

EXCURSION TO ST. GEORGE'S HILL,
WEYBRIDGE.

SATURDAY, MARCH 29, 1919.

REPORT BY C. N. BROMEHEAD, F.G.S., *Director of the Excursion.*

DESPITE the fact that the ground was deeply covered with snow, a party of a dozen met at Weybridge Station and walked to St. George's Hill. The first section visited was the sandpit at the old brickworks; many new houses have been built and the site of the claypit is occupied by a garden. The sandpit, however, is still untouched and shows the top part of the Bagshot Sand and the base of the Bracklesham Clays. The sands are seen to be clearly stratified in horizontal layers, often as little as a quarter of an inch thick, but individual layers are minutely current-bedded; many seams of pipe-clay are interstratified with the sands. In parts of the section the colouring is very brilliant, the sands being deep-pink, yellow and silver-white, while the pipe-clay is crimson, grey or white, recalling the famous Alum-Bay Sands of the same age. The Bracklesham Clays occupy a basin cut in the sands across the bedding; they are lilac-grey in colour and somewhat laminated, developing a prismatic structure on weathering. Both the sands and the clays show staining by iron, but at the contact of the two materials the iron is segregated to form an ironstone. This ironstone was, at one time, extensively worked by means of shallow trenches, which follow the junction nearly all round the hill, and afford a useful guide in mapping. The ore was smelted and wrought at a mill, now known as Ham Mill on the Wey. Dr. Eric Gardner, of Weybridge, has traced the history of this industry and finds that it was in existence not less than 33 years, from 1779 to 1812. On the original one-inch geological map of the district, of which the topography is dated 1815 the site of the works is still marked as "Iron Mills." A picked specimen of the ironstone was analysed at the Survey Laboratory and found to contain only 23 per cent. metallic iron. The late Mr. H. B. Woodward conducted an excursion to this locality in 1911 and the report¹ gives a photograph in this section (Plate xxxiv., fig. 2.), which is also shown in the Survey Memoir² (Plate iv.), but the former working of the ironstone was not known at that time. It is of special interest as being the only instance of the use of a Tertiary ironstone in the London Basin.

The party then proceeded to the top of the hill. On the way a small excavation, where a path had been cut to a new house, showed a few feet of structureless sand belonging to the Barton Beds. These beds were not shown here on the original one inch geological map, but were recognised as of Barton age by

H. B. Woodward ; at the time of his excursion they were exposed beneath the Plateau gravels, and Mr. Monckton expressed his agreement as to their age¹. The director explained that he had succeeded in mapping them on the six-inch Geological Survey maps, though the new section showed that at this point he had not allowed sufficient thickness for them : in tracing the boundary round the outlier he had found scarcely any trace of the pebble bed which forms such a marked feature at the base of the Barton Beds further west. A subsequent excursion to Stanners Hill would be to some extent complementary to the present one and enable members who came to both to see a fairly complete sequence of this division of the Eocene (*see below, p.130*). On reaching the top of the hill the pits in the Plateau Gravel were found to be obscured and a small exposure seen by the Director a few weeks previously had also been filled in. A description of these gravels and discussion of their origin will be found in the Survey Memoir on the district (pp. 59-62, 66).³

The ancient Camp was next examined ; the position of the ramparts was clearly marked out by the snow and magnificent views of the surrounding country obtained. A very full account of the camp and of various archaeological finds connected with it has been published by Dr. Gardner.² The director had a copy of the pamphlet and members were able to follow his brief summary of its contents on the maps and plans. The steep-sided hill formed a natural position for a stronghold, and had the further advantage of being almost surrounded by rivers, the Thames on the north and the Wey and Mole on the west and east. The only "land" approach was from the south past Silvermere, where the narrow neck of ground between the two rivers was low-lying and swampy. Across each river was an ancient ford reached from the camp by trackways. Dr. Gardner showed that at the fords numerous antiquities of the Bronze Age (approximately fifth century B.C.), had been found, and others along the line of the trackways ; illustrations of many of these are given in his paper. In the director's opinion he had shown conclusively that the camp belonged essentially to the Bronze Age. A later addition to the camp, carefully examined by Dr. Gardner, was of more directly geological interest. On the north side of the camp, just outside the ramparts, was the head of a little gully known as "The Dell" ; here was a small spring thrown out near the junction of the Barton Sands, and the underlying clays. Such a spring formed a suitable water supply for the camp ; at a somewhat later date than that of the construction of the main ramparts a subsidiary trench and mound had been thrown round the Dell to protect it.

The party then descended the southern slope of the hill ; near the bottom the old trenches for ironstone were noticed and a roadside cutting again showed the junction of the Bracklesham

Clay and Bagshot Sand. Here, however, there was no evidence of contemporaneous erosion, the line between the two divisions, marked as before by ironstone, being horizontal and coincident with the bedding in contrast to the basin-structure seen at the first pit. Close to this exposure was a new pit, opened to obtain sand for the Golf Links, in the Bagshot Sand. Some 20 feet of sand was exposed, and the current-bedding well seen.

Leaving St. George's Hill by the South lodge, the main road was followed to Cobham. At the bridge over the Mole the director pointed out the various terraces of river gravel; from a temporary excavation in a small patch of gravel mapped by him as Boyn Terrace, Dr. Gardner had recorded several good palaeoliths of Chellean type, but no exposures were now available.

Tea was obtained at Street Cobham, after which most members walked through Church Cobham to the station and caught the 7 o'clock train to Waterloo. Mr. T. W. Reader acted as Excursion Secretary.

REFERENCES.

- Maps, iin. Ordnance, Small Series Sheets, 269, 285, 286.
 iin. Ordnance Large Series, Sheet 115.
 iin. Geological Old Series, Sheet 7.
 iin. Geological New Series, London Sheet 3.
1. 1911. WOODWARD, H. B.—"Excursion to Weybridge and St. George's Hill," *Proc. Geol. Assoc.*, vol. xxii, pp 237-240.
 2. 1911. GARDNER, E.—"The British Stronghold of St. George's Hill. Weybridge," *Surrey Archæol. Collections*, vol. xxiv.
 3. 1915. DEWEY, H. and C. N. BROMEHEAD.—"Geology of Windsor and Chertsey" (*Mem. Geol. Surv.*), Price 2/6.