

therefore to be sought in the district between Fredville and Chilham, and probably nearer to the former locality than to the latter.

The Silurian portion of the buried Palæozoic floor is then traced westwards through Cliffe, on the Thames below Gravesend, to Ware in Hertfordshire, and northwards through Essex to Harwich, Sutton, and Culford (Bury St. Edmunds). To the south of this the Devonian rocks occupy the area of London, and extend as far as the district of Croydon.

The varying thickness of the overlying rocks is also dealt with, and details are given of three sections, at Ropersole, Chilham, and Bobbing, in the hope that they may be useful to other explorers.

2. "Shelly Clay dredged from the Dogger Bank." By John Walker Stather, F.G.S.

The Dogger Bank fishermen frequently get in their nets a tough peaty material, which they call 'moorlog'. In a paper published in the *Essex Naturalist*, April and July, 1909, this 'moorlog' was described by Mr. H. Whitehead and Mr. H. H. Goodchild, with a report on the plant-remains by Mr. Clement Reid, F.R.S., and Mrs. Eleanor Reid.

In looking over some recently dredged 'moorlog' brought in by a Hull trawler, the author noticed that, adhering to the specimens of 'moorlog', was a dark silty clay, full of marine shells. These specimens of 'moorlog', with the associated shelly clay, were dredged in lat. 55° 24' N. and long. 3° 10' E., at a depth of 20 fathoms.

A collection of these shells was submitted to Mr. Clement Reid, who stated that they are all assignable to very shallow-water species, and probably flourished just beneath low-water level. This and other evidence seems to show that the 'moorlog' in this part of the North Sea rests upon a bed of shelly silt, and the shells in the silt together with the 'moorlog' point to great changes of level in the North Sea Basin.

CORRESPONDENCE.

THE CARVED CRAG '*PECTUNCULUS*' SHELL.

SIR,—I am very glad you have admitted to your pages an illustration of the interesting carved shell of *Glycimeris* [olim *Pectunculus*] found in the Red Crag at Walton-on-the-Naze.

Through the kindness of Dr. Marie Stopes I have been permitted to examine the specimen. In common with some others who have examined the shell, I feel sure that it is not a modern forgery, but an ancient work of art; the present fragile condition of the shell and the staining are proofs of that. The sculpturing is not that of a prentice hand, nor, as the marks show, done with a modern or metal instrument.

That it is not of Pliocene age I am also convinced, and would hazard the following explanation of its history.

The surface deposits of the district in which it was found contain palæolithic implements, proving the occupation of the area by primitive man on its elevation above the sea-level.

The Crag in those days would not be in the condition in which we now know it. It had not then been soaked to so great an extent with the iron-charged drainage waters that have percolated it from palæolithic times to the present

day, reducing its shelly contents to their present condition, and anything buried in it then would be similarly changed with the other contents.

A palæolithic man graved the shell (note the breadth of the nose in connection with Professor Sollas' suggestion as to the affinities of cave man—a later man would not have made it so broad); it was buried with the owner in a grave dug down into the Crag, all traces of which interment with the perishable human remains would become obliterated in the subsequent ages, or if any were left would be overlooked by the finder, who was not, I believe, a skilled geologist, and who certainly was not expecting the prize that came in his way.

B. B. WOODWARD.

PS. Since writing the above I have re-examined the shell with Mr. A. S. Kennard and others. Mr. Kennard pointed out that the hinge-teeth in one place held a small fragment of matrix unlike that of the Red Crag adhering to other parts of the shell, and strongly resembling humus. This little piece of evidence, if correct, will further support the interment theory. Mr. Kennard further considers that the staining in the cuts, especially the mouth, are unlike Red Crag staining, though not modern. It had previously occurred to me that it looked as if red ochre, as known to the ancient hunters, had been rubbed into the cut.

Another friend has favoured me with an attempt to reproduce the carving from memory on a *Glycimeris* shell from the Red Crag of the locality, but his efforts have only served to emphasize the impossibility of reproducing with modern tools and modern conception of the human face, even in caricature, the quaint but characteristic sculpture on the shell in question.

ON A DISCOVERY OF FOSSILS IN THE WEKA PASS STONE,
NEW ZEALAND.¹

SIR,—While not wishing to defend *in toto* the position taken up by Professor Marshall and Messrs. Speight and Cotton on the Younger Rock Series of New Zealand, which has recently been assailed by Professor Park in this Magazine (December, 1911), I should like to announce a discovery of fossils in the Weka Pass Stone which has considerable historical interest. Professor Park in 1905 (Trans. N.Z. Inst., xxxvii, pp. 545–6) and in the paper mentioned stated that he was unable to find recognizable fossils in this rock, and came to the conclusion that the fossils previously reported by Haast and Hutton were probably derived from fallen blocks of the overlying Mount Brown Beds. Professor Park had not had access to the Geological Survey collections, in which there are undoubtedly Tertiary fossils from this rock, and may be pardoned for not recognizing as from the Weka Pass Stone certain fossils in the Canterbury Museum which are labelled simply 'Weka Pass' or 'Waipara'. He is certainly right in maintaining that fossils are not abundant in the Weka Pass Stone, as stated by Haast, for it is possible to search for hours without success. In a recent visit to the Waipara district, however, Mr. Cotton and myself had the good fortune to stumble across several specimens of *Pecten* (*Camptonectes*) *huttoni* (Park), and a single specimen of a *Cirsotrema* allied to *C. lyrata* (Zittel), two of the most characteristic fossils of the Oamaru Series (Lower Tertiary). This discovery proves that Hector, Hutton, and Haast were right in ascribing a Tertiary age to the Weka Pass Stone, and throws back the position to where it was on Hutton's death, viz. that if the Weka

¹ By permission of the Director of the Geological Survey of New Zealand.