

that as more was discovered about the building of dunes and sand-banks, geologists might be able to decide on inspection whether a false-bedded section represented an æolian or an aqueous deposit.

III.—GEOLOGICAL SOCIETY OF LONDON.

November 3, 1915.—Dr. A. Smith Woodward, F.R.S., President, in the Chair.

Dr. C. W. Andrews, F.R.S., gave an account of the discovery and excavation of a very large specimen of *Elephas antiquus* near Chatham. The specimen was originally discovered about three years ago by a party of sappers who were digging a trench. The attention of the British Museum was drawn to this find by Mr. S. Turner, of Luton, Chatham. The extraction of the bones was delayed until the past summer. A great part of the skeleton has now been collected, owing largely to the skill of Mr. L. E. Parsons, jun. The skull, unfortunately, was in a very bad condition, but two complete upper and one lower second molars were obtained. One tusk, about 7 or 8 feet long, was also found. The lower ends of both femora were destroyed in the original trench, but of the other limb-bones nearly complete specimens from one or both sides have been obtained, as well as a sufficiently large series of bones of the feet to allow of their reconstruction. Many vertebræ were also collected.

The animal, which was adult, must have been of very large size, having stood about 15 feet at the highest part of the back, or more than 3½ feet higher than the large African elephant mounted in the Entrance Hall of the Natural History Museum.

The molar teeth show conclusively that the species represented is *Elephas antiquus*, and from the thickness of the enamel and some other characters, it may be inferred that the animal was probably of a type as early as, or earlier than, that found at Grays. It is the first British example of this species in which the skeleton has been found directly associated with the teeth.

Lantern-slides and remains of *Elephas* were exhibited.

Mr. G. C. Crick, F.G.S., exhibited two Nautili from the Upper Cretaceous rocks of Zululand. Each showed approximation of the last three septa, indicative of the comparatively sudden arrest of growth of the animal and of the accompanying forward movement of the animal in its shell, a character usually attributed to senility. One specimen showed also irregularities of depth in the other chambers of the camerated part of the shell.

CORRESPONDENCE.

EARLY MAN AND HIS IMPLEMENTS.

SIR,—With reference to Mr. Reid Moir's letter in the October Number of the GEOLOGICAL MAGAZINE criticizing M. Boule's recent paper in *Anthropologie*, the Abbé Breuil requests me to ask you, on his behalf, the favour of publication of the following remarks, and copy of his letter to me of February 27, 1913.

“ PARIS, Oct. 29, 1915.

“ I ask this publication relying on my right of reply, since I deem it beneath my dignity and scientific repute to reply directly to the poor and arbitrary attack of Mr. Reid Moir against my scientific independence and experience.--
H. BREUIL.”

49 QUEEN VICTORIA STREET, E.C.
November 2, 1915.

F. N. HAWARD.

[COPY.]

“ 110 RUE DEMOURS, PARIS.

February 27, 1913.

“ DEAR MR. HAWARD,—I am entirely of your opinion concerning the so-called Pre-Palæoliths (or ‘Eoliths’) of Mr. Reid Moir and Sir Ray Lankester. Your article¹ is very strong against them, but, as with all their ‘Eolith-loving’ confrères, it is difficult to discuss with these gentlemen. They affirm their opinions with too much enthusiastic conviction, which prevents them from appreciating the rights of others to doubt.

“ The ‘Eoliths’ of the Pre-Crag bed of these gentlemen are really much older than the deposit which contains them; probably they came from the remains of Miocene or very old Pliocene, or of beds of the sort you have described. If they had been chipped by intelligent beings, it would not have been during the Pliocene period, but at a period too early for the probable geological antiquity of mankind, because it would be necessary equally to admit not only Le Puy Courmy (Miocene) but Boncelles, which is at least Oligocene. Now at Boncelles M. Rutot has discovered at the side of his so-called ‘human station’ a spot yielding similar flints to those of Belle Assise, but much finer, resulting evidently, even in his opinion, from movement of the soil.

“ I have brought to these gentlemen the best flints from Belle Assise. Mr. Reid Moir would not say that these were not made by Man. Sir Ray Lankester was more prudent: he said ‘that they were not due to pressure’. I replied that in any case the fracture and the ‘retouching’ were produced after they were embedded in the Eocene sand. ‘Sand like water produces nothing by pressure,’ so far as static pressure is concerned, but movement of the soil, as you say so well, produces formidable compression.

