

Heene, Worthing
July. 27— 1879

My dear Mr Darwin,

My memory says that within a day or two of this date you will spread your wings for a flight to the lakes of Cumberland.¹ That affords me an excuse for writing, because I desire to wish you a *bon voyage* with a dry and sunny time of it. Ah! happy is the man who is "ruled with a rod of iron"—*sua si bona nôrit*—and lighter than the lightest feather is the iron of that rod when it descends from a gentle hand upon shoulders for which it is a salutary discipline!² Think what it brings; a pleasant excursion through a beautiful country with agreeable companions; and, for the time at least, freedom from the daily task;—the chances of being interviewed, depicted, chattered at, bored—possibly sermonized by an officious member of the widely diffused Grundy family, a bishop *in partibus*, or the conceited young curate anxious to try the effect of some unctuous sentences in the discourse he is preparing for delivery on the following Sunday in presence of the rural Dean.³ Oh! Thrice happy is the man that is ruled by a rod of iron whose specific gravity equals that of the finest eider-down!—

As it is now vacation time at Cambridge I am thinking that Mr G. D. may make one of your party. Should that be so please to give him my cordial salutations. I have not forgotten his generous self immolation by coming here to visit me in the depth of winter amid snow and half a gale from Eastward.⁴

If you pull up for any time at Ambleside there is a singularly primitive and picturesque hamlet in its neighbourhood, called Trout-beck, out of the line of ordinary tourists, and little known, except to artists.⁵ It is worth a visit when the question arises, "What shall we do to day"?— But I am referring to primaeval times, before the rail, the steam boat, and big hotel had invaded the "Lakers" district; so it may be transformed into a cockney suburb of stucco "villas" by this time.

I have seen a house fly,⁶ the first of the year, on this 27th day of July; while in ordinary seasons one or two generally keep me company all the winter through. And every year since I have lived here a goodly company of little spotted fly-catchers⁷ has done me the honour of passing the summer months on the iron railings at bottom of my lawn. This year two couples appeared in June—remained three days,—no

more—and not a single one has visited my premises since their departure. What better proof could one have of the unusual inclemency of this spring and summer?⁸ I hope that you had luck with your hay— Mine, a good three tons, after laying out a fortnight, but stacked a fortnight ago, was discovered yesterday to have become musty from top to bottom, throughout, and throughout.

My respects to M^{rs}. Darwin; and may the “Clerk of the weather” have you and yours in his holy keeping; now and ever.⁹ | Very truly | Anthony Rich

P.S. and **N.B.** | These idle scribblings of mine, are not to inflict upon you the penalty of writing in return. Only when you get back to your own home it would give me great pleasure to hear that you had thoroughly enjoyed your tour, and reinvigorated your health.

I was just upon the point of closing up my envelope with the preceding when I bethought me of that flock of starlings that you “wot of”.—¹⁰ I am certain that each old bird attended to one only young one, and that the two never changed about with others.— But I have made another guess to explain the matter— Here, on my lawn I often see an old bird feeding a young one—either starlings, thrushes blackbirds, or once a chaffinch—but with a single exception presently to be mentioned, only one old and one young one at a time. And it now occurs to me that the stronger ones of the brood are able to shift for themselves immediately upon leaving the nest, while the parent takes charge of any weakly one for a short time longer till it too is strong enough to take care of itself.— Thus several birds of different families might be foraging together when they belong to groups which habitually congregate, without their being charged with the awful crime of communism, for which there is no hope here or hereafter!—

Once this summer I have watched a starling with two young ones in attendance, one on each side of her or him, (whichever it was)— They kept their distance fairly at about a yard laterally from the old one, and slightly in the rear; advancing at equal distances as the old one moved on, and as regularly as drilled soldiers. They never changed sides. The old bird distributed its finds with equal justice first on one side then on the other; but never, as far as I could observe, favoured either side by giving what we used to call when schoolboys “*two helps*” to the same open mouthed claimant in succession. That confirms in some degree what you say about the nestlings being fed in fair rotation all round, as I, in my ignorance, have often surmised must be the fact.—¹¹

Very many thrushes & blackbirds build in my shrubberies, and forage for the young ones, and, I suppose, the “*missus*”, on my lawn, which abounds in worms. The old bird never flies up to the nest until he has collected several choice morsels in his beak, as many, I fancy, as there are young ones in the nest, one for each; for I observe that he breaks one worm into several pieces, & then hunts for another, which is submitted to the same process; the first lot being deposited on the grass by his side, while the second is being manipulated—*rostriplulated*¹²—or carved into the fitting number of portions. Then off he goes with all the fragments in his beak together.

I had something to say about blackbirds likewise; but my conscience tells me that I have already trespassed too much upon your good nature; and I stand in fear that a certain rod might be laid rather heavily and very deservedly upon my back, if I were to act as people who take likenesses do!— — —Addio!— | AR

DAR 176: 137

- ¹ The Darwins stayed at Coniston in the Lake District from 2 to 27 August 1879 (Emma Darwin's diary (DAR 242)). Cumberland is the former county where Coniston is situated; it was later subsumed into the present county of Cumbria.
- ² 'Rule with a rod of iron': an allusion to the biblical verse (Rev. 2:27). *Sua si bona nôrit*: if he knew his blessings (Latin); a phrase adapted by Rich from Virgil, *Georgics* 2: 458.
- ³ 'Mrs Grundy' is a character in Thomas Morton's play, *Speed the plough* (1798); she is 'proverbially referred to as a personification of the tyranny of social opinion in matters of conventional propriety' (*OED*). *In partibus*: a contraction of *In partibus infidelium*, 'in the regions of infidels', words describing a titular bishop in an infidel or a heretical country (*OED*).
- ⁴ George Howard Darwin had visited Rich on 8 and 9 January 1879 (letter from G. H. Darwin to W. E. Darwin, 10 January 1879 (DAR 210.14: 14)).
- ⁵ Ambleside, at the northern tip of Lake Windemere, is about eight miles north-east of Coniston; the village of Troutbeck is a few miles south-east of Ambleside.
- ⁶ The housefly is *Musca domestica*.
- ⁷ The spotted flycatcher is *Muscicapa striata*.
- ⁸ The summer of 1879 was the wettest in England since records began in 1750 (Briffa *et al.* 2009, p. 1897).
- ⁹ Clerk of the weather: imaginary functionary humorously supposed to control the state of the weather (*OED*).
- ¹⁰ Wot of: know of (*OED*). For Rich's earlier observations on the feeding behaviour of starlings, see the letter from Anthony Rich, 1 July 1879.
- ¹¹ CD's letter to Rich has not been found.
- ¹² Rostrulated: a coinage of Rich's own, from *rostrum* (beak; Latin).

To Samuel Wilks 27 July 1879

Down, Beckenham,
27 July 1879

[Thanking him for sending the text of a recent oration by Wilks (which Darwin was unable wholly to follow when it was delivered) and thanking him also for an article on parrots.]¹

Sotheby's (dealers) (12 December 1967: 489)

- ¹ See letter from Samuel Wilks, 26 July 1879 and n. 1. Wilks had sent CD a copy of his Harveian oration (Wilks 1879a) and evidently included a copy of his recent article in the *Journal of Mental Science*, 'Notes from the history of my parrot, in reference to the nature of language' (Wilks 1879b). CD's copy of Wilks 1879b is in the Darwin Pamphlet Collection—CUL.

From W. S. Dallas 29 July 1879

21 Alma Square N. W.
29 July 1879

My dear M: Darwin

I had hoped to have finished your work some days ago, but the difficulties of it are so great that I have been able to make but slow progress— It is not only the wretched

small writing, which I can only read by daylight, that makes delay, but in many cases the author has referred to wrong pages for his quotations from Buffon & Erasmus Darwin, & in others has given no references at all, making it necessary to seek out the passages required by means of the context.—¹

I am at home today hard at work upon it but do not expect to get done until Thursday, for which I am sorry, as it throws me too late for you to get the translation at home.— It will not, however, be long after you in reaching the Lakes, & I hope it will prove satisfactory—² Shall I make up the books into a parcel & send them also to Coniston? I fancy you will want them if you are going to work upon the memoir while you are away.— I will send my address as soon as I know what it will be,³

Meanwhile, | Believe me | Yours truly | W. S. Dallas

DAR 99: 112–13

CID ANNOTATION

End of letter: 'Ambleside' pencil

¹ Dallas was translating the revised essay on Erasmus Darwin by Ernst Krause for *Erasmus Darwin*. There is only one reference to a specific work by Georges Louis Leclerc (comte de Buffon) in the published version (see *ibid.*, p. 148).

² The Darwins stayed at Coniston in the Lake District from 2 to 27 August 1879; they began their journey via London on 1 August (Emma Darwin's diary (DAR 242)). The Thursday following 29 July 1879 was 31 July.

³ Dallas planned to holiday in Margate when he finished his translation work (letter from W. S. Dallas, 15 July 1879).

From Francis Darwin [before 31 July 1879]¹

Bot Institut | Würzburg

My dear Father,

Just after I wrote last Sachs asked me if I should like to publish my root work in his *Arbeiten* so of of course I said I should like it.² It is nice to publish with the other people who have been working with me here & there is also honour and glory. It is rather difficult to write as I must not quote the last edition even of the *Lehrbuch* as there Sachs evidently expected negatively heliotropic roots to grow quicker in light.³ I am glad to discover that he has not been quite so much of a weather cock as I thought as in 1876 his pupil Müller Thurgau published what is pretty well the general idea which we have namely that Heliotropism is not the direct result of the shaded side being obliged to grow quicker but that heliotropism & geotropism are both “Reizerscheinungen”⁴ In his lectures this summer he has said the same thing distinctly—that the light or gravity acting in an unusual direction acts like a Reiz and the plant's internal organis[!] determines what kind of movement shall follow. When Müller Thurgau wrote his paper he quoted what was merely Sachs opinion as if it had been published so that I asked Sachs where he had published this view about Heliotropism. I thought the simplest thing in quoting was to speak of “Müllers investigations in the Lab at Wzbg”: but Sachs wants me to put some such

phrase as “The question which Sachs laid before Müller for investigation in the Lab at Wzbg”. Müllers way of putting it is certainly misleading so I suppose I must say something of the kind⁵

He also wanted me to criticise Wiesner, & I was preparing to say I would see him blowed when he took it into his head he would do it himself, which is a relief.⁶ Sachs says he will translate my paper for the *Arbeiten* into German himself as it is so short. It is usually called purgatory here when an MS has been given to Sachs & until it is quite approved of. Elving the Finn has had an awful dose of purgatory, Sachs wants him to bring in his favourite idea of an organ which grows horizontally really consisting of a positive & negatively geotropic organ tied together, & a lot of other schematic things. Elving and everybody here thinks it pure bosh, & he is trying to bring it to absurdity by inventing more & more such theories & drawing them on the black board & showing them to Sachs; anyhow he says he won't alter his MS in this respect.⁷ I produced the theory that when a man stands still he only does so because he really consists of two men walking equally quick in opposite directions, which met with much applause from the simple German mind

I shall start on Thursday pm & go by Heidelberg & Strassburg. I want to get one or two things at the instrument maker at Heidelberg & then Strassburg is so close that I should like to go & see D^c Bary & C^o for one day.⁸ I shall be able to get to London by Sunday sometime I hope & so on. I suppose of course Ubbadubba goes with you when you go? If you want me to look at the life of Eras I shall call at Uncle Ras so any message would find me there.⁹ I have made two appeals to the public to know how the dickens to get to Coniston. I can do the French life quite well.¹⁰

DAR 274.1: 56

¹ The date is established by Francis's reference to starting his return to England on Thursday (see n. 9, below). In 1879, the Thursday before 4 August was 31 July.

² The latest extant letter from Francis is that of 9 July 1879. Francis had been uncertain whether he would be asked to publish his work in Julius Sachs's journal, *Arbeiten des botanischen Instituts in Würzburg* (see letter from Francis Darwin, 4 July 1879). Francis's paper 'Über das Wachstum negativ heliotropischer Wurzeln im Licht und im Finstern' (On the growth of negatively heliotropic roots in light and in shade; F. Darwin 1880) appeared in 1880.

³ See letter from Francis Darwin, 4 July 1879 and n. 7. In his published paper (F. Darwin 1880, p. 522), Francis referred to unpublished work of Alexander Wolkoff and the last (fourth) edition of Sachs's *Lehrbuch der Botanik* (Textbook of botany; Sachs 1874, pp. 804, 810).

⁴ Hermann Müller-Thurgau, in his article 'Ueber Heliotropismus' (Müller-Thurgau 1876, pp. 88–9), had shown that the bending of a stem towards a horizontal light source continued for some time even after the light was removed. *Reizerscheinungen*: stimulus phenomena (German).

⁵ In the introduction to his article on heliotropism (Müller-Thurgau 1876, p. 66), Müller-Thurgau had noted that his research, conducted over two summers at Würzburg, was intended to show the relationship between the light source and bending of the stems, as Sachs had done in experiments on geotropism. Most of his references to Sachs relate to the latter's research on geotropism (Sachs 1873b, Sachs 1873–4).

⁶ The first part of Julius Wiesner's monograph on heliotropic phenomena had appeared in 1878 (Wiesner 1878–80). For Sachs's negative view of Wiesner's work, see the letter from Francis Darwin, 29 May 1879 and n. 8.

⁷ Fredrik Elfving had observed a tendency in roots of the genus *Scirpus* (bulrushes) to grow horizontally (see letter from Francis Darwin, [after 2 June 1879] and n. 3).

- ⁸ The instrument maker in Heidelberg has not been identified. Anton de Bary was professor of botany at Straßburg (Strasbourg), which is about seventy miles south-west of Heidelberg.
- ⁹ Francis joined the Darwins in the Lake District on 4 August 1879 (Emma Darwin's diary (DAR 242)); the Sunday before that was 3 August. He stopped at Erasmus Alvey Darwin's London residence; Erasmus had a copy of CD's proof-sheets of the first version of his introductory essay on Erasmus Darwin, the first part of *Erasmus Darwin*. Ubbadubba was a pet name for Francis's son, Bernard Darwin.
- ¹⁰ The Darwins stayed at Coniston in the Lake District from 2 to 27 August 1879 (Emma Darwin's diary (DAR 242)). The 'French life' is probably a reference to the biography of Erasmus Darwin published in *Biographie médicale* (see letter from James Paget, 25 July 1879 and n. 1).

To G. H. Darwin [31 July 1879]

From Mr. C. Darwin, Down, Beckenham.

Be so kind as to send name & address of tailor from whom you got the D's gown to

W. G. Richmond Esq^r
Beavor Cottage
Hammersmith
London.

He wants to finish gown, & will then return it direct.¹

Apc

Postmark: Beckenham (JY) 31 (79); Cambridge AU 1 79

DAR 210.1: 88

¹ CD's portrait was being painted by William Blake Richmond, who had been commissioned by the Cambridge Philosophical Society (see frontispiece). The portrait, showing CD in his red doctor's robes, commemorated the honorary doctorate of laws (LLD) awarded to CD by the University of Cambridge in 1877 (see letter to John Fiske, 10 June 1879, n. 2). Richmond's address was, in fact, Beavor Lodge, Hammersmith (*Post Office London suburban directory* 1878).

To Felix Marchand [c. 1 August 1879]¹

[6 Queen Anne Street, London / Waterhead Hotel, Coniston.]

Dear Sir

I thank you for your very courteous, letter, & I hope that you will express to the members of your Society how much obliged I feel for the gr H. which they have conferred on me by electing me a member of the Society which has for so long a period assisted in the progress of Natural Science.—²

I shall not return to my home for about a month, but as soon as I do, it will give me pleasure to forward a photograph of myself³

I have the honour to remain | Yours faithfully & obliged | C D.

ADraftS

DAR 202: 115v

¹ The date is established by the relationship between this letter and the letter from Felix Marchand, 20 July 1879, and by CD's statement that he was away from home (see n. 3, below).

² See letter from Felix Marchand, 20 July 1879. CD had been made a member of the Naturforschende Gesellschaft zu Halle (Natural Science Society of Halle).

³ The Darwins stayed at Coniston in the Lake District from 2 to 27 August 1879; they were in London on 1 August (Emma Darwin's diary (DAR 242)).

To Francis Darwin [2 August 1879]¹

6 Queen Anne Street, | London, W
Saturday

My dear F.

We shall be at the "Waterhead Hotel, Coniston"—The train which leaves Euston St. at 10 A.M & reaches Coniston at 6 P.M is a very good one.—²

I have looked to the French life of D^r Darwin.³

It will be very nice to see you & to hear about axles.⁴ Bernard is very jolly.⁵ I asked him whether he liked London. & he answered. "I do, but it is dirty".

We are all in good heart for our tremendous journey.

yours affect | C. Darwin

D^r F. Darwin

DAR 211: 63

¹ The date is established by the address. The Darwins stayed at the home of CD's brother, Erasmus Alvey Darwin, on 1 August 1879, before travelling to Coniston (Emma Darwin's diary (DAR 242)); 2 August 1879 was a Saturday.

² Francis was on his way back from Würzburg, Germany. In his letter of [before 31 July 1879], Francis had asked how to get to Coniston to join the Darwins on holiday.

³ CD had evidently looked at the biography of Erasmus Darwin published in *Biographie médicale* 3: 384–93; see letter from James Paget, 25 July 1879. Francis had offered to look at it on his way through London (letter from Francis Darwin, [before 31 July 1879]).

⁴ Francis referred to his various 'axles' (a family word for unresolved work-related issues) in his letter to Emma Darwin of 30 June 1879.

⁵ Francis's son, Bernard Darwin.

From R. T. Wright 2 August 1879

9 Victoria Terrace, Aldershot
2 Aug, 1879

Sir,

Pardon my addressing you as a stranger, but I hope you will excuse the liberty I take in writing to you when I mention it is only to inform you where you will find some curious facts relating to your studies.—

When I was in India I met the Stud Commission on their tour of inspection which led to their report on perusing which the Government of India gave up horse-breeding in Bengal.—¹

The Commission consisted of Major-General Crawford Chamberlain, President, (now Commanding the Lucknow division, & the members were Colonel Ravenhill, Royal Horse Artillery, & M^r Hallen, Principal Veterinary Surgeon.—² I met them before their tour was complete, but they told me such interesting facts that when I came home I applied at the India Office for information if the report had been

published or not.— As I am only a junior officer, (a surgeon of ten years' service, passed for promotion, I was not very much surprised to receive no answer, so I asked Col. Ravenhill about it, now that he has come home & is stationed at Canterbury.—

I inclose you his reply, as you see by it that he quite agrees with me about the desirability of printing the Stud Commission report, & suggests that a question in the House of Commons might effect the object.—

However a savant like yourself, Sir, might perhaps have access to the report of the Studs at the India Office without worrying Gov^l at the end of the Session, & no doubt you would be enabled to make what use you chose of the materials placed at your disposal, which are now lost in official pigeon-holes.—

The Studs were abolished because the damp climate of Bengal proper had a most deteriorating effect on the horses bred in them, though the stock was continually being replenished by arabs, & by thoroughbred horses & mares imported from England at enormous expense.—³

The Commission report is illustrated by photographs of the horses, some of which were shown to me.—

In covering up all the photograph but the head, you would think it was the likeness of a sheep or a goat, for the profile of the face was convex instead of flat & straight; the eyes looked outwards, & apparently not at all to the front; the ears were long & drooping outwards languidly, not “pricked” briskly, & the whole aspect of the animal was decidedly “sheepish” & stupid, though the sires & dams were very handsome & intelligent.—

They had ring bones as big as your head, pasterns as long as your arm, & every conceivable equine disease—

The hoofs were split like those of oxen, not merely on the front, but also underneath, the animal's foot being held up to let the ground surface of it be photographed— The crack was two inches in depth.—⁴

These Studs were in Behar, the garden of India, the most North Western part of Lower Bengal, a most lovely place each depôt was, but the *damp* is fatal.—⁵

On the contrary in the Punjab, at the Salt Range, between Jhelum, Rawal Pindi & Pind Dadun Khan,⁶ where the herbage is hardly visible, the ground is baked & the sky is a furnace, both horses & cattle flourish in the *dry heat* almost as much as they do in England, so the Studs are now removed thither.—

Yrs. respectfully | R. Temple Wright
(Surg)eon, Bengal army

[Enclosure]

R.H.A. Barracks | Canterbury
July 28th 1879

Dear M^r Wright

Absence from here & travelling about has prevented my answering your letter of the 13th. inst

The Report of the late *Stud Commission in Bengal* has never been published *it would be a most curious thing to put in Darwin's hands & substantiate much he sets forth,*⁷

Of course they have it at the India Office, I should say, & if you cannot get it to look at, you should get a Member of Parliament to *ask in the House, for the report to be published, in detail, as a most interesting Assistance to Breeders of Horses & cattle everywhere.*

Yes, the old Chesnut Troop* has entirely changed of late years—, but it still keeps up its great reputation; and has first rate Officers with it now—

Should you come this way I hope you will look us up—& Believe me | Yours truly
F. G. Ravenhill—

*i.e. A. Battery, A. Brigade Royal Horse Artillery formerly commanded by Col. Ravenhill—

The battery is commonly called the “Chestnut Troop” because all the horses are of that colour—

It is renowned for its smartness in the Service, but in India it was regarded by the natives with almost veneration for they have a curious superstition that if you go into battle on a chestnut charger you are certain to escape unhurt.—

R. T. W.⁸

DAR 181: 177

¹ For details of the Special Stud Commission's work and their reasons for recommending the abolition of horse breeding in Bengal, see Hallen 1887.

² Crawford Trotter Chamberlain, Frederick George Ravenhill, and James Herbert Brockencote Hallen. While serving as acting inspecting veterinary surgeon of the Bengal army, Hallen was a member of the Special Stud Commission from December 1872 to March 1876 (*Proceedings of the Royal Society of Edinburgh* 24 (1901–3): 645).

³ The final report of the Special Stud Commission was never published, but the Stud Department of the Government of India was replaced by two departments: Army Remount Operations and Horse-breeding Operations (Hallen 1887, p. 181).

⁴ Ringbone is a lameness disease of the pastern and coffin joints, and is degenerative and incurable. Long pasterns lead to hyperextension of the fetlock and possible lameness. Split hoof is most frequently a result of fungal infection in damp conditions.

⁵ CD described high humidity as a problem for horses in *Variation* 1: 53.

⁶ Jhelum, Rawalpindi, and Pind Dadan Khan are now in Pakistan.

⁷ CD had considered the inheritance of characteristics and diseases of the horse in *Variation* 1: 49–61 and 2: 10–11.

⁸ *i.e. ... R. T. W.' in Wright's hand.

From Reginald Darwin 4 August 1879

Fern | *Buxton*
Augs^t 4 1879—

My dear Cousin

I have met with an old paper which I think may be of interest to you— It is, as you will see, an address of our Grandfather's to a new Society which he formed in Derby— The Society continued in existence until within the last 20 or 30 years, when I believe its possessions, i.e. Books, passed to the Town Library— This address

was printed as a sort of preface to the Rules & the Catalogue, but I did not know of the existence of the original until last week.¹

I say “original” tho’ it is not in D^r Darwin’s hand writing, but is probably a “fair copy” made for him by some member of his family—the endorsement is in my Mother’s hand—²

With kindest regards | affec^{thly} Yours | Reginald Darwin

DAR 99: 160–1

¹ The enclosure has not been found; CD probably returned it to Reginald. Erasmus Darwin gave an address to the newly formed Derby Philosophical Society at his house on Full Street, Derby, on 18 July 1784; the society, with its collections and library of 4000 volumes, was amalgamated with the Derby Town and County Museum and Natural History Society in 1858 (Elliott 2009, pp. 70–1, 82; *Newsletter of the Geology Curators Group* 8 (1976): 393). CD quoted from the address in his introduction to *Erasmus Darwin*, pp. 55–6.

² Jane Harriett Darwin.

To W. E. Gladstone 4 August [1879]

Coniston

Aug 4th.

Dear M^r Gladstone

Although you are so kind as to tell me not to acknowledge the receipt of your Essay, in which you show how wonderfully Homer distinguished different kinds of movement,¹ yet I must beg permission to thank you for this honour & I remain | Faithfully yours | Charles Darwin

Postmark: AU 4 79

British Library (Add MS 44471 ff. 5–6); International Autograph Auctions (dealers), (23 February 2013)²

¹ Gladstone had sent CD his essay ‘On epithets of movement in Homer’ (Gladstone 1879) with his letter of 24 July 1879.

² The cover, with the postmark, is in the sale catalogue.

To Anton de Bary 5 August 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

[Waterhead Hotel, Coniston.]

August 5. 1879

Dear Sir

My son Francis has shown me the two wonderful specimens of *Utricularia*, which you were so kind as to give him; & I hope that you will allow me to urge you to publish an account of your observations.¹ This seems highly desirable, because the case of *Utricularia* is widely different from that of *Drosera*. I could not detect any evidence of true digestion in *Utricularia*, though the state of the cells in contact with *decaying* animal matter plainly showed that there had been absorption.—² The fact of young seedlings developing bladders is also very interesting.

I hope that you will excuse the liberty which I have taken in writing to you; & this note requires no sort of answer.

With great respect & with my thanks for your kindness to my son I remain
Dear Sir | Yours faithfully | Charles Darwin

Natural History Museum (General Special Collections MSS DAR A 45)

- ¹ Francis Darwin had visited de Bary in Straßburg (Strasbourg) on his way back from working in the laboratory of Julius Sachs at Würzburg; see letter from Francis Darwin, [before 31 July 1879].
- ² For CD's observations on the digestive power of secretions of *Drosera rotundifolia* (common or round-leaved sundew) and the absorption of animal matter by *Utricularia vulgaris* (common bladderwort), see *Insectivorous plants*, pp. 85–135 and 410–24.

To John Fiske 5 August [1879]¹

Waterhead Hotel | Coniston, Ambleside
Aug^t 5th

My dear M^r Fiske

I received two days ago the kind present of your essays.—² I had intended to write after I had read them; but I wish to remain in an idiotic state of idleness, as long as I possibly can, & after reading half of the first essay, I can plainly see that they will set me thinking. So I shall defer reading them until my present golden state of vacuity becomes quite intolerable, & then they will be a real pleasure to me.—

So pray believe me with many thanks | Yours very sincerely | Charles Darwin

The Huntington Library (HM 8267)

- ¹ The year is established by the address; the Darwins stayed at Coniston in the Lake District from 2 to 27 August 1879 (Emma Darwin's diary (DAR 242)).
- ² Fiske had sent *Darwinism, and other essays* (Fiske 1879); the first essay in the collection was 'Darwinism verified'. CD's copy is in the Darwin Library–Down.

From W. S. Dallas 6 August 1879

Alric House | Harold Road | New Town | Margate
6 August 1879

My dear M^r Darwin

I am afraid you will have been thinking that I was very long in sending you the translation of D^r Krause's work, but although I laboured hard & did not leave London until the 1st August, I was defeated by fate.—¹ On my last day, when I thought I had a few hours work to do & got up early to begin upon it, I had hardly made a commencement when I came upon some quotations from Lord Monboddo! these are from your Journal of Researches, (which, I am ashamed to say, I don't possess) one from the Edinburgh Review & one from Craik's Manual of English Literature,—all as it were mines sprung unexpectedly upon me in the last few steps of my progress.—The Journal I got from the Linnean easily enough, but the others I could not get at on Friday, so I have made rough translations of the passages &

will send copies of these to my son who will get the books & copy the quotations at the Brit. Mus. Reading Room—² With these sins of omission (& how many of commission of course I don't know) I have made up my MS. in two sealed packets registered, which I have no doubt will reach you before this does.— I hope when you get them you will find the contents satisfactory.—

My daughter, for whose benefit chiefly we came here, is, I am glad to say, getting better, but my family will remain here till the time for work comes round upon me again.—³ I shall, however, take a short run through Belgium next week, starting the day after tomorrow, & returning here most likely on Monday week, after which I shall remain at the address above given until near the end of the month.—

I gave your books to M^r. Charlton at the Geological Society to be packed up & left him your address in the event of your wishing to have them sent to Ambleside, but as *he* will be going for his holiday at the end of next week, it will perhaps be your safest plan, if you require the books, to write to my son, James Dallas, at the Geological Society, & desire him to have the parcel forwarded.—⁴

I don't think I have anything more to say, except to wish you all the benefit to your health that you can desire from your visit to the north-country.—

Believe me | Yours very truly | W. S. Dallas.

It has just struck me that I have not now explained the cause of my being so long in finishing the translation after all,— the delay was caused by the visit of an old friend, who, being a business man, chose to pay us a visit here for the bank holiday, & effectually prevented my working until he left us yesterday.—⁵

DAR 99: 114–17

¹ See letter from W. S. Dallas, 29 July 1879; Dallas was translating the final part of Ernst Krause's manuscript for *Erasmus Darwin*.

² Krause referred to *Of the origin and progress of language*, anonymously published by James Burnett, Lord Monboddo ([Burnett] 1774–92), in *Erasmus Darwin*, p. 201; he published a longer section in the German edition (Krause 1880, pp. 117–18). Krause cited articles in the *Edinburgh Review* in *Erasmus Darwin*, pp. 138 and 208. He referred to the second edition of George Lillie Craik's *A compendious history of English literature* (Craik 1864, 2: 382–3) in *Erasmus Darwin*, p. 209. None of these works are mentioned in any edition of CD's *Journal of researches*, and the *Journal of researches* is not referred to in *Erasmus Darwin*. Dallas also refers to the Linnean Society and the British Museum.

³ One of Dallas's daughters (Lillias Mary or Louisa Joanna) was suffering with fainting fits; see letter from W. S. Dallas, 15 July 1879.

⁴ CD had lent Dallas some of his books; see letter from W. S. Dallas, 29 July 1879. Isaac Charlton was house steward at the Geological Society of London; James Dallas was assistant in the library and museum.

⁵ Dallas's friend has not been identified.

From J. R. Atkin 7 August [1879]¹

Pantlludw, | Machynlleth.

Aug 7th

Dear M^r Darwin

Thank you very much for your present and the kind letter you sent me.² I hope you will enjoy yourselves at the Lakes and that you will have better weather than we

have here. We had a great thunder storm here on Saturday night: I wonder if you had it where you are. Is Bernard with you?³ I am sure he has grown very much since I last saw him. Please give my love to him and to M^{rs} Darwin, Bessie and Uncle Frank.⁴ Mama, Walter and Robert send their love too.

Goodbye dear M^r Darwin. From your affec little | Dick Atkin

DAR 159: 122

¹ The year is established by the reference to CD's holiday in the Lake District. The Darwin family stayed at Coniston from 2 to 27 August 1879 (Emma Darwin's diary (DAR 242)).

² The letter to Atkin has not been found. Elizabeth Darwin had travelled to Switzerland with Atkin's mother, Mary Elizabeth Atkin, in June 1879, and his younger brothers, Walter Stewart George Davenport Atkin and Robert Laurence Atkin, had stayed at Down (see letter from Francis Darwin, [after 16 June 1879], and letter to Francis Darwin, 24 June [1879]).

³ Francis Darwin's son, Bernard Darwin, was Atkin's cousin.

⁴ Emma Darwin, Elizabeth Darwin, and Francis Darwin.

From Archibald Liversidge 7 August 1879

ROYAL SOCIETY OF N.S.W. SYDNEY | *The Society's Rooms*, | *Sydney*,
Aug^t 7th 1879

To Chas. Darwin Esq. F.R.S. | &c. &c. &c. | Down, Kent.

Dear Sir,

I have the pleasure to inform you that at a General Meeting of the *Royal Society of New South Wales*, held on the 6th inst, it was unanimously resolved, on the motion of the Council, that you be elected an Honorary Member of this Society, as a slight acknowledgement of your very distinguished labours in the cause of Science, and more particularly in recognition of your most valuable contributions to the Natural History of Australia.

By this same mail I beg to forward to you a copy of the last volume of the Society's Journal.¹

Trusting that you will be pleased to accept the Honorary Membership of this Society, with profound respect | I am, | My Dear Sir, | Yours truly | Arch.^d Liversidge.
| Hon. Sec^y²

Copy

Fundamental Rule N^o 7. | Honorary Members.

The Honorary Members of the Society shall be persons who have been eminent benefactors to this or some other of the Australian Colonies, or distinguished patrons and promoters of the objects of the Society.

Every person proposed as an Honorary Member must be recommended by the Council and elected by the Society. Honorary Members shall be exempted from payment of fees and contributions; they may attend the meetings of the Society, and they shall be furnished with copies of Transactions and Proceedings published by the Society, but they shall have no right to hold office, or vote, or otherwise interfere in the business of the Society.

DAR 230: 77

- ¹ For a record of the meeting and CD's election, see *Journal and Proceedings of the Royal Society of New South Wales* 13 (1879): 129; the journal has not been found in the Darwin Archive-CUL.
- ² Liversidge was honorary secretary of the society from 1874 to 1884 (*Aust. dict. biog.*).

From Hugo de Vries 7 August 1879

Amsterdam, Kerklaan 9
Aug. 7. 1879.

Dear Sir,

During the last days I have been making the experiments on tendrils, you had the kindness to point out to me in your letter of Nov. 10. 75. I am much pleased, that I have at last found the occasion of making these experiments; you know that it was chiefly with regard to them, that I have worked out in 1876 my plasmolytic method in my Paper: *Untersuchungen über die Zellstreckung* 1877. This method has now proved to be of great use to me.¹

Among the seeds of *Echinocystis lobata* only one germinated and gave a small plant; the seeds of *Sicyos lobata*, that Prof. Asa Gray sent me at the same time, germinated very well, so I have made most of my experiments with the tendrils of this species.²

The question was to decide, whether the rapid curvations of the tendrils are caused by growth, or by a change of the turgor of the cells. So I put the tendrils, as soon as they had curled clearly round the thin (2. Mm) sticks in a solution of NaCl of 20%, where the turgor was annulled in a very short time. Tendrils that had made $\frac{1}{4}$ – $\frac{1}{2}$ curvations in $\frac{1}{4}$ –1 hour, quite lost them in the salt solution, and showed thereby that your suggestion was right, and that no apprehensible growth had occurred on the upper side. Tendrils, that had curled once or twice round the sticks, did not quite loose their curvations, but lost them the more, the less they had curved themselves. So it was also with the tendrils of other plants

You see, that the stimulus occasioned a change of the turgor of the cells, and that the growth is increased only in a secondary manner.

It seems, that by all curvations of growing plants, the turgor of the convex side is increased first, and that the increasing of the growth is only an effect of the increasing of turgor. For they all loose their curvations more or less in the salt solution. So it is with the epinastical curvations of tendrils and of petioles, with the revolving and climbing movement of climbing plants; with the geotropical and heliotropical curvations of young stems, and with the geotropical curvations of the knots of grasses.³

If you cut off tendrils, that have just curled themselves round a stick, or made some free curvations after not finding a stick, and you put them in a solution of salt of 20%, you will easily see, that the number of the curvations becomes smaller.

I am yet extending my investigations on this point.

I have also experienced on the contraction of roots, you were so kind as to show much interest in, during my visit to you, last year.⁴

You can not only see the wrinkles in the bark of the roots, but very often even the oldest, central, vessels of the wood are wrinkled by being contracted. The active

cause of the contraction lies in the parenchymatous cells of the wood and the bark, the woody elements are only an impediment to the contraction. For this reason the roots of herbaceous plants have so much parenchym, and so few fibres and vessels.⁵

The parenchym contracts by absorbing water.

If part of a young root is put into water, it becomes shorter and thicker; you may see the cells doing the same if very thin peaces of the parenchym are put into water under the microscope. Cells and parts of tissue contract in a few minutes, the whole roots in some hours. The contraction is generally about 5%. If a root fades, it becomes flat and longer; so it is when it is killed, or when the turgor is annulled by strong solutions of salts. The contraction is caused by an increasing of the turgor.

This temporary increase of the turgor must affect the growth of the cells, they must become thicker and shorter by growing.

As soon as my observations will be published, I will send them to you, but I fear it will last long.⁶

With many thanks for the great marks of interest in my experiments, you so often showed me; I remain, dear Sir, with much respect, | Yours faithfully | Hugo de Vries.

DAR 180: 22

CD ANNOTATION

Top of letter: '(Keep Science)' *square brackets in ms ink*; 'Use for foot-note if his paper not obtainable | I may now say excellent ground for believing' *ink*; 'All circummutation due to Turgescence. Or not to simple growth | Ch I or II⁷' *pencil*

¹ In his letter of 10 November 1875 (*Correspondence* vol. 23), CD had asked De Vries to investigate further the cause of curvature of the tendril in *Echinocystis lobata* (wild cucumber), which CD maintained was not due to growth differences on the convex and concave sides. CD's observations are in *Climbing plants* 2d ed., pp. 128–34. In a paper on permeability of protoplasm in red beet cells, De Vries had noted that in cells placed in a salt solution, the primordial utricle (the layer of protoplasm adjacent to the cell wall) moved away from the cell wall and water was withdrawn from the central vacuole (Vries 1871, p. 118). He further noted that the protoplasm was impermeable to solutes within the vacuole and that this semi-permeability was the reason for changes in turgor in the cell. In 'Untersuchungen über die mechanischen Ursachen der Zellstreckung' (Studies on the mechanical causes of cell extension; Vries 1877, pp. 7–13), De Vries referred to this phenomenon as plasmolysis (*Plasmolyse*) and outlined his plasmolytic method for demonstrating changes in cell turgor. Based on his experiments, he concluded that change in turgor within the cell was the principal cause of extension and contraction of the cell wall (*ibid.*, p. 89).

² CD had asked Gray to send seeds of *Echinocystis lobata* to De Vries; see *Correspondence* vol. 26, letter to Asa Gray, 15 August 1878. *Sicyos lobata* is a synonym of *Echinocystis lobata*.

³ De Vries used the terms hyponasty and epinasty to denote the greater longitudinal growth along the lower or upper side of a plant part that caused upward or downward bending respectively (Vries 1872, p. 252). CD later adopted the terms because they were so often used in Germany (see *Movement in plants*, p. 6).

⁴ De Vries had visited CD at Abinger Hall, Surrey, on 14 August 1878 (Emma Darwin's diary (DAR 242)). See *Correspondence* vol. 26, letter to Hugo de Vries, [15] August [1878].

⁵ Parenchyma: the fundamental or ground tissue of plants, typically consisting of living, thin-walled, often polyhedral cells, as in the pulp of fruits, the softer parts of leaves, the pith of stems, etc. (*OED*).

⁶ De Vries published his results in 'Ueber die inneren Vorgänge bei den Wachsthumskrümmungen mehrzelliger Organe' (On the internal processes of the growth curvature of multicellular organs; Vries 1879) and 'Ueber die Kontraktion der Wurzeln' (On the contraction of roots; Vries 1880); CD's annotated copies are in the Darwin Pamphlet Collection–CUL.

⁷ CD's annotations are notes for his reply to De Vries of 12 August 1879, and a reminder to describe De Vries's research in *Movement in plants* (see *ibid.*, pp. 2 and 108–9).

From John Ball 8 August 1879

Alagna Piedmont | 10, Southwell Gardens, | South Kensington.

8 Aug. 1879

Dear Mr Darwin

Before leaving England for the Alps I corrected the proofs of a lecture on the Origin of alpine vegetation of which a copy has I trust been forwarded to you, in the hope that you might take the trouble of reading it.¹ I am fully aware that in addition to the inherent difficulties of the undertaking arising from the imperfection of existing materials & my own inadequate knowledge of those that exist—a popular lecture is not a satisfactory form in which to put forward views that require for their exposition a vast array of well-arranged facts to many of which I could give no space whatever in the lecture. But I thought that in this brief and incomplete form I might at least succeed in directing to the subject the attention of some of those best able to judge of it, and that if as I hope I should be able to discuss the whole matter more fully hereafter I could not fail to benefit by the opinions which the present essay might elicit—

It is quite unnecessary to say that there is no one whose judgement I look to with such deep interest as yours—quite certain that it will in no way be affected by the circumstance that on one or two points I have ventured to dissent from opinions that you have sanctioned—² Of all the arguments that seem to me to favour the belief in the high antiquity of the existing genera & tribes of plants one of the strongest, as I think, is that derived from the great differences in the distribution of very many natural orders & conspicuous genera. Making every allowance for peculiarities of structure that must in some cases have largely affected the distribution of certain groups, either in a positive or negative direction, it yet seems almost impossible to account for the facts without allowing vast intervals of time & corresponding changes on the earth's surface between the dates at which different groups were distributed— Of course any attempt to illustrate this argument in detail would have been impossible in my lecture but to those who know the facts I think it will not be without weight.

If you should favour me with a word of remark on the subject it will be forwarded from my London address given above.

I remain always | very truly yours | John Ball

DAR 160: 35

¹ Ball had sent his lecture to the Royal Geographical Society, 'On the origin of the flora of the European Alps' (Ball 1879); an annotated copy is in the Darwin Pamphlet Collection–CUL.

² In Ball 1879, Ball challenged the theory of glacial migration, which CD had used as part of his theory of geographical distribution in *Origin*, pp. 367–70. He also speculated that the conditions were right in terms of levels of carbonic acid in the atmosphere for flowering plants to have evolved in alpine regions before the carboniferous period. CD agreed with William Turner Thiselton-Dyer's opinion

that the theory was as unlikely as William Thomson's hypothesis of the sun's energy being constantly replenished by meteors and asteroids; see letter to W. T. Thiselton-Dyer, 18 June 1879 and n. 5.

From Anton de Bary 9 August 1879

Dear Sir,

The few experiments on the nutrition of *Utricularia*, to which your very kind letter of Aug. 5. refers are not sufficiently exact and complete to allow a publication.¹ They gave—even more than the poor dry specimens can show—an evidence of the high efficacy of animal food for the vegetation of *U. vulgaris*; but the growth of my plants was disturbed by the apparition of algae, then by unfavourable temperature etc., and all these obstacles could not be removed in the very bad locality, where I was obliged to make my experiments. If I had got more than evidence, if it had been possible to give somewhat exact numbers and measure, I would not have neglected a short notice on my observation.

These last days I found, in the laboratory, in an old culture, a lot of very small specimens of *U. vulgaris*, which I believe to be very well fit for the continuation of my old experiments. I have therefore begun some comparative cultures, and I hope that they are now under better conditions than the old ones. As soon as they permit to give some better result, I will beg you the permission to give you a notice on it; and finally the publication shall not be neglected.²

I had great pleasure to see Mr. Fr. Darwin here, and I am only sorry, that his visit was so very short.³ Begging you, to say to him my best compliments, I am, with the highest respect | faithfully yours | A de Bary.

Str. 9. August 79.

DAR 162: 134

¹ See letter to Anton de Bary, 5 August 1879.

² De Bary never published on *Utricularia* but in *Insectivorous plants* 2d ed., p. 365 n., Francis Darwin wrote, "The late Professor de Bary showed me at Strasburg two dried specimens of *Utricularia (vulgaris?)*" which "clearly demonstrated the advantage which this plant derives from captured insects. One had been grown in water swarming with minute crustaceans, the other in clean water; the difference in size between the "fed" and the "starved" plants was most striking."

³ On his return from Würzburg, Francis Darwin had visited de Bary in Straßburg (Strasbourg); see letter to Anton de Bary, 5 August 1879 and n. 1.

From F. B. Goodacre 11 August 1879

Wilby Rectory | Attlebro' | Norfolk

Aug 11/79

Dear Sir,

I trouble you with this thinking you may like to know the results of my experiments for this year in cross breeding between the two forms of domestic geese; I enclose an account of the goslings that have been reared by myself & several friends:—¹

D: Meadows was prevented doing anything owing to the two birds I sent him (children of your pair) being both of one sex;² should it so happen that you could give him a *female* gosling I should be much obliged as then he would try to breed for another generation in & in, I enclose his country address in case you can supply him with one.

I will gladly send you one of my goslings (rather more than $\frac{1}{2}$ Chinese) if for any reason you would care to have one Perhaps you might like to watch the change of colour of the bill from black to orange: I am making a collection of skulls & windpipes thinking they may be interesting for reference, I wish I knew of pictures of the windpipes of Grey lag Bean White fronted & Pink footed Geese³ that I could take tracings of them for comparison:

Hoping you are better than when I last heard with kind regards | Believe me yrs truly | F B Goodacre

[Enclosure]

Ganders		Goslings reared in /79	
$\frac{1}{3}$ Chinese	&	Pure Chinese	
$\frac{1}{3}$ Chinese (brother to above)	&	Pure Common	
$\frac{1}{2}$ Chinese (brother to yours)	&	Common or $\frac{3}{4}$ Chinese	} some doubt as to which goose laid the eggs they were hatched from
$\frac{1}{2}$ Chinese brother to above	&	Pure Chinese	

Dr. Meadows country address

To the care of | M: Masson | Poyle Park | Colnbrook | Bucks⁴

DAR 165: 66

CD ANNOTATION

Top of letter: '(Keep)', *square brackets in ms ink;* 'Attleborough' *ink*

¹ Goodacre offered CD crosses between Chinese geese, a domestic variety of the wild swan goose (*Anser cygnoides*), and common geese, a variety of the wild greylag goose (*A. anser*), in 1878; CD had agreed to do further crossing experiments with them at Down (see *Correspondence* vol. 26, letter to F. B. Goodacre, 3 September [1878]). CD had discussed such crosses as examples of hybrid fertility in *Origin*, p. 253,

- and *Descent* 2: 114. Goodacre thought that the Chinese and common geese were 'mongrels' of the same species and that this explained why they could interbreed; he thought 'hybrids' could not interbreed (see *Correspondence* vol. 26, letter from F. B. Goodacre, 2 September 1878 and n. 2).
- ² Goodacre had proposed sending Alfred Meadows these geese to cross in 1878; see *Correspondence* vol. 26, letter from F. B. Goodacre, 2 September 1878 and n. 3.
- ³ The bean goose is *Anser fabalis*; the white-fronted or greater white-fronted goose, *A. albifrons*; and the pink-footed goose, *A. brachyrhynchus*.
- ⁴ William Masson worked as Meadows's gardener at Poyle Manor, Colnbrook, Buckinghamshire (*Gardener: a Magazine of Horticulture and Floriculture* (1881): 188).

To Leonard Darwin 12 August 1879

Coniston
Aug 12th

My dear L

I do hope you will be able to come here¹ The place is most beautiful and the inn very comfortable, but there are too many human beings for my taste

Ever dear old Lenny | Yours affec | C Darwin

Copy
DAR 153: 94

- ¹ CD was on a family holiday in the Lake District from 2 to 27 August 1879 (Emma Darwin's diary (DAR 242)), staying at the Waterhead Hotel, Coniston.

To Hugo de Vries 12 August 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
[Waterhead Hotel, Coniston.]

Augt 12th: 1879

My dear Sir

I thank you much for your letter, which has interested me more than anything which I have read for a long time.—¹ I have gradually been coming to the opinion that in all the cases to which you refer, growth was preceded by a change in the turgescence of the cells, or by some such change; but then I had very little evidence, & my opinion was chiefly founded on general considerations, which are often deceptive.— I hope that you will publish in the course of the Winter, so that I may be able to read & refer to your evidence before the Spring.²

I may just mention, in case you wanted plants to observe, that the hypocotyledonous stem of *Lychnis githago* (var *Githago segetum*) contracts in a most striking manner: it is at first quite smooth, but after formation of some true leaves becomes covered with zig-zag ridges.³

Once again thanking you for your letter, I remain | My dear Sir | Yours very faithfully | Ch. Darwin

(P.S. I am writing this away from my home.)⁴

Artis Library (De Vries 6)

- ¹ See letter from Hugo de Vries, 7 August 1879.
- ² For De Vries's publications on turgescence referred to in *Movement in plants*, pp. 2 and 108–9, see the letter from Hugo de Vries, 7 August 1879 and n. 7.
- ³ *Lychmis githago* and *Githago segetum* are synonyms of *Agrostemma githago* (common corncockle). CD described the contraction of the hypocotyl of *Githago segetum* and cited De Vries's explanation of contraction in *Movement in plants*, pp. 108–9; his experimental notes on contraction of the hypocotyl in *Lychmis githago*, dated 28 October and 29 November [1878], are in DAR 209.14: 36.
- ⁴ CD was on holiday at Coniston in the Lake District; see letter to Leonard Darwin, 12 August 1879.

To F. B. Goodacre 13 August [1879]¹

Waterhead Hotel | Coniston, Ambleside
Aug^t 13th.

Dear Sir

I am much obliged for your note. With respect to my own success, it has only been moderate, but has sufficed to shew that the hybrids are fertile *inter se*.² I was not aware that geese will not copulate except on the water, & I kept the birds enclosed in a large wire enclosure.—As soon as I discovered about the copulation, I sent them to a pond, & afterwards reared 2 young birds, one of which unfortunately killed itself. In a second hatch I reared 3 fine young Birds—so that I now have 4 young birds.—I found it quite necessary to keep my birds enclosed, as they w^d wander off to a pond quarter of a mile distant where there were other geese; but this was discovered before the breeding season.

I shall return home in 2 or 3 weeks & sh^d be glad to hear whether you would like to have all the geese returned to you, as under the circumstances just stated, it is too troublesome to keep them any longer. What had I better do with respect to D: Meadows?³ is it possible to distinguish males & females whilst the birds are young? Shall I send him the two old Birds?

I sh^d like to publish a notice of a few lines in length in the Proc. Zoolog. Soc. on the fertility of the hybrids; & if so may I use your results?⁴ With respect to the windpipe I think that Yarrell gives figures; but I daresay I could find out when in London later in the autumn.—⁵

Thanking you very sincerely for all your kindness, I remain | Dear Sir | Yours faithfully | Ch. Darwin

Dr John Goodacre (private collection)

- ¹ The year is established by the relationship between this letter and the letter from F. B. Goodacre, 11 August 1879.
- ² See letter from F. B. Goodacre, 11 August 1879 and n. 1. Goodacre had sent CD Chinese and common geese for crossing experiments in 1878.
- ³ Goodacre had asked whether CD could send Alfred Meadows a female gosling; see letter from F. B. Goodacre, 11 August 1879 and n. 2.
- ⁴ CD published the results in a letter to *Nature*, 1 January 1880, p. 207, not in the *Proceedings of the Zoological Society of London*.
- ⁵ In his letter of 11 August 1879, Goodacre had asked for a source of pictures of the windpipes of different geese. CD probably refers to William Yarrell's paper 'Observations on the tracheæ of birds' (Yarrell 1827).

To Ernst Krause 13 August 1879

Waterhead Hotel | Coniston | Lancashire | England

Aug 13. 1879

(This will be my address for 2 or 3 weeks)

My dear Sir,

I have at last read consecutively my notice (which I have greatly condensed & altered in arrangement) and the translation of your article. I fear that you will be disappointed when I tell you that according to my judgment a large part of your article must be omitted.¹ This has grieved me much; but it would be of no use whatever to publish a book which would not be read. It would be ridiculous to publish two biographies of the same man in the same volume: an English critic would say that your account of the life, though very well done, was merely a condensation of Miss Seward's memoirs.² Secondly your history of the progress of evolution seems to me to be quite out of its proper place in a short life of D^r Darwin; although I fully admit that it shows great research and has been to me personally very interesting. Thirdly the first part about the Botanic Garden appears to me too lengthy: an English critic would say that it was of no use to give the contents of each Canto, when any one could, if he cared, look at the book itself. Considering how long ago D^r Darwin lived, any life of him now ought to be very short. Therefore what I should wish to do would be to publish my preliminary notice condensed, with only parts of your essay presently to be indicated. But it is quite possible that you may object to my plan, and if you object I shall have no cause to complain, for I should never have thought of writing on the subject had it not been for your article in *Kosmos*.³ If you object I shall give up publishing, but shall print my own notice for *private* distribution among my friends.

I will now explain what I wish to do: after many doubts I think (as do friends whom I have consulted) that my Notice had better come first. I would then give the first 2 or 3 pages of your M.S as far as where you give your authorities I would then omit the whole of your Life-part, as well as the historical sketch of evolution. So that after the two or three opening pages I would pass on to the general criticism on the Botanic Garden to be condensed. When you come to the transformation of species the whole of your article could be given with advantage as it now stands. The plan which I here propose has been formed after due deliberation, and with much regret on my side; but I hope that you will remember what I originally proposed was a translation of the article in *Kosmos*. If you assent to my plan, proof sheets shall be sent you both of my part and of your own. It is manifest that you can publish your essay in its extended form in Germany: I will explain in a preface (if you assent to my plan) about the article in *Kosmos*, your subsequent enlargement of it and your permission to me to condense it to dimensions fitted for the English public. Will you kindly let me hear your decision soon, because if you object to your article being cut down I must inform my publishers in London Paris & America, that I have given up the intention of publishing.⁴

I am extremely sorry to have caused you so much trouble & remain, my dear Sir
Yours sincerely | Charles Darwin

LS(A)

The Huntington Library (HM 36191)

- ¹ CD and Krause had been working on sections of *Erasmus Darwin*. CD had received the final part of the English translation of Krause's manuscript in early August; see letter from W. S. Dallas, 6 August 1879.
- ² Anna Seward's *Memoirs of the life of Dr. Darwin* (Seward 1804).
- ³ For the parts that CD suggested omitting, see the German edition, in which Krause reinstated his introduction and a section on the history of evolutionary theory and added over 100 pages of notes (Krause 1880, pp. 78–124, 180–286). CD's inspiration for the biography of Erasmus Darwin was Krause's essay in *Kósmos* 'Erasmus Darwin, der Großvater und Vorkämpfer Charles Darwin's: ein Beitrag zur Geschichte der Descendenz-Theorie' (Erasmus Darwin, Charles Darwin's grandfather and forerunner: a contribution to the history of descent theory; Krause 1879a). CD had initially asked Krause whether he might publish an English translation of this essay in his letter to Krause of 9 March 1879.
- ⁴ John Murray had agreed to publish the English edition of *Erasmus Darwin*; see letter from John Murray, 3 June [1879]. Reinwald had expressed an interest in publishing a French translation (see letter to Ernst Krause, 5 [May] 1879) but none was published. D. Appleton & Co. published *Erasmus Darwin* US ed. in 1880.

From John Denny 16 August 1879

Stoke Newington,
August 16.th 1879

Dear Sir

You may perhaps remember, we corresponded seven years ago, with reference to some varieties of the Pelargonium, which while similar to all appearance, (save being some what more robust) to the other varieties in my house, "proved to be sterile, excepting with each other."¹

I've since found that th(e) two varieties are fertile with some varieties raised by Mon^s Lemoine, but which varieties evidently arose either from self-fertilization, or crosses between these two, viz, Beautie de Surressnes & the Duke of Cornwall, or sports as was the case with the Doubles which were sports off Beautie de Surressnes, & all the varieties thus raised by Lemoine proved to be sterile—with the other varieties of the Zonal Pelargonium. I therefore consider them to constitute "a distinct Class"—or Species—as some would call them²

As you took much interest in my communication upon this subject at the time I refer to and—In reply to my Communication (Letter of July 15 1872) you remarked, that you considered I had made an important discovery as bearing upon the Origin of Species. As you could only account for the facts related by supposing that a variety—through cross breeding or some other cause—had arrived at a condition, which resulted in "a stop", & refusal to be fertile with other varieties of its kind.³

You also asked me if I met with any thing in my cross breeding experience that further bore upon this point—or seemed of scientific interest—to communicate it to you

I must first tell you that I've continued to raise several thousand seedling Pelargoniums yearly, and as you may have seen by the horticultural press, have immensely improved the form & size of the flower but nothing has occurred of a scientific nature that I deemed worthy of troubling you with until now recently.⁴

You must bear in mind that the origin of the varieties *Beautie de Surressnes* & *Duke of Cornwall* were unknown to me. These being the varieties I quoted as infertile with the other varieties of *Zonal pelargoniums*—& these two varieties might have been raised from seed, or they might have resulted as sports.— I failed in any way to trace their origin

I now purpose describing a variety, & its origin which may tend to throw some light upon the probable origin of these varieties & possibly upon the origin of what are called species.

As I consider the matter of importance & interesting, I will go into details & endeavour to make myself intelligible

Upon a *White Variety of my own raising*, I one day observed at the top of one of its branches a very considerably larger flower than its fellow(s) also that the leaves of this twig were larger & stouter.

I consequently made a cutting of & propagated this twig which grew into a plant of a much more robust habit than the the plant from which it was taken, & which also maintained its improvement in size & substance of blossom.— the cuttings taken from this plant have also increased in robustness of growth, until they resemble in form of foliage & habit precisely that of *Beautie de Surressnes* & *the Duke of Cornwall*. The flower also resembles in form & substance that of those varieties, save in colour—they being respectively pink, & scarlet.

But now I come to what seems to me the most important point—(viz) that this sport seems to be like the class referred to, equally sterile with other varieties—for I can neither get it to seed from the application of the pollen off the plant from which it was taken—or any other variety that I have as yet tried upon it, nor will its pollen fertilize.⁵

I do not now possess a plant of *Beautie de Surressnes*.—but I intend to obtain one, on purpose to try if they will prove fertile upon one another.

I have had no experience in sports of other plants—, but it would be interesting to know—if when they show considerable variation from the pla(nt) from which they were tak(en) whether they prove sterile with the pollen of its mother plant & similar varieties. Because should such be the case—it would undoubtedly indicate the origin of *Species*.

I shall continue my endeavours to cross this sport with my other varieties—. & I will try it with the pollen of *Beautie de Surressnes*,—also its pollen upon that variety, & should be happy to report to you with what result—if you consider the matter of interest to you

Dear Sir | Yours faithfully | John Denny

Cha^s Darwin Esqre

DAR 162: 161

¹ See *Correspondence* vol. 20, letter to John Denny, 22 July 1872. CD had referred to Denny's observations of *Pelargonium zonale* in *Cross and self fertilisation*, p. 142.

² Victor Lemoine raised several varieties of pelargonium, including, in 1865, the first genuine double-flowered zonal pelargonium *Gloire de Nancy*, developed from *Beauté de Suresnes* (Dauthenay 1897, pp. 112–13). Zonal pelargoniums are so called because their leaves are divided into two colour zones.

- ³ No letter from CD to Denny on the significance of Denny's experiments for the origin of species has been found. However, in a draft of a letter to Denny of 14 July [1872] (*Correspondence* vol. 20), which CD might have added to before sending it on 15 July, he had written that Denny's discovery that the 'Duke of Cornwall' variety was fertile with its own pollen and some other varieties but sterile with others was remarkable. For Denny's results, see Denny 1872a and 1872b. In Denny 1872b, p. 53, after remarking on the small number of good and novel varieties produced from a given number of seedlings, Denny quoted *Origin*, p. 486: 'A new variety raised by man will be a far more important and interesting subject for study than one more species added to the infinitude of already recorded species.'
- ⁴ Denny's varieties of pelargonium were reported on and advertised extensively in *Gardeners' Chronicle*; see, for example, *Gardeners' Chronicle*, 12 July 1879, p. 57.
- ⁵ The case was described in the report of the scientific committee of the Royal Horticultural Society in *Gardeners' Chronicle*, 22 November 1879, p. 663.

From Ernst Krause¹ 16 August 1879

Berlin N.O. Friedenstrasse 10. II.
den 16.8.79.

Hochverehrter Herr!

Aus Ihrem soeben empfangenen freundlichen Schreiben ersehe ich zu meinem grossen Bedauern, dass ich Ihnen—sehr wider meine Absicht!—eine Menge Schwierigkeiten, Bedenken und Hindernisse bereitet habe. Ich bitte Sie, mir darüber nicht böse zu sein; es wäre gewiss nicht geschehen, wenn ich diese Schwierigkeiten hätte voraussehen können. Aber wie ich mir erlaubte, Ihnen wiederholt zu sagen, habe ich meine Arbeit stets nur als *Material* angesehen, aus dem Sie für die englische Ausgabe so viel oder so wenig entnehmen möchten, als Ihnen passend und geeignet erscheinen würde.²

Ich bitte Sie daher nochmals dringend, hochverehrter Herr, der Publikation ganz diejenige Form geben zu wollen, welche Ihnen als die beste erscheinen wird, aber keinesfalls an ein Aufgeben des Planes zu denken, zumal Murray das Buch angezeigt hat, und die betreffende Notiz bereits durch alle möglichen englischen, französischen und deutschen Journale gegangen ist.³

Auch heute zwar kann ich mich nicht enthalten zu glauben, dass für das deutsche, französische und amerikanische Publikum, die von Ihnen beabsichtigte Form zu fragmentarisch sein dürfte, denn unter Hunderten wird nicht *ein* Leser im Stande sein, sich das Seward'sche Buch zu verschaffen, noch weiss auf dem Continent irgend Jemand etwas über Canning's Satire, oder könnte den botanischen Garten nachschlagen.⁴ Für das englische Publikum stimme ich Ihrer Ansicht überall bei, für das ausländische nicht.

Gleichwohl wird es mir als das Beste erscheinen, mich bei der deutschen Ausgabe genau an die englische anzuschliessen, weil ich vermeiden möchte, dass Sie an irgend einem Theile der deutschen Ausgabe Missfallen haben könnten.

Am wenigsten beklage ich den Wegfall der Bemerkungen über die Evolutionstheorie vor Dr. Erasmus Darwin; ich werde dieselben möglicherweise später einmal für sich im Kosmos geben, oder sie vielleicht bei einer ausführlichen Studie über die Geschichte des Descendenz-Gedankens verwerthen. Es ist daher an demselben keine Arbeit verloren und ich bedauere nur, Herrn Dallas die unnütze Mühe der

Uebersetzung gemacht zu haben. Hat Ihnen Mr. Dallas das deutsche Manuscript mitgesendet, so möchte ich es von Ihnen zurückerbitten, sonst wende ich mich an denselben direkt?⁵

Eine grosse Freude macht es mir, zu hören, dass Sie Ihre Ergänzungen, wie Sie es anfangs beabsichtigten, als Präliminar-Notiz voranstellen wollen. Es erschien mir das immer als das weitaus richtigste.

Da ich während des Septembers fortwährend auf Reisen sein werde, so möchte ich Sie bitten, falls der Druck des englischen Originals in dieser Zeit beginnen sollte, die Probebogen an meinen Freund, den Lehrer am französischen Gymnasium Dr. *Paul Voelkel*,⁶ Berlin, *Friedrichstrasse* (nicht *Friedenstrasse*!) 105. C. IV senden lassen zu wollen. Derselbe würde mir dann in der Uebersetzung etwas vorarbeiten, damit die deutsche Ausgabe nicht allzuspät käme.

Für den Fall, dass Sie den kleinen hübschen Brief, mit der Vorschrift: "To make love" aufnehmen wollen, möchte ich Sie noch um gütige Auskunft darüber bitten, ob die nachstehenden deutschen Volksnamen den englischen Pflanzennamen entsprechen würden:⁷

1, Sweet-William, Bartnelke, Dianthus barbatus. (Hier würde im Deutschen wahrscheinlich besser Stolzer Heinrich (*Inula Helenium*) gesetzt werden müssen, da wir keinen entsprechenden Volksnamen für die Bartnelke haben.)

2, Honesty, Ehrenpreis (*Veronica*)?

3, Herbe of grace, Gnadenkraut, *Gratiola*?

4, Eye-bright, Augentrost, *Euphrasia*?

5, Motherwort, Mutterkraut, *Pyrethrum Matricaria*?

6, Heart's Ease, Herzenstrost, *Viola tricolor*?

7, Cuckold-Pint, Kuckuckblume, *Orchis*?

8, Heart-Chokes, Herzgespann, *Leonurus cardiaca*?

9, Violents, wohl nur Wortspiel mit *violent* und *violet*? Oder giebt es eine *violent* genannte Pflanze?⁸

Schliesslich möchte ich Sie noch bitten, in der Vorrede lieber nicht zu erwähnen, das meine Skizze gekürzt werden musste; das Publikum, welches den eigentlichen Sachverhalt nicht kennt, würde das leicht missverstehen und glauben können, meine Darstellung sei so weitschweifig und fehlerhaft gewesen, dass sie einer bedeutenden Kürzung bedurft hätte.⁹

Sollte ich—was in diesem Augenblicke nicht in meiner Absicht liegt,—bei der deutschen Ausgabe einige Erweiterungen für nützlich halten und hinzufügen, so würde es genügen, wenn ich in einer Vorrede zur deutschen Ausgabe bemerkte, es seien in der englischen Ausgabe aus guten Gründen Einzelheiten weggeblieben, die dort theils zu bekannt, theils in leicht zugänglichen englischen Werken enthalten seien.¹⁰

Ich glaube aber, wie gesagt, nicht, dass das geschehen wird, möchte mich vielmehr möglichst *wörtlich* an die englische Ausgabe halten und bitte Sie noch mals herzlichst, dieselbe ganz nach Ihrem Ermessen zu gestalten, denn *Ihre* Ansicht muss hier die *allein* maassgebende bleiben. Ich bin böse auf mich, dass ich Ihnen soviel

Skrupel und Zweifel, Mühe und Arbeit gemacht habe, aber ich bitte Sie zu glauben, dass es in der besten Absicht, optima fide, geschehen ist.

Mit dem Wunsche, dass Ihnen Ihr Sommeraufenthalt möglichst viel Freude und Erholung bringen möge, zeichne ich, hochverehrter Herr | Ihr | herzlich ergebener
| Ernst Krause

DAR 92: B35–6

CD ANNOTATIONS

7.4 Dr. ... Berlin,] *underl blue crayon*

7.4 Friedrichstrasse ... käme. 7.6] *scored blue crayon*

Top of letter: 'new Address in Berlin | List of Plants for Krause' ink; '[Rengger]'¹¹ pencil

¹ For a translation of this letter, see Appendix I.

