U. S. DEPARTMENT OF AGRICULTURE,

BUREAU OF SOILS—MILTON WHITNEY, Chief.

IN COOPERATION WITH THE GEORGIA STATE COLLEGE OF AGRICULTURE,
ANDREW M. SOULE, PRESIDENT; DAVID D. LONG,
IN CHARGE SOIL SURVEY.

SOIL SURVEY OF MERIWETHER COUNTY, GEORGIA.

BY

MARK BALDWIN, IN CHARGE, AND J. A. KERR.

W. EDWARD HEARN, INSPECTOR, SOUTHERN DIVISION.

[Advance Sheets—Field Operations of the Bureau of Soils, 1916.]

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1917.

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LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Bureau of Soils,
Washington, D. C., June 28, 1920.

Sir: In the extension of the soil survey in the State of North Carolina during the field season of 1918 a survey was undertaken in Hoke County. This work was done in cooperation with the North Carolina Department of Agriculture.

I have the honor to transmit herewith the manuscript report and map covering this work and to request their publication as advance sheets of field operations of the Bureau of Soils for 1918, as authorized by law.

Respectfully,

Milton Whitney,
Chief of Bureau.

Hon. E. T. Meredith,
Secretary of Agriculture.

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SOIL SURVEY OF MERIWETHER COUNTY, GEORGIA.

By MARK BALDWIN, In Charge, and J. A. KERR.—Area Inspected by W. EDWARD HEARN.

DESCRIPTION OF THE AREA.

Meriwether County is situated in the western part of Georgia, about midway between the north and south boundaries of the State. It is 20 miles east of the Alabama State line and about 50 miles south of Atlanta, and is bounded on the north by Coweta County; on the east by Spalding, Pike, and Upson Counties, from which it is separated by the Flint River; on the south by Talbot and Harris Counties; and on the west by Troup County. The county is roughly rectangular in outline, measuring about 26 miles from north to south and about 20 miles from east to west. It embraces an area of 498 square miles, or 318,720 acres.

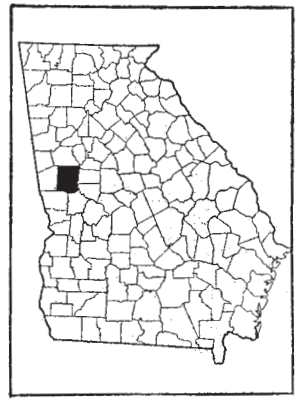


FIG. 1.—Sketch map showing location of the Meriwether County area, Georgia.

The general topography is that of a moderately dissected, gently rolling plain. Exceptions to this are most marked in the south-central and southeastern parts of the county, where monadnocks of highly resistant rocks rise 300 to 400 feet above the general level of the plain. These mountains, as they are locally called, occur mostly as comparatively narrow ridges with rather steep slopes, dissected by the valleys of swift-flowing streams. Elsewhere in the county steep slopes are confined to the valley walls of some of the larger streams in regions where they are cutting through comparatively resistant rocks. Gently undulating to almost level areas occur on the broad divides, especially in the northeastern part of the county, and some of the valley slopes are long and gradual, the upland passing almost imperceptibly into the steam bottoms.

Owing to wide variations in the resisting qualities of the underlying rocks of the county, there are marked differences in the character of the stream valleys. The valley of the Flint River, where it cuts through the quartz mountain ridges of the southeastern part of the county, is a narrow, steep-walled gorge, in places 400 feet deep. To the northward, where the rocks consist of granite-gneiss and mica-

schist in places, the valley slopes are long and gentle and terraces and broad bottoms are common. Similar variations, though not so marked, occur in the valleys of many of the larger creeks. In general, however, the smaller streams have rather narrow bottoms, bounded by valley walls of moderate slope.

The general elevation of the county ranges from 750 to 1,000 feet above sea level. The extreme range in altitude is from about 600 feet, where the Flint River leaves the county, to 1,300 feet or more on the crests of the higher mountains.

A main drainage divide extends north and south through the county. Eastward from this the streams flow into the Flint River; westward they enter Troup County to reach the Chattahoochee River on the State line. The chief tributaries of the Flint River, from north to south, are Whiteoak, Redoak, Cane, and Pigeon Creeks; those of the Chattahoochee, named in corresponding order, are Yellow Jacket, Flat, Flatshoal, and Sulphur Creeks. These streams and their tributaries reach every section of the county, affording ample drainage for the entire area. Along the more swiftly flowing streams water power has been utilized for many years to operate gristmills and sawmills.

Meriwether County was organized in 1827, and the land definitely opened to settlement about that time. The early settlers were chiefly of English and French descent, and came from Virginia, North Carolina, South Carolina, and eastern Georgia. The present white inhabitants are nearly all American born, many of them being descendants of the early settlers. Negroes form a large percentage of the population. The county is most thickly settled near the towns and in the more level and productive sections, very few people living in the mountainous country in the southeastern part of the county.

The total population, as given in the 1910 census, is 25,180, an increase of 1,841 over that of 1900. There are no towns in the county of more than 2,500 inhabitants, the entire population being classed as rural. Greenville, the county seat, had a population of 909 in 1910. Manchester, the largest town in the county, had 922 inhabitants in that year, but has grown considerably since then. Woodbury, accredited with 917 inhabitants, also has increased in population. Other towns of local importance are Luthersville, Bullochville, Gay, Durand, Stovall, and Alvaton.

Meriwether County has good transportation facilities. The main line of the Atlanta, Birmingham & Atlantic Railway from Birmingham and Atlanta to Waycross and Brunswick extends north and south through the eastern part of the county, passing through Manchester, Woodbury, Gay, and Alvaton. A branch line of this road extends west from Manchester through Bullochville, Durand, and Stovall. The Central of Georgia Railway traverses the west-

ern part of the county north and south. Durand, Harris, Greenville, and Luthersville are situated on this line. The Macon & Birmingham Railway, crossing the southern part of the county in an east and west direction, serves the towns of Odessadale, Harris, and Woodbury, and the Southern Railway, traversing the southeastern corner, Bullochville and Woodbury.

The public roads are fairly good and are being rapidly improved by careful grading and surfacing with a sand-clay mixture. Telephone facilities are available in all the towns and in most of the rural sections. Rural mail delivery reaches all parts of the county.

The local markets are Greenville, Manchester, and the smaller towns of Meriwether County, and Grantville, Chipley, Hogansville, and La Grange in adjoining counties. Peaches are shipped to the large cities of the North.

CLIMATE.

The climate of Meriwether County is comparatively mild and pleasant. The winters are short and have only occasional periods of disagreeable, chilly weather. The summers are long and warm, but extremely high temperatures are seldom recorded. The mean annual temperature is 62.3° F. The mean for the winter is 44° and that for the summer 78.9°, a difference of only 34.9°. The average dates of the last killing frost in the spring and the first in the fall are March 20 and November 4, respectively, giving an average growing season of about 7½ months, which is ample for the maturing of all the crops commonly grown. The date of the latest recorded killing frost in the spring is April 17 and that of the earliest in the fall October 11.

The mean annual precipitation is about 49 inches. The rainfall is adequate for the needs of all crops and normally is well distributed throughout the year. Droughts sometimes occur in the growing season and affect yields to some extent, but they seldom, if ever, cause total crop failures. Heavy winter and spring rains sometimes cause serious erosion in the more rolling areas, where the fields are not properly terraced.

The climate is well suited to the production of a great variety of crops. The mild, open winters favor stock raising and eliminate the necessity for expensive shelters. Wheat, oats, rye, barley, and many of the legumes, including crimson and bur clover, are successfully grown through the winter. An open grazing season of 9 or 10 months, or possibly the entire year, may be maintained. The northward-facing slopes of the mountain ridges in the southeastern part of the county are favorable situations for peach orchards, the high altitude and the air drainage reducing damage from frost in the spring to a minimum.

The data in the following table, compiled from the records of the Weather Bureau station at Griffin, in Spalding County, are representative of the climate of Meriwether County.

Normal monthly, seasonal, and annual temperature and precipitation at Griffin, Spalding County.

