

composition closely corresponding to that of the Oceanic Clay of Barbados.

The recent calcareous ooze closely resembles the more calcareous "chalks" of the Barbadian Oceanic Series, but the latter contained much colloid silica and fine clay. The differences between the analyses of the recent ooze and of English chalk, when certain allowances are made, were found to be but small. The recent calcareous ooze contained many more *Globigerina*-tests than Tertiary or Mesozoic chalks, but it is suggested that this is due to our possessing only the surface-layers of the *Globigerina*-ooze.

In one important respect all the different kinds of deposit which were examined resembled one another, namely, in the infinitesimally small quantity of quartz which they contained.

The authors' examination of the recent oceanic deposits, and a comparison of them with the raised Barbadian deposits, only increased their conviction that the latter were of truly oceanic origin.

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#### CORRESPONDENCE.

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##### LOWER GREENSAND FOSSILS IN KENT.

SIR,—I am indebted to Messrs. Jukes-Browne, Monckton, and Leighton for calling my attention to an unfortunate omission in Part V. of the paper published in the March Number of the GEOLOGICAL MAGAZINE. The word "Eastern" was omitted from before England in line 22 from top of page 101. Six times on that page it is repeated that attention is being restricted to the area "of Guildford and Dorking," "the line between Guildford and Godstone," "the line between Guildford and Caterham," "the London area or to the south of it," etc. I had never thought of questioning the occurrence of *Hoplites interruptus* in Wiltshire or even the West of Surrey. It is recorded from Devizes in the paper of Mr. Jukes-Browne, quoted on the same page; good specimens from that locality are exhibited in the show-cases both at Jermyn Street and in the British Museum (Natural History). That this species as well as the lower *Ac. mammillare* should reappear to the West of Guildford area, in association with the Lower Greensand outliers, appeared inevitable.

Mr. Leighton has sent me four fragments of an Ammonite from Westcott, which are no doubt referable to *Hoplites interruptus*. Mr. Leighton has therefore obtained the fossils "from the very base of the Gault in Eastern Surrey," without which, as it is said in the paper, "no final answer to the question discussed in Part V. can be given." Mr. Leighton has fortunately found there a nodule bed at the base of the Gault. It appears to be at the very base. The *Ac. mammillare* zone is therefore still absent; so that the replacement or thinning out of the *mammillare* and *interruptus* zones in the area of London and to the south of it, has in the Dorking district only affected the former, and not both of them. If the *mammillare* zone be included with the Gault, as seems now generally agreed, then the

conclusion of the fifth part of the paper, that "the commencement of the 'epoch' of the Gault is represented not by the base of the fossiliferous clays, but by some part of the non-fossiliferous sands now included in the Lower Greensand," is quite valid. Mr. Leighton's discovery of the nodule bed at Westcott proves, however, that the extent to which this is the case was exaggerated in the paper.

March 11, 1895.

J. W. GREGORY.

ON *PINITES HEXAGONUS*, CARRUTHERS.

SIR,—I desire to correct the statement in the foot-note, relating to my paper at a recent meeting of the Geological Society, referred to on page 102 of Dr. Gregory's paper.<sup>1</sup> I said at the meeting that the specimen had been sent to Mr. Carruthers some months before for determination, and that he at once replied (on May 25, 1894) that it appeared to agree with a specimen he had described from the Gault of Eastware Bay, sent to him by Mr. Starkie Gardner, but if I would explain the exact horizon of Mr. Mangles' specimen he would look further into the matter. That I did, and but for unforeseen circumstances Mr Carruthers' note would have been in the hands of the meeting. The species has *not yet* been determined, but no doubt it is one of those which have been recorded from the Gault.

I think it is a pity that Dr. Gregory has included unfossiliferous beds, about which we have no relative evidence, in the table on page 100 of his paper. Of course, if we were under obligation to divide the Lower Greensand into divisions, fossils or no fossils, the Survey classification could be retained by simply placing the Leith Hill Cherts and Dorking Clayey Sands, into which they pass, in the Sandgate Beds. As to the latter of these (the Clayey Sands), this was suggested in 1892 by Professor Boulger and myself, and two years later by Mr. F. Chapman. Were it necessary, other difficulties brought out by detailed mapping could be similarly dealt with. Looking at Dr. Gregory's table, one is inclined to enquire, since he deals with the Leith Hill Cherts, where the Reigate-Tilburstow Hill Cherts are to be placed?

THOS. LEIGHTON.

March 5, 1895.

GAULT AND LOWER GREENSAND.

SIR,—Dr. Gregory's paper on some fossils from the Lower Greensand of Great Chart, in Kent, is a welcome contribution to the classification of the Lower Cretaceous series of the Wealden area. His views with regard to the general grouping together of the Sandgate Beds, Bargate Beds, Fuller's Earth, and Farrington Beds coincide with a conclusion I came to some years ago. His subdivision of the whole series into three instead of four, and his correlation of the two upper groups—the (1) Folkestone and Sandgate, and (2) the Hythe Beds—with the Aptian of the continent, is exactly the arrangement I suggested in this *MAGAZINE* nine years ago.<sup>2</sup>

<sup>1</sup> *GEOL. MAG.* March 1895.

<sup>2</sup> *GEOL. MAG.* 1886, Dec. III. Vol. III. p. 316 *et seq.*