² In his letter to Krause of 13 August 1879, CD had suggested substantial cuts to Krause's manuscript for the English edition of *Erasmus Darwin*.

³ John Murray had agreed to publish *Erasmus Darwin*; see letter from John Murray, 3 June [1879]. For examples of advertisements and announcements, see *The Times*, 12 July 1878, p. 6, *Newcastle Courant*, 18 July 1879, p. 6, and *Sheffield Independent*, 19 July 1879, p. 10.

⁴ Krause refers to Anna Seward's *Memoirs of the life of Dr. Darwin* (Seward 1804), George Canning and John Hookham Frere's poem 'The loves of the triangles' (a parody of Erasmus Darwin's poem *The loves of plants* (part 2 of *The botanic garden*); [Frere and Canning] 1798), and Erasmus Darwin's *The botanic garden* (E. Darwin 1789–91).

⁵ Krause reinstated the section on evolutionary ideas before Erasmus Darwin in the German edition of *Erasmus Darwin* (Krause 1880, pp. 78–124). William Sweetland Dallas had translated Krause's German manuscript into English for *Erasmus Darwin*; see letter from W. S. Dallas, 6 August 1879.

⁶ Paul Maximilian Voelkel.

⁷ Erasmus Darwin claimed to have discovered an old 'receipt book' in the closet of his bedchamber, entitled 'A Bouk off verry monny muckle vallyed Receipts bouth in Kookery and Physicks', one of which, 'To make Love', he transcribed in the letter to his fiancée, Mary Howard, shortly before their wedding (see King-Hele 1999, pp. 30–1). CD quoted the letter in full in his preliminary notice to *Erasmus Darwin*, pp. 21–4.

⁸ The German name for *Dianthus barbatus*, 'Bartnelke', translates literally as bearded carnation. 'Honesty' is the common name of plants of the genus *Lunaria*, known in German as 'Silberblatt' (silverleaf); 'Ehrenpreis' (literally, honour prize) is speedwell (plants of the genus *Veronica*). 'Herb of grace' typically refers to rue in English (*Ruta graveolens*) but can also refer to hedge-hyssop (*Gratiola officinalis*), which in German is 'Gnadenkraut'. Eyebright, or in German 'Augentrost' (literally, 'eye comfort'), is the genus *Euphrasia*. Motherwort is *Leonurus cardiaca*; the German 'Mutterkraut' (mother herb) is feverfew (*Pyrethrum matricaria*, a synonym of *Tanacetum parthenium*). Heart's-ease is one of many common names for *Viola tricolor*; in German, 'Herzenstrost' ('heart comfort') is an old name for horsemint (*Mentha longifolia*). Cuckoo pint is *Arum maculatum*; cuckoo flower is *Cardamine pratensis*; 'Kuckkuck Blume' is an old German name for this species, which is in the mustard, not the orchid, family. The artichoke (heart-choke) is *Cynara cardunculus*; the German 'Herzgespann' (from an old German word for a feeling of pressure on the heart) is motherwort (*Leonurus cardiaca*), a traditional treatment for heart disease and anxiety. 'Violents' was a play on 'violets' and 'violence'.

⁹ CD had suggested that he make a statement in the preface to *Erasmus Darwin* that Krause had enlarged his article in *Kösmos* (Krause 1879a) and that Krause had given him permission to condense it for English readers; see letter to Ernst Krause, 13 August 1879.

¹⁰ In the German edition, Krause reinstated two introductory sections and added over 100 pages of notes (Krause 1880, pp. 75–124, 180–286).

¹¹ CD's annotations are notes for his reply of 19 August [1879].

To John Fiske 17 August [1879]¹

Waterhead Hotel | Coniston, Ambleside
Aug. 17th

Dear M^r Fiske

I fear that you will think me very troublesome, but I cannot rest easy without thanking you for the pleasure which your Essays have given me.— I think those on Wright, on a Librarian's duty & the supplement on Buckle interested me most.²

Yours sincerely | Ch. Darwin

The Huntington Library (HM 8268)

¹ The year is established by the relationship between this letter and the letter to John Fiske, 5 August [1879].

² Fiske had sent CD his *Darwinism, and other essays* (Fiske 1879); see letter to John Fiske, 5 August [1879]. Chapters 6 and 12 were titled 'Chauncey Wright' and 'A librarian's work'. Chapter 10 ('Postscript to Mr. Buckle') was a supplement to chapter 9 ('Mr. Buckle's fallacies'); they critiqued the work of Henry Thomas Buckle on European civilisation.

From W. S. Dallas 18 August 1879

Margate
18 August 1879

My dear M^r: Darwin

I arrived here late on Saturday & found that my son had written for the small portion of D^r: Krause's original matter which I had brought here to finish, & at the same time mentioned that from some expressions used in your letter, he inferred that you had not received the whole of my MS. translation.— I sent the MS. off on the 6th August, in two packets registered, so that I hope there is no ground for my son's apprehensions.—¹

I also hope that the translation is satisfactory, although of course it will want a little polishing as it goes through the press, the difficulty of merely reading the MS. German being often considerable.

My son has I hope before now sent you the two or three quotations, from Monboddo & Craik which I was unable to get at before I left town, but if the work as it stands is, as he says, much too lengthy, probably these will be among the things cut out.—²

I shall be very glad to hear from you if you can find time to write a few lines.—

Yours very truly | W. S. Dallas

C. Darwin Esq

DAR 99: 118–19

CD ANNOTATION

Top of letter: 'Proof to Krause' *blue crayon*; 'Pamphlet' *pencil*; 'Returned' *ink*

¹ See letter from W. S. Dallas, 6 August 1879. Dallas was on holiday in Margate and had returned on 16 August from a trip to Belgium. His son James Dallas worked at the Geological Society of London and

he had asked CD to write to James if he wanted his books returned. Dallas had reported that he was sending his translation of Ernst Krause's part of *Erasmus Darwin* from Margate with a few omissions that he was going to rectify. CD's letter to James Dallas has not been found.

² For the quotations from James Burnett (Lord Monboddo) and George Lillie Craik, see the letter from W. S. Dallas, 6 August 1879 and n. 2.

To Ernst Krause 19 August [1879]¹

Waterhead Hotel | Coniston, Ambleside
Aug 19th

My dear Sir

I thank you cordially for your letter. It has been a great relief to me, for I feared that you might think that I had treated you shabbily.— I will attend to all your instructions.² The Preface shall not be printed off until you have seen it, so that it can be altered. My son will make a list of Plants to the best of his power when we return home.—³

I return **registered** by this Post the German of the 'History of Evolution'.⁴

I shall send all the M.S in 2 or 3 days to the Printers. I heartily hope the little book may sell fairly well that there may be some profit to send you, but I am rather doubtful on this head.

In Haste | Yours very sincerely | Ch. Darwin

We start for Home on the 26th.⁵

The Huntington Library (HM 36192)

¹ The year is established by the relationship between this letter and the letter from Ernst Krause, 16 August 1879.

² In his letter of 16 August 1879, Krause agreed to CD's extensive cuts to Krause's manuscript for *Erasmus Darwin*.

³ Krause had asked CD not to include a statement that CD had condensed his manuscript in the preface of *Erasmus Darwin*; see letter from Ernst Krause, 16 August 1879 and n. 10. For the list of plant names that Francis Darwin was going to check, see the letter from Ernst Krause, 16 August 1879 and n. 8.

⁴ Krause had asked CD to return the German manuscript of the section on the history of evolution before Erasmus Darwin; see letter from Ernst Krause, 16 August 1879 and n. 5.

⁵ The Darwins returned to Down on 27 August 1879 (Emma Darwin's diary (DAR 242)).

To A. A. W. Hubrecht 25 August 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

[Waterhead Hotel, Coniston.]

Aug 25th 1879

Dear Sir

I am much obliged for your extremely courteous letter, together with your Essay & published papers.¹ Permit me to remark that you write excellent English—

It is well to try all sorts of hypotheses, but I do not feel inclined at present to place much trust in that suggested by you. Is not very long life rather rare with the Invertebrata? Considering that there would be no difference at first in structure, habits, or habitation between the first & last born offspring of any species, would

they not be extremely liable to intercross,—for instance the children of the first born with the second born &c? According to your theory trees, some of which live for 1000–3000 years, would be particularly liable to have left first-born modified & later-born unmodified progeny; & is there any reason to believe that this has occurred?

In all cases it seems to me probable that the more highly modified & better adapted first-born progeny would displace & exterminate the less modified.

But as I have said it is well to consider all hypotheses, & with sincere good wishes for the success of your investigations, I remain | Dear Sir | Yours faithfully | Charles Darwin

Hubrecht Institute for Developmental Biology and Stem Research

¹ The letter from Hubrecht has not been found. Hubrecht probably sent a draft of his essay 'De hypothese der versnelde ontwikkeling door eerstgeboorte en hare plaats in de evolutieeler' (The hypothesis of accelerated development by primogeniture and its place in the theory of evolution; Hubrecht 1882) and his publications on Nemertea (the phylum of ribbon worms). Hubrecht 1882 was translated into English and published in *Nature*, 18 January 1883, pp. 279–81, and 25 January 1883, pp. 301–4. Hubrecht had argued that the first born of sexual generations were the principal variants and source of new species, while the last born were the representatives of stability. For a contemporary critique of the theory, see Minot 1883.

To Victor Marshall 25 August 1879

Waterhead Hotel
Augt 25th 1879

My dear M^r. Marshall

I cannot leave tomorrow morning this delightful place without thanking you cordially for all your kindness.¹ Your permission for me to wander over your estate & grounds has made *all* the difference in my enjoyment, & in the good which the visit has done me.

I can call your garden nothing less than paradise.— We have used your carriage several times & your coachman has been most obliging.— We went one very long expedition to Grasmere, home by Ambleside. The three miles between these two places is the most splendid drive which I ever took. Nevertheless I am a staunch Conistonite & feel indignant if anyone prefers Grassmere or Ambleside to Coniston.— Pray tell M^rs. Marshall that we disobeyed orders & went to Furness; & we were punished, for the day was dark & gloomy. On our return we said that a walk along your Terrace was worth half-a-dozen Furness Abbeys; & in the afternoon I proved the truth of this by taking 2 or 3 turns along the Terrace, & though the afternoon was dull they gave me intense pleasure.—²

Now I am going to be impertinent: when you return I beseech you to look at four clumps of young & unhealthy fir-trees (& which I cannot think will ever grow vigorously from not growing on a slope) in the field in front of the verandah of the hotel; they sadly spoil the view, & if universal maledictions would have killed them, the poor things would now all stand withered skeletons.

Forgive me scribbling at such length. Everyone here joins me in thanking you & M^{rs}: Marshall most truly. When you come to London, if you & M^{rs}: Marshall can spare the time, pray pay us a visit at Down. In case we sh^d: not hear when you are in London, I hope that you will be so good as to inform us.

Believe me my dear M^r: Marshall | Yours sincerely | Charles Darwin

American Philosophical Society (Getz 12199)

- ¹ The Darwins had been staying at the Waterhead Hotel, Coniston, on Marshall's Monk Coniston estate. The estate was developed by Marshall's father, James Garth Marshall, and included a hall, several villas and the Tarn Hows woodland and lake (Menuge 2013, pp. 149–50). Marshall's cousin William Cecil Marshall was a friend of CD's son Horace Darwin at Cambridge and had designed extensions to Down House (Freeman 1978). CD travelled back to Down on 27 August 1879 (Emma Darwin's diary (DAR 242)).
- ² Emma Darwin's diary (DAR 242) records that they went to Grasmere on 14 August, and to Furness Abbey on 21 August 1879; under the Furness entry Emma wrote 'ugly day'. Marshall's wife was Victoria Alberta Alexandrina Marshall.

From E. S. Morse 26 August 1879

Tokio Japan
Aug 26th 79

My dear Sir

I take the liberty of sending you some proof sheets from a Memoir of mine on the Shell Mounds of Omori Japan. It is now being published by the University of Tokio and will be out in a few weeks when I will send you a complete copy.¹ I thought you would be interested in the changes which have taken place between the ancient forms and those now living in the immediate vicinity

I expect to be back in my home at Salem Massachusetts for good, in the course of six weeks.²

Knowing how busy you are I beg you will not take any of your precious time in acknowledging this.

Very faithfully y^{rs} | Edwd S Morse

DAR 171: 246

- ¹ The proof-sheets of Morse 1879 have not been found but an offprint of the article is in the Darwin Pamphlet Collection–CUL.
- ² Morse served as professor of zoology at the Imperial University in Tokyo from 1877, and became director of the Peabody Academy of Science in Salem, Massachusetts, in 1880 (*ANB*).

From W. S. Dallas 28 August 1879

Margate
28 August 1879

My dear M^r: Darwin

I thought I would give you time to get a little settled at home before answering your last kind letter, & indeed I don't know that I have very much to say.—¹ Of

course as the translation of Krause was made to be used by you as suited you best I can have no just cause of complaint at the suppression of any part of it, & I am only too glad when you give me an opportunity of being of service to you in any way.— The proofs I will do my best to correct & improve, but I shall have to ask you to send me the German original when the proofs come to me as I shall have to consult it in critical cases.— I don't know whether you are aware that D^r. Krause proposes (or proposed) to publish the whole of his essay in German & requested me to send him the MS. when done with.— Shall I forward it to him with the corrected proofs? for I think it will be better that he should have the proofs after I have been over them.—²

The question of payment had better stand over until after the matter is in type,— my original calculation was made from the printed matter & from the way in which the work has been done I am quite at sea as to quantity,— moreover a great deal of the translation will be useless to you.—³

Believe me | Yours very truly | W. S. Dallas

We return to town on Monday & I shall be at Geol. Soc. from Tuesday next onwards.—⁴

DAR 99: 120–1

¹ The letter from CD to Dallas has not been found, but see the letter from W. S. Dallas, 18 August 1879.

² In his letter to CD of 6 August 1879, Dallas said he had sent his translation of the manuscript of Ernst Krause's part of *Erasmus Darwin*. In the letter to Ernst Krause, 13 August 1879, CD had proposed to omit a large portion of Krause's manuscript for the English edition, leaving Krause to include the omitted sections in the German edition (Krause 1880) as he wished. Krause had accepted CD's proposal and asked whether he should consult Dallas directly to get his original German manuscript back; see letter from Ernst Krause, 16 August 1879.

³ Dallas had based his fee of £10 for the translation on CD's initial request to translate only Krause's *Kosmos* article 'Erasmus Darwin, der Großvater und Vorkämpfer Charles Darwin's: ein Beitrag zur Geschichte der Descendenz-Theorie' (Erasmus Darwin, Charles Darwin's grandfather and forerunner: a contribution to the history of descent theory; Krause 1879a); see letter to W. S. Dallas, 12 March [1879], and letter from W. S. Dallas, 14 March 1879. Krause had then decided to augment his essay and had sent Dallas the manuscript.

⁴ Dallas was assistant secretary of the Geological Society of London. Monday was 1 September.

From W. M. Hacon 28 August 1879

18, Fenchurch Street, | London. | E. C.
28th August 1879

My dear Sir

My eldest son is about to commence his University education at Balliol college, Oxford, in October and I am told that it may be an advantage to him if I can get for him a personal introduction to D^r Jowett.¹ I take the liberty of asking whether you can give me one for my son. I think I may say that the youth is of some promise. He has been brought up entirely by private tuition & is entering his college by having passed the public school examination in Latin (with distinction) Greek, preliminary mathematics, history & French. His physique is sound. He is good tempered & easily

managed: and has hitherto occasioned me but little anxiety. I hope you will excuse my request if you cannot comply with it.

& I am | My dear Sir | Yours very truly | W^m M Hacon

Charles R. Darwin Esq^{re} | Down | Beckenham | Kent

DAR 166: 21

¹ Hacon's eldest son was William Llewellyn Hacon; Benjamin Jowett was master of Balliol College, Oxford. There is no evidence that CD was personally acquainted with Jowett.

To Gustaf Retzius 28 August 1879

Down, | Beckenham, Kent. | (*Railway Station | Orpington. S.E.R.*)

Aug. 28th 1879

Dear Sir

I thank you most sincerely for the present of your magnificent work, 'Finska Kranien', which it is an honour to any country to have published, & it is a great honour to me to have received.—¹

I beg leave to remain | Dear Sir | Yours faithfully & obliged | Charles Darwin

Centrum för vetenskapshistoria, Kungl. Vetenskapsakademien (Gustaf Retzius arkiv, Inbundna serien, Engelsmän I, s 35)

¹ Retzius had sent his *Finska kranier; jämte några natur- och literatur-studier, inom andra områden af finsk antropologi* (Finnish skulls; with some natural and literary studies, in other areas of Finnish anthropology; Retzius 1878); CD's copy is in the Darwin Library–Down.

To F. B. Goodacre 29 August 1879

Down, | Beckenham, Kent. (*Railway Station | Orpington. S.E.R.*)

Aug. 29th 79

Dear Sir

I have now returned home.¹ The single gosling, which survived from the first set of eggs, is a very fine bird & is pronounced by a man who attends geese, certainly to be a gander.— The sexes of the 3 goslings of the 2^d hatch, also very fine birds, cannot be distinguished as yet.— Now will you be so good as to inform me what I had better do with the whole lot, for I am not willing to keep them any longer from the reasons formerly assigned, & in addition because the gander pursues and frightens a little grandchild who lives with us.—²

Shall the birds be all returned to you, or shall I send some or all to D^r Meadows? In the latter case would they reach D^r Meadows' house quickly by rail so as not to suffer for want of food & water?³

Further will you permit me to ask whether you intend to publish the result of your trials in any *scientific* Journal; for if you do not intend to do so, I sh^d. much wish to publish a mere note in the Proc. of the Zoolog. Soc.—⁴

Again thanking you very sincerely for all your kind assistance, I remain | Dear Sir | Yours faithfully | Ch. Darwin

Any of the birds not returned to you or D^r Medows will be cooked & eaten by us, as soon as old enough, which I believe will be next month.— I mention this solely to show that you may freely dispose of the whole lot.

Dr John Goodacre (private collection)

- ¹ CD had been on holiday at Coniston in the Lake District from 2 to 27 August 1879 (Emma Darwin's diary (DAR 242)).
- ² CD had taken part in Goodacre's programme of crossing experiments with Chinese and common geese. He had written about the trouble he had breeding them in his letter to Goodacre of 13 August [1879]. Both breeds, like their wild progenitors, are monomorphic, but some behavioural differences, such as neck carriage, can be indicative of sex. The only accurate method for sexing goslings, vent sexing, was not developed until the early twentieth century. The grandchild was Bernard Darwin.
- ³ In his letter of 11 August 1879, Goodacre had asked CD to send Alfred Meadows a female gosling to breed with one of his geese to produce another generation of crosses.
- ⁴ CD had asked whether he could use the results of Goodacre's crossing experiments for a publication in his letter of 13 August [1879]. In the event, Goodacre published a short note in the *Proceedings of the Zoological Society of London* (Goodacre 1879) and CD published a letter in *Nature*, 1 January 1880, p. 207 (see letter to *Nature*, 15 December [1879]).

From Ernst Haeckel¹ 30 August 1879

Perth
30 Aug 79

Hochverehrter theurer Freund!

Für Ihre gütige Einladung, Sie in Down zu besuchen, sage ich Ihnen meinen herzlichsten Dank.² Ich würde dieselbe *sehr gern* annehmen und es würde mir die grösste Freude sein, einige Stunden mit Ihnen zu plaudern und Ihnen vom "Darwinism in Germany" zu erzählen. Ich bin 14 Tage in North-Schottland (meistens in Scourie) gewesen und gehe übermorgen nach Edinburgh zurück.³ Mittwoch (3. Sept.) reise ich nach *London* und bleibe dort 4–5 Tage. Wenn Sie von Ihrer Reise zurückgekehrt sind und vielleicht Sonntag, 7. Sept. (oder eventuell Montag, 8. Sept.) zu Hause sind, so würde ich sehr gern auf einige Stunden nach Down kommen.

Ich bitte um Antwort nach London unter der Adresse von Professor *Günther*, Zoological Department, British Museum.⁴

Mit freundlichsten Grüßen Ihr treu ergebener | Ernst Haeckel

DAR 166: 75

CD ANNOTATION

Top of letter: '[Tuesday!]'⁵ blue crayon

¹ For a translation of this letter, see Appendix I.

² In his letter of 15 July 1879, CD had invited Haeckel to Down in early September 1879, having heard of Haeckel's tentative plans to pass through London on his way back from Edinburgh in late August; see letter from Ernst Haeckel, 12 July 1879.

³ For Haeckel's 1879 travel itinerary, which included the Dutch coast near Scheveningen and Rotterdam, the east coast of Scotland (St Andrews and Inverness), the west coast of Sutherland (Scourie and Handa), and the south coast of England (Portobello and Brighton), see Haeckel 1879–81, 1 (part 1): xvi.

⁴ Albert Günther was keeper of the zoological department at the British Museum.

⁵ Probably a reference to the day this letter (written on Saturday) arrived at Down from Perth, Scotland; CD replied on Tuesday 2 September.

From F. B. Goodacre 1 September 1879

Wilby Rectory | Attlebro' | Norfolk
Sep! 1/79

Dear Sir,

Many thanks for your kind letter which I purposely delayed answering as you expected to be from home for a few weeks, I am sorry now that I did not reply sooner so as to saved you the trouble of writing again: without a pond of your own I can well understand what a nuisance the geese must be to you & your anxiety to dispose of them forthwith;¹ I have been told that poultry dealers can often tell the sex of young birds, I have found much difficulty in doing so with any certainty, my only guide being the more speedy change of color of the bill from black to orange in young ganders, this sign is evident enough but only answers for full colored birds, for those with white on plumage have colored bills from the beginning if you can send Dr Meadows² the most backward bird of your 2nd hatch I think the probability is he will be fittest for carrying on the testing of the fertility of these crossbred birds for another generation in a straight line

It is very good of you to offer me all your birds but I really could not keep them but I have little doubt but that I could find a good home for the old goose near London but do not yet know the exact address, she would there live with another of her brothers of the same hatch:— I have what I consider a very good water color picture of your pair of birds done by a young animal artist friend of mine³ who has engaged to do what I require in that line & has already painted me a few pictures connected with the subject of domestic animals should it so happen that you care to see these I would gladly forward them by post for your inspection if you would not mind the trouble of returning them by the same way: & if you could get that of the geese copied into the PZS I should have no objection to lending it for that purpose, as of course I can have none to your using my name, & mentioning the results of experiments I told you of in my last in any paper you may send to the PZS;⁴ To tell you the truth I should like to see the matter thus made public by you, & if the Secretary would accept of a paper from me I should like to state my own deductions from the *fact* of the fertility of your birds, not by way of controversy between us, but to shew how very opposite explanations can be given of the same fact:⁵ a very old friend of mine (who is a strong evolutionist & has written in the cause) has suggested this plan to me, & my only reason for hesitating to follow his advice, is lest you should think a paper from me written in opposition to your views should be an unhandsome return for all your kindness I have made several unavailing attempts to bring the Study of domestic animals into the foreground, for I am fully persuaded that its diligent cultivation as a branch of Zoology would tend to solve many mysteries & thus lessen the points of difference between us: On looking over the 1st Vol of Loudons Mag of Nat Hist. 1829 I was much struck with a passage on p about the Z Soc “In the first prospectus issued by this Society one of their objects

is stated to be “the introduction of new *varieties breeds & races* of animals for the purpose of domestication &c”⁶ it seems to me that this object has not been so diligently pursued of late as it might have been:

I enclose Dr Meadows address for the geese & with kind regards & many thanks for your kindness | Believe me | yrs truly | F B Goodacre

DAR 165: 67

- ¹ See letters to F. B. Goodacre, 13 August [1879] and 29 August 1879. CD was in Coniston in the Lake District from 2 to 27 August 1879 (CD’s ‘Journal’ (Appendix II)).
- ² Alfred Meadows was assisting Goodacre in the crossing experiments with geese (see *Correspondence* vol. 26, letter from F. B. Goodacre, 17 August 1878).
- ³ The artist was George Lovell Harrison. The watercolour of the geese is reproduced in Ashmole and Goodacre eds. 2011. See plate on p. 380.
- ⁴ CD had asked whether he could include the results of Goodacre’s experiments in a short note on hybrid fertility in geese for *Proceedings of the Zoological Society of London* (see letter to F. B. Goodacre, 29 August 1879). The results of the crossing experiments were eventually published in a letter to *Nature*, 21 January 1880, p. 207 (see letter to *Nature*, 15 December [1879]).
- ⁵ Goodacre thought that hybrids could not interbreed (see *Correspondence* vol. 26, letter from F. B. Goodacre, 2 September 1878); he published a short paper stating his belief that the Chinese goose (*Anser cygnoides*) and the common goose (*A. anser*) were varieties of the same species in *Proceedings of the Zoological Society of London* (Goodacre 1879).
- ⁶ The *Magazine of Natural History* was published by John Claudius Loudon; the quotation appears on p. 79 of the first issue (*Magazine of Natural History* 1 (1829): 79). On the early history of the Zoological Society, see A. Desmond 1985.

From Otto Hahn¹ 1 September 1879

Reutlingen (Württemberg Deutschland)
den i. September 1879.

Geehrtester Herr!

Hierbei sende ich Ihnen mein Werk “die Urzelle”.² Die Entdeckungen, welche ich im Anschluss an meine Arbeiten über das Eozoon canadense gemacht habe, sind zu wichtig, als dass ich sie nicht Ihnen vor Allen vorgelegt sehen möchte.³ Wenn sie sich, wie ich hoffe, als begründet erweisen, so hat die Entwicklungslehre, welche die Wissenschaft Ihnen dankt, die breiteste Grundlage gewonnen. Ich darf daher wohl hoffen, dass Sie, hochgeehrter Herr, und Ihre Freunde in England die Sache nicht mit Stillschweigen oder ungeprüft übergehen werden. Schon jubelt eine gewisse kirchliche Parthei in Deutschland über das Fiasco, welches die Naturwissenschaft gemacht, weil es ihr nicht gelungen, *alle* Thatfachen mit Einem Male oder mit einigen Gesezen zu erklären und zu begründen.⁴ Diese Freude war aber wohl von sehr kurzer Dauer. Durch die Thatfachen welche ich festgestellt zu haben glaube, ist für die von Ihnen aufgestellten Sätze eine dauernde Grundlage gewonnen.

Wollen Sie in der Mittheilung meines Buches einen schwachen Beweis meiner Hochachtung und des Dankes erblicken, zu welchem die Wissenschaft Ihnen immer verbunden sein wird.

Mit ausgezeichneter Hochachtung | Ihr ergebenster | Dr Otto Hahn

DAR 166: 82



A pair of cross-bred geese (1878).
Watercolour by George Lovell Harrison.
By kind permission of Myrtle Ashmole and John Duncan Goodacre.

- ¹ For a translation of this letter, see Appendix I.
- ² A copy of *Die Urzelle* (The primordial cell; Hahn 1879) is in the Darwin Library–Down.
- ³ *Eozoon canadense* (Dawn animal from Canada) was thought to be a fossilised Foraminifera; it is discussed in Hahn 1879, pp. 1–2, 12–13, and in several earlier publications by him (Hahn 1876 and Hahn 1878). CD had added information on the discovery of *Eozoon canadense* to *Origin* 4th ed., p. 371, although disputes about its organic nature led him to modify his statement in *Origin* 6th ed., p. 287 (see *Correspondence* vol. 14, letter to J. D. Hooker, 31 May [1866] and n. 4, and *Correspondence* vol. 22, letter to J. D. Hooker, 25 March [1874] and n. 6). The mineral origin of *Eozoon canadense* was established in the 1890s (see O'Brien 1970).
- ⁴ The ecclesiastical party has not been identified; for more on the religious disputes over evolutionary theory in Germany, see the letter from Ernst Haeckel, 9 February 1879 and n. 3.

From Ernst Krause¹ 1 September 1879

Berlin N.O. Friedenstrasse 10. II
den 1.9.79.

Hochverehrter Herr!

Verschiedene Personen, mit denen ich über die Biographie von Dr. Erasmus Darwin gesprochen habe, bestärken mich sämmtlich in der Meinung, dass wie auch immer die Bedingungen für die englische Ausgabe liegen mögen, es für die deutsche unbedingt zweckmässig sein würde, den Hauptinhalt des Seward'schen Buches und der sonstigen Nachrichten zu recapituliren.² Denn da bei uns diese Einzelheiten nicht allein unbekannt, sondern die betreffenden Quellen gar nicht einmal zu beschaffen sind, so würde es, wie mir gestern ein Buchhändler sagte, gradezu unverantwortlich sein, wenn in dem einzig existirenden deutschen biographischen Werke über Dr. Erasmus Darwin, auf Quellen verwiesen würde, die nicht zu beschaffen sind. In England liegt, wie ich vollkommen einsehe, der Fall ganz anders, da hat obendrein das Butler'sche Buch die Lage complicirt;³ aber für Deutschland neige ich mehr und mehr zu dem Gedanken, von meinem Theile Alles das zu geben, was nicht in dem Ihrigen bereits erledigt ist. Ich möchte Sie daher herzlich bitten, sei es am Rande der englischen Uebersetzung, sei es, meines Manuscriptes, mir freundlichst diejenigen Stellen bezeichnen zu wollen, welche unhaltbar oder falsch sind, damit ich diese weglassen kann. Ich weiss noch nicht, ob ich den Inhalt im Zusammenhange geben, oder in Anmerkungen zerschneiden werde, die an's Ende des Bandes zu verweisen wären, und im letzteren Falle würde ich Sie um die Erlaubniss bitten, Ihren Text mit Zahlen versehen zu dürfen, welche auf die Schluss-Anmerkungen hinweisen.

Da ich am 7^{ten} oder 8^{ten} September von hier auf drei Wochen nach Süddeutschland mit wechselndem Aufenthalt gehen will, so möchte ich Sie ferner freundlichst bitten, die Sendung, falls Sie nicht in dieser Woche geschehen kann, ebenso wie die Bogen Ihrer Präliminar-Notiz nicht an die früher angegebne Adresse, sondern an Herrn Verlagsbuchhändler *Karl Alberts*⁴ in *Oberwesel*^a/Rhein adressiren zu lassen, da diesem wegen der vorgerückten Zeit im Jahre, viel an einer schnellen Förderung der Angelegenheit liegt, welche durch meine Reise wieder in Frage gestellt werden würde.

Ich bitte Sie, gütigst die vielen Umstände entschuldigen zu wollen, die ich Ihnen in dieser Angelegenheit gemacht habe und fortfahre, zu machen.

Mit den innigsten Wünschen für Ihr Wohlbefinde zeichne ich, hochverehrter Herr, | Ihr | herzlich ergebener | Ernst Krause

DAR 92: B37–8

CD ANNOTATIONS

2.1 Da ... September] *double scored pencil*

2.4 sondern ... lassen, 2.5] *triple scored pencil*

End of letter: 'I suppose you received the History of Evolution | By all means do whatever you think fit, about notes | I do not understand ['about' *del*] the part of your letter about numbering the lines of | As I am working very hard have not compared all dates'⁵ *pencil*

¹ For a translation of this letter, see Appendix I.

² CD was concerned that large parts of Krause's essay would duplicate material that was familiar to English readers, such as Anna Seward's *Memoirs of the life of Dr. Darwin* (Seward 1804). See letter to Ernst Krause, 13 August 1879, and letter from Ernst Krause, 16 August 1879.

³ *Evolution old and new* by Samuel Butler (S. Butler 1879; see letters from Ernst Krause, 23 May 1879 and 7 June 1879).

⁴ Karl Alberts worked for the firm of Ernst Günther, the publisher of Krause 1880.

⁵ CD's annotations are notes for his reply to Krause of 3 September [1879].

To W. T. Thiselton-Dyer 1 September [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Sept. 1st

My dear Dyer

It w^d be a kindness if you or anyone at Kew can by good chance name the plant of which I send leaves. It presented the *extremely* rare case of its cotyledons sleeping by bending vertically *down* at night.—²

It came up by chance in pot in which San-foin seeds had been sown, & so is probably British.³ It looked to me like a Geranium. It was placed in pot by itself in greenhouse & grew to large size, as you will see by withered leaves; for it was neglected when we were at Coniston & our gardener was ill.—⁴

It has not flowered, so is I suppose a biennial or perennial.—

If you can tell me that it must be one out of 2 or 3 species, this w^d be an aid.—

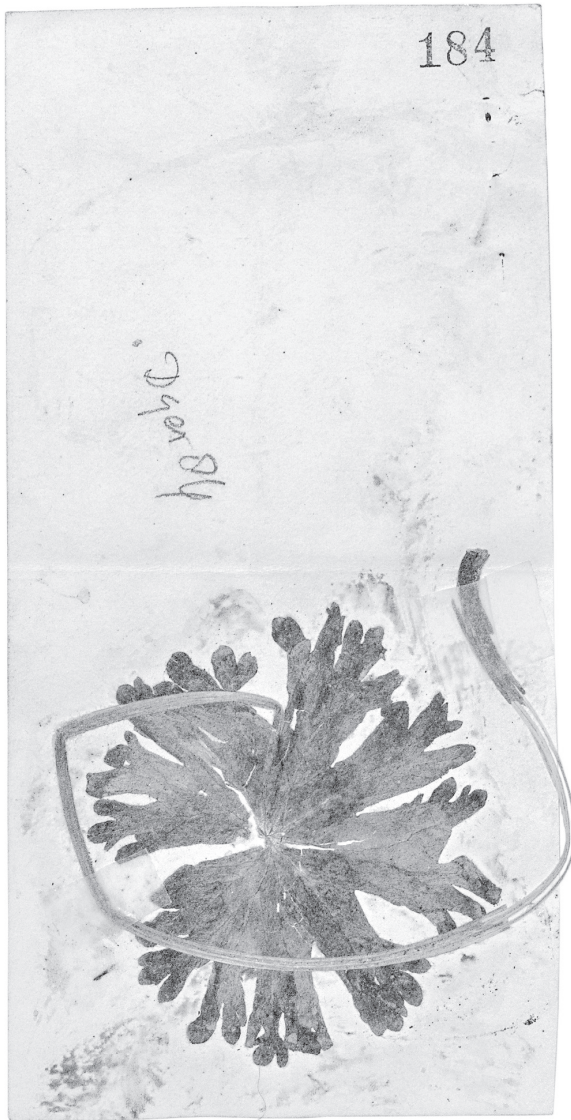
We enjoyed our stay at Coniston which is wonderfully beautiful, notwithstanding the weather, & I enjoy still more getting back to work.—

I shall be glad to hear that you are having some rest.—

Yours very sincerely | Ch. Darwin

I have gummed one old leaf on card to show size.—

[Enclosure]



Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: ff. 182–3). Thiselton-Dyer, W. T. Letters: folio 184. Image reproduced (ninety per cent of the original size) with the kind permission of the Board of Trustees of the Royal Botanic Gardens, Kew.

- ¹ The year is established by the reference to CD's stay in Coniston (see n. 4, below).
- ² In *Movement in plants*, p. 304, CD described the cotyledons of a seedling bending perpendicularly downwards at night; the plant later died and was sent to Kew, where it was identified as probably *Geranium rotundifolium*.
- ³ Sanfoin (*Onobrychis vicicifolia*) is a member of pea family (Fabaceae), and is commonly found in chalk grassland in Britain.
- ⁴ CD replaced his head gardener, Henry Lettington, later in 1879 (see letter to J. D. Hooker, 1 October [1879], n. 2). The Darwins had stayed in Coniston in the Lake District from 2 to 27 August 1879 (CD's 'Journal' (Appendix II)).

To F. B. Goodacre 2 September 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Sep 2. 79

Dear Sir,

I thank you for your very kind letter.¹ The smallest of the birds of the second hatch shall be dispatched in the course of a few days to D^r Meadows.² I will do nothing about the other birds until I hear from you. I suppose that any remaining birds must be killed & eaten but I feel that this is something like murder. I am glad to hear that you will send a paper on the subject to the Zoolog Soc; for there is nothing like discussion on all sorts of subjects.³ I should think, but cannot of course tell positively, that your paper would be printed by the council. What you say about the Soc neglecting domestic productions is extremely true, and I have often expressed my great regret with respect to this prejudice. I am much obliged for the offer of the drawings, but they would be of no use to me as my Note will consist of only a few lines just stating the fact of the birds having bred.⁴

My dear Sir | Yours very faithfully | Charles Darwin

LS

Dr John Goodacre (private collection)

¹ See letter from F. B. Goodacre, 1 September 1879.

² Alfred Meadows.

³ Goodacre published a short paper stating his belief that the Chinese goose (*Anser cygnoides*) and the common goose (*A. anser*) were varieties of the same species in *Proceedings of the Zoological Society of London* (Goodacre 1879; see letter from F. B. Goodacre, 1 September 1879 and n. 4).

⁴ CD's note was eventually published in a letter to *Nature*, 21 January 1880, p. 207 (see letter to *Nature*, 15 December [1879]).

To Ernst Haeckel 2 September 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Sep 2. 1879

My dear Haeckel,

I shall be delighted to see you here on any day at any hour. But would it not be the best plan for you to sleep here? There is a train which leaves Charing Cross for Orpington Station, where at 4.54 I would have a carriage waiting for you, and you could return as early as you liked next morning.¹ As I cannot talk long with anyone

I believe that I should by this means be able to see more of you than if you came down here in the middle of the day. But pray do exactly what suits you best, & let me hear.

Until we meet, yours very sincerely | Charles Darwin

LS

Ernst-Haeckel-Haus (Bestand A-Abt. 1: 1-52/49 [A 9903])

¹ See letter from Ernst Haeckel, 30 August 1879. Haeckel stayed at Down House from 5 to 6 September 1879 (Emma Darwin's diary (DAR 242)).

To C.-F. Reinwald 2 September [1879]¹

Down
2 September

[Sends 'the 2 first sheets' of his 'notice of Erasmus Darwin', promising to send the rest in a few days, and referring to the current printing of Dr Krause's article and cost of 1,000 copies]²

[...]Until you receive all you & Mr Bastien will not be able to judge whether the little book will be worth translating. I shall be pleased if it is translated. My notice is only 127 pages, & that of Dr Krause, I *Conjecture* about 100 pages[...]³

[...] copy of a picture of D^r. D. & I will when I hear inform you of cost of 1000 copies.—⁴

Dear Sir | Yours faithfully | Ch. Darwin

Incomplete⁵

Sotheby's (dealers) (catalogue LN7755, 11 December 1997)

¹ The year is established by the relationship between this letter and the letter to C.-F. Reinwald, 11 September 1879.

² Reinwald had expressed an interest in publishing a French translation of *Erasmus Darwin* (see letter to Ernst Krause, 5 [May] 1879).

³ This paragraph has been taken from a transcription in the catalogue entry; 'Mr Bastien' is an incorrect transcription of 'Mr Barbier'. Edmond Barbier had translated a number of CD's works into French. *Erasmus Darwin* included a biographical sketch by CD (pp. 1-127) and a translation of an essay by Ernst Krause (pp. 131-216).

⁴ A portrait was used as the frontispiece of *Erasmus Darwin* (see letter from V. H. Darwin, 4 April 1879, n. 3). This incomplete sentence and the valediction have been transcribed from a photograph in the sale catalogue.

⁵ According to the catalogue description, the original letter is complete and three pages long.

From Hugo de Vries 2 September 1879

Amsterdam, Kerklaan 9
2 Septem— 1879.

My dear Sir

I was very much pleased to see from your kind letter, that you had been coming to the same opinion on the causes of growth, as I had been led to through my

experiments.¹ I always deferred answering you and thanking you for your kind words on my researches, because I hoped to be able to make some more communications to you on this subject.

Since that time I experimented almost only with the tendrils of *Sicyos*, and I found some more arguments for the opinion, that the force of turgor is the true cause of the movements.²

It seemed to me to be of great interest to make out, whether the attractive power of the parenchyme for water is increased by the stimulus, or whether the extensibility of the elastic tissues becomes greater. The first is rather more probable, but it could not *a priori* be considered as sure.

To decide this question I cut off the upperside of the tendrils and brought the remaining portion in a solution of salt of 1%. Here they do not absorb water nor loose it; they keep the curvations they took during their being cut. It is easy to cut them in such a way, that the epiderm, the collenchyme and the vascular bundles of the upperside are taken off, and that only the parenchyme remains, in connection with the vascular bundles and collenchyme of the lower side. Tendrils that have been operated in this way still remain sensitive, and are able to make very close curvations. To my opinion this fact proves that the force of turgor of the parenchyme is increased by the stimulus; at all events the elastic tissues of the upperside are not necessary for the movements.³

I made another experiment to prove this. If you allow a tendril to make $\frac{1}{2}$ –1 curvation round a thin stick and then get it off and inject it with water under the air-pump, you will see the curvations rapidly increase at the same moment. In a few minutes the tendril makes 3–5 turns beginning in the point, where it had touched the stick. I often made this experiment, it shows that the power of the parenchyme to grow by absorbing water is rapidly increased by the stimulus. Before the injections the cells could but slowly absorb water, after being injected they find it in abundance immediately around them.

With the movements of tendrils, the water-absorbing power of the parenchyme is generally increased, for almost all movements are temporarily accelerated by injection with water. But in the described case the effect is always the most evident.

So it is the water-absorbing power, that plays the principal part in the growth and the movements caused by stimulus. This power is due to some substances in the vacuoles of the cells; I hope to be able to recognise the nature of this substance another year.

According to your wish, that I should publish in the course of the winter, I have already begun to write, and hope to finish before the end of our summer holidays.⁴

If I were allowed to combine the results of this investigation with that of my experiments on roots, I should be led to say, that growth of cells and organs chiefly depends upon two causes: the extensibility of the cellwalls, and the water-absorbing power of the contents of the cells. If the extensibility of the cellwall is different in various points or in various directions, the form of the cells and organs will change; so may grow the hairs, fibres, ramificated cells, cylindrical cells, so the potatoes may

be formed by the thin stolones. Then the force of turgor causes the rapidity of the growth; it depends on the quantity of water, the light, the gravity etc, and causes the etiolement, the geotropical and heliotropical curvations, and the movements of the junctures by which many leaves and branches of inflorescences are attached to their stems. It seems to be quite clear, that both the force of turgor, and the extensibility of the cellwalls are regulated by the protoplasm. Do you think these considerations probable?

Many kind thanks for your communications on the roots of *Lychnis Githago*, I am sorry we have no young specimens in our garden, so that I am not able to see the ridges.⁵

Sincerely thanking you again for your kind letter, I remain | Dear Sir | Yours very faithfully | Hugo de Vries.

DAR 180: 23

CD ANNOTATIONS

1.1 I ... movements. 2.3] 'unicellular organs | extensibility of ['one' del] wall of one side' *blue crayon*

2.2 force of turgor] *underl blue crayon*

4.1 To ... movements. 4.10] *scored blue crayon*; 'Does ['it' del] cut side become concave' *blue crayon*

9.4 If ... stolones. 9.7] '?' *blue crayon*

¹ See letter to Hugo de Vries, 12 August 1879.

² De Vries experimented with *Sicyos lobata*. *Sicyos lobata* is a synonym of *Echinocystis lobata*, wild cucumber. See letter from Hugo de Vries, 7 August 1879.

³ De Vries uses 'parenchyme' to denote the soft wall tissue of plants, whereas 'collenchyme' denotes the hardened tissue (see letter from Hugo de Vries, 7 August 1879).

⁴ Vries 1879 and Vries 1880 (see letter from Hugo de Vries, 7 August 1879 and n. 6).

⁵ *Lychnis githago* is a synonym of *Agrostemma githago*, common corncockle (see letter to Hugo de Vries, 12 August 1879).

From Ernst Haeckel¹ 3 September 1879

London, British Museum | (Dr. Günther)

Sept. 3. 79

Hochverehrter Freund!

Ich bin sehr erfreut und sehr dankbar, dass Sie mir erlauben, Ihnen einen Besuch abzustatten. Ihrem gütigen Wunsche entsprechend werde ich eine Nacht in Down zubringen, um mehr mit Ihnen sprechen zu können.² Ich beabsichtige, nächsten *Freitag Nachmittag* mit dem Zuge, welcher 4 Uhr 12 M. von Charing Cross abfährt, nach Orpington zu gehen und *Samstag* Vormittag zurückzukehren. Wenn Sie damit einverstanden sind, ist *keine Antwort nöthig*. Wenn Sie aber einen anderen Tag wünschen, bitte ich ein paar Worte hierher zu schreiben (Adr. Dr. Günther).³ Montag oder Dienstag (spätestens) will ich nach Jena zurückkehren.

In der Hoffnung auf frohes Wiedersehen | Ihr treulichst ergebener | Ernst Haeckel

DAR 166: 74

¹ For a translation of this letter, see Appendix I.

² See letter to Ernst Haeckel, 2 September 1879 and n. 1.

³ Albert Günther.

To Ernst Krause 3 September [1879]¹

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

Sept 3^d

My dear Sir

Pray do whatever you think best in the German edition; & I can add in the Preface to English Edition that parts omitted.— I have always thought your article very well done & more interesting than mine.—²

I send (Registered) your original & the translation of the parts which I have not used; & I have marked with pencil the few errors which I have found.— If, as I suppose, there is a French edition, perhaps the French may like to translate your additions, so please have an additional set of proofs printed.—³

I sent 2 days ago the 2 first sheets of my notice to **Friederick** St. as you directed.

I will attend to your instructions for the future.—

It will be necessary for you to read the Eng. Translation of your Article when in Proof, for M^r Dallas could not read some words.—⁴

I suppose that you received safely your ‘History of Evolution’⁵

In Haste to catch Post | Yours sincerely | Ch. Darwin

P.S. | I cannot send the few first pages of your M.S. as M^r Dallas told me that *he sh^d. require them in correcting the Translation*; but they shall be sent as soon as he has corrected first sheet.—

The Huntington Library (HM 36193)

¹ The year is established by the relationship between this letter and the letter from Ernst Krause, 1 September 1879.

² See letter from Ernst Krause, 1 September 1879. Krause was preparing a German edition of *Erasmus Darwin* (Krause 1880), based on a revised and expanded version of his article in *Kosmos* (Krause 1879a). CD had written a lengthy biographical notice to the English translation (*Erasmus Darwin*), but had declined to include all of Krause’s additional material.

³ CD had been in contact with the publisher Charles-Ferdinand Reinwald about the possibility of a French edition of *Erasmus Darwin* (letter to Ernst Krause, 5 [May] 1879).

⁴ William Sweetland Dallas had translated the revised version of Krause 1879a from the German manuscript (see letter from W. S. Dallas, 28 August 1879).

⁵ Krause had included a history of descent theory since Erasmus Darwin in his revised version of Krause 1879a; CD wanted to exclude this from the English translation, and Krause had asked for it back (see letters to Ernst Krause, 13 August 1879 and 19 August [1879]).

From John Murray 3 September [1879]¹

50, Albemarle St | W

Sept 3

My Dear M^r Darwin

I have read great part of your Memoir of your Grandfather & like it much I have seen no part of D^r Krauses Essay—but can have no hesitation in offering, if it

be agreeable to you to take all the risque of the publication on condition of paying over to you one half of the Profits I think I may venture to print 1000 Copies—and will follow closely your wishes & instructions as to paper—binding &c²

In order to obtain estimate from the Autotype Company it will be necessary to shew them the Portrait to be copied³ Will you kindly furnish me with an impression of it? It seems to me you have drawn an interesting Character of D^r Erasmus Darwin—such as will gain the sympathy of large part of the Public

I beg to enclose my Cheque for £1¹19⁶ in exchange for yours of the same amount received a week or two ago You will perceive by the memorandum enclosed that in making out your accounts this sum, for supplying copies of your Books to you, was deducted from your Balance⁴ For this cause I return it

remaining My Dear Sir | Yours very sincerely | John Murray

I am glad to perceive that much abused King George III had at least the merit to admire D^r Darwin!⁵

Charles Darwin Esq

DAR 92: B12–13

¹ The year is established by the relationship between this letter and the letter to John Murray, 4 September 1879.

² CD had written a biographical sketch to accompany the English translation of an essay on Erasmus Darwin by Ernst Krause (see letter to John Murray, 2 June 1879).

³ On the portrait used for the frontispiece of *Erasmus Darwin*, see the letter from V. H. Darwin, 4 April 1879, n. 3. On the Autotype Company of London, see the letter to Ernst Krause, 14 March 1879, n. 6.

⁴ The memorandum has not been found.

⁵ George III was reported to have asked Erasmus Darwin to be his physician (*Erasmus Darwin*, p. 69).

To Ernst Haeckel [4 September 1879]

From Mr. C. Darwin, Down, Beckenham.

Most glad to see you tomorrow Will meet you at Orpington for 4.12 train¹

Thursday

pc

Postmark: SP 4 79

Ernst-Haeckel-Haus (Bestand A-Abt. 1: 1–52/49b [A 47730])

¹ Haeckel stayed at Down House from 5 to 6 September 1879 (Emma Darwin's diary (DAR 242)). See letter from Ernst Haeckel, 3 September 1879.

To John Murray 4 September 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Sep 4. 1879

My dear M^r Murray,

I am sorry to have caused trouble about the £1–16 by my blunder.¹

As I said I am not sanguine about the sale of the little book, but success apparently

depends largely on chance; and it appears to me fair that if above 1500 copies should be sold that I should receive $\frac{2}{3}$ profits as on former occasions.² I am bound to look after D^r Krause's³ interest (as well as my own) and unless you feel inclined to agree to my proposal, I should prefer publishing on commission, or taking the proof sheets to Mess^{rs} Macmillan⁴ to see if they will give me larger profits. Do you offer books published on commission at your sale to the booksellers, which I suppose is an advantage? I omitted to state that I shall have pay M^r Dallas for translating, and he has translated a good deal more of Krause's MS than appears to me worth publishing.⁵

A picture of D^r Darwin has been photographed by the Autotype C^o, & there only remains to strike off copies, and to ascertain the price per thousand.⁶

Yours sincerely | Ch. Darwin

LS

National Library of Scotland (John Murray Archive) (Ms. 42152 ff. 358–9)

¹ See letter from John Murray, 3 September [1879].

² For CD's original proposal and reservations about the sale of *Erasmus Darwin*, see the letter to John Murray, 2 June 1879.

³ Ernst Krause was co-author of *Erasmus Darwin*.

⁴ Macmillan & Co. was a leading publishing firm in Britain (*ODNB* s.v. Macmillan family).

⁵ William Sweetland Dallas. On CD's decision to cut portions of Krause's essay, see the letter to Ernst Krause, 13 August 1879.

⁶ On the portrait used for the frontispiece of *Erasmus Darwin*, see the letter from V. H. Darwin, 4 April 1879, n. 3. On the Autotype Company of London, see the letter to Ernst Krause, 14 March 1879, n. 6.

From R. F. Cooke 6 September 1879

50A, Albemarle Street, London. W.
Sept. 6 1879

My dear Sir

M^r Murray will be very happy to publish your Memoir of D^r Darwin, at his own expense & risque & give you $\frac{2}{3}$ ^{rds} of the profits, or he will publish it on commission if you prefer it.¹

In either case we should offer it to the booksellers at our Annual Trade Sale.²

As regards the copies you would require to present to your friends, allow you—as we have hitherto done, a certain number gratis according to what are printed, & charge you the trade price for the rest.³

I believe the Autotype Comp^y allow 20 Per^{ct} disc^t to the trade & of course if we manage the work for you, this advantage w^d be secured.⁴

Before printing off the sheets finally we would submit for your approval a sample of the paper to be used, so that you could decide for yourself & the binding would be done according to your wishes.⁵ If I remember correctly you intend the volume to be an ordinary *demy 8vo* which w^d be like Lyell's *Principles of Geology* & larger than the rest of yr works.⁶

When Mess^{rs}. Clowes have the whole of the matter up in slips, we will have a specimen page prepared for yr approval & tell you how many pages the volume will make, & make out an estimate of cost, including woodcuts & plate.⁷

I hope you are keeping well, with kind compl^{ts}. Believe me | Yours faithfully | Rob^t. Cooke

Cha^s. Darwin Esq

Altho' dated Albemarle St I am in N. Wales, taking a little holiday

DAR 92: B5-6

CD ANNOTATION

5.3 If ... works. 5.5] 'No' pencil

- ¹ CD had suggested these terms for the profits of *Erasmus Darwin* in his letter to John Murray, 2 June 1879. See also letter from John Murray, 3 September [1879], and letter to John Murray, 4 September 1879.
- ² John Murray's annual sale dinner was held in November (Murray 1908-9, p. 540).
- ³ The presentation list for *Erasmus Darwin* is in Appendix IV.
- ⁴ The Autotype Company printed the frontispiece portrait of Erasmus Darwin (see letter to John Murray, 4 September 1879 and n. 6).
- ⁵ CD had requested 'rather large type on thickish paper with cut gold edges' (letter to John Murray, 2 June 1879).
- ⁶ Charles Lyell's *Principles of geology* was published by Murray; the most recent edition was Lyell 1875. *Erasmus Darwin* was printed in octavo to match CD's other books (Freeman 1977).
- ⁷ William Clowes & Sons were Murray's printers; in addition to the frontispiece, there were two woodcuts (see *Erasmus Darwin*, pp. 3, 125).

To Hugo de Vries 6 September 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Sep. 6. 79

My dear Sir,

I have been much interested by your letter,¹ & thank you for sending it; for as I am working together with my son Francis² on the movements of plants, we like to learn as much as we can about them, tho' I do not intend to write anything about the mechanism of the movements.

I imagine from your remarks that when an *Oscillatoria* bends from side to side, you suppose that the movement depends on the opposite walls alternately becoming more extensile, together with the interior of the cells being in a state of turgescence.³ Do you feel sure that the cell walls have not a power of contraction; for I could not avoid suspecting that they had this power, whilst observing the movements of *Drosera* and *Dionæa*.⁴ But the subject is a most difficult one and I heartily wish you success in your observations.

My dear Sir | Yours sincerely | Charles Darwin

P.S. | I enclose a few seeds of *Lychnis Githago*. It is the hypocotyledenous stem not the root which I observed contracting.⁵

LS

Artis Library (De Vries 7)

- ¹ See letter from Hugo de Vries, 2 September 1879.
² Francis Darwin.
³ *Oscillatoria* is a genus of blue-green algae with thread-like filaments. For more on De Vries's theory of turgor, see the letters from Hugo de Vries, 7 August 1879 and 2 September 1879.
⁴ On contraction of the leaf-cells in *Drosera* (sundew) and *Dionaea* (Venus fly trap), see *Insectivorous plants*, pp. 256–9 and 317–18; see also *Correspondence* vol. 24, letter from Casimir de Candolle, 30 July 1876 and n. 3.
⁵ *Lychnis githago* is a synonym of *Agrostemma githago*, common corncockle. See letter to Hugo de Vries, 12 August 1879, and letter from Hugo de Vries, 2 September 1879.

From Victor Marshall 7 September 1879

Monk Coniston, Ambleside.

Sept^r 7. 1879

Dear Mr Darwin

I have just come back, but have not yet been down to the Inn field. When I go, the trees shall have the benefit of your recommendation.¹ I am very glad that you had a good time here. I was rather doubtful about your prospects at first, for I was afraid the Inn would not be quiet enough. Next time you come I hope we may be able to get hold of a house for you.

I had meant to ask you to plant a tree somewhere in the garden, but could not get back here in time to catch you.

Will you send me a young plant of some kind, or a seed that will grow, in order that in future we may have a memorial of your visit.

The Burnet seems a very wide awake plant, that is we cant catch it napping.² Did you encounter Ruskin? He told somebody the day after he had heard that you had arrived, that if Mr Darwin would get different kinds of air & bottle them, & examine them when bottled, he would do much more useful work than he does in the contemplation of the hinder parts of monkeys.³ I communicate this valuable suggestion to you free of all charge

Yours very truly | Victor Marshall

DAR 171: 46

- ¹ The Darwins had stayed at Waterhead Hotel in Coniston in the Lake District from 2 to 27 August 1879 (CD's 'Journal' (Appendix II)). The hotel was owned by Marshall. CD had recommended removing some fir trees that spoiled the view from the verandah of the hotel (see letter to Victor Marshall, 25 August 1879).
² Burnet (*Sanguisorba minor*) is a plant in the family Rosaceae. CD was working on nyctitropic movement, or sleep, in plants.
³ John Ruskin lived at Brantwood on Coniston Water. In *Descent* 2: 291, CD had described the vivid red on the hinder part of the body in male *Cercopithecus cynosurus* (a synonym of *Chlorocebus cynosurus*, Malbrouck monkey) and *Cercopithecus griseo-viridis* (a synonym of *Chlorocebus aethiops*, grivet or green monkey).

From F. B. Goodacre 8 September 1879

Wilby Rectory | Attlebro' | Norfolk

Sept 8./79

Dear Sir,

I am much obliged to you for your very kind letter,¹ I have just heard from my friend who I thought would like your old goose, he says he intends keeping his

present pair but does not wish to keep more stock birds: however if you would rather return the old gander & goose than kill them I find I could easily find homes for them, as a neighbouring clergyman said he would keep a pair of geese for me & help in the experiment of crossbreeding I leave it therefore to you to send the old birds or not or either of them as most convenient to yourself & merely enclose a label that there may be no mistake about the Station should you send them. A goose I have lately rec^d. from my brother in law a very beautiful bird is now laying² she is $\frac{3}{4}$ Chinese & is paired with $\frac{3}{4}$ Common gander I hope I may be able to rear a few goslings to see if $\frac{1}{2}$ bred obtained this way are exactly like those got by first cross

Believe me | yrs truly | F B Goodacre

DAR 165: 68

CD ANNOTATION

Top of letter: 'Ask Lichfield'³ blue crayon

¹ See letter to F. B. Goodacre, 2 September 1879.

² The brother-in-law was Harris Harrison. The friend and neighbouring clergyman have not been identified.

³ Richard Buckley Litchfield.

To R. F. Cooke 9 September 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

Sept. 9th 79

My dear Sir

I am very much obliged to you for all your information & kind attendance to my wishes. It pleases me that M^r Murray will allow me $\frac{2}{3}$ profits, for I am very anxious that D^r Krause sh^d receive some profit.¹ I do hope that the little work will sell fairly; & as I suppose it will have a better chance in your hands than on Commission I gladly agree with the proposed usual terms.—

I have always intended that the book sh^d match in size all my previous ones.—

I enclose copy of the Autotype, which was made by the Co^y under the instructions of my son, who understands photography & commands the Photographic Department at Chatham;² & all that is required is to order copies to be struck off, as soon as estimate is given.— I must know price per 1000 for sake of foreign editors.—

I got estimate of the 2 wood-blocks from M^r Cooper;³ but cannot this minute lay my hand on it.—

Yours very sincerely | Ch. Darwin

I hope that you will enjoy your holidays in Wales: we have just returned from the Lakes, where we had dreadful weather, but most glorious scenery.—⁴

P.S. 2^d My son & I are preparing a large Botanical book, which will be expensive for the number of Diagrams & which will be dry as dust; & this I must publish on Commission, & if I lose only about 100£ shall think myself very lucky.⁵

National Library of Scotland (John Murray Archive) (Ms. 42152 ff. 360–1)

- ¹ CD was negotiating the terms for *Erasmus Darwin*, which included a biographical sketch by CD and a translation of an article by Ernst Krause (Krause 1879a). See letter to John Murray, 4 September 1879, and letter from R. F. Cooke, 6 September 1879.
- ² The Autotype Company produced the frontispiece of *Erasmus Darwin* from an engraving of a portrait by Joseph Wright of Derby (see letter to John Murray, 4 September 1879 and n. 6). Leonard Darwin was an instructor of chemistry and photography at the School of Military Engineering, Chatham (*ODNB*).
- ³ James Davis Cooper.
- ⁴ The Darwins had stayed in Coniston in the Lake District from 2 to 27 August 1879 (CD's 'Journal' (Appendix II)).
- ⁵ CD was working with Francis Darwin on *Movement in plants*.

To F. B. Goodacre 10 September [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Sep 10th 7^o 30' a.m.

Dear Sir

I write one line to say that the old goose & gander has just been despatched to B. St for earliest train to London.²

We have done the best we c^d to make them as little miserable as possible during the journey & I hope that they will arrive safely

With very many thanks | Yours faithfully | Charles Darwin

LS

Dr John Goodacre (private collection)

¹ The year is established by the relationship between this letter and the letter from F. B. Goodacre, 8 September 1879.

² See letter from F. B. Goodacre, 8 September 1879. Bromley was a train station near Down.

From Hugo de Vries 10 September 1879

Amsterdam
10 Sept 1879

My Dear Sir!

I thank you very much for your kind letter, and for the seeds of *Lychnis githago*, which I propose myself to sow next spring.¹ I have finished my experiments on tendrils for this year, and hope to continue them next summer. In the course of this winter I hope to be able to send you a copy of my paper on tendrils.²

In respect to the movements of *Oscillaria*, I am very sorry to say that I never studied them so exactly as to have an opinion on their mechanism, which seems to be very difficult to recognise.³

You ask me whether I feel sure, that cellwalls have not a power of contraction. I am quite sure that they often have this power, but only in cells that are extended by their turgescence. Such cells will contract by losing water. I suppose that the cells in the tentacles of *Drosera* are turgescient, and that those of the outside draw water from those of the innerside; thereby the first ones will extend themselves, the last

ones will contract. For this is the case with tendrils. I am not able to say whether the cause of the movements of the tentacles of *Drosera* is the same as it is with tendrils, and my plants of *Drosera* are now too old to make an experiment.⁴

I should be much obliged to you, if you would thank your son Francis for the kind words he added to your letter.⁵

With much respect I remain | Dear Sir | Yours very truly. | Hugo de Vries.

DAR 180: 24

¹ See letter to Hugo de Vries, 6 September 1879. *Lychnis githago* is a synonym of *Agrostemma githago*, common corncockle.

² A copy of the paper 'Ueber die Kontraktion der Wurzeln' (On the contraction of roots; Vries 1880) is in the Darwin Pamphlet Collection-CUL.

³ *Oscillatoria* is a genus of blue-green algae. See letter to Hugo de Vries, 6 September 1879 and n. 3.

⁴ *Drosera* is the genus of sundews. See letter to Hugo de Vries, 6 September 1879 and n. 4.

⁵ Francis Darwin's addition to the letter to De Vries of 6 September 1879 has not been found; the whole letter is in his hand.

From R. F. Cooke 11 September 1879

Rhiwgwreiddyn, Machynlleth | Wales
Sep^r. 11 1879

My dear Sir

The Portrait of D^r. Darwin in Autotype, in *Crown 8^{vo}. size* (like yr other works) will cost us about £7. p^r. 1000 copies & you can quote this *size & price* to Appletons.¹

But the Foreign editions are generally printed as a Demy 8^{vo}. or even larger & the price cannot be less as *demj* than £7ⁿ17ⁿ6, if larger say £8.2.6.

I am glad you intend to keep the volume uniform with yr Series, as it induces purchasers to buy.

When we get an estimate of the extent of work & the whole of expenses, we will confer with you, as to the number to be printed, which will do on my return at end of the month. When your Botanical work is advanced sufficiently we will give you every assistance we can as to expenses &c.²

I have a comfortable Cottage here in a lovely situation & altho', it has been rain, rain (&,) rain, yet we keep the view & so are reconciled, for what we wanted after London was *repose* & we have it thoroughly

The river Dulas³ runs at

AL incomplete

DAR 171: 502

¹ The Autotype Company produced the frontispiece of *Erasmus Darwin* (see letter to R. F. Cooke, 9 September 1879). D. Appleton & Co. published *Erasmus Darwin* US ed.

² CD had pointed out that the diagrams in *Movement in plants* would be expensive (see letter to R. F. Cooke, 9 September 1879).

³ The river Dulas runs north of Machynlleth in Wales. Cooke was on holiday in Wales (letter from R. F. Cooke, 6 September 1879).

To C.-F. Reinwald 11 September 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Sep 11. 79

Dear Sir,

I have dispatched this morning all the remaining sheets of the little life of D^r Darwin. D^r Krause intends in the German edition to add a good many pages from Miss Seward's 'Life'; and these have not appeared to me worth publishing in England,¹ but if you bring out a french translation they would be worth Monsieur Barbier's consideration²

Yours very faithfully | Ch. Darwin

LS

University of Virginia Library, Special Collections (3314 1: 64)

¹ See letter to C.-F. Reinwald, 2 September [1879] and n. 2. In preparing *Erasmus Darwin*, CD decided to exclude parts of Ernst Krause's text that repeated material from previously published English sources, such as Anna Seward's *Memoirs of the life of Dr. Darwin* (Seward 1804); Krause wished to retain this material for the German edition (see letter from Ernst Krause, 1 September 1879).

² Edmond Barbier had translated some of CD's works into French.

From Ernst Krause¹ 12 September 1879

Regensburg
den 12.9.79.

Hochverehrter Herr!