Month.	Temperature.			Precipitation.		
	Mean.	Absolute maximum.	Absolute minimum.	Mean.	Total amount for the driest year.	Total amount for the wettest year.
	°F.	°F.	°F.	Inches.	Inches.	Inches.
December	44.9	73	5	5.22	3.95	3.98
January	44.5	77	8	3.08	3.75	5.72
February	42.6	78	[1] 4	6.29	3.69	1.37
Winter	44.0	78	[1] 4	14.59	11.39	11.07
March	57.5	91	22	4.60	2.07	7.43
April	62.0	90	24	3.13	1.88	.48
May	71.4	101	37	3.26	3.09	2.39
Spring	63.6	101	22	10.99	7.04	10.30
June	77.8	103	45	4.43	1.66	7.84
July	80.0	104	55	5.09	2.70	4.14
August	78.8	103	55	5.68	6.44	8.66
Summer	78.9	104	45	15.20	10.80	20.64
September	73.9	97	39	3.10	.42	4.32
October	62.7	93	29	2.60	.39	4.75
November	52.1	80	18	2.45	2.87	2.60
Fall	62.9	97	18	8.15	3.68	11.67
Year	62.3	104	[1] 4	48.93	32.91	53.68

[1] Temperature for cold wave, Feb. 3, 1899, not included.

AGRICULTURE.

Agriculture began in Meriwether County about 1827, when the land was definitely opened to settlement. The early settlers found a heavily forested country, but plantations were rapidly established. In clearing the land nearly all of the timber was burned, as there was no accessible market for lumber. The early agriculture consisted of the production of food supplies, including corn, wheat, rye, oats, buckwheat, vegetables, hogs, cattle, and poultry. Game was depended upon for part of the meat supply. Sheep were raised to some extent for the production of wool. The growing of cotton was soon begun as a source of material for clothing. The cotton lint was at first separated from the seed by hand and spun and woven into

cloth by primitive methods. Up to the time of the Civil War each plantation was practically self-supporting. The landowners usually lived on their plantations and exercised personal supervision over the farming operations. The Civil War and the reconstruction period wrought great changes in agricultural conditions. Many of the plantation owners moved into cities and small towns. Much fertile land was abandoned and many mansions were allowed to go to ruin. A system of tenant farming developed, with cotton as the principal money crop.

The production of cotton increased from 15,154 bales in 1879 to 32,218 bales in 1909. The annual value of the normal cotton crop ranges from $2,000,000 to $3,000,000. The crop is produced upon 90,000 to 100,000 acres of land, with a cost for fertilizers estimated at $200,000 to $250,000 annually. The yields[1] range from less than one-fourth bale to more than 1 bale per acre, the average yield, according to the census figures, being about one-third bale.

Corn ranks next to cotton in importance, the 1910 census reporting a production of 378,593 bushels from 37,402 acres. Nearly all the crop is used in the county for feeding work stock, cattle, and hogs.

Oats were grown on 4,188 acres in 1909, producing 67,760 bushels. Most of the crop is fed in the sheaf to work stock. Other small grains of minor importance are wheat, rye, and barley.

The chief forage crops are small grains cut green, cowpeas, corn stover, sorghum, and clover. Alfalfa, which was introduced into the county within recent years, does well, yielding 3 and 4 cuttings a season. Sudan grass promises to become a satisfactory hay crop. Bermuda grass is the most important pasture growth.

Sweet potatoes, Irish potatoes, peanuts, and many garden vegetables, including tomatoes, turnips, radishes, lettuce, collards, and cabbage are grown, mainly for local consumption.

The most important fruit crop is peaches. The commercial orchards are confined almost exclusively to the "mountain" slopes and ridges of the south-central and southeastern parts of the county. The trees are thrifty and bear well, and the crop is profitable when market conditions are favorable. The orchards are usually given clean cultivation, at least through the spring. Much of the land in orchards is not terraced, although occupying steep slopes. Washing is largely prevented by the gravelly character of the soil, which favors ready absorption of moisture, and by careful methods of cultivation. The shipping season for the fruit extends from about June 10 to September 1, the chief markets being Philadelphia, New York, Baltimore, Boston, and Providence.

[1] All statements of cotton yields are based upon returns for years previous to the advent of the boll weevil.

Nearly all farmers keep a few hogs and cows. The hogs are chiefly good grade animals in which the Berkshire strain is predominant. There are some purebred hogs and the number is increasing. The cattle are mostly grade Jersey animals. A few farmers have purebred bulls of both beef and dairy breeds.

The adaptation of crops to soils and topographic conditions is recognized in a broad way by the farmers. As already stated peaches are grown mainly on the mountain slopes and ridges, where the comparatively high altitudes and good air drainage afford practical immunity from damage by frost. The bottom lands are favored for the production of corn and oats, as where sufficiently drained they produce much better yields than the uplands. The soils of the Davidson series and the heavier Cecil soils are considered better for grain production than for cotton.

Light farm equipment is commonly used, except by a few of the more progressive farmers, and implements are generally of the one-horse type. Large farm buildings are uncommon, the farming system and the weather conditions not demanding large or expensive structures for the housing of stock, implements, or crops. The work stock consists chiefly of mules, although horses are used to some extent in all kinds of work. Most of the horses are light. Oxen are used to some extent in hauling.

Ground for cotton and corn is usually broken in the spring as soon as weather conditions become favorable, but the more successful farmers recognize the desirability of fall plowing and the growing of winter cover crops. As a rule cotton is planted in bedded rows, 3½ to 4 feet apart. Corn is planted in rows, usually 4 to 6 feet apart. On the uplands corn is usually planted in furrows and in the more poorly drained bottoms on slight ridges or beds. Cowpeas are often planted between the corn rows. On the rolling upland both cotton and corn rows follow contours, and cultivation is at right angles to the slope. Cotton receives 4 to 6 and corn 3 to 5 cultivations. There is considerable variation in the methods of seeding small grains. Oats, the only grain produced to any extent, are a winter crop. They are sown broadcast and plowed or harrowed in, seeded with a grain drill, or put in between cotton or corn rows in the fall.

Little attention is paid to the rotation of crops. Many fields have been continuously in cotton for many years. Corn and cotton are alternated to some extent, and some of the more successful farmers are beginning to use a definite system of rotation, including the growing of legumes and small grains as winter cover crops. There must, however, be a diversification of crops before rotation systems can be extensively practiced. This involves the establishment of markets for the disposal of crops other than cotton and of live stock. Very

few farmers in the county prefer the prevailing one-crop system of farming; it has been imposed upon them by economic conditions difficult to change.

Commercial fertilizers are used on nearly all crops, and the amount expended therefor increased from $98,980 in 1879 to $263,292 in 1909. For cotton, under normal conditions, the popular mixtures contain 8 to 10 per cent phosphoric acid, 2 to 4 per cent nitrogen, and 2 to 4 per cent potash, but at present, owing to the scarcity and high prices of potash and nitrate, a mixture of acid phosphate and cottonseed meal is generally applied. From 200 to 600 pounds of this mixture to the acre is used on cotton, the larger quantity being usually made in two applications—one just before seeding, the other about the time of blossoming. About the same grades of fertilizer are used for corn as for cotton, the application being made at planting time at the rate of 100 to 400 pounds to the acre. A side dressing of 50 to 100 pounds per acre of nitrate of soda also is sometimes applied. Commercial fertilizer is not so generally used for corn as for cotton. Oats are usually fertilized at the time of seeding, and a top-dressing of nitrate of soda is sometimes added in the spring. Commercial peach orchards are fertilized with a complete mixture, usually applied at the time the trees begin to bloom.

Most of the farm laborers are negroes. At times it is difficult to obtain sufficient labor, owing to the competition of local manufacturing centers. Monthly wages range from $10 to $20, while day laborers receive about $1 a day. For picking cotton from 50 to 60 cents a hundred pounds is paid. The census reports a total expenditure of $196,340 for farm labor in 1909.

In 1910 there were 3,754 farms[1] in the county. The average size of the farms was 70.7 acres, of which 44.8 acres was improved. There are some individual holdings containing a thousand acres or more. Most of the tenant farms are leased on a share basis, the landowner supplying the stock, implements, and fertilizers and receiving one-half the crop. Farms rented for cash bring from $2 to $6 an acre, depending upon productiveness and location. The 1910 census reports the average value of land as $17.75 an acre. Selling prices range from $5 to $75 an acre, depending upon the soil, topography, and location.

SOILS.

