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Some Pre-Lind Writers on Scurvy

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To-day a few tenuous sentimental attachments have become for me very real ties to the University of Edinburgh. One is long interest in the history of scurvy, whose conquest you are commemorating. The second tie goes back even further, almost half a century, to 1905 when our literature instructor insisted that no man could really lay claim to a knowledge of the English language unless he had read and re-read *A Window in Thrums*. I took his admonition to heart and fell under the spell of Barrie for ever after, so much so, in fact, that I treasure highly my copy of that thin little volume *The Entrancing Life*, the address Sir James delivered on the occasion of his installation as Chancellor of the University of Edinburgh on 25 October, 1930. I know it almost by heart. The other attachments are somewhat more realistic. Two of the graduates of the medical school are friends (one of them is my family physician). One is in California, the other elected to remain in Great Britain. Both of them are professors of medicine in great medical schools, and both of them are pupils of Dr C. P. Stewart. That is why I so readily and proudly accepted Dr Stewart's generous offer to read this paper for me when I found myself unable to attend, although, like Barrie, in his opening remarks here 23 years ago, 'I am riven with misgivings. What have I dared!'

Any commemoration of Dr James Lind's *A Treatise of the Scurvy* inevitably must focus attention upon those who helped to guide his thoughts.

It becomes a felicitous task for me, and one for which I am deeply grateful to The Nutrition Society who have permitted me to trot forth my hobby and remember a few of Lind's predecessors. By hanging out lanterns, feeble as the light of some of them may have been, they gave him direction. They do not detract from Lind's glory as a scientist. Living to-day and working with the tools of modern biochemistry Lind certainly would have occupied the high pedestal with Sir Frederick Gowland Hopkins.

Within our lifetime biochemistry has so changed perspectives that we may not appreciate fully the groping of our forefathers. Re-reading Lind's *Treatise* will reveal this clearly. He tried to lay aside 'all systems and theories of this malady which were found to be disavowed by nature and facts'. The amount of reading he did on the confused subject of scurvy was a formidable task in itself.

Before Lind the literature on scurvy was a welter of jumbled writings, many of them highly tinged with Sydenham's axiom that 'all disease could be described as natural history'. That is why Lind prudently segregated the medicinal from the

folklore knowledge in his attempt to be objective. He reviewed more than 200 authors, abstracting sixty-one, some briefly and some *in extenso*. Yet Lind overlooked Moellenbrok's isolation of a potent crystalline antiscorbutic from a syrup of scurvy-grass, in 1676, the penalty of the clinician's pardonable disregard for the weird 'scurvy receipts' of that day.

Of the sixty-one, only fourteen are English; twenty-one are German; twelve Dutch and five French. Denmark, Russia and Austria are represented by two each; and one reference each stems from the Hungarian, Swedish and Swiss literature on scurvy. In addition, Lind lists thirteen academic theses, all but four of them German, and sixteen academical disputations*. He appealed for help to obtain six 'academical disputations' or 'any other curious and useful observations made and published on the scurvy, or also such of the following academical performances as are distinguished by an asteric', (Koelessner, 1707; Crauford, 1707; Thiessen, 1735; Alberti, 1731; Burchard, 1735; and Hilscher, 1747) adding 'I desire and earnestly entreat all men of study and learning who are possessed of them not to conceal them from me'.

There were no *Nutrition Abstracts and Reviews* in Lind's day, no bibliofilm or photostats, which make for such quick exchange of scientific information to-day. Perhaps that is why this antiquarian interlude is placed here—to slow down the programme a bit—slow down the zeal and pace of research reports which engender still more ardour for realism and relegate memories of humble and romantic beginnings to a scientific attic to gather dust and cobwebs.

Brief evaluation of some of these pre-Lind texts which I have collected may scarcely seem justified if only those authors reviewed by Lind were cited. We shall, therefore, discuss only a few of his authors and dust off a few others he ignored or overlooked. Among these are: Robert Boyle, Doctors William Clowes, John Woodall, John Colbatch, David Macbride, and a curious anonymous text of 1682 with its detailed recipe for making *Mum* and a jolly commentary on this drink. Each time I read it I am tempted to brew it.

The great medical library formed at the end of the fifteenth century by Dr Nicholaus Pol, Austrian-born court physician to Emperor Maximilian I, contains no books on scurvy. The reason for this is obvious. Pol's books dealt chiefly with Greek and Arabian medicine, with diseases of the Mediterranean regions where scurvy, as such, was virtually unknown.

The first actual bibliography of scurvy is that of Johannes Echthius (1541), the Dutch-born physician of Cologne, who referred to seven authors. Lipenius (1679), in his *Bibliotheca Realis Medica*, only listed twenty-nine papers dealing with scurvy, and the great Mercklin's (1686) *Cynosura Medica*, only twenty-four.

'It has been no easy matter to obtain a knowledge of the many writings on this distemper', Lind (1753) remarks in the Appendix to the first edition of his *Treatise*, adding 'There have been collections made from time to time of the several authors

* Among the latter there occurs the first work on scurvy from an Italian University. This is the 1679 dissertation of Charles Patin, brother of the more famous Dr Guy Patin, Professor of Medicine at the University of Paris. Of Charles Patin, Lind, however, makes the laconic comment: 'Patin is more celebrated for his other writings than the *Oratio de Scorbuto*'.

on the plague, venereal disease, etc.: but no such have been compiled of writers on the scurvy'. For example, Felix Plater (1656), of Basle, in 1608, believed that scurvy, like lues, had been brought from abroad by sailors.

This constant association of scurvy with venereal diseases, on the one hand, and with rheumatism, on the other, is evident also from Martin Lister's (1694) introduction to the chapter on scurvy in his *Sex Exercitationes Medicinales*. Lister, the physician to Queen Anne, writes:*

'I have placed scurvy adjacent to the chapter on venereal disease, because of the newness of the disease, and because both are so closely related and have so many symptoms in common that they are not readily distinguished from each other, except by an experienced physician'.

With easy transition Lister follows his chapter on scurvy with one entitled *de Arthritide*, antiscorbutic remedies appearing throughout.

