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EXCURSION TO BOURNE END.

MAY 27TH, 1916.

REPORT BY LLEWELLYN TREACHER, F.G.S., *Director of the Excursion.*

THIS Excursion was arranged to enable members to examine the district in the angle formed by the Thames and the Wycombe stream. It is a projecting spur of the Chilterns, consisting of Chalk covered on the top, and at various levels on both flanks, by thick deposits of gravel and brick-earth. On the narrow top of the ridge is the straggling hamlet of Flackwell Heath, celebrated for its cherry orchards.

A party of seventeen arrived at Wooburn Green Station about 3 o'clock, and proceeded up the narrow lane westward to the large chalk pit close by at a level of 200 ft. O.D. or 100 ft. above the bottom of the valley. The Chalk exposed is in the lowest part of the *M. cor-anguinum*-zone and is fairly fossiliferous, *Micraster* and *Echinocorys* being very abundant. Bryozoa are also common, and among many species there may be noticed *Fungella dujardini*. The flints are small and mostly solid, but some specimens are carious and others contain sponge remains.

Farther up the lane, and just above the 300 ft. contour, a nearly level platform or terrace makes quite a distinct feature along the valley side. A section in the brickyard on the right side of the road showed masses of gravel and stony brick-earth disposed in unaccountable confusion to a depth in places of at least 30 ft. The gravel, some patches of which are loose and shingly, consists mainly of rolled flints and flint pebbles. One large pebble of quartz was observed, but it had probably fallen from the surface soil. Traces of bedding could be seen in the brick-earth, but the bedding-planes were short and impersistent. On the whole the deposit looked very unlike the gravel of an ordinary river terrace.

The Director called attention to what seems to have been a small bowl-shaped excavation in the top of the section, now lined with a thin layer of black ashes, and filled in with surface soil. He considered that this was the remains of a prehistoric dwelling used when the inhabitants of the country were mere hunters, moving about from place to place in pursuit of game,

and without any permanent habitations. A hole would be dug to hold the fire and a wigwam of boughs erected over, or a shelter put up around it, and here the hunters rested for a night or two. Traces of these dwellings are common in this part of the country, nearly every gravel pit revealing them, and some contain bits of rude pottery, flint implements of the polished type, and, in one instance, perforated lumps of burnt clay known as loom-weights. In the present instance nothing besides the ashes has as yet turned up.

The walk was then continued to the top of the hill, the level at Vicarage Farm corner being 370 ft. O.D. Looking eastwards from this point the country presents the appearance of a nearly level plain sloping gently southwards, and deeply dissected by the narrow gorge-like Wycombe Valley and its various branches. The Director suggested that this feature may possibly represent a very early flood-plain of the Thames. A discussion followed on this subject, from which it appeared that it would be well to wait for the publication of the revised Geological Survey Map of the district, with its accompanying Memoir, before forming a definite opinion.

The next section visited was a gravel pit in a wood about half-a-mile west of this spot, and was reached by road, and then by the footpath opposite the Green Dragon. It is about 15 ft. deep, the surface level being considerably above the 300 ft. contour. The gravel differs from that in the last mentioned pit in that it is more sandy and evenly bedded, but chiefly in the abundance of large pebbles of brown and liver-coloured quartzite.

The party then took the footpath down the western slope of the Flackwell Heath ridge, an important feature of which is a series of steep valleys converging to a point near Pigeon-house Farm, and thence continued at a gentler gradient to the Thames. The lower end of this valley contains a thick deposit of gravel which projects as a sort of fan out on to the present flood-plain of the main river. The gravel is well exposed in a large pit close to the Marlow Road, nearly opposite the lane leading down to Spade Oak Ferry. The section shows two types of gravel. The lower part, sandy, current-bedded, and containing many pieces of Chalk Rock, may belong to the Taplow terrace of the Thames Valley, being at about the same level. The upper part is stiffer, less bedded, and is marked by several seams of clay. It is probably down-wash from the Flackwell Heath gravel.

During the few minutes spent in this pit the following objects were noted: a fragment of a mammoth's molar and a Jurassic *Gryphaea* from the bottom gravel, and, lying about, large sarsens, large flints, and a boulder of Hertfordshire pudding-stone.

On the party leaving the pit, about half-past five, the

excursion terminated, members proceeding to Bourne End Station by various routes.

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VISIT TO THE GEOLOGICAL DEPARTMENT, UNIVERSITY COLLEGE.

SATURDAY, JUNE 3RD, 1916.

REPORT BY A. L. LEACH, F.G.S.

THIS visit was arranged to enable members to examine, preparatory to the proposed Long Excursion to Ravenstonedale and Shap, the collection of Lower Carboniferous fossils from Westmorland, arranged according to the faunal succession established by Professor E. J. Garwood. A party of twenty-two members assembled at the College at 3.30 p.m. Professor Garwood explained the system of zones, sub zones and bands comprised in the palæontological sequence of the north-western province of Carboniferous rocks. The fossils characteristic of each faunal division were then inspected, and several interesting comparisons were instituted with regard to the equivalent divisions in the rocks of the Bristol area and of the south-western province in general.

After tea, which was served in the department, the President thanked Professor Garwood for his admirable demonstration, and expressed also the appreciation of the members for the assistance kindly given by Miss Goodyear.