Meriwether County lies wholly within the Piedmont Plateau province, a region of crystalline, igneous, and metamorphic rocks, consisting of granites, gneisses, diabase, quartzites, schists, and similar rocks. The most extensive formations are medium-grained biotite granite and a closely associated granite-gneiss, which underlie most of

[1] The census lists each tenancy as a farm.

the northeastern part and the western half of the county. These rocks are quite similar in chemical composition and give rise to similar soils. Next in extent to the granite rocks are the mica schists, composed chiefly of muscovite mica and siliceous material. In the southeastern part of the county the principal formations are quartzite and quartz schists, which weather into soils carrying large quantities of gravel and rock fragments. The mountains and ridges composed of these rocks stand out prominently above the surrounding formations. In the north-central part of the county diabase and hornblende schists underlie a large area, while extending across the central part of the county in a slightly northwest and southeast direction runs a narrow dike of diabase, broken here and there by other formations.

Upon disintegration and subsequent weathering these rock formations have given rise to soils of different characteristics. The difference in texture between some of these soils is due largely to surface erosion, which has produced the heavy types by a more or less complete removal of the sandy mantle in places, and the sandy members by the slow but constant carrying away in suspension of the finer material by rain water.

The soils of the county are grouped in series on the basis of origin, color, structure, and topography, the members of the series being separated on the basis of texture. In all, 8 series are mapped, including 18 distinct types and 3 phases of types, in addition to 1 miscellaneous soil classed as Meadow (Congaree material).

The upland soils, covering by far the greater part of the county, are in origin residual from the underlying rocks, and are included in the Cecil, Davidson, Durham, Appling, and Hanceville series.

The Cecil series includes gray to red surface soils and brittle, friable, red clay subsoils. A characteristic of the subsoil is the content of sharp quartz sand and the frequent occurrence of veins of quartz and small mica flakes. These soils are derived from granites, gneisses, and schists. Of this series seven types and one phase are mapped in Meriwether County.

The Davidson series is characterized by reddish-brown to dark-red surface soils and dark-red or maroon-red subsoils. The subsoils are generally free from sharp quartz sand and have a smooth and slightly greasy feel. They are derived from the dark-colored basic igneous rocks, such as diabase, hornblende schist, and quartz-free diorites. Rounded fragments of the parent rocks are numerous on the surface in places. The Davidson clay loam and clay, the latter with a stony phase, are mapped.

The Durham series is distinguished by the gray to whitish color of the surface soil and the yellow color and prevailingly friable structure of the subsoil. These soils are derived from the light-colored

granites and gneisses composed principally of quartz, feldspar, and mica. Only one type, the Durham sandy loam, occurs in Meriwether County.

The Appling series includes types with grayish, yellowish-gray, or light-brown soils and a reddish-yellow or mottled light-red and yellow, friable clay subsoil. The subsoil is intermediate in color between the yellow of the Durham and the red of the Cecil series. The Appling soils are derived from gneisses, mica schists, and in places quartzite. Two types, the sandy loam and fine sandy loam, and a gravelly phase of the latter are mapped in the present survey.

The Hanceville series includes types with gray or yellowish-gray surface soils and a light-red to red subsoil. These soils are derived from quartzite and quartz schists, which are generally harder and more resistant than the surrounding formations. They occupy isolated hills and low mountains. Fragments of the parent rock are numerous over the surface. Two types, the Hanceville stony fine sandy loam and gravelly fine sandy loam, are mapped in Meriwether County.

Throughout the county in the first bottoms of streams there are narrow belts of recent-alluvial deposits, and along the Flint River and in places along some of the largest creeks there are small bodies of old alluvium forming second bottoms or terraces. All of these areas represent material washed from the Piedmont soils and deposited along streams during periods of overflow. The second bottoms or terraces lie above normal overflow, and the material has been more or less weathered since it was laid down by the streams. The soil here is classed with the Altavista and Wickham series.

The Altavista series includes types having gray surface soils and a yellow subsoil, while the Wickham series is distinguished by brown surface soils and a brown to red subsoil. Each of these series is represented in the county by the fine sandy loam.

On the first bottoms, or present flood plains, the material is more or less mixed, and is constantly being changed by deposition of new sediments or removal of the old. Where it can be classed into types it is correlated with the Congaree series. This series includes types with brown surface soils and subsoil, the latter usually carrying a noticeable amount of finely divided mica scales. The soils of this series are subject to frequent overflows. The Congaree fine sandy loam and silty clay loam are mapped.

The first-bottom material of diversified texture, structure, and color is mapped as Meadow (Congaree material).

The following table gives the names and actual and relative extent of the several types mapped:

Areas of different soils.

Soil.	Acres.	Per cent.	Soil.	Acres.	Per cent.
Cecil sandy clay loam	102,464	32.2	Hanceville gravelly fine sandy loam	4,800	1.5
Cecil sandy loam	62,848	19.7	Appling fine sandy loam	2,880	1.5
Meadow (Congaree material)	30,976	9.7	Gravelly phase	1,728	
Cecil clay loam	25,664	8.8	Durham sandy loam	2,880	.9
Gravelly phase	2,368		Cecil fine sandy loam	2,304	.7
Appling sandy loam	18,752	5.9	Davidson clay loam	2,304	.7
Davidson clay	12,416	4.4	Cecil coarse sandy loam	1,920	.6
Stony phase	1,536		Congaree fine sandy loam	1,728	.6
Cecil gravelly fine sandy loam	13,504	4.2	Altavista fine sandy loam	704	.2
Hanceville stony fine sandy loam	12,544	3.9	Wickham fine sandy loam	640	.2
Congaree silty clay loam	7,936	2.5			
Cecil stony sandy clay loam	5,824	1.8	Total	318,720	

CECIL STONY SANDY CLAY LOAM.

The surface soil of the Cecil stony sandy clay loam is a gray to light brownish red sandy loam to sandy clay loam, 4 to 8 inches in depth. The subsoil is a stiff, heavy red clay containing some angular quartz grains and small mica flakes. Distributed over the surface and mixed with the soil are rock fragments consisting chiefly of quartz, with some granite, gneiss, and mica schist. In the neighborhood of St. Marks fragments of coarse-grained granite weathered from dikes are quite prominent.

This type is associated with the Cecil sandy clay loam, occupying small areas where quartz veins outcrop in abundance or where the slopes are quite steep and the soil thin. The topography is rolling to hilly and drainage is well established.

Probably less than 50 per cent of the type is under cultivation, the remainder being in the original forest or in old fields. Because of its comparatively small extent, its stony character, and in places its rough topography, this is not an important type agriculturally. It is utilized for practically the same purposes as is the Cecil sandy clay loam, although probably a larger proportion of it is in Bermuda-grass pasture.

CECIL GRAVELLY FINE SANDY LOAM.

The surface soil of the Cecil gravelly fine sandy loam is a yellowish-brown to reddish-brown loamy fine sand to fine sandy loam, 8 to 16 inches deep. The upper 4 to 6 inches of the subsoil is a yellow to yellowish-red fine sandy clay, which grades into a uniformly red, friable, heavy fine sandy clay or friable clay. Scattered over the surface and throughout the soil section is a large quantity of small, subangular quartz fragments. Few of these fragments are more than 2 inches in diameter, and they do not interfere seriously with

cultivation. The bedrock is soft and crumbly and appears only in cuts.

The Cecil gravelly fine sandy loam is extensively developed in the south-central and southeastern parts of the county, from Cane Creek to Pine Mountain. The topography is uniformly undulating to moderately rolling, except in small areas near the larger streams and in The Cove, where it is somewhat hilly. Drainage is good throughout the type. The soil is practically free from gall spots, and terraces are made only at rather wide intervals on the slopes.

A large proportion of the forest growth consists of hardwoods, including post oak, red oak, and hickory, with some shortleaf pine. Except for large woodlots on watercourses or on gravelly knolls and slopes, the type is generally under cultivation. The soil does not differ essentially from the sandy loam type in cultural requirements or in productiveness. Cotton and corn are the principal crops. The price of farm land ranges from $15 to $50 an acre, according to location, improvements, and productiveness.

CECIL COARSE SANDY LOAM.

The surface of the Cecil coarse sandy loam consists of a gray or light-brown loamy coarse sand, 5 to 12 inches deep. This grades usually into a yellowish or light-red coarse sandy clay loam, which becomes heavier with depth, passing into a red, stiff, heavy clay at a depth of 12 to 15 inches. In the shallower areas the surface soil has a slightly reddish to brownish tinge, owing to an admixture of some of the underlying red clay subsoil. A characteristic of this type is that bedrock, usually consisting of granite or granite-gneiss, is encountered within 2 to 6 feet of the surface, and fragments of this rock are common on the surface over the more rolling areas. The sand content of the surface soil usually consists of a mixture of all grades of subangular quartz, ranging from gravel to fine sand, with the medium and coarse material predominating.

