Issued September 12, 1916.

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 LAURENS COUNTY, GEORGIA.

BY

A. T. SWEET, IN CHARGE, GROVE B. JONES, E. T. MAXON,
T. M. MORRISON, AND E. C. HALL.

W. EDWARD HEARN, INSPECTOR, SOUTHERN DIVISION.

[Advance Sheets—Field Operations of the Bureau of Soils, 1915.]

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1916.

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LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
Washington, D. C., February 21, 1916.

SIR: During the field season of 1915 a soil survey was made of Laurens County, Georgia. This work was done in cooperation with the Georgia State College of Agriculture, and the selection of the area was made after conference with State officials.

I have the honor to transmit herewith the manuscript report and map covering this survey and to recommend their publication as advance sheets of Field Operations of the Bureau of Soils for 1915, as provided by law.

Respectfully,

MILTON WHITNEY,
Chief of Bureau.

Hon. D. F. HOUSTON,
Secretary of Agriculture.

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SOIL SURVEY OF LAURENS COUNTY, GEORGIA.

By A. T. SWEET, In Charge, GROVE B. JONES, E. T. MAXON, T. M. MORRISON, and E. C. HALL.—W. EDWARD HEARN, Inspector.

DESCRIPTION OF THE AREA.

Laurens County is situated near the central part of Georgia, its western boundary being about 30 miles from the city of Macon. The county is irregular in outline. It has an area of 796 square miles, or 509,440 acres. Wilkinson and Johnson Counties bound it on the north; Emanuel, Montgomery, and Wheeler Counties on the east; Wheeler and Dodge Counties on the south; and Dodge and Bleckley Counties on the west.

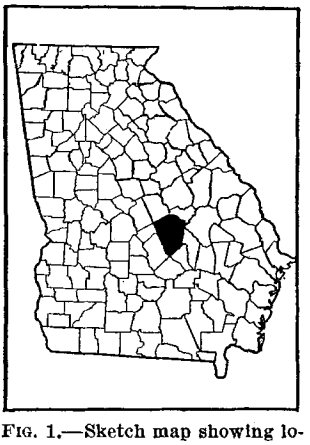

FIG. 1.—Sketch map showing location of the Laurens County area, Georgia.

Laurens County has no striking or prominent topographic features. As a whole it consists of a plain of low elevation, gently sloping toward the south and southeast. Into this plain sluggish streams have cut comparatively wide valleys, such being possible on account of the low gradient of the streams and the soft material in which they have worked.

The county lies on the northern edge of the Altamaha upland, the northern boundary, according to Veatch, running in an irregular line across the county a few miles north of Dublin, marked in a general way by the boundary between the Norfolk and Tifton soils on the south and the Orangeburg and Greenville soils on the north. Long, low ridges form the divides between the larger drainage courses and smaller ridges extend out from these between the stream tributaries, surface relief in this general region being due almost entirely to erosion and to uneven solution of the soft underlying rock beds.

In the northern part of the county the Oconee River and its tributary streams have cut deep valleys which are bordered by steep slopes, in places almost perpendicular. These vary in height from 50 to over 150 feet and in most places do not admit of profitable cultivation. In places outcrops of cherty limestone are common. These

are especially prominent in the extreme northwest part of the county along the upper course of Turkey Creek, where the steep slopes and rock outcrops usually occur south of the stream, while the slope on the north side is much more gradual, with little or no outcrop. Throughout this part of the county the larger streams are fed by many small, short tributaries, which gully deeply into the adjacent uplands. The uplands in general, however, except where thus gullied, have an undulating to rolling topography similar to that prevailing farther south. In the central and eastern parts and much of the southern part of the county the streams follow sluggish, meandering courses through rather broad flood plains. The stream courses are not very sharply defined, the streams in many places having two or more channels which frequently divide and reunite. Bordering the present flood plain of the larger streams there are in many places long stretches of an old flood plain not at present subject to overflow. These benches or terraces in many places have been more or less eroded and it is often difficult to determine the boundary between the terrace and the present flood plain or between the terrace and the upland proper. In this part of the county only a few small areas are too steep for profitable cultivation, comprising long, narrow strips bordering the valleys, usually on one side only, or around amphitheaterlike depressions at the heads of small tributaries. In a few places there are small, almost flat, poorly drained areas which have somewhat the appearance of the flatwoods tracts in the southern part of the State. These areas have sufficient elevation for good drainage, but the Coastal Plain of which they are a part is so young that drainage has not had sufficient time for development.

Throughout the county there are circular or elongated depressions, varying in extent from less than one-fourth acre to several acres, and in depth from 5 to 10 feet or more. The boundaries are usually sharply defined by rather steep slopes. Some of these depressions remain throughout the year as small circular bodies of water, others during wet weather are partly filled with water, which is lost by seepage and evaporation as the season becomes dry. They support a dense growth of cypress, tupelo gum, and other trees which thrive under the moisture conditions. In many places these depressions occur in chains which may or may not be connected by a drainage way. Frequently they are almost, but not entirely, reached by a small branch and are artificially drained by extending the natural drainage way. Many of the small branch streams have their source in amphitheaterlike depressions which appear to be the remnants of old ponds which have been captured and drained by the small tributary. Many of the ponds and depressions appear to be the result of solution of the underlying formations, with consequent sinking of the surface material.

The Oconee River flows from northwest to southeast through the county, approximately one-third of the county being east of the river. The general slope of the county is toward the south, though drainage is also toward the Oconee River, streams east of the Oconee flowing southwest and those west of the river, southeast. The elevation of the Macon, Dublin & Savannah Railroad station at Dublin is 231 feet above sea level; that of the station at Dudley, 11 miles west of Dublin, 325 feet; and at Montrose, 5 miles farther west, 391 feet, indicating a slope of about 10 feet to the mile. Dudley and Montrose, however, are on the upland, while the station at Dublin is in the valley of a small stream near the Oconee flood plain, so that the average fall is somewhat less than the elevations given would indicate. The slope here is probably fairly representative of the general slope throughout the central part of the county.

The Oconee River has its source well up in the Piedmont Plateau in the region of red soils, and carries much sediment which it rapidly deposits after it passes the fall line separating the Piedmont from the Coastal Plain. The water throughout the greater part of the year is muddy, and in this respect is strikingly different from that of the streams of the county which are bordered by areas of sandy soil and have a slower flow. The Oconee River is navigable, and is used to a small extent for the shipping of lumber, wood, fertilizers, and other bulky products. Turkey Creek enters the county near the west corner and after a southeasterly course of over 20 miles empties into the Oconee from the west about 8 miles below Dublin. This stream, with its numerous tributaries drains nearly one-fourth of the county. Joiner, Alligator, and Okeewalkee Creeks drain the southern and southwestern parts of the county. Okeewalkee Creek empties into the Oconee outside the county, and the other two flow into the Ocmulgee River. All these streams have many small branching tributaries which finger out into all parts of the uplands. So numerous are these small branches that it is unusual to find a tract as large as 50 acres where one or more of them has not intruded, and practically all the upland farms have good drainage outlets.

The Oconee River flows through a low flood plain which varies in width from one-fourth mile to over a mile. The bottom land is practically all heavily forested with pine and various hard and soft woods. Much of it is subject to annual overflow, but part of the higher lying land is under cultivation. The valleys of Turkey Creek and of the other smaller streams vary in width from less than 100 yards to more than one-half mile. These bottoms are covered with a heavy growth of timber, undergrowth, and vines, and under present conditions are not susceptible of cultivation. The small

branches are also in most cases bordered by a forest growth of some kind, and even the extreme upper reaches of their valleys can rarely be crossed in cultivating the fields. In a few places this land has been cleared and drained and put under cultivation.

Settlements were made before the close of the eighteenth century in the region which afterwards became Laurens County. The county was created December 10, 1807, from parts of Washington and Wilkinson Counties. The early settlements were few and widely scattered. In 1880, according to the census, the population was only 10,053. By 1890 this had increased to 13,747, in 1900 it was 25,908, and in 1910, 35,501. In the latter year the population outside of Dublin was 29,706. Settlement is rather evenly distributed throughout the county, and the population is 83.7 per cent rural, with a density of settlement of approximately 40 persons to the square mile. Approximately three-fifths of the population of the county is white.

Dublin was made the county seat of Laurens County in 1809. Until about 30 years ago it was a comparatively small village. In 1890 it had a population of only 862, which 10 years later had increased to 2,987. The 1910 census gives the population as 5,795. Dublin is the business, financial, and social center of almost the entire county. Many of the largest landowners of the county live in Dublin and have extensive business interests there. Villages having 50 to 400 population are Dudley and Montrose in the western part of the county; Dexter, Rentz, and Cadwell in the southwestern part; and Brewton, Lovett, and Rockledge in the eastern part. All are on railroads having direct communication with Dublin and with important trunk lines.

Although no trunk line railway enters Laurens County, local lines, the outgrowth of the roads built for developing the lumber and turpentine industries, reach all parts of it except the northern and southern. The Macon, Dublin & Savannah Railroad crosses the county east and west, making connection with the Georgia & Florida and Seaboard Air Line Railways at Vidalia and with the Southern Railway at Macon. Lines of the Wrightsville & Tennille Railroad extend southward from Dublin to Eastman and to Hawkinsville, where they meet the main line of the Southern Railway, and to Tennille on the north, connecting with the Central of Georgia Railway. In the extreme southern part of the county the nearest railroad points are on the Seaboard Air Line Railway outside the county.

Savannah is the principal cotton market for this region. Some live stock is shipped to the packing house at Moultrie, in Colquitt County. Dublin is the principal market for the county. Cotton and hogs are shipped from many of the towns.

A good system of public roads is being developed. Highways radiate from Dublin, connecting it with the other towns of the county and with the larger towns of adjacent counties. In the construction of roads convict labor is used very largely and sand and clay are the principal building materials. Telephones and the rural free delivery of mail extend into nearly all parts of the county.

CLIMATE.

The climate of Laurens County is representative of that of a large part of middle Georgia below the fall line. It is appreciably warmer and has a longer growing season than has the southern part of the Piedmont Plateau region, less than 50 miles to the north.

The temperature in general is relatively high. The annual mean as reported at Dudley is 65.5° F. This is less than 2° lower than that at Thomasville, in the extreme southern part of the State. The hottest month is August, with a mean temperature of 81°, while January, the coldest month, has a mean temperature of 47.7° F. The mean temperature for the winter season is 48.6°; for the spring, 66.8°; for the summer, 80.1°; and for the fall, 66.4°.