Zunächst sage ich Ihnen herzlichsten Dank für Uebersendung der Druckbogen sowohl wie des Manuskriptes, welches ich eben noch bei meiner Abreise von Berlin empfang.² Ich bitte Sie, gütigst zu entschuldigen, dass ich Ihnen erst heut schreibe, aber ich bin seither beständig unterwegs gewesen und meist den ganzen Tag gefahren, so dass ich nicht die nöthige Ruhe fand. In etwa acht Tagen hoffe ich bei dem Verleger des Kosmos, Herrn Alberts³ in Oberwesel einzutreffen und mit demselben persönlich Rücksprache zu nehmen. Es ist meine Absicht, ihm vorzuschlagen, die deutsche Ausgabe mit der englischen wortgetreu übereinstimmend zu machen und die für den deutschen Leser etwa wünschenswerthen Zusätze in Form von Anmerkungen zu geben, die einen besondern Anhang am Schlusse des Werkchen bilden würden.⁴ Dadurch würde der Zusammenhang am wenigsten gestört werden, und die Anmerkungen brauchte nur zu lesen, wer es eben für gut findet, ohne dass andererseits der Vorwurf erhoben werden könnte, das Buch sei dem deutschen Leser nicht zugänglich. Falls diese Idee zur Ausführung kommt, werde ich Ihnen unmittelbar die Probebogen senden, damit Sie dieselben dem französischen Verleger⁵ zur etwaigen Benutzung senden können, freilich würde dann gleich im Haupttexte darauf Rücksicht genommen werden müssen, durch Zahlen, die auf die Anmerkungen verweisen, weshalb ich Ihnen die Probebogen von N^o 1 an senden würde. Diese Anmerkungen würden den grössten Theil meines Manuscriptes, mit Ausnahme der historischen Skizze der Evolutionstheorie, enthalten, also wohl 2–4 Druckbogen umfassen.

Bezüglich der englischen Ausgabe zweifle ich nicht im Mindesten, dass Herr Dallas⁶ genau meine Auffassung wiedergegeben haben wird, doch werde ich die Probefbogen Ihrem Wunsche gemäss, aufmerksam lesen. Ein kleines Bedenken ist mir hinsichtlich des Titels eingefallen. Wird es nicht sonderbar erscheinen, dass mein Name auf dem Titel eines Buches steht, zu dem ich so wenig beigetragen, zumal der grösste Theil meiner Skizze aus Citaten besteht?⁷ Freilich weiss ich hier keinen Vorschlag zu machen, und da die Vorrede—an der ich nichts zu ändern vorzuschlagen wüsste—den Sachverhalt darlegt, so ist dieses Bedenken damit wohl erledigt.

Ich danke Ihnen ferner bestens für die Liste der englischen Volks-Pflanzennamen, und werde Ihrem offenbar richtigsten Rathe folgen, ganz wörthlich zu übersetzen, bis auf das Wort Cuckold-Pint, was eine kleine Umschreibung nöthig machen wird.⁸ Da ich bis zum ersten October unterwegs bleiben werde, so würde ich Sie ergebenst bitten, auch die folgenden Bogen an Herrn Karl Alberts (Oberwesel a/Rhein) gelangen zu lassen, damit derselbe sie einstweilen übersetzen lassen kann.

Mit dem innigsten Wunsche, dass diese Zeilen Sie in erwünschtem Wohlsein antreffen mögen, zeichne ich, hochverehrter Herr | Ihr | verehrungsvoll ergebenster | Ernst Krause

DAR 92: B39–40

CD ANNOTATIONS

2.1 Bezüglich . . . erledigt. 2.8] ‘Quite agree to what you propose—will send sheets to Paris, (Will not read myself the German Translation as very busy)’ *pencil*

3.3 Cuckold] *double underl pencil*

End of letter: ‘Title | Sheets have been sent to Karl Alberts | Dallas sheets for you—I will send to Berlin | Till Oct 1!’⁹ pencil

¹ For a translation of this letter, see Appendix I.

² See letter to Ernst Krause, 3 September [1879]. CD had sent proof-sheets of *Erasmus Darwin* and Krause’s manuscript of his portion of the book.

³ Karl Alberts.

⁴ Krause was preparing a German edition of *Erasmus Darwin*; it contained a revised and expanded version of Krause’s article in *Kösmos* (Krause 1879a), and a biographical preface by CD. Krause appended 112 notes to the German edition (see Krause 1880, pp. 179–236).

⁵ Charles-Ferdinand Reinwald. See letter to Ernst Krause, 3 September [1879] and n. 3, and letter to C.-F. Reinwald, 11 September 1879 and n. 1.

⁶ William Sweetland Dallas had translated Krause’s portion of *Erasmus Darwin* into English.

⁷ CD had suggested the title ‘Life of | Erasmus Darwin | by | Dr. Ernst Krause | with a supplementary notice | by | Charles Darwin’ in his letter to Krause of 18 July [1879].

⁸ In his letter of 16 August 1879, Krause had listed several English common names for plants including ‘Cuckold-Pint’ (a play on cuckoo pint, *Arum maculatum*) with suggested German equivalents. CD’s reply has not been found. See also *Erasmus Darwin*, p. 21.

⁹ CD’s notes were for his reply (letter to Ernst Krause, 15 September 1879).

From W. S. Dallas 13 September 1879

Geological Society, | Burlington House, W.
13 Sep^r 1879

Dear M^r Darwin

I write a few lines in great haste to acknowledge the receipt of your letter with the accompanying packet of MS. & proof.—The latter I will go through carefully

& shall be guided by circumstances as to the best course to adopt with regard to D^r Krause's proofs.—¹ All the quotations were most carefully copied so that there will, I think, be no necessity for any reference to the originals.— All your suggestions I will bear in mind & will send the proof to Clowes as soon as possible.—² The German MS. I will send to D^r Krause as soon as I have gone through the proof—

Believe me | Yours very truly | W. S. Dallas

DAR 99: 122

¹ CD's letter to Dallas has not been found. Dallas had translated a revised essay by Ernst Krause for *Erasmus Darwin* (see letter to Ernst Krause, 3 September [1879]). See also letter from W. S. Dallas, 28 August 1879.

² Krause's essay contained extensive quotations from Erasmus Darwin's works. William Clowes & Sons were John Murray's printers. Murray was CD's publisher.

To Victor Marshall 14 September 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Sep 14. 1879

My dear M^r Marshall

Your letter amused us much. It was very acute of M^r Ruskin to know that I feel a deep & tender interest about the brightly coloured hinder half of certain monkeys.—¹

With respect to the tree you wish to treat me as if I were a Royal Duke, but of course I shall be proud to be so honoured.² I am, however, perplexed what to send, for it would be a pity not to plant a handsome tree. I admire some the American oaks & have got a beauty, but stupidly I forget its name, but could get from Kew one of the handsomest, as Hooker knows them well.³ I have a fine young *Picea nordmanniana* in a pot, which I procured because a Frenchman says its leaves sleep, which mine will not do, & in a month's time shall have no use for.⁴

Lastly my father sowed the acorn of a cork-tree on my birthday, & I have one of its children which is now covered with acorns, & if they ripen this autumn, shall I send you some:—the young trees would be my grandchildren in one sense.—⁵ Here is a fuss about the tree; but what shall I do?

It is a constant pleasure to me to recall the scenes at Coniston,⁶—the one out of your grounds which is most indelibly impressed on my brain, is on the cross-road from beneath your house, near to the Ewedale road, where a fine rugged mountain is seen over a flat field, with an old farm-house with fine sycamores on the left-Hand. It seems to me a perfect picture. I heard lately a story of a rough Yankee who was showing the Hudson River to an English Lord, who admired the view greatly. The Yankee then said "Yes, Lord, we take a deal of pains with our scenery"; & I think that you all at Coniston have taken a deal of pains with your mountains.

Believe me | yours very sincerely | Charles Darwin

American Philosophical Society (Getz 12230)

¹ John Ruskin. See letter from Victor Marshall, 7 September 1879 and n. 3.

² Marshall wanted to plant a tree in his garden as a memorial of CD's recent visit to his hotel (letter to Victor Marshall, 25 August 1879, and letter from Victor Marshall, 7 September 1879).

³ Joseph Dalton Hooker was director of the Royal Botanic Gardens, Kew.

⁴ *Picea nordmanniana* is a synonym of *Abies nordmanniana*, Caucasian fir. CD cited Gaspard-Adolphe Chatin on the sleep of *Pinus nordmanniana* (also a synonym of *A. nordmanniana*) in *Movement in plants*, p. 389.

⁵ Robert Waring Darwin (1766–1848). The bark of *Quercus suber* (cork tree or cork oak) is harvested for cork.

⁶ The Darwins had stayed at Coniston in the Lake District from 2 to 27 August 1879 (CD's 'Journal' (Appendix II)).

To G. J. Romanes 14 September [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Sept. 14th

My dear Romanes

We send you our best thanks for your magnificent present of game. I have not tasted Black grouse for *nearly half-a-century*, when I killed some on my Father-in-laws land in Staffordshire!²

I hope that you are well & strong & do not give up all your time to shooting. Pray tell M^{rs} Romanes if you turn idle, I shall say it is her fault & being an old man shall scold her.³ But you have done too splendid work to turn idle, so I need not fear & shall never have audaciously to scold M^{rs} Romanes. But I am writing great rubbish.— You refer to some Zoological Station on your coast, & I now remember seeing something about it, & that more money was wanted for apparatus. Therefore I send a cheque of 5.5.0 just to show my good will.—⁴

Yours very sincerely | Ch. Darwin

We went to the Lakes for 3 weeks to Coniston, & the scenery gave me more pleasure than I thought my soul, or whatever remains of it, was capable of feeling. We saw Ruskin several times & he was uncommonly pleasant.⁵

How does poor Grant Allen go on?⁶

American Philosophical Society (567)

¹ The year is established by the reference to CD's stay in Coniston (see n. 5, below).

² Josiah Wedgwood II owned Maer Hall, Staffordshire.

³ Romanes had recently married Ethel Duncan.

⁴ A small zoological station was opened in Cowie, Aberdeenshire, Scotland, in August 1879; *Nature* reported the event and made an appeal for financial support (*Nature*, 14 August 1879, pp. 372–3). No letter from Romanes about the zoological station has been found.

⁵ The Darwins had stayed at Coniston in the Lake District from 2 to 27 August 1879 (CD's 'Journal' (Appendix II)). John Ruskin's house, Brantwood, overlooked Coniston Water. For more on the Darwins' visit with Ruskin, see Healey 2001, pp. 301–6.

⁶ CD had sent a cheque to assist Grant Allen (see letter to G. J. Romanes, 23 July 1879 and n. 1).

From W. S. Dallas 15 and 16 September 1879

Geological Society

15 Sept. 1879

Dear M^r Darwin

On consideration I have thought it best to send you the corrected proofs of Krause in order that you may approve of what I have done to them if you think fit,

or strike out anything of which you disapprove.—¹ You will see that I have adopted nearly all the suggestions that you are so kind as to make, & also that a good many of the errors were misprints.—

I shall send off the German MS. to Krause by this same post & with it the duplicate proofs, to which I have transferred all my marks, requesting him to make any corrections or suggestions that he may think necessary & return the proofs to me.— In the meantime we can send the proofs now forwarded to you to the printers,² & make use of D^r. Krause's criticisms upon the revises, which I will read as quickly as possible when I get them.— These first proofs have taken me some time to read, as I had to compare the quotations all through.—

Believe me | Yours very truly | W. S. Dallas

P.S. 16 Sept.— I will add a P.S. to my letter to D^r. Krause as I do not exactly understand what he wants.— I suspect he wanted the MS. to enable him to read the proofs,— if so it will be unnecessary now that he has his own MS. & my corrected proofs.— At p. 143 in a note I queried whether 3 Scallop-shells are your *family* arms,— the note of interrogation was not intended to be printed, but I am still uncertain whether the statement in the note is admissible.—³

If you will send back the proofs to me, I will forward them to the printers & beg them to let me have the revises as soon as possible.— Shall I get additional revises & have my marks transferred to them to be sent to France & Germany?

W. S. D.

DAR 99: 123–4

CD ANNOTATIONS

2.4 meantime ... printers, 2.5] *double scored red crayon*

4.4 At ... printed, 4.5] *scored red crayon*

5.2 Shall ... Germany? 5.3] *scored red crayon*

5.3 France] *double underlined red crayon*

5.3 Germany?] *scored red crayon*

Bottom of letter: 'p. 187. I am nearly sure that it was **John** Hunter—*so correct.*⁴ | p 201 a short suggested correction'
ink

¹ Dallas had translated a revised essay by Ernst Krause for *Erasmus Darwin* (see letter from W. S. Dallas, 13 September 1879).

² William Clowes & Sons.

³ The note in *Erasmus Darwin*, p. 143, reads:

It was a favourite notion of Dr. Darwin's that all the lime of the earth originated from living creatures, corals, shells, and other animals, and therefore must have taken part in the pleasures and pains of life. The limestone mountains of England appeared to him as 'mighty monuments of past delight.' It was probably in consequence of this idea, and in allusion to his family arms, consisting of three scallop shells, that he altered his motto to 'E conchis omnia.'

E conchis omnia: everything from shells (Latin).

⁴ *Erasmus Darwin*, p. 187, quotes a passage from *Zoonomia* that attributes the discovery of crop milk in male and female pigeons to 'T. Hunter' (E. Darwin 1794–6, 1: 508); this is corrected in *Erasmus Darwin* to 'J. Hunter'. The original source was John Hunter's essay 'On a secretion in the crop of breeding pigeons, for the nourishment of their young' (John Hunter 1786, pp. 191–97). Crop milk is fluid produced by regurgitation at the time when offspring are hatching (see Silver 1984).

To Ernst Krause 15 September 1879

Down, | Beckenham, Kent.

Sep 15. 1879

My dear Sir,

I quite agree to what you propose, & I cannot see any objection to the title as it now stands.¹ Whenever I receive the sheets with the additions, they shall be sent to Paris. But I do not yet know positively that there will be a French translation; M^r Reinwald & M. Barbier the translator both said that a translation should be published, but I advised them not to decide until they had looked at the original.²

As I am so poor a German Scholar I will not read over your sheets.

All the remaining sheets of my preliminary notice have been sent to Karl Alberts.³ I will write to M^r Dallas⁴ & tell him that you would like to see his translation, & will ask him to send the sheets to K. Alberts as, if I understand rightly, that will be your address until Oct 1.

My dear Sir | Yours sincerely | Ch. Darwin

P.S. | I have now ascertained that the autotype of D^r Darwin will cost £7 per 1000 copies, if printed the same size as my book which is demi-octavo; but if larger they will cost £7-17-6 or £8-2-6 per 1000⁵

LS

The Huntington Library (HM 36194)

¹ See letter from Ernst Krause, 12 September 1879 and n. 7.

² Edmond Barbier. CD had sent a copy of the proof-sheets of *Erasmus Darwin* to the publisher Charles-Ferdinand Reinwald (see letter to C.-F. Reinwald, 11 September 1879).

³ See letter from Ernst Krause, 1 September 1879 and n. 4.

⁴ William Sweetland Dallas.

⁵ The Autotype Company produced the frontispiece of *Erasmus Darwin* (see letter from R. F. Cooke, 11 September 1879 and n. 1).

To Karl Alberts 16 September 1879

Down, | Beckenham, Kent.

Sep 16. 1879

Dear Sir,

I am much obliged for your letter, & hope that the little book may sell fairly well in Germany.¹ As I was in communication with Mons Reinwald, I asked D^r Krause whether he would object to French & American editions, appearing to which he agreed.² M. Reinwald proposed to bring out an edition, but I do not positively know that he keeps to his decision. He has published translations of all my books and gives me a percentage on the profit; and this if any I intended to hand over to D^r Krause. It therefore makes no difference to me who publishes the French edition, excepting that I consider myself pledged in honour to give my Notice to M. Reinwald.

I always supply Mess^{rs} Appleton with stereotype plates of the type & they give me a percentage of the profits which I likewise intend to hand over to D^r Krause.³

I have informed D^r Krause of the cost of the autotype portrait: clichés of the two woodblocks will cost only a trifle.⁴

Dear Sir | Yours faithfully | Ch. Darwin

P.S. I will write by this post to M. Reinwald, & tell him what I have said to you⁵

LS

Erbengemeinschaft Alberts (private collection)

¹ Alberts's letter has not been found. He was arranging the publication of *Erasmus Darwin* in Germany (see letter from Ernst Krause, 12 September 1879).

² CD had sent a copy of the proof-sheets of *Erasmus Darwin* to Charles-Ferdinand Reinwald (see letter to C.-F. Reinwald, 11 September 1879). See also letter to Ernst Krause, 5 [May] 1879.

³ D. Appleton & Co. published *Erasmus Darwin* US ed.

⁴ See letter to Ernst Krause, 15 September 1879 and n. 5.

⁵ The letter to Reinwald has not been found, but see the letter to C.-F. Reinwald, 11 September 1879.

From James Torbitt 18 September 1879

*J. Torbitt, | Wine Merchant. 58, North Street, | Belfast,
18 Sept 1879*

Charles Darwin Esqr. | Down | Beckenham Kent.

My dear Sir

Since receipt of your last valued letter in the Spring,¹ I have had great sorrow and anxiety. My poor wife,² my only companion, I may say, for twenty seven years, had to have her left breast amputated and it is only now I am beginning to think there are fair grounds to hope that the awful disease may not return. Business is still becoming worse and I am by no means sure I shall not be ruined.

Nevertheless I have not neglected the experiments in crossing the potato. The varieties now ripe, I am engaged in raising, and in a short time propose to submit report. In the meantime I suspect the advantage to be obtained by crossing the plant and growing it from the seed will be found to be greater than would be the mere suppression of the disease, that is to say, I suspect that I have found varieties which are so prolific and so little diseased that, after rejecting the diseased tubers, a far larger yield remains behind than the old varieties give of sound and diseased tubers taken together. The Black 75 No 1 has not changed in character this year so I presume it *must* have been mixed.³

Most respectfully | my dear Sir | James Torbitt

DAR 178: 154

¹ See letter to James Torbitt, [after 30 April 1879].

² Margaret Ann Torbitt.

³ On the 'Black seventy-five' potato, a variety named by Torbitt, see the letter from James Torbitt, 1 May 1879.

From W. S. Dallas 19 September 1879

Geological Society, | *Burlington House, W.*
19 Sept. 1879

Dear Mr. Darwin

Many thanks for the proof, which I will keep, as you suggest, until Dr. Krause returns the one I have sent to him.—¹ I called his attention to the passage on p. 171,— my note upon it was not intended to be printed, but only in order that the question might not be lost sight of.— Your suggested alteration makes all right,— we shall see what he proposes.—²

I notice that a little quotation from the “Botanic Garden” is considerably altered,— there must be some difference in the editions, & yet I thought the copy which I borrowed from the Linnean Society was the second.—³ The additional words “and adds” inserted in a subsequent page were in my MS. but seem to have been struck out by somebody as unnecessary, & the cancelling line afterwards smudged as if to rub it out, but the printers have taken it as cancelled.—

Would not the title of this translated part of your book read better:—

The Scientific Labours
of
Erasmus Darwin.—?

I think there is a better word than either works or labours but I can't hit upon it.—⁴

Believe me | Yours very truly | W. S. Dallas

DAR 99: 125–6

¹ CD's letter to Dallas has not been found. Dallas had asked CD to check and return the corrected proofs of the translation of Ernst Krause's essay for *Erasmus Darwin* (see letter from W. S. Dallas, 15 and 16 September 1879).

² In *Erasmus Darwin*, p. 171, Krause discussed the resemblance of the offspring to the parent, and Erasmus Darwin's view that the embryo was produced by the father, while the mother provided the ‘nutritive fluid’; Dallas had queried the translation of ‘parent’ as ‘father’ (see letter from Ernst Krause, 2 October 1879).

³ *The botanic garden; a poem in two parts* (E. Darwin 1789–91) had a complex publication history, with multiple editions of each part printed separately during the 1790s (for a list of the editions, see King-Hele 1999, p. 401).

⁴ Krause's essay in *Erasmus Darwin* was titled ‘The scientific works of Erasmus Darwin’.

From Melchior Neumayr¹ 19 September 1879

Wien
19.9.79

Verehrtester Herr!

Ich erlaube mir anzuzeigen, das ich morgen eine Arbeit, über den untersten Lias der nordöstlichen Alpen an Sie absenden werde;² ich bitte Sie dieselbe Ihrer Bibliothek einzuverleiben, Sie werden einige Daten über Formenreihen in derselben finden, wenn Sie einmal in der Lage sein sollten Zusammenstellungen über die geologische Aufeinanderfolge abändernder Organismen zu machen; dagegen möchte ich Sie darauf aufmerksam machen, dass in meiner Schrift keine derartige Zusammenstellung allgemeinerer Resultate enthält, dass ich Ihre Zeit mit Lesung

derselben in Anspruch nehmen möchte; nur die vorletzte und drittletzte Seite enthält einiges der Art.

Ich hoffe jetzt die Herausgabe eines grosseren Werkes zu Wege zu bringen, welches Belege für die allmälige Veränderung auf einem von Ihnen selbst angegebenen Wege herstellen soll; ich habe mich an Dr Kobelt, Vorstand der deutschen malakozoolog. Gesellschaft gewendet und ihm vorgeschlagen gemeinsam mit mir eine Beschreibung der Mittelmeerconchylien und ihrer miocänen und pliocänen Vorfahren herauszugeben;³ es müssten natürlich noch mehrere Mitarbeiter sich betheiligen. Die Beischaffung des Materials wird zwar einige Schwierigkeiten machen, aber trotzdem hoffe ich, dass schon im nächsten Jahre die Arbeit werde beginnen können.

In der letzten Zeit ist wieder ein Theil des grossen Werkes von Barrande über die böhmischen Silurbildungen erschienen, welcher die Beschreibung der Brachiopoden enthält.⁴ Es ist sehr merkwürdig, dass hier nun ebenfalls die Existenz von Formenreihen zugegeben und sogar eine neue unter den *Pentamerus* des Silur und Devon nachgewiesen wird.⁵ Allerdings sucht Barrande der Erscheinung eine Erklärung zu geben, welche sich mit der Constanz der Arten vereinigen lässt; jedenfalls ist es aber eine wichtige Bestätigung der Beobachtungen, eine allmälige Veränderung selbst von einem so entschiedenen Gegner der Transformation anerkannt zu sehen.

Herr Württemberger hat sich bis jetzt noch nicht an mich gewendet; ich werde ihn jedoch vielleicht bei der in Baden-Baden am 26. Sept. stattfindenden Versammlung der deutschen Geologen sehen, und werde dann hören, ob er seine Arbeiten über Ammoniten fortzuführen gesonnen ist.⁶

Mit dem Ausdrücke ausgezeichnetster Verehrung verbleibe ich | Ihr | ganz ergebener
| M Neumayr.

DAR 172: 17

CD ANNOTATION

Bottom of letter: 'Present of book—but 2 or 3 Pages read your new work on Pent & Tertiary shells Barrand—
| Wurtemberger'⁷ ink

¹ For a translation of this letter, see Appendix I.

² A copy of Neumayr 1879 is in the Darwin Library–CUL. See letter from Melchior Neumayr, 21 January 1879. The Lias is a series of strata forming the lower Jurassic (*OED*).

³ Wilhelm Kobelt was a co-founder of the Deutsche Malakozoologische Gesellschaft (German Malacological Society) in Frankfurt am Main; he published extensively on European marine shells (*NDB*).

⁴ The fifth volume of Joachim Barrande's *Système silurien du centre de la Bohême* (Barrande 1852–1911) was published in 1879.

⁵ On *Pentamerus*, a prehistoric genus of brachiopods, see Barrande 1852–1911, 5: 35–41.

⁶ See letter from Leopold Württemberger, 10 January 1879, and letter from Melchior Neumayr, 21 January 1879.

⁷ CD's annotations are for his reply to Neumayr, which has not been found.

From Henry Johnson 22 September [1879]¹

10 Corve St | Ludlow
Sept 22.

My dear Darwin,

I am going to ask you a great favour. You see what trouble your great Eminence in Science brings upon you.

Will you be so very kind at your leisure to give me your autograph on a loose bit of paper. It is for a brother medical man who is very anxious to possess it.

You will be surprised to learn that I have retired from Shrewsbury and come to live here quietly & I am not well, having attacks something like Angina Pectoris.

I sincerely hope *you* are well & strong in mind & body as ever.

Believe me | Yours most truly | & heartily | Henry Johnson

P.S. Mary & I were present in the Cave near Tenby when they found so many antediluvial bones &c. with Professor Rolleston &c. It was deeply interesting.²

DAR 168: 69

¹ The year is established by the relationship between this letter and the letter to Henry Johnson, 24 September 1879.

² Mary Elisabeth Johnson (Johnson's daughter) and George Rolleston. Human and animal remains were found in two caves at Longbury Bank, Penally, near Tenby; the excavation is described in the *Report of the 48th Meeting of the British Association for the Advancement of Science* (1878): 209–17.

To Henry Johnson 24 September 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

Sept 24th— 1879

My dear Johnson

It gives me pleasure to do as you ask & send my signature on the next page.—¹ I had not heard that you had taken up your abode in Ludlow, & hope that you find it a pleasant retreat. As far as I can remember it is a beautiful place. You have my sincere sympathy in your state of health, & I much hope that you do not suffer greatly. I am blessed with almost everything, except strength & better health, which a man can desire; nevertheless I find old age a dismal time.—

I am at present working at the movements of plants. As you probably do not see German works & periodicals on physiological botany, you will perhaps like to hear that your experiments on the tension of parts &c &c are still often quoted.—²

Believe me with all good wishes | Yours sincerely | Ch. Darwin

Private collection

¹ Johnson had requested CD's autograph in his letter of 22 September [1879].

² Johnson had published several articles on plant movement, reporting experiments on stem growth and elasticity in a wide range of common plants (Johnson 1835a and Johnson 1835b).

To George Sleight [before 26 September 1879]¹

Sir—

I have heard through Sir J. Hooker from M^r. Smith of Kew, that you want a gardeners place & that my place might suit you.² I have a small hot-house & greenhouse (which I use partly for experimental purposes) & w^d like to build an orchard House.³ You w^d also have to attend to the far grounds & gardens K. Gns when asked I sh^d keep 2 men in the gardens who w^d be under your direction, one

of whom w^d have also to look after the cows. & pigs.⁴ If you thought that my place w^d then suit you, you could come down here & make more particular enquiries, & I sh^d be able to judge whether you would suit me, & before write to L^d Walsingham, for your character.⁵ But in the first place, I sh^d want to hear what wages you would expect,—bearing in mind that you w^d have to find a cottage in the village about $\frac{1}{4}$ of a mile distant. I sh^d wish to hear whether you are a married man—& have a family

I am | Yours faithfully | C. D.

ADraftS

DAR 202: 93

¹ The year is established by the relationship between this letter and the letter to Thomas de Grey, 26 September 1879.

² Joseph Dalton Hooker and John Smith. CD was looking for new head gardener to replace Henry Lettington (see letter to J. D. Hooker, 1 October [1879] and n. 2).

³ CD's interest in building an orchard house, a glazed structure for growing fruit trees in pots, is mentioned in several letters from Emma Darwin to Henrietta Emma Litchfield in September 1879. On 24 September 1879, Emma wrote: 'Sir J. brought word of a promising gardener but he discourages us about orchard houses as he says they so often fail' (DAR 219.9: 209). The structure was apparently never built at Down House.

⁴ CD planned to place Lettington under the new head gardener (letter from Emma Darwin to Elizabeth Darwin, [26 September 1879] (DAR 219.9: 210)); the other man employed as a gardener at Down House was Thomas Price (see F. Darwin 1920a, pp. 57–8).

⁵ Thomas de Grey, Baron Walsingham. See letter to Thomas de Grey, 26 September 1879 and n. 1.

To Thomas de Grey 26 September 1879

Down, | *Beckenham, Kent.* | (*Railway Station* | *Orpington. S.E.R.*)
Sept. 26th 1879

My Lord

I should be much obliged if you would be so good as to inform me with respect to the character of G. Sleigh, who has been in your Lordship's service. I wish to learn whether he is sober, honest & industrious; & whether he is likely to prove a useful gardener, as far as you may be able to form an opinion.¹

My name, as a fellow-worker in natural science will perhaps be known to your Lordship; & I have the honour to remain | Your obedient servant | Charles Darwin

Cleveland Health Sciences Library (Robert M. Stecher collection)

¹ George Sleigh had been suggested as a replacement for CD's head gardener, Henry Lettington, who had become ill (see letter to George Sleigh, [before 26 September 1879], and letter to J. D. Hooker, 1 October [1879] and n. 2).

From Henry Johnson 26 September [1879]¹

10 Corve St | Ludlow
Sept 26.

My dear Darwin,

Thank you very very much for your prompt & kind letter and for sending me your *valued Autograph*.²

Altho' I have in fact *retired* from practice—I am going to-day to see my Brother in Law Mr. Peters of Pitchford near Shrewsbury.³ I much fear his is a fatal disease, & I cannot cure him. I am here quite out of the way of all Scientific proceedings & hardly see any thing that *smells* of Science. Mary⁴ & I take nice pleasant walks together. I find flowers—and we here meet with a great variety of of *fungi*. Some are very curious & beautiful—quite *scarlet*. An old Lady of 70—is quite an enthusiast & walks all about to find them and take their likenesses.

Believe me | dear Darwin | always yours | very sincerely | Henry Johnson

DAR 168: 70

¹ The year is established by the relationship between this letter and the letter to Henry Johnson, 24 September 1879.

² See letter to Henry Johnson, 24 September 1879.

³ Charles Powell Peters.

⁴ Mary Elisabeth Johnson.

From E. Desrousseaux¹ 30 September 1879

Monsieur

J'ai lu avec un vif intérêt votre ouvrage si remarquable intitulé "Origine des Espèces" qui a soulevé des problèmes de premier ordre; s'il a trouvé des contradicteurs, en revanche il fait chaque jour de nouveaux partisans.²

Je compose dans ce moment un ouvrage sous le titre: "Ces grands phénomènes de la nature" et j'aurai l'honneur de vous en envoyer un exemplaire quand il sera terminé.³ Les aperçus que j'y traite donneront une preuve de plus de la vérité de la doctrine que vous avez exposée.

Je suis en effet arrivé à la conclusion que tous les phénomènes, quels qu'ils soient, sont enfantés par le mouvement. La matière éternelle remplit l'espace sous forme d'atomes invisibles d'un type unique qui constituent l'Ether lui-même et sont la véritable semence des mondes. Ces atomes, autrement dit, la matière réduite à son dernier degré de division, sont soumis à des lois éternelles comme eux. Resserrés les uns les autres en vertu de leurs attractions naturelles, ils ne sont cependant pas en contact parce qu'ils sont doués de mouvement, lequel consiste en vibrations calorifiques; malgré ces vibrations, la température de l'éther est glaciale, à cause du défaut de rayonnement de son calorique qui est latent et combiné avec les particules. Celles-ci obéissent ainsi à deux forces contraires, attraction et répulsion, qui se font équilibre et donnent aux atomes des distances fixes.

Tel est l'état normal de la matière de toute éternité. Comment, cet état normal étant établi, les phénomènes peuvent-ils surgir? C'est parceque le repos et l'immobilité n'existent nulle part dans la nature, comme le prouvent les vibrations éternelles. L'évolution commence parceque, en réalité, l'équilibre entre les deux forces attractive et répulsive *n'est jamais stable*; à tour de rôle, la première domine, puis la seconde; autrement dit, les atomes éprouvent sans discontinuité une oscillation pareille à celle du pendule et cette oscillation qui tantôt les sépare davantage, tantôt

les rapproche, est la *véritable force mécanique de l'Univers*; elle est fabuleusement lente et doit se chiffrer par des milliards de siècles pour un seul balancement. Comme pour le pendule, l'équilibre dérangé tend de lui-même à se rétablir, puis se déränge de nouveau précisément à cause de l'impulsion par laquelle il fait effort pour se rétablir; les atomes oscillent donc sans cesse de part et d'autre de leur positions normales et le mouvement est éternel, puisqu'il n'y a pas de frottement dans le vide absolu.

Telle est l'origine des nébuleuses sur différents points de l'espace. S'il se fait quelque part une condensation ou resserrement des atomes; c'est parce qu'ils avaient éprouvé antérieurement une séparation trop grande; l'excès du dérangements de l'état normal dans un sens appelle le même excès dans le sens opposé.

Pour comprendre ce phénomène, il faut réfléchir que les atomes sont doués de mouvement (vibrations naturelles). Au point d'équilibre ces vibrations sont latentes et ne rayonnent pas, car elles font précisément contrepoids à la force attractive; mais si par suite de l'oscillation éternelle, les atomes quittent leurs positions normales pour se reserrer, ils vibrent de plus en plus; le calorique augmente, car le mouvement qui leur est communiqué rencontrant la résistance opposée au resserrement par les vibrations naturelles est obligé de se transformer et finalement de se convertir en calorique (le calorique est, comme on sait, une simple transformation du mouvement). C'est ainsi que les chocs sur une matière résistante donnent du calorique. Alors, non seulement il y a rayonnements (clarté dans la nébuleuse) puisque les vibrations sont en excès, mais la force expansive s'accroît et finit par amener un desserrement général. Les atomes sont ramenés ainsi à leurs positions primitives, mais n'y restent pas, à cause de l'impulsion que leur avaient imprimée les vibrations en excès; ils dépassent donc le point normal et se séparent trop. Le phénomène précédent se reproduit alors et donne des résultats inverses. Au lieu du rayonnement, il se fait un refroidissement et une augmentation de la force attractive, comme dans toute substance refroidie ou dilatée mécaniquement. En effet, les atomes en revenant à leurs positions normales ne possédaient plus à ce moment que leurs vibrations naturelles, mais comme ils dépassent le point d'équilibre en vertu de l'impulsion acquise lors du desserrement, ils sont obligés de perdre du calorique, puisque le mouvement qu'ils possèdent ne peut exister que par une transformation du calorique en mouvement; autrement dit, *le calorique disparaît parcequ'il se convertit en mouvement*, et ne peut reparaître que lors d'une nouvelle condensation. Si donc la séparation des atomes devient exagérée, l'éther qui se dilate se refroidit; le manque de calorique pour ce nouvel état donne la prépondérance à la force attractive et les particules qui ont acquis par leur séparation une énergie de position exceptionnelle finissent par revenir les unes vers les autres avec une grande puissance. Une condensation croissante en résulte et elle est assez intense pour amener une portion des atomes au contact.

La nébuleuse est alors en formation et l'évolution a commencé. Elle se continue, car les premiers éléments qui se sont unis servent de points de ralliement à ceux qui les suivent et sur ces noyaux d'attraction les atomes étherés ne cesseront de tomber pendant des périodes incalculables. Non seulement la nébuleuse fait rayonner son calorique par sa condensation, mais les particules qui tombent sur les

noyaux se débarrassent par le choc d'une partie de leurs vibrations intrinsèques qui rayonnent dans l'espace et par leur émission leur permettent de s'unir en différentes proportions pour former les corps simples. Ces combinaisons chimiques d'une puissance qui leur donne la faculté de résister aux hautes températures des noyaux, grâce à l'énergie potentielle acquise avant la chute, sont la source d'une lumière éblouissante (transformation du mouvement de chute).

L'étoile a donc pris naissance et s'accroît sans cesse. La lumière se maintient à travers les âges, même quand à la longue la nébuleuse s'est dissipée. En effet le phénomène se continue car l'électricité dégagée par les combinaisons chimiques des corps simples se distribue positivement et négativement sur les éléments qui entourent l'étoile et sur ceux qui en font partie. L'astre a acquis par là une force d'induction qui lui permet d'attirer sans cesse à lui les atomes de l'éther et d'entretenir sa clarté par de nouvelles combinaisons chimiques.

Nous avons ainsi l'explication de la permanence si mystérieuse de la lumière du soleil depuis un passé insondable et aussi celle de la lumière zodiacale qui consiste dans un calorique diffus qu'émettent les atomes resserrés sur le plan de l'écliptique par la force centrifuge, car tout en tombant sur le soleil ils gravitent autour de lui et s'en rapprochant de plus en plus pour disparaître dans les combinaisons chimiques. Un phénomène semblable a lieu dans les nébuleuses arrivées à un degré d'avancement tel que les mouvements des atomes se sont à la longue mis en harmonie sur un plan commun. Dans leur chute sur les noyaux ils gravitent en spirale; de là une rotation de la nébuleuse. Ces atomes pressés les uns contre les autres constituent une espèce de nébulosité et par leurs chocs obliques à la surface du soleil ils donnent à celui-ci son mouvement de rotation, comme le prouve la plus grande rapidité de marche des taches à l'équateur où les particules sont plus resserrées et plus nombreuses et font mouvoir la photosphère plus vite qu'aux pôles.

Ainsi *le milieu universel est le principe de tout*. Il ne se borne pas à servir d'intermédiaire entre les mondes pour le rayonnement et la pesanteur qui se transmettent de molécules en molécules éthérées; il les enfante; les nourrit de sa propre substance, et de plus leur communique *le mouvement et enfin la vie*.

Il nous faut en effet suivre la théorie jusque dans ses dernières conséquences. Le calorique et l'électricité n'étant que le mouvement des atomes transformé, mouvement condensé (calorique) et mouvement emmagasiné (électricité) doivent nécessairement reproduire le mouvement lui-même lorsqu'ils réagissent sur la matière, car rien ne peut se perdre dans la nature. Or, en réalité, le mouvement est synonyme de vie; il est la vie qui anime l'univers. C'est pourquoi l'énergie transmise au soleil par les atomes qui tombent sur lui se convertit d'abord en calorique et en électricité, puis rayonne sur les planètes où ces deux agents font surgir la vie par une nouvelle transformation très mystérieuse. Ce sont encore eux qui nous donnent toutes les forces mécaniques que nous utilisons.

Ce n'est pas tout. Les mouvements des astres eux-mêmes n'ont pas d'autre origine. Si le soleil tourne sur son axe et se déplace dans l'infini, si les planètes pivotent et se meuvent dans leurs orbites, si enfin les satellites gravitent autour des planètes, c'est

parceque tous ces rouages sont mis en jeu par la force centrale; dans leur chute sur le soleil les atomes agissent par leur énergie potentielle comme l'eau qui par son énergie de position fait mouvoir une turbine ou roue hydraulique. Le mouvement de chute des atomes est en effet une force immense qui, ne pouvant être perdue, se change en calorique et en électricité qui à leur tour de communiquer aux planètes et satellites par le véhicule de l'éther et reproduisent le mouvement qui les a engendrés.

Il serait trop long de décrire ici le mécanisme très curieux au moyen duquel les agents physiques communiquent le mouvement aux astres; le calorique et aussi l'électricité transformée en courants qui enveloppent les planètes et satellites y jouent un rôle important. Pour le connaître j'ai dû étudier de près l'électricité et le magnétisme et j'ai fini par découvrir que si le calorique est le mouvement lui-même plus ou moins intense imprimé par les chocs des atomes étherés à la matière qui réagit pour restituer la force transmise, l'électricité a un lien de parenté très-étroit avec le calorique; c'est pourquoi les deux agents peuvent se convertir l'un en l'autre. En somme l'électricité est une forme particulière du mouvement; elle est le mouvement emmagasiné, converti en *ressorts moléculaires* très puissants par l'effet d'un dérangement d'équilibre des molécules matérielles. Comme dans tout dérangement d'équilibre deux forces contraires, égales et complémentaires surgissent à la fois et sont les deux fluides qui se recombinent pour rétablir l'état normal. Les deux ressorts inverses se détendent réciproquement, c'est à dire que le mouvement qui avait été emmagasiné à l'aide d'une force mécanique ou électromotrice constitue des ressorts dont l'énergie potentielle *retourne à l'état actif* dans le courant. Celui-ci par suite a la vertu de reproduire le mouvement à son tour, soit par ses réactions, soit par le calorique qu'il transmet.

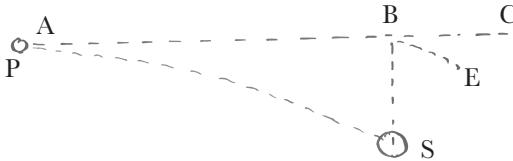
Je ne pourrais vous décrire en quelques mots le phénomène par lequel le mouvement se convertit en électricité pour constituer deux ressorts inverses; cela demanderait trop de développements. Il en est de même du mécanisme de la gravitation. Je me bornerai à vous indiquer par quel moyen le soleil peut se mouvoir dans l'espace. C'est à l'aide de son magnétisme *qui réagit sur l'éther* par attraction d'un côté et répulsion de l'autre en imprimant une vitesse inouïe de rotation aux particules étherées autour des axes des lignes de force qui émergent des pôles, tout en les attirant ou les repoussant selon les pôles dont l'un est passif et l'autre actif, propriétés que l'étude du magnétisme m'a fait connaître. L'astre marche dans l'éther comme le navire sur l'eau frappée par l'hélice.

Ces lois ne cadrent pas tout à fait avec la théorie newtonienne, mais je ne viens pas combattre cette théorie; il suffit de la compléter. Newton⁴ avait trouvé la force attractive, qui est l'un des deux facteurs de la gravitation; à son époque il ne pouvait soupçonner le second facteur, c'est à dire le mouvement transformé et reproduit. En introduisant dans sa théorie l'élément qui fait défaut, les calculs astronomiques restent les mêmes puisqu'il avait supposé la force centrifuge, seulement nous apercevons la cause de cette force centrifuge.

Une force vive ne peut naître d'elle-même et si les globes ont un mouvement de déplacement à travers l'espace, il faut bien qu'il y ait une cause à ce

déplacement— Or, cette cause c'est la force vive transmise à l'étoile par les atomes étherés qui tombent sur elle et dont la puissance d'énergie se transforme en agents physiques qui réagissent.

Et même en supposant que les astres aient reçu une impulsion primitive, et en ne tenant pas compte du frottement sur l'éther qui aurait cependant suffi, pour user et anéantir l'impulsion depuis tant de millions d'années, la gravitation serait encore impossible sans l'intervention des agents physiques. Une démonstration bien simple vous le prouvera—



En astronomie, on dit qu'une planète P lancée dans l'espace de A en C et passant à proximité de l'astre S, dévie lorsqu'elle arrive au point B et se transporte de B en E, en vertu de la loi du parallélogramme des forces. Or, je demande pourquoi la planète ne dévie qu'à partir du point B. Il faut donc supposer l'attraction *nulle de A en B* et active seulement de B en C, mais en vertu de quelle loi ignorée l'attraction n'agit-elle pas avant le point B?

Il suffit de poser la question pour faire comprendre l'erreur. En réalité, la planète attirée dès A commencerait alors à dévier de plus en plus, et elle ne pourrait qu'aller tomber sur S par la diagonale d'après la loi même du parallélogramme. Pour empêcher la chute, il faut absolument l'intervention d'un second facteur qui lui permette de braver l'attraction en lui donnant le mouvement et par suite la force centrifuge. Le second facteur est le mouvement lui-même transformé en agents physiques.

Tout se tient dans la nature. La théorie de l'évolution ne peut que se fortifier, en dépit des résistances, par une meilleure connaissance du mécanisme réel de l'Univers. L'évolution commence dans l'oscillation éternelle de l'éther et fait surgir chaque phénomène l'un après l'autre, en vertu de la loi du mouvement qui est synonyme de vie. Le mouvement lui-même peut se déplacer et se métamorphoser, mais jamais d'anéantir, car si de l'éther il se communique aux étoiles en engendrant leur calorique, des étoiles il retourne par rayonnement dans le sein de l'éther au profit de ses atomes qui soumis à la dilatation incessante de l'oscillation sont avides de calorique et l'absorbent en l'emmagasinant pour le restituer dans un avenir infiniment lointain lorsque le mouvement de condensation remplacera celui de dilatation pour enfanter de nouveaux mondes. Le mouvement est donc indestructible aussi bien que les atomes de l'éther.

Je n'ai pas besoin d'admettre, comme Kant, une température inouïe et incompréhensible (que serait devenue cette chaleur?) dans un chaos inadmissible.⁵ Il suffit que l'éther soit doué d'un calorique latent et tout s'explique par l'oscillation des atomes qui tantôt se refroidissent, tantôt vibrent davantage. Le calorique des

étoiles est engendré par cette condensation poussée à un point extrême. Quant à la température de l'éther, elle est toujours glaciale, tant à cause du non rayonnement de son calorique naturel que parcequ'il exerce une action absorbante, quand il se dilate et produit un froid prodigieux.

La preuve de cette constitution de l'éther, telle que je la donne, est dans l'explication du phénomène de la pesanteur à distance, phénomène qui était très obscur. L'Ether à son état normal n'est ni attractif ni répulsif parceque les deux forces d'attraction et de répulsion se font équilibre, mais si une masse quelconque se trouve au milieu de l'éther, elle en attire les atomes à elle, et comme l'attraction a lieu de tous côtés à la fois, rien n'est encore changé. Si au contraire deux globes se trouvent en présence, ils attirent à eux les particules étherées qui, sollicitées dans deux sens différents, réagissent sur les deux globes; les atomes ne peuvent se porter dans ces deux directions opposées sans se séparer. Or si l'éther se dilate il se refroidit immédiatement et la force attractive domine; la séparation des atomes ne peut donc se faire que dans une minime mesure et ce sont les deux astres qui sont obligés de se porter l'un vers l'autre. On comprend mieux le phénomène en comparant le milieu à une bande de caoutchouc qui tiré de force réagit et attire à son tour quand on le dilate. En se rapprochant les deux globes exercent une attraction de plus en plus vive sur les atomes intermédiaires; le ressort acquis par ces atomes se tend en conséquence et la vitesse de chute devient accélérée.

Le même phénomène a lieu pour les attractions et répulsions entre les pôles des aimants qui font naître des spires dans le milieu autour des axes des lignes de force. Ces spires étant de *véritables courants* sont attirées entre deux pôles différents mais comme elles s'attirent elles-mêmes elles ne peuvent obéir; en se séparant une grande tension se manifeste dans le milieu et la réaction force les deux pôles à se porter l'un vers l'autre. La même tension se présente avec des résultats inverses entre deux pôles semblables; les spires étant de sens opposé sont repoussées par les pôles, mais comme elles se repoussent elles-mêmes elles ne peuvent obéir en se resserrant, et la réaction du milieu force les deux aimants à s'écarter.

Bien d'autres phénomènes électriques, tels que l'induction, s'expliquent par les réactions du milieu intermédiaire; je ne puis vous les indiquer toutes ici. Ce que je vous expose suffit pour vous montrer quelle est la constitution réelle de l'éther, et la force qui fait naître l'évolution.

Persuadé que ces aperçus vous intéresseront et que peut-être vous me ferez l'honneur d'une réponse; je vous prie, Monsieur, de recevoir l'assurance de ma très-haute considération, | Desrousseaux

Mouzon (Ardennes) le 30 Septembre 1879

DAR 162: 173

¹ For a translation of this letter, see Appendix I.

² The most recent French edition of *Origin* was Barbier trans. 1876.

³ Desrousseaux 1879.

⁴ Isaac Newton.

- ⁵ Immanuel Kant was an early proponent of the nebular hypothesis, a theory about the formation and development of planetary systems from nebulous material. For more on the hypothesis and its connection with theories of organic evolution, see Brush 1987; see also *Correspondence* vol. 26, letter from A. S. Wilson, 28 February 1878.

To J. D. Hooker 1 October [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Oct 1st

My dear Hooker

Do not hate me too much for bothering you. L^d Walsingham says G. Sleigh is sober, honest & industrious; & he evidently wishes to give him a good character, but adds “he is likely to be a useful gardener under a good head. He is a strong able working man, but requires instruction & experience”. Now having done the thing most odious to me of making a change in my servants, I think it would be a pity not to get a really good gardener. Pray tell me what you think. I have written to Sleigh that he would not do, but I could easily take him if you thought that I had better; I agreed that I w^d give him 28^s per week to be raised to 30^s; I have sent him a present to make up for his disappointment.²

Can you or M^r Smith aid me?³ Miss Laura Forster, who is staying here says she has known of 6 good gardeners procured through M^r Veitch.; but I do not know the Veitch's.⁴ For love of Heaven advise me | Your affect | C. Darwin

I forgot to thank you for *Tecoma* & *Mimosa*; the former like all other apheliotropic plants proves at present to be a beast.⁵

Pray tell Lady Hooker that I have thoroughly appreciated her Bananas: they were excellent & she the best of women.—⁶

DAR 95: 489–90

- ¹ The year is established by the relationship between this letter and the letter to Thomas de Grey, 26 September 1879.
- ² CD had asked Thomas de Grey, Baron Walsingham, for a character reference for George Sleigh (letter to Thomas de Grey, 26 September 1879; see also letter to George Sleigh, [before 26 September 1879]). Henry Lettington, CD's previous head gardener, became ill in 1879 and seems to have reduced the amount of time he spent working for CD (letter to W. T. Thiselton-Dyer, 1 September [1879]; letter from Emma Darwin to H. E. Litchfield, [20 September 1879], DAR 219.9: 207; CD's Classed accounts (Down House MS)). Grey's reply and CD's second letter to Sleigh have not been found.
- ³ Hooker was director of the Royal Botanic Gardens, Kew; John Smith was curator of the herbarium.
- ⁴ CD had had dealings with the nurserymen James Veitch & Sons since at least 1861 (see *Correspondence* vol. 9).
- ⁵ According the Kew *Outwards book* (Archives, Royal Botanic Gardens, Kew), CD was sent “*Tecoma* (?) *radicans*” and *Mimosa pudica* on 26 September 1879. *Tecoma radicans* is a synonym of *Campsis radicans* (trumpet creeper). In *Movement in plants*, p. 451, CD commented that the stems of *Tecoma radicans*, like the stems of other plants that climbed by rootlets, were apheliotropic. He discussed the movement of the cotyledons of *Mimosa pudica* (the sensitive or shame plant) in *ibid.*, pp. 37, 105 and *passim*.
- ⁶ Hyacinth Hooker had evidently taken over Hooker's task of sending CD bananas from Kew (see *Correspondence* vol. 25, letter to Hyacinth Hooker, [18 November 1877]).

October 1879

To Harvard University Library? 2 October [1879]¹
 Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)
 Oct 2^d

Mr C. Darwin encloses a P. order for 16:8^d, which he is informed is equal to 4 dollars for Prof Scudders Catalogue.—²

AL

Boston Public Library

¹ The year is established by the reference to Scudder 1879; the recipient is conjectured from the publisher of Scudder 1879 (see n. 2, below).

² Samuel Hubbard Scudder's *Catalogue of scientific serials of all countries* was published by the Library of Harvard University in 1879 (Scudder 1879). It appears in CD's Library catalogue (DAR 240), but is no longer in the Darwin Libraries at CUL or Down.

From J. D. Hooker 2 October 1879

Royal Gardens Kew
 Oct 2/79

Dear Darwin

Write to Masters—& I will to Barron at the Hort! Socy.—¹

Smith² is away at Brighton, but I fear he knows of no good man, & we have no one we could recommend. What I fear is, that what is botanically called a good gardener would not like your place at all. nor you him, & that you would do better to improve upon what is technically speaking a 2^d class man.

Ever aff yrs | Jos. D. Hooker

Lubbock has asked us *both* to High Elms on Saturday—though Lady L. is laid up³
 Still we cannot go. I have not forgotten Heliotropic Insectivores. but not begun yet!⁴

DAR 104: 131–2

¹ CD had asked Hooker for recommendations for a new gardener (see letter to J. D. Hooker, 1 October [1879]). Maxwell Tylden Masters was editor of the *Gardeners' Chronicle*; Archibald Farquharson Barron was superintendent of the Royal Horticultural Society gardens in London.

² John Smith was curator of the herbarium at the Royal Botanic Gardens, Kew.

³ Hooker's wife was Hyacinth Hooker. Sir John Lubbock's wife was Ellen Frances Lubbock, who died later in October (letter from Emma Darwin to H. E. Litchfield, [23 October 1879], DAR 219.9: 213).

⁴ No recent letters between Hooker and CD on this subject are known. In *Movement in plants*, p. 450, CD wrote that he had not found insectivorous plants to be heliotropic, which he thought was understandable given that they needed to orientate themselves to catch insects, not receive sunlight. He added that Hooker had exposed the pitchers of *Sarracenia* to a lateral light, but they did not bend towards it.

From Ernst Krause¹ 2 October 1879

Berlin N.O. Friedenstrasse 10. II.
 den 2.10.79

Hochverehrter Herr!

Gestern von meiner Reise zurückgekehrt, habe ich eiligst die Durchsicht der Druckbogen vorgenommen und dieselben an Mr. Dallas zurückgesendet.² Ich hoffe,

dass die Verzögerung, welche durch meine Abwesenheit hervorgebracht worden ist, keine erhebliche Störung verursacht haben wird, da Sie mir früher schrieben, der Verleger beabsichtige das Buch erst zum ersten November herauszugeben.³ Zu verändern habe ich fast nichts gehabt, und auch die Stelle, wo ich (p. 171) irrthümlich the parent, weil im Singular gebraucht, mit Vater übersetzt habe, liess ich stehen, weil eine Veränderung bedeutende Satzveränderungen nöthig gemacht u. den Zusammenhang gestört hätte; die Anmerkung klärt das Missverständniss auf.⁴

Für Ihr liebes Schreiben vom 15 September, welches ich in Oberwesel vorfand, danke ich Ihnen herzlichst; die Bogen sind alle richtig angekommen und bereits übersetzt, so dass der Druck alsbald beginnen kann. M. Reinwald hat sich mit Herrn Alberts in Verbindung gesetzt, will also die Herausgabe jedenfalls machen.⁵

Mit innigsten Wünschen für Ihr Befinden zeichne ich, hochverehrter Herr | Ihr | dankbar ergebenster | Ernst Krause

DAR 92: B43

CD ANNOTATION

Top of letter: '(I have opened my note to put this in, which shows that you will now very soon be able to return proofs for press.)⁶ ink, square brackets in ms

¹ For a translation of this letter, see Appendix I.

² CD had asked Krause to read the proof-sheets of William Sweetland Dallas's translation of Krause's essay on Erasmus Darwin (*Erasmus Darwin*); see letters to Ernst Krause, 3 September [1879] and 15 September 1879.

³ See letter to Ernst Krause, 16 June [1879]; the publisher was John Murray (1808–92). Krause spent much of September in south Germany (letter from Ernst Krause, 1 September 1879).

⁴ See Krause 1879a, p. 411, and *Erasmus Darwin*, p. 171 (Erasmus Darwin referred to 'the embryo, or new animal which partakes so much of the form and propensities of the parent'; E. Darwin 1794–6, 1: 480). In Krause 1880, p. 153, Krause translated 'parent' as *Vorfahren*.

⁵ Letter to Ernst Krause, 15 September 1879. Krause had CD's preliminary notice to his essay on Erasmus Darwin translated into German for publication with an augmented version of his essay (Krause 1880). Karl Alberts was Krause's publisher. Charles-Ferdinand Reinwald published French translations of CD's works, but no French translation of *Erasmus Darwin* has been found.

⁶ CD forwarded Krause's letter to Dallas (see letter from W. S. Dallas, 5 October 1879). CD's note to Dallas has not been found.

To Gustaf Retzius 2 October 1879

Down, Beckenham, Kent. | 🚂 (Railway Station | Orpington. S.E.R.)

Thursday | Oct 2 1879

My dear Sir

I have just heard thro' Mrs Scott¹ that you are in London.— If you could spare the time we should be delighted to see you & Madame Retzius² here Owing to my state of health I am compelled to be careful in not conversing long with any one.

Would it be worth your while to give us the pleasure of seeing you to luncheon tomorrow or Saturday? If so, your best plan would be to leave Charing Cross Station by the 11.25 train, stopping at Orpington St. (which is 4 miles from my house) where you will find a fly.

A return train leaves Orpington at 2.50. This will give us nearly an hour & half of your society, which is a very short time but it is as much as my strength will allow—

I remain my dear Sir | Yours very faithfully | Charles Darwin

Mrs Darwin presents her compliments to M^{me} Retzius & hopes to have the pleasure of seeing her with you—

P.S. I have just found out that we must send a visitor now staying here to the Train at 2^o50' on Saturday; so that if you come on that day, pray do not take a fly for the return journey, as you can return in my carriage.³

In Haste to catch the Post. | C.D.

LS(A)

Centrum för vetenskapshistoria, Kungl. Vetenskapsakademien (Gustaf Retzius arkiv, Inbundna serien, Engelsmän I, s 37)

¹ Ann Scott was an old friend of the Darwins.

² Anna Wilhelmina Hierta-Retzius.

³ Gustaf Retzius declined CD's invitation (see letter from Gustaf Retzius, 3 October 1879); according to Emma Darwin's diary (DAR 242), Ann Scott and her sister, Sarah Lucas, and her daughter Susan Fisher Scott visited Sarah Elizabeth Wedgwood at Down on Saturday 4 October 1879; Lucas and S. F. Scott stayed until 6 October (letter from Emma Darwin to Ida Farrer, [6 October 1879] (DAR 258: 65r)).

To C. G. Semper 2 October 1879

Down, | Beckenham, Kent.

Oct 2nd 1879

My dear Prof Semper,

I thank you for your extremely kind letter of the 19th, & for the proof sheets. I believe that I understand all, excepting one or two sentences where my imperfect knowledge of German has interfered.¹ This is my sole & poor excuse for the mistake which I made in the second edit of my Coral book.² Your account of the Pellew Islands is a fine addition to our knowledge on Coral reefs. I have very little to say on the subject: even if I had formerly read your account & seen your maps, but had known nothing of the proofs of recent elevation & of your belief that the Islands have not since subsided, I have no doubt that I should have considered them as formed during subsidence. But I should have been much troubled in my mind by the sea not being so deep as it usually is round atolls, and by the reef on one side sloping so gradually beneath the sea; for this latter fact, as far as my memory serves me, is a very unusual & almost unparalleled case. I always foresaw that a bank at the proper depth beneath the surface would give rise to a reef which could not be distinguished from an atoll formed during subsidence.³ I must still adhere to my opinion that the atolls & barrier-reefs in the middle of the Pacific & Indian oceans indicates subsidence;⁴ but I fully agree with you that such cases as that of the Pellew Islands if of at all frequent occurrence, would make my general conclusions of very little value. Future observers must decide between us. It will be a strange fact if there has not been subsidence of the beds, of the great oceans and if this has not affected the forms of the Coral reefs.⁵

In the 3 last pages of the last sheet sent, I am extremely glad to see that you are going to treat of the dispersion of animals.⁶ Your preliminary remarks seem to me quite excellent. There is nothing about M. Wagner as I expected to find.⁷ I suppose that you have seen Moseley last book, which contains some good observations on dispersion.⁸

I am glad that your 'Biology' will appear in English, for then I can read it with ease.⁹

Pray believe me | Yours very sincerely | Charles Darwin

LS(A)

Universitäts- und Landesbibliothek Düsseldorf (slg 60/Dok/61)

¹ Semper's letter has not been found. The proof-sheets, which have not been found in the Darwin Archive-CUL, were for Semper's *Die natürlichen Existenzbedingungen der Thiere* (The natural conditions of existence of animals; Semper 1880).

² In *Coral reefs* 2d ed., p. 223, CD stated that the Pelew Islands (Palau) were in an area of subsidence; he added that there were some contraindications, and noted Semper's doubts that the whole group had subsided, citing Semper 1863. In chapter 8 of Semper 1880, Semper argued that the islands were in fact in an area of upheaval.

³ See *Coral reefs* 2d ed., p. 162.

⁴ For CD's argument that atolls and barrier reefs formed in areas of subsidence, see *Coral reefs* 2d ed., pp. 117–26.

⁵ Semper's reply to this letter has not been found, but in a note to his chapter on the Pelew islands in the English translation of Semper 1880 (Semper 1881, pp. 455–6), he reproduced CD's letter (omitting the last two paragraphs), and wrote that although subsidence may have been in some cases the sole cause of the formation of an atoll, subsidence was not sufficient to explain all the conditions and relations of coral-reefs.

⁶ Semper evidently included the first page of chapter 9, which was titled 'Currents, viewed as a means of extending or hindering the distribution of species' (the chapter title in the English translation, Semper 1881). The first page of chapter 9 was in the same signature as the last pages of chapter 8.

⁷ Semper discussed Moritz Wagner's theory that the formation of new species was dependent upon geographical isolation later in chapter 9 (Semper 1880, 2: 109–14; see also Semper 1881, pp. 288–93). He had written that he intended to discuss Wagner's theory in his letter of 6 December 1878 (*Correspondence* vol. 26).

⁸ Henry Nottidge Moseley's *Notes by a naturalist on the 'Challenger'* (Moseley 1879), contains remarks on the distribution of plants and animals throughout.

⁹ Semper 1880 was translated as *The natural conditions of existence as they affect animal life* (Semper 1881). CD's lightly annotated copy is in the Darwin Library-CUL; his copy of Semper 1880 is at the Linnean Society.

From Gustaf Retzius 3 October 1879

31 Cambridge Street, Hyde Park Sq. L—n

3/10 79.

Dear Sir,

Last night I received your exceedingly kind invitation to come down to your house.¹ It would have been a very great honour and pleasure to me to have seen you, but hearing on my arrival here from Professor Hæckel² that you were out of health and knowing how very precious your time is for science and humanity I did not want to disturb you for a moment and do not feel it right to come now and fatigue you by a visit. I believe that the work I am now engaged in—the organ of hearing of the vertebrates, from that of the fishes to that of man—will interest you. I have been unable to get on with it as far as I hoped; I came to London to get exotic batrachians and reptiles, but I have been very unsuccessful in this. When my work once will be

ready, I hope to have the honour of sending it to you or perhaps, if you will allow it then, to bring it myself.³

M^{rs} Retzius⁴ joins with me in kindest regards and thanks to M^r Darwin.

I remain, dear Sir, | your most devoted and faithful | Gustaf Retzius

DAR 176: 123

¹ See letter to Gustaf Retzius, 2 October 1879.

² Ernst Haeckel was in London in early September 1879 (letter from Ernst Haeckel, 30 August 1879); he visited CD on 5 and 6 September (Emma Darwin's diary (DAR 242)).

³ CD's copy of the first volume of Retzius 1881–4 is in the Darwin Library–Down; Retzius sent it by post (see letter to Gustaf Retzius, 21 December 1881, *Calendar* no. 13574b).

⁴ Anna Wilhelmina Hierta-Retzius.

To R. F. Cooke 4 October [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Oct 4th

My dear Sir

My preliminary notice has long been corrected & ready for press; & M^r Dallas has long had first proofs of Krause's part, but there has been delay about the latter as K. was away from home & M^r Dallas wanted him to read over the Translation. I heard, however, this morning from Krause that he has returned proofs to M^r D. who will now merely have to look at Revises.²

Title-Page & Preface all complete.— The Autotype Portrait is all ready to be printed off.—³ Really my opinion is worth **nothing**, but if I had published the book on commission, I sh^d have printed off only 1000 copies.—⁴ I am very glad that type will be kept up. Will you kindly give order for stereotype plates of type & 2 woodcuts for M^{ess} Appleton of New York. They will arrange about the Portrait—⁵

With respect to advertisement, it does not agree with Title, but it is perhaps better, as giving better notion of what the little book is; but you must decide whether it is too great a departure from Title: I give Title on Back⁶

Yours very sincerely | Ch. Darwin

Erasmus Darwin
by
Ernest Krause
translated by W. D. Dallas
with a preliminary Notice
by
Charles Darwin

To Krause's part there is a fly-title

The Scientific Works
of
Erasmus Darwin

National Library of Scotland (John Murray Archive) (Ms. 42152 ff. 362–3)

- ¹ The year is established by the relationship between this letter and the letter from Ernst Krause, 2 October 1879.
- ² See letter from Ernst Krause, 2 October 1879 and nn. 2 and 3. CD had asked William Sweetland Dallas to translate an updated version of a German essay on Erasmus Darwin by Ernst Krause that was first published in *Kosmos* (Krause 1879a); the revised essay was published together with CD's preliminary notice under the title *Erasmus Darwin*.
- ³ The Autotype Company produced a photograph of a portrait of Erasmus Darwin for the frontispiece (letter to John Murray, 4 September 1879 and n. 6).
- ⁴ Cooke's letter giving this information has not been found. John Murray and CD had agreed to publish the book at Murray's risk (letter from R. F. Cooke, 6 September 1879, and letter to R. F. Cooke, 9 September 1879). Evidently Cooke had suggested 1000 copies and this was the number printed (letter to R. F. Cooke, 18 November [1879]).
- ⁵ D. Appleton & Co. published the US edition of *Erasmus Darwin* in 1880. The woodcuts were of Elston Hall and Breadsall Priory (*Erasmus Darwin*, pp. 3, 125).
- ⁶ The advertisement has not been found in the Darwin Archive-CUL. In the *Publishers' Circular*, 16 October 1879, p. 878, the book was advertised as 'A sketch of the life of Erasmus Darwin. By Charles Darwin, F.R.S. With a study of his scientific works by Ernst Krause. Translated by W. S. Dallas.'

