Notes and News

Overton Down Experimental Earthwork

PLATE XXVIII

The Overton Down earthwork* has now been sectioned at two years and four years after construction. The next scheduled section is not until it is eight years old, so now is a good time to appraise results so far.

Outwardly the bank shows little change, apart from some rounding of its contours. There has been an overall loss of height of about 6½ in., almost entirely due to compaction of the turf stack in the centre. The rubbly chalk surface has now weathered to a relatively fine tilth, but this is still white and unclothed by vegetation. Some grass seedlings did appear in the first year but failed to persist. About an inch below the surface, however, blue-green algae (*Cyanophyceae*) have formed a continuous green line; these plants have the power to fix atmospheric nitrogen, so their appearance may be an important first step in the ecological succession on the bank.

The most dramatic changes have taken place in the ditch. In the first few weeks after completion a sprinkling of dark soil fell into the ditch angles from the topsoil, which had expanded slightly so that it overhung the ditch. The mild winter of 1960–1 produced a scree extending about a foot up the side and some 2 ft. across the floor of the ditch, the larger fragments tending to roll towards the centre. A section of this scree revealed the organic deposit clearly recognizable in the angles; more recently it has become less obvious as it has become impregnated with redeposited calcium carbonate. In the summer of 1961 further light falls from the walls occurred, but the greatest collapse came in the second winter, though this, too, was a mild one. It produced scree extending almost to the centre line of the ditch (see 1962 section, FIG. 1), so that the ditch was no longer flat-bottomed but V-shaped. The 1962 section showed that the scree from the first winter had protected the lower part of the wall from weathering in the second winter; the zone of weathering therefore progressively narrows upwards as the scree builds up, resulting in undercutting of the turf, which was overhanging by a foot or more.

A shadow of things to come was cast in the summer of 1962, when two pieces of overhanging turf broke off and rolled into the centre of the ditch. The following winter, 1962–3, was exceptionally severe and the earthwork was engulfed in huge snowdrifts. In the spring it was seen that long strips of the overhanging turf had been torn off, presumably by the weight of snow, and had slid some or all of the way down the scree slope (PL. XXVIII*a*). After the fourth winter the ditch had not changed much in appearance. Some new scree was added, covering some of the fallen turves and piling up against others, but measurement of the ditch section showed that in the second 2-year period only about a quarter of the amount of scree accumulated as compared with the first 2 years; this despite the fact that the third winter was one of the worst on record.

In section the scree shows bands of coarse and finer material, the coarse bands representing winter scree formation and the finer ones the continued accumulation during the rest of the year. The scree has now attained a slope almost in line with that of the bank (see 1964 section, FIG. 1), so that if the berm does give way it seems unlikely that there will be a major collapse of the bank into the ditch.

* *The Experimental Earthwork on Overton Down, Wiltshire, 1960* (ed. P. A. Jewell). British Association for the Advancement of Science (London, 1963).

PLATE XXVIII

a

OVERTON DOWN EXPERIMENTAL EARTHWORK

(*a*) *The ditch after the severe winter of* 1962–3.
(*b*) *Section of bank and ditch, July* 1964.

See pp. 134–6]