During the winter there are periods of damp, chilly weather and ice frequently forms, but snow rarely falls and hard freezes are almost unknown. Short periods of rainy weather are usually followed by clear, cool days, but long periods of warm weather even in midwinter are of frequent occurrence.

Farm work is carried on throughout the winter, much of the land being plowed during this season. Hardy vegetables, such as collards, onions, lettuce, spinach, turnips, and radishes, may be grown in sheltered places or with only slight protection throughout the greater part of the winter season. Little protection, except from chilly rains, is needed for stock, and by exercising care pasturage on oats, rape, rye, vetch, and clover may be had throughout the winter.

Although the summers are long and hot, extreme temperatures, such as are common in parts of the Middle West, are rare and the heat is usually tempered by breezes from the Gulf.

The normal annual rainfall, as recorded at Dudley, is 46.93 inches. The precipitation is well distributed throughout the year, the heaviest rainfall occurring during the summer months, when it is most needed for growing crops, and the lightest during the fall, when clear weather is needed for ripening and harvesting the crops.

Small grain, corn, and other crops sometimes suffer from periods of hot, dry weather during the spring and summer. With intertilled crops, however, injury can, to a large extent, be avoided by deeper

winter plowing, thus providing a larger reservoir for the storage of moisture, by incorporating more organic matter in the soil, by planting in the water furrow, and by giving frequent shallow cultivation. Cotton sometimes suffers from too much rainfall, but rarely from too little.

Such crops as peas, beans, and potatoes are planted early in March, and there is not much danger of injury from killing frosts after about the 20th of that month. The weather records for Dudley indicate that the average date of the last killing frost in the spring is March 22, and that of the first in the fall, November 6, giving an average growing season of 229 days. The date of the latest recorded killing frost in the spring is April 18 and that of the earliest in the fall, October 11.

The long growing season permits of four cuttings of alfalfa. After a crop of oats, wheat, rye or barley the land may be put in corn, cotton, peanuts, sorghum, sweet or Irish potatoes, soy beans or cowpeas. A field of small grain may be harvested, the land put in cowpeas, which may also be harvested, and the field again seeded to small grain the same season. Sugar cane, cotton, and velvet beans, the principal crops, require such a long growing season that they can not be succeeded by another crop the same season. Even these, however, may be followed by winter oats, rye or bur clover.

The percentage of possible sunshine during all seasons is high, and this, with the freedom from extremes of temperature and precipitation, combined with a long growing season, renders the climate very favorable for general farming, and especially for development of the live-stock, dairy, and poultry industries. Drainage conditions are good in the principal farming sections, or may easily be made so, and where sanitary conditions are maintained the region is very healthful.

Water for domestic purposes and for work stock is usually obtained by digging into the clay subsoil to depths which vary from less than 20 to over 60 feet. The wells are curbed to a depth of 8 or 10 feet from the surface, below which the walls stand up without curbing. There are several artesian wells in the county, which furnish an abundant supply of excellent water, in addition to some large springs which have never been known to go dry. Animals which run at large are usually able to obtain water in holes along creeks and branches.

The following table gives the normal monthly, seasonal, and annual temperature and precipitation as compiled from the records of the Weather Bureau station at Dudley:

Normal monthly, seasonal, and annual temperature and precipitation at Dudley.

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	49.3	78	12	4.03	3.28	2.66
January	47.7	78	12	3.11	2.37	3.76
February	48.7	80	−3	5.51	3.81	5.93
Winter	48.6	80	−3	12.65	9.46	12.35
March	63.5	93	12	3.88	2.10	7.99
April	64.2	97	29	4.88	1.08	4.37
May	72.8	100	41	3.34	1.62	5.71
Spring	66.8	100	12	12.10	4.80	18.07
June	78.4	104	51	4.12	2.51	3.39
July	80.8	105	61	5.22	2.97	9.34
August	81.0	103	58	5.41	9.43	3.33
Summer	80.1	105	51	14.75	14.91	16.06
September	76.9	101	35	3.24	.59	2.66
October	65.4	97	30	1.50	.06	1.94
November	56.9	86	19	2.69	4.15	3.60
Fall	66.4	101	19	7.43	4.80	8.20
Year	65.5	105	−3	46.93	33.97	54.68

AGRICULTURE.

Settlements were made in the territory now comprising Laurens County more than a century ago, and some of the old plantations have been farmed almost continuously, although the farms over the greater part of the county are comparatively new. According to the census, improved land in Laurens County in 1880 represented 27.4 per cent of the total acreage in farms. In 1890 this proportion had increased to 31.3 per cent, while in 1900 it was 46.6 per cent, and in 1910, 56.9 per cent. Since the last census was taken a considerable acreage of cut-over land has been brought under cultivation.

The early settlers established homes near the larger streams, which afforded at that time the principal means of transportation. Much of the land selected was sandy, and after being farmed for a few years became unproductive. For this reason some of the earlier settlements were practically abandoned. Corn and wheat were the first crops to be grown in the county. Stock raising was carried on, and the hogs, sheep, and cattle ran at large. Hogs lived

on mast in the forests. Prior to the development of extensive farming operations, turpentining was an important industry. Following this lumbering became the principal source of revenue.

The Federal census for 1880 shows 20,689 acres devoted to the production of cotton, 25,563 acres to corn, and 4,745 acres to oats. In addition a large acreage of cowpeas was grown. By 1890 the acreage planted to all these crops, except oats, had greatly increased. This increase in acreage continued, and the 1900 census shows 58,376 acres in cotton, 61,606 acres in corn, 1,848 acres in oats, and 2,245 acres in cowpeas. From the last 17,136 bushels of seed were harvested. From 1900 to 1910 the acreage devoted to cotton and cowpeas almost doubled, the acreage of oats increased about fourfold, the production of sweet potatoes more than doubled, and peanuts became an important crop, being grown on 2,164 acres in the last census year.

The table following shows the acreage in, or production of, the principal crops grown in Laurens County at the last four census periods:

Acreage or production of various crops grown in Laurens County, 1880–1910.

Crop.	1880	1890	1900	1910	Crop.	1880	1890	1900	1910
Cotton....acres..	20,689	31,050	58,376	100,253	Peanuts..acres..	.....	448	691	2,164
Corn.....do....	25,563	31,715	61,606	69,437	Sugar cane,				
Oats.....do....	4,745	3,563	1,848	7,023	acres.....	111	.....	371	817
Wheat....do....	478	16	259	14	Seed cowpeas,				
Rye.....do....	498	127	89	26	bushels.....	8,270	23,765	17,136	21,671
Sweet potatoes,					Potatoes, bush-				
acres.....	345	770	741	1,491	els.....	20	1,130	3,593	5,806

The agriculture of Laurens County at the present time consists of the production of cotton as the money crop, with corn, oats, cowpeas, peanuts, and sweet potatoes as subsistence crops for feeding to the work stock and hogs, as well as for use in the home. Hog raising is of considerable importance.

Since 1910 there has been considerable change in the agriculture of Laurens County, owing largely to the investigations and instructions of the State College of Agriculture and Experiment Station and the United States Department of Agriculture. The farmers have increased their acreage in wheat, oats, corn, peanuts, cowpeas, and other crops which are used for subsistence purposes in the home and for the feeding of work stock and hogs.

Cotton is the most important crop of the county, and the money crop. Laurens County is one of the leading cotton-producing counties in the State, ranking about equal with Burke County. In 1911 the production, according to the Government reports, was nearly

61,000 bales, and in 1914 it was somewhat over 56,000 bales. The acreage devoted to cotton in 1909 was 100,253 acres. The crop is grown to a greater or less extent upon all the well-drained upland soils of the county. The principal varieties are Tooles Prolific, Hastings Upright, Cleveland Big Boll, Half and Half, and Cooks Improved. Some of the planters in the county have developed improved strains of their own which give satisfactory results.

Corn is the second crop of importance in the county. In 1909 there were 69,437 acres planted to this crop, producing 790,538 bushels. The yields have greatly increased, particularly during the last 15 years. Corn is used as a subsistence crop for the feeding of work stock and hogs and for home consumption. The production, however, is insufficient to meet the demand, and a considerable quantity is annually shipped in.

Oats in 1909 were grown on 7,023 acres, with a production of 105,848 bushels. Only a small part of the crop is thrashed. The greater proportion is cut and fed in the sheaf or cured and baled for hay. Some of the oats fields are pastured during the winter and spring. Winter oats are grown exclusively, the principal varieties being the Texas Rustproof, Appler, Hastings 100-bushel, Fulghum, and Bancroft. Oats are grown as a subsistence crop exclusively and are fed to the work stock.

Peanuts are grown on considerably more than 2,000 acres, producing somewhat over 28,000 bushels. Only a small part of the crop is sold for cash, the remainder being pastured to hogs. The average yield of peanuts is about 14 bushels an acre, although 45 can be obtained. Two principal varieties are grown—the small Spanish peanut and the North Carolina variety.

Cowpeas are an important crop in this county. More than 5,000 acres were planted in 1909. Cowpeas are grown mainly for hay, although more than 21,000 bushels of seed was gathered in 1910. The acreage devoted to this legume is increasing rapidly, but nevertheless much cowpea hay is shipped into the county.

Sweet potatoes were grown in 1909 on 1,491 acres, producing 41,897 bushels. Their production is distributed throughout the county, as nearly every farmer devotes to this crop a patch ranging in size from a fraction of an acre to several acres. Sweet potatoes are grown for home use, for sale at the local markets, and for feed for hogs. The average cost of production is estimated at less than 20 cents a bushel and the crop sells at the local markets in the spring at 50 to 75 cents a bushel.

In addition to the important crops, there are a number of minor crops grown to a greater or less extent. There are nearly 1,000 acres planted to sugar cane. Cane is grown in patches throughout the county for sirup, which is manufactured for home use and for

supplying the local markets. The quality of sirup from the lighter colored soils is excellent, while the darker colored soils produce a larger yield of sirup but a product slightly inferior in quality. Velvet beans, soy beans, chufas, grasses to be cut green, and wheat are grown in small patches locally. The acreage devoted to wheat has increased remarkably in the last two years, owing to the high price of flour and the low price of cotton.

Hog raising is an important industry in Laurens County, being much better developed here than in most cotton-growing districts. There were 21,152 hogs sold or slaughtered in 1909, according to the census. Hogs are raised principally to supply pork products for home use, although a considerable number are shipped to the packing house at Moultrie, Ga. The raising of hogs is well distributed throughout the county.

The number of cattle, including calves, sold or slaughtered in 1909 was 3,308. Some of the cattle slaughtered are used at home and for supplying the local markets, while some are shipped to packing houses.

