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The Epping Forest Survey.

A PRELIMINARY ACCOUNT OF THE ECOLOGICAL WORK OF THE CHINGFORD BRANCH AT THE CUCKOO PITS IN 1942.

Report by the Branch Council:—W. A. Wright, Chairman; D. G. Tucker, Secretary; J. H. G. Peterken, E. T. Nicholson, E. B. Pinniger, K. E. Hoy.

WHEN the Chingford Branch recommenced activities in January 1942, it was decided to undertake a series of surveys of representative portions of the Forest near Chingford, and the first area selected was that surrounding the Cuckoo Pits. A small area was considered desirable, as the resources of the Branch are small, and the provisional boundaries enclose an area approximately 500 × 250 yards. A preliminary map was made, and the area was subdivided into 14 vegetation units. The map has been revised from time to time, and the accompanying one (Fig. 6 opposite p. 44) is thought to be reasonably correct, except that footpaths have been shown somewhat straightened for simplicity. It is intended to be used for recording and for work in the field, and copies may be obtained from the Branch Secretary.

The south-western boundary of the area is the small stream known as the Cuckoo Brook, and from this the land rises perhaps 20 feet, being capped with a bed of gravel over its highest portion, in which lie the series of shallow stagnant ponds known as the Cuckoo Pits. To the north, the northern edge of Pear Tree Plain (vegetation area M) forms a boundary; the southern and part of the eastern boundaries are formed by grassy "rides"; the north-western, and middle part of the eastern, boundaries are rather artificial, being formed by not-too-distinct footpaths.

The ponds comprise five vegetation units. Pond G is the largest, being about 45 × 25 yards. It is almost completely overgrown with vegetation, chiefly sallow and rushes; there are considerable quantities also of bur marigold (*Bidens cernua*) in the autumn, and bitter-sweet (*Solanum dulcamara*). The greatest depth is about 2 ft. 6 ins., and in the late summer of 1942 the pond became very nearly dry. The water teems with small animal life; on one occasion a sample of the water contained about 15 water-fleas (*Daphnia*) to the cubic cm. Other crustacea, including *Cypris* and *Cyclops*, and numerous other microscopic forms of animal life (including many protozoa) are common.

Pond K is almost the same area, being about 35 × 30 yards. However, only about one-third of its area is overgrown with vegetation; the remainder is open water, except for patches of white water-lily (*Nymphaea alba*) and *Potamogeton natans*. The overgrown portion is occupied chiefly by reed-mace (*Typha latifolia*) and bur-reed (*Sparganium*

sp.) with some rushes. This pond does not dry up in the summer. The ground to the north is marshy, and is included in area K. Sphagnum moss occurs in both these larger ponds.

Ponds J and H, about 100 sq. yds. in area, dry up completely for some months, and so far have shown little of interest.

Pond area E is a series of ten mostly very small ponds and marshy areas, which also dry up completely in the summer. Rushes form a considerable proportion of the vegetation.

The woodland consists of five vegetation units, A, B, C, D and L. In all of these, the dominant tree is hornbeam, with pedunculate oak subdominant. Tansley, in his book "The British Islands and Their Vegetation," 1939, says generally ". . . it is probable that hornbeam would in no case dominate the oaks with which it is associated since its height growth is not so great, though it casts a deeper shade" (p. 257). The Cuckoo Pits district is evidently an exception to this general rule. Holly and hawthorn are common. The undergrowth is chiefly bramble, with some bracken on the gravel portion.

Pear Tree Plain (area M) is the only large open area; it is very damp. The vegetation consists of grasses of several species, sedges and rushes. *Deschampsia caespitosa* is locally dominant. The boundary on the north is a line of fine oaks, but on the south there is a dense tangle of hawthorn and blackthorn, with dog-rose and bramble, which is encroaching on to the Plain, and threatens eventually to overrun it.

The open, gravel-soil, area immediately surrounding the ponds E and G is considered a vegetation unit (F) and is covered chiefly with grasses, bracken, rushes, and a little bramble and heather (*Calluna vulgaris*).

The other two vegetation units are the rides (N) and the stream (P).

Methods of Recording the Vegetation. The common plants are recorded by means of quadrat charts and line transects, and fairly detailed vegetation charts have been made of the ponds. For the rest, lists of species are made with notes on their relative abundance.

Invertebrate Animal Life. It has not been possible to do very much work on this vast subject, owing to the absence of expert observers in most branches. However, the dragonflies have been studied in some detail, a preliminary list of butterflies and moths has been prepared, and a visit by Mr L. Parmenter led to a short list of flies. Some notes on gall-flies have been contributed by Mr J. Ross.

Birds and other Vertebrates. These have been studied relatively thoroughly. Of birds, 48 species have been recorded in the survey area, although 81 species have been observed in a larger area, 1 mile diameter, centred on the Cuckoo Pits. Evidence of breeding has been looked for, and 12 species have been recorded as giving such evidence in the survey area.

Other vertebrates are not numerous, only 7 species having been recorded in 1942.