Johann Hartmann, whom Lind recognizes despite the Marburg physician's acceptance also of the symptomatic clinical similarity between lues and scurvy, 'commends for poor people in the scurvy the decoction of guaiacum wood with scurvy-grass'. This same Hartmann (1633), however, first reported the harmful effects of mercury in the treatment of scurvy, and the Hungarian army surgeon, Kramer (1737), claimed knowledge of 200 men 'destroyed by mercury given as an antiscorbutic'.

Another adherent of the lues-scurvy tenet and perhaps the most widely read authority on scurvy before Lind, was Severinus Eugeleus, a Friesian physician, whom Lind accused of 'extreme ignorance in physic'. Eugeleus, who in 1604, practised medicine in the cities of Emden and Amsterdam, quoted 200 such cases in his *De Morbo Scorbuto liber* (Eugeleus, 1623). He expressed surprise over the rapidity with which the venereal contagion spread, and gave as the only distinguishing diagnostic sign between lues and scurvy the *pulsus inordinatus*, the quick, small, uneven pulse of scurvy and the appearance of the urine.

Eugeleus was everywhere credited with speedy miraculous cures of scurvy, although Lind said: 'Eugeleus had not talents sufficient to form any sort of theory'. Lind's review of Eugeleus is one of the lengthiest in his book, extending over eighteen pages.

Lind makes the Dutch physician, Balduin Ronsseus, *facile princeps*. Ronsseus suggests that cold damp air of the sea and the seashore is the principal cause of scurvy. His is the first book written expressly on scurvy and was published in 1564. A later edition of Ronsseus (1585) combined the *epistolae* of Echthius and Langius as well as the *observatio* of Wierus as a sort of compendium of the current views on scurvy. Ronsseus also held to the theory of involvement of the spleen in scurvy. Both Ronsseus and Echthius, writing separately, interpreted Pliny's (70) description of the disease, which afflicted the Roman army under Germanicus, as scurvy.

* 'Proximo autem Lui Venereæ loco *Scorbutum* posui, & propter morbi novitatem, & quod illi tot tantisque *signis communibus*, valde affinis sit; imo unum ab altero dignoscere, nisi admodum exercitato medico, haud ita facile est'.

Wier (Wierus) (1567), copying Echthius, and Bruner (Brunerus) (1589), copying Wierus (adding only that leg pains preceded the actual onset of scurvy) well might have justified the subhead in Lind's preface *Dies Diem Docet*, and the words:

'To know a disease and to cure it being the utmost essential things to be learned, I have, therefore, transcribed the symptoms and the cure of the scurvy from those authors where they do not entirely copy from each other. I hope such motives (truth, and good of mankind) will to the candid and to the most judicious be a sufficient apology for the liberties I have assumed'.

In re-reading the principal pre-Lind authors *seriatim* one observes the transitions from land to sea scurvy, or *purpura nautica*. One also sees the transition of the concept of scurvy as a winter epidemic among urban populations and its entity as a deficiency disease when studied in the isolation of the sailing ship when voyages of discovery increased in duration sufficient to permit complete deprivation of anti-scorbutic stores.

It was Dr Thomas Willis (1684) and his copier, Dr Walter Charleton (1672), physician to King Charles II, who seem to have 'exceeded all others in multiplying divisions and classes of scurvys', as Lind remarks, adding that Aegidius Hoffmann's so-called 'Muriatick Scurvy' seemed to be merely 'a chimerical distinction' attributed to the drinking of sea water, then fashionable as a physic.

The general implication of salt in sea scurvy is too well known to merit discussion.

Though land scurvy was, in its epidemic era, regarded as the winter disease of the cities, localized sometimes as in 'The Disease of London' or the 'Dutch Distemper' (in Scotland it was descriptively called 'blacklegs' from its ecchymoses of the extremities), it was for the most part the disease of the poor. Its remedies were the lowlier herbs, the cresses, the scurvy-grasses, so fittingly named, although only one, *Cochlearia officinalis*, or sponggrass, rightfully bore this name. So deep was the folk-faith in scurvy-grass that Moellenbrok (Mollimbroschius) (1676), in his *Cochlearia Curiosa** said:

'It hath been declared above, that Scurvygrass doth not grow in all places, and chiefly not in the Eastern parts of the world, in which it is never found, nor will its seed sown in the Earth there produce it, for it will only grow in the Western parts, in which the Disease which it cureth, viz., the Scurvy is frequent'.

Hildanus Fabricius† (1629) in his *de Conservanda Valetudine*, however, questioned the claim by pointing out that 'Nature is backward in producing scurvy-grass in Switzerland, because through God's mercy this Country has hitherto been free from this grievous plague The Scurvy'.

Fabricius, according to Shipley (1929), states that scurvy appeared for the

* 'Englished from the German by Thomas Sherley, M.D., and Physitian in Ordinary to His present Majesty'.

† In 1627 Fabricius (Hildanus), who has become one of the controversial figures in scurvy lore, attempted twice to grow Dutch scurvy-grass in his garden in Switzerland, having 'carefully sowed the seed which he procured out of Holland'. Failing in his first, he succeeded in his second attempt, adding his prayer 'that it might not prove an unlucky Omen to the Swissers, and a Forerunner of this Disease, of which it is a Remedy'.

first time in North Germany in 1486. He is also the recipient of the letter dated 15 October, 1622, from a Dr Ludovic Schmid, physician to the family of George Frederick, margrave of Baden. Dr Schmid (see Schmid, 1627) describes what he calls a case of scurvy in the 14-month-old son of the margrave. Lind, however, dismisses the Schmid letter-evidence with 'not deserving of notice', although he refers to 'Hildanus' as a 'celebrated practitioner'.

Thomas Sydenham (1685) who, Lind says, did 'not quite believe in scurvy' but whom he acknowledged as 'The English Hippocrates', employed 'leaves of fresh scurvy-grass' for his antiscorbutic electuaries and recipes. In two remedies Sydenham combined scurvy-grass with oranges. In one he used the juice of half an orange in a pint of the scurvy-grass beer; and in the other, the pulp of a whole orange combined with both the leaves and the seeds of scurvy-grass steeped in half a pint of white wine.