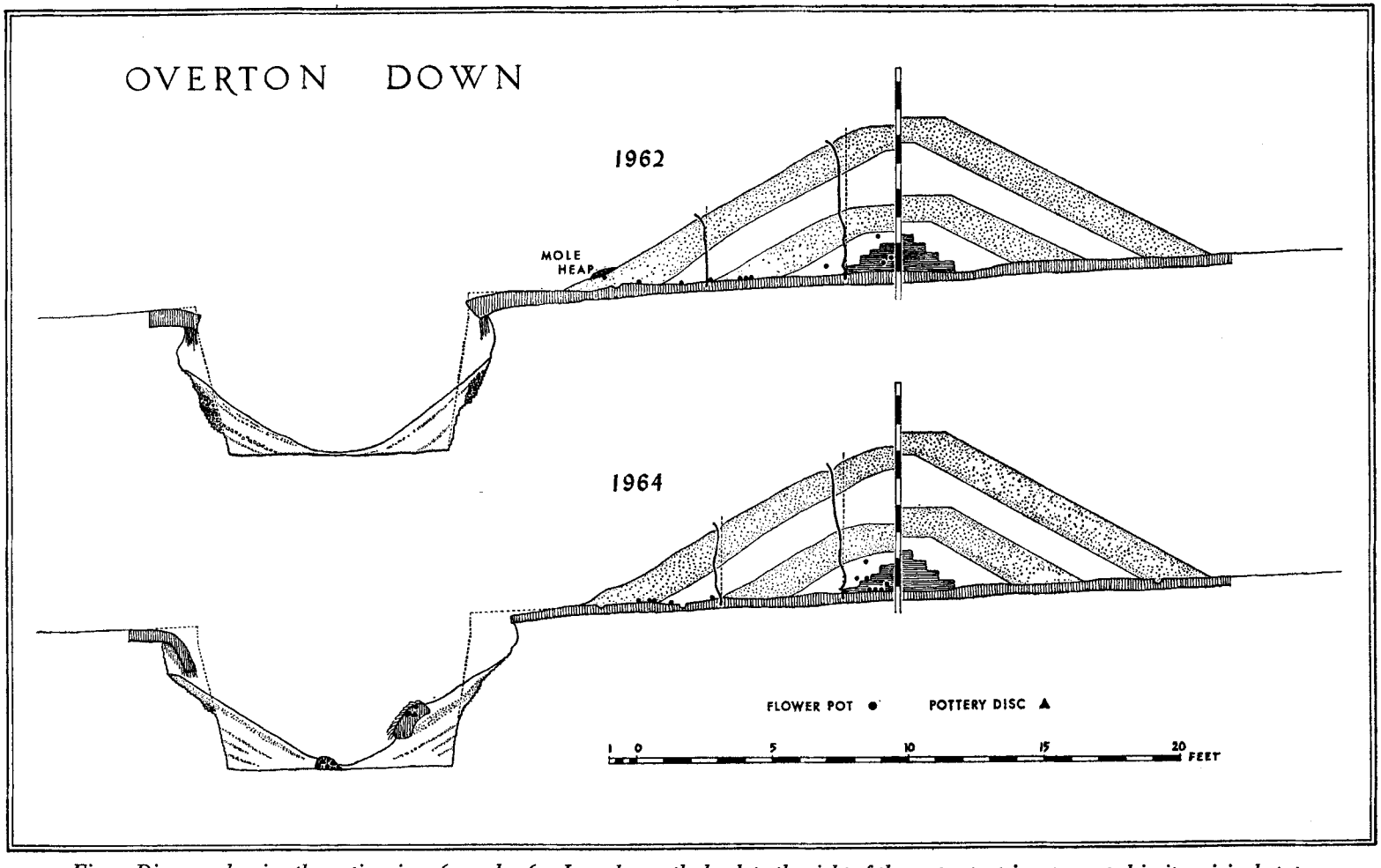

Fig. 1. Diagram showing the sections in 1962 and 1964. In each case the bank to the right of the centre post is represented in its original state.

Potential collapse of the bank—only 2 years old—was a problem which had to be faced in cutting the first section in 1962. To avoid undue weight on the bank a gantry of scaffolding was built across it. (This was so useful in excavation that it was also used in 1964.) In the event the bank did stand up satisfactorily (PL. XXVIII*b* shows the 1964 section). In the two sections the distortion of the polythene tubes (see FIG. 1) clearly showed the compaction of the turf stack and also that there was some lateral movement in the bank. The layers of the bank were easily recognized by the coloured chippings which had been sprinkled at each interface. Calculation confirmed that very little compaction had taken place in the chalk rubble layers.

Various materials of potential archaeological interest had been buried under the turf stack and also in the chalk rubble of the bank. Specialist reports are still incomplete even for materials recovered in 1962, but a few preliminary results may be mentioned here.

Billets of oak and hazel, both charred and uncharred, were found to be under vigorous attack by fungi. By 1964 the oak billets averaged only about two-thirds and hazel just over three-quarters of their original weight. So far there is no indication that charring has any preservative effect.

After 2 years' burial, textiles of wool and cotton had deteriorated badly under the turf stack; in fact, some cotton samples had disappeared completely. Similar samples in the chalk milieu were less damaged, but here too vigorous microbiological activity was shown by discoloration and fibre damage. In both wool and cotton it seemed that dyeing had had some preservative effect on the fibres.

Pottery fragments showed, somewhat surprisingly, no physical or chemical change after 2 years, but cremated bone was found to have become harder and less friable.

Before the construction of the bank, spores of *Lycopodium* had been dusted over the ground to simulate pollen rain and these were traced after 2 years by pollen analysis. Under the turf stack they remained confined to the turf on which they had been deposited, but elsewhere they had moved both downwards and upwards, apparently through the action of earthworms.

The vigorous biological activity, even in the core of the bank, is a rather unexpected result of the experiment. Destruction of the buried materials by fungi and bacteria indicates adequate aeration, as does the earthworm activity, which by 1964 had reached the turf stack. Worms have clearly been active throughout the bulk of the bank, and casts were found at all levels in interstices in the chalk rubble.

A final point is of particular archaeological significance. Pottery markers which had been placed in the ground outside the ditch edge were found on the floor of the ditch on the centre line, having fallen in with overhanging turves. In such a situation artifacts would normally have been taken to be contemporaneous with the ditch; but these markers could represent artifacts of much earlier date than the ditch itself. It follows from the pattern of scree formation in the ditch that artifacts lying in the angle near the wall are much more likely to be contemporary with the ditch than those lying on the centre line—even if these are actually on the cut floor of the ditch.

G. W. DIMBLEBY

Standing Field Stones in Kansas

PLATE XXVII

Travelling recently by car through the limestone country on Highway 36 east of Cawker City in the Solomon River valley of north central Kansas, in the United States, I observed that, for several miles, instead of there being wooden or metal posts supporting the strands of wire forming the fences around the field crops, these were supported by stone posts. These varied in above-ground length from about 2 to 6 ft. in height and were very approximately 1 to 2 ft. along the sides. Several such stone fence posts are illustrated here; the manner by which the wire was attached to the posts is indicated—a retaining wire around each post at each level of the horizontal field wire (PL. XXVII). It will be noted how deeply the retaining wire has cut