

SOIL SURVEY OF COLQUITT COUNTY, GEORGIA.

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DESCRIPTION OF THE AREA.

Colquitt County is situated in the southern part of Georgia. It is bounded on the north by Worth and Tift Counties, on the east by Berrien County, on the south by Brooks and Thomas Counties, and on the west by Thomas and Mitchell Counties. The county is rectangular in shape, except that the eastern boundary, formed by Little River, is irregular. It has an average length from east to west of about 27 miles, and its width from north to south is slightly less than 20 miles. It has a total area of 544 square miles, or 348,160 acres.

The topography of the greater part of the county is gently undulating to rolling. In the south-central and eastern parts there are areas which are low, flat, and poorly drained, resembling the "flat-woods" country farther south and east. In the western and southwestern sections, along the Little Ocklocknee River and Bridge Creek, and in the northeastern part between Warrior Creek and Little River, there are areas which are more rolling and somewhat broken. Small hilly areas occur in places near the valleys of all the larger streams.

The surface of this region was formerly smooth, with a gentle slope to the south. The present surface irregularities are due principally to erosion and to solution of the underlying limestone at various places.

The county comprises a number of low, almost parallel ridges extending in a general north and south or northwest and southeast direction. One of these ridges crosses the county near its center and forms the divide between the streams which enter the Gulf of Mexico through Little River and the Suwanee on the east and those which flow into the Ocklocknee on the west. Other long ridges separate the drainage of Bridge Creek from that of the Ocklocknee River to the east and the Little Ocklocknee to the west. The ridges



FIG. 19.—Sketch map showing location of the Colquitt County area, Georgia.

between the tributaries of Little River are not so long or so clearly defined.

The larger streams of this region follow crooked, sluggish courses through broad, shallow, swampy valleys. In places these valleys are bordered by low hills, ranging in elevation from 40 to 75 feet or more above the valley floor. In many places, however, the slope is so gradual that it is often impossible accurately to distinguish between valley and upland. Owing to the small quantities of sediment carried by the water and the sandy nature of the soils it is difficult to determine the extent of the flood plain, even immediately after a period of overflow.

The most important streams of the eastern part of the county are Warrior Creek, Indian Creek, and Ocopilco Creek, which are tributaries of Little River. In the western part of the county the Ocklocknee and Little Ocklocknee Rivers and Bridge Creek are the principal streams. These and the smaller streams have many small tributaries which branch out into all parts of the low divides. Many of these smaller streams have no flood plains and are mere drainage ways during periods of excessive rainfall or outlets of seepage water. All parts of the county are so completely dissected by these small "heads," "draws," or "slashes" that there are few fields of any considerable extent which do not contain one or more of them.

A common topographic feature of this region consists of numerous ponds and sinks. These are found in all parts of the county, but mainly in the western and northern sections. They are depressions, circular, elliptical, or elongated in shape and varying from less than an acre to several acres in extent. As a rule they have a depth of only a few feet and are thickly overgrown with cypress or gum. They are spoken of as cypress bays or gum bays. Some have no visible outlet, but do not hold water permanently. Others are drained and farmed. Many of the small streams have an amphitheaterlike depression at their source and apparently have worked back into one of these bays.

The earliest settlements in this region were made more than three-quarters of a century ago. The early settlers were largely from the longer settled parts of the State. With the development of the turpentine and lumber industries there was a marked increase in immigration, principally from North Carolina, and as these industries exhausted the pine over portions of the county, agricultural, commercial, and manufacturing enterprises rapidly increased in importance, and a steady immigration from other States continued. The settlers of the present time, however, are mainly farmers from middle and northern Georgia, attracted by the low prices of land in this county. At the present time only a small part of the population is made up

of negroes. The population was 2,527 in 1880, 4,794 in 1890, 13,636 in 1900, and 19,789 in 1910. The rural population is 16,440. The population of the county is increasing rapidly.

Moultrie, the county seat, is located near the center of the county. It is an enterprising town, with a population of 3,349 in 1910. It is a railroad center and a city with modern improvements and considerable industrial interests.