Sydenham's contributions to medicine are too well known to warrant extensive comment here except for his relationship to Robert Boyle, and the latter's array of fantastic remedies against scurvy and its manifestations. A study of the great chemist's remedies, or receipts, as he calls them, can only lead to the conclusion that Boyle, like so many of us to-day, apparently failed to take his physician friend's advice seriously and elected to experiment by compounding his own remedies.

Boyle's (1696) *Medicinal Experiments: or, a Collection of Choice and Safe Remedies, etc.* contains eighteen recipes for antiscorbutic remedies; four of them for the disease itself, and thirteen 'to fasten the loose teeth', the result of scurvy. Still another, a true antiscorbutic decoction, while making no mention of scurvy, is prophetically entitled 'To Promote the Healing of Wounds'. Boyle confesses to having suffered from the 'scorbutic colic',* for which he gave the following recipe:

'Take English Barley, and having well wash'd it, boil it in a sufficient quantity of fresh Spring-water till it be just ready to burst: Then pour off the clear upon the yellow part of the Rhinds of Lemons, freshly cut off from the white part, and put them into a Bottle, which being carefully stopt, the Liquor is to be kept so for Use, which is, that the Patient make it his constant Drink'.

The remedies which Boyle concocted and advised, (some of them he admits were

* Boyle blames his delicate constitution on being 'the thirteenth or fourteenth Child of a Mother, that was not above 42 or 43 Years old when she dyed of a Consumption, 'tis no wonder I have not inherited a robust, or healthy Constitution'.

'For this Mischance happening in Ireland, and I being forc'd to take a long journey, before I was well recovered, the bad Weather I met with, and the as bad Accomodation in Irish Inns, and the mistake of an unskilful or drunken Guide, who made me wander almost all Night upon some Wild Mountains, put me into a Fever and a Dropsie.'

'But this after the foregoing Relation may well be said, that it need be no great wonder, if after such a train of Mischiefs, which was succeeded by a Scorbutick Cholick that struck into my Limbs, and deprived me of the use of my Hands and Feet for many months, I have not enjoy'd much Health, notwithstanding my being acquainted with several Choice Medicines; especially since divers of these I dare not use, because by long sitting, when I had the Palsie, I got the Stone, voiding some large ones (as well as making bloody Water) and by that Disease so great a tenderness in my Kidneys, that I can bear no Diureticks, tho' of the milder sort, and that I am forced to forbear several Remedies for my other Distempers, that I know to be good ones, and amongst them divers, that by God's Blessing, I have successfully try'd on others'.

merely copied from other writers) show a predilection for 'Terra Japonica in Claret Wine', sometimes with and sometimes without 'allom'. Throughout, it can be seen that Boyle's concern was chiefly with the gingival involvement, the 'laxity of the gums' as he paraphrases 'scorbutic gume' in his Recipe Number Ten of Book Three.

In returning to Martin Lister (1694), Sydenham's contemporary, one finds espousal of the cold and salt theories of scurvy as propounded by Eugeleus. His twelve case reports* of scurvy (Aegrotus I to XII) provide interesting reading for the clinician to-day and reveal Lister's various treatments of the disease. Medication in the last three cases proved so effective that Lister concluded that 'the greater "ungrateful" degree of acidity of immature fruits' alone does not seem to be the full measure of their antiscorbutic value but that in the citrus fruits, lemons coming first, followed by oranges and citrons, 'reside a special exotic principle curative of scurvy superior to bezoar stones and the like', concluding with, 'without boasting, however, I have observed in all my medical practise that with no other remedies were such successful results effected as with lemons'.

Lister, however, was not the first English physician to employ citrus fruits in the treatment of scurvy. That distinction, as Shipley (1929) claims, should go to John Woodall. Nor am I the first to be bothered by the failure of Lind to include Woodall's (1639) *The Chirurgion's Mate, or Military and Domesticke Surgery* among his references. This thin folio volume published in 1639, with a dedication to King Charles, seems to have escaped the notice of almost all medical writers of the eighteenth century. Dr David Macbride, a Dublin contemporary and admirer of Lind, writes in 1764:

'The only places where I see it mentioned are in Wiseman's preface, and in the preface to Turner's surgery; but it is not to be found in Haller's catalogue, neither in Heiszer's *Bibliotheca Chirurgica*; nor, which is still more to be wondered at, in Lind's *Bibliotheca Scorbutica*; notwithstanding that Woodall hath left a very

* CASE

- No. 1. A robust soldier, returning from camp with a diarrhoea and oliguria, his whole body covered with red spots, recovered after medication with an anise, fennel and ginger infusion in white wine.
- No. 2. Received nasturtium and scurvy grass juice in red wine.
- Nos. 3. One obese and the other emaciated, both covered with red petechiae and showing signs of hematuria, died 'wasting away'.
- No. 4.
- No. 5. The 50-year-old Prebendary Cooke of York Cathedral, whom Lister diagnosed as scorbutic, died 'despite application of an emollient poultice of scurvygrass'.
- No. 6. A 'very obese' man named Batavus was diagnosed as scorbutic by the gum and tongue signs, died following violent nocturnal epistaxis.
- No. 7. A youth, also suffering violent nose bleeds, together with purplish-black maculae, terminated fatally. No note is made of medication.
- No. 8. A 5-year-old boy, died of haemorrhage, to which Lister adds: 'N.B. Blood flowed from the maculae themselves'. He failed to recall what medication had been employed.
- No. 9. A 10-year-old son of a merchant named Waller died after a typical gingival involvement, that finally affected the tongue and throat as an ulceration which prohibited the administration of either medicine or food.
- Nos. 10. A 6-year-old boy and an 8-year-old girl as well as another girl, recovered upon treatment
11. with his later prescriptions of ('succu limonum, succu cochleariae, aurantiorumve succu')—
12. 'the juice of lemons, scurvygrass or orange'.

excellent discourse on the scurvy, his description of which appears to have been drawn from his own observation, and his method of cure founded on experience, for he served both at sea and in the army' (Macbride, 1764).

Woodall (1639) laments that none of his 'countremen had, out of their experience, taken in hand sincerely to set down to posteritie the true causes, signes, and cure thereof; neither left any caveats, instructions, or experiences, for the prevention or cure of the same'. Modestly Woodall acknowledges the causes to be 'so infinite and unsearchable, as they far exceed my capacity to find them out'.

