

(30 feet in *Memoir*) assigned to it cannot now be seen in any part of the valley. No flint implements have been found, nor are any shells recorded. The bones found in the brickearth and in the underlying gravel include elephant, horse, ox, deer, and musk sheep; those found in recent years have been presented by Mr. A. Gregory to the British Museum. The gravel which underlies the true brickearth (but not continuously) varies from a few inches to 9 feet in thickness. No good section was exposed on this occasion.

The "drift," as seen at present, appears to be largely a "rain wash" ("hillside drift" or "run of the hill"), and bears little resemblance to the well stratified deposits in the Crayford pits, but the main mass of the deposit, which has been almost entirely converted into bricks, may have shown more definite stratification.

The party now crossed the valley and strolled through "The Pines" to Bostal Heath, where tea was obtained at the Lodge. On the way homeward the President proposed a hearty vote of thanks to the Directors for this excursion through an interesting piece of country. The Directors having suitably responded, the members proceeded to Plumstead station, and returned to London by the 7.33 train.

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EXCURSION TO ASHTEAD AND HEADLEY.

SATURDAY, MAY 5TH, 1906.

Director: GEORGE W. YOUNG, F.G.S.

Excursion Secretary: A. H. WILLIAMS.

(Report by THE DIRECTOR.)

LEAVING Waterloo Station at 2.7 p.m. the members alighted at Ashtead, where they were joined by several others, the whole party numbering 38. Soon after leaving the station a halt was

made while the Director pointed out the general features of the district. The Lower London Tertiaries form a narrow band dividing the Chalk mass on the south from the broad expanse of London Clay on the north.

Ashtead is but one of a remarkable line of villages on the road running from Croydon to Guildford, all of which are situated on this outcrop. No doubt the early settlers were influenced in their selection of a site, quite unconsciously, by the geological conditions. Here the London Clay would provide the woodlands, and the Chalk Downs the grazing grounds for flocks, while the variable beds between would yield the all-important good water supply.

Without entering into the whole question of the origin of parish boundaries, their outlines in this district are corroborative of this idea, and suggest that they have come down from very early times. They form long strips of land lying across the road connecting the villages so that each parish gets some of each kind of soil. This is especially noticeable west of Leatherhead.

After passing through Ashtead Park, Bishop's Chalk Pit (No. 58),* at the corner of Headley Lane, was reached. The main object of the excursion was to demonstrate the presence of the *Marsupites*-zone in this part of Surrey, and the Director explained that although at the time he read his paper before the Association he had not actually found *Marsupites* in this pit, he strongly suspected its presence owing to the proximity of the pit to the Tertiary border, and subsequently he did find it. The 300 ft. contour line is about half-way up the pit face. The main face, about 45 ft. high, is based in the zone of *Micraster cor-anguinum*. Fossils were not very numerous, but it had yielded the following: *Micraster cor-anguinum* (and var. *latior*), *Echinocorys vulgaris* (dome shaped), *Echinoconus conicus* (tumid form), *Rhynchonella plicatilis*, *R. reedensis*, *Inoceramus* sp., *Actinocamax* (? *verus*), *Porosphaera globularis*, *P. patelliformis*, and several *Polyzoa*. The beds dip north at about 2 to 3 degrees, and on the north-eastern flank the *Marsupites*-zone is displayed, with *Uintacrinus* below and *Marsupites* above. The chalk is very white and soft, but rather badly weathered, so that the actual junctions cannot be made out. This part had afforded the following fossils: *Marsupites*, *Uintacrinus*, *Bourgueticrinus* (nipple-head) *Echinocorys vulgaris* (sub-pyramidal var.) *Cidaris sceptriifera*, *Inoceramus*, *Ostræa*, *Stomatopora granulata*, and *Hydractinia*. On this occasion a fair collection was made. After a short search all the zone-name fossils, *M. cor-anguinum*, *Uintacrinus*, and *Marsupites* were found *in situ*.

A move was next made along Headley Lane, passing a large shallow pit (No. 59), where the Director had found *Uintacrinus*.

* The numbers in brackets refer to the list given in "The Chalk Area of N.E. Surrey," G. W. Young, *Proc. Geol. Assoc.*, vol. xix, p. 188.

For a short distance the road runs along the Ermyn Street, and affords a fine view of Epsom Downs and racecourse. Soon after passing Headley Court, Clay Lane pit (No. 189) was reached. This is an interesting exposure close under the Tertiary beds of the Headley outlier, and shows about 30 ft. of massively bedded chalk, all belonging to the *Marsupites*-zone. It lies on the 500 ft. contour line, and is just two miles south of Bishop's Pit. This gives a rise of 100 ft. per mile, equal to a general dip of 1 degree, but as the dip in Bishop's Pit is more than double that there is probably a local syncline here, which would also account for the preservation of the Tertiary beds. The chalk is white and soft, but scattered flints occur in greater numbers than is usual in this zone. Only a short time could be allowed for collecting, but it sufficed for finding several plates of *Marsupites*. A full list of fossils is given in the paper already alluded to.

One-third of a mile farther on is the well-known roadside section at Oyster Hill, where the Woolwich and Reading beds contain an abundance of *Ostræa bellovacina*, but time did not permit of more than a passing glance. Tea was taken at the Clermont Inn, Tot Hill, and at its conclusion Mr. Monckton gave a short but interesting description of the Tertiary beds in this neighbourhood, after which the shortest route was taken to Leatherhead, whence the party returned to town by the 8.7 p.m. train.

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EXCURSION TO BOXFORD AND WINTERBOURNE (BERKS).

SATURDAY, MAY 12TH, 1906.

Directors: H. J. OSBORNE WHITE and LL. TREACHER.

Excursion Secretary: G. E. DIBLEY.

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

ON arriving at Newbury, a little before 11 a.m., a party of nineteen walked through the town to the parish church, where Mr. Frank Comyns gave them an outline of the history of the building, and drew their attention to the more interesting features