From W. P. Garrison 4 October 1879

The Nation,¹ 5 Beekman Street (P.O. Box 25), | New York,
Oct. 4. 1879

Dear Sir:

By this mail I send you a little book compiled (originally for the benefit of my children) from your "Journal of a Voyage", and which I hope you will regard less as an unauthorized appropriation of your labors, than as an humble tribute to your surpassing services to mankind.² Though the publishers have been very liberal in carrying out my wishes in regard to the manufacture of the book, it still falls short of my ideal in the illustrations. I was particularly disappointed in not being able to give the portraits of your former colleagues, Captains King and Fitzroy, but I sought in vain to obtain them and others on both sides of the Atlantic.³

Craving, as I do, your indulgence for the liberty thus taken with your writings, I feel a delicacy in expressing the full extent of my admiration for your genius, and for your extraordinary success in redeeming the human mind from error. It may gratify you more to learn that during the last illness of my father, the late William Lloyd Garrison, I had the pleasure of calling his attention to your remarks on the subject of slavery, which I have carefully preserved in my abridgment, and which shed, for him, a new and welcome light on your character as a philanthropist. In combating the enemies of freedom in this country, he emancipated himself from that theology the destruction of which is perhaps your highest title to the honors of your own time and the blessings of posterity.⁴

Believe me, with sentiments of profound esteem and gratitude, | Yours faithfully,
| Wendell P. Garrison

D: Charles Darwin.

DAR 165: 8

- ¹ Garrison was literary editor for the *Nation*, a US periodical.
- ² Garrison's edited abridgement and rearrangement of *Journal of researches* was published under the title *What Mr. Darwin saw in his voyage round the world in the ship 'Beagle'* (C. R. Darwin 1880). It included two prefaces (one for parents and one for children) and 100 illustrations, and was divided into four sections: animals, humans, geography, and nature. Garrison also enclosed memorials of his father, William Lloyd Garrison (see letter to W. P. Garrison, 16 October 1879).
- ³ Philip Gidley King was a midshipman and Robert FitzRoy was commander of HMS *Beagle* during CD's five-year voyage.
- ⁴ For CD's strictures on slavery, based on his experiences in Brazil, see *Journal of researches* 2d ed., pp. 20–1, 24–5, and 499–500, and C. R. Darwin 1880, pp. 113–16; see also A. Desmond and Moore 2009. W. L. Garrison was a prominent US abolitionist and religious reformer; he died in May 1879 (ANB).

To W. P. Garrison [after 4 October 1879]¹

It will ever be a deep gratification to me to know that your Father, whom I honor from the bottom of my soul, should have heard and approved of the few words which I wrote many years ago on Slavery.²

Incomplete

Garrison and Garrison 1885–9, 4: 199 n. 1

¹ The date is established by the relationship between this letter and the letter from W. P. Garrison, 4 October 1879.

² William Lloyd Garrison. See letter from W. P. Garrison, 4 October 1879 and n. 4.

From W. S. Dallas 5 October 1879

21 Alma Square
5 October 1879

Dear M^r Darwin

I went into town yesterday with the intention of writing to you, asking whether you had heard anything from D^r Krause, thinking that, if your book was to appear early in November, he was running matters rather close.— To my great satisfaction I found his packets waiting for me.—¹ He has made very few marks on the proofs, & of these two or three are indications of misprints or omitted letters which somehow escaped my notice.— In the first page, however, where it is said that your ancestor “deserves considerable credit in connection with the history of the Darwinian theory” he suggests that instead of “history” we should say “præhistory” a word which is hardly admissible, & the only way that I see of getting in the idea intended to be conveyed by it, would be a complete alteration of the construction of the sentence.— But I don't think it is at all necessary,— the history of anything may surely be held to include an account of those things which led up to its full development, just as we used to read about ancient Britons (& admire their pictures) in the old school histories of England, & about Romulus & Remus & their somewhat eccentric nursing in those of Rome.—²



THE ROBBER-CRAB.

The robber-crab.
C. Darwin 1880, p. 87.

By permission of the Whipple Library, University of Cambridge.

D^r Krause has bothered me dreadfully with a postscript to his letter in which he says:—“Mir ist auf Seite 30 die Schreibweise “charus” aufgefallen; ist das altenglische Orthographie oder Druckfehler?”³ Now I can find nothing like “charus” on the thirtieth page of the proof, nor indeed anywhere else, for I have just read through the whole in search of it.— From his reference to “altenglische Orthographie” it ought to occur in some quoted passage, but I can see nothing like it.—

One of his marks leads to a query, to settle which I must refer to Buffon,⁴ which I will do tomorrow morning & then at once send in the proofs for correction.— Of course I had better see revises.—

Believe me | Yours very truly | W. S. Dallas

I return Krause’s letter;— you had already settled the “parent” question.⁵

DAR 99: 127–8

¹ Ernst Krause had been checking Dallas’s translation from German of his portion of a book on Erasmus Darwin that he co-authored with CD (*Erasmus Darwin*; see letter from Ernst Krause, 2 October 1879).

² In the printed book, ‘history’ was retained (*Erasmus Darwin*, p. 131). According to legend, Romulus, the founder of Rome, and Remus, his twin brother, were suckled by a wolf.

³ ‘On page 30, I noticed the spelling “charus”; is this Old English orthography or a typographical error?’ Krause’s letter to Dallas has not been found. The word appears in *Erasmus Darwin*, p. 30, in the Latin phrase ‘multis mihi nominibus charus’ (dear to me by many names), quoted in a letter from Erasmus. ‘Carus’ is the correct form, but ‘charus’ was a common misspelling. Erasmus’s original letter has not been found.

⁴ Krause referred to Georges Louis Leclerc, comte de Buffon, several times in his section of *Erasmus Darwin*. See also letter from W. S. Dallas, 29 July 1879.

⁵ CD had sent Dallas Krause’s letter of 2 October; see letter from Ernst Krause, 2 October 1879 and n. 6.

To J. D. Hooker 5 October [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Oct 5th

My dear Hooker

I write one line to thank you very much about the gardener. I despatched a letter this morning telling the young man about the place, terms &c.— I will keep all the documents & return them to you if the man does *not* wish to come here.—²

Ever yours | C. Darwin

It is very good of you remember about heliotropism of insectivorous plants.—³

Halls (dealers) (29 July 2009)

¹ The year is established by the relationship between this letter and the letter from J. D. Hooker, 2 October 1879.

² Hooker was helping CD find a new gardener; see letter to J. D. Hooker, 1 October [1879], and letter from J. D. Hooker, 2 October 1879. The prospective gardener was probably William Duguid, CD’s head gardener from 1879 to 1880 (CD’s Classed accounts (Down House MS), letter from Emma Darwin to H. E. Litchfield, [4 November 1879], DAR 219.g: 214). The letter to him, and the documents concerning him, have not been found.

³ See letter from J. D. Hooker, 2 October 1879 and n. 4.

To Arnold Dodel-Port 6 October 1879

Down | Beckenham
Oct 6. 1879

Dear Sir,

Pray accept my thanks for the 3rd part of your magnificent atlas which you have been so good as to send me.¹ It seems to me admirably done & would be very valuable to any one engaged in teaching

Dear Sir | Yours faithfully | Charles Darwin

LS

Zentralbibliothek, Zürich (Ms. Z VIII 417.2)

¹ Dodel-Port had sent the third part of his and his wife Carolina's botanical atlas (Dodel-Port and Dodel-Port 1878–83). See also letter to Arnold Dodel-Port, 12 February 1879.

From J. D. Hooker 7 October 1879

Royal Gardens Kew
Oct 7/79

Dear Darwin

Please get me *good* specimens of enclosed from Miss Wedgwood Garden¹ I want to draw it, & also roots (if perennial):

In haste | Yrs | J D Hooker

Sarracenia & *Darlingtonia* do not care for "light & sweetness" hitherto²

DAR 104: 133

¹ Emma Darwin's sister, Elizabeth Wedgwood, lived in Down. The enclosure has not been found.

² *Sarracenia* (trumpet pitcher-plants) and *Darlingtonia californica* (the California pitcher-plant; *Darlingtonia* is a monospecific genus) are insectivorous plants. Hooker had evidently found that they were not heliotropic (see letter from J. D. Hooker, 2 October 1879 and n. 4). 'Light & sweetness': an ironic reference to the idiom 'sweetness and light', popularised by Matthew Arnold's *Culture and anarchy* (Arnold 1869).

To Karl Alberts 8 October 1879

Down, | Beckenham, Kent.
Oct 8. 1879

Dear Sir,

M^r Murray has forwarded to me your card, as he does not read German. He will supply clichés of the two wood-cuts at a trifling cost. With respect to the phototype I believe that I sent a copy to D^r Krause; any how I have not one left, but could of course procure one¹ I much doubt whether it would be possible to make a good copy from a photograph, the price per 1,000 copies of those in the English edition will be £7; for a large size either £7–17^s–6^d or 8^l–2^s–6^d per 1,000. If you determine to have copies printed in England you had better send me the exact size of your page & then M^r Murray could give the order

Dear Sir | Yours faithfully | Ch. Darwin

LS

Erbengemeinschaft Alberts (private collection)

¹ Karl Alberts was the director of Ernst Günther, the firm publishing the German version of *Erasmus Darwin*; the English version was published by John Murray. *Erasmus Darwin* contained two woodcuts (of Elston Hall, p. 3, and Breadsall Priory, p. 125), and a photograph of a painting of Erasmus Darwin (1731–1802) by Joseph Wright as a frontispiece.

To Daniel Mackintosh 9 October 1879

Down | Beckenham Kent
Oct 9/79.

Dear Sir.

I hope that you will allow me to have the pleasure of thanking you for the very great pleasure which I have derived from just reading your paper on erratic blocks— The Map is wonderful. & what labour each of those lines show!¹ I have thought for some years that the agency of floating ice, which nearly $\frac{1}{2}$ a century ago was overrated, has of late been underrated—² You are the sole man who has ever noticed the distinction suggested by me between flat or planed scored rocks & mamillated scored rocks.—³

I do not think that I ever published any notice on the Ashley Heath Boulder— nor can I tell where to look for my memoranda of its size, when I had the ground excavated on one side & partly beneath it—but I remember that the hole was deep.—⁴ The block rested on *rounded* lumps of new Red Sandstone about as big as a child's or man's head; & one of these had been split into two halves & was deeply-scored, though the scores were short. I thought at the time that the boulder had fallen off floating ice, & had crushed & scored the block. If it had fallen through the air so soft a rock would have been crushed into powder—

with great admiration for your paper | I remain dear Sir. | Yours faithfully
| Ch Darwin.

Copy

DAR 146: 333

¹ Mackintosh's paper was 'Results of a systematic survey, in 1878, of the directions and limits of dispersion, mode of occurrence, and relation to drift-deposits of the erratic blocks or boulders of the West of England and east of Wales' (Mackintosh 1879); the map, 'Shewing the positions, limits and directions of dispersion, and intercrossing of the courses of the boulders of the W. of England and eastern part of N. Wales' is plate 22.

² Charles Lyell had argued for the role of floating ice in the transport of rocks in Lyell 1830–3, 1: 299 and 3: 50, before Louis Agassiz presented his theory of glaciation to explain a wide range of geological phenomena (Agassiz 1837). On the reception of these two theories, and their place in CD's thinking, see Mills 1983 and Rudwick 1969.

³ See Mackintosh 1879, p. 448, and CD's 'Ancient glaciers of Caernarvonshire', pp. 186–7, where CD speculated that dome-formed rocks indicated the action of glaciation, and flat or angular rocks the action of icebergs.

⁴ In Mackintosh 1879, p. 442, Mackintosh noted that a boulder that he saw on Ashley Heath was probably the same as one described by CD; see also *Correspondence* vol. 9, letter to Charles Lyell, 10 September [1861] and n. 8. CD had written about the boulder in 1842 in his 'Ancient glaciers of Caernarvonshire', p. 186 n. Ashley Heath is in Staffordshire. CD's note on the boulder, made in June 1846, when he was visiting relatives at Maer, is in DAR 5: B31–2.

From T. H. Farrer 12 October 1879

Abinger Hall, | Dorking. | (Gomshall S.E.R. | Station & Telegraph)

12 Oct/79

My dear Mr Darwin,

Now that you have sent Ida back to us and I have had a talk with her, I write a line at once to say that I give up my wish to keep the matter secret any longer, which indeed, after this visit, would be very difficult. This will, I believe, be a great relief to every one both here and at Down. There is not much use in dwelling on by-gones—I will only say that when I wished the matter postponed it was with a view to a very different state of things than that which has actually occurred. No one seems to have been able to keep to my conditions, and I dare say they were really impracticable.¹ For one thing—and this seriously affects my own past and present views—I could not then be aware how strong and real the attachment was and is.

I will therefore at once write to my own family and tell them about it; and release you and yours from any further attempt at concealment. I will also write a line to Horace today.²

I will only add—as I have been the great obstacle hitherto—that if his health and work stand, as I trust they will, I shall personally hope to get as much happiness from the connection as I could from any marriage which carries her away from home³

Believe me | Very sincerely yours with every kind wish to yourself & Mrs Darwin
| T H Farrer

DAR 164: 93

¹ Horace Darwin and Ida Farrer had announced their wish to become engaged in June, but T. H. Farrer, Ida's father, after initially opposing the match or insisting on a delay of a year or two, had stipulated a wait of some months before it was made public, during which time the couple were not to meet (letter from Emma Darwin to Sara Darwin, [1 July 1879] (DAR 219.1: 123); letter from T. H. Farrer to Horace Darwin, [August–September 1879] (Down House, EH 88207899)). Ida had visited Down from 2 October (Emma Darwin's diary (DAR 242), letter from Emma Darwin to H. E. Litchfield, [29 September 1879] (DAR 219.9: 211)). See also letter from CD to T. H. Farrer, 27 June [1879].

² Farrer's letter to Horace has not been found.

³ Farrer had objected to Horace as a son-in-law on the grounds that his health was poor and his career uncertain (letter from T. H. Farrer to Horace Darwin, [August–September 1879] (Down House, EH 88207899)).

To T. H. Farrer 13 October 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

Oct 13th 1879

My dear Farrer

I thank you cordially for your letter, which has filled us all with joy; & Emma particularly desires me to say how very happy it has made her.¹ It is as you say a golden rule not “to dwell on by-gones”; but let me repeat that I was not in the least surprised at your demurring to the marriage on account of Horace's weak health & his not being able to do much work.² The match, moreover, is a poor one for Ida in

a worldly point of view; & she is altogether charming.— On the other hand I must say that Horace has as sweet a temper & as unselfish a disposition as anyone whom I have ever known; & this is of more importance for the happiness of married life than wealth, grandeur or distinction, & more even than strong health.—

I beg you to give my love to Effie,³ & once again accept my very true thanks.

Believe me, my dear Farrer | Ever yours sincerely. | Charles Darwin

English Heritage, Down House (EH 88207898)

¹ See letter from T. H. Farrer, 12 October 1879. Farrer had withdrawn his objections to making public the engagement of Horace Darwin and Ida Farrer.

² See letter from T. H. Farrer, 12 October 1879 and n. 3.

³ Effie Farrer was T. H. Farrer's wife and CD and Emma Darwin's niece.

From W. M. Hacon 13 October 1879

18, Fenchurch Street, | London, | E.C.
13th Oct^r 1879

My dear Sir

Under the circumstances, mentioned in your letter of Friday, I think you cannot do better than propose to settle, upon your son about to be married, the same amount as you settled on your son Francis viz £5000.—¹

But this opinion is subject to a qualification. Marriage-settlements are frequently,—perhaps too often,—the subject of bargains more or less keen. The friends of the Lady make the amount of the fortune, settled on her part, depend upon the sum settled on the part of the gentleman and the friends of the latter are thus induced to increase the amount he puts into settlement. The inducement is that what is put into settlement on the part of the lady is an absolute irrevocable benefit to the husband & the issue of the marriage and is not dependant upon subsequent action on the part of the Lady's parents or friends.

If therefore by increasing somewhat the sum you settle on your son you can procure an increase of the amount settled on the part of the Lady it may be worth while your making such an increase;—and this notwithstanding that there may be to you something disagreeable in the bargain suggested.

Should you for the above, or any other, reason decide to settle more than £5000 the addition might, if you thought fit, be made in the form of an engagement, to be expressed in the settlement, that you will, by your will give your son, subject to his mothers life interest, the sum by which the £5000 is increased.—

I am | My dear Sir | Yours sincerely | W^m M Hacon

Charles R. Darwin Esq^r

DAR 166: 22

¹ CD's letter to Hacon of 10 October 1879 has not been found. Horace Darwin was engaged to marry Ida Farrer. Francis Darwin had married Amy Ruck in 1874 (see *Correspondence* vol. 22, letter to W. M. Hacon, 16 April [1874]). According to CD's Investment book (Down House MS), p. 134, CD

settled £5000 of North Eastern Railway debenture stock each on his children Henrietta Emma Litchfield, Francis Darwin, and Horace Darwin, on their respective marriages.

From B. J. Sullivan 13 October 1879

Bournemouth

Oct 13/79

My dear Darwin

I find after all that M^r Bridges reserved J. Button's grandson for Beagles, by getting the lady who had taken on herself to provide for him to take another orphan and though he did not write to me about it he has sent them the list of orphans for publication; & forgetting that I told him the boy should have FitzRoys name added, and be called "James FitzRoy Button" he has put my name instead of FitzRoys—and called him "James Button Sullivan"—¹ This I will have altered, as M^{rs} FitzRoy likes the name I proposed & so we all did— She and her daughters wish to give 3£ a year towards the 10£ required; I am going to give 2£, & I will ask you again to give the 1£ you intended when it was first mentioned.² I have no doubt. Hamond Mellesh Osborne & Stokes will do the same. Johnson is so ill, & his memory was so weak the last time I saw him, that I will not say anything to him about it.³

I hope you are all well. My wife & I spent July & August at different places in Devon & Cornwall. Our daughters are still absent. We are pretty well—but I cannot get my legs strong again to walk as I used until last Summer. but I can manage three or four miles if I do not mind a little pain.⁴

My wife joins me in kind regards to M^{rs} Darwin and yourself and all your circle | Believe me | very sincerely | your's | B J Sullivan

I dont think I ever sent you a young Falkland Island *Tree* (Veronica). I sent Hooker one some time since.⁵ I could send you a nice little plant if you care for it. they require a rather warm border for a severe winter.

DAR 177: 310

¹ Thomas Bridges was a missionary at Ushuaia in Tierra del Fuego. Sullivan had proposed that former members of the *Beagle* crew adopt one of Jemmy Button's grandsons (see *Correspondence* vol. 26, letter from B. J. Sullivan, [14–20] April [1878]). Jemmy Button, originally named Orundellico, was a Fuegian of the Yahgan tribe who was brought to England in 1830 by Robert FitzRoy, the captain of HMS *Beagle*, and returned to Tierra del Fuego in 1833; he died in 1861. See also *Correspondence* vol. 26, letter to B. J. Sullivan, 22 April 1878, and letter from B. J. Sullivan, 10 May 1878.

² The grandson appears under the name James Fitzroy Button and his sponsors are listed as 'Mrs Fitzroy, and Officers of H.M.S. "Beagle"' in the *South American Missionary Magazine*, 2 January 1882, p. 14. The boy's Yahgan name was Cooshaipunjiz. Maria Isabella FitzRoy was Robert FitzRoy's widow; his daughters were Fanny, Katherine, and Laura Maria Elizabeth FitzRoy.

³ Robert Nicholas Hamond, Arthur Mellersh, Alexander Burns Osborne, John Lort Stokes, and Charles Richardson Johnson had served on the *Beagle* during CD's 1831–6 voyage.

⁴ B. J. Sullivan's wife was Sophia Sullivan; their daughters were Frances Emma Georgina Sullivan, Sophia Henrietta Sullivan, and Catherine Sabine Trench. See also letter from B. J. Sullivan, 9 June 1879.

⁵ Probably *Veronica elliptica*, a tall shrub: there were reportedly no trees on the Falkland Islands (C. H. Wright 1911, pp. 313, 327). Joseph Dalton Hooker was the director of the Royal Botanic Gardens, Kew.

From Daniel Mackintosh 14 October 1879

Whitford Road, | Tranmere, | Birkenhead,
14th Oct. 1879.

Dear Sir,—

I can scarcely find words to express the extent to which I have been gratified by the opinion you have formed of my labours.¹ It is to you that I owe the circumstance of my having made a special subject of boulders. As early as 1843 I lectured in different English towns on your discoveries in the southern part of S. America, illustrating the subject by modelling a heap of sand, with salt to represent ice.² I believe Sir James Hall briefly suggested floating ice as a means of transporting stones, but you were the first to discover and explain the precise mode in which the process of transportation, from its commencement to its termination, was effected.³ My recent paper in the *Quarterly Journ. Geol. Soc.* was partly the outcome of a small pecuniary grant from the Government Committee of the Royal Society, which I spent in railway expenses. The Committee will be able to see most of the results in the paper (a part has not yet been published) but I cannot help wishing that you would allow me to let the secretaries know the opinion you have expressed of my labours when I next communicate with them.⁴ Should you have no objections to this you need not take the trouble to write again.

With many thanks, | I am, Dear Sir, | Your faithful Servant, | D. Mackintosh.
| Lecturer on Physical Geography, Liverpool College.

P.S. I was very much interested by your statement about the Ashley Heath boulder. I fancy it must have gone from some of the mountains surrounding Ennerdale, Cumberland.⁵

DAR 171: 8

¹ See letter to Daniel Mackintosh, 9 October 1879.

² According to his obituary in the *Geological Magazine* 3d decade 8 (1891): 432, Mackintosh was well known in the south of England, where he lectured on astronomy, geology, physical geology, and ethnology 'with considerable success'. For CD's discoveries in South America, see *Journal of researches* (published in 1839).

³ Hall 1812, pp. 146, 157–60. See also CD's 'Ancient glaciers of Caernarvonshire', and Mills 1983.

⁴ Mackintosh had been awarded £25 from the annual government grant to the Royal Society of London of £1000 (*Proceedings of the Royal Society of London* 28 (1878–9): 75). He acknowledged the support of the Government Grant Committee of the society in Mackintosh 1879, which was published in the August 1879 issue of the *Quarterly Journal of the Geological Society of London*. The secretaries of the Royal Society were Thomas Henry Huxley and George Gabriel Stokes. The last part of Mackintosh's paper was postponed until the following year, and included remarks on the Ashley Heath boulder in CD's letter (Mackintosh 1880).

⁵ See letter to Daniel Mackintosh, 9 October 1879 and n. 4.

To B. J. Sullivan 15 October 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Oct 15. 1879

My dear Sullivan,

I have pleasure in enclosing a cheque for £2 for the Buttonian subscription; & I hope the whole plan will succeed. I am glad to hear a fairly good account of your

health and as you can manage a walk of 3 or 4 miles, you are a long way ahead of me in strength.¹ I have no news of any kind to tell you, for my life is passed in observing plants.²

With all good wishes.

Yours very sincerely | Ch. Darwin

P.S. Many thanks for the offer of the Veronica, which I will not accept as tender plants will not do in our clay soil & at this considerable altitude³

LS

Sullivan family (private collection)

¹ See letter from B. J. Sullivan, 13 October 1879. Sullivan had asked CD for his contribution towards the sponsorship of James FitzRoy Button (Cooshaipunjiz), an orphan grandson of Jemmy Button (Orundellico).

² CD's research on movement in plants was published in 1880 (*Movement in plants*).

³ See letter from B. J. Sullivan, 13 October 1879 and n. 5. Down is 578 feet (176 metres) above sea level.

From Emily Beke 16 October 1879

Maison Colbert | Pau

16: Oct: 79

Dear Sir,

I beg to thank you most gratefully for your very very kind response to my letter, and to assure you that I shall never cease to appreciate your great kindness, though I deeply regret that there should be such real necessity for it. However, I have got over my worst difficulties, I trust, owing to the generous & continued help of my friends—¹

Thanking you for your good wishes for my health & success—²

I remain | Sir | Yours sincerely & obliged | Emily Beke

Charles Darwin Esq

DAR 160: 125

¹ On 14 October 1877, CD recorded a charitable donation of £5 to Beke in his Classed account books (Down House MS). He had also sent her a gift in 1877 (*Correspondence* vol. 25, letter to [Agnes Taylor?], 22 October [1877]). Beke's previous letter has not been found.

² CD's letter to Beke has not been found.

To W. P. Garrison 16 October 1879

Down, | Beckenham, Kent.

Oct 16. 79

Dear Sir,

I am much obliged for your kind present of the beautifully illustrated volume of the Voyage of the Beagle, which I consider no small honour. I thank you also for the Memorials of Garrison, a man to be for ever revered.¹

Dear Sir | Yours faithfully | Charles Darwin

LS

Private collection

¹ See letter from W. P. Garrison, 4 October 1879. Garrison had sent his abridgement of *Journal of researches (What Mr. Darwin saw on his voyage round the world; C. R. Darwin 1880)*, and had probably sent a copy of the speech given at a memorial gathering for his father, the leading anti-slavery campaigner William Lloyd Garrison, by the freed slave Frederick Douglass (Douglass 1879).

To Daniel Mackintosh 16 October 1879

Down, | Beckenham, Kent.

Oct 16. 79

Dear Sir,

You are quite welcome to show my letter to the secretaries, as it gives my deliberate conviction; but I beg you to say that it was written without the least notion that any one would see it except yourself, so probably it is badly expressed.¹ It has pleased me much that my old paper should have stimulated you to such excellent work.² If in any future papers you use the expression of 'overshot loads', I think you ought to explain your meaning rather more fully, for I failed to feel sure about it.³

I remain, dear Sir, | Yours faithfully | Charles Darwin

LS

Cleveland Health Sciences Library (Robert M. Stecher collection)

¹ In his letter of 14 October 1879, Mackintosh had asked CD's permission to show CD's letter to him of 9 October 1879, praising his article on erratic boulders (Mackintosh 1879), to the secretaries of the Royal Society of London, which had given him a grant towards his research. The secretaries of the Royal Society were Thomas Henry Huxley and George Gabriel Stokes.

² In his paper, Mackintosh had referred to CD's 'Ancient glaciers of Caernarvonshire' (Mackintosh 1879, pp. 442, 448).

³ See Mackintosh 1879, p. 428. Mackintosh used the term 'overshot boulder-loads' to describe groups of boulders that had fallen close to each other but apparently in separate events. He did not use the term in later articles in the *Quarterly Journal of the Geological Society of London*.

To J. D. Hooker 17 October [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Oct 17th.—

My dear Hooker

I thank you heartily for your most kind congratulations about Horace, which rejoices us deeply.²

I happened to know of the reference to the work on Heliotropism in, I think, Olivers hand-writing.³ But I write now for the *chance* of your having any or all of the 3 kind of seeds, *on next page*: I want much to see how the seedlings, which are so peculiar break through the ground.—

Ever yours | Ch. Darwin

Delphinium nudicaule

Ipomœa leptophylla

Megarrhiza Californica

(These plants are mentioned by Asa Gray in New Edit of Bot. Text-Book p. 21, 22)⁴

Do not write if you have not the seeds

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: ff. 185–6)

- ¹ The year is established by the allusion to Horace Darwin's engagement, which was made public in October 1879 (letter from T. H. Farrer, 12 October 1879).
- ² Horace was engaged to Ida Farrer (see letter from T. H. Farrer, 12 October 1879).
- ³ Hooker's letter has not been found, and the work on heliotropism has not been identified. Oliver: Daniel Oliver.
- ⁴ *Delphinium nudicaule* is red larkspur; *Ipomoea leptophylla* is the bush morning-glory; *Megarrhiza californica* is a synonym of *Marah fabacea*, the California manroot. Gray had pointed out that the cotyledons of these three species developed in an unusual way (A. Gray 1879, pp. 20–2). See also *Movement in plants*, pp. 80–4.

From W. S. Dallas 18 October 1879

Geological Society, | *Burlington House, W.*
18 Oct. 1879

My dear Mr Darwin

I was so much occupied all day yesterday that I could not answer your kind note at once, as I ought to have done—I also am very glad that the work is at last finished, for it has been hanging about for a long time.—¹

As regards the money matters I hardly know what to say.— I think I estimated the translation of the article originally printed in "Kosmos" at £15, & I suppose I did a good deal more than that, although you have hardly made use of so much.—² £20 would probably be a fair payment all things considered,—but if this is more than you choose to afford we can revert to the original sum.— I hope to be allowed to have a copy of the whole book when published to take its place with other writings of yours on my shelf.—³

With kind regards | Believe me | Yours very truly | W. S. Dallas

DAR 99: 129–30

- ¹ CD's letter has not been found; Dallas had translated an essay by Ernst Krause that formed the second part of the book *Erasmus Darwin*.
- ² Krause had originally published his essay on Erasmus Darwin in the German journal *Kosmos*, but had added to it for publication in *Erasmus Darwin*. Dallas had estimated £10 for the translation of the original article (letter from W. S. Dallas, 14 March 1879). He started work in May 1879 (see letter from Ernst Krause, 5 May 1879), but CD later decided not to use some of the revised essay (letter to Ernst Krause, 3 September [1879]).
- ³ CD paid Dallas £21 on 19 November 1879 (CD's Account books—banking account (Down House MS)). Dallas received a copy of *Erasmus Darwin* in mid-November (letter from W. S. Dallas, 14 November 1879).

From George Sim 18 October 1879

20 King St | Aberdeen
Oct 18th. 1879

C Darwin Esq

Sir

Believing that you would be interested in the subjects to which I am about to refer, I take the liberty of writing you; As I think they are calculated to strengthen your views on the advance of the higher animals from that of lower forms: views which appear to me incontrovertible.

The first then, is that of a cow I saw here a short time ago, which had three toes on each of her fore feet, and all three quite fully and equally well developed. Some time

ago this cow gave birth to a calf (which still lives) having exactly the same peculiarity. And on the cow being killed, which she was recently, A fetus was found in her. Also possessing the same abnormality.¹ The legs of the cow, as also that of her fetal young have been preserved, and are in the anatomical museum of our University.—

The next is that of a woman having two teats on her left breast, one being three inches below the other.² Milk flows freely from both, although she never suckles her children from the lower one. She is the wife of a fisherman of this city, with whom I have been in the habit of going to sea in dredging expeditions &c, thus, from his knowing my wish to hear of anything strange connected with man and other animals, he told me of this peculiarity in his wife; and after some coaxing, she consented to let me see her breast, a proceeding she was very shy in doing. She tells me that prior to her having children, the two nipples were about the same size, but now, that she gives suck to her children with the upper—or proper one only, it has become larger on that account. She has two daughters in her family, the youngest of the two has no appearance of the peculiarity, But she cannot say wheather the oldest one has it or no, as she will on no account allow her mother to see her breast, although asked to do so several times. So, in the present state of the matter we may conclude that the peculiarity is confined to the mother alone; unless indeed, the cause of the daughters refusal, is from her having it also. The fisher folk here are rather superstitious, and altogether strange in their ideas, especially as regards any personal defect &c. this being so, the girl may wish to prevent its being known that she has any such mark, from fear of being talked about, or looked upon by her acquaintances with some degree of superstitious dread.

The foregoing being facts, such as I nor any of the medical gentlemen here, to whom I have spoken on the subject have ever heard of befor, I thought it well to acquaint you of them. Perhaps you will kindly say what value (if any) such things are in support of your writings; They appear to me to be considerable.

If I have not made the matter sufficiently plain, I shall be happy to render you any further information on the subject you may desire, if such be within my power, & in the meantime | I remain Your ob^{mt} Sv^t | Geo Sim.

P.S. The cow had only one spurious toe on each leg, but in both her young the spurious toes were well developed. G.S.

DAR 177: 163

¹ CD discussed the inheritance of supernumerary digits in cows and other animals in *Variation* 2d ed. 1: 459 and n. 33.

² For CD's remarks on supernumerary mammae, see *Descent* 2d ed., pp. 36–7 n. 38.

From Ernst Krause¹ 20 October 1879

Berlin N.O. Friedenstrasse 10. II.
den 20 October 1879.

Hochverehrter Herr!

Mit bestem Danke sende ich Ihnen hierbei unter Kreuzband die Correc<tionen> zurück.² Von Fehlern habe ich nur noch bemerkt

p. 138 l. 8 offsprings for offspring

p. 170. l. 12 biogenetical for biological.³

Der Letztere ist wahrscheinlich ein Schreibfehler im Manuscript; vielleicht lässt er sich noch unter den Erratis am Schlusse anführen.

Die deutsche Ausgabe ist im Drucke noch nicht begonnen obwohl der Verleger schon lange im Besitze des Manuscriptes ist, ich weiss nicht, woran die Verzögerung liegt.⁴

M. Reinwald will, wie ich höre, nur Ihre biographische Skizze uebersetzen lassen, wobei aber wahrscheinlich nur ein Missverständniss unterliegt.⁵ Derselbe hatte nämlich an meinen Verleg(er) geschrieben, und dieser hatte, ohne dass zwischen uns die Sache besprochen worden war, in meinem Namen ein Honorar von 60 Mark pro Bogen verlangt. Obwohl das eigentlich keine hohe Summe ist, und es sich im Ganzen um eine Zahlung von 100 M. an mich handeln würde, hat M. Reinwald dies für exorbitant erklärt, und die Absicht ausgedrückt, er werde meinen Theil nicht mitabdrücken. Ich theile Ihnen diese Details nur mit, damit Sie nicht von Paris her in den Glauben versetzt werden, ich hätte eine irgendwie namhafte Summe verlangt. Mir liegt so wenig an dem Gelderwerb, dass ich ihm gern das Uebersetzungsrecht umsonst ertheilen würde, allein da es sich hierbei offenbar um eine Anim(osi)tät des Franzosen gegen den Deutschen handelt, so werde ich meinerseits nicht nachgeben, und eher das Doppelte verlangen.

Darf ich Sie wohl später, hochverehrter Herr, mit der Bitte belästigen, mir noch über einige in Ihrer Biographie auftretende Personen, von denen unsre biographischen Werke nichts wissen, und die ich Ihnen dann namhaft machen würde, einige ganz kurze Notizen für die Anmerkungen zu geben? Es werden nur 3 oder 4 Namen sein.⁶

In der Redaction des Kosmos ist eine Veränderung in sofern eingetreten als Prof. Jaeger und Caspari nicht mehr auf dem Titel erscheinen. Prof. Jaeger (ha)tte durch sein lärmendes Auftreten in letzter Zeit eine so lebhaft Antipathie gegen sich hervorgerufen, dass sein Name den Fortbestand unseres Journals ernstlich gefährdet haben würde.⁷ Da beide Herren sich gar nicht um die Redaction gekümmert haben, so ist durch ihren Austritt in technischer Richtung keine Veränderung entstanden, und wir hoffen sogar, dass dadurch das Journal nur gewinnen wird.

Mit dem herzlichsten Wunsche, dass diese Zeilen Sie in erwünschtem Wohlsein antreffen mögen, zeichne ich, hochverehrter Herr | Ihr aufrichtig ergebener | Ernst Krause

DAR g2: B41-2

¹ For a translation of this letter, see Appendix I.

² Krause had evidently seen corrected proofs of the translation of his part of *Erasmus Darwin* (see also letter from Ernst Krause, 2 October 1879).

³ Both these corrections were made in the printed book.

⁴ The German version of *Erasmus Darwin* was published by Karl Alberts of the publishing company Ernst Günther in April 1880 (*Correspondence* vol. 28, letter to Ernst Krause, 19 April 1880).

⁵ Charles-Ferdinand Reinwald published French translations of CD's works; however, no French translation of *Erasmus Darwin* was published. See also letter to Ernst Krause, 5 [May] 1879.

⁶ For the list of names, see the letter from Ernst Krause, 14 November 1879.

⁷ Gustav Jäger and Otto Caspari. Jäger may have offended his co-editors by his efforts, from 1878 onwards, to publicise his sanitary woollen system (see Jaeger 1886), based on his theory that the odours of the human body had physical and psychological effects (see Jaeger 1880, a collection of reprints of essays originally published from 1876 onwards in *Kösmos* and other periodicals).

To Casimir de Candolle 21 October 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

Oct 21. 1879

My dear Sir

I am very much obliged for your kind present of your work on the anatomy of leaves, which I will soon read.¹ The Plates strike me as wonderfully good, like Photographs, but clearer.—

Pray remember me kindly to your honoured Father² & believe me, my dear Sir | Yours very faithfully | Charles Darwin

Archives de la famille de Candolle (private collection)

¹ CD's offprint of C. de Candolle 1879 is in the Darwin Pamphlet Collection—CUL.

² Alphonse de Candolle.

To E. S. Morse 21 October 1879

Down | Beckenham, Kent. | (Railway Station | Orpington S.E.R.)

Oct 21. 1879

My dear Sir

Although you are so kind as to tell me not to write, I must just thank you for the proofs of your paper which has interested me greatly.¹ The increase in the number of ridges in the 3 *species* of *Arca* seems to me a very note-worthy fact; as does the increase of size in so many yet not in all, the species.² What a constant state of fluctuation the whole organic world seems to be in! It is interesting to hear that everywhere the first Change apparently is in the proportional numbers of the species: I was much struck with this fact in the upraised shells at Coquimbo in Chile, as mentioned in my Geolog. Obs. on S. America.³

Of all the wonders of the world, the progress of Japan, in which you have been aiding, seems to me about the most wonderful.⁴

Believe me, my dear Sir | Yours very faithfully | Charles Darwin

Peabody Essex Museum: Phillips Library (E. S. Morse Papers, E 2, Box 3, Folder 11)

¹ Morse had sent proof-sheets of his memoir on the shell mounds of Omori in Japan (Morse 1879; see letter from E. S. Morse, 26 August 1879). CD's offprint is in the Darwin Pamphlet Collection—CUL.

² For Morse's report on the molluscs found in the shell mounds, see Morse 1879, pp. 23–36. The three species of *Arca* were *A. subrenata* (a synonym of *Anadara kagoshimensis*), *Arca inflata* (a synonym of *Anadara broughtonii*), and *Arca granosa* (a synonym of *Tegillarca granosa*).

³ In Morse 1879, pp. 23–5, Morse discussed differences between the numbers and size of specimens of particular species in ancient shell mounds and still living, at Omori and elsewhere. CD had used the

proportion of numbers of various species of molluscs at different levels as an indicator of how recently land had been upraised; see *South America*, pp. 35–57.

- ⁴ In his preface, Morse pointed out that his memoir had been printed in Japan on Japanese paper, and that the plates had almost all been drawn and lithographed by Japanese artists; a Japanese version had also been issued. Morse was professor of zoology at the Imperial University in Tokyo from 1877 to 1880 (*ANB*).

To John Lubbock 22 October 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

October 22 1879

My dear Lubbock

I cannot help writing, though it is so soon, to tell you how deeply I sympathise with you in your dreadful loss.¹ It is a terrible calamity. She used to show in every word & her expression how devotedly she loved you.— Her image, so bright & beautiful, now rises clearly before my eyes, as I saw her first years ago in the Crystal Palace.² My wife, as you will well believe, joins me in her deep sympathy for you & all your family.— Do not, of course, pain yourself by answering this note.

Yours affectionately | Charles Darwin

DAR 263: 68 (EH 88206512)

¹ Ellen Frances Lubbock died in the night on 19 or 20 October 1879, at High Elms, Down, aged about 45 (*The Times*, 22 October 1879, p. 1; Hutchinson 1914, 1: 165).

² John Lubbock married Ellen in 1856. The Crystal Palace, built in Hyde Park to house the Great Exhibition of 1851, was moved to Sydenham in Kent in 1854.

To George Sim 22 October 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Oct 22^d 1879

Dear Sir

All cases of inheritance possess some interest, but polydactylism is so common, that there is nothing very remarkable about the cow.—¹

Instance of supernumerary mammae in woman (& man) are by no means very rare. I advanced cases in my *Descent of man*, as some evidence of man being descended from an animal with more than two mammae.— I modified this conclusion in the 2^d Edit, & am now sorry that I did so, for from in a recent & exhaustive paper on the subject in Germany, the author maintains that my first view was correct, & that the statements which made me doubt were erroneous.²

Wishing you success in your pursuit of Science

I remain | Dear Sir | Yours faithfully | Ch. Darwin

Aberdeen City Libraries, Local Studies (George Sim papers)

¹ See letter from George Sim, 18 October 1879 and n. 1.

² See *Descent* 1: 125 n. 38 and *Descent* 2d ed., pp. 36–7 n. 38. Otto Michael Ludwig Leichtenstern wrote that he had confirmed CD's suspicion that supernumerary mammae in humans were reversions after

he discovered in a review of more than 100 cases that 91 per cent occurred on the front of the thorax and in a predictable linear relationship with ordinary mammae (Leichtenstern 1878, p. 239). Leichtenstern's paper was summarised in *Kósmos* in August 1878 (*Kósmos* 3 (1878): 443–7). CD's copy of this issue of *Kósmos* is in the unbound journal collection in the Darwin Archive–CUL; it is lightly annotated, including with the words, 'I have read the original paper somewhere' (*ibid.*, p. 447). CD's offprint of Leichtenstern 1878, inscribed by the author, is in the Darwin Pamphlet Collection–CUL; it is not annotated.

From Francis Darwin to Ernst Krause 23 October 1879

Down | Beckenham

Oct 23. 79

Dear Sir,

My father directs me to express his thanks to you for your letter & for the errata to which you are good enough to call his attention.¹

He is very sorry to learn that your part will not appear with his in French; as regards the difference with Reinwald my father (from his knowledge of R's character) cannot for a moment believe that he would be influenced by such trivial feelings as antagonism to the Germans²

My father will be glad to give you any information in his power about the characters in his Biography to which you allude

Yours faithfully | Francis Darwin

P.S. | Reinwald always gives my Father a small percentage on his works,³ & my father intended to hand over to you any profits that might thus arise from the sale of the French edit of yours & his joint work.

The Huntington Library (HM 36217)

¹ See letter from Ernst Krause, 20 October 1879. Krause had seen proofs of the translation of his part of *Erasmus Darwin*.

² See letter from Ernst Krause, 20 October 1879. Charles-Ferdinand Reinwald published French translations of CD's works; however, no French translation of Erasmus Darwin was published.

³ See, for example, *Correspondence* vol. 25, letter from C.-F. Reinwald, 9 May 1877.

To Horace Darwin 23 October [1879]

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Oct 23^d

My dear Horace.

Many thanks for all the many things which you have done for me & for your shipshape account,— all as clear as daylight.— I hope you have charged me enough for all your own affairs.— The tank is a heavy expense, & there will be so much the less to divide amongst you all at the end of January or beginning of February, & this seems rather to please Frank.—¹

How happy you will be my dear old fellow on Saturday.—²

Your affect | C. Darwin

Postmark: OC 23 79

DAR 258: 549

- ¹ Horace's account has not been found. He had worked on a tank for either rain water or liquid sewage (for garden use) in the orchard at Down House (letter from Emma Darwin to H. E. Litchfield, [24 September 1879] (DAR 219.9: 209)). According to CD's Classed account books (Down House MS), CD paid £370 14s. 3d. for a tank in the orchard on 23 October 1879. He had had tanks for liquid sewage and rainwater constructed in the 1840s and 1850s (see *Correspondence* vol. 2, letter to Susan Darwin, 27[–8] April [1843], and *Correspondence* vol. 5, letter to Edward Cresy, 15 May [1853]). CD had decided to divide his surplus income among his children annually (see letter to the Darwin children, 21 February 1879). Frank: Francis Darwin.
- ² Horace was going to spend a few days with his fiancée, Ida Farrer, on Saturday 25 October (letter from Emma Darwin to Ida Farrer, [22 October 1879] (DAR 258: 629); letter from T. H. Farrer, 30 October 1879).

To T. H. Farrer 23 October 1879

Down | Beckenham Kent
Oct 23— 1879.

My dear Farrer.

I should like you to read the 2 letters in Newspapers sent, which will not take more than 5 minutes & they need not be returned.¹ I do so because you were so kind as formerly to aid me on the subject— The letters are written by men who do not understand M^r. Torbitt's main Principle of Selection but they show fairly favourable results considering what a dreadful season this has been for the Potato.²

I heard from M^r. Torbitt about 2 months ago in much distress as his wife had just been operated on for cancer. He says trade was so bad he feared he should be ruined, but he would go on as long as he could with his experiments—³ Unless he is aided I fear all his work will be thrown away but he asks for nothing— What a pity there cannot be 2 sets of men in our Government,— one to do all the miserable squabbling & the other to attend to the real interests of the country.

Ever yours sincerely, | Ch. Darwin.

Copy
DAR 144: 97

- ¹ The two letters have not been identified.
- ² Torbitt and CD had corresponded since 1876 about Torbitt's efforts to produce a blight-resistant potato by crossing the most successful varieties (see *Correspondence* vols. 24–6). In 1878, CD had sought Farrer's support to secure a government grant for the work (see *Correspondence* vol. 26).
- ³ See letter from James Torbitt, 18 September 1879. Torbitt's wife was Margaret Ann Torbitt.

From Eduard Schulte¹ 23 October 1879

Fürstenwalde | Prov. Brandenburg.
23.10.79

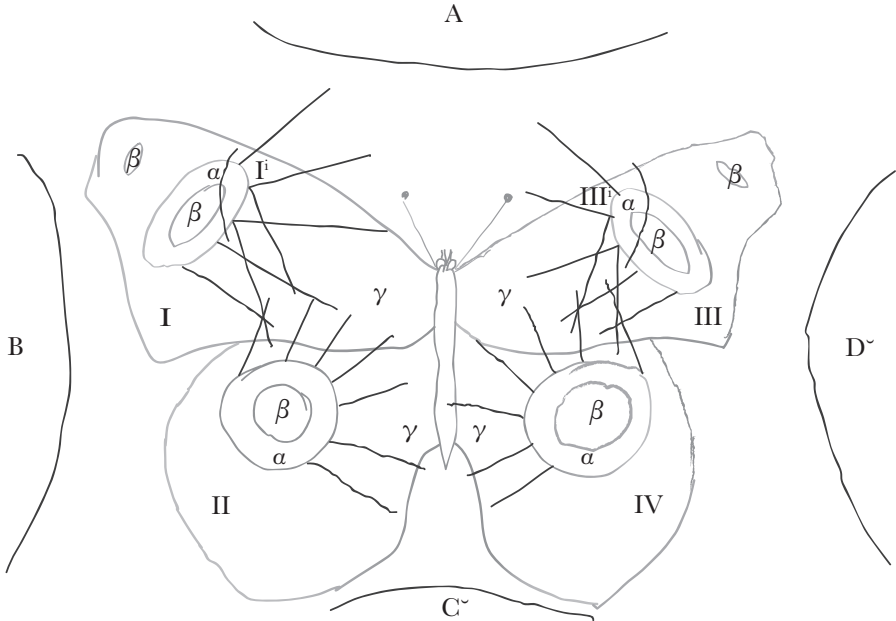
Carolo Darwin | Viro Ornatissimo et Doctissimo | S. P. D^o.² | Eduardus Schulte
philosophiae doctor.

Mittebam tibi, Vir Ornatissime, imaginem et descriptionem papilionis cujusdam, qui in insula Celebe³ reperitur et colorum varietate, quam nuper inveneram et

accuratius investigaveram, notabilis et insignis est. Putabam, hanc descriptionem tibi gratam fore, si quidem eum papilionem nondum noveras, nam ut hanc varietatem cognosceres, credebam tua non parvi interesse ad vim rationemque differentiae generum apud papiliones indagandum.

Vale.

[Enclosure 1]⁴



Hypolimnas sive Diadema Bolina,⁵ mas.

Ex insula Celebe.

(Ad naturae mensuram descriptus.)

Alae (γ) sunt nigrae.

Oculi (β) sunt albi.

Anuli (α) sunt modo nigri, modo caerulei.

Lineis atramento factis via fulgoris caerulei indicatur.

A, B, C, D sunt loci spectantium.

[Enclosure 2]

Inter marem et feminam hujus papilionis pernimum interest, nam quamquam pars inferior utriusque nihil differt vel haud multum, partes superiores coloribus valde inter se distinguuntur. Alae maris (γ) sunt nigrae, loci sive oculi β sunt albi. Anuli α , qui spectantium oculos in se maxime convertunt, modo nigri sunt, ut

alae, modo caerulei, ut caelum. Quum lumen ex loco B adit, is, qui in loco D^o est, colorem caeruleum non videt, neque quum lumen ex loco A adit, is, qui in loco C est, colorem caeruleum videt. Quem ut videas, necesse est, lumen aut a tergo aut a parte sive dextra sive sinistra spectantis penetrare. Ex conditione, ut lumen apte et commode adeat, ex loco B vides anulos a III et IV caeruleo splendore mirum in modum micantes, ex loco D^o anulos I et II, ex loco A anulos II et IV. Nunquam vides quatuor anulos eodem tempore simul micantes, neque unquam modo tres anulos. Nam quum ex angulo B C papilionem conspicias, solus anulus III plene et perfecte sibi micat, ex anulis I et IV autem nihil nisi particula quaedam splendorem illum parebet. Itaque numquam plus quam duo anuli simul micant, ut aut unus anulus et alter luceat aut unus et dimidia pars alterius et dimidia pars tertii. Qui a tergo papilionis (C^o) spectat, caeruleum fulgorem nisi ex minimis partibus anuli I (I^o) et III (III^o) omnino non videt, ac merito quidem, nam maris nihil interest, ab hac parte spectari, quo oculi ejus non penetrant: vult enim feminae animum colorum varietate delenire et admiratione rei novae defigere, et ipse id agit, ut admirantem feminam animadvertat et stupore defixam opprimat voluptateque permulceat. Mirum profecto est, quod natura actionem levandi demittendique alas, quae papilionum mares feminas alliciunt, aliis papilionibus utilem, huic quodammodo necessariam esse voluit: sive hac actione enim splendor ille magnificentissimus vel omnino non spectaretur vel non satis: ita hujus papilionis et splendor et actio alarum et ars amandi magis conjuncta sunt quam in alio papilione.

[Contemporary translation of part of enclosure 2]

He who looks at the butterfly from behind does not see the brilliant blue except from a very small part of the rings on the front wings, and there is reason in this for it is of no interest to the male to be looked at from this side where his eyes do not penetrate (This seems utter bosh)⁶ for he wishes to charm the female by the variety of his colours, and he acts in such a way that he may attract the attention of the female and obtain her admiration. It is a wonderful thing that nature has decreed that the action of raising and lowering the wings (by which male butterflies attract the females)—useful in other butterflies should be in a certain sense necessary to this one. For without this action this most magnificent splendour would be either not at all or not enough admired.

DAR 177: 64

¹ For a translation of this letter, see Appendix I.

² SPD: *salutem plurimam dicit* (Latin), 'bids the best possible health', or, 'greet's'.

³ Celebes (now Sulawesi) is an island in Indonesia.

⁴ The diagram is reproduced at ninety per cent of the original size.

⁵ *Hypolimnas bolina* is the common eggfly. CD referred to the butterfly under the synonym *Diadema bolina* in *Descent* 1: 413.

⁶ The contemporary partial translation is in the hand of Francis Darwin; he added this comment in pencil.

To ? 23 October 1879

Down | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

Oct 23^d 1879

My dear Sir

I am much obliged for your note. The report of M^r Nash's death was very precise, & we were deeply grieved; but we since heard through the Desborough's that the report was false. I am heartily glad that he has recovered. M^r Nash & his wife have always appeared about the best man & woman whom we have ever known.—¹

Believe me yours faithfully & obliged | Charles Darwin

Ronald T. Raines (private collection)

¹ The note has not been found. Wallis and Louisa Ahmuty Nash had lived in Down during the 1870s, before emigrating to Oregon in 1879. Mary Desborough, Louisa's widowed mother, had also lived in Down. The source of the false report has not been identified, but apparently reached Down on 6 October 1879 (letter from Emma Darwin to Ida Farrer, [6 October 1879] (DAR 258: 651)). In his book *Two years in Oregon* (Nash 1882, p. 100), Wallis Nash refers to 'a sharp attack of illness' in the autumn of 1879. Nash wrote a memoir of the Darwins as his neighbours in Down in Nash 1919, chapter 14.

To Asa Gray 24 October 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

Oct 24th/79

My dear Gray

I have procured & been reading your new Edit. of your Text-Book of Botany, (which has been greatly developed since old times)¹ & I find at p. 21, 22, a curious account of some seedlings. For the bare possibility of you being able to send me a few seeds of the 2 kinds which I want most, I have written their names down on the next page.— I have procured *Delphinium nudicaule* from a nurseryman.² I have attended somewhat to the manner in which seedlings break through the ground, & it is for this object that I want these seeds.

I have written a rather big book,—more is the pity—on the movements of plants, & I am now just beginning to go over the M.S. for the second time, which is a horrid bore.³

I hope that M^{rs} & you are both quite well.—

Ever yours very sincerely | Ch. Darwin

De Vries has been working at the tendrils of Cucurbitaceæ sent by you.—⁵

seeds wanted

*Ipomœa leptophylla*⁶

*Megarrhiza californica*⁷

Archives of the Gray Herbarium, Harvard University (125)

¹ Gray's *Botanical text-book* was in its sixth edition (A. Gray 1879). Gray had recommended the fifth edition (A. Gray 1858) to CD in 1863 (*Correspondence* vol. 11, letter from Asa Gray, 26 May 1863 and n. 25).

² Gray had discussed the unusual development of cotyledons in three species, including *Delphinium nudicaule*, red larkspur, in A. Gray 1879, pp. 20–2. CD had asked Joseph Dalton Hooker for seeds of each species (see letter to J. D. Hooker, 17 October [1879] and n. 4). The nurseryman has not been identified.

³ *Movement in plants* was published in 1880.

⁴ Jane Loring Gray.

⁵ CD had asked Gray to send seeds of *Echinocystis lobata* (wild cucumber) to Hugo de Vries so that De Vries could observe the tendrils (see letter to Hugo de Vries, 13 February 1879 and n. 5). De Vries had probably visited Down on 21 September (letter from Emma Darwin to H. E. Litchfield, [20 September 1879] (DAR 219.9: 207)).

⁶ Bush morning-glory.

⁷ A synonym of *Marah fabacea*, the California manroot.

From R. F. Cooke 25 October 1879

50A, Albemarle Street, London. W.

Oct. 25 1879

My dear Sir

I am afraid you will think me troublesome.

But what do you think should be the Title on the outside back of the Volume

Erasmus

Darwin

—

Krause

&

Darwin

or can we venture to say

Life

of

Erasmus

Darwin¹

I suppose as you wish the price of the volume to be as cheap as possible, you will not object to 7^s/6.

This if the whole 1000 are sold, w^d. give about a total profit of £70.

Yours faithfully | Rob^t Cooke

Cha^s Darwin Esq

DAR 92: B3-4

¹ In the event, *Erasmus Darwin* had 'Life of Erasmus Darwin' embossed on the spine. See also letter to R. F. Cooke, 4 October [1879]).

From G. M. Asher 26 October 1879

Ericht Lodge Dulwich London S.E.

Oct 26 / 79.

Dear Sir

Would you kindly examine the following idea by which human and animal sociology are brought under one head; and, if you think it deserving of your commendation, send this note with as many words as possible of yours, to Macmillan's Magazine—¹

How does the bee's cell acquire its hexagonal shape? we know

1) That the bee's original instinct is to build a circular cell

2) That the shape of the hexagonal cell is just such as if a number of circular cells in a liquid state had been squeezed (aga)inst each other—similar in fact to the cells in the foam of soapwater blown from a pipe; that is to say to bubbles turned, by mutual squeezing from a globular into an angular shape.

Even in the case of the foam there is not exactly a bodily pressure, but merely a mutual repression of (ex)pansive tendencies; and that also is impossible in the case of the bee. The only possible explanation therefore is, that an *intellectual* repression takes place; that is to say each bee feeling in its own mind the reflection of the other bees' instincts, leaves room for the exercise of those instincts; and thus the circular cell becomes hexagonal by *mutual concession*.

If the bee were disposed to swerve to the right or left, the figure of the neighbouring bee, whose province would be infringed upon, rises in the bee's mind; and in consequence an intellectual pain similar to that which our bee would feel if its own prov(ince) were infringed upon; a reminder closely resembling that inwardly received by a man disposed to infringe upon another man's rights. For all human rights spring, like the hexagonal shape of the bee's cell, from mutual concessions by which individual propensities are checked.

Now all this illustrates the principle introduced from Indian Philosophy into modern thought by Schopenhauer, and made by him the basis of all moral and religious philosophy. The Indians call the above described feeling "*Thou art I*" and Schopenhauer calls it the *law of compassion*.

Schopenhauer spoils what might have been a great boon by his abstruse language, his misanthropy and his fanatical atheism, and therefore not only failed to draw the necessary conclusions from his own premises but arrived at opinions diametrically opposite to them. Into these errors we need not follow him; and for our purpose it is quite sufficient to see that his "*Thou art I*" principle belongs to animal as well as to human sociology.²

These two sociologies are nevertheless far from identical; as a further investigation of our principle in its application to the one and the other sociology shows; a fact at once obvious when we take the following things into account:

1) The human microcosm consists in the faculty to reproduce every individuality whether human or animal, animate or inanimate, bodily or intellectual; while we have no reason to suppose animals capable of reproducing, in their minds, any individuality not exactly alike to their own.

2) The mutual reproduction of men's individualities is principally, though not exclusively, affected by language, a faculty not possessed by animals, just because they lack its foundation, the human microcosm.

3) The human *Thou art I* principle and, therefore human society, can be highly developed only by religion.

Repeating the above request I remain | Dear Sir | Respectfully Yrs | G. M. Asher.

Ch Darwin Esqr. | LLd. FRS. &c.

DAR 159: 121

¹ Asher did not publish this note in *Macmillan's Magazine*.

² Arthur Schopenhauer discussed ethics in book 4 of his *Die Welt als Wille und Vorstellung* (The world as will and idea; Schopenhauer 1819). On his use of Indian philosophy and religion, see Cross 2013; on his 'ethics of compassion' in relation to Sanskrit texts, see Ruffing 2013.

From Ernst Krause to Francis Darwin¹ 26 October 1879

Berlin N.O. Friedenstrasse 10. II
d. 26.10.79.

Hochgeehrter Herr!

Zunächst danke ich Ihnen von Herzen für Ihr gütiges Schreiben, welches ich soeben empfang, und die Rücksendung des Briefes, der aus Versehen zwischen die Druckbogen gekommen war.²

Die Schwierigkeit mit Herrn Reinwald wird sich leicht lösen, zumal wenn Ihr allverehrter Herr Vater vielleicht gelegentlich Herrn Reinwald gegenüber den Wunsch ausdrücken wollte, dass die französische Ausgabe der englischen völlig conform sein müsste.³

Was mich anbetrifft, so bin ich für die sehr geringe Mühe meiner Arbeit, durch die Ehre sie in solcher Form publicirt zu sehen, so *überreich* entschädigt, dass ich meinerseits am liebsten *gar keinen* pekuniären Vortheil daraus ziehen möchte, und Sie bitten würde, Ihrem Herrn Vater meinen Wunsch mitzuthemen, dass der in Ihrem freundlichen Schreiben erwähnte Ueberschuss Herrn Dallas zufließen möge.⁴

Da Sie meinen Argwohn einer nationalen Animosität Seitens des Herrn Reinwald zu meiner Freude widerlegt haben, so würde ich mit Vergnügen bereit sein, Herrn Reinwald aller Verpflichtungen gegen mich zu entbinden. Es wird dies um so leichter sein, als wir beide bisher keine Zeile miteinander gewechselt haben, und die Verhandlung—vielleicht nicht rücksichtsvoll genug—durch Herrn Alberts geführt worden ist, wobei ich keinen der Briefe zu Gesicht bekommen habe.⁵ Ich darf daher annehmen, dass diese Angelegenheit sich leicht arrangiren wird.

Ich zeichne, hochgeehrter Herr, mit herzlichstem Danke und der Bitte, mich Ihrem Herrn Vater freundlichst zu empfehlen

Ihr | ganz ergebenster | Ernst Krause

DAR 92: B44-5

¹ For a translation of this letter, see Appendix I.

² See letter from Francis Darwin to Ernst Krause, 23 October 1879. Krause had returned revised proof-sheets of *Erasmus Darwin* to CD (see letter from Ernst Krause, 20 October 1879).

³ Krause was preparing an annotated German edition of *Erasmus Darwin*, which contained an essay by himself (an expanded version of the one in the English edition) and a biographical preface by CD. Krause's publisher, Karl Alberts, was negotiating with Charles-Ferdinand Reinwald over the publication of a French translation. Alberts had proposed charging royalties for Krause's part, upon which Reinwald threatened to publish an edition containing only CD's part (see letter from Ernst Krause, 20 October 1879). Reinwald usually paid CD deferred royalties, dependent upon sufficient sales (see letter from C. F. Reinwald, 17 April 1879). In the event, no French translation was published.

⁴ William Sweetland Dallas had translated Krause's essay on Erasmus Darwin into English. See also letter from W. S. Dallas, 18 October 1879 and n. 3.

⁵ Krause had assumed that Reinwald's objection to paying him royalties was based on national animosity (letter from Ernst Krause, 20 October 1879).

October 1879

To G. M. Asher 28 October 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Oct 28. 79

Dear Sir,

I have resolved owing to my advanced age not to write again on such difficult subjects as the origin of Instinct, Sociology &c, & therefore cannot comply with your request.¹ The subject is a very interesting one. Formerly I made many observations on the manner in which bees make their cells, & I have given an abstract of the conclusions at which I arrived in my 'Origin of Species'.² There can, I think, be no doubt that each bee continually regards the work of its fellow bees. I have also treated in my 'Descent of Man' on the origin of the conscience as being derived from the Social instinct.³

Believe me my dear Sir | Yours faithfully | Charles Darwin

LS

The New York Public Library. Astor, Lenox and Tilden Foundations. The Henry W. and Albert A. Berg Collection of English and American Literature.

¹ Asher had asked CD to comment on a note by him on bee cells and send it to *Macmillan's Magazine* for publication (see letter from G. M. Asher, 26 October 1879).

² CD had worked extensively on the social instincts of bees and the geometry of bee cells (see especially *Correspondence* vols. 7 and 9). In *Origin*, pp. 224–35, he explained the hexagonal shape of bee cells as a by-product of the spacing of circular cells.

³ See *Descent* 1: 70–106.

To Eduard Schulte 28 October 1879

Down, | Beckenham, Kent. | Railway station | Orpington. S.E.R.

Oct. 28. 79.

Dear Sir,

I am much obliged for your interesting letter.¹ The case is quite new to me, & may perhaps explain other instances in which the magnificent colours in the wings of butterflies appear only from certain points of view. If you or any one had actually observed in Celebes² the male approaching the female in the proper position for displaying his colours, the case would have been well worth publishing. When I next go to London I will look at this butterfly in the British Museum, that I may be able fully to appreciate your description. I will then perhaps give an account of your remarks in "Nature".³

Dear Sir, | Yours faithfully & obliged | Charles Darwin.

Copy

DAR 147: 428

¹ See letter from Eduard Schulte, 23 October 1879.

² Celebes is now Sulawesi in Indonesia.

³ The butterfly was *Hypolimnas bolina*, the common eggfly (known to CD as *Diadema bolina*). See letter to *Nature*, 16 December 1879. CD next visited London from 3 to 11 December (Emma Darwin's diary (DAR 242)).

From Francis Darwin to Ernst Krause [29 October 1879]¹

Down

Dear Sir,

My father begs me to enclose to you a letter addressed to M. Reinwald; he begs that you will read it & if you approve of it that you will post it²

Dear Sir | Yours very faithfully | Francis Darwin

The Huntington Library (HM 36218)

¹ The date is established by the relationship between this letter and the draft letter to C.-F. Reinwald, 29 October 1879.

² See letter to C.-F. Reinwald, 29 October 1879. Krause had heard that Charles-Ferdinand Reinwald, who published French translations of CD's works, intended to publish only CD's portion of the translation of *Erasmus Darwin*; CD wrote a letter to encourage Reinwald to publish Krause's portion also, but in the event no translation was published. See letter from Ernst Krause, 20 October 1879.

To C.-F. Reinwald 29 October 1879

Dear Sir

I hear from D^r Krause that there has been some misunderstanding with the German Publisher about the translation of his part of the life of D^r Darwin.¹ In my opinion it would not be worth while to translate into French my Preliminary notice, without D^r Krause's account of the scientific works of D^r D. D^r Krause has kindly agreed at my request that you sh^d publish the whole volume, on the same terms on which you have published translations of my other books; & I will arrange with D^r Krause about any profit which you may be able to hand over to me.—² I have sent this letter through D^r Krause, that he may read it, & that you may be assured that there is no misunderstanding on my part.

I remain Dear Sir | Yours very faithfully | Ch Darwin

Oct 29th 1879

To M^r Reinwald

(Frank—keep this foul copy)³

(Ask D^r K. to sign this letter also if he does not object)

ADraftS

DAR 202: 80

¹ See letter from Ernst Krause, 20 October 1879. Karl Alberts was publishing a German edition of *Erasmus Darwin*, co-authored by Krause and CD (Krause 1880).

² See letter from Ernst Krause to Francis Darwin, 26 October 1879. CD usually received deferred royalties from Reinwald (see, for example, letter from C. F. Reinwald, 17 April 1879).

³ Francis Darwin was CD's secretary. CD uses 'foul' in the sense 'heavily corrected'.