The farmers recognize that the sandy loam soils of the Norfolk, Tifton, Orangeburg, Greenville, and Kalmia series are well suited to cotton, and most of the cotton in the county is produced on these types. The Greenville sandy loam is considered one of the best soils in the county for the production of oats. The light-textured sandy loams are the best soils for peanuts, garden vegetables, and early truck crops. The Norfolk and Kalmia soils are recognized as best for the production of sugar cane, as these soils give a sirup of bright color and good flavor. The heavier sandy loams are recognized as the most productive corn soils, especially when they are filled with organic matter or the crop follows cowpeas which have been turned under.

The farm dwellings are fairly good throughout the county, but the barns are generally small, and of insufficient size to house the hay and other crops. The work stock, consisting mainly of mules, many of which are brought in from Kentucky and Tennessee, is usually housed in the barns or near-by stables. The cattle and hogs are not given much protection in the way of shelters or stalls. The farm machinery consists principally of one-horse turn plows, harrows, and cultivators, although on many of the better farms two-horse plows, sulky cultivators, mowing machines, rakes, binders, and heavy wagons are common. The light sandy soils do not require as strong stock or as heavy implements as the heavier clay lands farther north.

No definite rotation of crops is generally practiced, and many of the farmers grow cotton year after year in the same fields or, at most, alternate cotton and corn.

Cowpeas are usually sown broadcast after oats or are planted at the last cultivation of corn, being placed in hills between the rows. Oats are generally seeded in October, while wheat is seeded in November or December. Cotton is planted any time between the last of March and the last of May, but farmers in general realize that it is better to plant as soon as the soil can be prepared and the danger from killing frost is past. Sugar cane is grown from the stalks of the previous crop. These are kept by covering with soil during the winter. Peanuts are frequently planted in rows in corn, the latter crop in this case being planted in rows 5 or 6 feet apart. After the corn has been gathered hogs are turned into the fields to feed on the peanuts.

According to the census of 1910 there was $381,507 worth of commercial fertilizer used in Laurens County the preceding year. It is reasonable to suppose that with the gradual increase in the acreage of cotton the quantity of fertilizer used has increased proportionately. Commercial fertilizers are in general use, no crop being grown universally without them. Cotton receives from 200 to 800 pounds per acre of a commercial fertilizer analyzing 9–2–3 or 10–2–4.[1] The fertilization given corn is usually lighter than that given cotton, the ordinary applications ranging from 150 to 400 pounds per acre. Oats usually receive 100 to 300 pounds per acre of the same grade of fertilizer as is used for corn or cotton, and in the spring are by some given a top dressing of about 75 to 100 pounds of nitrate of soda. Peanuts are fertilized in a moderate way and also give better results if limed. Cowpeas receive only a small application of fertilizer, and this is usually in the form of phosphoric acid. Sweet potatoes are fertilized to some extent, but they are usually grown on light sandy soils which are heavily manured. The better farmers realize that with the addition of vegetable matter to the soil and the rotation of crops the nitrogen content of the complete fertilizer can be reduced.

Negro labor is used almost exclusively throughout the county. The ordinary wages are $10 to $15 a month, with rations and a house to live in. The ordinary day laborer receives about 60 cents to $1. The pay for picking cotton is about 50 cents per 100 pounds at the beginning of the season, but this is sometimes increased toward the close of the season and during winter weather.

The size of the farms varies greatly, ranging from about 50 acres to 1,000 or more in exceptional cases. The ordinary farm, however, contains from 100 to 200 acres. The 1910 census gives the average size of farms as 83.4 acres, but classes each tenancy as a farm.

[1] The figures represent the respective percentages of phosphoric acid, nitrogen, and potash.

According to the census of 1910, 73.1 per cent of the farms in Laurens County are operated by tenants, only 26.7 per cent being operated directly by the owners. Many farms are rented for a standing cash rental. This varies with the kind of soil, the improvements, and the location of the farm, and ranges from about $50 to $100 for a "one-horse" farm of 25 to 35 acres. Some of the tenants rent for a definite amount of lint cotton, ranging from 1 bale to 2 bales for a farm of about 30 acres. The method in most general use is that in which the landlord furnishes the work stock, feed, seed, farm implements, and one-half the fertilizer, and receives one-half of all the crops produced.

The prices of land vary widely, depending upon the character of the soil, the topography, drainage conditions, farm improvements, and location of the land with respect to markets and lines of transportation. The well-improved farms are held at $30 to $75 an acre, while those remote from town can be purchased at much lower prices. Land values have increased greatly in Laurens County within the last few years. There is still, however, much good land which can be purchased at very reasonable prices.

SOILS.

Laurens County lies wholly within the Coastal Plain region. The upland soils are derived principally from unconsolidated deposits of sand, silt, and clay.

In the extreme northern part of the county, along the Oconee River, the Jackson formation, consisting of limestone, marls, and calcareous and glauconitic clays, is exposed. These materials influence the soils locally only. Underlying the north-central and northwestern parts of the county is the Vicksburg formation, consisting of white limestone, sands, and clays. The Altamaha formation,[1] comprising irregularly bedded sands, clays, and gravels, some of which are locally indurated, covers the remainder, and the greater part, of the county.

Waterworn gravel, principally quartz, found in many parts of the county, is evidence of the marine action that took place on the ancient seashore. While the various sediments were deposited upon the ocean floor considerable assortment of material by the action of stream currents, ocean waves, and tides was evidently taking place. Since its deposition and following the retreat of the ocean numerous changes have been wrought in the material by erosion and weathering—embracing leaching and oxidation—by the addition of organic matter from decaying plant growth, and by the action of bacterial life.

[1] Veatch, Geology of the Coastal Plain of Georgia, Bul. No. 26, Geol. Surv. of Georgia, 1911.

The soils of the county are prevailingly sandy in the surface portion and have friable sandy clay subsoils. In the north and north-central parts of the county the subsoils are dominantly red, while in the southern and southeastern parts yellow-colored subsoils prevail. On slopes where oxidation and erosion have been more pronounced red to reddish-yellow colored subsoils are more prevalent.

Soils which are similar in color, structure, origin, and general topography are grouped into series. The upland soils are classed in the Norfolk, Tifton, Orangeburg, Ruston, Greenville, Susquehanna, and Grady series.

The types of the Norfolk series are prevailingly gray or yellowish gray in the surface portion and have light-yellow, friable sandy clay or sand subsoils. They occupy nearly level to rolling uplands and are derived from the unconsolidated beds of sands and clays. The series is represented in the county by three types—the sandy loam, with a deep phase, the sand, and coarse sandy loam.

The Tifton series is similar in color and structure to the Norfolk, except that the subsoil is probably, in general, of a deeper yellow color, is slightly more compact, and frequently contains reddish or brown iron stains. The Tifton soil is differentiated from the Norfolk mainly on account of the presence of small, roundish iron concretions and ferruginous sandstone gravel which are distributed over the surface and disseminated throughout the surface soil and, to a less extent, the subsoil. The topography is favorable for agriculture and the natural surface drainage is good. Only one member of the Tifton series—the sandy loam—occurs in this county.

The surface soils of the Orangeburg series range in color from gray to brown and are underlain by bright-red, compact but friable sandy clay or sand subsoils. This series occupies level to rolling areas and is usually well drained. It is represented in this county by one type—the sandy loam—with a hilly phase.

The surface soils of the Ruston series range in color from gray to brown. The subsoils are reddish-yellow, yellowish-red or yellowish-brown sandy clays of a moderately friable structure, though somewhat more sticky and compact than the Orangeburg or Norfolk subsoils. Occasionally the lower subsoil is of a mottled red, yellow, and gray color. The subsoil of this series is intermediate in color between the red of the Orangeburg and the yellow of the Norfolk. The Ruston soils are apparently derived from practically the same material as the Orangeburg and Norfolk types, and the difference in coloration is probably due to differences in oxidation and aeration. Two Ruston types—the sandy loam and sand, the latter with a loamy phase—are mapped.

The Greenville types differ from those of the Orangeburg series in that the surface soils have a redder and the subsoils a darker red color. These two series are closely associated in many places. The Greenville soils are apparently more retentive of moisture than the corresponding members of the Orangeburg series. The Greenville soils are reddish brown to dark red in the surface portion and have a subsoil consisting of dark-red, friable sandy clay. They occupy level to gently rolling areas. Only one type—the sandy loam—is mapped in this county.

The Susquehanna soils range from gray or yellowish gray to reddish in the surface portion, and have mottled red and gray or red, gray, and yellow, plastic, heavy clay subsoils. These types are derived from the heavy clays of the Coastal Plain region and are locally influenced by the weathering of arenaceous limestone. The subsoils of this series are decidedly the heaviest and most impervious of any in the county. One type, the Susquehanna sandy loam, with a shallow phase, is mapped.

The surface soils of the Grady series are generally dark colored, with heavy, plastic sandy clay or clay subsoils, light gray in color, and mottled with yellow or brown. The subsoil is in places partly residual from limestone. These soils are poorly drained, as the topography is always flat, and they are generally found in depressions or sinkholes or along drainage ways. Only one type, the Grady sandy loam, is mapped in Laurens County.

The soils of the River Flood Plains province, embracing the first bottoms and the second bottoms, or terraces, are developed along the Oconee River and other streams of the county. The terrace soils occur along the larger creeks and the Oconee River and represent old alluvium, or reworked and redeposited Coastal Plain material. The material along the Oconee River is partly Piedmont sediments. The first-bottom soils along the Oconee River represent reworked material which has been transported by this stream from the Piedmont region to the north. The first-bottom land along the creeks and smaller streams consists of reworked Coastal Plain material.

On the second bottoms or terraces the Kalmia and Myatt series are developed. The surface soils of the Kalmia series are gray to yellowish gray and the subsoils are yellow or mottled yellow and gray. These types closely resemble the Norfolk soils of the uplands. The Kalmia soils are derived from reworked Coastal Plain material, except along the Oconee River, where there is an admixture of Piedmont material. Two types, the Kalmia sandy loam and sand, are encountered. Mapped with the sandy loam are a few small developments of Cahaba sandy loam, indicated on the soil map by inclusion symbol.

The Myatt soils differ from the Kalmia in that the surface material is darker and the mottled gray and yellow subsoils are frequently impervious in character. The Myatt soils represent poorly drained parts of the stream terraces. While they lie above ordinary overflow, yet the surface is flat and water frequently covers the type for a long period after heavy rains. Only one type, the sandy loam, is encountered. Included with it are spots of the Leaf sandy loam, which are indicated on the soil map by inclusion symbols.

