again Chalk was reached in places, sometimes with a trace of the Reading Beds (sand).

Finally the Highfield brickyard, northward of Wood Lane End, was visited, where masses of pebbles occur in the loam. This pit is notable for the finding of flint implements, as described by Sir John Evans (*Quart. Journ. Geol. Soc.*, vol. lxiv., pp. 3-5), whose adoption of Mr. Worthington Smith's view that the brick-earth is a deposit of lacustrine origin was here alluded to.

A trudge of about two miles through the snow brought the party back to Boxmoor, where a well-earned tea was enjoyed at the Railway Hotel, and after a vote of thanks to the Director, proposed by Mr. J. Parkinson, the return to London was made by the 7.35 train.

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EXCURSION TO CHARLTON AND ERITH.

SATURDAY, MAY 2ND, 1908.

Director: A. L. LEACH.

Excursion Secretary: A. C. YOUNG.

(*Report by THE DIRECTOR*)

THE party, in number about thirty, arrived at Charlton at 2.25 p.m., and walked to Gilbert's Pit in Hanging Wood, where in a fine section of the Lower London Tertiaries the structure of these beds is shown very clearly. The Director briefly indicated the chief features of interest in the pit, which affords one of the best general Tertiary sections in the whole London District. From the "bull-head" at the base of the Thanet Sand to the Blackheath pebble-beds, the series is fully represented.

The Thanet Sand, for which the pit is now worked, yields a few internal sand-casts of two species of *Pholadomya*, and specimens recently obtained were exhibited on this occasion. The specimens were perfect but very fragile, and every trace of shelly material had disappeared.

At the junction of the Thanet Sand and the Woolwich Beds

a thin pebble-bed was seen, and the method of working the pit makes the division quite clear. As only the Thanet Sand is of economic value, the overlying beds are stripped off, and a level working platform is formed on the top of the Thanet Sand. Two species of *Cyrena* (*C. cordata* and *C. cuneiformis*) were obtained in the Woolwich Clays, and small crystals of selenite were found

FIG. 38.—PLAN SHOWING THE CAMP IN HANGING WOOD, CHARLTON, AND THE PRESENT EXTENT OF THE SAND-PITS.

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in cavities in the hard mottled clays. The general sequence of the Woolwich Beds, viz., bottom-bed of green loam, shelly clays, thinly bedded clays and loams, was shown to be present here.

An irregular junction was traced between the Woolwich and the Blackheath Beds, and reference was made to the variable position of the base of the Blackheath pebble-beds in relation to the Woolwich Beds. Here the base-line runs generally through

the "thinly-bedded loams," but in one part of the pit the pebble-beds cut down through the "shelly clays" into the "bottom green loam," thus recalling the section opposite Hope Cottage, Plumstead, which was visited by the Association in 1906.

The party now walked to the top of the hill to examine some sections of Woolwich and Blackheath Beds exposed on the steep slope above Maryon Park. Here the *Cyrena* clays are well developed, and the variable character of the pebble-beds is exemplified, small pea-gravel passing laterally and vertically into beds of much coarser structure. Some interesting examples of "hill-side drift" or "run of the hill" were examined on the slope above the railway.

The remains of an ancient camp (see Fig. 38) were noted on the hill where the continued extension of the sand-pits is rapidly completing the destruction of what was once an important earth-work. Some evidence of its age is afforded by the vases (probably Roman) discovered in the inner trench in 1906, but the camp itself may be pre-Roman.

At 4.4 p.m. the party left Charlton, and arrived at Erith at 4.29 p.m. The great ballast-pit (Parish's) shows the same general arrangement of Lower London Tertiaries, but red mottled clays in the Woolwich Beds are more pronounced than at Charlton, and the section includes also the base of the London Clay. Here the full sequence of the Lower London Tertiaries can thus be examined in one general section. The Thanet Sand is almost unfossiliferous, but some fish vertebræ were obtained by Dr. A. E. Salter a few years ago. The Woolwich Clays also appear to be unfossiliferous, but this may be due to decalcification.

On ascending a clayey slope of "foundered" Woolwich Beds a patch of drift was seen resting in a hollow of Blackheath Beds; a few mammoth teeth have been obtained here. In the northern corner of the workings a remnant of the pebbly basement bed of the London Clay was seen overlain by a few feet of weathered brown clay, but the section was not so good as on the occasion of the visit (September 28th, 1907) of some of the delegates to the Centenary of the Geological Society, when the succession was quite clear.

In a new cutting in this part of the pit a pebble-bed, probably the Basement-bed of the London Clay, was seen dipping at a high angle and becoming involved with Blackheath Beds. The Director considered this to be due to landslips, and referred to the section* (seen by Mr. Whitaker many years ago) which showed Pleistocene drift underlying Eocenes.

After tea at the Prince of Wales Hotel, Erith, the Director was thanked for his services, and the party returned to London by the 7.4 p.m. train.

* "Geology of London," *Mem. Geol. Surv.*, vol. i, p. 141.

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EXCURSION TO SAVERNAKE AND BEDWYN.

SATURDAY, MAY 16TH, 1908.

Directors : H. J. OSBORNE WHITE, F.G.S., AND LLEWELLYN
 TREACHER, F.G.S.

Excursion Secretary : GEORGE W. YOUNG.

(*Report by* H. J. OSBORNE WHITE.)

THE London party reached Savernake shortly after 11.0 a.m., and were joined at the station by a few of the Association's Wiltshire members and friends, who brought the number up to seventeen.

The Great Western Railway's station and goods-yard at Savernake are situated in a wide cutting, which shows, on its northern side, a long and clear section, about 20 ft. in depth, of light grey-green glauconitic sand, containing bands of rough calcareous concretions, and belonging to the highest part of the Selbornian Series.

When the cutting was being widened, in 1504, many fine siliceous sponges, of the species occurring in the well-known Warminster Greensand, were to be obtained, but since the sand has been cut back to an even face these and other fossils are less easily found. The few forms observed on the present occasion included: a large *Nautilus* (probably *N. expansus*), *Cidaris* sp., *Catopygus columbarius*, *Discoidea subuculus*?, *Pachypoterion* (fragments, probably *P. robustum* and *P. compactum*), and numerous examples of a branching object, like the "*Spongia paradoxica*" of the Lower Chalk of Hunstanton.

Leaving the station, the party walked northward up the Chalk escarpment to Durley, noticing on the way a shallow cutting in the Lower Chalk, on the Midland and South-Western Junction Railway, which here runs parallel to the Great Western line. Mr. W. H. Bell, who was present, suggested that the northern limb of the Pewsey anticline is broken at this spot by a strike-fault, running between the two railways.