Woodall's autopsy reports may well interest the pathologist, and his dietetic advice for treatment of patients with scurvy is quite specific:

'An oatmeal caudle, with a little beer or wine, the yoke of an egge, and some sugar; or a broth, made with currants or other fruits, with spices and sugar; and, for drink, barley water, with some juice of lemons, if it may be had, if not, with oyl of vitriol and sugar. The juice of lemons is a precious medicine, and well tried, being sound and good: let it have the chief place, for it will well deserve it. It is to be taken twice a-day, a spoonful or two with sugar'.

Woodall's protagonist, Macbride (1767), wrote an entire book filled with illustrations of apparatus in which he performed his 'fixed air' experiments on the digestion of mutton, in an attempt to keep it sweet, or if already putrid, to sweeten it. The Dublin surgeon's dabbling was designed to prove the superiority of his malt or wort over Lind's citrus cure for introduction into the Royal Navy. Confidently, however, without having treated a single case of scurvy he sent out a quantity of his malt for clinical tests. Macbride based his ideas, second-hand, on 'the theory, which makes the cure of the sea scurvy to depend chiefly, if not altogether on the fermentative quality of the fresh vegetables', to which he says 'the ingenious Dr Lind ascribes somewhat', adding 'yet his theory rests chiefly on the saponaceous, attenuating and resolving virtue, which, according to him "is the chief and most essentially requisite quality in the antiscorbutic mixture"'. (Lind, p. 304)'.

If Macbride's 'fermentative' might be misinterpreted in the sense of biochemical nomenclature for enzymic, the Dublin surgeon might be regarded as a prophetic genius instead of the proponent of an untried theory that scurvy is a 'putrefactive diathesis brought on by excessive moisture' amenable to the wearing of dry clothing and a draught of his wort. On the other hand, Macbride may seem to have had a rather modern and fundamental concept of scurvy, in that he believed its putrefaction resulted from the loss of a 'principle, forming the cement, or bond of union', upon which the 'firmness, soundness, and perfect cohesion of bodies, chiefly depend'. He therefore conducted elaborate *in vitro* experiments to trace 'the progress of digestion, and showing that the principle above hinted at is received into animal bodies by way of the chyloferous canals'. Perhaps we are tempted to read too much into Macbride's verbiage without a sufficiently critical examination of his actual experiments. Words, however, tempt the reader as well as the writer.

With Macbride's untried wort and Sydenham's (1685) antiscorbutic 'twelve bottles of small beer, acidulated with Spirit of Vitriol, every twenty-four hours',

**A PROFITABLE AND NECESSARIE
Booke of Obseruations, for all those that are burned with
the flame of Gun powder, &c. and also for curing of
wounds made with Musket and Caliuer shot, and other
weapons of war commonly vsed at this day both
by sea and land, as heerafter shall
be declared :**

**VVith an addition of most approoued remedies,
gathered for the good and comfort of many,
out of diuers learned men both old
and new VVriters :**

**Last of all is adioined a short Treatise, for the cure of
Lues Venerea, by vnctions and other approoued waies
of curing, heertofores by me collected : and
now againe newly corrected and
augmented in the yeere
of our Lorde
1596.**

**By WILLIAM CLOWES
one of hir Maiesties
*Chirurgions.***



**Imprinted at London by Edm. Bollifant,
for Thomas Dawson.**

1596

Fig. 1. Facsimile of title page of Clowes's (1596) book

The cure of two Seafaring men which fell
sicke at the sea of the Scorby.

Cap. 12.



Can not here well pade over this brieffe note of obseruation of the curing two seafaring men, which traueled a long time upon the seas, and there fell sicke of the Scorby, which infection as I gathered by inquiry was reported principally vnto their rotten and ynholsome bituals, for they labd their bread was mouldy and mouldy, their bare sharpe and soler like vniager, their water corrupt and drunke the best drinke they had, they called Aleuicage, halfe wine and halfe putrid water mingled together, and yet a very small and short allowance, their beere was like wine, by reason of the corruption therof, of a most ischome and stinky taste and sauer, insomuch that they were constrained to stop their noses, when they did eate and drinke therof: moreouer their becon was redde, their fish, butts and chesse vnderfull bad, and so consequently all the rest of their bituals: by means hereof, and like wise lacke of convenient exercise, cleane keeping and shift of apparell, and againe, being in an ill disposed climate, and want of good aire: these causes and such like were the one by means they fell into the Scorby, for their gums were rotten euen to the very roots of their teeth, and their chethes hard and swollen, their teeth were loose nere ready to fall out, their iawes very painfull, their breath of a stinky sauer, that at what time I dyed their gums, and was shed their monthes, the sauer was so odorous, that I was scarce able to stand, and abide it: in like manner their legs were feeble, and so weak, that they were scarce able to carrie their bodie: moreouer, they were full of aches and paines, with many blewes withered vaines or spots, some broad and some small like sea bitings, or the graines of a pomegranate, their wife their legs were colde, hard, and swollen, which caued me to fear a Gangrana, for colones in such extremities being in corrupt bodie full of euill iuice, both challenge putrefaction, which disease or sickness although it be in some faile cured, yet experience daily proueth that a number also die. Now the first thing that required helpe by Chyrurgery was their gums, and their legs, being the rottenest cause, but for that I will procede as orderly as I can in my writing, I will begin with the antecedent cause in wastly, which was done and performed by the advice and counsell of learned physicians, who very kindly denly set me down their opinions for their maner & order of purging, with