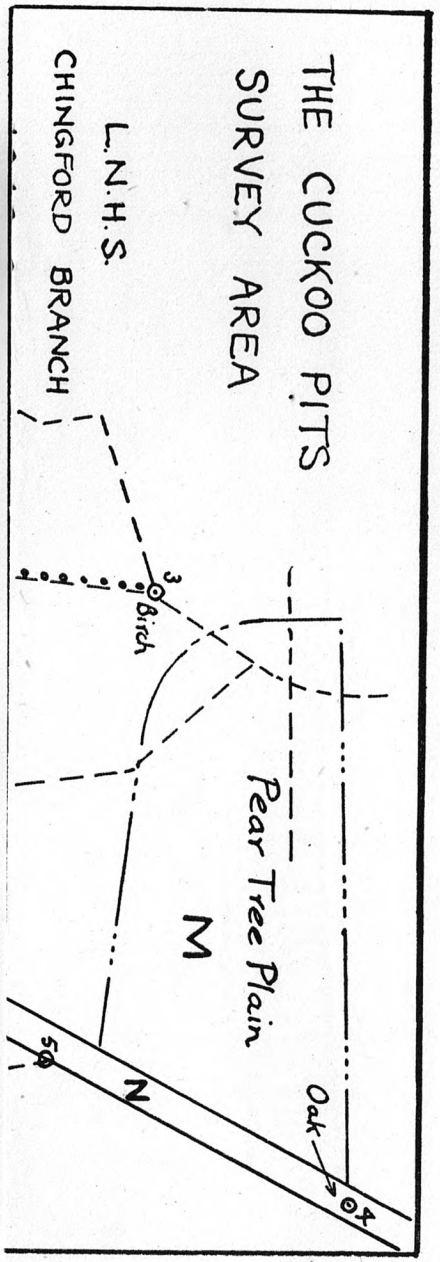
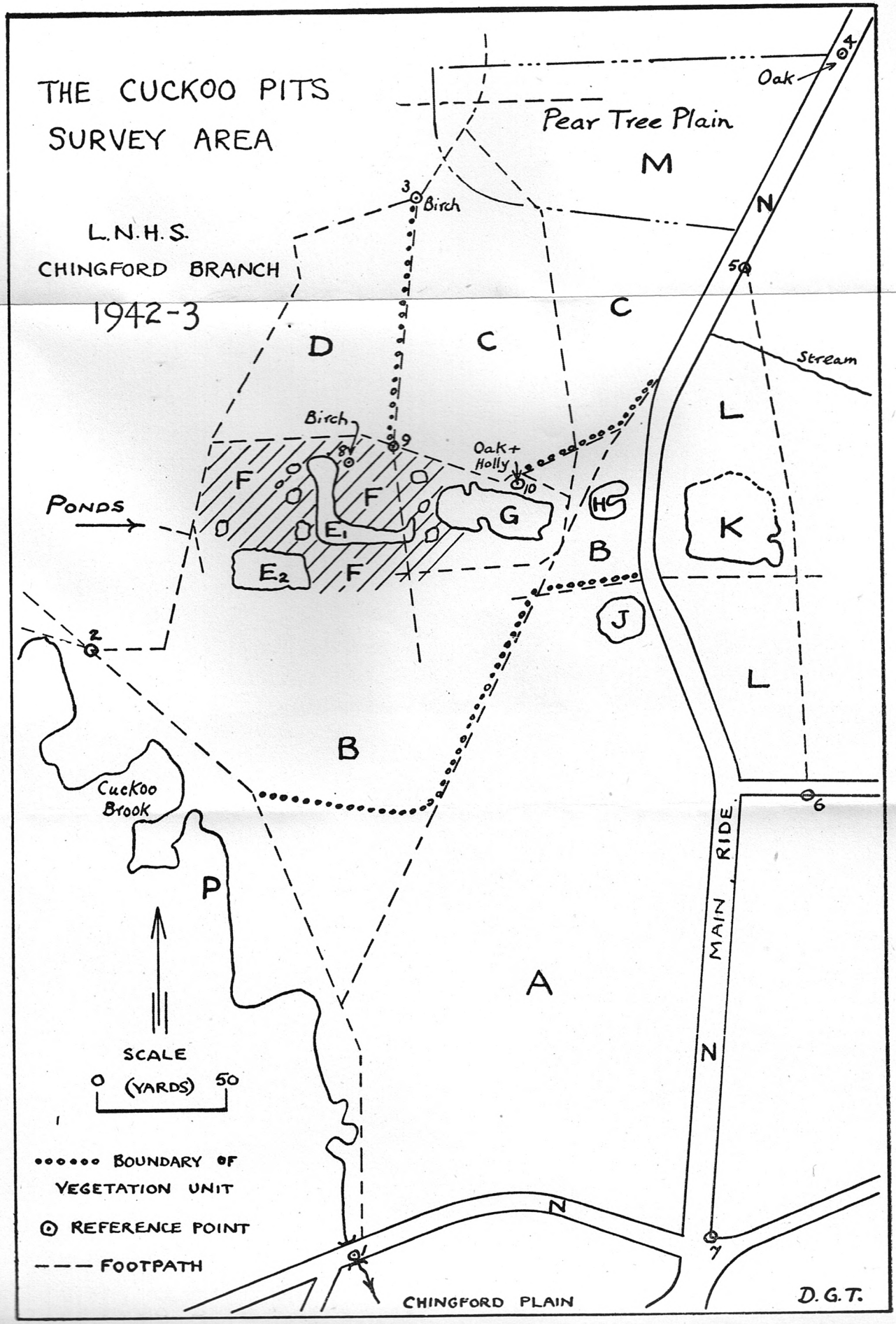


Fig. 6. Based upon the Ordnance Survey Map, with the sanction of the Controller of H.M. Stationery Office.



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