In the present flood plain or first bottoms there are developed two series, the Thompson and Congaree, in addition to the miscellaneous type, Swamp. All these types are subject to frequent and protracted overflows, and are constantly being changed through deposition or removal of materials by the stream currents.

The Thompson series has brown to grayish surface soils and yellowish subsoils which are in many places mottled with gray and various shades of brown. The Thompson soils consist of material washed from the Coastal Plain soils. One type, the Thompson fine sandy loam, is mapped in this county.

The Congaree series has brown to reddish-brown surface soils and brown subsoils. Grayish and yellowish mottlings are frequently encountered in the lower part of the subsoil. The Congaree soils are developed only along the Oconee River, this being the only stream which has its source in the Piedmont Plateau region. The Congaree fine sandy loam and silty clay loam are mapped in Laurens County.

Swamp represents a mixture of soils where no definite classification of the material can be made. It is covered with water the greater part or all of the year.

The table below gives the names and the actual and relative extent of the various soils mapped in Laurens County:

Areas of different soils.

Soil.	Acres.	Per cent.	Soil.	Acres.	Per cent.
Norfolk sandy loam	121,600	33.4	Kalmia sandy loam	9,472	1.9
Deep phase	48,576		Cahaba sandy loam [1]	.....	.....
Grady sandy loam	56,448	11.1	Norfolk coarse sandy loam	7,872	1.5
Norfolk sand	48,320	9.5	Greenville sandy loam	5,440	1.1
Ruston sandy loam	44,800	8.8	Swamp	3,584	.7
Tifton sandy loam	42,944	8.4	Ruston sand	1,152	.7
Orangeburg sandy loam	26,368	7.6	Loamy phase	2,240	
Hilly phase	12,480		Myatt sandy loam	1,728	.3
Susquehanna sandy loam	29,248	5.8	Leaf sandy loam [2]	.....	.....
Shallow phase	128		Congaree fine sandy loam	1,088	.2
Congaree silty clay loam	18,560	3.6	Total	509,440	.....
Thompson fine sandy loam	17,216	3.4			
Kalmia sand	10,176	2.0			

[1] Area of this type included in the Kalmia sandy loam.
[2] Area of this type included in the Myatt sandy loam.

NORFOLK SANDY LOAM.

The Norfolk sandy loam in its typical development consists of a gray or slightly brownish gray loamy sand which at a depth of 3 to 5 inches grades into a brownish-gray or pale-yellow loamy sand. This is underlain at about 10 to 18 inches by a light-yellow or lemon-colored sandy loam which grades quickly into a yellow, friable sandy clay. This becomes heavier in texture and its color in many places more pronounced with increasing depth.

From the typical soil this type has quite a range in color, texture, and crop value. Over the greater part of the type the surface soil when freshly cultivated has a rather brownish yellow appearance and a loamy structure. As it approaches the deep phase of this type or areas of Norfolk sand this brownish color gives way to pale yellow, light gray or almost white, and the structure changes to a loose, incoherent sand. The subsoil here is deeper and the type less productive than the typical soil. Areas of this character usually occur on the lower slopes adjacent to small streams, or in semi-circular areas around the source of small branches. In many places, however, these low-lying, sandy areas along the streams have been modified by the washing of loamy soil over the surface and by the decay of plants which thrive under moist conditions. These loamy areas assume a dark-gray or rather bluish gray color at the surface. The soil here, until the organic matter is exhausted, is quite productive.

The type ranges on the other hand toward the rusty-brown or red pebbly soils. On many of the short but steep slopes near small stream courses, around ponds, and about the heads of streams, narrow areas show in the cultivated fields a distinctly reddish-brown or rusty-brown shade. They possess a heavier texture and more plastic structure than the typical soil, and the heavy sandy clay subsoil lies much nearer the surface than is typical. These areas often represent the Ruston soils, but are too small to be outlined on the soil map. The soil immediately surrounding them is a gradation between the Norfolk sandy loam and the Ruston sandy loam. Where areas of Norfolk sandy loam and Tifton sandy loam are adjacent, they merge into each other so gradually that there is no sharp line of separation. There is little difference in the appearance of the soils or in their productiveness. In such transitional areas the reddish-brown iron pebbles are quite numerous, but not so abundant as in the typical Tifton sandy loam.

The largest areas of typical Norfolk sandy loam extend south and west from Dublin. This type is the predominating soil throughout that part of the county south of the Macon, Dublin & Savannah Railroad and west of the Oconee River. Many small bodies of

other types, developed along the ridges and drainage ways, break the continuity of the area. East of the Oconee River a rather large development of this type extends north and south from Brewton, but in this area the soil approaches in many places the Norfolk sandy loam, deep phase, and the Norfolk sand, and on the whole is somewhat less desirable than the typical soil. Small, isolated areas of the type occur throughout the county. As a whole these small developments are less typical and less uniform than are the larger areas.

In topography this type varies from smooth or almost level to undulating and gently rolling. In general, it occupies low, broad ridges between the principal stream courses and smaller low ridges which extend out from them between the smaller drainage ways. Where the Tifton sandy loam occupies the higher parts of the ridges the long slopes below the crest are in nearly all places occupied by the Norfolk sandy loam. In no place where the typical soil occurs is the topography sufficiently steep to interfere with cultivation. On some of the minor steep slopes where the soil approaches the Ruston sandy loam, the surface erodes, forming gullies or exposing "galled spots." This tendency is checked to a considerable extent by the use of low terraces and by planting intertilled crops along the contour lines.

The drainage, surface and internal, of the typical Norfolk sandy loam is generally good. On some of the slopes where a heavy clay subsoil lies near the surface seepage water interferes with early planting and cultivation and the growth of certain crops. These places and the narrow, low-lying strips close to the small streams can often be greatly benefited by artificial drainage.

On account of its large area, wide distribution, and the high productiveness of the typical soil, the Norfolk sandy loam is the most important type in the county. Few of the principal areas of this soil are not under cultivation.

Cotton is the most important crop grown on this type, followed by corn. Over a large part of the corn acreage field peas or velvet beans are planted in the rows and over much of the acreage alternating rows of peanuts. The third crop in importance is oats, followed by cowpeas and crab grass for hay. Small acreages are used for sugar cane and sweet potatoes, and for vegetables for home use and for the local market.

In the vicinity of Dublin dairying is carried on to supply the local demand, and the dairy farms are located partly on soil of this type. High-grade Jerseys are kept. On these farms the Texas fever tick has been eradicated. Rye, oats, cowpeas, crab grass, and Bermuda grass are used for pasturage.

Owing to the warm nature and light, sandy texture of this type, all crops start growth on it earlier and grow more rapidly than on the heavier soils. It is therefore somewhat more desirable for growing early truck crops, for crops which are to be followed by a second planting, and for velvet beans and late-maturing varieties of cotton.

In 1909 the average yield of cotton for the entire county was about two fifths bale per acre and of corn 11½ bushels. Based on the statements of several of the more progressive farmers who handle soil of this type, the yields of cotton on the better grade of Norfolk sandy loam probably average between two-thirds and three-fourths bale, with many yields of a bale or more to the acre reported. The average yield of corn is probably about 20 bushels per acre, with yields of 25 to 50 bushels often reported. Oats average 15 to 25 bushels an acre, but often yield 30 to over 50 bushels. Cowpeas and crab grass yield 1 to 1½ tons of hay to the acre, and velvet beans make a large yield.

Yields on the better parts of the Norfolk sandy loam are high not only on account of the character of the soil, but also because many of the best managed farms in the county are located on it. As a whole this type of soil is well farmed. Plowing is fairly deep, averaging between 5 and 8 inches. Some farmers subsoil to a depth of 12 inches. Cotton and corn are almost invariably planted in the water furrow and frequent shallow surface cultivations given, the surface being approximately level when the crop is laid by. Fertilizers are in general use on this type. Cotton receives from 200 to 800 pounds per acre. Lighter applications are given corn land.

Land values of farms in which the Norfolk sandy loam is the predominant type range from $30 to over $50 an acre in the vicinity of Dublin and near the principal highways, but are as low as $20 an acre in the more inaccessible parts of the county.

The principal methods of improvement for the Norfolk sandy loam, suggested by the county agricultural agent and the agricultural agent of the Macon, Dublin & Savannah Railroad and followed by the more progressive farmers on the type, consist of increasing the organic-matter and nitrogen supply by growing and plowing under leguminous crops, increasing the plant-feeding and moisture-holding capacity of the soil by deeper plowing, followed by frequent surface cultivations, the growing of more hay and grain crops and the raising of more live stock and diversifying the crops grown, making a reduction in the acreage of cotton especially.

Experiments carried on at Moultrie, at Vidalia, and at other places having practically the same soil and climatic conditions indicate that on a good grade of Norfolk sandy loam, by increasing the organic-matter and nitrogen supply by the use of cowpeas or velvet beans and

correcting the acidity by the use of lime, clover and alfalfa can be successfully grown. Experiments in progress at Montrose show encouraging results with vetch. For such crops the soil should be well prepared, limed and fertilized, and inoculated.

Norfolk sandy loam, deep phase.—The deep phase of the Norfolk sandy loam consists of a gray or light-gray sand, underlain at 2 or 3 inches by pale-yellow or light-gray sand or loamy sand, which grades at about 20 to 30 inches into a yellow, light sandy loam. This in most places is underlain by yellow, friable sandy clay within the 3-foot section. In some areas, however, the deep subsoil consists of a sandy loam or light sandy clay loam, the heavy sandy clay not being reached within the 3-foot section.

Areas of this phase occur throughout that part of the county covered by the typical Norfolk sandy loam. It occurs principally in two positions, either on the highest part of the low divides or on the lower part of long slopes near the courses of small streams. On the ridges it has an undulating to gently rolling topography and is often surrounded by areas of the typical soil in which the sandy clay subsoil is reached at a depth of 20 inches or less. Where it occurs on the lower slopes the topography is more nearly level and the phase ranges in character from the typical soil in the higher lying part of the area to Norfolk sand or Grady sandy loam along the stream.

The greater part of this phase is well drained and some of it, on account of its loose, incoherent structure and the depth to the heavy subsoil, is excessively drained. Where it occurs on the lower slopes adjacent to small drainage ways, moisture conditions are better. In fact, in this latter location some places have an excess of moisture and could be improved by artificial drainage.

In the natural state this phase supported a growth of post oak, blackjack oak, and other small oaks on the ridges. The areas can often be recognized by the mounds thrown up by burrowing animals.