To W. T. Thiselton-Dyer 29 October 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Oct. 29th 79

My dear Dyer

You have been exceedingly kind as on so many other occasions.— The seeds of the *Delphinium* are sown, & I have written to Asa Gray for the chance of his having seeds of the 2 Californian species.¹

It is a ridiculous fact, but I have forgotten why I wanted much seeds of *Ipomœa nil*, which you have got from India; but as I go over my M.S. for the second time (& this I have just begun to do) my memory will surely return.²

And now I want to beg a favour which cannot cause you much trouble, viz to name the genus & if possible the species of enclosed cryptogamic plant, which entirely coated the soil in old pots standing in damp & shady place.— I have always called it a *Marchantia*,³ but Heaven knows whether this is right.—

Secondly what ought I to call the little discs? May I call them fronds?

Lastly, I suppose that the little greenish bodies in the open saucers are spores? I have been observing the little discs for many days, & they circumnutate just like any of the higher plants, but on a very small scale, so that the movement has to be much magnified.

I was very glad to hear in your previous note a flourishing account of all your family.⁴

Ever sincerely yours | Ch. Darwin

PS | The plant which I have belonging to Kew is *Anthurium violaceum*; & I cannot remember whether this was a precious one worth returning.⁵

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: ff. 187–8)

¹ Thiselton-Dyer's letter to CD has not been found. CD had asked Joseph Dalton Hooker, the director of the Royal Botanic Gardens, Kew, for seeds of *Delphinium nudicaule* (red larkspur; see letter to J. D. Hooker, 17 October [1879]); Thiselton-Dyer was the assistant director. CD also wanted seeds of *Ipomoea leptophylla* (bush morning-glory) and *Megarhiza californica* (a synonym of *Marah fabacea*, the California manroot); see letter to Asa Gray, 24 October 1879.

² See letter to W. T. Thiselton-Dyer, 24 March 1879 and n. 4; see also *Movement in plants*, pp. 47–8. The manuscript that CD was 'going over' was that of *Movement in plants*, published in 1880. *Ipomoea nil* is the white-edge or Japanese morning-glory.

³ The genus *Marchantia* is a member of the division of liverworts (Marchantiophyta).

⁴ Thiselton-Dyer's previous letter has not been found.

⁵ See letters to W. T. Thiselton-Dyer, 5 June 1879, n. 2, and [after 26] July [1879]. *Anthurium violaceum* is a synonym of *A. scandens*, the pearl laceleaf.

From T. H. Farrer 30 October 1879

Abinger Hall, | Dorking. | (Gomshall S.E.R. | Station & Telegraph.)

30 Oct/79

My dear Mr Darwin

I have been very busy and have kept your papers about potatoes till I could read up the old papers— Now I cannot distinctly remember what Caird & I proposed to do a year & half or more ago.¹

I think I could interest Lord Sandon in the case, but am not sure what it is that it would be well to do at present—² Is it to get a Gov^t grant: or a subscription? What do you think?

Has not Mr Torbitt now some distinct further results to shew?

What do you think is best to be done? I will gladly do anything I can

Ever yrs sincerely | T H Farrer

Horace has just left with Ida after a very pleasant visit.³ We relieved ourselves by calling them “the young donkeys”—a name given by a Lancashire friend. We are deeply disappointed that Godfrey is too ill to take them in.⁴ That visit pleased us particularly.

DAR 164: 94

¹ See letter to T. H. Farrer, 23 October 1879 and n. 2; CD had asked for help for James Torbitt, who was trying to breed blight-resistant potatoes. In 1878, CD, Farrer, and James Caird had tried to obtain government support for Torbitt's experiments (see *Correspondence* vol. 26).

² Dudley Francis Stuart Ryder, Viscount Sandon, was minister for the Board of Trade, where Farrer was permanent secretary.

³ Horace Darwin was engaged to marry Ida Farrer; he had gone to spend a few days with her on 25 October (see letter to Horace Darwin, 23 October [1879]).

⁴ Godfrey Wedgwood was Emma Darwin's nephew, and had married his cousin Hope Elizabeth Wedgwood, the sister of Farrer's second wife, Katherine Euphemia Farrer.

From A. S. Packard 30 October 1879

Brown University | Providence, Rhode Island.

Oct. 30th 1879.

Charles Darwin. Esq. F.R.S.

My dear Sir:

Several observers have this autumn noticed that a *Plusia* moth has been caught by its maxillæ in the flowers of *Physianthus albens*.¹ I noticed that the tip of the tongue was caught as if in a vise by the two lips of an apparatus covering each set of the pollinia; and thus caught, the moth died. Several *Plusias* would be found dead hanging by their tongues or proboscides—on one raceme of flowers.

Now a strange additional fact has been observed by the Rev. Leander Thompson of North Woburn, Mass. who states to me that he has seen the honey bee—several of them—dart down upon the moths as they were struggling to escape, sting them over and over again, until dead, “and then rip open the bodies of the moths and devour the soft parts within”—

I am not so much surprised at the bees stinging the moths, but their carnivorous propensities are quite new to me and I find no reference to them in your book or that of Hermann Müller.² I dislike to take your time, but I should be greatly obliged if you could inform me whether a parallel case has been observed. I suppose the bees must have used their mandibles in tearing open the bodies of the moths—

I am Sir, with great respect | Yours most truly, | A. S. Packard, Jr.

DAR 174: 3

- ¹ The moth was *Plusia precatonis* (a synonym of *Autographa precatonis*, the common looper moth); see Packard 1880. Maxillae: a general term to refer to the mouthparts of arthropods; in some moths, modified semi-cylindrical maxillae (galea) fit together to form a nectar-sucking proboscis. *Physianthus albens* is a synonym of *Araujia sericifera*, the common moth-vine or cruel plant.
- ² Müller had written on role of insects in the fertilisation of plants in 1873 (H. Müller 1873). Packard also wrote to Hermann Müller about the observations (Packard 1880).

From Eduard Schulte¹ 30 October 1879

Fürstenwalde | Prov. Brandenburg,

30.10.79

Carolo Darwin | Viro Ornatissimo et Doctissimo | S. P. D.² | Eduardus Schulte philosophiae doctor.

Hoc unum abs te peto, vir ornatissime: si de papilione illo aliquid scripseris, mittas mihi velim unum exemplar “Nature”, vel mihi appelles numerum folii.³ Hoc officium mihi summo et honori et decori erit.

Cura ut valeas.

DAR 177: 65

¹ For a translation of this letter, see Appendix I.

² SPD: *salutem plurimam dicit* (Latin), ‘bids the best possible health’, or, ‘greet’s’.

³ Schulte had written to CD about the iridescent butterfly *Hypolimnna bolina* (the common eggfly, known to CD as *Diadema bolina*); see letter from Eduard Schulte, 23 October 1879, and letter to Eduard Schulte, 28 October 1879. No further letters from CD to Schulte have been found, but CD wrote about sexual coloration in butterflies, including Schulte’s case, in his letter to *Nature*, 16 December 1879.

To T. H. Farrer 31 October 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Oct 31 1879

My dear Farrer

I am delighted for Horace’s sake to hear that the marriage will take place early in the ensuing year.¹

He tells me that you would like to hear about his future & present income prospects.

William estimated carefully a few years ago the amount of my property (including some which I know to have been bequeathed to me) & from this it follows that after my death & Emma’s, Horace will receive about £40,000 a little more or less.² At present I allow him £300 annually, & I have made over to him property producing annually rather above £100. For the future I intend to divide annually the overplus of our income, amongst my children; & on an average from the last ten years, this amounts annually to £2728.³ This will give to Horace at least £400; so that his annual income will be at least £800;—always assuming that my income does not fall off, & none of my investments are speculative.

With respect to a marriage settlement, I think it w^d be the best plan, as I am not a man of business, for my Solicitor to call on your brother; & I understand that you

concur in this.⁴ My solicitor is Mr Hacon⁵ of 18 Fenchurch St, whom I have long employed— He knows fully the state of my affairs, & my general notions about settlements. I have always found him a very sensible & just man; & I believe that he w^d advise what is best for all parties under all contingencies.

Your suggestion about Horace possibly becoming a partner in some business, seems to me a very wise one, which had not occurred to me, & which I will pass on to Mr Hacon, as it bears on the amount advisable to be settled.⁶ If you will authorize me, I will ask Mr Hacon to call on your brother in Lincoln's Inn Fields to talk over the affair.

I shall always consider Horace as one of the most fortunate of men—
Believe me, my dear Farrer | Yours very sincerely | Charles R. Darwin

LS(A)
DAR 185: 19

- ¹ Horace Darwin and Ida Farrer were married on 3 January 1880 (Emma Darwin's diary (DAR 242)).
- ² CD's eldest son, William Erasmus Darwin, who was partner in a bank in Southampton, frequently helped CD with his financial affairs; for William's July 1871 estimate of the amount of CD's property, with CD's later additions, see the letter to Horace Darwin, [28 June 1879].
- ³ See letter to the Darwin children, 21 February 1879.
- ⁴ One of T. H. Farrer's brothers, William James Farrer, was a lawyer; for the results of the interview, see the letter from W. M. Hacon, 7 November 1879.
- ⁵ William Mackmurdo Hacon.
- ⁶ In January 1881, Horace entered into partnership with Albert Dew-Smith in the Cambridge Scientific Instrument Company (Cattermole and Wolfe 1987, pp. xiv, 20–1).

From W. T. Thiselton-Dyer 31 October 1879

Kew.
Oct^r 31. 79

Dear M^r Darwin

Your plant is *Lunularia vulgaris*.

We have spoken in Sachs of the vegetative structures of this plant as composed of thalloid shoots since they are really laterally expanded axes bearing rudimentary leaves along a central nerve on the under side. To speak of them as fronds would however meet with very general approval (since *Hepaticæ* with this habit are called frondose) I am not sure that our objection to the shorter expression was not a little pedantic.¹

The greenish bodies in the open saucers are perhaps hardly spores but are usually called *gemmæ*. The similar bodies in *Machantia* are figured in Sachs (p. 298)² They really are modified *hairs* and their gradual development into young plants may be compared to the formation of buds from the leaves of *Bryophyllum*.³ Of course they tread hard on⁴ spores which are themselves mostly structures arising asexually for reproduction. But spores I take to be unicellular bodies capable of a period of *suspended* vitality (e.g. fern spores). These *Lunularia* hairs grow *directly* into new *Lunularia* plants

In *Marchantia* the containing receptacle has a complete circular margin while in *Lumularia* it is a crescent.

I have been very unwell with an attack fortunately slight of liver congestion. But I hope and believe I am convalescent again

Believe me | Yours very sincerely | W. T. Thiselton Dyer

DAR 209.3: 335

CD ANNOTATION

End of letter: '(I ought to allude to Selaginella. Lycopodiaceæ circumnutating in Chapt I.)'⁵ *pencil*

- ¹ See letter to W. T. Thiselton-Dyer, 29 October 1879. *Lumularia vulgaris* is a synonym of *L. cruciata*, the crescent-cup liverwort. Thiselton-Dyer and Alfred William Bennett had translated Julius Sachs's *Text-book of botany* from the German (Sachs 1875). On *Lumularia* see Sachs 1875, p. 298; on their preference for 'thalloid' over 'frondose', see *ibid.*, p. 296 n. 2. The former taxon Hepaticae is roughly equivalent to Marchantiophyta (liverworts). CD used the term 'frond' in *Movement in plants*, p. 258.
- ² Thiselton-Dyer refers to the translation, Sachs 1875.
- ³ *Bryophyllum* is a former genus, now subsumed within the genus *Kalanchoe*. The leaves of *Kalanchoe* species are notable for producing small growing plantlets on their edges that eventually drop off and root.
- ⁴ That is, tread hard upon the heels of, or approach closely to.
- ⁵ In *Movement in plants*, p. 66, CD described the movements of 'Selaginella Kraussii (?) (Lycopodiaceæ)'. The name is now usually rendered as *S. kraussiana* (Krauss's clubmoss); it is now in the family Selaginellaceae in the subclass Lycopodiidae. See also *Correspondence* vol. 26, letter from W. T. Thiselton-Dyer, 29 January 1878.

To Julius von Haast 1 November 1879

Down, Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Nov 1. 1879

My dear Sir,

I am very much obliged for your kind present of the Geology of N. Zealand, with its many admirable illustrations which I have looked at with much interest. I shall be particularly glad to read about the old glaciers.¹ Every thing about so isolated a spot is indeed highly interesting to every naturalist. The extent to which Science is cultivated in N. Zealand always excites my admiration

I remain, my dear Sir | Yours very faithfully | Charles Darwin

LS

Auckland War Memorial Museum Library Tāmaki Paenga Hira (T. F. Cheeseman Papers MS-58)

- ¹ CD's copy of *Geology of the provinces of Canterbury and Westland, New Zealand* (J. F. J. von Haast 1879) is in the Darwin Library–Down. For a discussion of Haast's work on glaciers, see Oldroyd 1973.

To James Torbitt 1 November 1879

Down,

Nov. 1, 1879.

My dear Sir

A lady lately sent me two newspapers giving an account of your potato experiments. I have forwarded these papers to Mr. Farrer of the Board of Trade,

and remarked to him what a National misfortune it would be if you were compelled to throw up the work.¹ He answers that he should be glad in any way to assist and wishes to know whether you have published any report this year, for I have seen none.² Will you kindly inform me on this head, and what amount of assistance you require for carrying on your experiments satisfactorily. I should also like to know whether you continue fairly hopeful of complete, or even moderate, success. If you will be so kind as to give me some information on the above points, I will communicate with Mr. Farrer, that is if you are still willing to carry on your most valuable work. I have written in haste and hope that I have expressed myself with sufficient clearness.

My dear Sir | Yours very faithfully | Charles Darwin.

Copy
DAR 148: 107

¹ The newspapers that CD sent to Thomas Henry Farrer have not been found; the lady has not been identified (see letter to T. H. Farrer, 23 October 1879 and n. 2).

² See letter from T. H. Farrer, 30 October 1879 and n. 1. Torbitt had hoped to send CD a report of the latest results of his potato experiments, but the report was delayed because of his wife's illness (see letter from James Torbitt, 18 September 1879).

From T. H. Farrer 2 November 1879
Abinger Hall, | Dorking. | (Gomshall S.E.R. | Station & Telegraph.)
2 Nov/79

My dear Mr Darwin,

I will at once tell my brother *William* that Mr Hacon will call on him about settlements.¹ These young ones will not starve even if Horaces designs do not prove very remunerative; as we trust they will.² He seems too to have what is worth a great fortune, prudence in dealing with money. So much the better for Ida has it all to learn.

My intention has been to give each of my younger children about £12,000 at my death and I would covenant to pay £300 a year to them at once.

Mr Hacon will find my brother a very sensible fellow on these matters, and I think you & I shall agree about them very well—I am not very fond of strict settlements especially where the people are prudent: and anything beyond a reasonable provision for a family I abominate.

Now that the matter is finally settled I do not think there is any good reason for delay. It is a trying time for everyone: and the sooner we can settle into new relations the better.³

Ever sincerely yours | T H Farrer

I mean to give your potato papers to Lord Sandon—but should like to have something definite to suggest.⁴ It is a good time for it—Agriculture wants press.

DAR 164: 95

¹ CD had suggested that his solicitor, William Mackmurdo Hacon, meet with Farrer's brother William James Farrer, who was also a solicitor, to discuss the marriage settlement for Horace Darwin and Ida Farrer (see letter to T. H. Farrer, 31 October 1879).

- ² Horace had been designing and building scientific instruments in Cambridge since 1877; he founded the Cambridge Scientific Instrument Company in partnership with Albert George Dew-Smith in 1881 (Cattermole and Wolfe 1987, pp. xiv, 20–1).
- ³ Farrer had initially withheld his consent for the marriage (see letter to T. H. Farrer, 27 June [1879] and n. 2).
- ⁴ CD had sent Farrer some newspaper articles about James Torbitt's potato experiments (see letter from T. H. Farrer, 30 October 1879, and letter to James Torbitt, 1 November 1879 and n. 1). Dudley Francis Stuart Ryder, Viscount Sandon, was minister for the Board of Trade.

To T. H. Farrer 3 November 1879

Down, Beckenham
Nov^r. 3.—79.

I thank you cordially for your note.¹ I have written to Mr T. & will in due time inform you what he says & what I think.²

C. D.

Copy
DAR 144: 98

¹ See letter from T. H. Farrer, 2 November 1879.

² See letter to James Torbitt, 1 November 1879.

From W. B. Cooper 4 November 1879

Philad^a
Nov: 4th/79.

Dear Sir

In your "Descent of Man" after some interesting remarks on the external differences of the races of man; you conclude by ascribing them to *sexual* selection.¹

I thought I would venture to suggest the possibility that the color of the Negro may have been maintained by *natural* selection, offering as it does in the deep gloom of a tropical forest such singular advantages in war and the chase, and as a means of concealment from enemies; this is made more plausible by the fact that several tropical animals derive advantages from the possession of an identical color, the Elephant, for example, is stated to be difficult to discern although only a few feet distant, so closely does he harmonize with his surroundings.²

It might be further suggested that the color of the American Indian is in harmony with the color of his surroundings in the autumn, the season when he is most active in the chase, but this may be regarded as fanciful, as also the attempt to refer the pale races to the result of sexual selection guided by an appearance of cleanliness.

I venture the above at the risk of advancing what may have appeared in some of your writings which I have not seen.

Yours truly | Wm: B. Cooper

To Charles Darwin Esq: F.R.S.

DAR 161: 224

- ¹ CD's claim was that, of all the causes for the differences in appearance between human races, sexual selection was 'by far the most efficient' (see *Descent* 2: 384). Cooper has not been identified.
- ² CD had a long-running debate with Alfred Russel Wallace about the role of protective coloration in insects and birds (see, for example, *Correspondence* vol. 15, letter from A. R. Wallace, 26 April [1867], and *Descent* 1: 403–10).

From W. M. Hacon 4 November 1879

18, Fenchurch Street, | London, | E. C.
4th Nov^r 1879

My dear Sir

I have received your letter of yesterday. And I will communicate with M^r William Farrer, respecting the settlement, to be executed previously to the intended marriage of your son Horace with Miss Farrer:—¹ writing, either to-night or tomorrow, for an appointment for my calling upon M^r W. Farrer.— At the meeting with that gentleman, I will state, in limine, that you are prepared to make now the same settlement, as you made upon the marriage of your daughter, and your son Francis viz £5000.—² *Some* reason must be assigned if you are asked to alter this sum.—

As to the intentions of the father of the Lady I must wait for explanation in the first instance.

I am | My dear Sir | Yours very truly | W^m M Hacon

Charles R. Darwin Esq^{re} | Down | Beckenham | Kent

DAR 166: 23

- ¹ CD's letter has not been found; see, however, the letter to T. H. Farrer, 31 October 1879. CD had suggested that Hacon meet with T. H. Farrer's brother William James Farrer, who was a solicitor, to discuss the marriage settlement of Horace Darwin and Ida Farrer.
- ² CD had settled £5000 of debenture stock in the North Eastern Railway Company on Francis Darwin and Henrietta Emma Litchfield (see letter from W. M. Hacon, 13 October 1879 and n. 1). *In limine*: on the threshold, i.e., as a preliminary.

To J. D. Hooker 4 November [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington, S.E.R.
Nov— 4th

My dear Hooker

All the acorns have dropped off my Cork-tree unripe. Will you therefore be so very kind as to do what you offered viz send by enclosed address a young tree of *Quercus rubra* or *coccinea* (whichever species is the handsomest) to be planted in my honour!²

Ever yours | C. Darwin

Pray thank Dyer for his full answer about *Lunularia*.—³

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: f. 191)

- ¹ The year is established by the relationship between this letter and the letter to Victor Marshall, 14 September 1879.

- ² CD had hoped to send acorns from a cork oak tree to Victor Marshall as a memorial of his visit (see letter to Victor Marshall, 14 September 1879). *Quercus rubra* is northern red oak; *Quercus coccinea* is scarlet oak.
- ³ In his letter of 31 October 1879, William Turner Thiselton-Dyer had identified a specimen as *Lunularia vulgaris* (a synonym of *L. cruciata*, crescent-cup liverwort).

To Ernst Krause 4 November 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

Nov 4. 1879

My dear Sir,

I think Herr Alberts has treated me very unfairly. I informed either you or him of the price of the photographs. M^r Murray was unwilling to give the order without prepayment, & I therefore took the responsibility on myself.¹ Herr Alberts now writes without any apology that he does not want the copies.² M^r Murray has written to the Photograph Company to stop the printing, but fears it is too late.³ If by good fortune the English edition should sell well we may perhaps be able to use any copies that have been struck off by having them cut down to the size of my volume. I am quite sure that you have taken no part in this proceeding, & that you will think it fair that I should deduct the cost of the useless photographs from the profit of the book which is to be transmitted to you.

I decline to hold any future communication with Herr Alberts, & if he wants clichés of the two wood cuts M^r Murray will certainly require prepayment.⁴

My dear Sir | Yours sincerely | Charles Darwin

LS(A)

The Huntington Library (HM 36195)

- ¹ Karl Alberts was the director of Ernst Günther, the firm publishing the German edition of *Erasmus Darwin*; the English edition was published by John Murray. CD had written to Alberts about the cost of reproducing the frontispiece, a photograph of an engraving of a painting of Erasmus Darwin by Joseph Wright (see letter to Karl Alberts, 8 October 1879).
- ² Alberts's letter to CD has not been found; see, however, the letter from Ernst Krause, 6 November 1879.
- ³ The Autotype Company of London printed the frontispiece (see letter to Ernst Krause, 14 March 1879, n. 6).
- ⁴ In addition to the frontispiece, *Erasmus Darwin* contained woodcuts of Elston Hall, p. 3, and Breadsall Priory, p. 125.

To Victor Marshall 4 November [1879]¹

Down, | Beckenham, Kent. | (Railway Station | Orpington, S.E.R.)

Nov. 4th

My dear M^r Marshall

Owing to the miserable summer everyone of the acorns has dropped off my Cork Tree.² I will therefore consult Sir J. Hooker whether *Quercus rubra* or *coccinea* is the handsomest species, & have one sent you in a few days for my own honour & glory.—³

Yours very sincerely | Ch. Darwin

American Philosophical Society (459)

- ¹ The year is established by the relationship between this letter and the letter to Victor Marshall, 14 September 1879.
- ² CD had hoped to send acorns from a cork oak tree for Marshall to plant in his garden as a memorial of CD's visit (see letter to Victor Marshall, 14 September 1879).
- ³ Joseph Dalton Hooker. *Quercus rubra* is northern red oak; *Quercus coccinea* is scarlet oak. See letter to J. D. Hooker, 4 November [1879].

From James Torbitt 4 November 1879

Belfast
4th Novr 1879

Charles Darwin Esq^r. | Down, Beckenham, Kent.

My dear Sir,

I have all along been most anxious to spare your time and therefore have not till now replied to your letter of 20th. Sept^r. last, one of the kindest possible and most highly valued.¹

With regard to "Black '75"—best thanks for your trouble in growing it and reporting on its behaviour.² N^o 1 was the part of the variety which came true to the original type. N^o 2 which by some mistake I have called, it seems, the "variety" was that part of the variety which came untrue; and I now suspect that the malady under which it suffers was caused by slugs partially cutting through the stems during the year 1878, instances of which I have observed. I have sent part of this variety to Paris, requesting them to grow a few tubers of it year by year to see what becomes of it; this they promise to do, and to report results.

There were few humble bees here and I did not observe one visiting the flowers of the potato, but the flowers had little or no perfume this year, and almost all dropped off.

On yesterday I received the last lots of the new varieties, and also your valued letter of 1st. Inst.³ before replying to which I wished to have a nights consideration—after which, "I have now to say, that in so far as my judgment goes, complete success is not only fairly hopeful, but complete success has been obtained. I have no doubt whatever, that by means of cross-fertilization and selection, any number of varieties of the potato can be produced fungus-proof not only in the tuber, but also in the foliage"—the statement in my last respects, that the whole of the foliage of the seedlings of present year was destroyed by the parasite was a mistake.⁴

As to costs of experiments; should it be determined on to hold the whole of the valuable varieties for another year, I think about four or five hundred pounds would be requisite, and should trade come right before March next I should be prepared to incur that expenditure myself; should trade not come right I will be prepared to do exactly whatever you, my dear Sir may wish; but by getting rid of the potatoes and continuing the cross-breeding no further money would be needed, and I intend to continue the crossing so long as I am able.

I did not publish any thing this year, except a letter to the "Field" in February last, which I did not trouble you with, but now enclose marking in red some parts you might wish to read.⁵

In a few days I hope to make inspection of the whole of the varieties, and to submit a detailed report of all the facts I have observed.

I am my dear Sir | most respectfully yours | James Torbitt

[Enclosure]

FROM "THE FIELD."

CULTIVATION OF THE POTATO.

SIR— Mr. Darwin authorises me to state, that "after due consideration of the information which I communicated to him, he fully approves of the principles on which I have been acting in this matter"—namely, growing the plant from the largest and heaviest seed, and selecting for continuous propagation by their buds (sets) those plants which proved themselves most vigorous and least subject to the Disease. And before the publication of his work on "Cross-Fertilization of Plants," he did me the great honour to explain that the advantages to be obtained by the crossing of plants were similar to those which have been obtained by the cross-breeding of animals; and suggested that to the principle of "selection of the fittest" I should add the increased vigour of life, and the other advantages to be obtained by cross-fertilization—cross-breeding carried down through successive generations.⁶ This suggestion I have been acting on to the best of my ability; and with Mr. Darwin's approval I now beg leave to submit to you an account of the progress of the work, so far as it has gone.

At the Meeting of the British Association at Belfast, in the Summer of 1874, I advocated the propriety of instituting such experiments:⁷ the result of the discussion being that I determined to make them myself, and on an extensive scale; to attempt, in fact, to introduce a rational system of cultivation of the plant to these kingdoms, and to the world at large.

Consequently, in the succeeding Autumn I advertised for berries of the plant, obtained a couple of tons, saved the seed, and in the Spring of 1875 I sent ten thousand seeds—ten thousand new distinct varieties of the plant—with instructions how to grow them, to each Member of the House of Lords, each Member of the House of Commons, each Magistrate of Ulster, and to some hundreds of persons interested, whose names I had obtained by advertising. I do not know the number of people so supplied with seeds, but it was large, seeing that the extraction of the addresses from the directories and writing them on the envelopes occupied a clerk for ten days. This distribution of seed I repeated in the Spring of 1876; but my efforts in that direction failed, for I have had no reports from the public of any particular value.

This want of success on the part of the public I attribute to two causes:—

First—Where the seeds were grown at all, the Gardeners in most cases, I suspect, failed to see that each seed is a distinct variety; they mixed the produce of the seeds—put together, for instance, all white tubers of a kidney shape—and where that has been done the result is of no value, because such mixtures contain the worst as well as the best varieties.

Second—The old varieties of the plant do not produce seed, and the seed I obtained by advertisement, besides being self-fertilized, was from new coarse varieties, the tubers produced thereby being generally of uncouth shapes, and, seemingly, unworthy of cultivation, and therefore not further cultivated.

My own experience is as follows:—

*In the Spring of 1875 I selected a field the most suitable I could find for the Parasite, whose growth in the body of the plant constitutes the Disease.*⁸

In the Summer I planted out into this field five thousand Potato plants, selected best of some one hundred thousand grown from seed, sown under glass in the Spring. When raising them in the Autumn I found that many had produced no tubers at all; many had had all their tubers destroyed by the Disease; a great proportion was more or less diseased; a few were absolutely free from disease; and almost all were of uncouth shapes. Of these five thousand plants I selected about a thousand of the best, and stored them over; in the Spring I found that about one-half of them had become considerably diseased, and these I destroyed; the remaining five hundred varieties I planted in the Spring of 1876 in a field which had not been broken up for twenty or thirty years, and they grew most luxuriantly: when in bloom, they resembled an immense bed of flowers. On raising them in the Autumn I found the yield very much larger than usual, and a further number of varieties diseased, which I destroyed, storing over the remainder.

In the Spring of 1877 I found further numbers of varieties diseased; destroyed them, and planted the remaining varieties,—this time as a crop in common rotation—and the growth was again most luxuriant, the large white flowers of certain varieties seeming to sparkle in the sunlight, and the yield being as before—very much larger than usual. Again, further varieties had become diseased; were destroyed; and remainder stored over, more varieties becoming diseased during the Winter, which were destroyed. In the Spring of 1878 I planted the remaining varieties—some fifty or sixty, perhaps—in the usual way, and a most remarkable change in their lives occurred: the beautiful bloom almost disappeared; such flowers as they produced were smaller, and some had changed colour; the foliage also had changed slightly; but the yield was as previously—very large. The proportion of diseased tubers in these selected best 1875 varieties I find at present to range from two or so to as much as ten or twelve per cent.; and there are three of them absolutely free from disease, and have been so during each year of their lives. Also, I suspect—in fact I have no doubt, merely from eating of them—that all these new varieties, besides being much more prolific, are much more nutritive than the old varieties, contain more flesh-forming matter in proportion to the starch; and the conclusion I draw from the foregoing facts is, that new varieties of the plant may easily be obtained, which, during the first few years of life, will be so prolific and so little subject to the Disease that they will give, after separating the diseased tubers, a larger yield of sound tubers than the old varieties give of sound and diseased tubers put together.

As regards the cross-breeds—

The first cross was effected in the Summer of 1876—white seedling upon white, and the offspring is all white. I have now of them (Feb., 1879) about a thousand varieties, of most beautiful shapes, excellent qualities and immense yields, at least two hundred and fifty of them being disease-proof for so far, and the remainder being very slightly affected. The next cross—seedling upon seedling, as before, and not a cross in the second generation—was made in 1877, using a white father and red mother, and the offspring is part red, part white, and part mottled. Of these I have about three thousand varieties; about one thousand being disease-proof for so far—shapes, qualities, and yields being, as before, of great excellence.

Last season (1878), under Mr. Darwin's wonderfully kind and minute instructions,⁹ I made many crosses of the second generation; have sown the seed, which is now growing vigorously, and I await a favourable result with great confidence.

Finally, Sir, should you consider this matter worthy of publication, and should any of your readers desire to communicate with me, I shall have great pleasure in responding.—

I am, Sir, | very respectfully yours, JAMES TORBITT.

Belfast, Feb., 1879

DAR 52: E3; DAR 178: 155

CD ANNOTATIONS

4.3 complete ... obtained. 4.4] *triple scored pencil*

5.1 on] 'on' written above pencil

5.2 I ... requisite, 5.3] *triple scored pencil*

5.4 expenditure] 'd' written over 'd' pencil

5.4 trade] 'd' written over 'd' pencil

7.1 In ... observed. 7.2] *scored pencil*

¹ CD's letter of 20 September has not been found; see, however, the letter from James Torbitt, 18 September 1879.

² CD had grown the 'Black seventy-five', a potato variety named by Torbitt; see CD's note to the letter from James Torbitt, 1 May 1879. CD's report to Torbitt has not been found.

³ See letter to James Torbitt, 1 November 1879.

⁴ See letter from James Torbitt, [1879²].

⁵ The enclosure with Torbitt's annotations has not been found; however, a reprint of Torbitt's letter dated 'Feb., 1879' and published in the *Field*, 8 March 1879, p. 272, is in DAR 52: E3 and is transcribed as an enclosure.

⁶ For CD's advice to Torbitt prior to the publication of *Cross and self fertilisation*, see *Correspondence* vol. 24, letter from James Torbitt, 14 April 1876, and letter to James Torbitt, 21 April 1876.

⁷ Torbitt presented a paper on potato disease at the British Association for the Advancement of Science meeting in Belfast in 1874 (see *Report of the 44th meeting of the British Association for the Advancement of Science, held at Belfast* (1874), Transactions of the sections, p. 134).

⁸ *Peronospora infestans* (now *Phytophthora infestans*) is a parasitic water mould responsible for causing potato late blight. The cycle of infection had been demonstrated by Anton de Bary in the 1860s (*DSB*).

⁹ See *Correspondence* vol. 26, letters to James Torbitt, 4 March 1878, 11 March [1878], 20 March 1878, and 28 June 1878.

From Victor Marshall [after 4 November 1879]¹

Monk Coniston, | Ambleside.

Dear Mr Darwin

I was on the point of writing to you to ask whether the seeds had ripened. I am very sorry that they have failed, however I shall value the plant whatever it is that you send—² Is there any chance of your coming round this way again before long?³ If so perhaps you will plant the tree yourself— But anyhow supposing you send it in the spring, I can plant it, & in case the opportunity arises you can transplant it. So I will put it in an inappropriate place hoping some day that you will set matters right.

We have had very comfortable weather lately—not too hot but quite warm enough— The colours of the leaves have been splendid We intend to be in town, 10 Petersham terrace Gloucester R^d, for the 1st 17 weeks of this year & I hope we may see you.⁴

Yrs very truly | Victor Marshall

DAR 171: 45

- ¹ The date is established by the relationship between this letter and the letter to Victor Marshall, 4 November [1879].
- ² CD had hoped to send acorns from a cork oak tree for Marshall to plant in his garden as a memorial of CD's visit (see letters to Victor Marshall, 14 September 1879 and 4 November [1879]).
- ³ The Darwins had stayed at Coniston in the Lake District from 2 to 27 August 1879 (CD's 'Journal' (Appendix II)).
- ⁴ The address is in South Kensington, London.

From Victor Marshall [after 4 November 1879]¹

9—Petersham Terrace | S.W.

Dear Mr Darwin

I never wrote to say that the oak had arrived safely, which was very ungrateful. I planted it in a place where it will be conspicuous & ornamental when it grows up we shall always value it very much & are very much obliged to you for letting us have it²

Yours very truly | Victor Marshall

I send the following ribald verses because the author has made free with your name.

The Rank Imposter

Sir I am an artful designer,
And this my design, to succeed.
I survey from Peru to far China,
And fashion mankind to my need.

My dad was a sugar refiner,
He left me no cash which was hard,
Therefore I'm a penny a liner,
Art critic, philosopher, bard.

I condemn the sonata C. minor,
Approve the Caprice in F. sharp,
I declare the trombone is diviner
Than the banjo, the bones, & the harp.

I maintain that peagreen is intenser
Than azure so modest & chaste,
I deplore that our good Herbert Spenser³
Has written so sadly to waste.

Other critics of intellect denser
Opprobrium attach to my name,
I care not, for I'm the dispenser
Judicious of praises & blame

I believe that Burne Jones is suppremer
 Than Leighton, than Watts, than Millais,
 That Swinbourne's a heavenly dreamer,
 Old Tennyson in a bad way

That Ruskin's a safe man to trust in
 Regarding the plant and the bird,
 While Darwin is simply disgusting,
 And what is more highly absurd.⁴

Enough! to recount my sucesces
 Would take the best part of a week.
 I've got into some shocking messes
 And out of them too—by my cheek

Alas! though my cheek be unbounded,
 Ah me! though my brow be of brass,
 I may be shown up & confounded
 Some day—and exposed as an ass

The bolts of ill-fortune may hurtle
 Around me— The low magazines
 Refuse me— For me no more turtle
 No venison, but bacon & greens.

Then shall I the memory foster
 Of this present season too blest,
 When I range a successful imposter
 Lie softly, & drink of the best.

DAR 171: 44

¹ The date is established by the relationship between this letter and the letter to Victor Marshall, 4 November [1879].

² Marshall wanted to plant a tree as a memorial of CD's visit to Coniston (see letter from Victor Marshall, 7 September 1879, and letter to Victor Marshall, 4 November [1879]). CD has asked Joseph Dalton Hooker to send Marshall a young oak tree (see letter to J. D. Hooker, 4 November [1879] and n. 2).

³ Herbert Spencer.

⁴ Edward Coley Burne-Jones, Frederic Leighton, George Frederic Watts, John Everett Millais, Algernon Charles Swinburne, Alfred Tennyson, and John Ruskin.

From Asa Gray 6 November 1879

Herbarium of Harvard University, | Botanic Garden, Cambridge, Mass.

Nov. 6 1879

My Dear Darwin

It is such a pleasure, and a rare sight, to see your handwriting, that I will do anything for you.¹ I shall try to get seeds of the *Ipomœa* & *Megarrhiza* for you,

neither of which seed here.² But at this season it is doubtful even if the latter can be picked up in California For the former try W^m. Thompson, seeds-man, Ipswich, on the chance.³ Glad you will turn your mind to what I think is an interesting point.

De Vries wrote me a letter.⁴

Now, I am a sinful not to have ever thought that you might like to see my revised Text Book, & to have sent it to you.⁵ Now I think of it, there are sundry things in the book which I could wish you to see, and I wonder I did not send the book

I am famously well—and deep in Solidago—an ungrateful task.⁶ My wife⁷ is in bed with a bad cold, but responds to your good wishes.

And hoping you & yours are all well, I am | Very sincerely Yours | Asa Gray

DAR 165: 200

¹ Letter to Asa Gray, 24 October 1879.

² In his letter of 24 October 1879, CD had requested seeds of *Ipomoea leptophylla* (bush morning-glory) and *Megarrhiza californica* (a synonym of *Marah fabacea*, California man-root).

³ William Thompson.

⁴ Hugo de Vries (see letter to Asa Gray, 24 October 1879 and n. 5).

⁵ A. Gray 1879 (see letter to Asa Gray, 24 October 1879 and n. 1).

⁶ Gray was working on a study of *Solidago* (the genus of goldenrod) in older herbaria (A. Gray 1882).

⁷ Jane Loring Gray.

From Ernst Krause¹ 6 November 1879

Berlin N.O. Friedenstrasse 10. II.
den 6.11.79.

Hochverehrter Herr!

Ich bin sehr erschreckt aus Ihrem soeben erhaltenen gütigen Schreiben zu erschen, wie wenig correct sich Herr Alberts in der Angelegenheit mit Herrn Murray benommen hat.² Herr Alberts schrieb mir in diesen Tagen, er denke das Lichdruckportrait in Deutschland herstellen zu lassen, da ihm Herr Murray einen Preis gemacht habe, der die Herstellungskosten um das Drei-oder Vierfache übersteige(?) und obendrein Vorausbezahlung verlange. Ich glaube wohl, dass ihn die letztere bei uns nicht übliche Bedingung ein Wenig in Harnisch gebracht hat, und in dieser Beziehung ist er wohl einigermaßen zu entschuldigen. Mir war es völlig unbekannt, dass er die Bestellung bereits gemacht hatte und ich halte es für völlig selbstverständlich, dass er die bestellten Drucke auch verwendet und bezahlt. Ich will noch heute an ihn schreiben und anfragen, was das Alles bedeutet.

Für Ihren so freundlichen Brief an Herrn Reinwald sage ich Ihnen herzlichsten Dank, ich hoffe, dass dort damit alles im Reinen sein wird.³ Auch möchte ich Sie recht sehr bitten, Herr Alberts nicht allzusehr zu zürnen; er wird sehr unglücklich sein, wenn er erfährt, Ihre Unzufriedenheit erregt zu haben, denn er giebt an Verehrung gegen Sie gewiss Niemandem in Deutschland etwas nach. In dieser Angelegenheit handelte es sich, wie mir scheint, um eine Unliebenswürdigkeit von Buchhhändler zu Buchhändler, aber freilich scheint Herr Alberts darin, wie ich schon aus der Angelegenheit mit Herrn Reinwald gesehen habe, recht ungeschickt zu sein in der Abwicklung solcher Geschäfte.

Herr Professor Häckel, der vorgestern hier in Berlin war, hat mir erzählt, wie sehr wohl er Sie vor einigen Wochen gesehen,⁴ und dies hat mich desto mehr mit Freude erfüllt, als ich leider bekennen muss, Ihnen viel Unruhe und Störung seit einem halben Jahre gemacht zu haben.

Ich zeichne, hochverehrter Herr | Ihr | von Herzen ergebenster | Ernst Krause

DAR 92: B46-7

¹ For a translation of this letter, see Appendix I.

² See letter to Ernst Krause, 4 November 1879 and n. 1. CD had paid John Murray in advance for photographs of the frontispiece of *Erasmus Darwin* for the German edition; however, Karl Alberts had cancelled his order (see letter to Karl Alberts, 8 October 1879).

³ CD had sent Krause a copy of his letter to Charles-Ferdinand Reinwald regarding the French translation of *Erasmus Darwin* (see letter to C.-F. Reinwald, 29 October 1879). No French translation was published.

⁴ Ernst Haeckel had visited CD at Down House on 5 and 6 September 1879 (Emma Darwin's diary (DAR 242)).

From W. M. Hacon 7 November 1879

18, Fenchurch Street, | London, | E.C.
7th. Nov^r 1879

My dear Sir

I have seen M^r William Farrer to-day on the subject of the settlement to be made on his niece's intended marriage.¹ I informed him that you were prepared to settle upon your son Horace the same amount as you had settled on your daughter and your son Francis on their marriages—viz—£5000.² He remarked that he thought this inadequate. He stated that his niece is entitled to about £6000 under her parents settlement,—subject to her fathers life interest:—and that her father is prepared either to take over this interest substituting for it £10000 of his own, or his engagement for the payment of £10,000 at his death,—or to make up the difference between the £6000 and £10,000 at his own death. He said that he, M^r William Farrer had not fully obtained his brothers views as to the immediate allowance he would make (and secure) to his daughter *until* the £10,000 came into possession: but that he had no doubt his brother would pay £250 per annum, perhaps £300 per annum.

M^r William Farrer intimated that he thought *more* should be settled on the part of your son than was settled on the part of Miss Farrer. But it was impliedly admitted that an equal settlement on your sons behalf would be accepted.—It was not asked that you should do more than engage that at your decease your son Horace should have, *with* the £5000 you are willing to give, £10,000 in all: & that until this sum comes into possession you should secure, by engagement, an allowance, in addition to the increase of the £5000, sufficient to give an income the same as that to be secured by the Ladies Father.

The scheme of which the above is the Substance was the outcome of a good deal of talk: and I hope that you will find the scheme generally intelligible. But I shall be glad to explain it further in any respect: and to receive your view respecting it. The

nature of the settlement-trusts were talked over and no departure was proposed from the usual arrangements. Each party to the proposed marriage could have the first life interest in his or her own future, with remainder to the other on death. The whole should be divisible amongst issue by the joint appointment of the husband & wife or by the sole appointment of the survivor. In default of appointment the whole fortune should go to children equally at 21 or (as to daughters) at marriage. And in default of children each party's fortune should subject to the life-interests revert to his or her marriage. Mr William Farrer thinks the powers of investment should be fairly large:—that powers to invest in the **purchase** of land are not desirable:—but he assented to a suggestion that it might be well to give power to buy a house &c.

I have not much to remark on the views expressed by Mr William Farrer. And indeed there is little to say about them,—if you are willing to engage that your son Horace shall at your death take (plus the £5000 you are willing at once to settle) another £5000 of capital:—and to engage that until that £5000 comes into possession, the income it will eventually give, shall be paid to the Trustees for the purpose of the settlement.

If you should think fit to insist that the period of payment of the £5000 shall be extended until the expiration of the life of the survivor of Mr Darwin & yourself I think that this would not be objected to,—provided the allowance by you, or from your estate of an income should be secured up to the payment of the £5000.

Of course Mr William Farrer's line was that an equality of settlement was to be carried out. His tone was considerate and civil. And I need scarcely say that the interview began & ended smoothly.

I am writing in some haste to save a post. | & I am | My dear Sir | Yours very truly | W^m: M Hacon

Charles R. Darwin Esq^{re}
Down | Beckenham | Kent

DAR 166: 24

¹ CD had suggested that Hacon meet with Thomas Henry Farrer's brother William James Farrer, who was a solicitor, to discuss the marriage settlement of Horace Darwin and Ida Farrer (see letter from W. M. Hacon, 4 November 1879).

² CD had settled £5000 of debenture stock in the North Eastern Railway Company on Francis Darwin and Henrietta Emma Litchfield (see letter from W. M. Hacon, 13 October 1879 and n. 1).

From Anthony Rich 7 November 1879

Chappell Croft, | Heene, Worthing.
Nov^r: 7. 1879.

My dear Mr Darwin

Your letter of the 5th was extremely acceptable to me, not only on account of the shrubs—(which arrived this morning, and are already planted)—and the promised book, for all of which I return many thanks—but because it assures me that you have got safely back into your own home¹ and normal studies from out of that strange world where the clouds have a “vibratory motion” and the skies a “diminished

light in them". What all that forebodes for ordinary mortals none but "Zadkiel" himself can expound.² But it is satisfactory to think that you have escaped without damage from such an awful phenomenon. In truth I have always thought that Oxford Professor a trifle demented upon certain subjects; the more so as I myself have never been able to reach the transcendental state of Turneromania.—³ I have several times felt a gentle pricking of conscience for not having written to thank you for that very kind and amusing letter you sent me from Coniston.⁴ Yet the silence was not altogether without design; for I can easily imagine the demands that must be made upon your time and patience by all sorts of correspondents, for any one, who has a conscience in these matters, not permitting himself to encrease the evil, when he could well wait for some favourable opportunity as has now befallen me. And oh! I can truly commiserate you on the irksome task of having to read and revise the proofs of such a work as you allude to, the minuteness of detail and fixedness of attention required being almost as wearying to the sight as to the mind.⁵ The genuine love for truth and science and a determination not to be hurried over the matter, are the only things, I fancy, which can enable a man to get through such work without a break down— But then the satisfaction when it has been successfully accomplished! and the glow of triumph when adhesions flock in! and the thought that the labour is for the profit of others more than self!—

Your eldest son⁶ came over and paid me a flying visit in the month of September. He was very pleasant; we soon became acquainted; and my only regret was that the time was necessarily so short. Upon returning to Southampton he was kind enough to interest himself on my behalf in procuring me a heifer from a well known dealer there who imports animals from the Channel Islands. She bids fair I think to turn out well, reasonably well looking, and extremely quiet; to me a matter of considerable importance as she has be tethered in her circumscribed paddock all day long. Now that I learn from you that he has returned from his tour in Switzerland, I shall take the liberty of writing to him, and asking his advice upon some points of treatment, as he himself keeps animals of the same breed. He told me something about "cotton cake" being good for them.⁷ People here know nothing about it. My animal does not seem inclined to eat hay at night—only the abundant washy grass of which she gets a generous fill during the day time, which makes her, as it seems to me too loose, requiring something more solid to steady it that she will eat. I dare say that he will enlighten and instruct me upon the subject when he has a half hour to spare.

The "mumps", as you say, *is* no joke—if that is not bad grammar— I did not send for a doctor; but fed for 10 days upon good strong beef tea, as I could not open my mouth wide enough to get anything in between the teeth, and could not bite if it had got in. The consequence was that I have passed an unhappy time of it, but did not know what it was till the end had passed. I did not catch it from any one; though I have since heard that the complaint is catching and has been prevalent at Worthing of late.

Doubtless it will be a sincere pleasure to you that your youngest son is going to be well and comfortably settled in life by uniting himself with a young lady who can

charm his parents as well as himself.⁸ I send them my unknown congratulations; with the hope that if they should ever be in this neighbourhood, as might probably happen, they would not leave it without giving me an opportunity of making their acquaintance.—

Having thus got down to the end of a second sheet, I must draw the bit without venturing upon further chatter.

With best regards & respects to M^{rs} Darwin, and a cordial wish for your happy emergence out of those proofs & revises | Believe me to be | Most truly yours
| Anthony Rich

DAR 176: 138

¹ CD's letter has not been found; his most recent trip was to Coniston in August (CD's 'Journal' (Appendix II)). The promised book was *Erasmus Darwin*.

² Richard James Morrison, whose pseudonym was Zadkiel, was a popular astrologer (*ODNB*; see Anderson 2005, pp. 70–8).

³ While at Coniston, CD had visited John Ruskin, who was Slade Professor of art at Oxford from 1869 to 1879 (Emma Darwin's diary (DAR 242)), (*ODNB*). Ruskin had praised the depiction of clouds and other atmospheric effects in the landscape painting of Joseph Mallord William Turner (see Ruskin 1843). Vibratory motion (or movement) and diminished (or diminishing) light are recurring expressions in Ruskin's writing.

⁴ CD's letter from Coniston has not been found.

⁵ CD evidently revised the proof-sheets of *Erasmus Darwin* during his stay in Coniston; the proofs had been read and commented on by Henrietta Emma Litchfield and Leonard Darwin (see letter from Leonard Darwin, [before 12 July] 1879).

⁶ William Erasmus Darwin.

⁷ Commercially produced seed cakes, made from industrial by-products such as cottonseed, were widely used to feed British cattle in the 1870s (Langlands *et al.* 2008, p. 22).

⁸ Horace Darwin and Ida Farrer were engaged to be married.

To James Torbitt 7 November 1879

Down,
Nov. 7, 1879.

My dear Sir

I wrote at considerable length yesterday to Mr. Farrer of the Board of Trade, with several extracts from your letter together with the printed documents.¹ I said I thought it would be a national calamity if you were prevented from trying the successful varieties during a few years more and raising new varieties from them. I also said the case appeared to me a proper one for Government assistance. What Mr. Farrer will do I cannot of course tell but in a former note he said he thought Lord Sandon was the best member of the Government to consult.² I was very much pleased to see in your last letter that you thought you had been quite successful in raising a fungus-proof variety, but pray do not be too sanguine until they have been tested during two or three seasons.³

With all good wishes believe me my dear Sir | Ch. Darwin.

DAR 148: 108

¹ CD's letter to Thomas Henry Farrer has not been found (see, however, letter to T. H. Farrer, 23 October 1879). Torbitt had enclosed an extract from the *Field* with his letter of 4 November 1879.

- ² Dudley Francis Stuart Ryder, Viscount Sandon, was minister for the Board of Trade (see letter from T. H. Farrer, 30 October 1879).
³ Torbitt was trying to breed a potato variety that was resistant to late potato blight (see letter from James Torbitt, 4 November 1879 and n. 8).

From Wilhelm Behrens 8 November [1879]¹

Braunschweig
 Nov. 8. (79)

Hochgeehrter Herr!

Ew. Hochwohlgeboren erlaube ich mir, anbei den Separatabdruck einer kleinen Arbeit von mir zu übersenden, welche in diesem Jahrgange der “Flora” publicirt wird.² Sie macht es sich zur Aufgabe, die morphologisch-anatomische Structur der Nectararien und den Process der Nectarbildung in den Blüthen klar zu legen.

Die von Ihnen wieder ans Licht gezogene Lehre von den Blumen und Insecten ist es, welche diese kleine Untersuchungsreihe veranlasste: den ersten Plan dazu habe ich beim genauen Studium Ihrer Werke über Di- und Trimorphe Pflanzen, über Orchideenbefruchtung und über “Different forms of flowers” etc. gefasst.³ Mehrfach habe ich zur Erklärung der anatomischen Structur der Nectararien Ihre Lehre der “Natürlichen Auslese” herbeigezogen, und Ihre Zustimmung in den betreffenden Punkten würde mir die grösste Belohnung sein.

Wenn es mir gelungen sein sollte, auf jene interessanten Blüthenorgane einiges neue Licht zu werfen, so will ich doch stets dankbarst anerkennen, dass *Sie* es waren, der diese meine Studien hervorgerufen hat—ja dass Ihre Werke es waren, die auf die ganze Richtung meiner botanischen Arbeiten bestimmend einwirkten.

Gestatten Sie hier dem Anfänger, dem Meister seine Bewunderung auszudrücken!

Genehmigen Sie, hochverehrter Herr, die Versicherung meiner aufrichtigsten Hochachtung und wärmsten Verehrung.

Ew. Hochwohlgeboren | ergebenster | W. Behrens.

DAR 160: 124

- ¹ For a translation of this letter, see Appendix I. The year is established by the reference to Behrens 1879.
² Behrens’s essay, ‘Die Nectararien der Blüthen: anatomisch-physiologische Untersuchungen’ (The nectaries of flowers: anatomical-physiological researches), was published in monthly parts of the journal *Flora, oder allgemeine botanische Zeitung* (Behrens 1879); CD’s annotated offprint is in the Darwin Pamphlet Collection—CUL.
³ The specific works discussed in Behrens 1879 were *Origin*, *Orchids*, *Forms of flowers*, *Cross and self-fertilization*, and ‘Fertilization of papilionaceous flowers’; in some cases, he referred to a text from the German collected edition of CD’s works (Bronn and Carus trans. 1876, Carus trans. 1877a, and Carus trans. 1877b). See Behrens 1879, pp. 2, 23–4.

To W. M. Hacon 8 November [1879]¹

Nov 8th

Hacon

My dear Sir—

I am very much obliged for your letter & valuable assistance. Considering what M^r T. H. Farrer will settle, I think M^r W. Farrer’s proposal reasonable.² The

sole objection that I see to it, is that in case of the early death of Horace's wife, leaving one child, & Horace afterwards having other children, the child by the first marriage w^d inherit in excess; but the risk must be run for I suppose there is no way of avoiding it.— If I understand M^r W. F. proposal correctly, it is that I shd settle on M^{rs} Horace Darwin 5000£ at once,³ & covenant that at my & *my wife's death* £5000 additional shall be settled & on her, (this additional £5000 I trust be a [considerable] advantage of the offer) in the mean time covenanting to pay interest of 10,000£, which I presume will be 400£ annually.— Mr T. H Farrer in a note to me, said he w^d covenant to pay 300£ only⁴

I think that you will be able to advise me how best to arrange the affair, if I tell you what I give Horace independently of any marriage.— I allow him 300£ annually & I have already made over property to which he was entitled at my death to amounting to a little over 100£ a year. I intend for the future to divide amongst all my children the overplus of my income, which for an average of the last 10 years, will give Horace about 400£, so he will have from me. 800£ annually.—

With respect to the £5000 to be placed in trust; I hold 13,000 North-Eastern R^y Debenture stock & 27,000£ of London & N. Western 4 per cent guaranteed stock⁵ & I could put in trust 5000 of either of these stocks whichever M^r W. Farrer w^d prefer or

Will you kindly arrange the whole affair with M^r W. Farrer

ADraft

DAR 202: 60

¹ The year is established by the relationship between this letter and the letter from W. M. Hacon, 7 November 1879.

² Hacon had met with Thomas Henry Farrer's brother William James Farrer to discuss the marriage settlement of Horace Darwin and Ida Farrer (see letter from W. M. Hacon, 7 November 1879).

³ This was the amount that CD had settled on his other children at the time of their marriages (see letter from W. M. Hacon, 7 November 1879 and n. 2).

⁴ See letter from T. H. Farrer, 2 November 1879.

⁵ CD had stock in the North Eastern Railway Company and the London and Northwestern Railway Company (see letter from W. E. Darwin, 9 January 1879 and n. 1 and CD's Investment book (Down House MS)).

From W. E. Darwin [9 November 1879]¹

Basset, | Southampton.
Sunday

My dear Father

M^r Olmstead wants to get a few good signatures to the enclosed petitions.² Will you mind signing them & forwarding to M^{rs} Spottiswoode. I enclose an envelope & note but I do not know M^r Spottiswoode exact address.³

Sara thought it would be possible to send it to Lord Derby through Lady Derby.

His would be a capital name if it could be got; but I don't want to give you any trouble; & unless you thought Mother could send it to Lady Derby nothing had better be done.⁴ Lords are thought much of over the water.

I shall get Huxley & D^r Hooker & perhaps M^r Cowper Temple's, unless I think of any big name George could get.⁵

Your affect son | W. E. Darwin

P.S. both petitions should be signed

[Enclosure]

MEMORIAL
ADDRESSED TO
THE GOVERNOR OF NEW YORK,
AND

THE GOVERNOR-GENERAL OF CANADA

To ALONZO B. CORNELL, Governor of the State of New York:

The undersigned, citizens of several states and countries, address you by reason of the suggestion lately made by LORD DUFFERIN,⁶ that the State of New York and the Dominion of Canada should secure and hold, for the world's good, the lands adjacent to the Falls of Niagara.

The Falls of Niagara are peculiarly exposed to disastrous injury. The heights of snow, the precipitous crags of great mountains, however they may be disfigured by man, can rarely be applied to uses which would destroy their sublimity. But should the islands and declivities of the Niagara River be stripped of their natural woods, and occupied for manufacturing and business purposes; should even the position, size, and form of the construction which the accommodation of visitors will call for, continue to be regulated solely by the pecuniary interests of numerous individual land-owners, the loss to the world will be great and irreparable. The danger may be measured by what has already occurred. The river's banks are denuded of the noble forest by which they were originally covered, are degraded by incongruous and unworthy structures, made, for advertising purposes, willfully conspicuous and obstrusive, and the visitor's attention is diverted from scenes to the influence of which he would gladly surrender himself, by demands for tolls and fees, and the offer of services most of which he would prefer to avoid.

Objects of great natural beauty and grandeur are among the most valuable gifts which Providence has bestowed upon our race. The contemplation of them elevates and informs the human understanding. They are instruments of education. They conduce to the order of society. They address sentiments which are universal. They draw together men of all races, and thus contribute to the union and the peace of nations.

The suggestion, therefore, that an object of this class so unparalleled as the Falls of Niagara should be placed under the joint guardianship of these two governments whose chief magistrates we have the honor to address, is a proper concern of the civilized world, and we respectfully ask that it may, by appropriate methods, be commended to the wise consideration of the Legislature of New York.⁷

A similar memorial has been addressed to the Governor General of Canada.⁸

Cornford Family Papers (DAR 275: 74), Gardner 1880, pp. 31–9

¹ The date is established by the relationship between this letter and the letter from Emma Darwin to M. C. Stanley, 12 November [1879]. In 1879, the Sunday before 12 November was 9 November.

² In October 1879, Frederick Law Olmsted prepared a memorial that called for the protection of Niagara Falls from commercial and industrial development. Together with Charles Eliot Norton (William's

- father-in-law), he circulated the document to leading persons in the US, Canada, and Britain and eventually obtained over 600 signatures, including CD's (see letter from C. E. Norton to F. L. Olmsted, 17 October 1879 (F. L. Olmsted Papers: Correspondence, 1838–1928, Library of Congress, mss 35121, box 18; reel 17); McLaughlin ed. 1977–2015, 7: 424–5, and Kowsky 1985).
- ³ Eliza Taylor Spottiswoode and William Spottiswoode.
 - ⁴ Sara Darwin (William's wife), Edward Henry Stanley, and Mary Catherine Stanley. See letter from Emma Darwin to M. C. Stanley, 12 November [1879].
 - ⁵ Thomas Henry Huxley, Joseph Dalton Hooker, William Francis Cowper-Temple, and George Howard Darwin.
 - ⁶ Frederick Temple Hamilton-Temple-Blackwood, first marquess of Dufferin, was governor-general of Canada from 1872 to 1878 (*ODNB*).
 - ⁷ The petition was presented in March 1880. For more on the campaign to preserve Niagara Falls, see Runte 1973.
 - ⁸ John George Edward Henry Douglas Sutherland Campbell, marquess of Lorne, was the governor-general of Canada from 1878 to 1883 (*ODNB*).

From W. P. Garrison 9 November 1879

Llewellyn Park, | Orange, N.J.
Nov^r. 9. 1879

Dear Sir:

Your kind approval of my little work is reward enough for all pains spent upon it, while your expressions concerning my father will be treasured by his children as precious beyond comparison—¹

For your thoughtfulness in suggesting an English edition of “What Mr. Darwin Saw” I am very grateful. I believe my publishers made some advances to Mr. Murray before the book was put in type, and before, therefore, he could judge of its character.² Encouraged by your initiative, they now write me that they have resumed the negotiation. I can for my part see no obstacle to the English copyright, unless it reside in the borrowed illustrations, for which, perhaps, substitutes might be found—indeed, might well be found in some cases.

I have just returned from a visit to my friend Mr. Lewis H. Morgan, at Rochester, where I had the pleasure of seeing several letters from your hand in his collected correspondence.³ This excursion has delayed my acknowledgment of your two letters, and I make it now with the reluctance which one must ever feel to encroach upon your time even under the obligations of civility.

Believe me, | Your much honored & indebted serv^t, | Wendell P. Garrison

Cha^s. Darwin, Esq.

DAR 165: 9

¹ See letters to W. P. Garrison, [after 4 October 1879] and 16 October 1879. Garrison had sent a copy of his edition of *Journal of researches*, abridged and rearranged for children (*What Mr. Darwin saw on his voyage round the world*; C. R. Darwin 1880), as well as memorials about his father, the anti-slavery campaigner William Lloyd Garrison.

² CD's remarks about an English edition were in a missing portion of his letter to Garrison of [after 4 October 1879]; see, however, the letter to R. F. Cooke, 18 November [1879]. C. R. Darwin 1880 was published in the US by Harper & Brothers. CD's publisher was John Murray.

³ Lewis Henry Morgan had visited CD in 1871; their most recent correspondence was in 1877 (see *Correspondence* vols. 19 and 25).

To Wilhelm Behrens 10 November 1879

Down, | *Beckenham, Kent.*

Nov. 10th 1879

Dear Sir

I am much obliged for your kind & courteous note & for the present of your work on Nectaries, which I will read, but cannot do so for some time, as I must first read another book & I get on very slowly with German.—¹ Your book will be particularly useful to me & my son Francis,² as we have lately observed one little fact about nectaries & which, *if it turns out true*, is interesting; but we shall have to wait till next summer.

I suppose you have seen M. Bonnier's strange book. He seems to deny that nectaries ever have been modified to insure or increase the visits of insects!³

With many thanks, I remain | Dear Sir | Yours faithfully | Ch. Darwin.

Niedersächsisches Landesarchiv – Standort Wolfenbüttel (VI Hs 11 nr. 12)

¹ Behrens 1879. See letter from W. J. Behrens, 8 November 1879.

² Francis Darwin.

³ Gaston Bonnier's book was on the anatomy and physiology of nectaries (Bonnier 1879a); for his view on the modification of nectaries, see *ibid.*, pp. 30–3.

From W. M. Hacon 10 November 1879

18, Fenchurch Street, | London, | E.C.

10th Nov^r 1879

My dear Sir

I have your letter of yesterday.¹ It may not be easy, but I am not sure that it is impracticable, to meet the objection stated in your letter, to the proposed scheme of settlement. Indeed, I can conceive that Mr W^m. Farrer may presently suggest that in the possible event of the early death of your son Horace, and of his widow marrying a second time she should have power to withdraw from her first settlement a part of the fund comprized in it and to put such *part* into a new settlement, on the second marriage,—the part to be determined by a ratio varying inversely with the number of the children of the first marriage,—or at all events depending upon such number.²

If this suggestion should be made on the part of the lady—perhaps if it be not made—I may be able to make a somewhat analogous suggestion in reference to the settlement on the part of your son: I am however bound to say that although I have seen a good many cases, in which an arrangement, such as I have indicated, has been made respecting the fortune settled on the part of the Lady, I am at present unable to recall an instance of such an arrangement respecting the Gentleman's fortune.—

The scheme of the settlement is such as stated in your letter: with slight qualifications. You will not settle the £5000 on the *Lady* at once.— You will give the Trustees the £5000 at once: but your son will have the first life-interest thereon: the

Lady taking the income for her life, only if & when she survives your son. So also on the death of the survivor of yourself and M^{rs} Darwin the £5000 which is to be secured by your covenant, will be paid to the trustees: your son will have the first life interest on that sum: the Lady taking the income for her life if & when she survives your son.—

The Lady will similarly have the first life interest on what her father settles viz £10,000.

The interest derivable from the £5000 which it is proposed you should at once make over to the trustees will be received by them and paid to your son at first and then to the Lady. And your covenant will secure that until the second £5000 is received by the trustees you will pay them the difference between the income derived from the first £5000, and an amount which you put at £400 per annum, but which, according to the principle of an *equal* provision on each side, should be just what M^r Farrer engaged to give his daughter— i.e. £300 per annum. Perhaps he may make it £400.

It is certainly understood by me that your settling £5000 immediately and £5000 on the demise of the survivor of yourself and M^{rs} Darwin is consequent upon M^r Farrer settling £10,000. and M^r William Farrer is certainly prepared that his brother should settle £10,000.

Both the securities mentioned in your letter are of the very first class.³ Have you any objection to my proposing that you should transfer to the trustees £2500 of each kind of security,

I am | My dear Sir | Yours very truly | W^m M Hacon

Charles R. Darwin Esq^{re} | Down | Beckenham | Kent

DAR 166: 25

¹ See draft letter to W. M. Hacon, 8 November [1879]; the letter sent to Hacon on 9 November has not been found.

² Hacon had met with Thomas Henry Farrer's brother William James Farrer to discuss the marriage settlement of Horace Darwin and Ida Farrer (see letter from W. M. Hacon, 7 November 1879). CD was concerned that, in the event of the early death of Ida, and Horace remarrying, a child from the first marriage would inherit a greater amount than would children from the second marriage (see letter to W. M. Hacon, 8 November [1879]).

³ CD had proposed transferring some of his railway company stock (see letter to W. M. Hacon, 8 November [1879] and n. 5).

To Ernst Krause 10 November 1879

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)

Nov. 10th 1879

My dear Sir

I write a line to thank you for your note & to say that I have heard from Murray that the Autotype Co^y had printed off only a few copies, so that the loss will not be great.— Murray charges only what the Autotype Co^y charge the public, so he makes

no profit & it is quite fair that he sh^d insist on prepayment.—¹ An Italian publisher never paid for the cliches of my *Variation under Domestication*, & he w^d have lost the whole sum, had I not taken the loss on my own shoulders.²

I was when I wrote rather angry, as I had taken the responsibility of Murray giving the order to the Autotype Co^y, but it is all over now. I will send you a copy of the English Edit. of the *Life*, as soon as it appears, & I do not know why it has not already appeared.³

My dear Sir | Yours sincerely | Ch. Darwin

The Huntington Library (HM 36196)

¹ See letter to Ernst Krause, 4 November 1879 and n. 1. CD had paid John Murray (1808–92) in advance for photographs produced by the Autotype Company of the frontispiece of *Erasmus Darwin* for the German edition; however, the German publisher Karl Alberts had cancelled the order. No letter from Murray on this subject has been found.

