

Gloucestershire, and Northamptonshire mentioned in his interesting paper, and I obtained many of the fossils given in his list. Several of these from the neighbourhood of Grantham I sent, at the time, to my friend Dr. Lycett, and he stated that although the greater number were new to him yet the rest were species decidedly belonging to the Inferior Oolite; and Mr. Sharp, with whom, on a future occasion, I examined the neighbourhood of Northampton, and who is thoroughly conversant with the geology of the district, agreed with me in classing the ferruginous Oolite overlying the Lias with the Inferior Oolite. Amongst other fossils obtained there of a decidedly Inferior Oolite facies I found a specimen of *Pygaster semisulcatus* which has not yet been recorded higher than that formation, and is common enough in the peagrit and pisolite near Cheltenham. Mr. Morris gives it in his list of fossils near Northampton, as well as *Hyboolypus agariciformis*. If these were not considered sufficient to prove the position of the rock in which they occur, the other shells I obtained associated with them, and a still larger number named by Mr. Morris, are decisive upon the point, as far as palæontological evidence goes. As there is also a clear ascending section from the Lias to the Great Oolite, the intervening strata may, therefore, be more reasonably placed with the Inferior Oolite, although there are certain lithological differences and a large increase of ferruginous matter in the Midland district, when compared with the same formation in Gloucestershire. It is not a matter of much consequence, but I think it due to myself to state that, after a careful comparison of the sections and fossils of the outer escarpments of the Cotswolds with those of Lincolnshire, and Northamptonshire, I had held from the first, since the year 1850, that a certain portion of the Oolites of the Midland Counties belonged to the Inferior Oolite, with which they will now probably be again and finally classed.

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#### *ELEPHAS MERIDIONALIS* IN THE NORWICH CRAG.

Sir,—I was surprised on again seeing Mr. Roper's collection at Lowestoff, to find that it did not contain one single specimen of an elephant's tooth, and that all the Mammalian remains were from, as he described it, the Coprolite bed beneath the Coralline Crag, and none at all from the Red Crag. The collection had been removed from West Tofts, near Brandon, where I had seen it five years ago; but there was no ground to suppose any specimen had been lost, for Mr. Roper showed me a MS., in which he had carefully figured all the mammals, with a coloured section of the strata at Sutton. The lowest of these was the bed from which he had taken an old shed tooth of a Mastodon, and three fragmentary portions of others, together with the basal part of a deer's horn, and a beautiful and perfect molar of a pig. Above this was the Coralline Crag, and then the Red Crag, from which, he said, he had obtained no Mammalian remains whatever.

I am very sorry to have misled Mr. Fisher by my having founded, as it appears, I must have done, this tooth of a Mastodon,

in which the mammillæ are worn down, with one of the *Elephas meridionalis*; at the same time I am glad to have been the means of calling attention to this singular coincidence with the discovery made by Mr. Prestwich, of similar mammalian remains in the stone-bed beneath the Coralline Crag at Sutton.

As Mr. Lankester wishes "to see a list of mammalian remains, in addition to the Mastodon teeth found in Mr. Gunn's stone-bed," in part performance—and because I cannot, after what has passed, expect him to receive my account—I will send to the Geological Society's rooms for his inspection an old shed tooth of the *E. meridionalis*, which I obtained last Monday, when in company with Sir C. Lyell and Mr. Leonard Lyell at the Horstead marl-pit, from the stony bed. Besides this, I had obtained previously three fine specimens of molars of the *E. meridionalis* from the Horstead and Coltishall pits, from the same bed, and another not referable to any recognised species of elephant, and three basal portions of the horns of deer (not described), and no other mammalian remains, except the Mastodon.

With reference to this stone-bed, I beg to be allowed to add some observations which I have made. It appears to lie upon an old land surface of the Chalk, which dips on an average 29 feet in the mile. This land surface seems to have been subaërial, in part at least during the successive deposits of the Tertiary beds, until it was entirely submerged in the Glacial period; and the animals, which lived upon it were entombed in or beneath the stony-bed. It is a well ascertained fact that the remains of the Mastodon are found immediately upon the Chalk or in the disturbed chalk-rubble, while those of the elephant and deer are found among the stones derived from the disintegrated Chalk. It appears to me, therefore, that this stony-bed admits of sub-division, and that a long period of time may have intervened between the deposition of the Mastodon and Elephant remains, and that no evidence is afforded of the co-existence of these two proboscideans in this locality.

Upon this stone-bed, on the land going down, or the water rising, whichever it might be, the fluvio-marine Crag was deposited, which is, according to my experience, nearly non-mammaliferous; and on this ground I ventured to suggest that the stone-bed and the fluvio-marine Crag, which have hitherto been considered one, and named by Mr. Charlesworth Mammaliferous Crag, should be separated. It is difficult to make the above clear without the aid of a diagram, and I propose to submit one, together with fuller details relative to the order of succession of these and the associated beds, to the Geological Society.

I have to thank Mr. Fisher for the answer he has given relative to the gravel on the south bank at Lopham ford. It is a matter of opinion as to whether it is middle-drift gravel or valley gravel. I visited the spot with Mr. Prestwich and Mr. Flower, and they both remarked that the gravel bore a striking resemblance to that of St. Acheul.

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