with other remedies, as hereafter followeth: first as I said, enacouraged on going before, to diminish the humors soe aboundant, it was therefore thought most meete to begin with blood letting in the middle vein on the left arme, & I did then take from eche of them vij. or viij. ounces of blood. The next day following they were also well purged with this purgation, R. Dialome ʒ.ij. S. Sirr. fumariz ʒ.ij. Aqua Cabiole ʒ.ij. Mifoe an. The purgation. D.D. hereunto were added. Allo tueric tenentij or eight day they were likewise purged with the pills of sumitioze ʒ.ij. made into fine pills, in as I say, after they were well purged, then in the meane space, there was prepared for them in a readines this drinke following, which continually they did drinke at their meales, and also as often as they were desirous to drinke. The order and making thereof is thus: first there must be prepared a cleane bestell of eight gallons, which was filled full of new ale, and then was added to it of Coclearia or Scorby grasse a by. G.R. pinte, being purely picked, and cleane washed, and also by iudged in a stone mortar, and after put into the bestell with the ale, then was added thereto of long Pepper ʒ.ij. Cinnamon and Ginger of each halfe an ounce, of Saffron ʒ.ij. all these spices were put into a fine linnen cloth or bag, and so hanged in the ale, with the herbes aforesaid, and thus it rested two daies before they did drinke of it. And further it is to be remembered, that every morning they did eate a messe of this Almonds milke being newly made, and it did them very much good. R. two spoonfulls of French Almond milke. G.R. half a pound, and put to it of Coclearia or Scorby grasse, sumitioze, and water Cresses, of each halfe a handfull, but first mixt with the Almonds in the drating of this liquor, for feare the Almonds will turne to an oile, then boile all together to the consumption of the third part, then add to the straining of the Sugar ʒ.ij. of Mele water ʒ.ij. let all these seth a litle, and then referre it to your bic: In litle lost euerie evening towards sober of the clocke they did drinke a good draught of posset ale, which was added of the iuice of Scorby grasse a spoonfull, with a litle of the powder of Cinnamon and some Sugar, and now and then they did eate a good draught of Almonds wine. Their meales that they did eate was Mustion boyled, and sometimes Treacle and chickens, or seasoned with veruicure made of grapes, and thickened with oile meale, summe. Moreover, there was added of Scorby grasse, sumitioze, water Cresses, and Scabianella. Their beere was made of the finest wheat, and of a way old. Now here note you well, that euerie day or second day, one or two after they had receiued a certaine summe, the description hereafter

after followeth, then they did presently drinke of the above named *Al-*
 mond milke. And after they they sweating was ended, I did immediately
 bathe their legs: which done, I annointed them, and lastly I applied a
 plaister, which hereafter shall be also nominated. Now so, that their
 sores were to erreasing stinking and rotten, I did at the very beginning
 scarse their gums with a scame, then presently I did as it were touch,
 or wipe their gums gently over with a certaine white water, which
 the goldiners have used for: refining their golde, and have themselves
 no use for it, the force and strength being by them greatly consumed and
 wearred, I did cause them certaine times in the day and in the night, to
 gargle or wash their gums and mouthes with my lotion published in
 my booke for the curing of *Lues Venerea*, Cap. 6. whereunto many
 times I mixed the sir of *Spulberies*, q. s. also I did at sundry times bite
 of the afoze named white water, and did take thereof ʒ. ʒ. whereunto
 I did put of Plantaine water ʒ. viij. and here with I did manobise and
 cleanse their gums. Also it is known most certainly what great good is
 done in curing of such rotten gums and soze mouthes, onely with this
 gargarine, which is published by *Salus Talmerrina*, & it is also set forth
 of late by maister *Banysler* in a booke, which he calleth his *Ambrosiare Chi-*
urgicall. R. Hordei integri p. ij. Eupatorij, Nicotiana, Plantaginis,
 Moricis gallinae, Ros. rub. ana m. j. boile these together in Aqua lib. iij.
 fill the one part be consumed, then add thereto Mellis rosar. Sir. rosa-
 rum siccarum ana. ʒ. iij. Aluminis vtri, Calcanti vtri, ana. ʒ. ʒ. boile all
 these with a walme of two, & so let it cole, and then kepe it to your use.
 Also I have found great good by the use of this powder, which is publi-
 shed by the reverend learned man *Wyerus*, who hath written most pro-
 foundly for the cure of the *Scooby*, take of salt and burne it in a crucible,
 whereunto ye shall adde of the powder of *Spomegranate flowers*, and so
 mire them together, & here with I did many times rub well their gums,
 whereover, I have in times past used *Vnguentum Egyptiacum*, and
 also a powder called of some *Pulus Alchimiticus*, or *Caput mortuum*,
 it is the dead head, of Aqua fortis, I also after washed their mouthes
 with vinegar and salt water. q. s. and by these means I have cured ma-
 ny soze mouthes specially in children, when I have had twenty, or thirty infer-
 ted with the *Scooby* at a time. After I had well manobised and cleanse
 the mouthes and gums of these two men, then I did administer a cer-
 taine sume, by the advice and counsell of D. D. which sume was recei-
 ved in at their mouthes by a funnell after this manner, I did take of
 Mirrhæ, Olibani, Aste fatidæ ana. ʒ. ij. Aceti viviaci l. b. j. which gums
 were

A very singu-
 lar garga-
 risme.

I was Chinur:
 Baron of Saunt
 Bartholo-
 mewes hospi-
 tall in Smith-
 field, and also
 of Chiffes
 hospital for

