

generally, yellowish shales, with remains of small Saurians; and beneath these a mass, certainly more than a hundred feet thick, of black carbonaceous shales, with occasional thin bands of coal. It is found that the diamonds are more abundant and of better quality when the level of the black shales is reached. It seems, therefore, not improbable that the carbon requisite for the formation of diamonds was obtained from these shales. Some other points of minor interest were also noted in this paper.

6. "On a new *Comatula* from the Kelloway Rock." By P. H. Carpenter, Esq., M.A., Assistant Master at Eton College.

The specimen, to which the author's attention was called by R. Etheridge, jun., Esq., is in the National Collection; he proposes for it the name *Actinometra calloviensis*. The specimen is from the Kelloway rock, of Sutton Benger; the whole diameter is 15 mm.; diameter of centrodorsal .6 mm. Three species of this genus are already known from the British Jurassic rocks; two are only known from their centrodorsals, which are each different from that of *A. calloviensis*; the third is *A. cheltonensis*, from the Inferior Oolite, known only by its radials and basals, which are different from those of the present specimen. To this *Antedon Picteti*, from the Valangian of the continent, has some resemblance. It is, however, a true *Actinometra*, differing chiefly from existing forms in retaining its primary basals without their having undergone transformation into a rosette.

7. "Descriptive Catalogue of Ammonites from the Sherborne District." By Sydney S. Buckman, Esq.

In this paper the author gave a list of the Ammonites from the Inferior Oolite of the neighbourhood of Sherborne, in which he enumerated about 47 species, and stated that he had about 50 more which appear to be undescribed; fully one-half have the mouth-termination perfectly preserved. The author indicated the zones into which the rocks furnishing these Ammonites could be divided, as shown at Osborne, near Sherborne, at Wyke Quarry, and at Bradford Abbas, and indicated the characteristic fossils of each; he also gave the principal synonyms of the species referred to, and discussed some of their characteristic peculiarities.

CORRESPONDENCE.

THE PLIOCENE BEDS NEAR CROMER.

SIR.—I have read with much interest the address of my colleague, Mr. Blake, of which an abstract was given in the *GEOL. MAG.* for June. There are, however, one or two points in it to which I must take exception. Mr. Blake may be, and probably is, right in considering that the Weybourn Crag is the equivalent of the Chillesford Clay, but I have avoided correlating them, for at present there does not appear to be any satisfactory evidence either for or against this view. The exact correlation of the different Pre-glacial soils is also very unsafe, and near Cromer probably incorrect.

With regard to the division between Pliocene and Pleistocene, Mr. Blake brings forward no evidence for altering the line I have

provisionally drawn; and until some reason is given, I think the *Leda myalis* Bed may be left with the Crag. A land surface, as we know from the Purbecks and Coal-measures, does not necessarily mark a break in the series.

While agreeing with Mr. Blake that the term "Forest Bed" is a misnomer, the suggested alteration to "Rootlet Bed" seems a good deal worse. As well might we class together the London and Oxford Clays, because at the present day the roots of the same species of trees penetrate both. The rootlets of the Forest Bed penetrate whatever happens to be underneath them; sometimes the Weybourn Crag, sometimes higher beds. Even if names are not quite correct, it is better to accept them with a slightly altered meaning than to upset all our nomenclature for every fresh theory. Therefore I think the name "Cromer Forest Bed," having now been in use for over 50 years, ought not be changed, but should be accepted with the meaning that it consists of a series of sub-aerial, lacustrine, and estuarine beds formed in, and from the débris of, a forest-clad country.

Mr. Blake uses the name "Bure Valley Beds" for what was termed the *Leda myalis* Bed; but I have already shown that Messrs. Wood and Harmer's typical Bure Valley fauna comes from the Weybourn Crag beneath, instead of above, the Forest Bed,¹ while at present the *Leda myalis* Bed has not been recognized in the Bure Valley. The test of thickness is of no value in these shallow-water beds; for after they have once reached the sea-level, they may remain for an indefinite time without either erosion or deposit. In our British Pliocene beds it should be remembered we have only the feather edge of a formation, which must be much thicker where the water was sufficiently deep, and perhaps might equal the 700 or 800 feet of the Sicilian Newer Pliocenes. I am astonished at Mr. Blake's statement that the thickness of the beds between the Cromer Till and the Chalk never exceeds 30 feet; the *average* measured thickness exceeds that amount, and at Happisburgh I have reason to believe that the Forest Bed alone is more than 60 feet, for I have dredged and found it in place in 10 fathoms near the shore, and it extends upwards to high water.

CLEMENT REID.

HORNSEA, HULL, 6th June, 1881.

OBLIQUE AND ORTHOGONAL SECTIONS.

STR,—If Mr. Day will examine the figure given with his letter in the March Number of this MAGAZINE, he will perceive that Mr. Fisher's 'cavils' are well founded. Not only has Mr. Day interchanged the symbols α and β , but his angle ϕ has no connexion whatever with anything in Mr. Fisher's paper. Mr. Fisher might no doubt have given a simpler proof of each of his equations (2) and (3) by the method indicated by Mr. Day, but one figure would not then have sufficed for the whole proof.

Mr. Day's suggestion of casting a shadow in sunlight, in order to find the form of outcrop, is, as Mr. Fisher readily admits, useful, but he does not tell us how to carry out the inverse process, viz., given

¹ See *GEOL. MAG.* Dec. II. Vol. IV. p. 300; and Vol. VII. p. 548.