A much smaller proportion of the deep phase is farmed than of the typical soil, its cultivation being confined largely to areas which are closely associated with soils of a more productive type and to those low-lying areas where the soil has been improved by the deposition of organic matter, and where an abundant supply of moisture has increased its productiveness.

The deep phase of the Norfolk sandy loam is at present probably used to a greater extent for corn than for any other crop, not on account of any marked adaptation to this grain but because it is not so well suited for cotton. The yield of corn is low, probably ranging from 8 to 15 bushels an acre on the ridge land. On the low-lying areas the yields are better, sometimes reaching 20 bushels or more per acre. Some of these low-lying areas are used for sugar cane, and the yields are satisfactory. Sweet potatoes, cowpeas, velvet beans, and

peanuts are other crops successfully grown on this phase. Watermelons, cantaloupes, potatoes, and garden truck are grown on it to a small extent for the local market.

Land of the deep phase is less productive and sells at a lower price than the typical Norfolk sandy loam.

Some of the most successful farmers improve soil of this phase by growing and plowing under leguminous crops. They also use it for Bermuda grass and lespedeza pasturage.

NORFOLK SAND.

The Norfolk sand consists of a gray, light-gray or almost white sand, underlain at a depth of 4 or 5 inches by a pale-yellow, loose sand which extends to a depth of 3 feet or more without much change. In some parts of the county the sand is known to extend to depths of 10 or 15 feet before a heavier material is reached. In a few developments of this type, especially in the large, nearly level areas a short distance east of the Oconee River, the soil has a rather brown color, approaching that of the Ruston sand, and a more loamy texture than the typical soil. It seems to be more productive. Owing to its open structure, the type is not retentive of moisture. The supply of organic matter is low and the surface soil, especially after having been cultivated for some time, is almost white.

There are included with this type small areas of Norfolk coarse sand which on account of their small size and low agricultural value are not considered of enough importance to justify separate mapping. The coarse sand differs from the sand in being of a coarser texture, carrying more small, rounded quartz gravel, and in being generally of lower agricultural value.

Numerous areas of the Norfolk sand are developed, their number and size increasing toward the southern and southeastern parts of the county. West of the Oconee extensive areas are found between the river and the New River Road and along the north side of Okeewalkee and Alligator Creeks. East of the Oconee River extensive areas are found a short distance back from the flood plain, as well as along Pughes Creek and other streams. The topography of the Norfolk sand comprises level to rolling areas, the type being conspicuous on low ridges and on the lower part of the long slopes adjacent to the stream courses. Near the large streams it also occurs as extensive, somewhat hummocky flats lying considerably above the stream flood plain. Where it occurs on ridges it is usually surrounded by the Norfolk sandy loam or its deep phase. On the slopes it extends from the Norfolk sandy loam on the upper slope to Grady sandy loam or Kalmia sand below. In the southeastern part of the county, where the topography is more choppy and broken, the Norfolk sand occupies some of the higher land and the

areas are surrounded by the Susquehanna sandy loam, which occupies the slopes and the lower adjacent land. On account of the loose structure of the soil, except in small, low-lying areas, drainage is excessive.

The Norfolk sand supports the same native growth as the deep phase of the sandy loam. Small areas associated with some other soil type are cultivated, but yields are low and the greater part of the type is not under cultivation. Some of the early settlements in the county were made on soil of this type and land which was to be cultivated was enriched by having stock penned on it during the winter. If not supplied with organic matter and if given clean cultivation, this soil soon "burns" out, and these old homesteads have long been abandoned. Some low-lying areas of this type, where more organic matter has accumulated and moisture conditions are good, are used for corn and sugar cane. Some farmers utilize soil of this kind for the growing of small grains and some are building it up by the use of legumes.

Land of the Norfolk sand in the more inaccessible parts of the county can be bought at prices ranging from $10 to $15 an acre.

In some parts of the South extensive areas of this type are used for melons, sweet potatoes, and various truck crops. In other places it is used for growing peanuts and sweet potatoes for fattening hogs, or rye for winter pasture. Any system of farming which adds organic matter to this soil greatly improves it. This can be done where it is to be used for truck crops by applying manure, or the soil may be built up more gradually by growing such legumes as velvet beans, cowpeas, and peanuts, and pasturing them to hogs or cattle.

NORFOLK COARSE SANDY LOAM.

The surface soil of the Norfolk coarse sandy loam is a grayish or yellowish-gray coarse sand to coarse sandy loam, which at a depth of a few inches passes into a pale-yellow or lemon-yellow coarse sandy loam. This in turn grades into a yellow, friable coarse sandy clay at depths ranging from 15 to 24 inches, the depth to the sandy clay subsoil being slightly greater on an average than it is in the sandy loam. The immediate surface material is dark gray in places, and the lower subsoil is sometimes slightly mottled with reddish, iron-stained material.

In a rather large area on both sides of Long Branch the surface soil is quite loamy, and a stiff, retentive coarse sandy clay subsoil is reached at about 15 inches.

In many places this type contains rather large quantities of small, sharp quartz gravel, which gives the soil a distinctly harsh feel and causes a grating sound when a vehicle is driven over it. This quartz

gravel, which appears in places, though to a less extent, in other Norfolk types, is known in this county as white gravel in distinction from the red or brown ferruginous gravel of the Tifton soils, and the land is referred to as "white gravelly land." In some places it is known as "ricey land."

A few small areas in which the gravel is sufficiently abundant to have a distinct influence on the crop value of the soil are indicated on the map by gravel symbols. The soil of such areas consists of a grayish to yellowish-gray coarse sand to coarse sandy loam which at a depth of a few inches passes into a pale-yellow coarse sandy loam. Scattered over the surface and through the surface soil and subsoil are rather large quantities of small sharp and also rounded quartz gravel and some waterworn quartz pebbles varying in size from that of a pea to that of an egg.

The principal areas of the Norfolk coarse sandy loam are in the southern part of the county. The largest and most numerous areas occur south and southeast of Cadwell along the Burch Road. In many other places areas of this type too small to be shown on the map occur, and have been included with the Norfolk sandy loam.

The topography of the Norfolk coarse sandy loam is probably a little more rolling than that of the greater part of the sandy loam. Drainage is good, and where the soil consists of nearly 20 inches of the loose, coarse sand it is excessive and the soil is droughty.

The greater part of this type is under cultivation, cotton and corn being the principal crops. In the area bordering Long Branch, where the surface soil is quite loamy and a retentive subsoil is reached at about 15 inches, the soil is as productive and valuable as a good grade of Norfolk sandy loam, but over much of the type it is leachy and much less desirable. The yields are correspondingly lower than upon the sandy loam. The same crops are grown as on the Norfolk sandy loam, and the same methods of improvement, including fertilization, are practiced.

TIFTON SANDY LOAM.

The surface soil of the Tifton sandy loam is a gray or brownish-gray loamy sand which passes at about 6 inches into a light-yellow or slightly reddish yellow sandy loam, light in texture. The subsoil is reached at depths varying from 12 to 20 inches and is a pale-yellow to bright-yellow, friable sandy clay, the color usually showing a slightly deeper reddish or brownish shade than that of the subsoil of the corresponding Norfolk soil. Locally, the lower part of the 3-foot section has a reddish cast and not infrequently it shows reddish stains from soft concretions.

Scattered over the surface and disseminated through the soil and, to a less extent, the subsoil there are ferruginous pebbles or iron con-

cretions ranging in diameter from one-eighth to one-half inch or more. Some of these are concretions showing concentric layers formed about a nucleus; others are merely round fragments of ferruginous sandstone. The presence of these fragments over the surface has given rise to the term "red pebbly" or "pimply" land, by which the soil is known. The name "red pebbly land" is used through this region in distinguishing between soils of this character and those in which quartz pebbles and gravel occur, the latter being spoken of as "white pebbly land." The red pebbles, however, are not confined to this type, small areas in which they are quite abundant occurring in the Ruston sandy loam, the Susquehanna sandy loam, and, to a less extent, in the Norfolk sandy loam and sand.

Extensive areas of the Tifton sandy loam extend to the west and northwest from Dublin; from Dudley through Montrose and Laurens Hill to near the county line; and from Dexter and Bryant School south and southeast through Cadwell and Rentz almost to Alligator Creek and the Wheeler County line. A rather large area is found along the eastern county line near Scott, and many small areas occur throughout that part of the county covered by the Norfolk soils.

In Laurens County the Tifton sandy loam is confined almost entirely to the crests and upper slopes of low, broad ridges which form the divides between many of the drainage ways. On many of these ridges this type is not continuous but occurs in small areas, usually occupying the higher positions and surrounded by areas of Norfolk sandy loam.

In a few places where the subsoil occurs at a depth of about 20 inches and is not markedly heavy, the soil is not highly retentive of moisture and is less productive than a good grade of Norfolk sandy loam. In a few other places, where the clay subsoil lies within 10 inches of the surface, the soil is sticky and clods badly if handled when too wet. It is also somewhat "colder" and more backward than the sandier soils. As a whole, however, the soil is quite uniformly about 15 inches deep.

The Tifton sandy loam is generally recognized as the most productive soil in the county. The average yield of cotton is probably nearly three-fourths of a bale to the acre; of corn, 25 to 30 bushels; and of oats, 20 to 40 bushels. Many of the "prize" patches of both cotton and corn occur on soil of this type, and on some of these remarkable yields have been produced, cotton yielding as much as 2 bales and corn from 50 to nearly 100 bushels per acre.

Nearly all this type is under cultivation and on it some of the best farming in the county is conducted. The type is used principally for cotton, but also for corn, oats, and other crops. It is especially prized by many farmers because fair crops can be grown on it

without commercial fertilizer or with only small applications. One farmer a short distance west of Dublin recently produced 7 bales of cotton on 8½ acres of land of this type, and the following year 35 bushels of corn per acre on the same land. These yields were made without the use of commercial fertilizer, the soil having been built up by growing and plowing under cowpeas.

Land including extensive areas of this soil ranges slightly higher in price than that on which the Norfolk sandy loam predominates. The price for well-located land of this type ranges from $40 to $60 an acre.

From results obtained elsewhere it is believed by the county agricultural agent and other authorities that alfalfa can be successfully grown on this type. The soil is deficient in organic matter. This constituent can be easily and cheaply supplied by the growing and turning under of such legumes as cowpeas, crimson clover, soy beans, and vetch.

ORANGEBURG SANDY LOAM.

The surface soil of the Orangeburg sandy loam is a gray, brownish-gray or reddish-gray loamy sand or light sandy loam, having a depth of 10 to 20 inches. Not infrequently there is encountered below 6 or 8 inches a yellowish or reddish-yellow subsurface layer of light sandy loam, which becomes heavier with depth. The subsoil is a bright-red or brick-red, friable sandy clay which usually becomes darker in color and heavier in texture in the lower part of the 3-foot section.