soze groin beater, then they were tied loosely in a fine linnen cloth, and
 so put into the brazier, then there was prepared an earthen pot fit for
 the purpose, well glazed or sealed, and at those times when it was called to
 be used, there was prepared a funnell made fit in widenes and compasse
 unto the mouth of the said pot, & so it was well packed or luted together,
 with this lute called of *Schlander*, and many other good distillers and Al-
 chemists *Lumen Speculæ*, and it is powned very necessary to lute and
 conglutinate two vessels together serving for distillations, or otherwise
 as afoze said. R. Clay and Fuller hair, with whites of eggs and sand,
 thus I luted the pot & the funnell together, and then I set it upon a char-
 singh of coles, and I let it boile gently, & then caused the patients to sit
 by in their beds one after another, & so they received into their mouthes
 the fume of smoke, that passed forth of the top of the funnell, & this
 was used divers moynings before they did take their Atonom smokes, and
 also certaine times in the evening, and did sweate halfe an hower after
 it in their beds: which sume was administered most chiefly to open their
 obstructions inwardly, and so being well coled and dyed with warm
 clothes, they did rise out of their beds, and went to the bathing of their
 legs, and annointings as followeth, R. the flowers of Chamomell, *Spes*
lulote and *Agriomolod*, the leaves of Coclearia, Water Cresters, and
 sometime, of each a handfull, of the berries of Juniper two handfulls, The Bath
 of *Spalmey* a quart, running water q. s. swete butter a pound, which
 were boiled together, to the consumption of the third part, which bath
 did being out in a short time a number of spots, which before lay by in
 the flesh, and herewith very warme, they were a long time together
 bathed, with double wollen clothes of white cotton or bates, & these dyed
 them very well, with hot linnen clothes: and as I have before mentio-
 ned, they were presently annointed sometimes with *Vnguentum Agrip-*
pe, and sometimes with *Vnguentum Brioniz*, or *Dialtheæ cum gum.*
 and also their legs were all wrapped round with this plaister, R. Er-
 platurum Deminio lb. ij. Gummi Armoniaci lb. ʒ. being dissolved in
Spalmey, then put them together, adding thereto *Axungie humani* ʒ. ij.
 ʒ. I boiled these together to the soyme of a plaister, I found also very
 much profit by the Curminum plaister published in this booke. And thus
 by the helpe of God and careful diligence, they were both perfectly cu-
 red, and divers of her persons of god account since that time, onely by
 this manner and order of curing also, & said, &c.

Fig. 1 cont. Facsimile of excerpts from text of Clowes's (1596) book.

it is small wonder that Edinburgh's own Dr John Comrie (1932) remarked that: 'The 17th Century sailor must have been a sturdy fellow!'

Almost a century before Macbride, and not unlike him in many respects, the cantankerous, Dr John Colbatch (1700) published his *Collection of Tracts, Chirurgical and Medical*. The first of these *A New Light of Chirurgery* dealt with Colbatch's 'discovery of a more safe and speedy way of curing wounds than heretofore usually practised, with several experiments'.

Having served in the war in Flanders as a military surgeon, where he was in charge of a field hospital at the siege of Namur, Colbatch records case report after case report in which he cured most seriously wounded soldiers. His remedies were two-fold, one of them his secret vulnerary powder, with which he not only dressed the wounds but which was injected with a syringe, and the other internal, namely 'treatment with a nutritious diet'. The possibility of scurvy* supervening seemed ever in his mind. Colbatch claimed to have made upwards of one hundred 'experiments upon Dogs and other animals, wounding them in the most desperate manner I could contrive'. Colbatch was knighted on 5 June 1716 some 12 years before his death.

Colbatch's boasting about miraculous cures, and his secret vulnerary powder, irked his medical colleagues no end, yet he was frank in prescribing citrus fruits as the acids† of choice for almost every distemper, from the healing of wounds to smallpox and viper stings‡, as well as in scurvy and what he regarded as its concomitants, gout, arthritis and rheumatism§.

Selfishly, Colbatch retains a warm spot in my heart, not merely for his enthusiastic approval of citrus fruits, but for his elegant and eloquent recipe** for 'lemmonade, the most grateful liquor in the World'. My Bavarian vintner forebears

* 'I now com to treat of the disuse of Alkalies in the Scurvy, that reigning Distemper, from which few are altogether free; and is by most accounted incurable, or at least for the most part proves so. But here I expect the cry of all Mankind against me; what! say there is no Acidity in the Blood in the Scurvy? What but an Acidity in the Blood causes the breaking out of Scabs, Pimples, Blotches, etc. on the Skin?'

† 'Why should we fly to Acids chymically prepared, when, as I said before, Nature has provided Oranges, Lemons, Citrons, Limes, and a great many more not necessary to mention, which for the most part answer our intentions, if skilfully given by an experienced hand?'

‡ 'But however, nothing is more grateful or delightful to an Hydropical Person, than a slice of Lemon or some such thing. Common Salt I allow will excite Thirst, but not *quatenus* Acid, for Spirit of Salt will take it off as soon as anything. Again, if acids were so pernicious to Mankind, as some would make us believe, I wonder the College of Physicians don't unanimously petition the Parliment to prohibit the Importation of Orange and Lemons in such vast quantities as we now have 'em' (Remarks upon Dr Tuthill's vindication of his *Objections against my Hypothesis*, p. 551).

§ 'As for what I have mention'd concerning the Efficacy of Juice of Lemons, in immediately abating and taking off the violent Symtoms that attended a Person who had bin bit with a Viper, after the Volatil Salt of Vipers, and other Antidotes had in vain bin given; I find the very same thing taken notice of by Hoffman in his *Clavis Pharmaceutica Schroderiana*, pag. 444, 445'.

§ 'If they are at any time very thirsty, they may drink Lemmonade; and if what they eat dos not digest well, they may about an hour after dinner eat the Pulp of a Lemon cut into slices, with som double-refined Sugar, it greatly helping Digestion, and strengthening the Stomach'.

'The moderate use of all acid Fruits is very convenient, but such as are very luscious and sweet are to be avoided'.

** 'Take of clear Spring-Water one quart; then pare off the outward thin Rine of two Lemmons, and put into it; afterwards squeeze in the Juice of the Lemmons, and then sweeten it with about two Ounces of fine Sugar'.

The WAY of Making
M U M,
WITH SOME
REMARKS
UPON THAT
LIQUOR.

IN the first place, I will give some instructions how to make *Mum*, as it is Recorded in the House of *Brunswick*, and was sent from thence to General *Monk*.

To make a Vessel of 63 Gallons, the Water must be first boyl'd to the Consumption of a third part, let it then be Brew'd according to Art with 7 Bushels of Wheat-Malt, one Bushel of Oat-Malt, and one Bushel of Ground Beans, and when it is Tun'd, let not the Hogshead be too much fill'd at first; when it begins to work, put to it of the inner Rind of the *Firr* three pounds, of the tops of *Firr*, and *Birch*, of each one pound, of *Carduus Benedictus* dried, three handfuls, Flowers of *Rosa Solis*, two handfuls,

Fig. 2. Way of making Mum (Anonymous, 1682).