“ There are some who believe that two or three laboratory experiments are equivalent to the mechanism so complicated and so varied as is that of Nature. There are experiments that one cannot reproduce in the laboratory, and others which are not worth the trouble, or which would cost too much to demonstrate an evident thing. And yet these gentlemen say that it has been done by machinery, and that consequently this proves nothing (as in the case of Mantes).

“ When one examines the geological formation of the ‘Sub-Crag beds’, where one finds the so-called ‘Rostro-Carinates’ and accompanying flints, it is striking that in all the pits where they can be seen one always finds them infallibly and abundantly. This fact is evidence that one is in the presence of a *geological and not an archaeological phenomenon*. Also, there are many other flints in these beds besides those which have been presented as ‘humanly worked’; some show no fracture, others one or two or a few fractures without signification, others are doubtful, although more elaborate in appearance, even in the opinion of the enthusiasts. Others carry written on their facets and edges the history of their long misadventures; the ‘patina’ of the facets proves the repeated action by the mechanical forces which is convincing to unbiassed minds well disposed to discuss dispassionately.

“ Probably there was a relation of ‘cause and effect’ between the production of scratches and the chipping of the edge of the opposite side. One would say

¹ “ F. N. Haward, ‘The Chipping of Flint by Natural Agencies’: Proc. Prehistoric Soc. E. Anglia (read December 4, 1911).”

the flints were fixed in such a manner that a moving mass of ice or earth slipped over, scratching the upper face and 'retouching' the opposite.

"One can often see that the predominating direction of the scratches is almost normal at the chipped edges. Sometimes it is evident that the hard substance which has incised a deep scratch has also dug, in some place where its action has been prolonged, a little 'cupola of contusion'. Later the line was continued as far as the more fragile edge, where the flint breaks, giving a bunch of chips on the other side, thus *simulating a concave scraper*.

"These explanations account for most of the so-called 'worked flints' of Pre-Crag beds and are very like those which you proposed. But it is astonishing that to obtain a good type of 'rostro-carinate' or similar 'implements' so many renewals of chipping of very different ages were necessary.

"So it seems some of the chipped facets can be Eocene, and the continuation of the same working could be Miocene or Pliocene. In any case, the difference of the age between the successive chippings is so great that it excludes the probability of the work of man. Otherwise very different actions seem to have collaborated. Probably in the first bedding of these flints there was the same compression as at Boncelles and Belle Assise; afterwards they were transported by diverse forces (more or less violent) which have left sometimes traces extremely energetic. Others, specially, more or less deeply graven lines, generally limited to one side, are to be considered. Often the other side is similarly favoured by abundant 'retouching'.

"I believe it is necessary to exercise very great caution and possess much familiarity with both 'natural' and 'artificial' chipping of flint to enable one to distinguish the difference. In many cases the natural fracture gives the same appearance as the rough working and chipping of Man. So it is sometimes impossible to distinguish between the work of Nature or Man, and the proof will come from another source than the morphology, which is too deceitful, because the natural inclination of the human imagination is towards the 'morphomaniac'.

"As to the *Ipswich skeleton*, I think that it is senseless to present it as 'Pre-Glacial'. The superdeposited soil is evidently due to the alteration and transport of Boulder-clay down the slope. It is not Boulder-clay, it is a dateless deposit (limon). The body had the position of a buried person, fairly old, perhaps Neolithic. A grave dug in non-stratified soil would not have left any trace after a considerable time. The decalcified soil of the clay and of the grave ('Middle Glacial') would not have permitted the preservation of a body so old at such a shallow depth.

"Finally, the position of the body is absurd. If the body had been abandoned on the seashore it would have been dismembered, and the bones would have been separated, rolled, destroyed. If the body is later than this marine plateau (and it is, since it is partly in the overlying bed), then it dates from this later bed; but if so, if it was a 'moraine de fond', the man could not have been precipitated into it, neither dead nor alive, and a body on the shore of the Middle Glacial sands would have suffered terrible injuries from the glacier. The bones would have been crushed, disjoined, and dissolved by the waters of the glacier.

"All this is incomprehensible on the hypothesis of Mr. Moir, and, on the contrary, is amply explained by yours and mine—burial in date probably late prehistoric, in a modern soil derived by means of the alteration and the reshuffling of the chalky Boulder-clay.

"H. BREUIL."

THE ALKALINE ROCKS OF SOUTH-WEST AFRICA.

SIR,—Since reading Mr. Holmes' paper on the alkaline rocks of Angola (*GEOL. MAG.*, July and August, 1915) I have thought that a brief note on the somewhat similar rocks occurring near Pomona and in Namaqualand may be of immediate interest. I received a collection of these rocks from Dr. A. W. Rogers in 1914, and I intend to visit