The type is rather variable in color and depth, level areas usually having a surface soil gray in color or only slightly tinged with red, and deep, loose surface material. Where the type covers undulating to rolling areas the surface soil has been partly removed by erosion, leaving the brighter colored and heavier material exposed at the surface. In many cultivated fields the exposure here and there of the red subsoil gives the surface a spotted appearance.

The largest area of this type occurs in the northwestern part of the county, west of the Oconee River. Another large body occurs in the northern part, east of the river, and a third along the upper course of Turkey Creek. Small, isolated developments are distributed throughout the northern half of the county.

The topography is undulating to rolling, and in places rough and broken. Areas in which the steepness of slope interferes seriously with profitable cultivation are separated and mapped as the hilly phase of this type. Drainage is good to excessive, and in places gall spots and gullies have resulted from erosion. Some of these eroded areas represent the Orangeburg clay or clay loam, but on account of their small size they have been included with the sandy loam.

On account of its rather small extent, this type is not a very important one in Laurens County. By the early settlers it was held in much higher favor than the lighter colored Norfolk and Tifton soils and some of the areas have been in cultivation for a long time. Others were at one time cultivated, but have since been allowed to grow up in second-growth pine. The areas which have been under cultivation for a long period are not in their present condition very productive, the yields of cotton and corn being low. The average yield of cotton ranges from less than one-third to one-half bale an acre and of corn from 15 to 25 bushels. Where the soil has been built up by growing cowpeas acreage yields of 30 to 35 bushels of oats are obtained.

Prices for land of this type have a wide range, depending on the distance from town and from the main roads. On the whole the value runs somewhat lower than that of the Tifton sandy loam or of a good grade of the Norfolk sandy loam, some areas being on the market at $20 to $30 an acre.

Results show that where a fairly heavy sandy loam is reached at a depth of 12 or 15 inches and the sandy clay at 20 inches or less this soil can be quickly built up and made quite productive and well suited to all the common crops by manuring and growing leguminous crops.

Orangeburg sandy loam, hilly phase.—The hilly phase differs from the typical Orangeburg sandy loam principally in having a hilly to broken topography. It has a brighter red color at the surface, is heavier in texture, and has the sandy clay subsoil nearer the surface.

The principal areas of this soil are found in that part of the county covered by the typical Orangeburg sandy loam, the phase extending in long, narrow strips between the typical soil and the stream valleys and occupying the steeper slopes. Such areas include the steeper hill lands on both sides of the Oconee River and narrower strips along the tributaries which discharge into it in the northern part of the county. There are also strips of the phase along the upper course of Turkey Creek and its tributaries.

The greater part of the hilly phase is of value only for its forest growth and for pasturage. The upper portion of some of the areas, however, are cultivated, erosion being checked by terracing and by deep plowing along the contour lines. Bermuda grass and lespedeza have been found to do well on this soil, the former being especially valuable in checking erosion.

RUSTON SANDY LOAM.

The surface soil of the Ruston sandy loam in its typical development is a gray or brownish-gray, light sandy loam or loamy sand, passing at 4 to 6 inches into a yellow, slightly reddish yellow or

rusty-brown sandy loam. The subsoil, beginning at 10 to 20 inches, consists of a yellowish-red or rusty-brown sandy clay of a moderately friable or slightly plastic structure. Near areas of the Susquehanna soils the subsoil is heavier than typical and is somewhat impervious. It is frequently mottled with red, gray, and yellow.

There are no large continuous tracts of this type in the county, but a broad belt in which there are numerous small areas extends from Dublin west and northwest to the county line. This belt forms a sort of transition between the red soils to the north and the gray soils to the south. East of the river there are a few quite important bodies rather closely associated with the Orangeburg and Greenville soils in the northern part of the county, and a few small isolated areas are developed farther south.

Some of the larger areas of this type have a fairly smooth or gently undulating topography, but the type on the whole is more broken and choppy in topography than any of the Tifton or Norfolk soils. There are areas in which the surface has a sort of hummocky appearance, probably caused both by uneven erosion and by solution of underlying limestone. There are few areas in which the slope is too steep for cultivation, though there are many short, steep slopes adjacent to stream courses and around depressions and the heads of streams. On these steep slopes the rusty-brown plastic clay of the subsoil appears at or near the surface. Such areas represent occurrences of clay loam or clay types, but on account of their small size and patchy occurrences they can not well be separated on the map. The drainage of the larger and more nearly level areas is good, but in those of broken topography the rather impervious subsoil and steep slope often result in seepy, poorly drained spots.

A considerable acreage of this type is under cultivation. The better areas are generally considered about as productive as a good grade of Tifton or Norfolk sandy loam, although on account of the heavier texture of soil and subsoil and the closer approach of the subsoil to the surface it is a "colder," later soil and requires more care in handling. When plowed wet it becomes sticky and gummy, and upon drying becomes hard and cloddy. The broken and eroded areas are the more difficult to handle, and as a rule are less productive.

Cotton and corn are the principal crops on this type, the yields probably averaging somewhat lower than on the Norfolk sandy loam. Some farmers improve this soil by gradually deepening the plowing and by plowing under organic matter and growing cowpeas and velvet beans to improve the texture. When thus improved, better crops are grown on this type with little or no commercial fertilizer than can be grown on the lighter, sandier soils.

In many places areas of this type contain considerable quantities of ferruginous gravel. Such areas are indicated on the soil map by gravel symbols. The surface soil here is a yellowish-brown, reddish-brown or rusty-brown sandy loam, grading at a depth of 2 or 3 inches into a heavy sandy loam, deeper in color. The subsoil usually begins at a depth of 8 to 15 inches and is a rusty-brown, reddish-brown, and in places mottled gray, yellow, and red, plastic sandy clay. Over the surface and disseminated through the soil and the upper part of the subsoil are iron concretions or pebbles which are so abundant as to constitute from 20 to over 40 per cent of the mass.

These gravelly areas usually occur on or near the steep slopes or on eroded points or gall spots. The soil is usually plastic and sticky when wet and hard when dry. It is more difficult to handle than a good grade of the Tifton or Ruston sandy loams.

This gravelly land occurs in small patches throughout the area covered by the typical Ruston sandy loam, many of them being too small to outline on the soil map. Although classed by many farmers with the Tifton sandy loam, it is, on account of difficulty in handling, a somewhat less desirable soil. On account of its occurrence in small patches, estimates of crop yields or of land values can not be given.

RUSTON SAND.

The Ruston sand consists of a brownish-gray or light-brown medium sand having a depth of about 6 to 10 inches, underlain by a brownish-yellow or reddish-yellow medium sand which continues downward for 3 feet or more.

The largest area of the Ruston sand occurs on the east side of the Oconee River south of Blackshear Ferry. A few areas are found at the foot of the long slopes on the north side of Turkey Creek and some small, unimportant developments are included with adjacent areas of Norfolk sand. In many places there is slight difference between these two types.

The Ruston sand occupies gently rolling to rolling areas, and has in some places apparently been formed by sand blown from surrounding Ruston, Orangeburg, or Greenville soils. In other places it seems to be derived from sand which has been washed down the slopes from areas of these soils or moved down by gravity.

On account of its small extent, the type is unimportant. In crop value it ranks somewhat higher than the Norfolk sand.

Ruston sand, loamy phase.—The loamy phase of the Ruston sand consists of a light-brown to reddish-brown loamy sand of medium texture, quite uniform to a depth of about 15 or 16 inches, below which the color becomes slightly lighter reddish brown, and continues to a depth of 3 feet or more.

The largest area of this phase is encountered east of the Oconee River near Dublin. A few small developments occur in the northern part of the county and south of Turkey Creek at the foot of the long slopes, and in other places some small, low-lying bodies are included with adjacent areas of Norfolk sandy loam, deep phase, or Norfolk sand.

The topography of much of this phase is smooth and almost level or gently sloping, the area east of the Oconee River resembling somewhat a high terrace. In places, however, the topography is undulating to rolling.

Much of this loamy phase is under cultivation and fair yields of cotton and corn are obtained, but as a whole it is less productive than are those types having sandy clay subsoils at favorable depths. The ordinary yields of cotton probably range from one-third to one-half bale per acre and of corn from 15 to 25 bushels.

The Ruston sand, especially the loamy phase, is susceptible of much improvement by the same methods that are suggested for building up the Norfolk sand. When so built up it should prove a valuable soil for small grain, peanuts, sweet potatoes, and pasture grasses, and for the development of the live-stock industry. Land values are low, ranging from $20 to $30 or more an acre.

GREENVILLE SANDY LOAM.

The Greenville sandy loam consists of a brown to reddish-brown, loose, friable sandy loam of medium texture, grading into a heavy, friable sandy loam below 6 or 8 inches. At a depth of about 12 to 14 inches this passes into a deep-red, friable sandy clay subsoil, the lower part of which becomes somewhat plastic. The type is fairly uniform in color and in depth to the subsoil, but on the steeper land adjacent to streams and around sinks the surface soil has in many places been partly or entirely removed by erosion, exposing "galled" spots of clay or clay loam. On account of their small size, these areas of heavier soil are included with the sandy loam.

The largest areas of the Greenville sandy loam are found east of the Oconee River in the northern part of the county. A few small areas occur in the region around the headwaters of Turkey and Rocky Creeks. This type is closely associated with the Orangeburg sandy loam and includes spots of Orangeburg soil which are too small to be separated on the soil map. The type occupies level to undulating and rolling areas. Circular sinks and depressions are common, as on other types of the county. The type as a whole is well drained and in places on the steeper slopes "galled" spots and gullies have resulted from erosion.

This type is considered one of the most productive of the Coastal Plain soils, equal to the best grade of Norfolk or Tifton sandy loam.

On account of its small extent, however, it is not of great importance in this county. The largest body east of the Oconee River was forested with pine, white and red oak, and hickory, but has within the last few years been cleared and put under cultivation. It is used almost exclusively for cotton and corn, and at present probably produces larger yields of both, in proportion to the amount of fertilizer used, than any other soil in the county. Cotton with a medium application of fertilizer has produced almost a bale to the acre, and corn with very little fertilizer 20 to 30 bushels. The areas west of the river have been under cultivation for a much longer time, but continue to give good returns, a yield of 2 bales of cotton to the acre being reported on a small field where the soil had been properly tilled and highly fertilized and a prolific strain of cotton planted.