The Cecil coarse sandy loam is not an important soil type, being confined to rather small areas west and southwest of Greenville. The largest lies 6 or 7 miles southwest of Greenville, between the Macon & Birmingham and the Atlanta, Birmingham & Atlantic Railways. The topography is undulating to rolling, and drainage is well established.

A part of the type is under cultivation, but much of it is in old fields. A characteristic growth in old fields is bear grass, a species of yucca common in this region. Cotton and corn are the most important crops. The methods of cultivation and the yields are similar to those on the Cecil sandy loam, with which this type is intimately associated. The coarse sandy loam, however, is not con-

sidered quite so desirable as the better areas of sandy loam; it appears to lose its organic matter more rapidly. The price of the land ranges from $10 to $25 an acre.

CECIL SANDY LOAM.

The Cecil sandy loam consists of a gray to light yellowish brown, loamy sand to light sandy loam, 6 to 15 inches in depth, underlain by a heavy, stiff, red clay, containing some quartz sand grains and, in places, mica flakes. In many places there is a gradational zone between the surface soil and subsoil in which the material is a yellowish to light-red sandy clay or clay loam. The shallower areas of this type when freshly plowed have a reddish-brown rather than a grayish color. The quartz grains in the surface soil usually are subangular and range in texture from fine sand to gravel, the medium grades usually predominating. Small, angular quartz fragments are scattered over most of the type, but usually do not constitute more than 2 or 3 per cent of the surface material. The Cecil sandy loam is closely associated with the Cecil sandy clay loam, and as mapped includes small areas of that type. There are also included spots in which the texture approaches that of the coarse sandy loam. Small areas in which the bedrock is comparatively near the surface and the subsoil is light red to mottled red and yellow in color represent a near approach to the Appling sandy loam.

The Cecil sandy loam is extensively developed throughout the county, except in the south-central and southeastern parts. For the most part it occupies broad, undulating divides where erosion has not been active, but in some areas, in which the bedrock is an especially siliceous granite or granite-gneiss, the topography is quite rolling. Drainage is well established.

Owing to its wide extent, favorable topography, and ease of cultivation, the Cecil sandy loam is one of the most important agricultural soils in the county. Probably 75 per cent of the type is under cultivation. The original vegetation consisted chiefly of longleaf, loblolly, and shortleaf pine, with some hardwoods in places. The principal crops are cotton, corn, and oats. Wheat, rye, cowpeas, and sorghum are minor crops. A few patches of alfalfa are grown. Garden vegetables, peanuts, and melons do well.

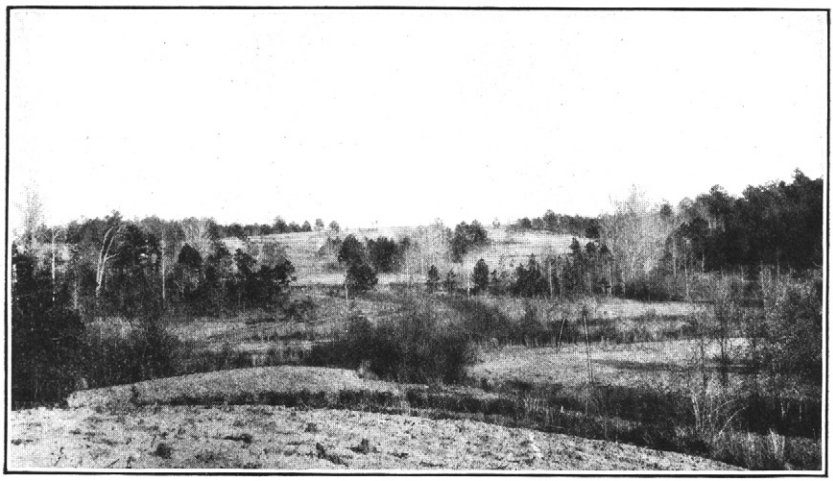
Cotton yields from one-fourth to 1 bale and corn from 15 to 50 bushels to the acre, the returns varying widely with difference in seasons, quantity of fertilizer used, previous use of the land, and care of the crop.

The Cecil sandy loam is well suited to all the crops common to this region. Owing to the light texture of the surface soil, it dries out and warms up earlier in the spring and can be worked under a wider range of moisture conditions than the heavier members of the Cecil

S8841

FIG. 1.—AN OLD FIELD ABANDONED BECAUSE OF STONY CHARACTER OF SOIL.

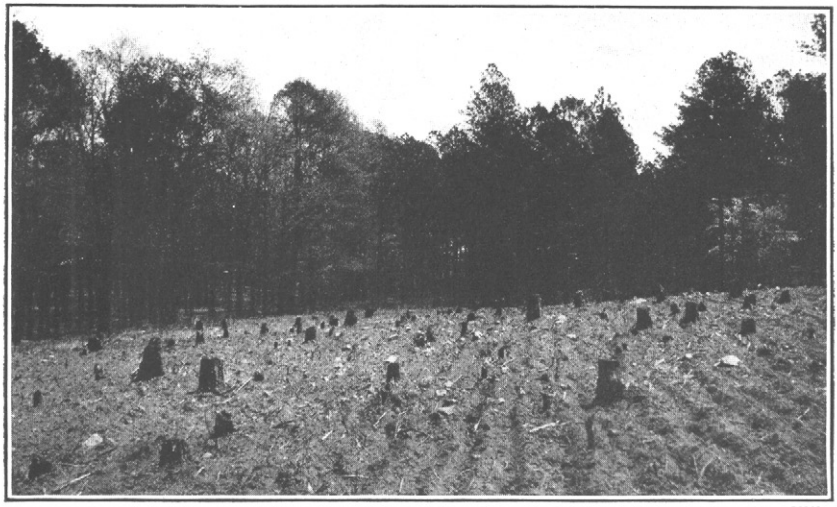
It has grown up in gum and loblolly pine trees, with open spaces which furnish a rather meager pasturage.



68840

FIG. 2.—TYPICAL ROLLING TOPOGRAPHY OF MERIWETHER COUNTY.

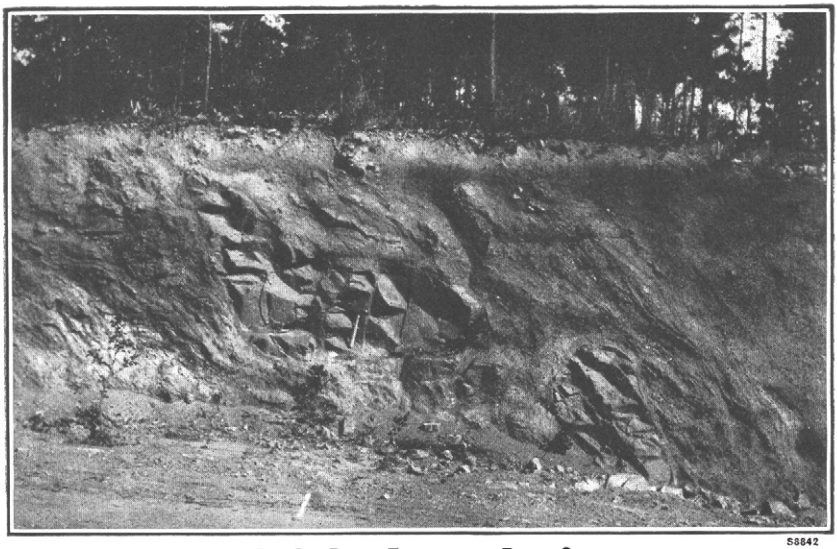
Showing small clumps of woodland, a small bottom, and terraced hillside field.



S8843

FIG. 1.—A NEWLY CLEARED FIELD.

Right background shows second-growth loblolly pine; left background, the original hardwood vegetation.



S8842

FIG. 2.—ROCK EXPOSED IN ROAD CUT.

Rock below grading into soil above. The rock is mica schist, with granitic inclusions.

series, while its compact subsoil enables it to hold moisture better. The price of land of this type ranges from $15 to $50 an acre, depending upon the location, topography, and improvements.

The prevention of erosion is one of the serious problems connected with the use of this soil. At present the chief reliance is placed upon terracing and contour plowing and these means have proved effective on most of the land. More attention should be given to the growing of winter cover crops, such as rye, wheat, oats, bur clover, and crimson clover, and the incorporation of organic matter. Promising crops are peanuts and Sudan grass, which are successfully grown elsewhere on the same soil. It is also utilized in other sections for the commercial production of peaches, Irish potatoes, sweet potatoes, cantaloupes, and dark-leaf plug tobacco.

