(See Fig. 1). Time would not allow of the excursion being extended as far as the escarpment, so a descent was made into the valley of the Arun, near Houghton. The rest of the way lay beneath the steep bluffs and hanging woods which border the Arun marshes. The study of the scenery and contours of the district being the special object of this excursion, no stop was made for the purpose of collecting fossils.

After tea at the Bridge Hotel, Arundel, a return train at 8.12 p.m. was taken to London.

REFERENCES.

Geological Survey Map, Sheet 9.

GODWIN-AUSTEN, R.—“On the Newer Tertiary Deposits of the Sussex Coast.” ‘Quart. Journ. Geol. Soc.,’ Vol. xiii, p. 40 (1857).

PRESTWICH, J.—“On the Westward Extension of the Old Raised Beach of Brighton.” ‘Quart. Journ. Geol. Soc.,’ Vol. xv, p. 215 (1859).

DIXON, F.—‘The Geology of Sussex,’ 2nd edit., Brighton (1878).

REID, C.—“On the Origin of Dry Chalk Valleys and of Coombe Rock.” ‘Quart. Journ. Geol. Soc.,’ Vol. xliii, p. 364 (1887).

EXCURSION TO SHENLEY.

SATURDAY, JULY 19TH.

(In conjunction with the Hertfordshire Natural History Society.)

Director: UPFIELD GREEN, F.G.S.

(Report by THE DIRECTOR.)

In July, 1884, the Members of the Hertfordshire Natural History Society paid a visit to Newberries, to inspect a pit in which the Hertfordshire Pudding-stone was believed to occur *in situ*. After a lapse of six years the same spot was now again visited, and in anticipation of the event the pit had been further developed and opened up, by the kindness of Mr. H. Lubbock, the present owner of the estate. The bed previously seen was now found to consist of large and small blocks of conglomerate embedded in clay, overlying a stratum of black-coated pebbles of irregular size and much intermingled with sand and clay. The Director, referring to a plan and sections of the locality on a large

scale, pointed out that the spot on which they were then standing should be occupied by the upper beds of the Woolwich and Reading Series, and that the basement bed, if existing at all near that spot, should be at some distance further north. He, however, believed that the surface no longer consisted of these beds *in situ*, but that they had been re-arranged and intermixed with detritus of the London Clay washed down from the higher ground lying to the south by the stream which now flows at a much lower level. Referring to specimens he had brought with him, collected from various parts of this county and Buckinghamshire, he pointed out that only here and near North Mymms was the Pudding-stone found in immediate contiguity to the present outcrop of the Reading Beds, while elsewhere extending beyond Missenden in the west it was found embedded in Drift gravels, clay, or clay with flints. With regard to the conglomerate itself, great variation in the composition of the inclusions and the matrix was shown. Some specimens partook more of the nature of a breccia than a conglomerate, and while the inclusions in some, notably those under review, consisted almost entirely of pebbles of the Reading Beds, in others angular and sub-angular fragments of flint and chert, with rolled pebbles of chalk and clay silicified, were largely present. In some cases the silica cementing the sandy matrix had attacked and partially dissolved the pebbles. Passing on to the question as to the origin and mode of formation of these blocks, the Director expressed an opinion that they were of fluvial origin and formed at the debouchure of streams flowing northward, which, draining the London Clay, cut through the Woolwich and Reading Beds, and deposited the detritus either in subterranean streams or in the bed of a Pre-glacial river, having a course parallel to and south of the Chalk escarpment. Two remaining representatives of these northern streams were the Mims stream, flowing from South Mims, which only after heavy rains flowed into the Colne, disappearing at other times, on reaching the Chalk, through various swallow-holes, and the Medburn, flowing from Elstree Reservoir also into the Colne, the swallow-holes near Radlett, through which the greater part of the stream formerly disappeared, having been plugged. The silica subsequently cementing these re-arranged materials he considered to have been derived from the decomposition of the soluble silicates of the felspathic constituents of the Glacial Drift. Time would not allow of a further development of his views on this occa-

sion, but he hoped to embody them at some future time in a detailed paper on the subject.

REFERENCES.

Geological Survey Map, Sheet 7. Drift Edit.

HOPKINSON, J.—“Introduction to Pryor’s ‘Flora of Hertfordshire,’” 8vo., London, 1889, pp. i-lviii.

WHITAKER, W.—“Geology of London.” ‘Mem. Geol. Survey’ (1889).

EXCURSION TO THE MENDIP HILLS.

AUGUST 4TH TO 9TH, 1890.

Directors : REV. H. H. WINWOOD, M.A., F.G.S., and HORACE B. B. WOODWARD, F.G.S.

(*Report by THE DIRECTORS.*)

Monday, August 4th.—*Frome, Holwell, Vallis, Vobster, Luckington, and Mells* (Director : REV. H. H. WINWOOD).—A party of about 40 in number, most of whom had arrived in Frome on the previous Saturday, left the George Hotel on the morning of Monday, August 4th, in brakes and carriages, in the direction of Holwell and Nunney, for the purpose of visiting the many sections of abnormal Secondary deposits for which this particular neighbourhood is so celebrated. Passing through the suburb called the Butts—probably so named from the archery butts having been here erected in the days when bows and arrows were in use—their route traversed those flaggy and shelly limestones of the Lower Oolites, to which the name of Forest Marble has been given, and which form the building-stone of the greater part of the town of Frome. The maximum thickness of the clays, sands, grits, and limestones of this formation is here 130ft. The Chalk hills on the left, with the bold eminence of Cley Hill, near Warminster, and the Greensand slopes of the Longleat Woods, stood out clearly in the distance—the vallum forming the camp on Cley Hill being clearly defined. Skirting Marston Bigot (the seat of the Earl of Cork), a bulge in the wall indicates the care with which a very fine sycamore tree has been guarded, the seeds of which had been brought home from some distant land by a former noble proprietor. Turning off the main road at Nunney Catch, in the direction of Holwell, a narrow band of Fuller’s Earth was crossed,