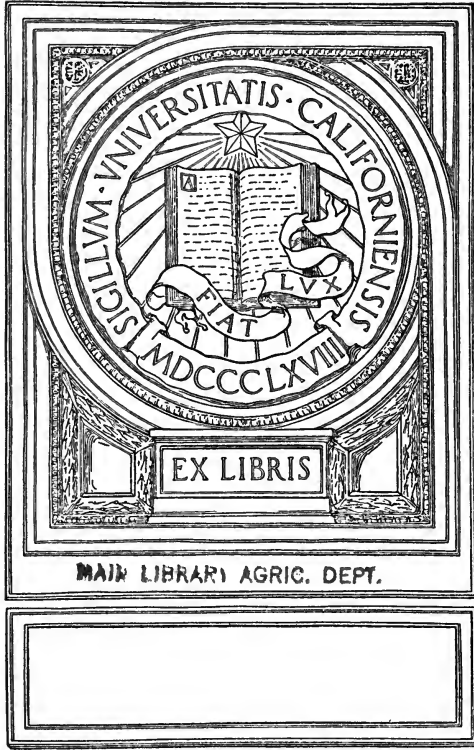


S
591
A4
nr. 3-7

UC-NRLF

B 3 071 612

YC 67891



MAIN LIBRARY AGRIC. DEPT.

Digitized by the Internet Archive
in 2007 with funding from
Microsoft Corporation

1000
Copy

MAIL LIBRARY AGRIC. DEPT.

United States Department of Agriculture,

DIVISION OF SOILS.

DESCRIPTION OF A SOIL MAP OF THE CONNECTICUT VALLEY.

INTRODUCTION.

In July, 1899, the Secretary of Agriculture authorized a soil survey of a portion of the Connecticut Valley. Mr. Clarence W. Dorsey and Jay A. Bonsteel were assigned to this work, and they spent about three and a half months in the field work connected with this survey. A report has been prepared and published in Report No. 64 of the United States Department of Agriculture entitled Field Operations of the Division of Soils, 1899, accompanied by a map of the area surveyed on the scale of one inch to the mile. A very small edition of the map has been issued in a separate form, mounted as a wall map, and supplied to a few individuals and institutions for educational purposes. The object of this circular is to describe briefly the conditions in the valley and the soils represented on the map, so that reference will not have to be made to the larger report in order to understand the map. The following summary has therefore been made of the report.

The area surveyed extends from South Glastonbury, where the valley pinches together, northward for a distance of about 41 miles to Bachelors Brook in South Hadley, Massachusetts, where the Mount Holyoke range of mountains completely separates it from that portion of the valley which extends northward from Northampton into Vermont. The valley has an average width of from five to ten miles on either side of the Connecticut River. The area surveyed and mapped comprises, approximately, 400 square miles or 256,000 acres.

The object of the work was primarily to investigate and map the different tobacco soils, but incidentally all soil areas were surveyed. One feature, which was very clearly recognized in the course of the survey, is the continual and rapid encroachment of city and suburban development for summer residence and for industrial purposes on the farming lands. Many extensive areas which were formerly considered agricultural lands are now built up or are being held as a speculation for residence or industrial purposes.

PHYSICAL GEOGRAPHY OF THE REGION.

The Connecticut Valley is bounded on either side by hills rising to elevations of from 50 to 100 feet above sea level in the neighborhood of Hartford, and to a little over 500 feet in the northern part of the area surveyed. The country is level or gently rolling, sloping gradually back to the high-rounded hills and low mountains which form the boundaries of the valley.

The hills and mountains forming the sides of the valley are of glacial origin and consist of a heterogeneous mass of boulders, sand,

and clay, recognized on the map as the Triassic stony loam and the Holyoke stony loam. The other soils are derived from a shallow glacial lake, which is supposed to have spread out during glacial times over the present valley from a dam somewhere below the present city of Hartford. Into this lake sediment was brought by rivers and streams. The sediment was sorted over and spread out more or less evenly over the bottom of the lake. As is usual in such cases, the deeper and quieter portions of the lake received the finer sand and clays, while the coarse sand and gravels were deposited near the shore line and near the mouths of rivers. After the lake was drained by the breaking of the glacial dam the Connecticut River and its tributaries commenced cutting a series of terraces through the valley. These terraces are not everywhere fully preserved nor can they be followed readily for any considerable distance, but in certain parts of the valley they are very plain, and there are abrupt escarpments of from 10 to 40 feet, which show the different stages of the lake and of the river.

The temperature of the Connecticut Valley during the growing season varies from 56° F. in May to 61° F. in September, with an average of 70° in July, which is the hottest month of the year. The mean maximum temperature of the months varies from 69° in May to 82° in July, with a mean daily variation during the season of 20°. There is on an average about 4.5 inches of rainfall during each month of this growing season, while the mean, relative humidity during June, July, and August is about 70 per cent.

TOBACCO.

The most interesting and most promising feature in the agriculture of the Connecticut Valley is the tobacco industry, which has given a world-wide reputation to the valley and has provided work and sustenance for a large number of people.

Tobacco was introduced into the Connecticut Valley as a recognized farm crop in the early part of this century. It was early recognized that the product differed greatly in its qualities from the Maryland and Virginia tobaccos; it had less nicotine, less body, and was not well adapted to pipe smoking or to chewing. The first domestic cigars are reported to have been made in the Connecticut Valley about the year 1802. It may, therefore, be considered the home of the domestic cigar tobacco as it is of the domestic cigar manufacturing.

