It is finely ground and digested with a weak solution of soda-ash, which effects the precipitation of all soluble iron salts, ultimately as ferric hydrate. The mud, after being thrown out of the lixiviating tank, is mixed with sawdust and a little dry soda-ash, and the whole is passed through a screen and disintegrator in order to ensure thorough mixture, uniformity of composition, and a satisfactory mechanical condition.

EXCURSION TO DATCHWORTH AND WELWYN.

SATURDAY, MARCH 8TH, 1919.

REPORT BY R. L. SHERLOCK, D.Sc., A.R.C.Sc., F.G.S.,
Director of the Excursion.

OWING probably to the unsettled weather this excursion was poorly attended. The party left King's Cross by the 1.35 p.m. for Knebworth. The station stands at the head of a dry chalk valley, having a flat floor caused by the accumulations of Glacial Drift. It has hitherto been supposed that there is continuous Drift filling a valley from here to Stevenage, but recent mapping shows that there is a chalk barrier north of the station, cutting off the Knebworth-Woolmer Green valley-drift from that of Stevenage.

The party proceeded to Datchworth which caps a hill a little over 400 ft. above O.D. Almost at the top of the hill is a large pit, at present disused. It is about 14 feet deep and in roughly bedded gravel containing brownish clay bands and pockets; the latter left as mounds all over the pit. In one place a chalk pinnacle rises up to well above the floor. The constituents are mainly flints and flint-pebbles from Reading Beds, but there are also present Bunter pebbles, Liassic limestone, sandstone, felsite, quartz, and Hertfordshire Puddingstone. Some of the flints are very large and occasionally they have been roughly rounded by battering. The quartz-pebbles vary from about 8 ins. to very small pebbles. On the whole the gravel is small, with comparatively few large pebbles. It is clear that the hill is composed of Glacial Drift resting on Chalk and that there is no room for the Reading Beds and London Clay shown on the published map.

The other side of the valley was then visited, the route taken passing over the boulder-clay and gravel-flat of Woolmer Green at the bottom of the valley. West of the railway, at Mardley Heath, a section was seen similar to that described above, but was in better condition, as it is being worked. Here two additional kinds of igneous rocks were found, one a very hard basic

rock (? diabase), and the other a splintery, decomposed andesitic rock.

These gravels are isolated patches of the thick Drift that fills the valley from Stevenage to past Watton, along the line of the new railway, which is to a great extent cut through it. They belong to the newer or Chalky Drift and never occur much above the 400 foot contour. They contain numerous constituents derived from the Midlands, never found in the older Drift.

Leaving Mardley Heath the party turned down the great North Road to Welwyn, passing on the way numerous small hillocks, some very sharply defined, representing all that is left of a sheet of the gravel described above. Their separation indicates the amount of post-Glacial erosion. From Welwyn the route was by the new road to Digswell. This road, following the Mimram (or Maran) Valley, lies in a deep cutting in the gravel.

Tea at the Cowper Arms, next to Welwyn Station, completed the excursion and the party returned to King's Cross, arriving 8.17. Mr. T. W. Reader acted as Excursion Secretary.

REFERENCES.

- Geological Survey Map, Old Series, 1-inch, Sheet 46 S.E.
1906. A. E. SALTER.—"Excursion to Welwyn, Harmer Green and Datchworth." *Proc. Geol. Assoc.*, vol. xix., p. 108.
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