Remarks upon MUM.

handfuls, of *Burnet*, *Betony*, *Marjoram*, *Avens*, *Pennyroyal*, *Flowers of Elder*, *Wild Thyme*, of each one handful and a half, *Seeds of Cardamum* bruised, three ounces, *Bayberries* bruised, one ounce, put the *Seeds* into the *Vessel*; when the *Liquor* hath wrought a while with the *Herbs*, and after they are added, let the *Liquor* work over the *Vessel* as little as may be, fill it up at last, and when it is stopp'd, put into the *Hoghead* ten new laid *Eggs*, the *Shells* not cracked, or broken: stop all close, and drink it at two years old, if carried by *Water* it is better. Dr. *Ægidius Hoffman* added *Water Cresses*, *Brooklime*, and *Wild Parsley*, of each six handfuls, with six handfuls of *Horse Rhabdish* rasped in every *Hoghead*: it was observ'd that the *Horse Rhabdish* made the *Mum* drink more quick than that which had none.

By the composition of *Mum* we may guess at the qualities, and properties of it, you find great quantities of the *Rind*, and tops of *Firr* in it; therefore if the *Mum-makers* at *London* are so careful, and honest, as to prepare this *Liquor* after the *Brunswick* fashion, which is the genuine and original way; it cannot but be very powerful against the breeding of *Stones*, and against all *Scorbutick Distempers*. When the *Suedes* carried on a *War* against the *Muscovites*, the *Scurvy* did so domineer amongst them, that their *Army* did languish, and moulder away to nothing, till once encamping near a great number of *Firr Trees*, they began to boyl the tops of them in their *Drink*, which recover'd the *Army* even to a miracle; from whence the *Suedes* call the *Firr* the *Scorbutick Tree* at this very day.

Mollenbroc. de
Arthritide vag.
Scorbut. p. 116.

Fig. 2 cont. Way of making Mum (Anonymous, 1682).

As for Eggs in the Composition of *Mum* they may contribute much to prevent its growing sower, their shells sweetning Vinegar, and destroying Acids, for which reason they may be proper in restoring some decay'd Liquors, if put whole into the Vessel. Dr. *Stubbs* in some curious Observations made in his Voyage to *Jamaica*, assures us, that Eggs put whole into the Vessel will preserve many Drinks even to admiration in long Voyages: the Shells, and Whites will be devour'd and lost, but the Yolks left untouched.

Oldenburg's
Philos. Transf.
act. N. 27.

Dr. *Willis* prescribes *Mum* in several Chronical Distempers, as Scurvies, Dropsies, and some sort of Consumptions. The *Germans*, especially the Inhabitants of *Saxony*, have so great a Veneration for this Liquor, that they fancy their Bodies can never decay, or pine away, as long as they are Lin'd, and Embalm'd with so powerful a preserver; and indeed, if we consider the frame, and complexions, of the *Germans* in general, they may appear to be living Mummies. But to conclude all in a few words, if this Drink call'd *Mum*, be exactly made according to the foregoing instructions, it must needs be a most excellent alterative Medicine, the ingredients of it being very rare and choice simples, there being scarce any one Disease in Nature, against which some of them are not prevalent, as *Betony*, *Marjoram*, *Thyme*. In Diseases of the Head; *Birch*, *Burnet*, *Water-Cresses*, *Brooklime*, *Horse-Rhadish* in the most inveterate Scurvies, Gravels, Coughs, Consumptions, and all obstructions.

Dr. Willis de
Scorbuto. Pharmaceut. Rational. p. 2.

Fig. 2 cont. Way of making Mum (Anonymous, 1682).

and my California oenologist friends, I feel certain, also subscribe to Colbatch's happy afterthought 'but if it be too cold for anyone's stomach, it may be made a little warmer with half a pint of Old Hock'!

Somewhat more alarming, however, were some of the ideas of Boerhaave (1728, 1742, 1783), the Dutch authority on scurvy, and another contemporary of Lind. The French edition of Lind's *Treatise*, published in Paris in 1783, has Boerhaave's *Treatise* appended as part 3, in commentary form by Van Swieten. 'Scurvy is particularly violent in those who do not exercise', writes Boerhaave and 'a lazy and sedentary life must therefore dispose one toward this malady', leading to a thickening of the blood or 'crassamentum'.

The 'crassamentum' seems to have been a sort of forerunner of 'sludged' blood

and increased sedimentation rates. How easy it becomes to reinterpret the foggy language of old writers and make them out geniuses, after all!

Misunderstood and forgotten great men are deserving of more than sentimental sympathy. California's Huntington Library has such an excellent copy of the elder Dr William Clowes' (1596) *Profitable and Necessarie Booke of Observations*, with its *The cure of two Seafaring men which fell sicke at the sea of the Scorby* (see Fig. 1*). Why Lind failed to include this in his bibliography will always remain a mystery to me, since the widely read Clowes fulfilled all of Lind's requirements of first-hand clinical observation. Clowes, who was Queen Elizabeth's physician, and 'one of hir maiesties chirurgions', was one of the first to abandon Latin and dare to write his medical observations in the vernacular. His remedy was an 8-gallon batch of new ale into which a 'peck of "coclearia or scorby grasse" purely picked, and cleane washed, and also brused in a stone mortar' was hanged along with cinnamon and ginger. To paraphrase any of it, or to put it into modern English, would destroy its clear, narrative flavour.

Clowe's recipe for making the antiscorbutic ale popularly known as Mum is not as precise as the one I found many years ago in *The Natural History of Coffee, Thee, Chocolate, Tobacco, Etc., and also the way of making MUM, with Some Remarks upon that LIQUOR*.

The recipe for Mum (Anonymous, 1682) is that of the House of Brunswick, from whom a General Monk seems to have obtained it. Chemists may be interested in the novel yet quite scientific way in which 'ten new laid eggs, the shells not cracked' were used to buffer the drink as it gradually acidified (see Fig. 2).

It was this recipe that set me on the trail of Dr Andreas Valentinus Moellenbrok (Molimbrochius) who clearly described what might well have been the isolation of ascorbic-acid crystals (Moellenbrok, 1676). The Leipzig physician-pharmacist-chemist, in his 195-page book on scurvy-grass entitled *Cochlearia Curiosa* experimented on ways to obtain various concentrates and finally to isolate the 'volatile spirit' of scurvy-grass. He indicates clearly that he was aware of the lability of the antiscorbutic principle to atmospheric oxidation. Even in Sherley's English translation this seems apparent (see Fig. 3).