² The publisher Carlo Vincenzi, who had taken over production of the Italian translation of *Variation* from a previous firm, failed to pay for stereotypes of the illustrations (see *Correspondence* vol. 23, letter from R. F. Cooke, 26 May 1875); the Italian translation was never published.

³ *Erasmus Darwin* was published around the middle of November 1879; CD started receiving thanks for presentation copies about 11 November (see letter from J. S. Burdon Sanderson, [11 November 1879]).

From R. A. Vance 10 November 1879

113 West Ninth Street | Cincinnati, Ohio,
Nov. 10th. 1879

Charles Darwin, F.R.S., | Downs, | Kent, | England,

My dear Sir;

I have by no means forgotten the kindly manner in which you responded to my inquiries relative to certain points in the anatomy of the lining membrane of that portion of the intestinal canal in the lower animals which corresponds, in man, to the mucous membrane of the rectum, and, as several y(ea)rs may elapse before I revisit England, I beg you to accept the copy of my monograph on the Rectum and its Diseases which will be handed you by the bearer, my friend J. H. Letcher, M.D., of Henderson, Kentucky.¹ I beg to call your attention to the **IX**th article, entitled: “Observations on those Structures in the Mucous Membrane of the Human Rectum known as the Valves of Houston”.² Now that the profits of Chirurgery have seduced me from the more pleasing pursuits of Physiology, I may be unable t(o) follow out the path those cur(i)ous structures opened before me, but I can never forget the kindly manner in which you encouraged and aided me at a time, when the merest reference to the line of inquiry I was following but too frequently evoked incredulity or contempt—and that too on the part of those whose position and character should have been a guaranty of other and better things.

My friend Doctor Letcher, the bearer, has been a deeply interested student in the same line, and now visits London for professional improvement. The Doctor will bear me out in this; Should you ever visit us here in America you would find how highly you are revered, how warmly you are esteemed—not by any one profession

nor the representatives of any one branch of research but—by all intelligent men as the representative and recognised leader in Science!

Trusting many years of active usefulness are yet before you in which to enjoy your well-earned honors, I am, | My dear Sir, | Very truly and sincerely | Your Obedt Servt, | Reuben A. Vance

DAR 180: 2

¹ See *Correspondence* vol. 25, letter from R. A. Vance, 12 November 1877, and letter to R. A. Vance, 4 December 1877. Vance had suggested that the spiral folds or valves in the human rectum were 'rudiments' of a more ancient type of structure, and were analogous to folds in the large intestine of some animals. The results of his research were published in parts in the *Cincinnati Lancet and Observer* (Vance 1877–8). Vance's friend was James Hughes Letcher.

² Vance 1877–8, pp. 659–66. Vance cited CD's discussion of rudimentary organs (see *Descent* 1: 17–31) in support of his argument that the rectal folds or 'valves of Houston' were reversions (Vance 1877–8, p. 666).

To August Weismann 10 November 1879

Down, Beckenham, Kent.

Nov. 10th 1879

My dear Sir

I am very much obliged for your kind present of your work on *Daphniæ* with its admirable drawings & for your letter.¹ As soon as I can find time, (for I have two essays in German to read which bear on my immediate work) I will assuredly read your book, for there is to me always an extreme interest in hearing of adaptations in parts which appear to owe their structure to other causes.

The nature of the *Vanessa* in Northern Siberia must have been particularly interesting & satisfactory to you.—² I have not heard for a long time from M: Meldola & do not know how the translation of your work goes on.³ He has unfortunately very little spare time.—

It is almost impossible to persuade English publishers to bring out translations of any scientific works, excepting such as bear on education; but I will not forget your wish, in which I heartily join, should any opportunity ever offer.

With all good wishes, pray believe me | My dear Sir | Yours very faithfully
| Charles Darwin

Shrewsbury School, Taylor Library

¹ Weismann's letter has not been found. His book *Beiträge zur Naturgeschichte der Daphnoiden* (Contributions to the natural history of daphnoids) is in the Darwin Library–CUL (Weismann 1879). Most parts of the book first appeared as a series of articles (Weismann 1876–80), copies of which are in the Darwin Library and Darwin Pamphlet Collection–CUL. Weismann's group 'daphnoids' included genera now placed in the suborder Cladocera (water fleas), and the related suborder Laevicaudata of the order Diplostraca.

² *Vanessa* is a genus of brush-footed butterflies. In his essay on seasonal dimorphism in butterflies, Weismann hypothesised that the early form of *Vanessa levana* (a synonym of *Araschnia levana*, the map butterfly) was the original type and had noted that it would be interesting to determine whether in high northern latitudes like Siberia two generations of the butterfly occurred, or only one (Weismann 1875–6, 1: 14–15 n. 1). By the time the English translation appeared, Weismann's question had been

answered; a Swedish expedition in 1876 to the Yenisei river region of Siberia found that only the early form of the butterfly existed there (Weismann 1880–2 1: 19–21 n. 15).

- ³ Meldola was working on a translation of August Weismann's *Studien zur Descendenz-Theorie* (Studies in the theory of descent; Weismann 1875–6). The translation (Weismann 1880–2) was published by Sampson, Low, Marston, Searle, & Rivington. See letters from Raphael Meldola, 6 February 1879 and 4 April 1879.

From J. S. Burdon Sanderson [11 November 1879]¹

26, Gordon Square. | W. C.
Tuesday

Dear Mr Darwin

I must trouble you with a note to tell you with how much pleasure I have received the life of your grandfather Dr Erasmus Darwin.

I received it last night & have read the "Preliminary Notice" this afternoon with very great interest.²

Many thanks for so kindly thinking of me | very truly yours, J S Burdon Sanderson

DAR 99: 96

- ¹ The date is established by the reference to *Erasmus Darwin*; CD began receiving letters of thanks for the book from other recipients from 12 November 1879 (see, for example, letter from Reginald Darwin, 12 November 1879). The Tuesday before 12 November 1879 was 11 November.

- ² Burdon Sanderson's name appears on CD's presentation list for *Erasmus Darwin* (see Appendix IV). CD had written the biographical preface to the book.

To G. S. Ffinden 11 November 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Nov 11th 1879

My dear Sir

I enclose a cheque for £11^{ns}5^{no} for the Down Coal & Clothing Club¹ consisting as follow

Ch. Darwin	5.5.0
Francis D.	3.0.0
George D.	1.0.0
Leonard D.	1.0.0
Miss. D. ²	1.0.0
	£11:5:0.

It is, as you remark, fortunate that there is a good balance from last year.—³

My dear Sir | Yours very faithfully | Ch. Darwin

American Philosophical Society (B/D25.267)

- ¹ The Down Coal and Clothing Club was a local charity that supplied parishioners with cheap coal and clothes in exchange for regular savings; CD served as treasurer from 1848 to 1869 (see *Correspondence* vol. 4, letter to John Innes, [8 May 1848] and n. 2). Ffinden was the vicar of Down; he ran the Coal and Clothing Club (J. R. Moore 1985, p. 470). On 11 November 1879, CD recorded a payment of

£11 5s under the heading 'Ffinden' in his Account books—banking account (Down House MS); he recorded the payment of £5 5s. under the heading 'Down coal club' in his Classed account books (Down House MS).

² Elizabeth Darwin (1847–1926) was CD's daughter.

³ No letter from Ffinden regarding the balance of the Coal and Clothing Club has been found.

From A. E. Darwin 12 November [1879]¹

17. North St | Derby.
Nov. 12th

My dear Cousin—

I am writing for my sister Violetta, as she has been out of health for some time past & is unable to write herself—to thank you very much for so kindly sending her a copy of the *Life of our grandfather*.² She has been reading the book with much interest— & says she thinks it was a most happy thought on your part, to write it, as it really seems a simple act of justice toward his memory— Also it has frequently occurred to her, when reading the *Temple of Nature*, how she wished it could be known that your own discoveries have been thus foreshadowed by him—³ She desires me to give you her kindest regards—

Believe me ever— | Your affect. Cousin | Anne Eliza Darwin

DAR 99: 135

¹ The year is established by the reference to *Erasmus Darwin*.

² Violetta Harriot Darwin's name appears on the presentation list for *Erasmus Darwin* (see Appendix IV). Her drawings of Breadsall Priory and Elston Hall were used in the book (see letters from V. H. Darwin, 4 April 1879 and n. 1, and 5 June [1879]).

³ *The temple of nature* (E. Darwin 1803) traced the development of life from a 'single living filament' to human society.

From Emma Darwin to M. C. Stanley 12 November [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Tuesday | Nov 12

My dear Lady Derby

My eldest son has received the accompanying papers from M^r Olmstead (so distinguished for his services in the American war).² He is very anxious to obtain some influential signatures to the petitions & Mr Darwin sends it to you in hopes that Lord Derby may be inclined to give his.³ I enclose an envelope to return it.

My husband sends by this post a short notice of his grandfather D^r E. Darwin which he has just published.⁴ He would be much pleased if it interested you in any degree—

Believe me | my dear Lady Derby | very truly yours | Emma Darwin

Liverpool Record Office, Liverpool Central Library (920 DER (15) 43/9/23)

¹ The year is established by the reference to *Erasmus Darwin*.

² William Erasmus Darwin had sent two petitions from Frederick Law Olmsted on the preservation of Niagara falls (see letter from W. E. Darwin, [9 November 1879] and enclosure). Olmsted had served as

head of the US Sanitary Commission during the American Civil War and had created a relief system to distribute medicine and clothing to the Union army (*ANB*). CD and Emma had also been impressed by Olmsted's writing on the southern states of the US before the abolition of slavery (see, for example, Olmsted 1860, *Correspondence* vol. 9, letter to Asa Gray, 21 July [1861] and n. 13, and *Correspondence* vol. 11, letter from Emma Darwin to J. D. Hooker, 26 December [1863]).

- ³ Edward Henry Stanley. A note attached to this letter reads: 'Darwin. Mrs. Nov. 13/79. (To L'y. D.) **Ans'd.** that I never sign memorials to a public office; but entirely sympathise & will help if desired by asking a qn. in the Lds if the thing is not done.' Stanley's letter to Emma Darwin, 13 November 1879, is in the Library of Congress, Frederick Law Olmsted Papers: Subject File, 1857–1952; Parks; Niagara, N.Y.; 1877–1879; mss 35121, box 40; reel 36.
- ⁴ Lord Derby appears on the presentation list for *Erasmus Darwin* (Appendix IV).

From Reginald Darwin 12 November 1879

Fern | Buxton
Nov 12 | 1879—

My dear Cousin

I have received your Book from Murray, & beg of you to accept my warmest thanks for your consideration—¹ I need hardly say that I have read it with the deepest interest, & from it, have learned much Family history previously unknown to me— Your refutation of Miss Seward's reckless & unjust assertions, is admirable & conclusive, & every descendant of Erasmus Darwin ought, & no doubt will, hold you in higher esteem, if possible, than ever—²

With best regards to you & to your family,

I am ever | affect^y Yours | Reginald Darwin

DAR 99: 162–3

¹ Reginald Darwin's name appears on the presentation list for *Erasmus Darwin* (see Appendix IV); *Erasmus Darwin* was published by John Murray.

² CD was highly critical of Anna Seward's biography of Erasmus Darwin (Seward 1804). See letter to Ernst Krause, 14 March 1879 and n. 4, letter to Francis Galton, 22 March 1879 and n. 2, and *Erasmus Darwin*, pp. 70–9.

From Douglas Fox 12 November 1879

1, Chesham Place, | Brighton.
12—Nov—1879—

Dear M^r: Darwin

It is **very** kind of you to send me the life of D^r: Darwin—¹ I admire it greatly, it is **very** interesting & full of valuable information— He was a striking character & shone especially in an age when such men were scarce—

I had used in my early life to hear much of him from my Father D^r: Fox who was a co-temporary with him & very intimate with him—² I shall always value highly the memoir you have given me—

Your's very much obliged, & faithfully | Douglas Fox

C. Darwin Esqre

DAR 99: 179–80

¹ Fox's name does not appear on the presentation list for *Erasmus Darwin*.

² Fox had recounted some anecdotes about Erasmus Darwin that he had been told by his father, Francis Fox (see letter from Douglas Fox to W. de W. Abney, 7 June 1879).

From E. S. Galton 12 November 1879

5, Bertie Terrace | Leamington

Nov: 12. 1879

My dear Cousin Charles—

My sister, Elizabeth Wheler & myself, are very much obliged to you for your kind present of our Grandfather's life—of course still more acceptable as coming direct from you—which we greatly value.¹ Pray accept our very best thanks—

My sister begs me to say, she would have written herself, but she is watching by the bedside of her dying Husband, who is now lying totally unconscious of all around him, & at the age of 81, Edward Wheler is not likely to rally— It is a case of decay of nature—

We have read your sketch of our Grandfather, & are *most thankful* for your publicly contracting Miss Seward's cruel statements, & my Aunt, M^{rs}. Schimmelpennincks exaggerated disagreeable remarks—² again & again as I read the pages of your book—I could not help wishing my mother³ had lived to see them, she would so truly have appreciated all you have stated.

One or two things have occurred to me—

Page 5. William Alvey Darwin died 1783—the year of my mother's birth, so she never knew him— His daughter, M^{rs}. Fox certainly had a great love for machinery, seemed to understand it at a glance. She must have inherited this from her Father— Her mother (née Brown)—had nothing of it— You must have seen her, I think at Osmaston.⁴ She did not die till 1835—aged 91— She lived upstairs, being unable to walk—& when staying at Osmaston, we used to go & see her in an Even^g—

Old M^{rs}. Darwin of Elston, (the mother of D^r. Erasmus Darwin)—who lived to a great age, had the habit latterly of thinking aloud—⁵ When my Grandmother & Uncles & Aunts⁶ went to pay their yearly visit at Elston, M^{rs}. W^m. Darwin made it a point to call on them—& old M^{rs}. Darwin (our Great Grandmother) much to the amusement & discomforture of the Bystanders, used to say—“I suppose I must ask M^{rs}. William to stay dinner— I hope she will not say yes—” then after repeating this 2 or 3 times—she would say aloud—“Will you stay dinner”—& M^{rs}. W^m. wisely declined—

D^r. Erasmus Darwin's Brothers & sisters were very deaf, & when old M^r. Robert Darwin of Elston, wanted to lecture his sister Ann, he took her a drive, as the noise of the carriage wheels, enabled them to hear each other better—⁷

My mother used to say—her Grandmother (the Mother of D^r. Erasmus Darwin) was a charming old Lady—used to get up at 6. o'clock. summer & winter—always in the nursery at 6. o'clock—fed her pigeons till the day of her death. When her Grandchildren visited her—she used to come into their bedrooms at 6. o'clock followed by her maid with a pillow, which was placed on the window seat—& she used to say, “My dears, are not you up yet?”—⁸

Page 5. John Darwin the rector of Elston, I have heard my Mother say, was a most excellent man—Doctor, Lawyer & Clergyman to the Parish—⁹ All went to him, when they wanted advice.

Page 6. My Mother used to say—her Father used to tell them, that when a Boy, he could not run up-hill—so when with his Brothers, & they came to a Hill, one or other, always took him on their backs—till they had surmounted the Hill—and then he could run on with them—

M^s. Darwin of Elston (Mother of D^r. E Darwin) when her children were young, she always had them to come into her room every morn^g—to say their prayers—and then she pushed back their nails—

Page 36. Stepsons—would be Stepson in law—as D^r. E Darwin had but one Stepson & that was my Uncle M^r. Chandos Pole, who died in 1813— He had two Stepsons in law. Col^l. Bromley of Abberley—and M^r. John Gisborne, who married Elizth. & Millicent Pole, daughters of my Grandmother—and M^s. Nixon is one of M^r. John Gisborne's daughters—but this does not signify¹⁰

Page 79. M^s. Schimmelpenninck was the *eldest* sister of my Father.¹¹ M^s. Schim^k: having been born in 1778—and my Father Sam^l. Tertius Galton, not till 1783—

My Mother used to say, our Grandfather D^r. E Darwin had a very great idea of his eldest Brother's good sense & abilities, & never published any of his works, without asking for his Brothers criticism—¹² Also my grandfather was afraid of publishing the Botanic Garden¹³ for some years, fearing it might injure his medical practice. Many might think a Poet, w^d. not be a good Doctor—

M^r. Day, was at one time engaged to our Cousin Miss Hall—but it was off—owing to M^r. Day, insisting on Miss Hall parting with her diamond earrings— she faithfully promised never to wear them, but she had a great affection for them, as they were a gift of her Grandmother's— M^r. Day—said—No wife must even have earrings in their possession—so she said—Then our intended marriage must never take place. Miss Hall was very indignant—and made not a brilliant marriage!! & accepted M^r. Vaughton in a hurry—¹⁴

I shall again read over your book with great interest—but I wanted at once to write, & tell you how much pleasure it has given my Sister & myself—

Pray give my kind love to your wife & daughter¹⁵ & believe me My dear Cousin
| Yours very sincerely | E. S. Galton

How pleased my Brother Francis will be—at the kind way you mention him in y^r. Book—¹⁶

DAR 210.14: 34

¹ The names of Emma Sophia Galton and her sister Elizabeth Anne Wheler are on the presentation list for *Erasmus Darwin* (Appendix IV).

² CD was highly critical of remarks by Anna Seward in her biography of Erasmus Darwin (see Seward 1804, pp. 64–8 and 406), and by Mary Anne Schimmelpenninck in her memoir (Hankin ed. 1858, 1: 152–4, 178–80, and 237–48; see *Erasmus Darwin*, pp. 70–80). See also letter from E. S. Galton, 25 March 1879 and nn. 2 and 6.

³ Violetta Galton.

⁴ William Alvey Darwin's wife was Jane Darwin (née Brown); their daughter Ann married Samuel Fox (*Darwin pedigree*, pp. 8, 28). The Fox family lived at Osmaston Hall, near Derby.

- ⁵ Erasmus Darwin's mother, Elizabeth Darwin, lived at Elston Hall until her death at the age of 94 (King-Hele ed. 2003, p. 102).
- ⁶ E. S. Galton's grandmother was Elizabeth Darwin (Erasmus Darwin's second wife). For the aunts and uncles, see King-Hele ed. 2003, p. 143.
- ⁷ Erasmus Darwin's siblings were Robert Waring Darwin (1724–1816), who inherited Elston Hall, Elizabeth Hall (1725–1800), William Alvey Darwin, Ann Darwin (1727–1813), Susannah Darwin (1729–89), and John Darwin.
- ⁸ For the grandchildren of Elizabeth Darwin, see King-Hele ed. 2003, p. 143. The maid has not been identified.
- ⁹ For more on John Darwin's parish work, see the enclosure to the letter from R. W. Dixon, 20 December 1879.
- ¹⁰ Erasmus Darwin's stepson was Sacheverell Chandos-Pole. His stepdaughters were Elizabeth Ann Pole and Millicent Pole. Elizabeth married Henry Bromley, who inherited an estate at Abberley, Worcestershire. Millicent married John Gisborne; their daughter was Emma Nixon.
- ¹¹ Samuel Tertius Galton.
- ¹² Robert Waring Darwin (1724–1816) shared Erasmus Darwin's interest in poetry and botany.
- ¹³ *The botanic garden* was published in two parts (E. Darwin 1789–91).
- ¹⁴ Elizabeth Hall (b. 1754) married Roger Vaughton in 1777 (*Darwin pedigree*, p. 9). Her grandmother was Elizabeth Darwin (1702–97). Mr Day was probably Joseph Day.
- ¹⁵ Elizabeth Darwin (1847–1926).
- ¹⁶ Francis Galton is mentioned in *Erasmus Darwin*, pp. 88 and 110.

From Francis Galton 12 November 1879

42 Rutland Gate
Nov 12/79

My dear Darwin

It was with the greatest pleasure that I received & read your biography of D:Darwin¹

What a marvel of condensation it is, and how firmly you lay hold of facts that had long been distorted and ram them home into their right places.

The biography seems to me quite a new order of writing, so scientifically accurate in its treatment. The many passages you quote are curiously *modern* in their conception and (Excuse this horrid paper which folds the wrong way) simple in expression, (considering his average style) I still can't quite appreciate the flow in his mind which made it possible for him to write so very hypothetically for the most part, while at the same time his strictly scientific gifts were of so high an order. There seems to be an unexplained residuum, even after what you quote from him about the value of hypotheses.—² I see you have mentioned me twice, very kindly—but too flatteringly for my deserts.³ How you are *down* upon M^{rs} Schimmelpenninck & Miss Seward!⁴

I now, with fear & trembling lest you should finally vote me a confirmed bore, venture to enclose copies of some queries I have just had printed & am circulating, after having obtained by personal enquiries a good deal of very curious information on the points in question.⁵ I venture to ask you more particularly, because the “visualising” faculty of D: Darwin appears to have been remarkable & of a peculiar order & it is possible that your's through inheritance may also be similarly peculiar. It is perfectly marvellous how the faculty varies, & moreover some very able men

intellectually do not possess it. They do their work by *words*. I am in correspondence, with Max Müller about this, who is an *outré* “nominalist”.⁶

Very sincerely y^{rs} | Francis Galton.

Thanks for Bowditch (children’s growth), which you kindly sent me.⁷

DAR 105: A101–2

¹ Galton’s name is on CD’s presentation list for *Erasmus Darwin* (Appendix IV).

² On the value of hypotheses, see *Erasmus Darwin*, pp. 49–50.

³ Galton is mentioned in *Erasmus Darwin*, pp. 88 and 110.

⁴ CD was highly critical of Anna Seward’s biography of Erasmus Darwin (Seward 1804), and of remarks made by Mary Anne Schimmelpenninck that were published in her memoir (Hankin ed. 1858; see *Erasmus Darwin*, pp. 70–80, letter to Francis Galton, 22 March 1879 and n. 5, and letter from E. S. Galton, 25 March 1879 and nn. 2 and 6).

⁵ The enclosure was a list of ‘questions on the faculty of visualising’; for the enclosure, together with CD’s replies, see the letter to Francis Galton, 14 November [1879].

⁶ Friedrich Max Müller. *Ou: extraordinary or extreme* (French).

⁷ CD’s copy of *The growth of children* (Bowditch 1877) is in the Darwin Pamphlet Collection–CUL.

From Henry Maudsley 12 November 1879

9, Hanover Square, W.

November 12th 1879

My dear Sir,

I have been very much gratified to receive from you a copy of the life of your distinguished grandfather, Dr E. Darwin, and I thank you sincerely for your kind remembrance of me.¹

Since I read his works—now several years ago—I have wished that some one would do justice to his remarkable originality and sagacity, by pointing out, among other things, how far he was in advance of the thought of his times in some important respects, and how happily he had anticipated some of what is now current scientific thought—

I am very glad therefore that this has at last been done; and I feel some difficulty in adequately expressing how grateful I am to have received from his grandson, who has himself effected the greatest revolution—or rather, evolution—of thought, a welcome copy of the memoir—Valued in itself, it will be greatly more valued in the giver.

Believe me | Yours faithfully | H Maudsley

DAR 99: 187–8

¹ Maudsley’s name is on CD’s presentation list for *Erasmus Darwin* (Appendix IV). Maudsley is cited on p. 108 in connection with Erasmus Darwin’s treatment of mentally ill patients.

From Jan van Bolhuis [13 November 1879]

M!

What must we believe over the orig(in) of men? The doctrine of the bible in <ge>nesis or Your doctrine of the descent from animal? Because I have read over

your interest to the Christian mission I am very desiring to know or you stick to your fallible doctrine—or to the Word of the Lord. Will me do the kindness to answer me.

The grace of the Lord with you!

J. Van Bolhuis | Minister Verbi Divini¹ | at *Lichtenvoorde prov. Gelderland Nederland*

ApcS

Postmark: AMST. 13 Nov () LONDON NO 15 79

DAR 160: 236

¹ *Minister Verbi Divini*: servant of the divine word (Latin; a title particularly associated with reformed Protestant churchmen). No reply has been found to this postcard.

From W. S. Dallas 14 November 1879

Geological Society, | Burlington House, W.

14 Nov. 1879

My dear Mr Darwin

I have to thank you for a copy of the little book on Erasmus Darwin, & for the kind manner in which I am spoken of in your note mentioning my share in the work.—¹ I have only read a portion of your text, but have done so with great interest.— Your explanation of Miss Seward's curious treatment of your Ancestor's memory is a very natural one,— I presume the Doctor was what was called in those days & earlier a very gallant man, & may have roused hopes in the Lady's bosom the disappointment of which would be painful.—²

D^r Krause occupies the smaller portion of the volume,—³

Believe me | Yours very truly | W. S. Dallas

DAR 99: 131–2

¹ Dallas's name is on CD's presentation list for *Erasmus Darwin* (Appendix IV). CD acknowledged his work on Ernst Krause's essay, which formed the second part of the book, in *Erasmus Darwin*, p. iii: 'Mr. Dallas has undertaken the translation, and his scientific reputation, together with his knowledge of German, is a guarantee for its accuracy'.

² CD suggested that the critical remarks in Anna Seward's biography of Erasmus Darwin (Seward 1804) had been motivated by jealousy: 'The only possible explanation appears to be that she had wished to marry him after the death of his first wife and before his second marriage' (*Erasmus Darwin*, p. 78).

³ CD's preliminary notice was 127 pages long; Krause's essay, 'The scientific works of Erasmus Darwin', was 95 pages (*Erasmus Darwin*, pp. 131–216). CD had recommended substantial cuts to Krause's revised essay after reading it in translation (see letter to Ernst Krause, 13 August 1879, and letter to John Murray, 4 September 1879).

To Francis Galton 14 November [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Nov. 14th

My dear Galton

I have answered the questions, as well as I could, but they are miserably answered, for I have never tried looking into my own mind.—² Unless others answer very much better than I can do, you will get no good from your queries.— Do you not

think that you ought to have age of the answerer? I think so, because I can call up faces of many school-boys, not seen for 60 years with *much distinctness*, but now-a-days I may talk with a man for an hour, & see him several times consecutively, & after a month, I am utterly unable to recollect what he is at all like.— The picture is quite washed out.³

I am *extremely* glad that you approve of the little life of our grandfather; for I have been repenting that I ever undertook it as work quite beyond my tether. The first set of proof-sheets was a good deal fuller, but I followed my family's advice & struck out much.—⁴

Ever yours very truly | Charles Darwin

[Enclosure]

QUESTIONS ON THE FACULTY OF VISUALISING.

BY FRANCIS GALTON, F.R.S.

The object of these Questions is to elicit the degree and manner in which different persons possess the power of seeing images in their mind's eye.

From inquiries I have already made, it is certain that remarkable variations exist both in the strength and in the quality of this faculty, and it is highly probable that a statistical inquiry into them will throw light upon more than one psychological problem.

Before answering Questions 1 to 5 (see the Schedule on the back of this page), think of some definite object—say your breakfast-table, as you sat down to it this morning—and consider carefully the picture that rises before your mind's eye.

1. Illumination.—*Is the image dim, or fairly clear? Is its brightness comparable to that of the actual scene?*
2. Definition.—*Are the objects sharply defined, or are any or most of them little more than blotches of light and shade?*
3. Completeness.—*Are all the details of the breakfast-table seen with equal clearness, like a real scene, or do some parts obtrude themselves while others are barely visualised?*
4. Colouring.—*Are the colours of the china, of the toast, bread crust, mustard, meat, parsley, or whatever may have been on the table, quite distinct and natural?*
5. Extent of field of view.—*Does it correspond in breadth and height to the real field of view?*

The Questions 6 to 16 refer to definite kinds of mental imagery.

6. Printed pages.—*When recalling passages in a book, is the actual print clearly conspicuous? How much of a page can you mentally see and retain steadily in view?*
7. Furniture.—*Can you judge with precision of the effect that would be produced upon the appearance of a room by changing the position of the furniture in it? Could you rely on your judgment in purchasing furniture that should prove suitable in size, shape and colour? Can you carry in your mind's eye the colour and pattern of your wall-paper and of your carpets?*
8. Persons.—*Can you recall with distinctness the features of persons whom you know well? Can you at will cause your mental image of them to change position, as to sit, stand, or turn slowly round? Can you deliberately seat the image of a well-known person in a chair and retain it, and see it with enough distinctness to enable you to sketch it leisurely (supposing yourself able to draw)?*
9. Scenery.—*Do you preserve the recollection of scenery with much precision of detail, and do you find pleasure in dwelling on it? Can you easily follow the descriptions of scenery that are*

so frequently met with in novels and books of travel? 10. Geography.—Do you readily follow the geographical descriptions in ordinary newspaper letters from foreign correspondents. 11. Military movements.—Can you realise the changing position of troops, as though you actually saw them on the march, when reading the description of battles or of manœuvres? 12. Mechanism.—Can you visualise any machinery at work? If you are a mechanic, describe one of the most complicated machines that you can clearly and completely imagine? 13. Geometry.—If you have experience in this, state fully your power of visualising plane and solid figures. 14. Numerals.—Are any mental figures associated in your mind with the various numerals? that is to say, if the words “fifty-six” be spoken, do you mentally see those figures in any shape or not? Can you picture to yourself many lines of figures and hold them fast in the mental field of view, and peruse them when there. (If you happen to have decided powers of mental arithmetic, describe your process and mention the most you can do.) If you are a mathematician, how far do you visualise your formulæ? 15. Card-playing.—Have you a good recollection of the cards that are out, and how far does your recollection consist of a mental image of them. 16. Chess.—Can you foresee far ahead the effects of a contemplated move? If so, is it by means of a mental image of the board? (If you happen to be able to play chess blindfold, please describe fully the limits of your powers.)

As regards the other senses—17, Tones of voices, and 18, Music—explain themselves. 19. Smells.—Think of tar, verbena, otto of rose, shoe blacking, chloroform, ditch water, hay, seaweed, jessamine, turpentine, a fur coat, &c., and consider whether in any or all of these cases your representation of the smell is vivid, and how far it may compare in vividness to that of the objects you visualise. 20. Tastes.—Proceed on a similar principle as regards these, with salt, sugar, lemon juice, currant jelly, castor oil, raisins, mustard, ink, Epsom salts, blackberries, &c.

Any further information as to your visualising powers will be acceptable.

F. G.

QUESTIONS ON THE FACULTY OF VISUALISING.

For explanations, see the other side of this paper.⁵

The replies will be used for statistical purposes only, and should be addressed to—

FRANCIS GALTON, 42, RUTLAND GATE, LONDON.

QUESTIONS.	REPLIES.
1. <i>Illumination</i>	Moderate, but my solitary breakfast was early & morning dark.
2. <i>Definition</i>	Some objects quite defined, a slice of cold beef, some grapes & a pear the state of my plate when I had finished & a few other objects are as distinct as if I had photos before me
3. <i>Completeness</i>	very moderately so.
4. <i>Colouring</i>	The objects above-named perfectly coloured
5. <i>Extent of field of view</i>	Rather small

Different kinds of Imagery.

6. *Printed pages* I cannot remember a single sentence, but I remember the place of the sentence & the kind of type
7. *Furniture* I have never attended to it
8. *Persons* I remember the faces of persons formerly well-known vividly, & can make them do any thing I like.
9. *Scenery* Remembrance vivid & distinct & gives me pleasure.
10. *Geography* No
11. *Military movements* No
12. *Mechanism* Never tried
13. *Geometry* I do not think I have any power of the kind
14. *Numerals* When I think of any number, printed figures rise before my mind; I can't remember for an hour 4 consecutive figures
15. *Card-playing* Have not played for many years, but I am sure should not remember
16. *Chess* Never played

Other Senses.

17. *Tones of voices* recollection indistinct, not comparable with vision
18. *Music* extremely hazy—
19. *Smells* No power of vivid recollection, yet sometimes call up associated ideas
20. *Tastes* No vivid power of recalling—

Signature of Sender and } Charles Darwin
Address } Down Beckenham

(Born Feb. 12th 1809)

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- ¹ The year is established by the relationship between this letter and the letter from Francis Galton, 12 November 1879.
- ² Galton had sent the list of 'Questions on the faculty of visualising' (see enclosure) with his letter of 12 November 1879.
- ³ Galton published the results of his survey in the article 'Statistics of mental imagery' (Galton 1880). He compared the answers of 100 adult men, most of whom were 'persons of distinction in various kinds of intellectual work', with those of 172 schoolboys (*ibid.*, pp. 304, 310).

⁴ Galton had praised CD's preliminary notice for *Erasmus Darwin* in his letter of 12 November 1879. Henrietta Emma Litchfield had suggested substantial cuts to CD's manuscript (see letter to Reginald Darwin, 4 April 1879, n. 3, and King-Hele ed. 2003, pp. ix, xvii–xviii).

⁵ CD's replies are on the verso of the printed instructions.

From Ernst Krause¹ 14 November 1879

Berlin N.O. Friedenstrasse 10. II
den 14.11.79.

Hochverehrter Herr!

Zunächst sage ich Ihnen herzlichen Dank für Ihren freundlichen Brief vom 10^l c., sowie für das Exemplar der englischen Ausgabe, welches Sie die Güte hatten, mir zu senden.² Das Buch macht einen so gewinnenden Eindruck und enthält soviel Interessantes aus dem intimen Leben Englands aus dem vorigen Jahrhundert, dass ich überzeugt bin, es wird vielen Beifall finden. Das Portrait ist sehr schön ausgefallen, und ich werde unter allen Umständen darauf dringen, dass es der deutschen Ausgabe nicht fehlen darf. Wie ich nachträglich erfahren habe, ist an der hässlichen Geschichte zunächst der Umstand, dass Mr. Murray nicht einen einzigen Brief des deutschen Verlegers beantwortet hat, woraus sich bei diesem eine Empfindlichkeit entwickelt hat, die ihn gewiss heute selbst am allermeisten schmerzt, nachdem ich ihm geschrieben habe, dass die Angelegenheit Sie unangenehm berührt habe.³ Ich werde nunmehr die Bestellung durch einen Londoner Commissionär in meinem Namen machen und die Vorausbezahlung, wenn verlangt, bewirken.

Leider muss ich Sie nun, hochverehrter Herr, nochmals in dieser Angelegenheit bemühen, nämlich mit der Bitte, über einige der in dem Buche erwähnten Persönlichkeiten und Vorkommnisse mir einige kurze Notizen geben zu wollen soweit sie Personen betreffen, die in unsern Nachschlagewerken nicht erwähnt werden. Natürlich würden für die Anmerkungen je 2–3 Zeilen genügen. Auch möchte ich Sie bitten, nur diejenigen Fragen, gütigst beantworten zu wollen, deren Beantwortung Ihnen keine Mühe und Umstände bereitet. Verzeihen Sie nur, wenn ich wieder wie ein Examinator frage, aber meine Lage ist weniger angenehm, denn ich muss Ihnen mit jeder Frage eine Lücke meines Wissens verrathen.

1. Ist der p. 4 erwähnte Mr. Stukeley derselbe, welcher über Stonehenge und Abury geschrieben hat?⁴
2. Was war der Spalding-Club (p. 4) für eine Gesellschaft, und wo hatte Sie ihren Sitz?⁵
3. War der p. 8 erwähnte "Scribelerus" eine Wochenschrift wie der "Tatler", oder sonst ein Buch?⁶
4. War Dr. Okes⁷ (p. 14) ein Arzt, oder sonst eine allgemeinbekannte Persönlichkeit?
5. War Dr. Bentley (p. 16) ein Sohn des berühmten Kritikers und ein Vorfahr des berühmten Botanikers dieses Namens?⁸

6. War Sir Brooke Bothby⁹ als Naturforscher oder Dichter berühmt? (p. 36)
7. Ist Ihnen bekannt, was für Versuche Dr. Crawford's¹⁰ (p. 51) gemeint sind?
8. War der p. 53 erwähnte Lord Cavendish ein Bruder des berühmten Naturforschers?¹¹
9. Prof. Duncan (p. 82) war wohl Mediciner?² und ist der gleichzeitig erwähnte Sir H. Raeburn als Juwelier berühmt geworden?¹²
10. Wer war Mr. Cradock (p. 89)?¹³
11. Soll "Darwinian snowdrops" (p. 90) nur von Dr. Darwin *gepflanzt* Schneeglöckchen bedeuten, oder handelt es sich um eine nach ihm benannte Art?¹⁴
12. Wer war Foot (p. 102)?¹⁵
13. Hatte der Lunar Club (p. 121) seinen Sitz zu Lichfield?¹⁶

Es sind das leider eine grosse Anzahl von Fragen, mit denen ich Sie belästen muss, aber ich hoffe nun auch, dass dies die letzte Plage sein wird, die Sie mit diesem kleinen Buche haben. Die Anmerkungen über diese und manche andre Punkte zu machen, erscheint mir für den deutschen Leser unerlässlich; sie sollen sammt dem Original-Text der poetischen Citate in einen Appendix kommen, während der übrige Theil der englischen Ausgabe gänzlich entsprechen wird.

Indem ich Ihnen, hochverehrter Herr, meinen innigsten Dank sage, dass Sie meine kleine Arbeit mit Ihrer Einleitung in die Oeffentlichkeit bringen, zeichne ich | Mit herzlichster Verehrung | Ihr | treulich ergebener | Ernst Krause

DAR 92: B49–50

¹ For a translation of this letter, see Appendix I.

² See letter to Ernst Krause, 10 November 1879. Krause's name is on CD's presentation list for *Erasmus Darwin* (Appendix IV).

³ CD had paid John Murray (1808–92) in advance for photographs of the frontispiece of *Erasmus Darwin* for the German edition; he had been upset when the German publisher Karl Alberts cancelled the order (see letter to Ernst Krause, 4 November 1879).

⁴ William Stukeley was the author of medical and antiquarian works, including *Stonehenge: a temple restor'd to the British druids* (Stukeley 1740) and *Abury: a temple of the British druids* (Stukeley 1743). Abury is Avebury in Wiltshire.

⁵ In *Erasmus Darwin*, p. 4, CD mentions that Erasmus Darwin's father, Robert Darwin (1682–1754), was a member of the 'Spalding Club'; this was the Spalding Gentlemen's Society (see Leveritt and Elsdon 1986).

⁶ "Turned over a few pages in Scribelerus" (*Erasmus Darwin*, p. 8): probably a misspelling of 'Scriblerus', a common pseudonym, most famously used by Alexander Pope in *The Dunciad* (Pope 1729).

⁷ Thomas Okes.

⁸ Thomas Bentley. Krause probably refers to the classical scholar Richard Bentley and to the botanist Robert Bentley.

⁹ Brooke Boothby (1744–1824) was a poet and translator.

¹⁰ Adair Crawford.

¹¹ George Augustus Henry Cavendish (see letter from E. A. Wheler, 18 April 1879) was not the brother of the naturalist Henry Cavendish.

¹² Andrew Duncan was a professor of medicine at Edinburgh University (*ODNB*). Henry Raeburn was a Scottish portrait painter who had been apprenticed to a goldsmith as a young man (*ODNB*).

- ¹³ Joseph Cradock (see enclosure to letter from W. E. Darwin, 29 April [1879] and n. 8).
¹⁴ The snowdrops were planted by Erasmus Darwin in his garden near Lichfield (see *Erasmus Darwin*, p. 90).
¹⁵ 'Every John Hunter must expect a Jessy Foot to pursue him, as a fly bites a horse' (*Erasmus Darwin*, p. 102): the passage alludes to Jesse Foot's hostile biography of the surgeon and anatomist John Hunter (see *ODNB* s.v. Foot, Jesse).
¹⁶ The Lunar Society of Birmingham met for dinner and discussion at a member's home each month (Schofield 1963, pp. 3–4; see letter from E. A. Wheeler, 25 March 1879 and n. 3).

To Newman Marks 14 November [1879]

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
 Nov. 14th

Mr C. Darwin presents his compliments to the Hon^y. Sec. & sends the enclosed.—¹
 As the R. Accad dei Lincei (at Rome) is the oldest Scientific Soc. in Europe, he thought that it w^d be well to add a few words showing that he was an Hon. Member.—²

He was advised by a friend to add other titles, but thought one more Scientific Soc sufficient.

[Enclosure]

SAINTE MARK'S CHURCH, VENICE.—Imminent REBUILDING of the WEST FRONT.—The following Memorial will be translated into Italian by a competent person:—

To his Excellency the Minister of Public Works of Italy.

We, the undersigned, architects, artists, men of letters, and others, lovers of art, and students of history, having been informed that the rebuilding or renewal of the Great Façade of St. Mark's Church, at Venice, is under consideration, venture most respectfully to address your Excellency, and to express a hope that you will give your attention to some considerations contained in the following memorial, which we make bold to lay before you on the ground of the universality of the interest in a building which has always been a centre of attraction for people of taste and cultivation.

In an admirable picture by Gentile Bellini,³ preserved in the Academy at Venice, there is, as you are doubtless aware, an accurate representation of this miracle of art as it then existed; and, comparing this with the building as it now is, we can see clearly that the façade has suffered little from the ravages of time since the end of the fifteenth century. Almost the only notable change is the substitution of comparatively modern mosaics for the ancient ones; though even of these a beautiful and perfect specimen is left us in the doorway at the north end of the façade. The delicate carvings and mouldings are as sharp and clear as if only finished yesterday; the shafts of rare marbles, collected with such care and pains, are still in their places: the marble slabs that cover the walls have not fallen down; and, in short, the whole front remains for us a storehouse of instruction in the history of style, and in the practice of architecture.⁴

But furthermore, the lapse of time has done more than merely pass harmless over the invention and incident wrought out by the original builders; rather it has glorified them; it has cast a veil of beautiful tone over the surface, which no device of man's hand could accomplish; it has softened whatever was crude, without hiding anything that was delicate; it has, we may say, restored those rare and laboured stones to nature without taking them from art.

Nor is that all. If this excellent work of art so kindly dealt with by nature had been preserved to the world with scanty or no records of its origin, it would be precious indeed; how much more precious is it then, being as it is a very hive of history and tradition; a relic of the wonderful state of Venice in the days when she was the link between the East and the West, and the foundress of European commerce. What a treasure the world has in this lovely building, schemed by men whose noble and dramatic lives have made their names household words at every hearth of the civilized world!

And if this art, history, and beauty of surface still exist in the building, and make the square of St. Mark's one of the classical spots of the earth, how lamentably rash must any alteration be. We are compelled to ask, what is there to restore, when all that architects, painters, and historians seek for is there in full measure? And if such restoration were desirable, it would be impossible. And in the vain attempt at it, the total loss of that beauty of form and of surface, and the historical interest which the building now possesses, would not be risked merely, but certainly incurred. For every age has had its own style of art, bred of its own thoughts and aspirations, and every change in these latter has immediately received its due expression in art. The imitation of the workmanship of past times, therefore, must be carried out by those whose daily lives, in common with those of all modern workmen, are passed amid thoughts strange to that workmanship. They cannot understand its forms, which are repellant to their instincts; the rudenesses, of which most mediæval work is full, seem ridiculous to them; its excellencies are not those they have been aiming at; they work, therefore, fettered doubly, by their own traditions and by those of the past. The very central point and reason for existence of the ancient work is missed by them, and they produce a mere caricature of it. The building dies under their hands.

The loss of the time-softened surface of an ancient building by the process of renewal is obvious enough, and it might have been thought that no less obvious would be the loss of its historical interest as a genuine document: indeed this is allowed universally in the case of buildings that are beyond a certain age. No one, we imagine, has suggested the restoration of the Parthenon, of the Temple of Philæ, or the Circles of Stonehenge; yet we fail to see that the past of Venice is less a part of history than that of Greece, Egypt, or England or that the study of it should be denied to the lovers of freedom and progress.

We also beg to remind your Excellency that the rebuilding of the façade would certainly necessitate the destruction of the historically interesting, and artistically unrivalled mosaics that at present adorn the ceiling of the portico. We say destruction, because though the restoration of several parts of the mosaics of the interior has been attempted, the result has been the loss of all beauty and interest in those parts, in spite of the skill and care which undoubtedly have been employed in those restorations.

On all grounds, therefore, we believe that any re-building of the façade of St Mark's Church, any renewal of its beautiful and venerable surface, will be an irreparable misfortune to art.

As to the soundness of its structure we are not in a position to express any definite opinion, but we are confident that, if it be threatened, it is within the power of science to devise a remedy which would restore its stability without moving a stone or altering the present surface in the least.

If, on the contrary, that surface is tampered with, all will disappear for which the façade is now valued, nor will it ever be possible to bring it back again.

Such, your Excellency, are our firm convictions on this matter, and they urge us to plead earnestly with you for, at least, delay and further consideration of the question—a prayer that we feel sure will be widely echoed throughout Europe and America among cultivated people.

In conclusion, we beg your Excellency to excuse us if in pressing any point, our words have been too warm, since we trust you will believe us to be actuated by that gratitude to Italy, our instructress in the Arts, and by that sympathy both with her past and present life, which is universal in all civilised countries, and is felt in none we believe more strongly than in England.

Endorsement: ‘Prof. Darwin. | 1879.’

The Society for the Protection of Ancient Buildings (Venice Memorial); *The Times*, 19 November 1879, p. 8

- ¹ Marks was the secretary of the Society for the Protection of Ancient Buildings. The original enclosure with CD’s signature has not been found; the transcription is from a copy published in the *The Times*, 19 November 1879, p. 8, and, as published, was followed by thirty named signatories, including ‘Professor Darwin, F.R.S.’, and a note that the memorial had been signed by ‘many hundred others distinguished in Art, Literature, and Science’.
- ² CD had been elected a foreign member of the Accademia dei Lincei in Rome in 1875 (see *Correspondence* vol. 23, letter from Quintino Sella, 28 November 1875).
- ³ Gentile Bellini’s painting, *Procession in St. Mark’s Square* (1496), is in the Gallerie dell’Accademia in Venice.
- ⁴ The campaign to preserve St Mark’s Basilica was led by William Morris (see Kelvin ed. 1984–96, 1: 528–47). For more on Morris and the preservation principles of the Society for the Protection of Ancient Buildings, see Donovan 2008.

From Anthony Rich 14 November 1879

Chappell Croft, | Heene, Worthing.

My dear M^r: Darwin.

Murray sent me the Life of Erasmus Darwin in due course, as you had kindly instructed him to do.¹ I spent the two last evenings in reading it through, and write at once to thank you for the book as well as your obliging recollection of me. It is full of pleasant and instructive reading; on both sides of it, your personal accounts, no less than D^r: Krause’s Summary of the doctrines contained in the various works of E. Darwin.² I had only known his name as a poet; and that, to confess the truth, only from Canning’s parody in the *Anti-Jacobin*.³ He must indeed have been a man of remarkable ability and originality of mind to have tapped, as it were, at the period when he lived the sources of knowledge which an equally gifted grand-son has spent an industrious life in investigating, correcting, expanding, and reducing to a system—by cumulative proofs deduced from all orders of nature, sufficient to convert bitter opponents, and satisfy the judgements of the first scientific enquirers of the day. It was well that you should set yourself to remove the slightest aspersion from a character like his.⁴ And, in the fulness of time, when another century has rolled on, I do not know what better wish one could breathe for you, than that another grandson of the family, another “younger Darwin” equal to the two elder ones, may come to the front, if necessary to see that no injustice is done to you. No man I apprehend of illustrious name can hope to pass away without being *pelting* by some one—if only by a member of that “learned” body who persuade their penitents in Lent that “hog’s flesh is fish ever since the Devil entered into them and

sent them rattling into the sea.”!—⁵ But this was to have been only a note of thanks, and I am prosing on much I fear to your tribulation. So good bye!, and *pardon!* Yours very truly | Anthony Rich.

Nov^r. 14— 79.

P.S. I have this moment remembered that you, or one of your sons, or some one else whom I have jumbled up by mistake, said that he could not find out when I was at Caius Coll: and I am so stupid about dates that I could not myself remember; which in these days of pretentiousness looked rather like being an imposter!—⁶ An old Cambridge Calendar tumbled out of one of my closets yesterday, by which I find that I went up as a freshman in Nov^r. 1821, and took my B.A. degree in Jan^y. 1825.—on the last day of which month I attained the age of 21.

DAR 176: 139

- ¹ CD had promised to send Rich a copy of *Erasmus Darwin*, which was published by John Murray (see letter from Anthony Rich, 7 November 1879 and n. 1). Rich’s name is on the presentation list for the book (Appendix IV).
- ² *Erasmus Darwin* contained a preliminary notice by CD and an essay by Ernst Krause on Erasmus Darwin’s scientific work that emphasised his contribution to evolutionary theory.
- ³ George Canning’s poem ‘The loves of the triangles’ (co-authored by John Hookham Frere) was published in three issues of the weekly periodical *Anti-Jacobin* ([Frere and Canning] 1798). It was a parody of Erasmus Darwin’s poem *The loves of plants* (part 2 of *The botanical garden* (E. Darwin 1799)). In *Erasmus Darwin*, p. 95, CD remarked that Canning’s parody caused the downfall of his grandfather’s fame as a poet.
- ⁴ CD was highly critical of previous biographical accounts of his grandfather (see *Erasmus Darwin*, pp. 70–80, letter to Ernst Krause, 19 March 1879, and letter to Francis Galton, 22 March 1879).
- ⁵ Rich alludes to the story of the Gadarene swine into which Jesus cast the demons that had possessed a man, resulting in the pigs’ running down a cliff into the sea; the story appears in the three synoptic gospels (Mark 5:1–20, Luke 8:26–39, and Matthew 8:28–34). See also *Erasmus Darwin*, p. 7.
- ⁶ Rich mentioned having attended Caius College, Cambridge, when George Darwin visited him in January 1879 (see letter to W. E. Darwin, 10 January [1879], n. 2).

From Newman Marks 15 November 1879.

The Society for the Protection of Ancient Buildings | 9 Buckingham St: | Strand W.C.
15th Nov^r 1879.

Prof: Darwin F.R.S | Beckenham. | Kent.

Sir,

We are obliged by your favor of yesterday enclosing Memorial signed¹
You were quite right in attaching your degrees to your signature—²
I am, Sir, | Y^{rs}. faithfully | T Newman Marks | Sec^y.

LS

DAR 171: 40

- ¹ See letter to Newman Marks, 14 November [1879]. The memorial criticised the proposed restoration of the facade of St Mark’s Basilica in Venice.

² In the published memorial (*The Times*, 19 November 1879, p. 8), CD's name appears on the list of signatories as 'Professor Darwin, F.R.S.'. CD had BA and MA degrees from Cambridge, and had received an honorary LLD (doctor of laws) from Cambridge in 1877 (Freeman 1878, p. 49).

From G. W. Norman 15 November 1879

24 Brunswick Square | Brighton
15th Nov^r | 1879.

Dear M^r. Darwin

I regard it as an honour, that you should have thought of me, in your distribution of Copies of the "The life of Erasmus Darwin"—¹

I have not as yet had time to read it, but shall proceed to do so without delay—

I am among the few, who can recollect the time, when the Darwinian Poems were still read & admired altho' their great popularity had waned—²

We have now been here for a fortnight. The beneficial effects of the Air & Water, on the health of M^{rs}. Norman³ are still in the future.

We shall remain here at least a fortnight longer—

My kindest Regards & best Wishes, to M^{rs}. Darwin & your Children—

Ever yours | Geo W^{de} Norman

C. R. Darwin Esq^{re}

DAR 99: 191

¹ Norman's name is on the CD's presentation list for *Erasmus Darwin* (Appendix IV).

² Erasmus Darwin's literary fame rested on two works of poetry, *The botanic garden* and *The temple of nature* (E. Darwin 1789–91 and E. Darwin 1803).

³ Sibella Norman.

From James Torbitt 15 November 1879

Belfast
15 Novr 1879

Charles Darwin Esq^r. | Down.

My dear Sir

On receipt of your valued letter of 7th. Inst.¹ I proceeded to examine the new potatoes, and have drawn up the enclosed report; to which is subjoined Mr Greens.² I have put them in type to facilitate perusal, and have printed 100, in case they should be wanted.

The statement that I think the plant should be grown from its seed each fourth year, is founded on my belief, that this plant at least, cannot be continued forever by bud germination, that (notwithstanding the existence of "flowerless plants") the members of a variety are actuated by one and the same life, which must eventually terminate.

I know of the differences of opinion in regard to this question of individuality, and of the stupendous issues involved; therefore I have never presumed to trouble you with my opinions on the subject; but now, seeing the value you do me the infinite honour to place on my ideas, I would ask you to permit me to lay them before you, together with the facts, or supposed facts, on which they are based.

Most respectfully, | I am My dear Sir | faithfully yours | James Torbitt

[Enclosure]

*Report
on the
Growth of the Potato from the Seed.
By James Torbitt.³*

Belfast, 15th November, 1879.

For the last five years I have been growing each year 5,000 new varieties of the plant, of which I have preserved some of the best and destroyed the others.

The first two years, 1875 and 1876, the varieties were grown from seeds of self-fertilized flowers; the succeeding years from seeds of flowers cross-fertilized by Mr. Darwin's advice, instructions, and assistance;⁴ and the results are as follows:—

Of the white varieties of 1875, there is one which appears to be absolutely disease-proof, as regards both the foliage and the tubers. The tubers are globular, of excellent quality, and the yield large.

Another is kidney shaped, of immense yield and good quality; but it is susceptible to disease to the extent of two or three per cent.

Seven other kidneys are very early, of immense yield, and excellent qualities; but they are diseased to the extent of about ten per cent.

Of the red round varieties of 1875, four are perfectly sound up to this date, and some ten or twelve others were so last year. These I gave to gentlemen in the North of Ireland last spring, on condition that they return to me an equal weight of the produce this autumn. As yet I have had only one report—it is: "That that variety is absolutely free from disease, and of good quality, but not of a particularly large yield."

The Bishop of Down also found a round red variety of 1875 from self-fertilized seed which I had sent him; which is disease-proof, of large yield, excellent quality, and which produces almost no small tubers.⁵ A specimen of this variety I have the pleasure to send to Mr. Darwin.

The varieties of 1876, which were not of much value, I gave all away, except one which is white, round, of good quality, and until the present year of very large yield: it is believed to be disease-proof in the foliage as well as the tubers; and a specimen of this variety, also, I have the pleasure to send to Mr. Darwin.

Of the crossed varieties of 1877 and 1878, and the twice crossed varieties of 1879, I have something like three or four thousand which, for so far, appear worthy of further trial. Large numbers, particularly the 1879's, are absolutely free from the disease; but no doubt many of them will succumb during the winter. In the spring I propose to wash and examine them, and to destroy all diseased to the extent of ten per cent.

(Pending the production, all over the kingdom, of disease-proof varieties, I think it would be better not to destroy any very prolific and marketable variety, diseased only to the extent of ten per cent.)

With regard to the future of these new varieties, I know that a variety called Skerry Blue practically resisted the disease for some twenty years, and I hope with some confidence that some of these new varieties will do so also.⁶

The Skerry, for the last few years, has become more and more susceptible to disease, and the yield has fallen off so far that it is being thrown out of cultivation.

But, setting aside the disease altogether, I am of opinion that new varieties should be continually coming forward; because I find that the new young varieties are very much more prolific than the old.

Knight found a variety which yielded 34 tons per acre.⁷ I have found varieties which yield from 12 to 24 tons per acre: while the average yield over the kingdom probably does not exceed eight or nine tons.

Further, I suspect, that by the scientific cultivation of the plant, England may be made to compete successfully with the United States in the production of beef, pork, butter, and cheese.

Further, I am of opinion, that the plant, in order to obtain its maximum yield, must be grown from its seed each fourth year, and, as of course, carefully cross-fertilized.

With regard to the cost of cultivating these varieties next season, I think £300 or £400 would be sufficient, and £100 would suffice to grow the number of seedlings I have arrangements made for, that is 5,000: but I hold in my hand hundreds of thousands of crossed seeds, and I believe that the more of them which shall be sown next spring the better it will be for the public.

(Signed), | JAMES TORBITT.

According to promise given to Mr. Torbitt in the Spring of 1879, that I would give a truthful statement of the different kinds of potatoes—say from above four thousand varieties grown on my farm—from the potato berries and hybridized while in bloom:

I herewith certify that the red, round kinds of 1875 are better than the old varieties hitherto grown, and that they are perfectly free from disease.

In the year 1876, I grew none; the red and white varieties of 1877 are better than those of 1875, and some hundreds of kinds are perfectly free from a single speck of disease; and also the red and white kinds of 1878 are in every way superior to any other kinds I have ever seen.

My experience convinces me that new varieties of the potato should continuously be propagated from the berries to replace those continuously wearing out, and which experience proves, at about ten or fourteen years, becomes an effete plant.

ABRAHAM GREEN.

Trumra Villa, Moira, Co. Down. | 12th 11th month, 1879.

DAR 52: E4; DAR 178: 156

CD ANNOTATIONS

Enclosure:

1.1 5,000] *double underl red crayon*

¹ Letter to James Torbitt, 7 November 1879.

² Abraham Green has not been further identified.

³ Torbitt's report is in the form of a single printed sheet, evidently intended for circulation.

- ⁴ For CD's initial advice on Torbitt's potato experiments, see *Correspondence* vol. 24, letters to James Torbitt, 14 April 1876 and 21 April 1876.
- ⁵ Robert Bent Knox. See *Correspondence* vol. 26, enclosure to letter from James Torbitt, 15 March 1878.
- ⁶ Torbitt had trialled the 'Skerry Blue' potato, an Irish variety, in 1876 (see *Correspondence* vol. 26, letter from James Torbitt, 17 March 1878).
- ⁷ Thomas Andrew Knight had made this claim in Knight 1833, p. 417 (see *Correspondence* vol. 26, enclosure to letter from James Torbitt, 24 February 1878).

From Reginald Darwin 17 November 1879

Fern | Buxton
Nov 17 | 1879.

My dear Cousin

Noticing your allusion to our Grandfather's short hand writing, I send you a Book on the subject which may interest you, as tho' it bears the date 1776, a portion of it had then been written "long ago"—¹

I have also found a curious paper, tho' without date called "a Moral & Physical Thermometer" bearing on the subject of Temperance— In all probability he was the author— If you will do me the favour to accept the Book & the paper You will much oblige me—²

With best regards | Affect^{ly} yours | Reginald Darwin

DAR 99: 164–5

- ¹ In *Erasmus Darwin*, p. 17, CD remarked: 'Whilst still young he filled six volumes with short-hand notes, and continued to make use of the art for some time.' The book on shorthand has not been found; it may have been a copy of Thomas Gurney's *Brachygraphy: or short-writing* (Gurney 1750), which went through numerous editions. CD mentioned that Erasmus Darwin had corresponded with Gurney about shorthand (*Erasmus Darwin*, p. 17).
- ² CD discussed his grandfather's strong advocacy of temperance in *Erasmus Darwin*, pp. 56–8. Various diagrams of 'A moral and physical thermometer: or a scale of the progress of temperance and intemperance' were published in the 1790s. Such works were often anonymous; see, however Rush 1790, p. 12, and Lettsom 1798, p. 12.

To T. H. Farrer 17 November 1879

Down. | Beckenham. Kent &
Nov 17th— 79.

My dear Farrer.

I have just received enclosed Report on Potatoes from M^r Torbitt for current year.¹

I hope that you will consider whether it is desirable that he should be aided—² I could get additional copies of his Report if wanted—

Ever yours truly. | Ch. Darwin.

I have been very sorry to hear that you have been suffering.

Copy
DAR 144: 99

¹ See enclosure to letter from James Torbitt, 15 November 1879.

² See letter from T. H. Farrer, 30 October 1879.

To Ernst Krause 17 November 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Nov 17 | 1879

My dear Sir

I am much obliged for your kind letter, & regret that I can only answer your questions imperfectly.¹

(1) Stukeley— Born 1687. He wrote on Stonehenge & many antiquarian works.²

(2) Spalding Club, an old & famous Society for Antiquarian & scientific researches; it published many volumes; but I know nothing further about it.³

(3) Scriblerus, I know nothing.⁴

(4) Okes a physician not celebrated⁵

(5) Bentley not related to any one famous.⁶

(6) Boothby a country gentleman & poet—not celebrated.⁷

(7) Crawford— I know nothing—⁸

(8) Cavendish, not brother of the celebrated Cavendish, but of the same family—⁹

(9) A physician & professor at Edinburgh¹⁰

(10) Cradock a literary man, now forgotten¹¹

(11) Darwinian Snowdrops—means merely planted by Dr D.

(12) Foot, a surgeon notorious at the time for many bitter attacks on the illustrious John Hunter¹²

(13) Lunar Club—used to meet monthly in Birmingham; it included a surprising number of distinguished men.¹³

Mr. Murray always has in the autumn a sale of the new books published by him; & the number then sold generally shews how far a new book will be successful; & I am sorry to say that only 600 copies of the Life of Dr D. were sold—¹⁴ It is however possible that the sale may improve

My dear Sir | yours sincerely | Charles Darwin

LS

The Huntington Library (HM 36197)

¹ Krause had sent a list of questions about *Erasmus Darwin* (see letter from Ernst Krause, 14 November 1879).

² William Stukeley and Stukeley 1740 (see letter from Ernst Krause, 14 November 1879, n. 4).

³ The Spalding Gentlemen's Society (see letter from Ernst Krause, 14 November 1879, n. 5).

⁴ See letter from Ernst Krause, 14 November 1879, n. 6.

⁵ Thomas Okes.

⁶ Thomas Bentley.

⁷ Brooke Boothby.

⁸ Adair Crawford.

⁹ George Augustus Henry Cavendish and Henry Cavendish.

¹⁰ Andrew Duncan (see letter from Ernst Krause, 14 November 1879, n. 12).

¹¹ Joseph Cradock.

¹² Jesse Foot (see letter from Ernst Krause, 14 November 1879, n. 15).

¹³ The Lunar Society of Birmingham (see letter from Ernst Krause, 14 November 1879, n. 16).

¹⁴ *Erasmus Darwin* was published in the second week of November 1879. John Murray had an annual sale dinner for the book trade in November (J. Murray 1908–9, p. 540).

To C. H. Tindal 17 November 1879

Down, | *Beckenham, Kent.*

Nov. 17th 1879

Dear Sir,

I am very much obliged by your kind offer of lending me the M.S.S. relating to my grandfather.¹

The little biography has already appeared, but I should be grateful if you would send me the letters. I should be interested in reading them, & I might see whether they would be of use in case of a second edition of the *Life of D^r Darwin*.²

I need not say that I would take the greatest care of them & return them as soon as I had read them & if necessary made extracts from them.

With my best thanks for your kindness, | I am, Dear Sir | Yours faithfully
Charles Darwin

LS

Shaw's Antiquarian Books (dealer) (25 May 2010)

¹ Tindal's letter offering the manuscript has not been found. He later sent correspondence between two friends of Erasmus Darwin, Robert Clive and Richard Gifford (see *Correspondence* vol. 28, letter from C. H. Tindal, 1 January 1880).

² CD wrote the preliminary notice to *Erasmus Darwin*; a second edition was published with minor changes in 1887 (see *Erasmus Darwin* 2d. ed, pp. v–viii).

To James Torbitt 17 November 1879

Down,

Nov. 17, 1879.

My dear Sir

I have been very glad to read so good a report.¹ Three copies have been forwarded to Mr. Farrer (who is already in communication with Ld. Sandon) and I have asked him to consider what can be done.² A Government official in another office remarked to me that it was very difficult for ministers to decide what to do in such cases as they must be prepared for mere cavillers in the H. of Commons. It would be a great evil if new varieties have to be raised every 4 or 5 years.

I shall be happy to read your remarks on varieties wearing out soon.

I have had to write many letters today— So believe me, | Yours very faithfully
| Ch. Darwin.

Copy

DAR 148: 109

¹ See enclosure to letter from James Torbitt, 15 November 1879.

² Thomas Henry Farrer and Dudley Francis Stuart Ryder, Viscount Sandon (see letter from T. H. Farrer, 30 October 1879, and letter to T. H. Farrer, 17 November 1879).

To R. F. Cooke 18 November [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Nov. 18th

My dear Sir

I am very much obliged for M^r Murray's kind offer, but the compiler (the son of the Noble Garrison) sent me a copy. I told him I know nothing about copyright or whether M^r Murray w^d object to the book being sold in England. In my opinion it w^d serve as an advertisement of my Journal. But I do not at all know whether the Publishers intend to try to sell it in England.²

I was satisfied with the sale of my books at your sale, except of the life of D^r D. for though my reason told me, as I said to you, that 1000 copies w^d be enough to print off, yet I had a secret wish that more w^d be ultimately required.³ This, I suppose, is now very improbable, though just possible, if the little book sh^d be spoken well of in Reviews.

With many thanks for all your kind assistance | I remain, my dear Sir | Yours sincerely | Ch. Darwin

National Library of Scotland (John Murray Archive) (Ms. 42152 ff. 364–5)

¹ The year is established by the relationship between this letter and the letter from W. P. Garrison, 9 November 1879.

² CD had received a copy of an American edition of *Journal of researches (What Mr. Darwin saw in his voyage round the world; C. R. Darwin 1880)*, abridged and rearranged for children by Wendell Phillips Garrison, son of the anti-slavery campaigner William Lloyd Garrison (see letter from W. P. Garrison, 9 November 1879). C. R. Darwin 1880 was published in the US by Harper & Brothers. CD's publisher was John Murray.