Prices of land of the Greenville sandy loam average about the same as those for Tifton sandy loam similarly located, possibly being slightly lower.

The Greenville sandy loam is capable of being built up to a high state of productiveness and maintained in this condition at a relatively small cost. In Dougherty County, Ga., this soil is used profitably for the production of oats and cowpea hay. It is one of the best oat soils in this part of the State.

SUSQUEHANNA SANDY LOAM.

The surface soil of the Susquehanna sandy loam is a gray loamy sand grading at about 3 to 6 inches into a pale-yellow, light sandy loam which continues downward to a depth of 10 to 20 inches. The subsoil usually begins as a deep-yellow or reddish-yellow, plastic sandy clay, which passes into a mottled red, yellow, and gray, heavy plastic clay at varying depths in the 3-foot section. In many places the surface soil resembles the Norfolk material and the upper subsoil Ruston material, while the deeper subsoil is typical Susquehanna.

The Susquehanna sandy loam is most extensively developed in the extreme eastern part of the county. This type and the Norfolk sand are the predominating types covering a strip about 6 miles wide extending from Mount Zion Church, near the east county line, north to the Johnson County line. West of the Oconee River many small areas of the type occur in the southeastern part of the county and a smaller number in the southern and southwestern parts. It is developed in long, narrow strips adjacent to or along the border of the valleys of Lime Sink, Long Branch, Whitewater, and Okeewalkee Creeks.

The Susquehanna sandy loam occurs in two distinctly different topographic positions. Adjacent to the valleys of nearly all the larger streams and many of the smaller ones there is a rather steep

slope on one side and a gradual slope on the opposite side. The steep slope is cut into in many places by small tributary streams and the upper reaches of branches, so that the topography in many places is broken and choppy, although usually not too steep for cultivation. The topography of much of the Susquehanna sandy loam is of this character. In other places there are, adjacent to the stream bottoms proper, long stretches of fairly level land which have somewhat the appearance of second bottoms or terraces but are not sufficiently distinct as such to be so classed, and many of the very small streams and heads of branches occupy broad, elongated basins. Small areas of Susquehanna sandy loam in both of these positions, on slopes and on smooth land, may be found throughout that part of the county covered by the Norfolk and Ruston soils. Many of the areas, on account of their small size, are included with the surrounding soils. The surface drainage of that part of the type which occurs on the slopes is excessive, and there are many gullies and "galled" spots resulting from erosion. In the level areas drainage is in most places poor.

Where the heavy subsoil occurs at a depth of 15 inches or more the Susquehanna sandy loam is fairly productive, ranking with the corresponding Ruston and Norfolk soil. Most of the type, however, is not uniform, the heavy, tenacious clay lying so near the surface in patches that the soil is of a "cold" nature and difficult to handle. On account of the plastic nature of the subsoil, deep plowing must be attained very gradually. When crops are well started on this type and given frequent shallow cultivations to conserve the moisture, they grow and yield well.

Cotton and corn are the principal crops grown on this type and the yields are rather low, cotton averaging less than one-half bale and corn 15 to 20 bushels per acre. Much of this type is best suited for the growing of pasture grasses. Bermuda grass and lespedeza do well on it and it is probably well suited to redtop and orchard grass.

In price this type ranges rather lower than the Norfolk or Ruston sandy loams.

In the extreme eastern part of the county, near Carters Chapel and in a few other places, there are some small areas of a gravelly variation of this type. These are indicated on the soil map by gravel symbols. The soil here does not differ essentially from the typical soil in color, texture, depth or structure, but has scattered over the surface and distributed throughout both soil and subsoil rather large quantities of rounded quartz gravel and pebbles. These are so abundant as to constitute from 10 to over 25 per cent of the soil mass. They range in size from smaller than a pea to as large as an egg.

The topography is rolling. Very little of this gravelly soil is under cultivation. The yields are similar to those on the typical Susquehanna sandy loam.

Susquehanna sandy loam, shallow phase.—The shallow phase of the Susquehanna sandy loam consists of a gray or brownish-gray sandy loam, 1 inch to 4 inches in depth, underlain abruptly by a distinctly mottled red, reddish-brown, gray, and yellow, stiff, plastic, impervious clay. On some of the eroded slopes the sandy covering has been removed by erosion, leaving the clay exposed at the surface.

Only a few small areas of this phase are mapped. These are closely associated with the larger contiguous bodies of the typical Susquehanna sandy loam. Many areas of the phase too small to be separated are included with the typical soil. The shallow phase, like the typical soil, occurs both on the steeper slopes and on the more nearly level areas adjacent to the stream courses. On the knolls and slopes it is often associated with outcrops of the Altamaha formation. On account of the near approach to the surface of the impervious clay and the difficulty of cultivation, very little of the land is farmed. It can best be used for pasturage, the native wild grasses, Bermuda grass, and lespedeza being best suited to it.

GRADY SANDY LOAM.

The surface soil of the Grady sandy loam is a dark-gray to gray sandy loam, passing at about 4 to 8 inches into a light-gray or whitish, sticky sandy loam which continues downward for about 10 to 20 inches. The subsoil is a light-gray, heavy, plastic sandy clay mottled with ocherous yellow or streaked with rusty brown. Occasionally bright-red or reddish-brown mottlings occur in the lower part of the 3-foot section.

This type is the second most extensive in the county, narrow strips reaching out into almost all parts of the county. It occurs in circular or elliptical depressions and sinks, along the drainage ways connecting chains of these, and along the courses of nearly all the smaller streams which drain the Norfolk and Tifton soils.

Owing to these differences in its position this type shows quite a range of variation. In the circular sinks and depressions the soil near the margin is usually quite sandy, owing to material being washed into it from the adjoining higher soils; the sandy surface soil is deep and the subsoil light. Nearer the center of such areas the surface soil is heavier and the sandy clay subsoil lies nearer the surface. In the central part of some of the larger depressions or sinks the surface soil is a dark-colored, almost black, heavy sandy loam or silt loam, underlain at a depth of only a few inches by a

mottled, heavy sandy clay. Such areas, on account of their small size and the difficulty of accurately separating them, are included with the sandy loam. The same variation from light-textured soils along the outer edge of the area to heavier soils in the lower lying part of the development may also be noted in many places in the narrow strips which follow the drainage ways. Throughout the county this type is influenced to a considerable extent by the character of the adjoining soils. The topography as a whole is level or gently sloping and drainage is poor.

Little of the Grady sandy loam is under cultivation. A few small areas have been drained and are used for corn, but the greater part of the type is low and wet and is covered with a dense growth of trees, shrubs, and vines. In the wet depressions are tupelo gum and cypress. In places clumps of alder grow on the lower lying land along the small streams, and gallberry bushes along the margin of the areas.

Where the soil has been drained large yields of corn are reported, especially on those areas which have a surface covering of silty soil. When the sandy areas are drained and farmed for a few years they are said to lose much of the dark soil color and to become much less productive through the gradual depletion of the organic matter. If cleared and drained, much of this type could be profitably used for lespedeza and Bermuda grass, and other grasses, as well as for oats and cowpeas.

KALMIA SAND.

The Kalmia sand consists of a gray sand underlain at about 6 inches by a pale-yellow or almost white sand having a depth of 3 feet or more. In places the subsoil is yellowish gray and slightly mottled. This type includes small areas of Kalmia fine sand, which differs from the typical sand only in the slightly finer texture of the material.

Rather extensive areas of the Kalmia sand are developed on the terraces along the lower course of the Oconee, on both sides of the river, and along Turkey Creek. Smaller areas are encountered along all the smaller streams which drain the central and southern parts of the county. In topography and drainage this type is practically the same as the Kalmia sandy loam. A smaller acreage, however, is under cultivation, and the yields are generally low.

KALMIA SANDY LOAM.

The surface soil of the Kalmia sandy loam is a light-gray or gray loamy sand, passing at about 6 inches into a yellowish-gray or pale-yellow loamy sand. The typical subsoil begins at varying depths between 12 and 20 inches and consists of a pale-yellow, friable sandy

clay which frequently becomes faintly mottled with light gray in the lower part. There are included with the Kalmia sandy loam a few small areas of Kalmia fine sandy loam, the latter differing only in having a slightly finer grade of sand in both soil and subsoil.

The principal areas of the Kalmia sandy loam are found adjacent to the flood plain of the Oconee River and the lower course of Turkey Creek. Smaller areas occur along Alligator, Lime Sink, Bluewater, and Pughes Creeks and other small streams. The topography is almost level or gently sloping, and in general the surface is fairly smooth, though it may be more or less eroded. Drainage is fairly good, although in places ditching is needed. On account of the low-lying position, moisture conditions on the portions of this type which are under cultivation are probably as good as on the corresponding grade of Norfolk sandy loam. The Kalmia seems to be somewhat better supplied with organic matter and is in general slightly more productive. It is used principally for cotton and corn, but is well suited to all the common crops. Cotton yields one-half to three-fourths bale per acre, and corn 20 to 30 bushels. The type is well suited to garden and trucking crops, although, owing to its low-lying position, danger of injury from frosts is somewhat greater than on the upland soils.

CAHABA SANDY LOAM.

A few miles to the southeast of Dublin and east of the Oconee River there are a few small areas of Cahaba sandy loam which, on account of their small size, have been mapped with the Kalmia sandy loam and indicated by inclusion symbol.

The soil of the Cahaba sandy loam consists of a gray or brownish-gray loamy sand, passing at 4 to 6 inches into a pale-yellow or reddish-yellow sandy loam. The subsoil, beginning at 12 to 20 inches, is a light-red or reddish-yellow sandy clay of moderately friable structure. The topography is undulating, owing to the erosion of the old high terrace on which the soil was deposited. The type is subject to overflow only in times of unusually high stages of the river. It is used largely for cotton and corn, and gives yields as high as, or perhaps a little higher than, those obtained on the Ruston sandy loam, the corresponding upland soil.

MYATT SANDY LOAM.

The Myatt sandy loam consists of a gray to dark-gray sandy loam or loamy sand having a depth of about 6 to 10 inches, and underlain by a mottled gray and yellow sandy clay.

A few small areas of this type are mapped near the junction of Pughes Creek with the Oconee flood plain and between this point

and Mercer Ford. In many places it is difficult to distinguish between the Myatt sandy loam and the Grady sandy loam where the latter occurs on a terrace.

The topography of the Myatt sandy loam is almost level and drainage is poor. The type is an unimportant one and none of it is at present under cultivation.

LEAF SANDY LOAM.