Areas indicated on the soil map by gravel symbols and stone symbols in the Cecil sandy loam color represent, respectively, a gravelly and a stony variation of this type. The soil is very similar to the typical soil, except in the larger proportion of fragmental rock. The extent of these variations is small, and no further discussion of them is necessary.

CECIL FINE SANDY LOAM.

The Cecil fine sandy loam consists of a light-brown or brownish-yellow, loamy fine sand, 6 to 15 inches deep, underlain by a reddish-brown fine sandy loam which becomes heavier with depth, finally grading into a red, friable fine sandy clay or clay. Bedrock, usually a siliceous mica schist, is exposed in the deeper road cuts and gullies, and the surface soil usually contains a small proportion of small rock fragments, mostly quartz, veins of which cut through the parent schist.

The Cecil fine sandy loam is developed only in small areas in the south-central and southeastern parts of the county, occurring at the foot of the "mountains" in association with the Cecil gravelly fine sandy loam. The topography is uniformly rolling, but nowhere so steep as to prevent the use of the land for farming. Surface drainage is well established throughout the type, and the texture of the soil and subsoil is favorable to the absorption of rainfall. Terraces are established at rather wide intervals on the slopes to prevent damage to fields from erosion following the heavier rains of winter and spring.

A large proportion of this type is under cultivation. The original forest consisted chiefly of hickory, post oak, red oak, sweet gum, dogwood, and shortleaf pine. Cotton and corn are the principal crops, with oats, rye, and wheat grown to a smaller extent. Cotton, with an acreage application of 200 to 300 pounds of a 10–2–2 or

8–2–2 fertilizer, yields one-third to one-half bale per acre. With careful handling of the soil and the liberal use of stable manure in conjunction with commercial fertilizer, a yield of 1 bale per acre is sometimes obtained. Corn yields 15 to 25 bushels and oats about 30 bushels an acre.

The farming methods generally practiced throughout the county are followed on this type. The price of land ranges from $10 to $30 an acre, depending chiefly on the location and improvements.

CECIL SANDY CLAY LOAM.

The Cecil sandy clay loam consists of a gray to light brownish red sandy loam to sandy clay loam, 4 to 8 inches deep, underlain by a stiff, heavy red clay containing some angular quartz grains and small mica flakes. The transition from soil to bedrock usually begins below a depth of 4 feet, and the various stages of decomposition of the parent material are readily observable in road cuts and gullies. In places on the crests or upper slopes of ridges bedrock is encountered within the 3-foot section, and the soil contains noticeable quantities of disintegrated rock material, such as feldspar and mica. The surface soil usually contains an appreciable percentage of larger rock fragments, usually quartz weathered from dikes or veins which are prominent features of the rock formations of the county.

The Cecil sandy clay loam is intermediate in texture between the Cecil clay loam and the Cecil sandy loam. It is closely associated with those soils throughout the county, and in many places the boundaries between the types are difficult to establish and as shown on the map are purely arbitrary. Many small areas of both these types are included with the sandy clay loam. This type occurs in large areas in all sections of the county except the mountainous region in the southeastern corner. It generally occupies broad, undulating to rolling interstream areas in which drainage is well established.

The favorable texture, topography, and drainage conditions of the Cecil sandy clay loam make it one of the more valuable agricultural soils of the county. About 80 per cent of the type is under cultivation, the remainder being occupied either by the original forest, consisting chiefly of various species of oak, hickory, sweet gum, and loblolly and shortleaf pine, or by a second growth of loblolly and shortleaf pine.

The principal crops are cotton, corn, and oats. Wheat, rye, cowpeas, sorghum, bur clover, crimson clover, and alfalfa are grown to some extent. Bermuda-grass pastures are maintained on a few farms. Garden vegetables and the fruits and berries adapted to the climate do well.

Cotton yields from one-fourth to 1 bale an acre, according to season, fertilization, and care in cultivation. Corn yields from 10 to 50 bushels and oats from 20 to 60 bushels per acre.

Most of the areas of the Cecil sandy clay loam are terraced, and contour plowing is universally practiced. The agricultural methods in general use are followed on this soil. Commercial fertilizers are used on practically all crops.

The price of land of this type ranges from $15 to $75 or more an acre, depending largely upon the improvements and the location with respect to towns and shipping points. The ordinary selling price for most of the type is probably between $20 and $30 an acre.

The texture of the Cecil sandy clay loam renders it especially susceptible to improvement. Where the surface soil is quite sandy it can be made more retentive of moisture and less subject to erosion by turning up some of the subsoil in plowing and by the incorporation of organic matter, including stable and green manures.

CECIL CLAY LOAM.

The Cecil clay loam consists of a red to brownish-red clay loam, 3 to 5 inches deep, underlain by a stiff, heavy red clay, which extends to a depth of 36 inches or more. The subsoil is brittle when moderately dry and rather sticky and tenacious when wet. It usually contains a small quantity of angular quartz sand grains and finely divided particles of muscovite mica. Below 36 inches a mottled or lighter colored material is encountered, which passes gradually into the decomposed bedrock. Rock fragments, consisting mostly of white quartz, derived from the veins which so commonly cut the country rock, are scattered over the surface in varying quantities, but seldom in quantities sufficient to interfere materially with cultivation.

There are several variations in this type. In places the surface material is sandier and lighter colored than usual and the gradation into the Cecil sandy clay loam is quite gradual. In other places the surface covering has been washed away in spots and the clay subsoil exposed. Newly cleared areas have a darker color and a higher content of organic matter than areas which have been under cultivation for many years.

The Cecil clay loam occurs in comparatively small areas throughout the county. It is usually closely associated with the Cecil sandy clay loam and the boundaries drawn between the two types are in many places arbitrary.

The topography generally is somewhat more rolling than that of the associated Cecil sandy clay loam, and in places, particularly in the western part of the county, the type is confined chiefly to the rolling slopes, where erosion has removed some of the sandy surface

material. In spots along some of the larger streams the topography is hilly. Surface drainage is well established throughout the type, and on the steeper slopes the run-off is so rapid as to cause considerable damage by washing and gullying.

About 70 per cent of this type is under cultivation. Small areas are in the original forest, consisting of oak, hickory, and other hardwoods, and shortleaf and loblolly pine. Old abandoned fields have grown up in loblolly and shortleaf pine, while those recently abandoned support a growth of broom sedge.

The Cecil clay loam is naturally one of the most productive soils of the Piedmont region, although in places the topography is unfavorable to farming operations. The system of farming is that prevailing generally over the county, cotton being the cash crop and corn and oats the chief grains. Minor crops are wheat, rye, cowpeas, sorghum, and alfalfa. Cotton yields from one-fourth to 1 bale per acre, with an average of perhaps less than one-half bale. Corn averages 20 to 25 bushels, but occasionally yields as much as 70 bushels per acre. Oats yield 20 to 50 bushels. In many cases oat fields are mowed for hay before the grain matures.

Nearly all the cultivated areas of this type are terraced to prevent washing, and contour plowing is generally practiced. Owing to the heavy character of the soil, it can be worked under only a narrow range of moisture conditions.

The price of land of the Cecil clay loam ranges from $15 to $40 or more an acre, depending upon the location, topography, and improvements.

The Cecil clay loam can be improved by deeper plowing, the incorporation of organic matter, and a systematic rotation of crops, including winter cover crops. More care should be devoted to the maintenance of terraces on the steeper slopes to prevent gullying. Some of the steeper slopes could profitably be sodded to Bermuda grass and used as pastures.

Cecil clay loam, gravelly phase.—The surface soil of the Cecil clay loam, gravelly phase, is a red to yellowish-red fine sandy clay loam, 4 to 8 inches deep. The subsoil is a red, friable fine sandy clay to clay. The surface is strewn with small quartz fragments.

This phase is not extensive. It occurs in small areas in association with the Cecil gravelly fine sandy loam on slopes from which the sandy mantle has been largely washed away. The subsoil is not easily eroded and the fields are not gullied.

The phase is quite largely under cultivation. Its crop adaptation, yields, and selling value are similar to those of the Cecil gravelly fine sandy loam.

DAVIDSON CLAY LOAM.

The surface soil of the Davidson clay loam, locally known as "dead land" or "push land," is a dark reddish brown silty loam to clay loam, 3 to 6 inches deep. The subsoil is a dark-red or chocolate-colored clay, grading at about 12 inches into a reddish-brown, slightly plastic clay.