³ Murray held a sale dinner each November for the book trade (J. Murray 1908–9, p. 540). CD had suggested printing 1000 copies of *Erasmus Darwin* in his letter to Cooke of 4 October [1879]. Six hundred copies were sold at the sale dinner; see letter to Ernst Krause, 17 November 1879.

From James Paget 18 November 1879

1, Harewood Place, | Hanover Square. | W.
Nov^r. 18. 1879.

My dear Darwin

I thank you very much for giving me the Life of your Grandfather.—¹ It is intensely interesting, not only as the history of a very rare life and the evidence of a greatness of mental power only now fairly estimated, but as an unmatched illustration of the transmission of intellectual tendency as well as intellectual strength—

May the like transmission be continued through yet many generations!

Sincerely your's | James Paget.

DAR 174: 11

¹ Paget's name is on CD's presentation list for *Erasmus Darwin* (Appendix IV).

From Eduard Schulte¹ 18 November 1879

Fürstenwalde, | Prov. Brandenburg.
d. 18. Nov. | 1879.

Eduardus Schulte Carolo Darwin
Viro Ornatissimo et Doctissimo
S.P.D.²

Epistulam, quam ad te dedi, tam comiter accepisti, ut iterum ad te scribere audeam.³ Ego sum assectator doctrinae tuae, sed mihi dubium est, quomodo vita papilionum cum hac doctrina conveniat. Papiliones sunt in doctrinae tuae arce, quae undique optime munita est, quasi locus infirmus, ubi adversarii facilius irrumpere porrunt. Transfiguratio enim, quam alia insectorum genera patiuntur, cum transfiguratione papilionum comparari non debet: illa enim genera pugnam de vita etiam transfigurata continuant, sive aggrediendo, sive se defendendo, sive opere diurno famem propulsando, instructā mirā armorum et instrumentorum varietate. Papilionum autem magna pars cibo se prorsus abstinet, nullus papilio quod sciam potest pungere vel mordere vel ferire vel veneno aspergere vel capillis incommodare (erucæ quaedam veneno vel capillis nocent) vel aliquo modo aggredi.⁴ Papiliones unī ex omnibus in hac terra animalibus a rebus terrestribus paene remoti sunt. Hoc unum eorum interest, ut stirpem suam propagent, et totā vitā papilionis omnino nihil natura efficit vel assequitur, nisi propagationem. Apud plantas eodem tempore, quo planta alitur, ge(n)italia existunt, quum speciem floris induunt: apud papiliones et vesci et propagare non eodem tempore sunt neque in eodem animali, nam eruca est animal vescens, papilio est animal propagans, vel rectius dicas papilionem esse volucre genitale vel potius genitale sui juris. Voluntas propagandi hic non minus valuit quam voluntas existendi, neque ulla necessitate, ut in ceteris animalibus, sed libera quadam et generosa actione naturae papilionibus figura sua data videtur esse et vestimentum, quod et morti et nuptiis aptum et idem est, nam papilio mas post initum moritur (qui hibernat, initu se abstinit), femina post partum ovorum. Tu, Vir Ornatissime, in arce doctrinae tuae imperator es et primus miles: si forte moenia arcis circumis, praescribas nobis militibus tuis, quomodo impediamus, ne per ordines papilionum adversarii arcem invadant.

Cura et valeas.

DAR 177: 66

CD ANNOTATION

Top of first page: 'Schulte' blue crayon

¹ For a translation of this letter, see Appendix I.

² SPD: salutem plurimam dicit (Latin), 'bids the best possible health', or 'greet's'.

³ See letter from Eduard Schulte, 23 October 1879, and letter to Eduard Schulte, 28 October 1879.

⁴ In *Descent* 1: 386, CD described male butterflies as 'pugnacious' and remarked on the injuries they suffered in battle for females. He discussed the feeding behaviour of moths and butterflies in *Orchids* 2d ed., pp. 20–5, 38–41.

From James Torbitt [after 19 November 1879]¹

Wall Heath N. Dudley.
November 19th 1879

Dear Sir,

I am much obliged to you for 16 seed potatoes weighing 2 lbs $\frac{1}{2}$ oz which reached here safely on the 17th April last & agreeably to your conditions in the 'Field' Newspaper on the 12th of that month beg to send you results.²

Immediately on their arrival I placed them to sprout in a moderately warm frame along with my bedding out plants but it was not until the 20th May when I thought they had grown sufficiently (about half an inch) that I cut them into 41 sets and planted them in some good rich soil dug two spits deep with only a small quantity of ordinary farm yard manure added

The crop was lifted on 28th October & found to weigh 20 $\frac{1}{2}$ lbs—the whole of the tubers with the exception of one about the size of a walnut being entirely free from disease*

I have caused a few to be boiled & found them very good cookers & eaters

A good many of them grew irregular in shape but I should think the produce was over the average in this District—this wretched season³

Truly yours. | Will^m Meredith

James Torbitt Esq^{re}. | 58 North Street | Belfast.

* very probably this is not the fungus—these small tubers being often otherwise diseased

Scattered all over the Kingdom, there are, perhaps a thousand growers like this, but it will require two or three years more for the varieties to attain sufficient bulk to be appreciated.

J.T.

DAR 178: 158

¹ The date is established by the date of the William Meredith's letter to Torbitt. Torbitt added a note (*very ... diseased*) at the end of Meredith's letter, and wrote a second note ("Scattered ... J. T.") across the text of the first page of the letter.

² Torbitt probably referred Meredith to his article 'On potato growing' in the *Field*, 12 April 1879, pp. 435–6.

³ The winter of 1878–9 was exceedingly cold, and was followed by an exceedingly wet summer (Manley 1974).

To E. S. Galton 20 November 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Nov 20. 1879

My dear Cousin,

I am extremely obliged to you for your letter, which will be most useful in correcting my many shameful errata & blunders should there be a second edition;¹ but this I fear is not likely as the book did not sell well at Murray's sale.²

I saw in the newspaper the death of M^r Wheler; & I am sincerely sorry for the grief which this heavy loss must cause your sister.³ Pray give my kind remembrances to her. Believe me with many thanks | Yours very sincerely | Charles Darwin

LS

UCL Library Services, Special Collections (GALTON/1/1/9/5/7/29)

¹ See letter from E. S. Galton, 12 November 1879. *Erasmus Darwin* 2d ed. was published in 1887.

² On the results of John Murray's sale, see letter to Ernst Krause, 17 November 1879, and letter to R. F. Cooke, 18 November [1879].

³ The death of Edward Wheler, the husband of Galton's sister Elizabeth Anne Wheler, was reported in *The Times*, 18 November 1879, p. 1. CD had received news of his declining health in the letter from E. S. Galton, 12 November 1879.

To W. T. Thiselton-Dyer 20 November 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Nov 20. 1879

My dear Dyer,

Can you tell me the name of the enclosed *Epimedium*, & I enclose an addressed post card to save you trouble. The long flower peduncles with yellow flowers come up separately from the leaves early in the spring out of doors.¹

In the summer I asked for some *Gossypium* seeds, but you had none; if you have any now I should be grateful for a few; but only species producing large cotyledons, such as the Nankin cotton which I had formerly from Kew, would be of any use to me² Thompson of Ipswich sent me *G. herbaceum* but these were of no use, and he has no other kind.³

My dear Dyer | Yours very sincerely | Ch. Darwin

LS

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: ff. 195–6)

¹ The specimen was probably *Epimedium pinnatum*, a perennial with bright yellow flowers in the family Berberidaceae. In *Movement in plants*, p. 103, CD mentioned that the greatly elongated flower stems and petioles of the plant rose up independently of the leaves and broke through the ground in the shape of arches.

² CD had requested *Gossypium maritimum* and *G. brasiliense* (both synonyms of *G. barbadense*, Creole cotton) in his letter to Thiselton-Dyer of 24 March 1879. CD's notes on the sleep of cotyledons in 'Nankin cotton', dated June, July, and August 1879, are in DAR 209.14: 5 and 15. Nankin is an alternative spelling for Nankeen; Nankeen cotton is *Gossypium nanking* (a synonym of *G. arboreum*, tree cotton). See *Movement in plants*, pp. 22–3, 324.

³ CD's notes on *Gossypium herbaceum* (Levant cotton) received from William Thompson are in DAR 209.5: 99–107; CD discussed the different behaviour of the cotyledons in Nankin cotton and *G. herbaceum* in *Movement in plants*, p. 303.

From James Torbitt 20 November 1879

Belfast

20th Novr | 1879

Charles Darwin Esq^r. | Down.

My dear Sir.

I duly received your esteemed letter of 17th Inst, and post card, and always wonder at the length to which you write me.¹

I can quite understand the difficult position of ministers in such cases, and I shall not be disappointed if Mr Farrer can make nothing of it.² I may say however that Mr Cave M.P. (Liberal) for Barnstaple has seen these new varieties, and I have no doubt would strongly urge the Government to assist in the work. It was he in fact who put my letter in the “Field”.³

My statement that “the plant ought to be grown from its seed each fourth year” was too strong—that course would be too troublesome in the present state of agriculture.⁴ What I should have said was; that in my experience, the yield of the plant in seed and tubers, was, in the second and third years of life, much larger than in the first, fourth, and fifth years.

The crossing, this year was a complete failure. I had made elaborate preparations, but the varieties selected for the purpose (and all other varieties but two) failed to produce fruit.

I shall try to put my ideas into shape regarding varieties wearing out, and try to have them printed in the “Pall Mall Gazette” or other paper, which would save you from reading manuscript.

I remain My dear Sir | most respectfully yours | James Torbitt

DAR 178: 157

¹ See letter to James Torbitt, 17 November 1879. The postcard has not been found.

² Thomas Henry Farrer had contacted the minister of the Board of Trade, Dudley Francis Stuart Ryder, about support for Torbitt’s potato experiments (see letter to James Torbitt, 17 November 1879).

³ Thomas Cave. Torbitt’s letter to the *Field* was enclosed with his letter of 4 November 1879.

⁴ See letter from James Torbitt, 15 November 1879, and letter to James Torbitt, 17 November 1879.

To A. S. Packard 23 November 1879

Down, | Beckenham, Kent | (Railway Station | Orpington S.E.R.)

Nov. 23rd 1879

Dear Sir:

I never heard of bees being in any way carnivorous, and the fact is to me incredible.

Is it possible that the Bees opened the bodies of the *Plusias* to suck the nectar contained in their stomachs?¹ Such a degree of reason would require repeated confirmation and would be very wonderful. I hope that you or some one will attend to the subject.²

My dear Sir | yours faithfully | Ch. Darwin.

Copy

English Heritage, Down House (Scrapbook)

¹ See letter from A. S. Packard, 30 October 1879 and n. 1. Packard had described honey-bees apparently feeding on moths of the species *Plusia precatonnis* (a synonym of *Autographa precatonnis*, the common looper moth).

² Packard included the full text of this letter, as well as responses from Hermann Müller and Asa Gray, in his article on the subject in *American Naturalist* (Packard 1880, p. 50).

From Ernst Krause¹ 24 November 1879

Berlin N.O. Friedenstrasse 10. II
den 24.11.79.

Hochverehrter Herr!

Ich schreibe heut nur zwei Zeilen, um mich für die Freundlichkeit zu bedanken, mit welcher Sie mir auf meine Fragen, soweit es Ihnen möglich war, Auskunft gegeben haben.² Die deutsche Ausgabe ist noch sehr weit zurück und wird erst im nächsten Jahre ausgegeben werden, obwohl Übersetzung und Manuscript seit längerer Zeit druckfertig vorliegen.³

Wir stecken bereits tief im Schnee und sehen einem langen Winter entgegen.

Mit dem herzlichsten Wunsche, dass diese Zeilen Sie in guter Gesundheit antreffen mögen, zeichne ich, hochverehrter Herr, | Ihr | dankbar ergebenster | Ernst Krause

DAR 92: B48

¹ For a translation of this letter, see Appendix I.

² See letter to Ernst Krause, 17 November 1879.

³ The German edition of *Erasmus Darwin* was published in April 1880 (Krause 1880; see *Correspondence* vol. 28, letter from Ernst Krause, 19 April 1880).

From John Ball 28 November 1879

Hotel Paradis— Nice— Alpes Maritimes
28 November 1879

Dear Mr Darwin—

Your very kind note of 13 August last—reached me only very lately when I returned for a few days to England—¹ I need not say that I read it with the greatest interest. I feel as strongly as possible that the hypothesis that I have ventured to put forward requires very much fuller development than I have yet been able to give it before it can claim even that degree of assent which belongs to a conclusion towards which several separate lines of probability appear to converge. I need not say that I have no notion of endeavouring to lure you into controversy but as you have been good enough to notice some specific difficulties I will venture to make a few observations on them²

1. Absence of experimental proof that the higher plants are more intolerant of carbonic acid gas than the lower—

I believe that all the experiments hitherto made on the cultivation of plants in an atmosphere surcharged with CO₂ have been inconclusive owing to the practical difficulty of maintaining a nearly uniform composition in the imprisoned air whose CO₂ is rapidly decomposed by the growing plants—but even if it should be shown that there is no such difference as has been supposed in the effect of excessive CO₂ on the growth of the higher & lower plants I should not regard that as very important to my argument. It seems to me probable that the great & important difference between the condition of the lowlands & the high mountains in palæozoic (pre-coalmeasure) times was not so much the chemical difference between the effect of the less charged air of the upper region & that of the more charged air of the lower zone as the

physical difference in the effect on vegetation of rapid & considerable changes of temperature & seasons of activity & repose, which would be felt in the more freely radiating upper region as compared with the lower zone where difference between night & day w^d be almost insensible & that of the seasons comparatively slight.

2. In considering the question of the probable degree of diffusion of CO₂—in an atmosphere containing 20 times the present proportion—(25 times would be I think nearer the mark) it would be well to consider that the only important interference with the law which w^d regulate an atmosphere at rest—(whose condition I had calculated) arises from the action of winds— But the diminished radiation from the greater part of the surface of the planet when surrounded by an atmosphere surcharged with CO₂ & aqueous vapour, would cut off or nearly so at their source most of the aerial currents & very much lessen the cause of disturbance.

3 Of course under almost any reasonable view of the origin of the existing flora one would expect a certain amount of relation between the floras of the mountain masses & that of the surrounding lower regions— I will not presume to give an opinion whether on the whole the facts favour the idea of the mountain plants being derived from the low country or vice versa— I should have thought that both were true to some extent— But apart from this I should think that the number of genera & species peculiar to the high mountains is great enough to make an a priori probability in favor of the opinion that their diffusion must date from a geologically remote period I stop myself lest I should contrary to my intention let this degenerate into an argument—instead of merely thanking you for your remarks If I am able to carry on the work that I have in my head I shall hope to obtain more countenance for my ideas than I can now expect from you

believe me most sincerely yours | John Ball

C. Darwin Esq

DAR 160: 36

¹ CD's letter has not been found, but see the letter from John Ball, 8 August 1879.

² Ball had asked for comments on his lecture 'On the origin of the flora of the European Alps' (Ball 1879; see letter from John Ball, 8 August 1879 and n. 2). For CD's opinion of Ball's hypothesis on the origin of higher plants in alpine regions, see the letter to J. D. Hooker, 22 July [1879] and n. 7.

From J. D. Hooker 29 November 1879

Royal Gardens Kew
Nov 29/79.

Dear Darwin.

I have not yet thanked you for the Life of your Grandfather;¹ which is not only very instructive but "great fun", without a trace of buffoonery.— I was rather disappointed with Krause's part, by contrast no doubt; for it shows a remarkable appreciation of Erasmus's work, & this in many ways— altogether it is a very valuable little contribution to the History of Science in England.²

We are "toiling & moiling"³ on here as usual, & overwhelmed with drudgery—

We had a horrid scare 10 days ago, in the form of a Telegram from “Nature” to Dyer to the effect that A Gray was dead,⁴ & asking for a biograph. notice. I could not but feel sure that one of his colleagues would have telegraphed to me, & yet was most anxious till 2 days ago, when I got a letter from him in excellent spirits. We still are thinking over our conjoint work on the Geograph distrib: of American Flora.⁵ I have sent him a comparison between the Rocky Mt Flora & that of Altai, which present many curious points of affinity: as in variety or absence of Oaks, Nuts, & other Cupulifera which abound all round both areas.⁶ He now wants my Lecture to R. I. in a modified form, & a comparison of the European & Asiatic Floras, which might be very interesting in reference to America.⁷ I have a notion that the E Asiatic & W. European temperate & subtropical Floras are very distinct, but not so distinct as both are from the intermediate area—and that the Himalaya is the bridge between them, crossing the intermediate area.

Further the Himalaya contains a mingling of European types with others typical of both Eastern & Western America.

I commenced this intending to confine it to thanks for your book & the information that we have no cotton seeds—⁸ Shall I write to Egypt for some?.

Ever affy yrs | J D Hooker.

DAR 104: 134–5

¹ Hooker’s name is on CD’s presentation list for *Erasmus Darwin* (Appendix IV).

² CD had written the preliminary notice, a biographical sketch of his grandfather, for *Erasmus Darwin*; the second part of the book was an essay by Ernst Krause, ‘The scientific works of Erasmus Darwin’ (*ibid.*, pp. 131–216).

³ Toiling and moiling; to labour in the mire.

⁴ William Turner Thiselton-Dyer and Asa Gray.

⁵ Hooker had travelled with Gray in July and August 1877, studying North American plant distribution (see *Correspondence* vol. 25, letter from J. D. Hooker, 19 October 1877, and L. Huxley ed. 1918, 2: 205–15). The results of their investigations were published in Hooker and Gray 1880.

⁶ The Altai mountains are in central Asia. The family Cupuliferae is roughly equivalent to the modern families Fagaceae and Betulaceae (see Bentham and Hooker 1862–83, 3: 402–3).

⁷ Hooker’s lecture on the distribution of North American flora was given at the Royal Institution of Great Britain on 12 April 1878 (Hooker 1878b).

⁸ In his letter to W. T. Thiselton-Dyer, 20 November 1879, CD had requested seeds of ‘Nankin cotton’ (an alternative spelling for Nankeen cotton, *Gossypium nanking*; a synonym of *G. arboreum*, tree cotton).

From G. H. Darwin [30 November 1879]¹

6 Qu: Ann St
Sunday

My dear Father

Uncle Ras² suggests that you ought to give a copy of Eras. D. to H^y. Parker.³ If you do so he thinks it will be best to send the copy here & write a letter to H. P. at the Oxf. & Camb. Club Pall Mall to tell him that the book is here.⁴

I shall see you on Wedn. as I sha’nt go back to Camb. till evening⁵ | G H Darwin

DAR 210.2: 81

- ¹ The date is established by the reference to *Erasmus Darwin* and by the date of CD's visit to London (see n. 5, below). In 1879, the Sunday preceding 3 December was 30 November.
- ² Erasmus Alvey Darwin.
- ³ *Erasmus Darwin* was published in early November 1879. Henry Parker was CD's nephew.
- ⁴ The Oxford and Cambridge University Club, 71–6 Pall Mall, London (*Post Office London directory* 1879). No letter from CD to Parker has been found.
- ⁵ CD and Emma Darwin went to stay at Erasmus Alvey Darwin's house in London on Wednesday, 3 December 1879 (Emma Darwin's diary (DAR 242)).

To J. D. Hooker 1 December [1879]¹

Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)
Dec. 1st

My dear Hooker

I sh^d. be very glad of a few cotton seeds, but it is a horrid shame to trouble you, for it is only one little point which I somehow overlooked: the cotyledons, when old & large, sink downwards at night, & I neglected to prove that it was not merely their weight, with reduced tension of the tissues at night, which caused this periodical movement.—²

Your praise of the life of Dr D. has pleased me exceedingly, for I despised my work & thought myself a perfect fool to have undertaken such a job.³

I am delighted to hear that you are thinking on geographical distribution. Your present problem seems a very complex one; but I hardly know any geograph. problem that does not deserve to be so disputed.⁴

I wish that you had leisure sometime to go over again the case of New Zealand with all & any new lights since you published that splendid essay.⁵

We are coming up on Wednesday to 2 Bryanston St for 5 days & then to 6 Queen Anne St for 3 days.⁶

Ever yours | C. Darwin

Royal Botanic Gardens, Kew (Darwin: Letters to Thistelton-Dyer, 1873–81: ff. 193–4)

- ¹ The year is established by the relationship between this letter and the letter from J. D. Hooker, 29 November 1879.
- ² See letter to W. T. Thistelton-Dyer, 20 November 1879, and letter from J. D. Hooker, 29 November 1879. CD discussed the movements of the cotyledons of a number of species of *Gossypium* (the genus of cotton) in *Movement in plants*, p. 303. In a note dated 12 April 1879, CD had noted that the cotyledons of some plants, possibly including *Gossypium*, bent permanently to the ground; he attributed the movement to epinasty, that is, increased growth on the upper side of the leaf (DAR 209.7: 138). In *Movement in plants*, p. 312, CD noted that in one species of *Gossypium*, the young cotyledons sank very little at night but the movement became more pronounced when they grew large and heavy.
- ³ Hooker had praised CD and Ernst Krause's book, *Erasmus Darwin* (see letter from J. D. Hooker, 29 November 1879).
- ⁴ Hooker was thinking of working with Asa Gray on the geographical distribution of plants, including the relationship of the American flora to that of Europe and Asia (see letter from J. D. Hooker, 29 November 1879 and n. 5).
- ⁵ There is a heavily annotated copy of Hooker's *Introductory essay to the flora of New Zealand* (Hooker 1853), bound with his *On the flora of Australia* (Hooker 1859), in the Darwin Library–CUL (see *Marginalia* 1: 398–403). CD was particularly interested in the relationship of the South American and the New Zealand flora (see also *Correspondence* vol. 6, letter to J. D. Hooker, 8 [July 1856] and n. 3).

⁶ CD and Emma Darwin stayed at 4 Bryanston Street, London, the home of their daughter Henrietta Emma Litchfield, from 3 to 8 December 1879, and at 6 Queen Anne Street, the home of CD's brother, Erasmus Alvey Darwin, from 8 to 11 December (Emma Darwin's diary (DAR 242)).

From A. A. W. Hubrecht 2 December 1879

Leiden
2 Dec. 1879

Dear Sir,

Up to now I have shamefully neglected to send you my sincerest thanks for the kind and encouraging letter with which you replied to the impertinent appeal I made upon you to criticise an unripe hypothesis of mine.¹ According to your advice and my own conviction I have provisionally put it back in its corner/drawer to see whether in time facts may be gleaned either supporting or invalidating it.

Since then I sent you a short account of the results I arrived at, regarding the affinities of the different genera of Nemerteans²

The anatomy of this group discloses other highly interesting facts, the principal of which I suppose to be the discovery of a central nervous system situated entirely above the intestine.³ Central in its character because down to the furthest extremity of the tail a continuous and equal sheath of nerve *cells* accompanies a central bundle of *fibres* in the so called lateral nerves, which latter merge into one another in the tail by a commissure situated *above* the anus.

The internal segmentation of these animals as well as some other points in their anatomy leads me to the conclusion that here we have a group much more nearly related to the primitive intermediate forms between invertebrate and vertebrate than are either the more modern ancestors the annelids (whose "Bauch Mark" offers so strong an objection but can in its turn be easily derived from such forms of Nemerteans as is f. ex. *Drepanophorus*) or the original candidates for this honour: the ascidians.⁴

Within a few weeks I hope to present to our royal Society paper on this subject which you will permit me to send you.⁵

ADraft

Hubrecht Institute for Developmental Biology and Stem Research

¹ See letter to A. A. W. Hubrecht, 25 August 1879.

² Hubrecht probably sent his short paper 'Vorläufige Resultate fortgesetzter Nemertinen-Untersuchungen' (Preliminary results of continuing research on Nemerteans; Hubrecht 1879), but it has not been found in the Darwin Archive-CUL. Nemertea is the phylum of ribbon worms.

³ See Hubrecht 1879, p. 474.

⁴ *Bauchmark*: abdominal or ventral nervous cord (German). *Drepanophorus* is a genus of the class Enopla (armed nemerteans). Some researchers believed that annelids (segmented worms) were the ancestors of vertebrates while others, including CD, thought that ascidians (sea squirts) were the most likely ancestors (see, for example, *Correspondence* vol. 23, letter from Anton Dohrn, 7 February 1875, and letter to Anton Dohrn, [after 7 February 1875]). A major morphological difference between invertebrates and vertebrates is the location of the nerve cord, which is ventral in the former and dorsal in the latter.

⁵ Hubrecht's paper 'Zur Anatomie und Physiologie des nervensystems der Nemertinen' (On the anatomy and physiology of the nervous system of nemerteans) was published in the *Verhandelingen van de Koninklijke Akademie van Wetenschappen* (Hubrecht 1880). No copy has been found in the Darwin Archive-CUL.


From E. R. Shaw 2 December 1879

Springfield, | Roupell Park, | S.W.
Dec. 2, 1879.

Sir,

I venture to trouble you with a line to communicate a curious fact which came under my notice during a visit, from which I have recently returned, to the island of Sark.¹

Several of the horses there have a well developed beard. One which I saw was a bushy growth more than three inches in length and curling gracefully outwards, thus

() The people of the island attribute the peculiarity to the horses' browsing among the furze.²

Your writings have profoundly interested me, and it occurred to me that the above fact is just one of the kind of observations which you would be glad to have communicated.³

Should it, however, not be new to you, or should you deem it valueless, you will I trust pardon my troubling you with this note.

Believe me to be, | Sir, | Yours faithfully, | E. R. Shaw.

D^r Darwin, F.R.S. | &c &c &c

P.S. I am indebted to my neighbour, D^r Wallich, for your address.⁴ | E.R.S.

DAR 177: 148

¹ Sark is one of the Channel Islands.

² Furze or gorse is *Ulex europaeus*, a dense, thorny bush.

³ CD mentioned horses' hair as being sometimes curled in *Variation* 2d ed. 1: 56, and discussed the mane as a protection during fights in *Descent* 2d ed., pp. 521–2.

⁴ George Charles Wallich is recorded as living at 3 and 4 Christchurch Road, Streatham, Lambeth, in the 1881 census; Springfield was next door to Wallich's address (Census returns of England and Wales 1881 (The National Archives: Public Record Office RG11/626/17/27). Wallich had been a correspondent of CD's in 1860, 1869, and 1872 (see *Correspondence* vols 8, 17, and 20).

From Robert Christison 4 December 1879

Edinburgh.
Dec. 4. 1879

Dear M^r Darwin

An accumulation of local work and of too much scribbling for my old eyes has prevented me from acknowledging sooner your kindness in sending me your biographical notice of your famous grandfather. It has revived ancient and pleasing recollections.¹ For when I was but a small boy "Darwin's Botanic Garden" in my father's library was one of my earliest favourites, after nursery rhymes ceased to suit in the progress of development.²

He was a most remarkable character. He should have lived however, not in the last, but rather in the present century; when he would have had at hand the scientific appliances for proving, and carrying into effect, his wonderful conceptions.

Among these,—it is comparatively a small matter however,—I was struck with the caution he gives against marriage with Heiresses. For some years ago I had occasion to caution, on the very grounds stated by him, the director of a great Assurance Company, of which I have long been physician, against accepting proposals of Assurance on the lives of Heiresses newly married, or about to be married. That is to say, heiresses who become so by the gradual extinction of their race. It is a fact that they generally die young, and not infrequently in their first accouchement.³

Winter has set in severely here at last, as in the South. But not till November 28th. Till then the roads and fields were soft,—unaffected by our very slight morning frosts, generally due indeed to radiation.⁴ But the morning of the 28th brought a “black” frost,⁵ which has grown ever since, till this morning at 9 a.m. my thermometer was at 15°.

In the course of your meteorological observation has this prognostic ever occurred to you?— That if there be from four to seven days of enduring frost in the last week of October or first week of November,—sharp enough to harden the roads and fields,—there is afterwards an open winter⁶ till the end of January at least. I have never known here an exception to that rule, and have experienced very many confirmations of it. I am not so sure of the converse. But last winter, a severe one, followed the converse rule; for we had no frost of the slightest moment till November 14th; and there was a similar case not long ago, although I do not recollect the year. This winter will prove another test; for I have carefully watched, and there has been no frost after sunrise till November 28th,—till which day fields & roads were as soft as in September.

I am | Yours Truly | R. Christison

Charles Darwin | Esq.

DAR 161: 146

¹ Christison’s name appears on CD’s presentation list for *Erasmus Darwin* (Appendix IV). He had sent CD information on the reception of Erasmus Darwin’s medical ideas (see letter from T. L. Brunton, 26 June [1879] and n. 4).

² E. Darwin 1789–91. Christison’s father was Alexander Christison.

³ Christison was medical adviser to the Standard Life Assurance Company (*ODNB*). In *The temple of nature* (E. Darwin 1803, p. 45), Erasmus wrote that it was hazardous to marry an heiress, since she was frequently the last of a diseased family.

⁴ That is, heat loss by radiation at night.

⁵ Black frost: temperatures low enough to freeze and kill plant tissues, causing them to blacken.

⁶ An open winter: a mild winter, free from frost, snow, and ice (*OED*).

To E. R. Shaw 4 December 1879

Down, | *Beckenham, Kent.* | *Railway Station* | *Orpington. S.E.R.*

[4 Bryanston Street, London.]

Dec. 4th 1879

Dear Sir

I am much obliged to you for your kind note.—¹ All such facts as that which you have communicated to me, are interesting, & there is indeed hardly any fact in

natural history which deserves to be called little. Now that you mention the case, I am almost sure that I have somewhere seen the same appearance in horses; but I am not likely ever again to write on the variation of domesticated animals.—²

Dear Sir | yours faithfully | Charles Darwin

American Philosophical Society (568)

¹ See letter from E. R. Shaw, 2 December 1879.

² Shaw had written to CD about horses with beards; see letter from E. R. Shaw, 2 December 1879.

From E. L. Sturtevant 4 December 1879

So Framingham, Mass.
Dec. 4. 1879.

Charles Darwin, F.R.S. etc.

Dear Sir;

I wish to communicate to you briefly the result of an experiment in selection which I do not remember to have seen tried before: selecting in opposite directions.

This spring I planted my corn (maize) field with corn carefully selected for the best. I also planted a small lot with seed of the worst character. The result was:-

1. {300 $\frac{1}{2}$ Bus.¹ of ears, of which 9 bus. were defective or about 3 per cent.
- 2 {181 ears, of which 179 were defective or 99%.

The appearance of the field and the plot offered as great contrast in the grain or earing as the figures show, but in the fodder growth there was no observable difference.

Please not feel it necessary to acknowledge receipt, as I know your time must be very much called upon.²

Sincerely yours | E Lewis Sturtevant

DAR 177: 270

CD ANNOTATION

o.1 So] 'South' *added above ink*

¹ Bus.: bushel.

² No reply to this letter has been found. Sturtevant had also written to CD about maize in his letter of 12 January 1878 (see *Correspondence* vol. 26). For Sturtevant's later experiments with crossing maize, see the second part of Sturtevant 1894.

From T. L. Brunton 5 December 1879

50, Welbeck Street, | Cavendish Square. W.
Dec^r. 5th. 1879

My dear Sir

On my return from my wedding tour I found the life of D^r Erasmus Darwin which you had so kindly sent to me.¹ For it I beg to return you my best thanks and at the same time to express my regret that I was unable to get the information you wished.² I must also apologise for my delay in thanking you but I can assure you

that it was not because I did not appreciate your gift. Indeed to tell the truth it was the difficulty I felt in expressing myself rightly which led me to delay writing to you while I finished off the small letters which required no thought.

Again I thank you most sincerely & remain | Yours faithfully & obliged
| T. Lauder Brunton

C. Darwin Esq

DAR 99: 186

- ¹ Brunton had married Louisa Jane Stopford in Dublin on 20 September 1879 (*Pall Mall Gazette*, 23 September 1879, p. 3). His name appears on CD's presentation list for *Erasmus Darwin* (Appendix IV).
- ² CD had asked Brunton about the influence of Erasmus Darwin on the practice of medicine (see letter to T. L. Brunton, 25 April 1879, and letter from T. L. Brunton, 26 June [1879]).

To F. B. Goodacre 5 December 1879

6. Queen Anne St | Cavendish Sq^{ure} | London.
December 5. 1879

My dear Sir

Will you be so kind as to inform me whether the two hybrids which you gave me were brother & sister of the same hatch?¹ I am glad to find that you have communicated to the Zoolog. Soc. the results of your crossing.² This being so I will send a short letter with a few remarks to *Nature*.³ If you do not see *Nature* & will inform me, I will send you a copy if my letter is printed.

My dear sir | Yours faithfully & obliged | Ch. Darwin

Dr John Goodacre (private collection)

- ¹ Goodacre had sent CD hybrid geese in 1878 (*Correspondence* vol. 26, letter from F. B. Goodacre, 2 September 1878).
- ² Goodacre 1879. See also letter to F. B. Goodacre, 29 August 1879, and letter from F. B. Goodacre, 1 September 1879.
- ³ See letter to *Nature*, 15 December [1879].

From A. H. Payne 5 December 1879

A. H. Payne Leipzig Leipzig
Dec. 5th 1879.

Sir,

As you are perhaps aware there is considerable agitation going on in Germany & especially here for the suppression of Vivisection, and as Leipzig has a University of 3,000 students opinions are very divided & violent.¹ The Vivisectionists say that no one but a medical man can judge of the question at all, that all medical men of any name are of opinion that Vivisection is desirable & that science has profited greatly by it & that every one who asserts the contrary is a blockhead. Anti Vivisectionists on the contrary assert that medical science has gained next to nothing by it, that opinions among medical men *are* very divided & that notably you, Sir. W. Fergusson & many other eminent men have declared themselves decidedly against Vivisection.² Not being a medical man myself I will not give my opinion, but I am very certain

that the disgusting cruelties practised by such men as Prof. Goltz & Prof. Schiff who on their own assertions (printed) bore holes in Dogs' heads, take out their brains & keep them in this state *for months*, without even *attempting* to prove that anything has been gained thereby,—that such proceedings are a disgrace to any nation & to man generally & I wish to assist as much as I can in stopping it.³ It would very materially assist the, as I think, good cause, if you would give your opinion on the question which I should have printed here & circulated. I hope you will excuse my troubling you with this matter, but if, as is asserted you have said “die Vivisection ist der Abscheu's inne Verdammung merkt”⁴ I venture to hope that you will be glad to assist in stopping the practice.

Your's obed^t servant, | Albert Payne
my address is
Albert Payne
c/o A. H. Payne, Publisher
Leipzig.

Ch. Darwin, Esque

P.S. To prevent the possibility of my intentions being misunderstood I would mention that I have no *interest* in the question beyond that of common humanity. I do not publish any books on the question & my motives therefore are quite free from business considerations. I hate cruelty & I think that an educated man who practises it under pretence of assisting science (*if* this is the case, or, at least, very often) is more to be condemned than a butcher or carter who is very often worked up into a rage by the frequent obstinacy of the animals he has to do with.

DAR 174: 32

¹ On the anti-vivisection movement in Germany, see Tröhler and Maehle 1987. Opposition to vivisection in Leipzig centred on the Physiological Institute run by Carl Ludwig, who was himself vice-president of an animal protection society (Tröhler and Maehle 1987, pp. 165–6).

² CD had been involved in efforts to draft a bill regulating vivisection in 1875 and 1876 (see *Correspondence* vol. 23, including Appendix VI, and vol. 24). William Fergusson, a surgeon, had signed Frances Power Cobbe's petition against vivisection; CD considered Cobbe's petition likely to damage the practice of physiology (Cobbe 1904, pp. 629, 633; *Correspondence* vol. 23, letter to F. P. Cobbe, [14 January 1875]).

³ Friedrich Ludwig Goltz worked in Strasbourg on the localisation of cerebral function in dogs; he was able to keep dogs whose cerebrums had been removed alive for up to three years (*NDB*). Moritz Schiff was forced to leave Florence in 1876 after a campaign against his vivisection experiments and became professor of physiology at Geneva (*DSB*).

⁴ 'Vivisection is horror's damnation realised'; however, the transcription of the German is uncertain. There is no record of CD's saying this.

From W. E. Darwin [8 December 1879]¹

Basset
Monday

My dear Father.

I return you Guthrie which I have been very much interested in.² He certainly shews that Spencer makes far too vast a claim as to what his formula includes, and convicts him of absolute contradiction about the mutability of the homogeneous.³

The book as a whole seems to me to shew that as long as Spencer is discussing inorganic evolution the word “force” & “forces” are confusing and unnecessary according to his formula; but as soon as he comes to organic life there are signs that he either consciously or unconsciously feels that “matter in motion” is insufficient, and that something further included in the word “force” is needed; as when he says “the reader must be reminded when applying the formula to life & society, in what sense the interpretations must be understood namely that they are to be interpreted in “terms of force”” without its being explained anywhere what the terms are⁴

And Guthrie I think shows that any formula to include organism &c must probably include force (apart from matter and motion) as represented by an original consciousness of the ultimate units of matter, or consciousness rising at a later period; which last idea seems to me less logical than the first.⁵

I cannot conceive how Spencer can make the evolution of language society industry *actually* the integration of matter & dissipation of motion; though the evolution of language may be very similar, I think the book brings out in spite of its criticism the wonderful parallelism that does exist in evolution of the world, and that if Spencer’s is only a “description” and not an “explanation”, anyhow evolution is the process and some one else has to frame a better formula.⁶ I shall like to see what Moulton says about it, if he writes to you.⁷

The part about the unknowable seems to show that Spencer juggles with the “relative” & the “non relative”, but I am not up to it.⁸

I hope your Romanes visit went off without much labour.⁹

Thank you for the label writing description¹⁰

Your affect son | W E. Darwin

I think this American pen after all is extremely pleasant to write with.

Cornford Family Papers (DAR 275: 72)

¹ The date is established by the relationship between this letter and the letter from J. F. Moulton, 10 December 1879. In 1879, the Monday before 10 December was 8 December.

² CD had sent William a copy of Malcolm Guthrie’s critique of Herbert Spencer’s views on CD’s theory of natural selection, *On Mr. Spencer’s formula of evolution* (Guthrie 1879); CD’s copy is in the Darwin Library–Down. For CD’s admission of his failure to appreciate Spencer’s work, see *Correspondence* vol. 11, letter to J. D. Hooker, 23 [June 1863].

³ See Guthrie 1879, pp. 115–20. Spencer’s formula (p. 115):

Evolution is an integration of matter and concomitant dissipation of motion, during which the matter passes from an indefinite, incoherent homogeneity to a definite, coherent heterogeneity, and during which the retained motion undergoes a parallel transformation.

⁴ See Guthrie 1879, p. 127. Guthrie was quoting from the third edition of Spencer’s *First principles* (H. Spencer 1875).

⁵ See Guthrie 1879, pp. 128–31.

⁶ See Guthrie 1879, p. 138. Guthrie’s central point is that while language, science, industry, and art may involve integrative processes, not all are integrative processes of matter.

⁷ See letter from J. F. Moulton, 10 December 1879.

⁸ See Guthrie 1879, pp. 152ff.

⁹ CD evidently visited or was visited by George John Romanes while he was in London from 3 December 1879 (Emma Darwin’s diary (DAR 242)).

¹⁰ No letter from CD to William mentioning label writing has been found.

From F. B. Goodacre 8 December 1879

Wilby Rectory | Attlebro' | Norfolk
Dec^r 8/79

Dear Sir,

The cross bred gees(e) (you) had from me were broth(er and) sister of the same h(a)tch; there is a statement to this effect in my paper, the pr(o)of of which I have received & returned; it is proposed to make c(er)tain omissions some of w(hich) I much regret, but I had no other choice but to consent as otherwise the paper would not be published in the Proceedings¹

I do not see "Nature" & shall greatly value a copy with (you)r (re)m(a)rks in² about the ($\frac{3}{4}$ line missing) my paper ($\frac{1}{2}$ line missing) two (le)tters by ($\frac{1}{2}$ line missing) Hens(1)ow in (the Mag): of Nat: Hist for 1830 ($\frac{1}{2}$ line missing) of species of Oxlip ($\frac{1}{2}$ line missing) red & blue *Anagallis* ($\frac{1}{2}$ line missing) (ig)norant of his ($\frac{1}{2}$ line missing) subject as I r(emember) his mentioning them in () (w)hen I attended his B(ota)ny lectures at Cambridge but on reading his letters it (s)truck me my idea about the two forms of goose was only extending the Prof's doctrine to the animal world:—³

I am still of my old opinion that much valuable knowledge is wilfully refus(ed) ()nctory neglect of ($\frac{3}{4}$ line missing) under ($\frac{3}{4}$ line missing) as regar(ds) ($\frac{3}{4}$ line missing) As to variation (in ani)mals in a state (of nature) you already kn(ow) ($\frac{1}{3}$ line missing) gathering together & I c($\frac{1}{2}$ line missing) that your lo() ($\frac{1}{2}$ line missing) work may so ($\frac{1}{2}$ line missing) appearance; th() ($\frac{1}{2}$ line missing) some relation bet(ween animals) in a wild state & u(nder domes)tication:—

With ki(n)d r(e)g(ar)ds | Believe me | yrs truly | FB Goodacre

DAR 165: 69

¹ See letter to F. B. Goodacre, 5 December 1879. Goodacre's paper on the results of cross-breeding hybrid geese was published in the *Proceedings of the Zoological Society of London* (Goodacre 1879).

² See letter to *Nature*, 15 December [1879].

³ John Stevens Henslow published two letters in the 1830 *Magazine of Natural History*, one suggesting that primrose, oxlip, cowslip, and polyanthus were all one species, and one suggesting that *Anagallis arvensis* and *A. caerulea* were one species (J. S. Henslow 1830a and 1830b). For Henslow's doctrine and his botany lectures at Cambridge, see Kohn *et al.* 2005. Goodacre had argued that the common and the Chinese goose were the same species (Goodacre 1879). CD had written on the cowslip (*Primula veris*), the primrose (*P. vulgaris*), the Bardfield oxlip (*P. elatior*), and the common oxlip, a hybrid of the primrose and the cowslip, in his 1869 paper, 'Specific difference in *Primula*'. *Anagallis arvensis* is scarlet pimpernel; *A. caerulea* is a synonym of *A. arvensis* (a horticultural variety known as blue pimpernel). The Chinese goose is a domestic variety of the wild swan goose (*Anser cygnoides*); the common European domestic goose is a variety of the wild greylag goose (*Anser anser*). Goodacre was an undergraduate at Cambridge from 1847 (*Alum. Cantab.*).

From J. W. Judd 9 December 1879

Science and Art Department | South Kensington Science Schools. | S. Kensington | S.W.
9th Dec^r 1879

My dear Sir,

I greatly regret that I had not the good fortune to be here to-day at the time of your visit—¹ The work of the Geological class does not commence till February, after the Biological course closes.

I hope that on some future occasion I may have the opportunity of showing you the arrangements we are making here to teach Geology practically in the field & the laboratory as well as in the lecture-room.²

I greatly rejoice to hear from Prof Huxley³ that you are so well in health—
Believe me to remain, | Yours very faithfully, | John W. Judd

Charles Darwin Esq

DAR 168: 85

¹ CD was in London from 3 to 11 December 1879 (Emma Darwin's diary (DAR 242)).

² The Royal School of Mines had moved from its original premises in Jermyn Street, London, to South Kensington; the physics, chemistry, and natural history departments had moved in 1872, and the geological department in 1877. Laboratory work had been impossible for the geological department at their previous location in Jermyn Street. (T. G. Chambers 1896, pp. xxxvi–xxxvii.)

³ Thomas Henry Huxley.

From J. F. Moulton 10 December 1879

74 Onslow Gardens | South Kensington
Dec 10th 1879

Dear M^r Darwin

By some mysterious process M^r Malcolm Guthrie learnt that I was desirous of reading his book soon after our conversation about it and sent it me.¹ I have not quite finished it but I have read sufficient to enable me to say what I think of it which you so kindly asked me to do.

The book is a very able and acute criticism of *First Principles*,² written with great fairness and a sincere desire to ascertain the value of what Herbert Spencer has done. Nothing could be more admirable than the patience & attention with which he follows M^r Spencer through the most intricate subtleties of his theories to find out what is his real meaning and the impartial way in which he tests the results at which he arrives. It is a most valuable contribution to the criticism of Spencer's works for it is likely to impress and hold the more thoughtful portion of those who are so far his disciples as to accept the truth of his physical speculations.

So much for one side of the picture. But there is another side. The Critique & the book criticized are tainted with the same inherent vices. The arguments of the critic are exactly of the same kind as those of the author and are equally open to attack. There is the same fatal habit of patching up our imperfect knowledge of physical truths by evolving fresh ones out of our inner consciousness. There is the same use of vague and scientifically meaningless phrases without any attempt to attach to them any definite signification. There is the same exclusive reliance upon words and verbal formulæ without any consideration of the things they denote. And above all there is the same radical ignorance of the things about which they are disputing. Such phrases as Force, Continuity of Motion, Indestructibility of Matter, Quantum of motion are freely used by both without any accurate knowledge of what they mean.³ Such looseness might have been excusable in the days of Plato or Lucretius, though it would have been none the less fatal to the scientific value of the works. Now-a-days

it is both fatal and unpardonable. To put the matter harshly, M^r Guthrie's book is a pseudo-scientific criticism of a pseudo-scientific work. If either he or M^r Spencer had prepared themselves for their respective tasks by getting a really accurate knowledge of the results of Modern Physics & Dynamics neither First Principles nor the critique upon it could have been written.

But it may fairly be said—Does a purely verbal philosophy deserve any thing better than an equally verbal criticism? The objection to this mode of viewing the case is that if these matters are looked upon as mere efforts in dialectics there is no prospect of deciding the controversy. It is then a mere question of ingenuity to find a reply to any attack and each side can go on alternately being slaughtered & slaughtering to the end of time without being any the worse for it or any nearer the attainment of the truth. It reminds me of a remark that in passing I one day overheard from a spectator of a street fray in which two inexperienced pugilists were making furious demonstrations & flinging their arms wildly about in their efforts to hit each other but were doing little or no execution. In a tone of deepest contempt he ejaculated “A month of this would not hurt 'em. The're a pair of blooming windmills”. It is just so with these dialectic controversies about scientific matters. They never have settled and never can settle anything. It is clear that both the disputants in the present case think that if our knowledge of physical truths is actually limited and imperfect it can be extended and improved by writing about them. I am happy to say that our present school of Physicists dont agree with them on this point.

I fear that I have wearied you with this unconscionably long letter. But I always find myself roused by any attempt to supplant our only true means of acquiring knowledge—observation & experiment—by the cheap mode of speculation as to what may be and taking those hypotheses which are capable of being most attractively draped in quasi-scientific language as demonstrated truths. And this is from beginning to end the method of Herbert Spencer's “First Principles”.

I remain | Yours very sincerely | J Fletcher Moulton

C. Darwin Esq F.R.S.

DAR 171: 278

¹ During CD's visit to London, he and Moulton had discussed Malcolm Guthrie's critique of Herbert Spencer's views on CD's theory of natural selection, *On Mr. Spencer's formula of evolution* (Guthrie 1879). CD was in London from 3 to 11 December 1879 (Emma Darwin's diary (DAR 242)). For Moulton's earlier critique of Spencer, see [Moulton] 1873.

² H. Spencer 1875.

³ H. Spencer 1875 included chapters on the indestructibility of matter, the continuity of motion, and the persistence of force, but unlike Guthrie (see e.g. Guthrie 1879, p. 76), he did not use the word 'quantum'.

From Emma Nixon 10 December 1879

15 Vernon Street | Derby
Dec^r. 10th. 1879

Dear M^r. Darwin

Please accept my best thanks for your great kindness in sending me a copy of “Erasmus Darwin”.¹ I am only just returned home from London, so have had no

time to look into the book, but I am looking forward with real pleasure to the time when I shall be able to sit down to read the Memoir, which to me will be full of interest. I did so rejoice when I heard you were going to write the character of that *great* man.

My Father² always regretted no one had written the life & character of one so *richly* gifted with such splendid talents.

You will, I am sure, be sorry to hear Violetta Darwin is sinking *Tapping* has given great relief—but her days on Earth cannot now be many—³ She is most patient & resigned to the Will of her Heavenly Father.

I hope your health does not suffer from our present most severe weather?⁴

Again thanking you for your kind remembrance of me, and with kind regards | Believe me | Yours sincerely | Emma Nixon

DAR 99: 189–90

¹ Nixon had sent CD information on family history via her cousin Elizabeth Anne Wheler (see letters from E. A. Wheler, 17 April 1879 and 18 April 1879). Her name appears on CD's presentation list for *Erasmus Darwin* (Appendix IV).

² John Gisborne.

³ Violetta Harriot Darwin died on 9 January 1880 (*Darwin pedigree*). 'Tapping' refers to a medical procedure designed to drain off fluid (*OED*).

⁴ Temperatures had been below freezing earlier in the week (see *The Times*, 8 December 1879, p. 10).

To A. H. Payne 10 December 1879

Down, | Beckenham, Kent.

Dec 10 1879

Dear Sir

I have no objection to express my opinion on the subject of vivisection. I detest cruelty, & any physiologist who in investigation causes suffering which can possibly be avoided deserves universal execration.¹

But I am convinced that physiology, which cannot progress without experiments on living animals, is one of the most important of the Sciences, & that it will hereafter confer inestimable benefits on mankind.

Whether or not it has already improved the practice of medicine, is a question of comparative insignificance; for the history of Science shews that benefits to man are generally the indirect result of the search for truth.

It is my firm conviction that he who stops or delays the progress of physiology will hereafter be looked at as the greatest enemy to the sacred cause of true humanity.

If physiologists are reckless in their experiments, which as far as I can discover has not been the case in England, assuredly they ought to be checked & punished by public opinion or the law—

I remain | dear Sir | yours faithfully | Charles Darwin

P.S. It is not probable that you will circulate this letter, but if you do, I appeal to your honour to print the whole of it.—

LS(A)

Uppsala University Library: Manuscripts and Music (Waller Ms gb-00523)

¹ See letter from A. H. Payne, 5 December 1879. For CD's interactions with the anti-vivisection movement, see *Correspondence* vols. 23 and 24.

To H. E. Litchfield 11 [December 1879]¹

Down,
11th

My dear Etty

I send by this post, Guthrie's book which you will perhaps not care to see after reading Moulton's letter. I also enclose William, who wished to see Moulton's, so please send it.— You had better ask whether Eras, w^d like to see the Book & these letters.² I have sent the Photo. to M^{rs} Billing.³

Good-bye dearest— love to Litchfield— you have both been very good to us.—⁴

Your affec | C. Darwin

I scratled to death.—⁵

3^o15' Pm. Mother not arrived!⁶

Sotheby's (dealers) (28 March 1983)

¹ The year and month are established by the relationship between this letter and the letter from J. F. Moulton, 10 December 1879.

² CD's copy of Malcolm Guthrie's *On Mr. Spencer's formula of evolution* (Guthrie 1879) is in the Darwin Library—Down. See also letter from W. E. Darwin, [8 December 1879], and letter from J. F. Moulton, 10 December 1879. Erasmus Alvey Darwin was CD's brother.

³ Mrs Billing has not been identified.

⁴ CD and Emma Darwin had stayed with Henrietta Emma and Richard Buckley Litchfield in London from 3 to 8 December 1879 (Emma Darwin's diary (DAR 242)).

⁵ In the Darwin family, 'scratle' seems to mean chatter.

⁶ The Darwins had returned from London, where they had been staying with E. A. Darwin, on 11 December (CD's 'Journal' (Appendix II)).

From Raphael Meldola 11 December 1879

21 John Street, | Bedford Row, | London W.C.

Dec. 11/79

My dear Mr. Darwin,

Herewith I send you a subscription form for my Eng. ed. of Weismann's "Studies".

It is much against my own inclination that I send you this circular but when I last saw you you so strongly insisted upon considering yourself a subscriber that I comply with your wish.¹ It would give me much greater pleasure if you would allow me to present you with a copy.

Whether the work is going to be a 'commercial' success or not I have not the least idea— I have sent out nearly 300 circulars to the Members of the different Scientific Societies.

Part I (Seasonal Dimorphism) is far more complete than the German ed. as the author has added a great deal & I have appended a résumé of Mr. W. H. Edwards' important experiments on this subject.²

You will be sorry to hear (if you do not know it already) that Mr. Wallace has not been appointed to the Superintendship of Epping Forest.³

Yours very truly, | R. Meldola.

DAR 171: 139

¹ Meldola's translation of August Weismann's *Studies in the theory of descent* (Weismann 1880–2) was published in parts beginning in 1880. It included a prefatory notice by CD. See also letter to Raphael Meldola, 7 February 1879 and n. 2. The last known meeting between CD and Meldola took place before 25 November 1878 (*Correspondence* vol. 26, letter from Raphael Meldola, 25 November 1878).

- ² For William Henry Edwards's experiments on seasonal dimorphism in butterflies, see Weismann 1880–2, 1: 126–58. The German edition was Weismann 1875–6.
- ³ The 1878 Epping Forest Act appointed the City of London Corporation as conservators of Epping Forest, an area of woodland to the north of London covering about 6,000 acres. The aim of the act was to keep the forest unenclosed and available for public recreation. Alfred Russel Wallace had sought CD's support in his application for the post of superintendent (see *Correspondence* vol. 26, letter from A. R. Wallace, 14 September 1878).

To W. T. Thiselton-Dyer 11 December [1879]¹
 Down, | Beckenham, Kent. | (Railway Station | Orpington. S.E.R.)
 Dec. 11th

My dear Dyer

I am going again to beg assistance of you. & Kew. We badly want apheliotropic plants & think we see our way to good results if we had more plants to work on. We want young plant of *Smilax aspera*, & rather want *Mutisia clematis* & *Eccremocarpus*, but seeds of 2 latter would do.² We also want any of following seeds, (on account of their radicles) which you may chance to possess, & which Thompson of Ipswich³ has not.— I copy all out on following page.⁴ The 2 plants of *Bignonia capreolata*, which you sent have been invaluable & shall herewith be returned.⁵

Yours very sincerely | Ch. Darwin

P.S. I forgot my most important question. I can get seeds of *Viscum*, but how w^d be best manner of making seeds germinate, so that they c^d be observed & Dutrochet says hypocotyls strongly apheliotropic.⁶

Royal Botanic Gardens, Kew (Darwin: Letters to Thiselton-Dyer, 1873–81: ff. 197–8)

- ¹ The year is established by the reference to *Bignonia capreolata* (crossvine); CD received plants from Kew in May 1878 (*Outwards book*, Archives, Royal Botanic Gardens, Kew), and still had them in February 1879 (letter to W. T. Thiselton-Dyer, 3 February 1879). He retained at least one when he sent plants back to Kew in July (letter to W. T. Thiselton-Dyer, [after 26] July [1879] and n. 2).
- ² CD had received plants of *Mutisia clematis* and *Smilax aspera* var. *maculata* (rough bindweed) from Kew in December 1879 (*Outwards book*, Archives, Royal Botanic Gardens, Kew), but the *Smilax* was damaged by scale insects (letter to J. D. Hooker, 22 July [1879] and n. 10). CD had discussed *Eccremocarpus scaber* (Chilean glory vine) in *Climbing plants*; he did not mention it in *Movement in plants*. On apheliotropism in the tendrils of *Bignonia capreolata* and *Smilax aspera*, see *Movement in plants*, pp. 432–3, 450–1.
- ³ William Thompson.
- ⁴ The page has not been found.
- ⁵ See nn. 1 and 2, above.
- ⁶ Henri Dutrochet discussed the tendency of the hypocotyl (the stem that supports the cotyledons) of *Viscum album* (mistletoe) to turn away from the sun in Dutrochet 1837, 2: 63.

To Raphael Meldola 12 December [1879]
 From Mr. C. Darwin, Down, Beckenham.

Many thanks for your note & kind wish, but I sh^d greatly prefer to see my name amongst the subscribers in aid of a good work.—¹ You have, however, omitted to enclose any paper to fill up.— I am extremely sorry to hear about Wallace.—²

In Haste | C.D.
 Dec. 12th.—

ApcS

Postmark: DE 13 79

Oxford University Museum of Natural History (Hope Entomological Collections 1350: Hope/Westwood Archive, Darwin folder)

- ¹ See letter from Raphael Meldola, 11 December 1879 and n. 1. CD wanted to subscribe to Meldola's translation of August Weismann's *Studies in the theory of descent* (Weismann 1880–2), rather than receive a free copy.
- ² Alfred Russel Wallace had failed to be appointed superintendent of Epping Forest. See letter from Raphael Meldola, 11 December 1879 and n. 3.

From A. G. Butler 13 December 1879

Zool. Dept. | *British Museum*
13th Dec. 1879

My dear Sir,

The female of *Ornithoptera magellanus* is slightly shot with opaline, but not by any means to the same extent as the male, the hindwings are also heavily spotted with black as in the allied forms.¹

We have 18 species of the yellow-winged group, but *O. magellanus* is the only one which shows an opaline lustre; the female of this species, although not in our Collection is figured in the 'Reise der Novara'.²

The females of *Apatura laurentia*, *lavinia* and allies have no shot-colouring, but are mimickers of the genus *Heterochroa*, a group of black, white and orange butterflies.³

The dash of green which you speak of in the females of *Ornithoptera* is rather a greenish tint in the yellow common to both sexes when seen with the tail to the light; in the same way you will remember that, when held between you and the light and looked at obliquely the same wings are of a golden orange tint.

Believe me to be | Very sincerely yours | Arthur G. Butler

D^r Ch. Darwin F.R.S. | &c &c &c

DAR 160: 391

- ¹ No letter in which CD enquired about this butterfly has been found, but CD evidently met Butler at the British Museum to look at butterfly specimens while he was in London between 3 and 11 December (Emma Darwin's diary (DAR 242), letter to *Nature*, 16 December 1879). CD's interest in what is now known as limited-view iridescence had been aroused by the letter from Eduard Schulte, 23 October 1879. *Ornithoptera magellanus* is a synonym of *Troides magellanus*, the Magellan birdwing.
- ² See *Novara* expedition 1861–75, pt 9.2 (2), atlas, tab. 5. The butterfly is listed under the name *Papilio magellanus*. The yellow-winged group was presumably a group of birdwing butterflies with yellow wings.
- ³ *Apatura laurentia* is a synonym of *Doxocopa laurentia*, the turquoise emperor; *A. lavinia* is a synonym of *D. lavinia*. *Heterochroa* is a synonym of *Adelpha* (the genus of sisters).

From J. F. Moulton 13 December 1879

74 Onslow Gardens | S. Kensington
Dec 13th 1879Dear M^r Darwin

I cannot help sending you a word in reply about Herbert Spencer.¹ You say that if he has done nothing for science what a pity it is that such labour and such talents

should have been thrown away. I have often thought about this & have long ago come to the conclusion that such is not the right view to take of Herbert Spencer's work. His is not the rôle of the scientific discoverer however much he may think it to be so. But none the less does the world owe a large debt of gratitude to him. He has been a great scientific teacher—or I ought perhaps to say *preacher*. He was among the very earliest to accept the newly discovered ideas of Evolution as the formative process in Nature and his imaginative and suggestive mind felt at once how vast its importance was as the only admissible solution of the whole world-mystery.² And then—long before there could be any scientific knowledge of the *modus operandi* of the process in many of the departments of Nature with which he was dealing—he represented vividly and plausibly how this great principle might account for all that we see around us. The immediate result has been very great. In our fathers' days the direct creative hypothesis was almost universally regarded as commanding *à priori* our belief. The supporters of all rival hypotheses had a heavy onus of proof to bear. Now, thinkers are half ashamed to hint that the principle of gradual and spontaneous growth is not all-sufficient. That this change of view has been so rapid is to a considerable extent—in England at least—due to Herbert Spencer's writings. He has, as it were, abridged the intellectual childhood of our thinkers in this respect and helped them to step at once into the full realization of the potentialities of the new ideas.

His work has thus been educational rather than scientific. He belongs to the type of writers of which Robert Chambers the author of the *Vestiges of Creation* is a good example.³ They make the World rapidly appreciate the force of new ideas that would otherwise have only slowly made themselves felt. This is a great service rendered though the benefit conferred is not strictly scientific. It is in fact almost independent of the scientific value of the writings that produce it. I always say that those who *read* Spencer *think* Spencer. And yet scarcely any of them remember the definite results at which he arrives and still fewer (of the sounder thinkers) accept any considerable portion of them. The whole of these results may be wrong and yet the good he has done will remain. One never loses faith in the infinite potentialities of gradual growth after reading Herbert Spencer.

Such a work as this the true scientific discoverers always refuse to do. Indeed their mental habits unfit them for it. It requires a kind of intellectual laxity to enable a man thus to outrun our knowledge, and, confounding together proof and surmise, to interweave inextricably the known and the unknown in his theories. And I cannot in my own mind ascribe to Herbert Spencer any higher function than this. But of all such writers he seems to me to be the greatest for—living at the birth of the most important revolution in human thought that has ever taken place—he has shewn himself equal to the task of making the world of thinkers feel the fulness of the new teaching. But greater tho' he be than his predecessors his fate will be the same. I doubt whether much that his books contain will ever be proved to be either right or wrong. Most of it will in the light of advancing knowledge be found to be so vague and unmeaning as to be cast aside. The real workers of the future may in their early

days have caught inspiration from him but they will derive no light and no guidance. And by other ways and with other results than his, the intricate working of evolution will be followed out by men who are willing to seek scientific truth by patient labour and investigation as alone it can be found. And when they have thus laboured and achieved, Herbert Spencer will be generously remembered as he will deserve to be. When the day has broken his vague fore-shadowings will be pointed to as having been the harbingers of the coming dawn and there is no fear that the author of the most brilliant of the “Songs before Sunrise”⁴ will be forgotten. But he will be remembered as one of the prophets and not as one of the founders of the new era.

These remarks do not apply to his more purely physical writings such as *First Principles*.⁵ There the process is reversed. We have so far advanced into the day that we are beginning to see distinctly the outlines of the objects that surround us. He would tempt us back into the twilight that he may more freely descant on the possibilities of the vague forms that seem to people it. Such writings do not deserve even kindly treatment. They are worse than useless—they are actively pernicious.

Once again I have troubled you with a long letter. It is a fault that shall not be repeated & I trust that in this case the common interest that we both of us feel in the matter may be taken as sufficient excuse.

I remain. | Yours very sincerely | J. Fletcher Moulton

C. Darwin Esq.

DAR 171: 279

- ¹ CD's letter to Moulton has not been found, but see the letter from J. F. Moulton, 10 December 1879.
- ² See *Correspondence* vol. 8, letter from Herbert Spencer, 22 February 1860. Spencer had coined the term ‘survival of the fittest’ (see *Correspondence* vol. 14, letter from A. R. Wallace, 2 July 1866 and n. 5). On Spencer's evolutionary theories, both before and after the publication of *Origin*, see R. J. Richards 1987, chapters 6 and 7.
- ³ The first edition of *Vestiges of the natural history of creation* was published anonymously in 1844 ([R. Chambers] 1844; see Secord 2000). It argued for a designed progressive evolution of life, and aroused a storm of protest and criticism. Robert Chambers was thought by many to be the author of the work, but this was not confirmed publicly until 1884, well after his death. In the historical sketch that was added to the third and later editions of *Origin*, CD criticised some aspects of *Vestiges*, but concluded, ‘In my opinion it has done excellent service in calling in this country attention to the subject, in removing prejudice, and in thus preparing the ground for the reception of analogous views’ (*Origin* 3d ed., p. xvi).
- ⁴ An allusion to Algernon Charles Swinburne's *Songs before sunrise* (Swinburne 1871), a collection of poems relating to Italy and its unification dedicated to Giuseppe Mazzini.
- ⁵ CD and Moulton had been discussing Malcolm Guthrie's critique of the third edition of Spencer's *First principles* (H. Spencer 1875; Guthrie 1879).

To *Nature* 15 December [1879]¹

FERTILITY OF HYBRIDS FROM THE COMMON AND CHINESE GOOSE

In the “Origin of Species” I have given the case, on the excellent authority of Mr. Eyton, of hybrids from the common and Chinese goose (*Anser cygnoides*) being quite fertile inter se; and this is the most remarkable fact as yet recorded

with respect to the fertility of hybrids, for many persons feel sceptical about the hare and the rabbit.² I was therefore glad to have the opportunity of repeating the trial, through the kindness of the Rev. Dr. Goodacre, who gave me a brother and sister hybrid from the same hatch.³ A union between these birds was therefore a shade closer than that made by Mr. Eyton, who coupled a brother and sister from different hatches. As there were tame geese at a neighbouring farm-house, and as my birds were apt to wander, they were confined in a large cage; but we found out after a time that a daily visit to a pond (during which time they were watched) was indispensable for the fertilisation of the eggs.⁴ The result was that three birds were hatched from the first set of eggs; two others were fully formed, but did not succeed in breaking through the shell; and the remaining first-laid eggs were unfertilised. From a second lot of eggs two birds were hatched. I should have thought that this small number of only five birds reared alive indicated some degree of infertility in the parents, had not Mr. Eyton reared eight hybrids from one set of eggs. My small success may perhaps be attributed in part to the confinement of the parents and their very close relationship. The five hybrids, grandchildren of the pure parents, were extremely fine birds, and resembled in every detail their hybrid parents. It appeared superfluous to test the fertility of these hybrids with either pure species, as this had been done by Dr. Goodacre;⁵ and every possible gradation between them may be commonly seen, according to Mr. Blyth and Capt. Hutton in India, and occasionally in England.⁶

The fact of these two species of geese breeding so freely together is remarkable from their distinctness, which has led some ornithologists to place them in separate genera or sub-genera.⁷ The Chinese goose differs conspicuously from the common goose in the knob at the base of the beak, which affects the shape of the skull; in the very long neck with a stripe of dark feathers running down it; in the number of the sacral vertebræ; in the proportions of the sternum; markedly in the voice or "resonant trumpeting," and, according to Mr. Dixon, in the period of incubation, though this has been denied by others.⁸ In the wild state the two species inhabit different regions. I am aware that Dr. Goodacre is inclined to believe that *Anser cygnoides* is only a variety of the common goose raised under domestication. He shows that in all the above indicated characters, parallel or almost parallel variations have arisen with other animals under domestication.⁹ But it would, I believe, be quite impossible to find so many concurrent and constant points of difference as the above, between any two domesticated varieties of the same species. If these two species are classed as varieties, so might the horse and ass, or the hare and rabbit.