The true scurvy-grass of history is the *Cochlearia officinalis*, Linn., 'spoonwort', belonging to the lepidiums or pepperworts of the larger family of cruciferae, or cresses. All of them are marked by pungency and antiscorbutic properties of their fresh leaves now well established also by chemical determination of their ascorbic-acid content. The apothecary of Lind's day had for his guide in compounding of cochlearia prescriptions, a Latin verse by Johannes Joachim Bechorus on p.

* Our facsimile is made available through the kindness of Mr Leslie E. Bliss, Librarian of the Huntington Library.

Cochlearia CURIOSA:

OR THE
Curiosities of Scurvygrass.

Being an exact Scrutiny and careful Description of the Nature and Medicinal Virtue of Scurvygrass.

In which is exhibited to publick use the most and best Preparations of Medicines, both Galenical and Chymical; either for Internal or External use, in which that Plant, or any part thereof is employed.

Written in Latine by Dr. *Andreas Valentinus Molimbrochius* of *Lipswick*.

Englified by *Tho. Sherley, M. D.* and Physician in Ordinary to His present Majesty.

L O N D O N,

Printed by *S. and B. Griffin*, for *William Cade*,
man, at the Popes Head in the *New Exchange*,
and *Middle Exchange* in the *Strand*, 1676.



Fig. 3. Facsimile of title page and excerpts from Moellenbrok's (1676) book.

CHAP. XIII

Of the Volatile Salt of Scurvygrafs.

Since the Salt is the chief part, by means of which, *Scurvygrafs* is prevalent in the Scurvy, according to the Philosophers Axiom: *Per quod quid est tale, illud est magis tale: That by which a thing is what it is, that thing is more such.* There is therefore a necessity, that we treat of this Salt. And because of its volatility, but little of it can be gotten, it is sufficient that we use its Spirit, in which this Salt is hid and contained. This Salt is made (after the same manner that many others are, *viz.*) Let the thick leaves of *Scurvygrafs*, and full of juice, be boiled a little while in water, and afterwards press out the juice, or which is better, if only the juice pressed out of the fresh gathered leaves be purified, and a little evaporated till it be somewhat thickened, and so set by, till of its own accord the Salt shoot in the juice. The chief efficacy of *Scurvygrafs* (as hath been declared just now, and also above in the fifth Chapter) is from the volatile Salt. For experience teacheth,

Fig. 3 *cont.* Facsimile of excerpts from Moellenbrok's (1676) book.

324 of his *Parnassus Medicinus Illustratus* (quoted by Moellenbrok, 1676), listing 'six several ways'*.

* In Sherley's translation the verse runs as follows:

Spoonwort doth warm, and also doth dry,
 In the Scurvy 'tis a great Remedy,
 It sends out all corrupt humors by sweat
 With this your mouth gargel often, and wet.
 This plant which deserves so much of your praise
 The Apothecaries use six several wayes,
 It's Spirit, Syrup, Water procures health,
 So doth its Salt conserve, and th Herb itself.

In cookery it was employed in the making of sauces, or as the Germans called them *Tunken* (vulgarly 'dips'), sometimes combined with the pulp of apples 'with cappers or with the pulp and juice of lemmons and wine or soure oranges'; or as a salad mixed with water cress. Such sauces, according to older authors, were particularly popular in Norway, just as rosehip conserves were used with winter dishes by my grandparents.

Conserves, decoctions and infusions of scurvy-grass leaves together with wine of scurvy-grass somehow bridged the gap between the household remedies and the apothecary's preparations, of which the 'spirit of Scurvygrass' was regarded the most efficacious. Several methods for its preparation are given, including the original technique of Johann Buttner, a German apothecary of Goerlitz, and that of the famous Danish naturalist, Simon Pauli. The alcoholic extract ('Spirit of Wheat or Rye, not the rectified Spirit of Wine') of the leaves was concentrated and the dosage was from ten to thirty drops in wine.

Electuaries, 'The medicine of a substance thicker than a syrup hardly liquid or fluid', were most often employed in filling the physician's prescription for a scurvy-grass medicament. They were made from macerated freshly-gathered leaves, whereas the less popular and less effective elixirs or essences were made from the dried leaves.

'Certainly the volatile salt of scurvy-grass is lost in drying the leaves', says Moellenbrok (1676).

The final and most potent medicament from scurvy-grass, according to Moellenbrok, was his purified 'Volatile Salt of Scurvygrass'. He is explicit in his directions for making it, having, in directing the preparation of the previous compound, warned against prolonged exposure to air or heat. To introduce his idea of being able to concentrate the effective principle of scurvy-grass into a salt, when popularly salt was thought to cause scurvy, Moellenbrok cites the 'Philosopher's Axiom: "Per quod quid est tale, illud est magis tale"', which Moellenbrok's translator, Sherley, renders into Gertrude Stein-like English literally as follows: 'That by which a thing is what it is, that thing is more such'.

Moellenbrok clearly indicates that the production of his 'Salt of Scurvygrass', because of its small yield and its lability ('volatility') is not practicable for the apothecary and that therefore 'it is sufficient that we use its spirit, in which this salt is hid and contained'.

The chemical procedure is described as follows by Moellenbrok (1676, pp. 112-113):

'Let the thick leaves of *Scurvygrass*, and full of juice, be boiled a little while in water, and afterwards press out the juice, or which is better, if only the juice pressed out of the fresh gathered leaves be purified, and a little evaporated till it be somewhat thickened, and so set by, till of its own accord the Salt shoot in the juice. The chief efficacy of *Scurvygrass* (as hath been declared just now, and also above in the fifth Chapter) is from the volatile Salt' (see Fig. 3).

I shall gladly leave it to the chemists to decide from the above whether or not Andrew Valentine Moellenbrok, the Leipzig pharmacist-chemist, in the middle

of the seventeenth century actually isolated ascorbic acid and thus close the covers on the yellowed pages where

‘Simply and gravely the facts are told
In the wonderful books of our fathers of old’.

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