The largest areas of this type occur between Woodbury and Flat Shoals Bridge, within 2 or 3 miles of the Flint River. Small areas occur in the uplands throughout the county. The topography is uniformly undulating to gently rolling. Drainage is well established, the type occupying positions well above the watercourses. The slopes are terraced at rather wide intervals to control the run-off from heavy rains.

This type is recognized as one of the most productive soils in the county, and practically all of it is under cultivation. It is comparatively free from stones, and under proper moisture conditions is easily cultivated. When wet, however, it becomes sticky, necessitating frequent cleaning of the plow. This soil is very well suited to the production of corn and small grains. It is also a good cotton soil. Land prices range from $20 to $50 an acre.

In the following table the results of mechanical analyses of samples of the soil and subsoil of the Davidson clay loam are given:

Mechanical analyses of Davidson clay loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay.
		Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
254329	Soil	4.3	11.0	4.0	14.4	6.9	28.8	30.7
254330	Subsoil	7.1	10.2	3.6	9.6	4.0	20.9	45.0

DAVIDSON CLAY.

The Davidson clay to a depth of 4 to 7 inches is a dark reddish brown to deep-red clay or heavy clay loam. The subsoil is a very heavy, stiff, dark-red or brownish-red clay having a smooth and slightly greasy feel, being practically free from the quartz sand which is characteristic of the Cecil subsoil. In places the subsoil grades into the decomposed parent rock within the 3-foot section. Stones, consisting chiefly of subangular quartz fragments derived from dikes or veins in the parent rock are scattered over most of the type. On eroded slopes undecomposed fragments of hornblende gneiss or schist are found.

The Davidson clay is associated in occurrence with the Cecil soils. It is readily distinguished from the Cecil clay loam by the darker color of the surface soil and subsoil.

This type is most extensively developed 4 to 7 miles east and southeast of Luthersville and in the neighborhood of Rocky Mount. Smaller areas occur in the northwestern part of the county in the neighborhood of Loneoak, along the Macon & Birmingham Railway southwest of Greenville, and in various other sections of the county. The topography is gently rolling to hilly, the hilly areas being confined to the steeper slopes along the large streams. Drainage is well established. On the steeper slopes the run-off is excessive during heavy rains, and over most of the type terracing is necessary to prevent erosion.

The Davidson clay is a productive soil, and the greater part of it is under cultivation. Small patches are forested with shortleaf pine and hardwoods, chiefly oak and hickory. Cotton, corn, and oats are the principal crops. Wheat and rye are grown to some extent, and alfalfa and bur clover in small patches. The soil is better suited to the production of small grains, grass, clover, cowpeas, and alfalfa than of cotton. Cotton yields one-fourth to three-fourths bale, corn 15 to 30 bushels, and oats 20 to 40 bushels or more per acre.

The farming methods in common use throughout the county are followed on this type. Owing to its heavy texture, the soil requires heavy farm implements and work stock for its proper cultivation. Breaking the soil when too wet results in the formation of heavy clods, which generally remain throughout the growing season.

Land of this type sells for $12 to $30 an acre, depending upon the location, topography, and improvements.

The Davidson clay can be improved by deeper plowing, thorough harrowing, systematic crop rotation, and the incorporation of organic matter. In places the removal of the larger stones is necessary for the most economical cultivation of the land.

Davidson clay, stony phase.—The Davidson clay, stony phase, consists of a heavy, dark-red clay loam, grading at 6 to 10 inches into a fairly brittle, dark-red clay. The surface is strewn with dark stones and small bowlders of diorite. There are few stones beneath the surface, except in patches, and these are small and partially decomposed.

This phase occurs in a strip, 100 to 600 feet wide, extending across the county from a point near Manchester northwestward, definitely marking the position of the dike from which it is derived. It does not differ in elevation from the adjacent soils, except where cut by streams. In such places it may stand 10 to 40 feet above the foot of the general slope.

Practically all of this phase is forested with oak, hickory, and other hardwoods, and some shortleaf pine. In other counties it is farmed

and considered a productive soil, especially well suited to the growing of alfalfa. The stones could be removed from much of the phase in this county at a reasonable cost.

Results of mechanical analyses of samples of the soil and subsoil of the typical Davidson clay and of the stony phase are given in the following table:

Mechanical analyses of Davidson clay.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay.
Typical:		*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
254313	Soil	5.2	6.9	3.6	19.4	11.4	20.0	33.8
254314	Subsoil	3.6	4.4	2.0	10.4	5.3	17.5	56.9
Stony phase:								
254317	Soil	1.0	3.0	2.2	10.0	9.2	43.4	31.6
254318	Subsoil	.2	.5	.6	4.2	7.0	35.4	52.3

DURHAM SANDY LOAM.

The surface soil of the Durham sandy loam, locally called "white land," consists of a light-gray to whitish loamy sand, passing at about 6 inches into a yellowish-gray or pale-yellow sandy loam which continues to a depth of 15 to 24 inches. The subsoil is a yellow, stiff, but friable sandy clay or clay. In the wooded areas the gray surface soil may extend to a depth of only 2 or 3 inches. In places the subsoil is a stiff, compact clay, locally known as "pipe clay."

This type is comparatively inextensive. It occurs in widely separated areas in the northeastern part of the county, particularly along Whiteoak Creek and to the northwest of Mount Carmel Church, in close association with the Appling sandy loam. The topography is gently sloping to undulating. Most of the type lies near the stream heads and at slightly lower elevations than the Appling and Cecil soils. Surface drainage generally is good and underdrainage is excellent, except in places at the base of slopes, where the type receives seepage water from higher lands. As a rule the moisture conditions are more favorable in this soil than in the Cecil sandy loam, especially during dry seasons.

About 60 per cent of the Durham sandy loam is under cultivation, the remainder being forested mainly with longleaf pine. Cotton, oats, and corn are the principal crops. The soil is well suited to the production of oats, owing to the fact that it can be easily plowed in the fall. Cotton yields ordinarily about one-third bale, and with large applications of fertilizer as much as 1 bale per acre. Oats yield from 20 to 30 bushels per acre. Most of the oat crop is fed in the sheaf to work stock. The yields of corn are low, except where the soil has been manured. Watermelons do very well.

Land of this type is commonly sold in conjunction with the Appling and Cecil soils and brings about the same price.

The Durham sandy loam, as its whitish color indicates, is very deficient in organic matter. It can be greatly benefited by turning under green-manure crops, such as cowpeas, crimson clover, or even rye, or by adding barnyard manure. A light application of lime on the lower lying areas would be beneficial, especially where cowpeas and clovers are to be grown. Bermuda grass is a desirable crop for this type. The soil is well suited to the production of sweet potatoes and truck crops, and it is the most important bright-tobacco soil of the Piedmont section of North Carolina and Virginia. Peanuts can no doubt be grown profitably on this soil. Near the heads of some of the streams open ditches or tile drains would be serviceable.

APPLING SANDY LOAM.

The surface soil of the Appling sandy loam is a gray to light yellowish brown loamy sand or light sandy loam, 10 to 24 inches in depth. The subsoil is a sandy clay, predominantly yellowish red in color, or mottled and streaked with red and yellow. The red color may predominate in the better drained areas on upper slopes. The clay is somewhat plastic in some of the lower situations, but there is usually a rather large proportion of sand in the subsoil. The type is locally known as "white land" and "piny-woods land."

This type is extensive in the northeastern part of the county. Small areas occur in the vicinity of Woodbury and throughout the central part of the county. It occupies undulating to gently rolling positions in the uplands and gently to moderately sloping areas along streams. Surface drainage is good, except in places at the heads of watercourses and in swales, where there may be constant seepage of ground water.

Some of the original forest of longleaf pine is yet standing. There is very little hardwood on the type.

The principal crops are cotton, corn, and oats. Ordinarily yields are not quite so good as on the Cecil soils, though the difference is not great, the customary rent on both types being two bales of cotton for about 30 acres of land.

The soil is quite easily cultivated. It withstands droughts better than most of the soils of the county, and is usually in good tilth in the fall. On the lower slopes Bermuda grass does exceptionally well. Yields of all crops are greatly increased by the use of fertilizer.

The price of land of this type ranges from $15 to $50 an acre, depending upon the location, improvements, and state of productiveness.

The Appling sandy loam can be readily improved by the incorporation of stable manure and the growing and plowing under of green-manure crops, especially the legumes.

APPLING FINE SANDY LOAM.