The Connecticut tobacco has taken its place especially as a light wrapper leaf. When dark, heavy wrappers are in style, the Connecticut tobacco is not in such favor as the Pennsylvania crop for wrapper purposes. The torn, coarse, or inferior leaves are used as binders, while the trash and waste from the barn and cutting tables are mainly exported to England.

There are two principal varieties of tobacco grown in the Connecticut Valley, namely, "Seed leaf" and "Broad leaf." The latter is grown almost exclusively on the eastern side of the Connecticut River, principally in a small area of the Podunk fine sandy loam.

It will not be necessary in this circular to discuss the peculiarities of the Connecticut tobacco, as these have been pointed out in other publications of the Department of Agriculture.

SOILS.

The Triassic stony loam, designated by the letters *Tsl* on the soil map, forms the sides of the valley in the southern portion and is found in many isolated areas scattered through the valley, frequently occurring as drumlins or hogbacks. These areas were islands in the glacial lake, and hence were not covered by the lake sediments. The soils of these areas are the characteristic, stony New England soils which have to be picked over year after year to remove the rocks and boulders and thereby facilitate the cultivation of the land. When so cleared of rocks and stones the soil is adapted to general farming and particularly to grain and hay crops and to certain fruits, particularly apples. As a rule it affords excellent pasturage when turned out to grass. A fair quality of tobacco is raised upon this soil, especially in certain localities, but it cures up red and is adapted only to certain markets.

The Holyoke stony loam (*Hksl*) is similar in many respects to the Triassic, except that it is not quite so strong a soil for agricultural purposes. The topography is considerably more broken, the hills are quite steep, and the land is not very extensively farmed in the areas surveyed. It affords very excellent grazing, however. So far as known, tobacco has not been grown upon this formation.

The Enfield sandy loam (*Esl*) consists of a thin covering of sandy loam overlying the Triassic stony loam, which occurs from 1 to 2 feet below the surface. The Triassic stony loam makes a very desirable subsoil, and, although this formation occurs in rather narrow areas and is of small extent, it is considered one of the best soils of the valley.

The Hartford sandy loam (*Hsl*) is the typical soil for the seed-leaf tobacco. It is a medium grade sandy soil from 10 to 20 feet deep, easily cultivated and moderately retentive of moisture. It produces a fine wrapper leaf and is highly prized as a tobacco soil. It is not so well adapted to general farming, however, as the Triassic stony loam.

The Windsor sand (*Ws*) is a coarse, open, sandy soil, a grade coarser than the Hartford sandy loam, and not at all adapted to general farming. This formation is adapted to early truck crops, and such crops are grown upon it to a considerable extent. Late crops, such as corn and tobacco, on this soil are liable to suffer severely from the summer droughts. About two years in five, the seasons happening to be favorable, a very superior wrapper leaf is produced on these soils, and it is from these that the lightest, finest wrapper leaf would be expected if the plants could be kept continuously growing and unaffected by drought.

The Podunk fine sandy loam (*Pfsl*), although covering but a small area, has a world-wide reputation as being the district in which the broad-leaf tobacco is produced in the greatest excellence. This is a very fine-grained, sandy soil, a grade finer than the Hartford sandy loam, and tobacco crops have been grown on it continuously for twenty-five consecutive years without any apparent deterioration in the soil.

The Chicopee gravelly loam (*Cgl*) is little cultivated on account of the very high content of gravel throughout the material. It is

at present a barren waste, but will unquestionably soon be utilized for suburban purposes for the city of Springfield.

The Connecticut meadows (*Cm*) is an upland strip bordering the Connecticut River and its larger tributaries, and is from 10 to 20 feet above the river level. It is slightly rolling here and there, but is generally level. The soil is a grade finer than the Podunk fine sandy loam, and is so rich, fertile, and retentive of moisture that the tobacco grows coarse and dark-colored and is not suited to the present market demands. The soil is admirably adapted to grass, corn, and the later truck crops. It is occasionally subject to overflow in seasons of very high floods. The meadows are usually highest along the river, which gives them excellent drainage, while away from the river, where they meet the escarpment of the terraces above, they are apt to be low and even swampy. These wet areas are usually quite narrow drainage canals.

The Suffield clay (*Sc*) is a cold, poorly drained, compact silt or clay, which is not cultivated to any extent and which is not even a good grass land. It is entirely unsuitable for tobacco, and the cultivation of this plant has never been attempted on this soil.

The Elmwood loam (*El*) consists of a sandy covering, not over two feet deep, overlying the Suffield clay. This gives the soil better drainage than where the clay is exposed, but owing to the cold, wet subsoil lying so near the surface it is not adapted to tobacco culture and but poorly adapted to any other farm crop.

The Connecticut swamp (*Cs*), as the name implies, is too wet for any cultivated crop. Some areas might be drained, but as a rule they are so small and the cost of reclamation would be so great that it would not be a profitable undertaking.

OBJECT OF THE SOIL MAP.

By referring to this soil map one can see at a glance the distribution of soils of different character and of different agricultural value. The scale is sufficiently large to enable one to locate quite accurately on any soil which would be adapted to the industry which it is desired to take up. It should also enable a farmer to intelligently consider methods and results attained in similar soils in other portions of the valley or in other localities. This soil map should serve as a guide not only to the most intelligent experimentation but to the most successful agricultural practice for any one who wants to make the most of the natural conditions in the production of crops.

MILTON WHITNEY,
Chief of Division.

Hon. JAMES WILSON,
Secretary of Agriculture.

WASHINGTON, D. C., *June 29, 1900.*

1944

1945

YC 67891



