

If the drifts were not frozen, I cannot understand the production in them of overfolds of considerable horizontal extent (such as that shown at the south end of Mr. Green's pit), without any obliteration of the planes of deposition.

Mr. Jukes-Browne speaks of the drifts as being pushed along in a 'partially-frozen state.' Even if contortion can be produced by coaction in deposits under such conditions, I cannot conceive that the order of succession of the deposits should be so constant as it is in the Sudbury area, upon this hypothesis. Surely the incoherent portions of the drift would become churned up, so that we should find masses of boulder-clay, gravel, and loam mingled together, and having their divisional planes obliterated. I have seen no signs of such in the area under consideration.

In asserting that contortions occur "in the accumulations which lie on the summits of ridges," I used the term 'summits' not for the highest points, but for the upper portions of the major ridges, and I referred to Mr. Green's pit and the pits near the cemetery. These pits are situated at the upper parts of major ridges, and the contortions are seen in Mr. Green's pit to lie *against* a minor ridge. At the same time I do not wish to assert that all the contortions were caused by the inequalities close to which they now lie.

I regret that my summing up should appear biased in favour of one explanation. I visited the Sudbury area with little practical knowledge of the East Anglian drifts. Having read much of the literature bearing upon these drifts, including Mr. Jukes-Browne's lucid papers, I started my examination with a strong bias in favour of their marine origin. As I was gradually led to abandon this view, I considered it worth while to state the evidence which weighed with me, but brought forward my reasons as an advocate, and not as a judge. I should certainly not venture to make a charge to a jury with the evidence derived from so limited an area.

I take this opportunity of calling attention to one or two inaccuracies in Fig. 1 of my paper. The Crag mass C' should be separated from the filled-in ground D by a little gravel; the junction of the Thanet sand and chalk in the isolated patch at the south end of the pit should be in the same straight line with that of the main portion, and the top and base of the Thanet sand layer are much more even than represented in the diagram.

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Aug. 6, 1887.

THE CORTLAND ROCKS.

SIR,—Dr. Callaway, in combating the 'metamorphic' origin of the rocks of the 'Cortland Series,' does not appear to be aware that Prof. Dana has materially modified his earlier opinion on this point. After examining some new railway cuttings, he was convinced that the hornblende and augitic rocks are of true *eruptive* origin, and although he does not find that the new sections throw any light on the origin of the 'soda-granite,' his former line of argument is evidently much weakened (Amer. Journ. Sci. 3, vol. xxviii. p. 384,

1884). Mr. G. H. Williams, who is publishing a series of petrological studies on the whole of the rocks in question, reserves to the last any general conclusions concerning their origin; but he states that the area "is quite sharply separated from the gneisses, mica-schists and limestones which surround it, showing none of the gradual transitions into these rocks which Hermann Credner, in his description of this district written in 1865, supposed to exist." (*Ibid.* 3, xxxi. p. 27, 1886.)

ALFRED HARKER.

ST. JOHN'S COLLEGE, CAMBRIDGE, *Aug. 5th*, 1887.

OBITUARY.

SIR J. F. JULIUS VON HAAST.

SIR JOHN FRANCIS JULIUS VON HAAST, K.C.M.G., Ph.D., F.R.S., F.L.S., F.G.S., Ord. Fr. Jos., Ord. Coron. Ferr. Austr. Coron. Ital., etc., etc., Director of the Museum, and Professor of Geology in Canterbury College, New Zealand.

It is with deep regret that we learn, through a Reuter's telegram from Wellington, that our friend and fellow-geologist, Sir Julius von Haast, died suddenly of heart disease, on the 15th August. It seems but yesterday that he was here with us, and although complaining of rheumatic gout, which he attributed to the severe work and endless engagements arising out of the duties he was called upon to fulfil last year, as Commissioner in charge of the New Zealand exhibits at the Colonial and Indian Exhibition, he appeared to have many more years of good work lying before him.

Sir Julius von Haast has done excellent service to science in New Zealand, not only in connection with its Geology, in which he took an active part, but also in the discovery and collection of remains of the great extinct Wingless Birds of those Islands with which the Museum of Christchurch (N.Z.), and those of nearly all the principal European and American Museums, have been enriched.

Sir Julius received the honour of Knighthood in recognition of his services in connection with the Colonial and Indian Exhibition; but so far back as 1867, he had been elected a Fellow of the Royal Society in recognition of his services to science. Upwards of thirty memoirs are credited to him in the Royal Society's list of scientific papers, mostly on the Geology and Extinct Birds of New Zealand. His loss will be keenly felt in the Colony where he has laboured so long and diligently.—H. W.

PROFESSOR LAURENT-GUILLAUME DE KONINCK.

Prof. C. Malaise informs us of the recent death (on 16 July last) of our venerable friend, Prof. de Koninck, For. Memb. Geol. Soc. Lond., late Professor of Chemistry and Palæontology in the University of Liège, Belgium. Prof. de Koninck's labours on the Fauna of the Carboniferous rocks of Belgium, England, Australia, etc., are well known. We hope to give a notice of his life in a later Number.—
EDIT. GEOL. MAG.