The Appling fine sandy loam consists of 8 to 15 inches of gray to light-brown, loamy fine sand or light sandy loam, underlain by a yellow to reddish-yellow fine sandy loam, which grades into a yellowish-red to light-red or mottled yellow and red, friable fine sandy clay or clay. The sandy material of the soil is derived from quartz, and small quartz fragments are scattered over the surface.

The Appling fine sandy loam is confined to the south-central and southeastern parts of the county. It occurs in small areas at the foot of the mountains in association with the Hanceville soils and the Cecil gravelly fine sandy loam and fine sandy loam. Its location and the appearance of subsoil exposures in road cuts and other places indicate that it is in part colluvial in origin, representing material washed from the mountain ridges. The topography is undulating to rolling, and drainage is well established, except in a few small areas around stream heads, which receive some seepage water.

Owing to its small aggregate area, the Appling fine sandy loam is not important agriculturally. In utilization, productiveness, and selling price it is similar to the Cecil fine sandy loam.

Appling fine sandy loam, gravelly phase.—The surface soil of the gravelly phase of the Appling fine sandy loam is a gray to light-brown, loamy fine sand, 8 to 15 inches in depth. This is underlain usually by a yellow fine sandy loam which grades into a yellowish-red or light-red, friable clay. Scattered over the surface of most of the phase is a relatively large quantity of subangular quartz fragments, usually 1 or 2 inches in diameter, but in places much larger.

This phase is confined to the south-central part of the county, all the areas being situated near the foot of the mountains. The largest continuous bodies lie 2 or 3 miles west of Bullochville. The topography ranges from undulating or gently sloping to roughly rolling or broken near the valleys of the streams which issue from the mountains. Drainage is well established, except in very small areas on the lower slopes which receive seepage water from the surrounding uplands.

Because of its small extent this soil is not important. Probably not more than one-half of it is under cultivation, the remainder being in the original forest or in second-growth pine. Cotton and corn are the principal crops.

The steeper slopes are terraced and contour plowing is generally practiced, but this soil does not as a rule wash badly, owing to its capacity to absorb the ordinary rainfall.

The price of land of the Appling fine sandy loam, gravelly phase, ranges from $5 to $20 an acre, depending chiefly upon the topography, improvements, and location.

HANCEVILLE STONY FINE SANDY LOAM.

The Hanceville stony fine sandy loam consists of a light-yellow or yellowish-gray, loamy fine sand, 10 to 24 inches deep, underlain by a light-red or yellowish-red, friable fine sandy clay. The surface as a rule is thickly strewn with small, subangular, reddish-brown pebbles of quartz and in places with large stones of quartz schist or quartzite. Bedrock frequently occurs within the 3-foot section and outcrops in places on the steeper slopes. The immediate surface of the type when dry is almost gray.

The Hanceville stony fine sandy loam is confined to slopes and narrow ridges in the south-central and southeastern parts of the county. These ridges have a maximum elevation of 1,250 feet above sea level, and the topography is for the most part quite steep and broken.

Most of the type is forested with blackjack oak, post oak, red oak, and hickory, with some pine, chiefly longleaf. It is of little value for general agriculture, but is well suited to the production of peaches, owing chiefly to freedom from frost. One large tract of steep land has been cleared and set out in peach trees.

Land values are low, approximating $3 to $5 an acre, except in locations suitable for commercial orcharding.

HANCEVILLE GRAVELLY FINE SANDY LOAM.

The surface soil of the Hanceville gravelly fine sandy loam is a light brownish yellow or yellowish-gray, loamy fine sand or light fine sandy loam, 10 to 20 inches deep. The subsoil is a light-red fine sandy clay or friable clay, underlain at a depth of 4 or 5 feet by decomposing quartz schist or siliceous mica schist. Scattered over the surface and throughout the surface soil and subsoil are numerous small, angular fragments of quartzite and quartz schist. The sand in this type consists mostly of quartz grains ranging in texture from very fine to coarse, with the finer grades predominating as a rule. In places there is a subsurface stratum of yellow fine sandy clay, which may be underlain by a mottled red and yellow, rather than a distinctly red, subsoil.

The Hanceville gravelly fine sandy loam is confined to the south-central and southeastern parts of the county. It occupies the crests

and the gentler slopes of ridges. The topography is prevailingly rolling to hilly, but in places nearly level to undulating. Some of the smaller areas have an elevation of 1,200 to 1,300 feet above sea level. Both surface drainage and underdrainage are well established.

About one-half this type is unsuited to farming and is either in the original forest of longleaf pine or in a second growth of longleaf pine, oak, and hickory. Only the more level and gently rolling areas are cultivated. This type, like the associated Hanceville stony fine sandy loam, is well suited to the production of peaches, and the peach crop of the county is almost entirely grown upon these two soils.

Cotton, corn, wheat, and oats are the general-farming crops most commonly grown. The yields equal those obtained on the Cecil gravelly fine sandy loam. Apples, tomatoes, cabbage, and other special crops are grown to some extent. Fertilizer is commonly used for all crops, including fruits.

There is a great variation in the value of the Hanceville gravelly fine sandy loam. The price of virgin cut-over land and of general-farming land ranges from $5 to $30 an acre, while land set to fruit trees commands much higher prices.

ALTAVISTA FINE SANDY LOAM.

The surface soil of the Altavista fine sandy loam consists of a gray, yellowish-gray, or brownish-gray loamy fine sand, 8 to 20 inches deep. The subsoil, to a depth of 36 inches or more, is a yellow clay loam to fine sandy clay. There are included with this type, because of their small extent, some areas in which the sand is coarser than in the typical soil.

The Altavista fine sandy loam occurs in relatively small areas on the second bottoms or terraces of the Flint River and some of the larger creeks. The topography is level to gently undulating. Most of the type lies above the reach of ordinary overflows, but there are some depressions and flat areas in which the natural drainage is poor and ditching is needed.

Owing to its small extent, the Altavista fine sandy loam is not important in the agriculture of the county. Probably about 50 per cent of its area is farmed, the remainder being either in the original or in second growth forest. Fields lying idle soon grow up in briers, gum sprouts, and broom sedge.

This type is used for the same crops and handled in the same manner as the adjoining upland soils. The acreage of grain compared with that of cotton, however, is probably higher than on the latter soils. The prices of land are based usually upon those of the surrounding upland types and range from about $15 to $30 an acre.

WICKHAM FINE SANDY LOAM.

The Wickham fine sandy loam consists of a reddish-brown loamy fine sand, 8 to 18 inches deep, underlain by a red, friable fine sandy clay which extends to a depth of 36 inches or more. In some places the surface soil is yellowish brown rather than reddish brown. In others the surface loamy fine sand extends to a depth of 3 feet or more, as in the small areas at the foot of the mountain southwest of Warm Springs.

The Wickham fine sandy loam occurs on the second bottoms or terraces of the larger streams, mainly those of the Flint River. Some small areas occur at the foot of the mountain southwest of Warm Springs. In places this type merges so gradually into the adjoining higher and lower lying types that the boundaries are arbitrarily drawn. The topography is level to gently undulating. Most of the type is well drained, and only in small depressions is artificial drainage necessary.

The greater part of the type is under cultivation, in connection with the adjoining upland soils. It is used chiefly for the production of corn and small grains.

CONGAREE FINE SANDY LOAM.

The Congaree fine sandy loam consists of a yellowish-brown loamy fine sand, 10 to 24 inches deep, underlain by a red to yellowish-red fine sandy clay to clay.

This type occurs in the bottoms of Flint River. It is overflowed several times each year, but is normally well drained. Most of the type is in woods pasture, supporting a good growth of grasses and shortleaf pine. The large area mapped in The Cove is used for the production of corn and oats.

Bordering the Flint River in many places there are very narrow strips of brown fine sand, which rise like levees above the level of the Congaree fine sandy loam. Most of these areas are forested. The soil is less productive than the fine sandy loam.

CONGAREE SILTY CLAY LOAM.

The Congaree silty clay loam consists of a reddish-brown silty clay loam, grading at 10 to 15 inches into a heavy, reddish-brown clay, which may be mottled with gray in the lower part of the 3-foot section.

This type occurs along the streams throughout the county, being most extensive along Whiteoak Creek and Flint River. Most of the areas along the small streams are ditched and under cultivation, but those along Whiteoak Creek and Flint River are subject to frequent

overflows and are not used for agriculture. Uncleared areas support a forest growth consisting mainly of water oak, red oak, poplar, sweet gum, shortleaf pine, and alder. This type where reclaimed is considered an excellent soil for the production of corn. With small applications of fertilizer from 25 to 50 bushels of corn per acre are obtained.

