

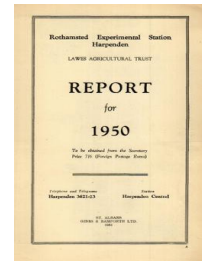
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## Soil Survey of England and Wales

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## SOIL SURVEY OF ENGLAND AND WALES

By A. MUIR

The systematic surveys in Yorkshire, Lancashire and Somerset continued during the year and that in Somerset (Sheet 296, Glastonbury) is now completed. As a result of a request for a survey of the Fenland, a party has been established at Cambridge and has begun work on Sheet 188.

### LANCASHIRE

#### *Sheet 75 (Preston)*

The detailed field survey of the Preston district was continued and about 20,000 acres were mapped on the 6 in. to 1 mile scale. Surveying was largely concentrated in two areas, the first to the west of Chorley including parts of the parishes of Euxton, Ulnes Walton, Croston, Bretherton, Charnock Richard, Eccleston and Mawdesley, and the second to the north-east of Chorley, including parts of the parishes of Heapey, Withnell, Wheelton, Brindle, Whittle-le-Woods, Clayton-le-Woods and Leyland.

The first area consists of a gently undulating plain falling gradually to the alluvial flats of the Douglas in the west. In the east the soils are formed largely on till of mixed Carboniferous and Triassic origin and the dominant series are the Adlington and Gillibrand, while the Coppull series is of much smaller extent. These series have been described in the 1949 report. Further west, till of Triassic origin becomes the dominant parent material and the Cottam, Salop and Salwick series, described in the 1948 report, are the commonest. In the south-east of the parish of Charnock Richard, the till is locally of Carboniferous origin and the soils derived from it belong mainly to the Rothwell and Charnock series. Small patches of sand in the east give rise to soils of the Newport and Wem series whilst outcrops of Carboniferous sandstones and shales in the south-east and of Bunter sandstone in the south have led to the formation of soils of the Rivington and Bridgnorth series.

The second area consists of more strongly rolling country gradually falling away westwards from the moorlands bounding it on the east. It is largely covered by glacial deposits, but outcrops of Carboniferous sandstones and shales are increasingly common towards the east. Soils of the Rivington and Anglezarke series formed on the solid outcrops occur only very locally, and most of the soils are developed on morainic material and till. The very mixed, but



mainly light-textured, morainic deposits give rise to a haphazard distribution of Wem, Newport, Ellerbeck, Crannymoor and Chorley series, approximately in that order of extent. Till of Carboniferous origin to the east and of mixed Carboniferous-Triassic origin to the west, gives rise to a number of series, the dominant ones being the Rothwell and Charnock on the Carboniferous till and the Gillibrand and Adlington on the mixed till. A very approximate line of demarcation between these two groups is recognisable running north-east to south-west across the area.

#### SOMERSET

##### *Sheet 296 (Glastonbury)*

The survey of this sheet is now complete, and a soil map and report are in course of preparation. The work incorporates the results of an extensive revision of the older field maps, on which work was begun about 1934, carried out in the field during the earlier part of the year. The legend includes thirty soil series, and five complexes each composed of two or more series in close topographic association.

At the request of the National Agricultural Advisory Service, the Wiltshire County Council Farm Institute estate at Lackham, near Chippenham, was surveyed and a soil map prepared on the 6 in. to 1 mile scale. Eleven soil series were distinguished, including the previously described Sherborne, Badsey, Denchworth, and Bromham series. Five of the series are derived entirely from alluvium or terraces associated with the river Avon, and the remainder from solid formations or thin superficial deposits. The Kellaways Beds are well developed in this area, giving rise to deep brown loamy soils with a high base-status.

A survey of the Hampshire County Council Farm Institute at Sparsholt, near Winchester, was carried out on the 6 in. to 1 mile scale. The soil pattern appeared typical of the gently rolling chalk country of mid-Hampshire, where Clay-with-Flints is present, but rarely extensive or thick. The majority of the soils were grouped with the Andover, Wallop, Winchester, or Charity series which have already been recorded.

#### YORKSHIRE

##### *Sheets 70 (Leeds) and 71 (Selby)*

During the summer, mapping was continued on these two sheets and about 5,500 acres were mapped on the 6 in. to 1 mile scale covering their junction. The soil series found were the same as those mapped on these sheets during the previous season's work. This area included Stockbridge House Farm near Cawood in the East Riding which was surveyed at the request of the National Agricultural Advisory Service. It is situated on mixed drift deposits associated with the Escrick terminal moraine.



A further area of 5,100 acres was surveyed in the Wetherby district on the Leeds sheet on the  $2\frac{1}{2}$  in. to 1 mile scale, and a detailed survey of Headley Hall Farm, Bramham, was made on the 25 in. to 1 mile scale, at the request of Professor Comber of the Department of Agriculture, Leeds University. Both surveys include soils developed on Permian limestone and marl as well as on till and morainic material which occupy discontinuous patches in the area. No new soil series were recorded and the soils could be grouped with those previously mapped on this sheet.

#### CAMBRIDGESHIRE

##### *Sheet 188 (Cambridge)*

Detailed surveying on the 6 in. to 1 mile scale was commenced on this sheet during the year. Three surveyors were engaged on the work and a total of 36,000 acres was mapped. Surveying was concentrated in the south-east around Newmarket, but an area near Wicken and Soham was also mapped.

The south-eastern part is undulating and the underlying rocks are the beds of the Upper, Middle and Lower Chalk. However, they are extensively covered by boulder clay, old river gravels and their associated washes so that it is rare to find soils directly derived from the chalk.

Six series have been distinguished in this area, and of these the Wantage, occurring as a south-west to north-east strip at the edge of the Fenland, and the Hanslope, developed on the boulder clay in the south-east, have been described before. Of the new series two are tentatively considered to be red and brown calcareous soils. The Newmarket series occurs where thin washes from the river gravels overlie the chalk and the Swaffham Prior is developed from the chalk where it is mixed with some sandy drift. The Moulton series occupies a large part of the Middle Chalk and is found on the river gravel deposits and the associated washes. It is a freely drained soil which in some places may be non-calcareous but is elsewhere calcareous and may therefore be classified either as a brown forest soil or a red and brown calcareous soil. The Burwell series, like the Wantage, is a sedentary soil on the Grey Chalk and Chalk Marl, but as it occurs in low-lying areas, it is imperfectly drained.

The strip surveyed near Soham lies in the Fenlands and the parent materials of the soils consist of peats and alluvium with occasional river sands or gravels. Through this mantle the underlying Gault and Chalk Marl rise to form low ridges which are often overlaid with thin washes of sandier material.

In this area a further eight series have been distinguished, all of which are new. Seven of these are mineral soils and four of them, the Block, Newbarn, Peacock, and Bracks, are grey calcareous soils. The Soham series is a red and brown calcareous soil developed on mixed drifts overlying chalk while both the Wicken and the St. Lawrence are of rendzina type, the latter having a sandier parent material than the Wicken.



Where the peats and alluvium intermingle a very complex pattern of soils is formed and no series have been differentiated on them as yet, except for the Adventurers' series. This is an organic soil consisting of three feet of black amorphous peat.

#### OTHER SURVEYS

The mapping of experimental farms for the National Agricultural Advisory Service and University departments has continued and the Survey is collaborating with the Veterinary Laboratory at Weybridge in trying to correlate the incidence of Johnes disease with soil conditions.