The fertility of the hybrids in the present case probably depends to a limited degree (1) on the reproductive power of all the Anatidæ¹⁰ being very little affected by changed conditions, and (2) on both species having been long domesticated. For the view propounded by Pallas, that domestication tends to eliminate the almost universal sterility of species when intercrossed, becomes the more probable the more we learn about the history and multiple origin of most of our domesticated animals.¹¹ This view, in so far as it can be trusted, removes a difficulty in the acceptance of the

descent-theory, for it shows that mutual sterility is no safe and immutable criterion of specific difference. We have, however, much better evidence on this head, in the fact of two individuals of the same form of heterostyled plants, which belong to the same species as certainly as do two individuals of any species, yielding when crossed fewer seeds than the normal number, and the plants raised from such seeds being, in the case of *Lythrum salicaria*, as sterile as are the most sterile hybrids.¹²

CHARLES DARWIN

Down, December 15

Nature, 1 January 1880, p. 207

¹ The year is established by the date of publication of this letter in *Nature*.

² In *Origin* 6th ed., p. 240, CD described Thomas Campbell Eyton's success in breeding together hybrids of the common and the Chinese goose, which were then, according to CD, generally ranked in different genera. The Chinese goose is a domestic variety of the wild swan goose (*Anser cygnoides*). The common European domestic goose is a variety of the wild greylag goose (*Anser anser*). On hare-rabbit crosses, see *Correspondence* vol. 19, letter from L. H. Morgan, [1 August 1871] and n. 5.

³ See *Correspondence* vol. 26, letter to F. B. Goodacre, 3 September [1878].

⁴ See letter to F. B. Goodacre, 13 August [1879].

⁵ See *Correspondence* vol. 26, letter from F. B. Goodacre, 17 August 1878, and this volume, letter from F. B. Goodacre, 11 August 1879.

⁶ In *Origin* 6th ed., p. 240, CD wrote:

I am assured by two eminently capable judges, namely Mr. Blyth and Capt. Hutton, that whole flocks of these crossed geese are kept in various parts of the country; and as they are kept for profit, where neither pure parent-species exists, they must certainly be highly or perfectly fertile.

See *Correspondence* vol. 5, letters from Edward Blyth, 4 August 1855, 22–3 August 1855, and 8 December 1855, and *Correspondence* vol. 6, letter from Thomas Hutton, 8 March 1856.

⁷ See Brandt 1836, p. 5, G. R. Gray 1840, p. 73, and Dixon 1848, pp. 82, 87.

⁸ Edmund Saul Dixon. See Dixon 1848, pp. 85 and 142. CD's annotated copy of Dixon 1848 is in the Darwin Library–CUL (*Marginalia* rev. ed.).

⁹ See *Correspondence* vol. 26, letter from F. B. Goodacre, 2 September 1878 and n. 2.

¹⁰ Anatidae is the family of ducks, geese, and swans.

¹¹ Pyotr Simon Pallas. See *Variation* 1: 31 n. 46, and Pallas 1780, p. 100.

¹² See 'Three forms of *Lythrum salicaria*'. CD had recently republished this and other papers on dimorphic and trimorphic flowers in *Forms of flowers*.

From A. B. Buckley 16 December 1879

1 St Mary's Terrace | Paddington W.
Dec 16./79

Private

Dear Mr Darwin,

I want very much to consult you upon a matter in which I have perhaps no real concern, but with which I believe I am better acquainted than others—

You will no doubt have known that Mr Wallace was a candidate for the post of Superintendent of Epping Forest & has been making great efforts to get it during the whole past year. He is now rejected & they have chosen a landscape-gardener instead—¹

Now he is so modest & sensitive about himself that I am sure he would never tell anyone that which however I know, that “pecuniarily it was of importance to him to get a regular salary”:

He is not strong & literary work tries him very much & the uncertainty of it is a great anxiety to him—

In a letter to me the other day he writes “I want some regular work either partially outdoor, or if indoor then not more than 5 or 6 hours a day & capable of being partially done at home— This I see no probability—hardly a possibility of getting at my age & with my irregular antecedents”—

Now I cannot help thinking that if men like Sir J. Lubbock, Sir J. Hooker & others knew that Mr. Wallace wanted work of a modest kind & not some important post, some good use might be made of his great Natural History power & his future made more secure— Only, of course, my moving in the matter should not appear, I merely suggest that, which if it could come, must do so from men of his own standing & I shall not mention to any one that I have written to you— Years ago he was to have had the East London Museum but it passed into the hands of S. Kensington & he lost it—² I feel he *ought* to have something & I could think of no one as good as yourself to whom I could say so—

I remain | Yours very sincerely Arabella B Buckley

DAR 160: 366

¹ Alfred Russel Wallace had asked for CD’s support in his application for the post of superintendent of Epping Forest (see *Correspondence* vol. 26, letter from A. R. Wallace, 14 September 1878). The new superintendent was Alexander McKenzie, previously superintendent of open spaces for the Metropolitan Board of Works.

² In 1869, the government planned to open a branch of the South Kensington Museum at Bethnal Green in east London to combine art and natural history. Wallace had hoped to be appointed as a director. In the event, when the museum opened in 1872, it was managed from South Kensington. (Fichman 2004, p. 60.) See also *Correspondence* vol. 16, letter from A. R. Wallace, 7 February 1868 and n. 1.

To Asa Gray 16 December 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Dec. 16 1879

My dear Gray

It is uncommonly good of you to have taken so much trouble about the seeds; but it makes me feel rather guilty, for though I was **very** curious to see them germinate, yet the points in question were not of much importance.¹ *Ipomœa leptophylla* has not yet germinated, but I have a good many seeds to sow again in the early spring, if those already sown do not germinate; & I have often suspected that some kinds of seeds have an obstinate inherited habit of not germinating & dying if sown in the winter.— I have just put 5 of the seeds of *Megarrhiza* to soak, but only one sinks & this alarms me.— I very much want to see whether the curious heel-like projection at the base of the hypocotyledonous stem, described by Flahault, & which splits the

seed-coats so beautifully in other Cucurbitaceæ, is here absent, as I hope & as ought to be the case as the Cotyledons are not with-drawn from the seed-coats.²

Now do not waste your very valuable time, but if you c^d. easily send me a score of seeds of the *common* cotton, (*Gossypium*), I sh^d. be glad; for oddly enough I can get no seeds in England. They have written for me to abroad from Kew, but seem doubtful of the result.— The cotyledons behave oddly at night, for when old & *only when old* they sink downwards, & I did not when I had seedlings investigate the point sufficiently.³

Ever yours very truly | Ch. Darwin

Archives of the Gray Herbarium, Harvard University (130a)

¹ See letter from Asa Gray, 6 November 1879. CD had requested seeds of *Ipomoea leptophylla* (bush morning-glory) and *Megarrhiza californica* (a synonym of *Marah fabacea*, California manroot).

² CD figured the 'projection' and described his observations on *Megarrhiza californica* in notes dated between 10 and 30 January 1880 in DAR 209.6: 106–11. For CD's discussion of *Megarrhiza californica* and *Ipomoea leptophylla*, see *Movement in plants*, pp. 81–4. Charles Flahault commented on the early growth of *Citrullus* and *Cucurbita* in Flahault 1877, p. 201. *Megarrhiza*, *Citrullus*, and *Cucurbita* are all in the family Cucurbitaceae.

³ See letter from J. D. Hooker, 29 November 1879. By 'common cotton' CD probably meant *Gossypium herbaceum* (see *Movement in plants*, p. 303).

To *Nature* 16 December 1879

THE SEXUAL COLOURS OF CERTAIN BUTTERFLIES

Dr. Schulte, of Fürstenwalde, has called my attention to the beautiful colours which appear on all four wings of a butterfly, the *Diadema bolina*, when looked at from one point of view.¹ The two sexes of this butterfly differ widely in colour. The wings of the male, when viewed from behind, are black with six marks of pure white, and they present an elegant appearance; but when viewed in front, in which position, as Dr. Schulte remarks, the male would be seen by the female when approaching her, the white marks are surrounded by a halo of beautiful blue. Mr. Butler, also showed me in the British Museum an analogous and more striking case in the genus *Apatura*, in which the sexes likewise differ in colour, and in the males the most magnificent green and blue tints are visible only to a person standing in front. Again with *Ornithoptera* the hind wings of the male are in several species of a fine golden yellow, but only when viewed in front; this holds good with *O. magellanus* but here we have a partial exception, as was pointed out to me by Mr. Butler, for the hind wings when viewed from behind change from a golden tint into a pale iridescent blue.² Whether this latter colour has any special meaning could be discovered only by some one observing the behaviour of the male in its native home. Butterflies when at rest close their wings, and their lower surfaces, which are often obscurely tinted, can then alone be seen; and this it is generally admitted, serves as a protection. But the males, when courting the females, alternately depress and raise their wings, thus displaying the brilliantly coloured upper surface; and it seems the natural inference that they act in this manner in order to charm or excite the females. In the cases above described this inference is rendered much more probable, as the full beauty

of the male can be seen by the female only when he advances towards her. We are thus reminded of the elaborate and diversified manner in which the males of many birds, for instance the peacock, argus pheasant, &c., display their wonderful plumage to the greatest advantage before their unadorned friends.³

The consideration of these cases leads me to add a few remarks on how far consciousness necessarily comes into play in the first acquirement of certain instincts, including sexual display; for as all the males of the same species behave in the same manner whilst courting the female, we may infer that the display is at least now instinctive. Most naturalists appear to believe that every instinct was at first consciously performed; but this seems to me an erroneous conclusion in many cases, though true in others. Birds, when variously excited, assume strange attitudes and ruffle their feathers; and if the erection of the feathers in some particular manner were advantageous to a male whilst courting the female, there does not seem to be any improbability in the offspring which inherited this action being favoured; and we know that odd tricks and new gestures performed unconsciously are often inherited by man.⁴ We may take a different case (which I believe has been already advanced by some one), that of young ground birds which squat and hide themselves when in danger immediately after emerging from the egg; and here it seems hardly possible that the habit could have been consciously acquired just after birth without any experience. But if those young birds which remained motionless when frightened, were oftener preserved from beasts of prey than those which tried to escape, the habit of squatting might have been acquired without any consciousness on the part of the young birds. This reasoning applies with special force to some young wading and water birds, the old of which do not conceal themselves when in danger. Again a hen partridge when there is danger flies a short distance from her young ones and leaves them closely squatted; she then flutters along the ground as if crippled, in the wonderful manner which is familiar to almost every one; but differently from a really wounded bird, she makes herself conspicuous. Now i[t]⁵ is more than doubtful whether any bird ever existed with sufficient intellect to think that if she imitated the actions of an injured bird she would draw away a dog or other enemy from her young ones; for this presupposes that she had observed such actions in an injured comrade and knew that they would tempt an enemy to pursuit. Many naturalists now admit that, for instance, the hinge of a shell has been formed by the preservation and inheritance of successive useful variations, the individuals with a somewhat better constructed shell being preserved in greater numbers than those with a less well constructed one; and why should not beneficial variations in the inherited actions of a partridge be preserved in like manner, without any thought or conscious intention on her part any more than on the part of the mullusc, the hinge of whose shell has been modified and improved independently of consciousness.⁶

CHARLES DARWIN

Down, December 16, 1879

Nature, 8 January 1880, p. 237

- ¹ See letter from Eduard Schulte, 23 October 1879. *Diadema bolina* is a synonym of *Hypolimnas bolina*, the common eggfly.
- ² See also letter from A. G. Butler, 13 December 1879. *Ornithoptera magellanus* is a synonym of *Troides magellanus*, the Magellan birdwing.
- ³ See *Descent* 2d ed., pp. 394, 396, 398–400.
- ⁴ See *Expression*, pp. 33–4 n. 8.
- ⁵ The letter t is missing in the printed letter in *Nature*.
- ⁶ See also ‘Recollections’, p. 393.

To A. B. Buckley 17 December 1879

Down Beckenham
Dec. 17/79

My dear Miss Buckley,

I am extremely sorry to hear about Mr. Wallace.¹ I am a bad person to aid, as aid ought to come from some one who can see and sound many persons; but I will gladly do my best. I should think that it would be impossible to get him any place, but a Government pension might perhaps be possible. I will write to Hooker by this post and if he thinks there is any chance (and he would be a good judge) I will do all that I can.² I must mention your name to him, but will tell him to keep it private.

I hope that you are well and in every way prosperous.

Your's very sincerely | Charles Darwin

Copy
DAR 143: 180

- ¹ Buckley had asked CD to use his influence to find Alfred Russel Wallace employment (see letter from A. B. Buckley, 16 December 1879).
- ² See letter to J. D. Hooker, 17 December 1879.

To J. D. Hooker 17 December 1879

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.
Dec 17. 79

My dear Hooker,

I have had a letter marked private from Miss Buckley on the following subject, but please observe that she wishes her name not to be mentioned. She says that Wallace “is not strong & that literary work tires him very much, & the uncertainty of it is a great anxiety to him”. She adds that she knows “that pecuniarily it is of importance to him to get a regular salary”. He lately wrote to her “I want some regular work either partially out-door or if indoor then not more than 5 or 6 hrs a day, & capable of being partially done at home. This I see no probability, hardly a possibility of getting at my age”.¹

Miss Buckley asks me to consult you, Lubbock,² & others whether any thing can be done for him. I can see no possibility of obtaining any scientific post for him, with a small regular salary; but it has occurred to me that it might be just possible to get him one of the government pensions. You can judge infinitely better than I can on

this head; and will you be so kind as to let me hear what you think. If the presidents of the several leading scientific societies & some dozen other eminent scientific men were willing to sign a memorial stating his claims, Government would perhaps listen to it; especially if any influential man like yourself could say a word in his favour. It seems to me that a fairly strong claim might be made out,— his travels in S. America & the Malay Archipelago for scientific purposes,— his large share in the descent theory,— his grand work on geographical distribution,— *Essays on Protection &c.*³ If you think at all favourably of the scheme, will you talk it over with any other leading men such as Huxley or Spottiswoode,⁴ as soon as you meet them. I am in very bad position for doing much, but should feel bound to undertake all the labour, if the plan is considered feasible by you & a few others. I hope & trust that the cause justifies me in troubling you about it.

My dear Hooker | Every yours sincerely | Charles Darwin

LS

DAR 95: 491–3

¹ See letter from A. B. Buckley, 16 December 1879; she wanted CD to use his influence to find a post for Alfred Russel Wallace.

² John Lubbock.

³ In the early part of his career, Wallace had collected specimens in the Amazon and the Malay Archipelago. While in the Moluccas, Wallace had written an essay on the origin of species through competition for survival and inheritance of useful characteristics and sent it to CD, with the result that CD was convinced to publish his own theory of natural selection, on which he had been working for many years (C. R. Darwin and Wallace 1858, *Origin*; see also *Correspondence* vol. 7). Wallace had published widely on mimicry for protective purposes and on geographical distribution (see, for example, [Wallace] 1867 and Wallace 1876).

⁴ Thomas Henry Huxley, William Spottiswoode.

From J. D. Hooker 18 December 1879

Royal Gardens Kew

Dec 18/79

Dear Darwin

I have well considered the pros & cons of the proposal to enlist sympathy in the matter of a pension to Wallace, & I greatly doubt its advisability.¹

Wallace has lost cast terribly, not only by his adhesion to Spiritualism, but by the fact of his having deliberately & against the whole voice of the Committee of his section of the British Association, brought about a discussion on Spiritualism at one of its sectional meetings, when he was President of that section.— This he is said to have done in an underhand manner, & I well remember the indignation it gave rise to in the B.A. Council, & amongst the members at large. In fact it led to our at once framing rules requiring the consideration in Committee of all papers before they should be read.²

Then there is the matter of his taking up the Lunatic's bet about the Sphericity of the Earth, & pocketing the money.³ There may be two opinions about this, but at any rate there is a prevalent & very strong one to the effect that it was not honorable, to a Scientific man, who was certain of his ground.

I think that under these circumstances it would be very difficult to ask one's friends to sign an application to Govt. for a pension. Added to which Govt. should in fairness be informed that the candidate is a public & leading Spiritualist!— It would never do if an M.P. were to stand up & challenge the pension, to have it said that the Scientific world had put him forward & left the Govt. in ignorance of what might have swayed their decisions as to the distribution of pensions.—

Lastly a man not in absolute poverty has little chance;—& after all Wallace's claim is not that he is in need, so much as that he can't find employment.⁴

I need not add that I have no animus against Wallace & that I cordially reciprocate your sentiment as to the value of his early work. & the claim it has on his country's gratitude

I hear such good accounts of your health—

Ever affy yrs | J D Hooker

We think of going to the Hodgson's⁵ in Glosteshire for Xmas. week.

DAR 104: 136–7

¹ See letter to J. D. Hooker, 17 December 1879.

² In 1876, Alfred Russel Wallace had been president of the biology section at the annual meeting of the British Association for the Advancement of Science. William Fletcher Barrett read his paper 'On some phenomena associated with abnormal conditions of mind' in the anthropology subsection; the paper discussed hypnotism, mind-reading, and other spiritualistic phenomena, and was followed by a discussion (*Report of the 46th Meeting of the British Association for the Advancement of Science* (1876): xi, xii; *The Times*, 13 September 1876, p. 5; Barrett 1883). In a letter in *The Times*, 21 September 1876, p. 3, Edwin Ray Lankester wrote that the committee for the biology section had refused to report on Barrett's paper, and that Wallace should therefore have rejected or postponed it. In his autobiography, Wallace wrote, 'The reading of [Barrett's paper] was opposed by Dr. W. B. Carpenter and others, but as it had been accepted by the section, it was read' (Wallace 1905, 2: 49). A new rule was added in 1877: 'Papers which have been reported on unfavourably by the Organizing Committees shall not be brought before the Sectional Committees' (*Report of the 47th Meeting of the British Association for the Advancement of Science* (1877): xx). As a former president, Hooker was an ex officio member of the council (*ibid.*, xlvi).

³ In 1870, Wallace, a qualified surveyor, had accepted John Hampden's challenge to scientific men to prove the convexity of a stretch of inland water, offering £500 if the proof was accepted by an intelligent referee. Wallace's proof was accepted by the referee, who gave him the £500, but Hampden refused to accept the result and subjected Wallace to a twenty-year campaign of abuse. (See Raby 2001, pp. 206–7.)

⁴ Wallace had recently failed in his application to be appointed superintendent of Epping Forest (see letter from A. B. Buckley, 16 December 1879).

⁵ Brian Houghton Hodgson and Susan Hodgson.

From A. B. Buckley 19 December 1879

1 St Mary's Terrace | Paddington W
Dec 19/79

Dear Mr. Darwin

Thank you very much for acting so promptly upon my suggestion. Perhaps nothing may be found, for such things are very difficult; but I felt that if no one knew the need there was never any chance—I wish much that *work* could be found, our friend is so sensitive upon points of money & I do not feel sure of his thinking it right to take Government money, for nothing in return.¹

Thanking you very much | Yours sincerely | Arabella B Buckley

DAR 160: 367

¹ Buckley had asked CD to use his influence to secure an appointment for Alfred Russel Wallace; see letter from A. B. Buckley, 16 December 1879, and letter to A. B. Buckley, 17 December 1879.

To J. D. Hooker 19 December [1879]¹

Down, | Beckenham, Kent. | Railway Station | Orpington. S.E.R.

Dec. 19th

My dear Hooker:

I am greatly indebted to you. Your letter is conclusive & I quite agree. I thought only of Wallace's distress & of his service to Nat. History, & what you say about Spiritualism & especially about the bet, never once crossed my mind.— What a mistake & mess I sh^d. have made had I not consulted you.— I am, however, very sorry & must write to Miss. B. that I can do nothing.²

Once again I thank you most truly. | Ever yours | Ch. Darwin

P.S. Please thank Dyer for me for seeds— those of the cotton are a treasure to me.³ My work must & shall soon end, otherwise you & Dyer will wish me dead & buried.— Asa Gray has sent me seeds of *Megarrhiza*, but I doubt whether they are ripe.—⁴

DAR 95: 494–5

¹ The year is established by the relationship between this letter and the letter from J. D. Hooker, 18 December 1879.

² Arabella Burton Buckley had asked CD to use his influence to find a post for Alfred Russel Wallace (letter from A. B. Buckley, 16 December 1879). For CD's initial response, and Hooker's reply, see the letter to J. D. Hooker, 17 December 1879, and the letter from J. D. Hooker, 18 December 1879.

³ See letter to W. T. Thiselton-Dyer, 20 November 1879. Cotton belongs to the genus *Gossypium*; CD discussed the circummutation of cotton seedlings in *Movement in plants*, pp. 22–3.

⁴ CD had asked Gray for seeds of *Megarrhiza californica*, a synonym of *Marah fabacea*, California manroot. The seeds germinated on 10 January 1880 (DAR 209.6: 106).

To A. B. Buckley 19 December 1879

Down, Beckenham

Dec. 19th. 1879

Confidential

My dear Miss Buckley

I put Wallace's claims strongly before Hooker, and I resolved if he thought that there was a fair chance of getting signature of the President of the Scientific Soc. and of some dozen eminent naturalists to work the plan to my utmost.¹ But I grieve to say that Hooker, though wishing earnestly for Wallace's welfare, is convinced and has convinced me that the plan is hopeless.— He says that Wallace gave deep offence by bringing on before the British Association *in opposition to the Committee* a discussion on Spiritualism, and secondly that unfortunate bet about the flatness of the earth which has lowered him much in the opinion of most scientific men.² Hooker says if I were to go on, I should be bound in honour to let the Government know of these affairs.— It is hopeless. Should I hear by any strange chance of any place for which

W. would be fitted, assuredly I will not forget him, but I am as little likely as any man in England to hear of such a place.

My dear Miss Buckley | Yours sincerely | Ch. Darwin

Copy

DAR 143: 181

¹ Buckley had asked CD to use his influence to try to secure a post for Alfred Russel Wallace (see letter from A. B. Buckley, 16 December 1879). President of the Scientific Soc.: i.e. presidents of the scientific societies.

² See letter from J. D. Hooker, 18 December 1879 and nn. 2 and 3.

From A. B. Buckley 20 December 1879

1 St Mary's Terrace | Paddington W

Dec 20/79

Dear M^r. Darwin,

Thank you so very much for all the trouble you have taken— I suppose it is hopeless, & indeed I have always feared that M^r. Wallace's want of worldly caution might injure him, though he would be a most valuable man in the right place—¹

Except for the trouble it has given you I cannot regret that I made the attempt if only to know that nothing is possible.

I hear of you from time to time when I meet M^r. Wedgwood² & was glad to hear that you are keeping well—

With very many thanks | Yours sincerely | Arabella B Buckley.

DAR 160: 368

¹ CD had written to Buckley to tell her that he did not think it would be possible to secure a government pension for Alfred Russel Wallace (letter to A. B. Buckley, 19 December 1879).

² Probably Hensleigh Wedgwood, CD's brother-in-law, who lived in London.

From R. W. Dixon 20 December 1879

Wickham Bishops, | Witham, Essex.

Dec. 20. 1879

My dear Sir,

I have just read with deep interest your "life of Erasmus Darwin".¹

My conception of the character of D^r. Darwin always made me feel very dissatisfied with his life by Miss Seward²

In the life I have just read I recognise the faithful, affectionate & benevolent friend I had conceived the D^r. to be.

The occasion of my writing is to say that I many years ago took copies of four letters written by D^r. Darwin—three of them from the original letters addressed to my G^d. father Richard Dixon & one from a copy of a letter to a Son of my G^d. father.

I enclose a copy of the letter which seems to me likely to be of most interest to you & which my Son has taken for me.³

I also write to ask if you have in your searches come across any letters to D^r: Darwin from any members of my family especially from Richard Dixon who died I believe 1797. That Richard Dixon was born at Elston abt. the same time as D^r: Darwin & on the back of his apprenticeship indentures are the names of

W ^m : Alvey Darwin	}
John Darwin ⁴	
Erasmus Darwin	
June 10. 1747	

A few years ago I paid a visit to Elston but found no remains of my family. I went into the ancient chapel in the records of which was the baptism of my Gt. G^d. father. I also went to see Elston Hall & was much interested in seeing the ground laid out & planted by Dr. Darwin.⁵

While reading this life of yr. Grandfather it occurred to me that it is possible Miss Susanna Darwin⁶ might allude in some letter to her Brother to the Dixons or Sumners—my relatives if so & if it would not be over burdensome to you I should feel very much obliged if you would let me know of any such allusions, for the slightest would be of interest.

I fear I have intruded myself too long on your attention but the interest I feel in these matters induced me to venture

I am | My dear Sir | sincerely yours | Robert Walker Dixon

P.S. I shall be glad to forward you copies of D^r. Darwin's other letters if you desire them.⁷

[Enclosure]

Derby
Oct. 25th—92.

To Richard Dixon. Citizen. | Hartfordend. Felstad. Essex—⁸

My dear old friend

I should have written to you much sooner but waited for a frank, as Erasmus⁹ promises at the same time to send you a scrawl,— I wish him to send you a subpœna to Derby, where you well know I shall at any time be very glad to see you or your's.— I hope you will come next summer & see yr. Cousin Sumner;¹⁰ you who are now a gentleman, at large, & not confined at home all the year, as I am, should not neglect your old Elston friends;—if I were Cousin Sumner, I believe I should strike you out of my will for not coming down this last summer!—she expects an annual kiss from you at least;—whether your mouth is drawn on one side or not,—you must mind on which side you approach lest you should kiss her ear. I am glad to find your spirits are so good, as to joke upon yr. infirmity of having yr. mouth drawn a little to one side, my next door neighbour, a young man to you, I suppose not 50 has had just such a seizure, which he is slowly recovering from, you say the only inconvenience you find, is that you cannot now whistle to amuse yourself, & he says all the inconvenience he finds, is, that he cannot blow out his candle, when he goes into bed. If yr. Doctor says you are well, how dare you think to the contrary? The success of the French

against a confederacy of kings gives me great pleasure, & I hope they will preserve their liberty, & spread the holy flame of freedom over Europe.¹¹ For my part I go on as usual to practice physic, and to write books,— I sold a work called “The Botanic Garden” for 900£ to Johnson the bookseller near St Paul’s, it is a poem; perhaps you may borrow it from some circulating library; it is in two parts and sold for 1—13—0—¹² I intend to publish another work next in prose wh. will be chiefly on physic, I fear it will not sell so well as the last.¹³ The worst thing I find now is this d—n’d old age, which creeps slyly upon one, like moss upon a tree, and wrinkles one all over like a baked pear.—but I see by your letter that your juvenility will never fail you; you’ll laugh on to the last, like Pope Alexander, who died laughing; on seeing his tame monkey steal to bedside, and put on the holy Tiara, the triple crown, wh. denotes him king of kings.¹⁴ Now Mr. Pain says that he thinks a monkey or a bear, or a goose may govern a kingdom as well, & at a much less expense than any being in Christendom, whether idiot or madman, or in his royal senses;¹⁵

adieu dear Citizen from thy affectionate equal | E. Darwin

M^{rs}. Darwin & all here beg to be remembered to you & send compliments to M^{rs}. Dixon.¹⁶ Brother John is returned to Carlton, & preaches furiously, he prays as usual, and advises his parish, & makes up differences & advises the poor as he used to do— He’ll hold the Devil a good tugg, I hope yet, for there are few such clergy to be found. I don’t believe amongst the 8000 French parsons, wh. you are now feeding in London, & wh. France has spewed out of her mouth, that you can find one equal to your old playfellow at Carlton Scroop.¹⁷ Pray give my comply^s, to all yr. sons. Mry. Day. is a teacher at M^{rs}. Ton’s boarding school at Chesterfield, and Susannah is going to be governess in a family near Chesterfield. & seem both very happy in their situations.¹⁸

DAR 218: D2, D3

¹ *Erasmus Darwin*, which included a lengthy biography of his grandfather Erasmus Darwin (1731–1802) by CD, had recently been published.

² On Anna Seward’s biography of Erasmus Darwin (Seward 1804), see King-Hele 1999, pp. 26, 327.

³ R. W. Dixon had three sons, Harold Goodman Dixon, Hugh Neville Dixon, and Rollo Havèe Dixon. His great-grandfather was Richard Dixon (bap. 1731 d. 1797).

⁴ William Alvey Darwin and John Darwin were Erasmus Darwin’s elder brothers.

⁵ Elston Hall near Nottingham was the birthplace of Erasmus Darwin; he did not live there as an adult.

⁶ Susannah Darwin was Erasmus Darwin’s elder sister.

⁷ See the enclosure to the missing letter from R. W. Dixon, [after 20 December 1878].

⁸ Felsted, Essex.

⁹ Erasmus Darwin (1759–99) was Erasmus Darwin’s son.

¹⁰ Elizabeth Sumner.

¹¹ The French First Republic was declared in September 1792.

¹² Joseph Johnson; E. Darwin 1789–91.

¹³ In 1794 and 1796, Erasmus Darwin published *Zoonomia; or, the laws of organic life*, ‘an endeavour to reduce the facts belonging to animal life into classes, orders, genera, and species; and, by comparing them with each other, to unravel the theory of diseases’ (E. Darwin 1794–6, 1: 1).

¹⁴ The source of this anecdote has not been identified, but see also E. Darwin 1794–6, 1: 426 (34.1.4). No pope is recorded as having died laughing at a monkey (Reardon 2004).

- ¹⁵ This wording does not appear in Thomas Paine's publications, but he had been in England between 1787 and 1792; the second part of his *Rights of man* (Paine 1792) was published in February 1792 (*ODNB*). Erasmus Darwin was a founding member of one of the local societies inspired by Paine's ideas, the Derby Society for Political Information (King-Hele 1999, p. 276).
- ¹⁶ Erasmus Darwin's wife was Elizabeth Darwin (1747–1832); Richard Dixon's wife was Mary Dixon.
- ¹⁷ John Darwin was rector of Carlton Scroop, a village in Lincolnshire. On estimates of the numbers of refugees from the French Revolution in Britain at this time, see Carpenter 1999, pp. 39–43. A large proportion of refugees were clergymen, owing to the revolutionary government's policy of limiting the power of the church.
- ¹⁸ Susanna and Mary Parker were Erasmus Darwin's natural daughters by his former employee Mary Parker, who had married Joseph Day. Mrs Ton has not been further identified. According to King-Hele 1999, p. 275, Susanna was going to be a governess to the family of Mrs Gladwin, at Stubbing, near Chesterfield; this was Frances Gladwin, a widow.

From Adam Fitch 20 December 1879

The Vicarage, | Thornton Steward, | Bedale, | Yorks.

December 20th 1879.

Dear Sir,

Soon after the Potato disease appeared, the prevalent impression was, that the varieties under cultivation were worn out, and that fresh blood was required—Prof. Henslow held this opinion, and he gave me a few *wild* sets which I fancy you had collected in S. America¹

In planting these I selected a piece of ground in the Orchard at Willingham Rectory, which in the memory of man had never been cultivated—fully exposed to the South—soil light loam on gravel,—no manure used—in the Autumn the produce of these sets quite as much diseased as the old varieties. I have long felt convinced that by selecting year after year, seeds from varieties best resisting disease and by crossing, a variety might eventually be raised, which would be impervious to the disease—² but whether the result would be a potato desirable for the table, I would not presume to say—my very kind friend & neighbour the late M^r. Maclaren of Burton, a first rate gardener, was of the same opinion.³

I find this year two varieties have been conspicuously noticed for freedom from disease, Magnum Bonum and Champion.⁴ I therefore venture to trouble you with this letter, to say, I should be most thankful if you would kindly tell me, if you think it would be most advisable to save from the two varieties mentioned, or seed from crossed flowers—Of course at my age 73 I cannot carry out my wishes, still all well I could plant potatos in my garden in spring and send the seed to my son in N. Zealand who is a gardener and very fond of his profession.⁵

As you have been a great traveller I venture to say I should feel much obliged if you could tell me why, as recorded in M^rs. Brassey's Voyage of the Sunbeam, Camellias, Tea Trees, Orange Trees and exotic Ferns, in the gardens of the Temple of the Moon, in Japan, were blooming & flourishing in immediate proximity to ice.⁶

Experience has taught me that in early Autumn frosts, whilst tender vegetables & tender plants have been destroyed in one portion of the garden, in other parts they have escaped uninjured

The great kindness you have shown to me on previous occasions will I trust induce you to pardon me for thus trespassing upon your time.⁷

I am | Dear Sir | Yours very truly | A. Fitch

DAR 164: 129

- ¹ For John Stevens Henslow's interest in the 1845 outbreak of potato blight, see *Correspondence* vol. 3, letter to J. S. Henslow, 28 October [1845] and n. 1. Henslow had seen dried specimens of the wild potato (*Solanum tuberosum*) that CD had sent from the Chonos Archipelago, off the coast of Chile; Alexander Caldcleugh, a businessman in South America, had sent tubers, which were grown successfully (*Journal of researches* 2d ed., pp. 285–6 and n.).
- ² CD's reply to this letter has not been found, but his correspondent James Torbitt had been experimenting on potato crosses (see *Correspondence* vol. 24 and following volumes).
- ³ James Maclaren of Constable Burton, Bedale, died in July 1879 (*England & Wales, national probate calendar (index of wills and administrations), 1858–1966, 1973–95* (Ancestry.com, accessed 26 April 2018)).
- ⁴ 'Champion' and 'Magnum Bonum' were potato varieties introduced in the 1870s; they were blight-resistant at first, but their resistance declined in a few decades (Salaman 1926, pp. 231–2, 282–3).
- ⁵ Sidney Ivatt Fitch.
- ⁶ Annie Brassey described this scene in her *Around the world in the yacht 'Sunbeam'* (Brassey 1878, p. 328). The temple was Tenjō-ji Temple on Mount Maya in Kobe.
- ⁷ For Fitch's previous queries, see *Correspondence* vol. 10, letter from Adam Fitch, 18 November 1862, and *Correspondence* vol. 25, letter from Adam Fitch, 20 July 1877.

From R. W. Dixon [after 20 December 1879]¹

[Enclosure]

Derby
18 March 1875

M^r: Richard Dixon, Hartfordend Mill, Felsted, Essex

My dear Friend,

I am glad you find yourself better by losing 7ℓ— You may say with the Irishman “you have gained a loss”— but I should not advise you to sink yourself any further, but keep where you are.— The reason I advised you to emaciate yr.self so far was, because I believed your shortness of breath to be owing to some fat about the lungs or heart— so that you should occasionally weigh yr.self? fast pray only when it is necessary. If you could get false teeth, you would find that another consolation as you would speak easier; & if you could get it for it is but one piece cut to look like 2 or 3 teeth) made of *ivory* instead of the bone of the *seahorse*,² it would become dusky & look like your other teeth. I should recommend Beardmore to you in Poel-Courts Fleetstreet— I advised my Bro^r: at Elston to get tooth but I believe he thought it a sin & would not at all listen to me about it.³

M^{rs}: Darwin & M^{rs}: Erasmus, & all the *branches* & *twigs* are well & beg to be remembered.⁴ I sent your compts. to M^{rs}: Day, she is got into her new house at No 21 Prospect Row Birmingham & has a good tempered man to her husband & is very happy I believe—⁵ I hope your Son's wife is better & beg my compt. to all of the

name of Dixon— pray tell him we have not dared to cut the cheese he was so kind as to send us, as your Bro^r said it must not be cut for two or three months⁶

Adieu God bless you if it be possible | from your affect. friend | E. Darwin

Derby
Mar. 30–91

M^r. Richard Dixon | Broomfield Mill | near Chelmsford, Essex

Dear Sir,

I have often experienced the readiness with which you serve yr. friends; as to these girls⁷ they ought to esteem you as a father— Now my conscience will not permit me to trouble yr. son Robert⁸ with them unless he will permit me to pay for their board, a guinea a week a piece while they stay with him— this I hope he will not take amiss that I offer; because I have no other way of repaying him by any kind of obligation at this distance from him, on these conditions I will send them up for 3 or 4 weeks, which will be an improvement to them, whether they get proper situations or not.

Your goodness to them requires, that I sh^d tell you my whole design abt. them. I think to leave them when I die.— (NB. that is not till the next century)— the value of 500£ a piece, part in money & part in annuities—wh. last I design to prevent their coming to absolute poverty in case of unhappy marriage. If they marry with my approbation I shall give them 2 or 300£ a piece at the marriage & an annuity of the value of the remainder at my death. By this sum & some employment as Lady's Maid or teacher of work they may be happier than my other girls who will have not much more than double or treble that sum, & brought up in more genteel life, for I think happiness consists much in being *well* in one's situation in life— & not in that situation being higher or lower.⁹ As soon as I have your answer to this letter I shall give further directions to the girls at Birmingham.¹⁰

Pray send me a particular directions to yr. Son Robert that I may write a line to him with them, to whom & his family I beg my best respects & am dear old friend | Yours affection^y | E. Darwin

“D^r. Darwins comp^s. to M^r. Thos. Dixon. He is come to M^r. Wedgwood¹¹ & stays till Tuesday morg. If M^rs. Dixon be not recovered from her indisposition the D^r will be glad to see her at M^r. Wedgwoods' at $\frac{1}{2}$ past seven any morning. If M^r. Richard Dixon Sen^r. be in London he shall hope to see him— Thursday Night”

A copy of the above letter was forwarded to M^r. Richard Dixon Sen^r. by his Son from London to Harfordend, Helsted that he might hasten his journey to London in order to meet D^r. Darwin & the letter is dated Friday (June) 17th. 1785

DAR 218: D1

¹ The date is established by the relationship between this letter and the letter from R. W. Dixon, 20 December 1879. Dixon had offered to send CD copies of three letters from Erasmus Darwin. CD's reply, and the letter with which these copies in Dixon's hand were enclosed, have not been found.

² Sea-horse: walrus (*OED*).

³ The original of this letter is in the Cadbury Research Library at the University of Birmingham (MS 78/1); The address given in the original is Bolt Court, Fleet Street, and the missing words are 'an

- artificial tooth'. Beardmore was Thomas Beardmore, a celebrated dentist. My brother at Elston: Robert Waring Darwin (1724–1816).
- ⁴ Erasmus Darwin's wife was Elizabeth Darwin (1747–1832). It is not clear who is meant by 'Mrs Erasmus'.
- ⁵ Erasmus Darwin had two daughters by his former employee Mary Parker, who married Joseph Day, a Birmingham merchant, in 1782.
- ⁶ Only one of Richard Dixon's sons was married at this date: Thomas. His wife was Maria Dixon. Richard Dixon's brother was Robert Dixon (bap. 1729, d. 1785).
- ⁷ Susanna and Mary Parker.
- ⁸ Robert Dixon (1765–1817).
- ⁹ Erasmus later purchased property for Susanna and Mary Parker on which they established a girls' school; Susanna later married a physician, Henry Hadley. My other girls: Violetta Darwin, Emma Georgina Elizabeth Darwin, and Harriot Darwin, Erasmus's daughters by his second marriage, to Elizabeth Pole.
- ¹⁰ Susanna and Mary were presumably staying with their mother and stepfather (see n. 5, above).
- ¹¹ Josiah Wedgwood I.

From Lewis Wright 22 December 1879

La Belle Sauvage Yard, | Ludgate Hill, | London, E.C.

Dec 22 1879

Dear Sir

Looking over my "Book of Poultry" for revision, it has struck me that you might be interested in the chapter on the "origin of the Domestic Fowl," and I therefore send you a copy.¹ It is written some six years ago, & some items regarding the *G. Stanleyii* may be of use to you. I have since *heard* of similar facts but not had time to verify them: the fowl has by no means rarely been kept in England for greater or less time, imported by Jamrach & others.²

Perhaps I may venture to add that there are several errors in the poultry section of "Variation in A. & Plants." I have not the book at hand, or looked at it for some months: but if my memory serves me, you say on some one's authority that hundreds of Spanish might be bred pure, without the occurrence of a single red feather.³ The exact reverse is the fact: red is constantly occurring in *all black fowls*, & is kept down by the most rigorous breeding.

Things are better now, shows having during the last six years *fixed* many varieties more than formerly. But within a year or two either way of the date "Variation" was published, the late Mr Lane of Bristol, then the most celebrated Spanish breeder of the day, told me he had killed *scores* of fine birds for their red feathers.⁴ I have several times intended to make a note of this for you, but forgot it. Apart from any theory, you will I trust pardon my supposition that you may feel an interest in the facts

Truly yours | Lewis Wright

Ch. Darwin, Esq.

CUL, Darwin Pamphlet Collection Q301 (tipped into L. Wright [1873], pt 21)

¹ CD's lightly annotated copy of part 21 of Wright's *Illustrated book of poultry* (L. Wright [1873], chapters 30–2) is in the Darwin Pamphlet Collection—CUL; this letter is tipped in before the back cover. Wright published a revised edition in 1880 (L. Wright 1880). Chapter 31 is 'Wild breeds of poultry—origin of the domestic fowl'.

² In L. Wright [1873], pp. 495–501, Wright questioned CD's view in *Variation* 1: 234 that *Gallus stanleyii* was not the parent of any domestic breed. Charles Jamrach was an importer of animals.

³ See *Variation* 1: 242: 'The Spanish breed has long been known to breed true, and no instance is on record of its throwing a single red feather.'

⁴ The first edition of *Variation* was published in 1868. Henry Lane was a plumber in Bristol.

From R. A. Job 23 December 1879

14 Water St | L'pool
23 Dec 1879.

Professor Darwin | Beckenham.

Sir,

I must apologise for thus troubling you, but the urgency & importance to me of the undermentioned subject must be my excuse.

I am most anxious to find out from the highest living authorities & investigators of the delicate subject of *consanguinity*, what can be said *for or against* it (physiologically considered) & I shall esteem it a lasting favor if you would shortly & *without much trouble to yourself* let me have your valuable & authoritative views and conclusions on the subject or if you could put me in the way of getting any reliable information abt. it.

You will readily appreciate my reason for troubling you when I say that I am the son of cousins & wishful to marry a first cousin if I can get sufficient *reliable* evidence to show that such a course would not be *unwise*¹

Enclosing my address & thanking you in anticipation for anything you may favor me with, | believe me, Sir, | Your's obed^t, Rob^t A. Job

I need hardly ask you to keep what I have written above in *confidence*.

DAR 168: 64

¹ Job married his cousin Sarah Elizabeth Milledge in 1880. His parents were Robert Hugh Job and Sarah Job Job. George Howard Darwin had published on cousin marriage (G. H. Darwin 1875a; see also G. H. Darwin 1873). CD's reply to this letter has not been found. See also *Cross and self fertilisation*.

From James Torbitt 25 December 1879

Belfast
25th Decr 1879

Charles Darwin Esq^r | Down.

My dear Sir,

I have now to report to you that I have procured the Vine to be grown from its seed, in a phylloxera-infested district in portugal—that Vines have been found, which the phylloxera has not attacked, and that the people are "delighted" by the vigorous growth of the new plants.¹

In regard to the potato, I am beginning to hope that I shall be able to continue the work, even without further assistance.²

I am my dear Sir | most respectfully and faithfully yours | James Torbitt

DAR 178: 159

- ¹ Phylloxera (*Daktulosphaira vitifoliae*) is a small sap-sucking insect native to North America, accidentally introduced in the mid nineteenth century to Europe, where it devastated native grapevines. No previous correspondence about the vine from Portugal has been found.
- ² Torbitt had corresponded with CD about his efforts to breed a blight-resistant potato since 1876 (see *Correspondence* vol. 24 and following volumes). He considered that his method would apply equally to producing phylloxera-resistant vines (see *Correspondence* vol. 26, enclosure to letter from James Torbitt, 24 February 1878 and n. 7).

To Karl von Scherzer 26 December 1879¹

What a foolish idea seems to prevail in Germany on the connection between Socialism and Evolution through Natural Selection.²

Incomplete

LL 3: 237

¹ The date is given by Francis Darwin, LL 3: 236.

² This letter fragment was published by Francis in his *Life and letters of Charles Darwin* (LL 3: 237), as showing a hint of CD's views on the connection being made in Germany between Darwinism and Socialism. Francis traced the connection to comments made by Rudolf Virchow in an address to the assembly of German naturalists and physicians in Munich in 1877 (Virchow 1877, p. 12). On the interrelationship of Darwinism and Socialism in late-nineteenth-century Germany, see Kelly 1981, especially pp. 58–60, and Weikart 1999. See also letter from Carl Kraus, 8 January 1879.

From C. E. Ferguson 27 December 1879

Indianapolis Ind.

Dec. 27, 1879.

Mr. Charles Darwin.

Dear Sir.

Knowing your authority on the theory of evolution as relating to man, I take the liberty of asking you if you will be so kind as to give me a list of books on the subject, such as a person desiring to cover the entire ground may need.¹

By doing this you will greatly oblige | your very sincerely | Charles E. Ferguson

DAR 201: 10

¹ For CD's reply, see *Correspondence* vol. 28, letter to C. E. Ferguson, 12 January 1880.

To James Torbitt 27 December 1879

Down,

Dec. 27, 1879.

My dear Sir

I am glad to hear about the Vines, but it will take some years before any one can feel secure about the new varieties. Nevertheless there would be a better chance with the Vine than with the Potato, as other closely allied American species are phylloxera free.¹

I trust that you may be able to continue your admirable potato work, even if you do not receive Government aid. I have heard nothing; I know that Mr. Farrer has had two communications with Ld. Sandon on the subject; I heard from two officials that he is one of those men who cannot make up their minds what to do.² It is enough to sicken one to see how politicians waste their time in squabbling and neglect doing any good.

Copy incomplete
DAR 148: 110³

- ¹ See letter from James Torbitt, 25 December 1879 and n. 1. Torbitt had announced that he had received a phyloxera-resistant vine from Portugal.
- ² CD had been trying to secure government aid for Torbitt in his work on breeding blight-resistant potatoes. Thomas Henry Farrer had offered to lay the case before Dudley Francis Stuart Ryder, Viscount Sandon (see letter to James Torbitt, 17 November 1879). The officials have not been identified.
- ³ A note at the end of the copy reads, 'the rest of this letter is cut away'.

From Michele Lessona¹ 28 December 1879

*R. Università | degli studi | Di Torino | Torino,
addì 28 X^{bre}. 1879*

Monsieur

J'écris très mal l'anglais. Je n'écris guère mieux le français, mais enfin un peu moins mal— Veuillez donc me permettre que je vous écrive en français.

L'Académie des sciences de Turin avait à décerner un prix de 12000 francs (prix Bressa, medecin de [Pavia] qui en a été le fondateur) à l'ouvrage plus digne paru dans les quatre années qui viennent de finir.²

L'Académie vous a décerné ce prix pour vos publications scientifiques sur la physiologie végétale, *Insectivorous plants* et autres, qui ont paru justement dans ces quatre dernières années.³

Vous en recevrez l'écri officiel, en attendant mes collègues ici ont fait l'honneur de me charger de vous donner tout de suite communication du fait.⁴

Mais collègues⁵ savent que je suis depuis longtemps un de vos plus ardents admirateurs.

Veuillez, Monsieur, agréer tous mes meilleurs souhaits | Votre | Michele Lessona

M^r. Charles Darwin | Down—

DAR 170: 2

¹ For a translation of this letter, see Appendix I.

² Cesare Alessandro Bressa founded the Bressa prize. CD recorded the receipt of £418 18s. 10d. under the heading 'Bressa prize' on 17 January 1880 (CD's Account books—banking account (Down House MS)).

³ *Insectivorous plants* (1875), *Cross and self fertilisation* (1876), *Forms of flowers* (1877).

⁴ See letter from Ercole Ricotti, 29 December 1879.

⁵ Mais collègues (But colleagues): Lessona probably meant to write 'Mes collègues' (My colleagues).

From Anthony Rich 28 December 1879

Chappell Croft, | Heene, Worthing.
Decr. 28. 1879.

My dear M^r: Darwin

I am thinking that you have in all probability followed an order which I heard given the other day to a set of industrious men—to “knock off—” and are at this moment enjoying a dignified ease, in the midst of your family, free from all worry of printer’s boy, “copy” or “revises”.— With that conviction I am unable to resist the temptation to break in upon your rest, and enquire how it has fared with you and yours during the last two months of winter; at the same time taking advantage of the opportunity to wish you a pleasant and a *warmer* new year. What has become of the Gulph Stream:¹ Has it lost itself, or gone some other way round? We have had here two months of almost absolute calm and drought, with a constant succession of the heaviest and whitest white frosts that I ever remember. My shrubs, flowering evergreens, look pinched, and flabby, and flowerless, and some of them, I suspect, will come out of the winter in a very shattered condition. I hope that yours can show a bolder front; but I console myself with the reflection that mine were already getting too luxuriant, and that the natural pruning they are likely to receive from the long continuance of frost will save them from the relentless surgical operations which otherwise I should have had to inflict upon them myself a month or two hence. The Philadelphus you were so good as to send me looks well at present.²

I have just procured a little book from the pen of M^r: Huxley—“Crayfish”— If you ever see him, as I dare say you do, would you call me to his memory, and salute him for me.³ He is so pleasant. I had some hopes that I might have seen him here sometime in the course of last summer. But when I think of family claims, business occupations, and the hosts of old and agreeable friends and acquaintances all eager for a *lien* upon him, with which he must be constantly beset, I see that such a thought on my part does really approach a species of presumption.

In the year that is coming I seem to fancy that there will be a deal of quarelling and ill blood set up throughout the county, as is ever the case when political parties are violently excited, more especially if they are, or are thought to be, pretty equally divided.⁴ It is a satisfaction to me that here in my eyrie I shall be out of the turmoil, or danger of collision with either of the combatants—*Tros Rutilusve fuit*—⁵ And that is the more fortunate because I have been through life one of those unwelcome, not to say despised, purists, who entertains a very firm conviction that nations as well as individuals ought to be guided in their relations with one another upon altruistic rather than egotistic principles—justice and truth, rather than force and chicanery—the court of honour rather than the court of Capel—the interests of mankind rather than the interest of the “Hebrew houses”.—⁶ I hope that I have not wearied, nor “riled” you!

Please to make my Compl^{ts}: and respects to M^{rs}: Darwin; accept the same for yourself, and pass them round to all members of your family who may be willing to accept them—and believe me to be, very sincerely yours | Anthony Rich

DAR 176: 140

- ¹ An earlier spelling of Gulf Stream, an ocean current that brings warm water to the British Isles from the Gulf of Mexico.
- ² No previous correspondence about CD's sending a plant of *Philadelphus* (the genus of mock-orange) has been found.
- ³ Thomas Henry Huxley's *The crayfish: an introduction to the study of zoology* (T. H. Huxley 1880a) had just been published. Huxley had visited Rich in 1878 (see *Correspondence* vol. 26, letter from T. H. Huxley, 28 December 1878).
- ⁴ In the latter part of 1879 and the early part of 1880, William Ewart Gladstone, the leader of the opposition Liberal party, was campaigning for the Midlothian constituency in Scotland, drawing national attention; he became prime minister in April 1880 (*ODNB* s.v. Gladstone, William Ewart).
- ⁵ *Tros Rutulusne fuat, nulla discrimine habebō*: Whether he be Trojan or Rutulian, I will make no distinction (Virgil, *Aeneid* 10: 108). The speaker is Jupiter or Jove, king of the gods, announcing his impartiality in the conflict between the Trojans and an Italian tribe. Rutulusve is an alternative reading.
- ⁶ The London Stock Exchange was in Capel Court in the City of London (*Post Office London directory* 1878). Hebrew houses: in this context, Jewish family-owned banking and finance companies, such as the Rothschilds and the Pereires (see, for example, *Nottinghamshire Guardian*, 16 December 1858, p. 3, and *Standard*, 22 July 1871, p. 5).

From Antonio Mendola¹ 29 December 1879

Sicilia. Provincia di Girgenti, | **Favara.**

29. Dic^{br} 1879.

Egregio Sig Darwin,

Credo utile alla scienza, ed a voi forse non dispiacevole, palesarvi due fatti, che mi sembrano di molto rilievo.

Concimai nel 1877 (Ottobre) alcune mie terre cogli avanzi del publico macello, tra i quali eranvi corni di diverse bestie. L'inverno 1878 fu piovosissimo. Un corno di giovine vitello seppellito a circa 13. centimetri di profondità, mise grosse e numerose radici della forma e grossezza dello asparagio. Nell'ultima aratura di Maggio 1878 mi accorsi dello strano fenomeno per la resistenza incontrata dall'aratro, perché io seguivo il bifolco per diletto. Raccolsi subito il corno radicato, che conservo integro.

Chiedo il permesso d'inviarlo a voi. Qui alcuni professori reputano sia un caso di parasitismo. Io penso che nò. Deciderete voi, se mi ordinate di spedirvelo.

Durante la convalescenza d'una mia lunga e penosa malattia per caduta di carrozza, per ingannare i miei forzati ozi e per mezzo d'un mio amico scopersi un altro fatto che è verissimo e che mi pare meraviglioso.

Alcuni peli di vario colore, strappati con tutti i rispettivi bulbi dalla coda di alcuni asini muli e cavalli, furono posti dentro un gran bicchiere d'acqua comune, che si mutava in parti quasi ogni settimana. La temperatura della stanza addetta a questo sperimento oscillava da 10 a 12. gr^d Reàmur—² Questi peli senza perdere il rispettivo colore andavano ingrossando. Dopo circa 15. giorni cominciarono a muoversi. In capo a 34 giorni divennero animali perfetti, semoventi, individuati, con muso nero.³ Adesso mentre scrivo guizzano sul mio tavolo, spesso escono la testa e porzione del corpo fuor dell'acqua e aderiscono alla liscie pareti del bicchiere, o per respirare o per trastullarsi. La notte riposano e intorpidiscono a sera tardi. Trovo sporchezze ogni due o tre giorni come di limo nel fondo del vaso, forse sono deiezioni o trasudamenti. Sono questi nuovi esseri sensibili alla luce ed al calore. Accostandoli

alla vivida luce d'una lampada di petrolio, o circondando il bicchiere di ca(r)ta nera, bucata in un punto per dove si faccia entrare un raggio di sole, corrono dalla parte opposta. Perseguitati poi col raggio di sole concentrato da una lente (luce e calorico) sfuggono celereamente a seconda la intensità della concentrazione.

Non chiedo il permesso di spedirvi questi animati, perché da per voi stesso potete facilmente ripetere l'esperimento studiarlo in tutte le sue fasi, e produrre animalacci meglio fatti di questi chi io possiedo.

Da 10. giorni ho messo nell'acqua capelli e peli di barba e di pudende, umani—Sinoggi nulla vedo di movimento. Vanno pero ingrossandosi, segnatamente quelli della barba.

Scrissi questi fatti al Prof. Canestrini⁴ in Padova per notificarveli e siccome no(n) ho avuto risposta, mi sono azzardato < >o non scenziato, e che non ho l'onore di conoscervi personalmente, a volgermi direttamente a voi.

Scusate se scrivo italiano. La mia ignoranza dell'inglese mi ci obliga.

Scrissi da qualche giorno a mio figlio studente del Politecnico di Stuttgart a a scrivervi in inglese questi fatti, peroche mio figlio conosce molte lingue anche orientali. Forse ricevereto il suo scritto quasi insieme alla presente⁵

Perdonate alla mia arditezza.

Attendo vostri ordini ed il vostro preciso indirizzo per spedirvi la cassetta col corno radicato.

Accettate i miei ossequi e creditemi | Devotissimo | Barone Antonio Mendola

Il mio indirizzo in caso di risposta è il seguenti

Sicilia—Prov.^{ia} di Girgenti | Favara

DAR 171: 150

¹ For a translation of this letter, see Appendix I.

² 12.5 to 15°C.

³ For recent debates about spontaneous generation, see, for example, *Correspondence* vol. 25, letter to G. J. Romanes, 23 May 1877 and n. 2.

⁴ Giovanni Canestrini.

⁵ Mendola's son was Giuseppe Benedetto Mendola. No other correspondence about this case has been found.

From Ercole Ricotti¹ 29 December 1879

Turin,

29 Decembre 1879

Le Président | de l'Académie Royale des Sciences de Turin

Monsieur le Professeur

J'ai l'honneur des vous annoncer que l'Académie Royale des Sciences de Turin, dans sa séance du 28 de ce mois, vous a adjugé le prix de 12000 liv^{es}. Irl. fondé par feu le Doct. Bressa, dans le concours comprenant les auteurs de decouvertes, publications et inventions faites dans tout le monde scientifique dans le courant des années 1875-76-77-78.²

L'Académie des Sciences de Turin est heureuse de pouvoir, par l'adjudication de ce prix, vous prouver la haute considération qu'elle vous professe comme investigateur des secrets de la nature, et la grande valeur qu'elle attribue a vos dernières recherches sur le phénomènes de la physiologie végétale

En vous faisant connaître le vote de l'Académie de Turin, je suis heureux de saisir cette occasion, pour vous fair hommage de ma haute considération

Votre très dev. Serviteur et Collègue | Le Président | E. Ricotti

P.S. Veuillez, M^r le Prof^t, charger quelqu'un fondé de vos pouvoirs pour ritirer la somme, sus-dite qui dès ce jour est à votre disposition³

A Monsieur | M. Charles Darwin | Londres

LS(A)

DAR 230: 78

¹ For a translation of this letter, see Appendix I.

² Cesare Alessandro Bressa. See letter from Michele Lessona, 28 December 1879 and nn. 2 and 3.

³ See *Correspondence* vol. 28, letter to Ercole Ricotti, 4 January 1880. CD recorded the receipt of £418 18s. 10d. under the heading 'Bressa prize' on 17 January 1880 (CD's Account books—banking account (Down House MS)).

To C. H. Tindal 29 December 1879

Down, | Beckenham, Kent. | (Railway station | Orpington. S.E.R.)

December 29th. 1879

Dear Sir

I am very much obliged to you for sending me the M.S. & for all the great trouble which you have taken. I have read the M.S with much interest, as it shows that many of D^r: D^r's views were formed 20 years before they were published in the *Zoonomia*.¹

I have had the last letter copied, which sh^d. there be a 2^d. Edit. of my little book, I sh^d. probably like to publish,—that is if you will grant permission.² But in [this case] I ought to preface it with a few remarks on the correspondence. Will you therefore add to your kindness by giving me [*illeg*] information on [2 or 3 words *illeg*] Mr Gifford & my grandfather [5 or 6 words *illeg*] Clive?³ Was M^r Gifford a clergyman & is Duffield near Derby?

The M.S. *registered* shall be posted this day.

Pray believe me Dear Sir | Yours faithfully & obliged | Charles Darwin

Incomplete⁴

Bonhams, Los Angeles and New York (dealers) (19 October 2009)

¹ See letter to C. H. Tindal, 17 November 1879. The manuscript has not been found. Dr D: Erasmus Darwin (1731–1802). On the development of Erasmus Darwin's ideas on evolution before the publication of *Zoonomia* (E. Darwin 1794–6), see King-Hele 1999, pp. 87–9, 297–301.

² No new edition of *Erasmus Darwin* was published in CD's lifetime. The letter that CD had copied was probably DAR 227.7: 14. It reads: 'young D^r Darwin & his Brother are just arrived. I propose going with them to Shrewsbury tomorrow, where the young Doctor is going to see if D^r Owens death will make a vacancy for him— He is a very clever worthy young man, & I should have great pleasure in being of any service to him.—' 'Young D^r Darwin' was CD's father, Robert Waring Darwin (1766–1848);

Robert's brother was Erasmus Darwin (1759–99). D^r Owen: Pryce Owen. According to an annotation, the paragraph was a postscript to a letter from Robert Clive to Richard Gifford.

³ Richard Gifford, vicar of Duffield, near Derby, and Robert Clive, archdeacon of Shropshire. Erasmus Darwin (1731–1802) was CD's grandfather.

⁴ The original letter is complete and is described in the sale catalogue as being three pages long. The first and third pages have been transcribed from images and the second (from 'this case' to 'Was Mr Gifford a' from ink showing through the first page.

From Emil Witte¹ 29 December 1879

Pless in Ober- | Schlesien
d. 29. Dec. 1879

Hochgeehrter Herr!

In einer Chronik des Fürstenthums Pless, verfasst vom Kammerrath Schaeffer, finde ich nachstehenden Fall, der Sie interessiren dürfte.²

Ende December 1827 war im hiesigen Kreise die Rinderpest ausgebrochen. "Der Krankheitsstoff wurde durch podolisches Rindvieh ins Land gebracht".³ Anfang Januar 1828 brach die Krankheit in der aus 85 Stück bestehenden Rinderherde des Fürstlichen Vorwerkes Jaroschowitz aus.⁴ Nachdem bis zum 11. Januar 28 Stück gefallen waren, wurde den übrigen 57 "auf Befehl des Herrn Regierungs- und Medicinal-Raths Lorinser aus Oppeln die Viehpest eingimpft".⁵

Von diesen 57 Stück fielen innerhalb 9 Tagen 51, die übrigen 6 blieben am Leben. "Merkwürdig ist hierbei, das nur 2 Zugochsen *podolischer* Raçe die Krankheit überstanden haben, und 2 andere Ochsen derselben Raçe, zeimaliger Impfung ungeachtet, gar nicht erkrankt sind".⁶

Soweit der Bericht. Die Erklärung scheint einfach. Die Rinderpest stammt aus den podolischen, galicischen,⁷ ungarischen etc. Steppen. Das dortige Rindvieh aber hat sich durch natürliche Zuchtwahl schon nahezu Immunität gegen die Krankheit erworben.

Gestatten Sie, hochgeehrter Herr, die Versicherung meiner ausgezeichnetsten Hochachtung, womit ich zeichne | ergebenst | Witte | Oberlehrer am Gymnasium | zu Pless.

DAR 181: 134

¹ For a translation of this letter, see Appendix I.

² Henryk Wilhelm Fryderyk Schaeffer's unfinished chronicle of Pless was published in a Polish translation in 1997 (Schaeffer 1997).

³ Podolian cattle have grey coats and long horns and originated in Podolia, a historical region encompassing Moldova, western Ukraine, and eastern Romania (Porter *et al.* 2016, p. 272).

⁴ Jaroschowitz (Jarosowice) was a village in the district of Pless (now Pszczyna, Poland; Michael Rademacher, *Deutsche Verwaltungsgeschichte*, http://www.verwaltungsgeschichte.de/sch_pless.html (accessed 15 May 2018)).

⁵ Karl Ignatius Lorinser. Oppeln in Silesia is now Opole in Poland. On the 1827 and 1828 outbreak of rinderpest in Upper Silesia, see Lorinser 1831, pp. 253–64.

⁶ On early attempts to inoculate against rinderpest, which often killed more than half the cattle inoculated, see Huygelen 1997.

⁷ Galicia is a historical region crossing the borders of modern Poland and Ukraine.

To A. S. Wilson 30 December [1879]¹

Down
Dec: 30.

My dear Sir

You will perhaps remember my writing to you in the summer about a great collection of all the vars. of wheat from Central Asia which had been despatched by the Governor-General.² I write now merely to say that I suppose the package has been lost in transition; anyhow it has never reached me

My dear Sir | Yours faithfully | Ch. Darwin

Copy
DAR 148: 368

¹ The year is established by the relationship between this letter and the letter to A. S. Wilson, 4 [June] 1879.

² See letter to A. S. Wilson, 4 [June] 1879. The governor-general of Turkestan was Konstantin Petrovich Kaufman.

From W. M. Hacon 31 December 1879

18, Fenchurch Street, | London, | E.C.
31st Dec^r. 1879

My dear Sir,

Mr Morris of my office will leave Cannon Street tomorrow by the train, which is due at Orpington Station at 12.16. Midday, and will be at your house at Down about half an hour subsequently for the purpose of obtaining & attesting your execution of the deed of transfer of the £5000 North Eastern Railway Companys Debenture Stock, and of the Settlement.¹

I have made arrangements for Mr. H. Darwin to call here on Friday evening to execute the settlement.

I am | My dear Sir | Yours very truly | W^m M Hacon

Charles R. Darwin Esq^{re}
Down | Beckenham | Kent

DAR 166: 26

¹ Hacon was CD's solicitor; Morris was probably George Horton Morris. CD settled £5000 of North Eastern Railway company stock on his son Horace Darwin before his marriage to Ida Farrer (CD's Investment book (Down House MS)); see also letter to W. M. Hacon, 8 November [1879].