MEADOW (CONGAREE MATERIAL).

Meadow (Congaree material) comprises alluvial material of variable texture and structure washed down from the upland soils and deposited in the first bottoms of streams. The material ranges in texture from coarse sand to clay and areas of different textures are so intricately intermingled that separation into types is impracticable. Furthermore, the character of the surface soil is constantly changing as a result of successive overflows. The color of both surface soil and subsoil is prevailingly reddish brown, but in some areas the subsoil is mottled gray and yellow. Minute mica flakes occur in varying quantities throughout the soil section.

Meadow (Congaree material) occurs in narrow areas along most of the smaller streams of the county. The surface is flat and nearly level, and natural drainage is poor. Only very small, scattered areas are under cultivation. The natural vegetation consists chiefly of birch, sweet gum, bay, willow, water oak, alder, reeds, and water-loving grasses. The principal crop is corn, which under good seasonal conditions yields 30 to 60 bushels per acre. If properly drained and carefully handled Meadow (Congaree material) would become one of the most productive soils in the county.

SUMMARY.

Meriwether County is situated in the west-central part of Georgia, in the Piedmont Plateau province. It embraces an area of 498 square miles, or 318,720 acres. The topography is prevailingly rolling and drainage is well established.

The population of the county is 25,180, all of which is classed as rural. Manchester, with a population of 922, and Woodbury, with 917, are the largest towns. Greenville, the county seat, ranks third in size, with a population of 909 in 1910.

Transportation facilities are excellent, four railroads traversing the county. The public roads are fairly good and are being improved.

The climate is comparatively mild and pleasant, being characterized by long, warm summers and short winters. The mean annual temperature is 62.3° F. and the mean annual precipitation about 49 inches. The rainfall is well distributed and is normally sufficient for all the crops grown.

Agriculture is the chief industry of Meriwether County. The principal crops are cotton and corn. Oats, wheat, rye, and forage crops are grown to some extent. Sweet potatoes and other vegetables are grown for local consumption. Peaches are grown on a commercial scale on the mountains in the southern part of the county. Complete fertilizers are used for nearly all crops.

There are 3,754 farms in the county, of an average size of 70.7 acres,[1] and nearly 80 per cent of the farms are operated by tenants. Farm laborers are mostly negroes. The selling price of land ranges from $10 to $75 an acre, the price varying with the soil conditions and location.

The native forest growth consists chiefly of longleaf, loblolly, and shortleaf pine, oak, hickory, gum, and tulip poplar.

The soils of the county are derived from igneous and metamorphic rocks, chiefly granite, granite-gneiss, mica schist, hornblende schist, quartz schist, and quartzite. The upland soils are residual from these rocks, while the alluvial soils consist of material washed from the uplands and deposited by streams. In all, 8 series of soils, including 18 distinct types, in addition to Meadow (Congaree material), are mapped.

The Cecil series comprises the more important of the upland types. The surface soils of this series are gray to red and are underlain by brittle, friable, red clay subsoils. Seven types are mapped, ranging in texture from stony sandy clay loam to clay loam. Gravelly and stony areas are common. The Cecil soils are devoted to general farming, cotton being the chief crop.

The Appling soils are closely related to the Cecil, the chief difference being in the color of the subsoil, which is mottled red and yellow or reddish yellow rather than red. The Appling sandy loam is developed in small areas over most of the county, while the Appling fine sandy loam, with its gravelly phase, is confined to the southern and southeastern parts. These soils are used for general farming.

The Durham sandy loam, the only type mapped in the Durham series, closely resembles the Appling sandy loam, with which it is associated. It is used for general farming, cotton, oats, and corn being the principal crops.

The Hanceville stony fine sandy loam and gravelly fine sandy loam are confined to the mountains in the southern part of the county. These soils are used only to a small extent, chiefly for the production of peaches.

The Davidson series includes reddish-brown to dark-red surface soils and dark-red subsoils. The Davidson clay loam and clay are

[1] Each tenancy is tabulated by the census as a "farm."

among the more productive soils in the county. They are used for general farming. The Davidson clay is the heaviest upland soil in the county. Practically all of the stony phase of this type is forested.

The alluvial soils are represented by two first-bottom and two terrace types. The first-bottom soils are correlated with the Congaree series and the terrace soils with the Altavista and Wickham series. All of these soils are relatively inextensive and unimportant. Undifferentiated bottom-land areas are classified as Meadow (Congaree material).

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[PUBLIC RESOLUTION—No. 9.]

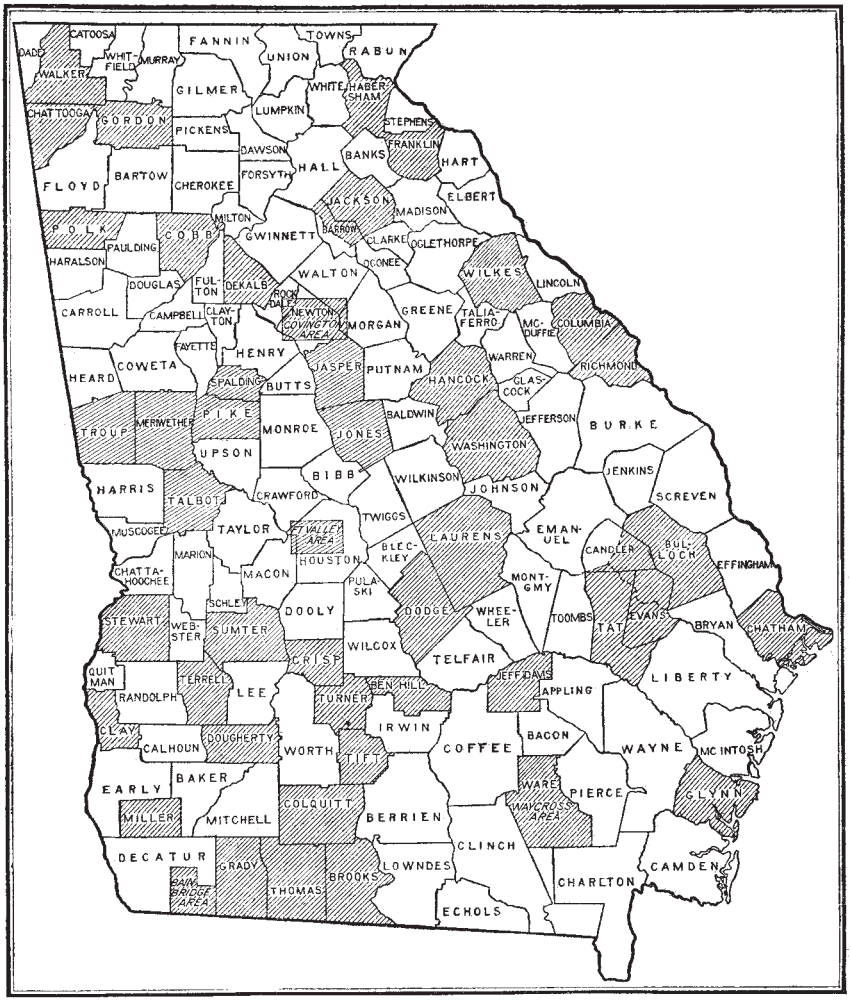
JOINT RESOLUTION Amending public resolution numbered eight, Fifty-sixth Congress, second session, approved February twenty-third, nineteen hundred and one, "providing for the printing annually of the report on field operations of the Division of Soils, Department of Agriculture."

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That public resolution numbered eight, Fifty-sixth Congress, second session, approved February twenty-third, nineteen hundred and one, be amended by striking out all after the resolving clause and inserting in lieu thereof the following:

That there shall be printed ten thousand five hundred copies of the report on field operations of the Division of Soils, Department of Agriculture, of which one thousand five hundred copies shall be for the use of the Senate, three thousand copies for the use of the House of Representatives, and six thousand copies for the use of the Department of Agriculture: *Provided*, That in addition to the number of copies above provided for there shall be printed, as soon as the manuscript can be prepared, with the necessary maps and illustrations to accompany it, a report on each area surveyed, in the form of advance sheets, bound in paper covers, of which five hundred copies shall be for the use of each Senator from the State, two thousand copies for the use of each Representative for the congressional district or districts in which the survey is made, and one thousand copies for the use of the Department of Agriculture.

Approved, March 14, 1904.

[On July 1, 1901, the Division of Soils was reorganized as the Bureau of Soils.]



Areas surveyed in Georgia.

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