

ANALYSIS OF THE RED CHALK OF HUNSTANTON, ON THE COAST OF NORFOLK.

BY R. CALVERT CLAPHAM, ESQ.

During one of the excursions of the late meeting of the British Association at Cambridge, the red chalk of Hunstanton was examined, and as I am not aware of its having been previously analysed, I obtained a specimen to analyse.

The bed of red chalk is about $3\frac{1}{2}$ feet thick, and runs along the coast, distinctly seen for some miles. It rests immediately upon the Greensand, and above lies a bed of white chalk, varying in thickness from 25 feet downwards.

Professor Phillips, of Oxford, informs me that this bed of red chalk has been traced from Speeton, in Yorkshire, to Spilsby, in Lincolnshire, and reappears at Hunstanton, in Norfolk.

It contains many fossils, chiefly of the White Chalk, and also fossils of the Greensand and Gault.

It is an interesting question to consider what is the cause of colour in the red chalk. Professor Phillips thinks that it is derived from decomposed glauconite or decomposed augite (both of which contain protoxide of iron and magnesia). It may also be caused by decomposed iron pyrites, as it will be observed it contains a trace of sulphate of lime.

At Speeton it is in some places a soft red clay, and is used to colour bricks and rough pottery.

The following is the analysis:—

	Red chalk.	White chalk.
Carbonate of lime	80·04	95·80
Sulphate of lime	0·10	trace only.
Peroxide of iron	9·60	1·08
Alumina	1·42	0·52
Magnesia	nil.	0·48
Silica	9·28	2·28
Manganese	trace.	0·11
	100·44	100·27

Walker, Newcastle-on-Tyne, November, 1862.

CORRESPONDENCE.

Ages of Mineral Veins.

SIR,—Upon reading your report upon Mr. Moore's paper on the "Pæontology of Mineral Veins, etc.," before the British Association, a circumstance bearing upon the question occurred to my recollection, which I would have mentioned had I been present in the Section at the time the paper was brought forward. Mr. Moore shows that lead veins in the

Mendip district and elsewhere reveal contents of Secondary age. I noticed many years ago, when the railway was being made from Frome to Radstock, that lead ore had been present in the inferior Oolite, where it reposes immediately upon the Carboniferous Limestone, at a spot near the letter "k" in the word "Pike" on the Ordnance map, about a mile (to scale) north of Frome. If my memory serves me, the ore occurred in veins in joints in the Oolite. This proves that, even if the lead veins of that district are not wholly of Secondary age, at any rate the deposit of ore was not *concluded* until after the deposition and solidification of the inferior Oolite.

I am, Sir, faithfully yours,
O. FISHER, F.G.S.

Elmstead, Colchester, Nov. 10.

Druid Sandstone.

DEAR SIR,—In your last number of the 'Geologist,' page 450, Mr. Bented makes the remark, that the statement of Dr. Mantell still holds good, that no regular stratum of the Druid Sandstone has yet been discovered in this country; and its geological position is still undetermined.

The following observations will, I believe, throw some light upon this question. Close to the village of Broodmayne, about five miles from Dorchester, on the Wareham road, are several blocks of Druid Sandstone, in two fields on each side of the road, close to a farmhouse, marked "Little Mayne" on the map. These blocks have been a puzzle to the local archæologists, who have endeavoured to give them an antiquarian value, and to explain their arrangement as belonging to some ancient so-called "Druidical" work. They are however a natural deposit, and as I conceive, are, so to speak, *in situ*; that is to say, they have not travelled any distance from the place where they were formed. The locality is on the line of junction with the Chalk of a small outlier of the Lower Tertiaries. These beds are extremely variable in character, and at this spot a fine sharp white sand crops out on the north side of the shallow valley in which the blocks lie. In the side of the road this sand has been cut into, and two of the blocks of sandstone are seen, one partly cropping out on the surface, with its lower portion embedded in its native sand. The other is entirely enveloped in the sand, except as far as it has been exposed in cutting the road.

The blocks are evidently indurated masses, or septaria of this bed of sand.

The denuding forces which have scooped out the valley, have removed the sand and left the blocks behind.

There are numerous other blocks of a similar character on and beneath the lofty hill called Blackdown, near Portisham. These however are conglomerates of large flints. Some lie on the top of the hill on the upper surface of the chalk, almost *in situ*, as at Mayne, and close to the Tertiary beds from which they came; others have been carried by some torrential action into the deep valleys of Portisham and Bridehead beneath.

I remain, faithfully yours,
O. FISHER.

Elmstead, Colchester, Dec. 10.