Mapped with the Myatt sandy loam, but distinguished by inclusion symbol, are a few small areas of Leaf sandy loam, of insufficient extent to be recognized as a separate type. The Leaf sandy loam consists of a gray sandy loam passing at 3 to 6 inches into a pale-yellow or yellowish-gray sandy loam, which continues to a depth of 12 to 20 inches. The subsoil of the typically developed areas is a mottled gray, yellow, and red, heavy, tough, plastic clay. In places the red mottlings are almost lacking. Only a few small areas of this type are mapped, these lying east of the Oconee River.

THOMPSON FINE SANDY LOAM.

The Thompson fine sandy loam is the first-bottom equivalent of the Kalmia sandy loam of the second bottoms or terraces. The typical soil is a light-gray, medium-gray or dark-gray fine sand or loamy fine sand, underlain at 2 or 3 inches by a grayish-yellow loamy fine sand or fine sandy loam. The subsoil, beginning at any depth between 12 and 30 inches, is a yellow fine sandy clay, usually mottled with grayish or reddish yellow. As mapped the type contains patches of other soils, chiefly the Bibb fine sandy loam.

The largest area of the Thompson fine sandy loam extends along Turkey Creek in a strip which varies in width from less than 100 yards to nearly one-half mile. Narrower strips extend along the principal clear-water streams of the county.

The type is subject to inundation and much of it is poorly drained, even between periods of overflow.

It is forested with slash and longleaf pine, swamp maple, ash, elm, sycamore, cypress, and a wide variety of other trees and shrubs which thrive under the moisture conditions prevailing in this type. In some places it supports a growth of palmetto.

Under present conditions of poor drainage and frequent overflows the Thompson fine sandy loam has no agricultural value except for pasturage.

CONGAREE FINE SANDY LOAM.

The surface soil of the Congaree fine sandy loam is a brownish-gray to light reddish brown, micaceous fine sandy loam, very slightly mottled with light gray. At a depth of about 12 inches this grades

into a lighter brown fine sandy loam, lighter and slightly coarser in texture. This type includes many areas of Congaree fine sand, similar in color. The soil lacks uniformity in the vertical section, as well as from place to place.

The Congaree fine sandy loam occurs in narrow strips in the first bottoms bordering the channel of the Oconee River, the sandier, coarser material prevailing adjacent to the river and grading into finer and heavier soil away from the stream. It is a small, unimportant type, in most places heavily forested. Small areas have been cleared and are used for corn. Owing to danger from overflow, the type is of low agricultural value.

CONGAREE SILTY CLAY LOAM.

The surface soil of the Congaree silty clay loam is a brown to reddish-brown silty clay loam. The subsoil is slightly lighter in color. It is of nearly the same texture, but is quite variable, in places passing into a stiff clay below 20 inches and in others becoming lighter in texture with included thin layers of sandy loam or sand. Where the clay is encountered in the subsoil it usually shows mottlings of gray and brown. Small mica scales appear throughout the 3-foot section.

Large areas of this type extend in the flood plain or first bottom along the Oconee River entirely across the county, the development varying from one-fourth to about two miles in width.

The type as a whole is low, flat, and poorly drained, and the greater part of it is subject to heavy and protracted overflows. In its present condition it is of little agricultural value, but if protected from overflow and cleared and drained it would undoubtedly be a very productive soil. Indications are that it would give large yields of corn, and it would afford excellent pasturage for cattle.

SWAMP.

The term Swamp is used to designate areas which are so variable in texture that no type distinction can be given it and which are too wet for cultivation, being covered with water much or all of the time. Within the developments of Grady sandy loam, Thompson fine sandy loam, and Congaree silty clay loam there are many areas which can best be designated as Swamp. Some of the largest of these are mapped, but many others, on account of their small size or their inaccessibility, have been included with the predominating soils where they occur.

The areas of Swamp support a heavy growth of water-loving trees and shrubs and are practically inaccessible. The soil usually resembles very much the surrounding type but usually contains a higher

percentage of organic matter from decaying vegetation and not infrequently has a surface covering of muck.

It would be very expensive to reclaim the Swamp areas. The soil in many places is, however, inherently productive and would give large yields of corn.

SUMMARY.

Laurens County is situated in central Georgia, in the higher part of the Coastal Plain, with an elevation above sea level between 200 and 400 feet. The topography ranges from undulating or rolling, or even broken in places in the northern part of the county and near the large streams, to almost flat in sections of the southern part. The Oconee River divides the county into two unequal parts and with its tributaries drains its entire area.

The population is largely rural, and fairly evenly distributed at the rate of 40 persons to the square mile. Approximately three-fifths of the population is white. Dublin, the county seat, is the principal town and the business and marketing center of the county. Transportation facilities for most of the county are fairly good. Public roads are being rapidly improved.

The climate is well suited to the system of one-crop farming which has been carried on, but is also well suited to diversified farming and stock raising.

Parts of the county have been under cultivation for a long period, but much of the land has only recently been cleared and brought under cultivation. The cultivated area is being increased each year, about 60 per cent of the county or a little more now being under cultivation. Cotton has always been the principal crop and the money crop, the production for 1914 being over 56,000 bales. The average yield per acre is estimated at about one-half bale, with many yields of three-fourths to over one bale reported. Corn is the second crop in importance. Peanuts, cowpeas, and velvet beans are other crops growing in favor rapidly. Oats and wheat receive more attention each year. There has been a gradual tendency for some time toward devoting more attention to other crops than cotton and to stock raising.

The principal means adopted by the better farmers of the county to improve the soils consist of reducing the cotton acreage, raising more live stock, building up the soil by the use of legumes, plowing more deeply, and growing more hay and pasture grasses.

The soils of Laurens County are derived from the unconsolidated sediments of the Coastal Plain. They are prevailingly sandy in the surface portion and have sandy clay subsoils. The upland soils are divided, according to the color of their subsoils, into seven series—

the Greenville, Orangeburg, Ruston, Susquehanna, Tifton, Grady, and Norfolk.

The Greenville sandy loam occurs only in the northern part of the county. It has a reddish-brown surface soil and a deep-red subsoil.

The Orangeburg sandy loam is also found principally in the northern part of the county and has a gray to reddish-gray surface soil and a bright-red subsoil.

The Ruston sandy loam occupies extensive areas in the northern and northwestern parts of the county. It has a gray to rusty-yellow or light-brown surface soil and a rusty-brown subsoil. The Ruston sand and its loamy phase are fairly productive soils.

The Susquehanna sandy loam has a gray to dark-gray or rusty-brown surface soil and a mottled subsoil.

The Norfolk sandy loam has a gray surface soil and a light-yellow subsoil. The Norfolk sand covers large areas in the eastern and southern parts of the county, but is of low agricultural value. The Norfolk coarse sandy loam is developed mainly in the southern part of the county. In places it is rather productive.

The Tifton sandy loam shows the same soil section as the Norfolk sandy loam but has reddish, ferruginous pebbles throughout surface soil and subsoil.

The Grady sandy loam occupies sinks, depressions, and lowlands along small drainage ways. The second-bottom or terrace soils recognized are the Kalmia sandy loam and sand, corresponding to the Norfolk series of the uplands, and the Myatt sandy loam, corresponding to the Grady soils.

Of the first-bottom soils the Thompson fine sandy loam is developed along the small streams and the Congaree soils along the Oconee River.

Swamp is a miscellaneous type comprising wet areas of mixed soil material.

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[PUBLIC RESOLUTION—No. 9.]

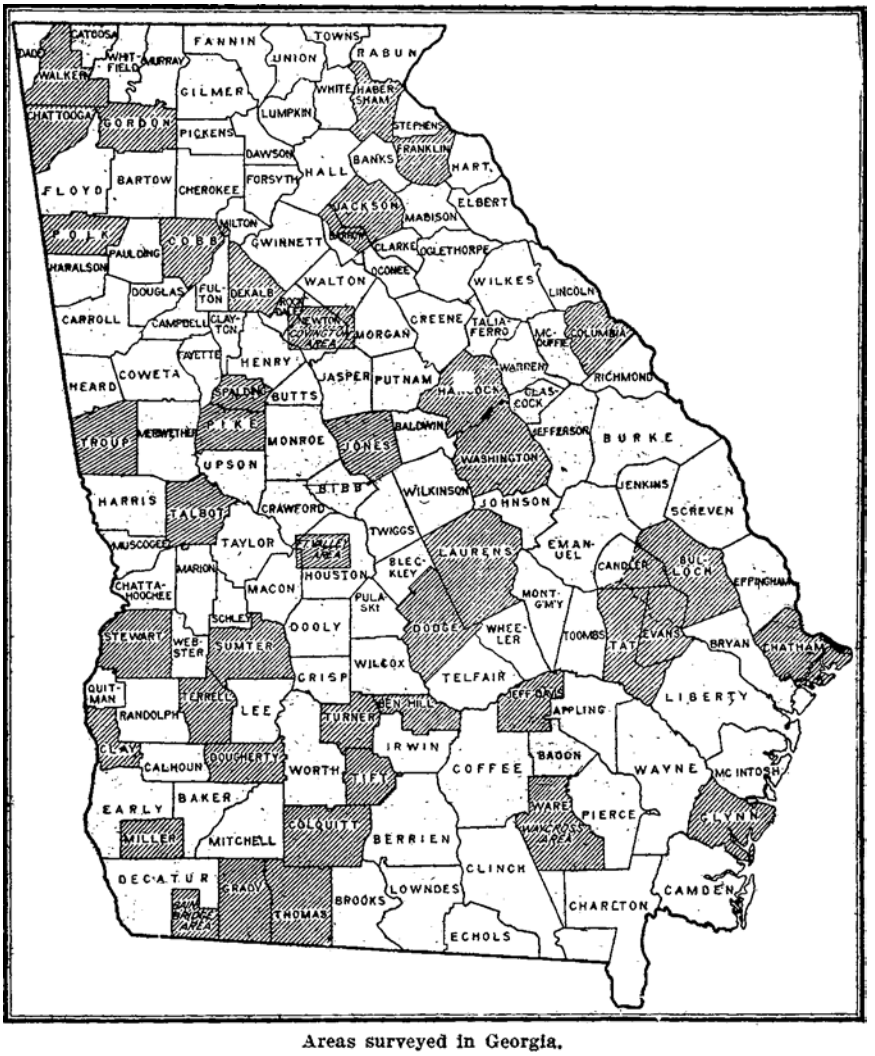
JOINT RESOLUTION Amending public resolution numbered eight, Fifty-sixth Congress, second session, approved February twenty-third, nineteen hundred and one, "providing for the printing annually of the report on field operations of the Division of Soils, Department of Agriculture."

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 Divison 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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