Doerun, on the Georgia Northern, in the northwestern part of the county, and Norman Park, on the Atlanta, Birmingham & Atlantic Railroad, in the northeastern part, are towns of over 600 population in 1910. Berlin, on the Valdosta, Moultrie & Western Railroad, in the southeastern part of the county, is a smaller but rapidly growing town. Other towns of local importance are Crosland, Funston, Hartsfield, Ellenton, Murphy, and Autreyville.

Railroad facilities in the county are good. The Atlanta, Birmingham & Atlantic Railroad crosses the county from southwest to northeast, furnishing direct communication with Atlanta, Birmingham, and northern points. The Georgia Northern extends across the county from north to south, connecting Albany, Dougherty County, with the Atlantic Coast Line in Thomas County. The Valdosta, Moultrie & Western Railroad extends from Moultrie to Valdosta, in Lowndes County. A branch line of the Georgia & Florida connects Moultrie with Sparks, in Berrien County, where it joins the main line. The Flint River & Northeastern extends from Doerun southwest to Pelham, in Mitchell County.

A good system of public roads is being developed, extending into all parts of the county. The roads radiate from Moultrie, and connect this point with all the other towns of the county and with adjoining counties. They are of sand and clay. The rural delivery of mail extends into all parts of the county.

CLIMATE.

The winter climate of Colquitt County, like that of other parts of southwestern Georgia, is mild. There are short periods of damp, chilly weather, but the temperature in general is relatively high, and although thin ice is frequently formed and killing frosts are not uncommon, snow rarely falls and hard freezes are almost unknown. Short periods of rainfall are usually followed by clear, cool weather, but long periods of warm weather are of frequent occurrence, even in midwinter.

The more hardy vegetables may be grown throughout the winter with only slight protection. Green pasturage of rye, rape, oats, and Bermuda grass may be had throughout the winter.

Peas, beans, and potatoes are planted in February, and there is little danger of injury from frost after the middle of March. Home-grown peas and strawberries are often ready for use by the last of March, and beans and potatoes mature before the last of April.

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

There is no Weather Bureau station in Colquitt County, but the records of Thomasville, 30 miles south of Moultrie, are fairly representative of local climatic conditions. These records indicate that the average date of the last killing frost in the spring is March 6, and of the first killing frost in the fall, November 18, giving an average growing season of 257 days. The latest date of killing frost recorded in the spring is April 15, and the earliest in the fall October 29. The long growing season permits the cutting of four crops of alfalfa. This long season also is favorable to the production of long-staple or sea-island cotton, and several successive crops of garden vegetables may be grown.

The mean annual temperature as recorded at Thomasville is 67.4° F. The hottest month is July, with a mean temperature of 81.4°, while January, the coldest month, has a mean temperature of 51.9°. The mean temperature for the winter is 52.9°, for the spring 67.7°, for the summer 80.6°, and for the fall 68.4°. The highest temperature recorded is 106° F. and the lowest 2° F.

The normal annual rainfall at Thomasville is 53.01 inches. That for Colquitt County is probably a little less. The precipitation is well distributed throughout the year, the heaviest rainfall occurring during the summer months, when it is most needed by growing crops, and the lightest during the fall, when clear weather is needed for ripening and harvesting.

Oats, corn, and truck crops sometimes suffer from periods of hot, dry weather during the spring and summer. Cotton sometimes suffers from too much rainfall, but rarely from too little.

The percentage of sunshine during all seasons is quite high, and freedom from extremes of temperature and precipitation renders the climate very favorable for the live-stock, dairy, and poultry industries. It is also favorable for trucking and the development of intensive agriculture.

Water for domestic use and for stock is easily obtained. Drainage conditions are good in the principal farming sections or may easily be made so. Where sanitary conditions are maintained the climate is healthful.

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

Normal monthly, seasonal, and annual temperature and precipitation at Thomasville, Thomas County.

Month.	Temperature.			Precipitation.		
	Mean.	Absolute maximum.	Absolute minimum.	Mean.	Total amount for the driest year.	Total amount for the wettest year.
	° F.	° F.	° F.	Inches.	Inches.	Inches.
December.....	53.0	82	13	4.15	3.64	7.02
January.....	51.9	82	15	3.75	4.65	3.84
February.....	53.9	81	2	4.68	3.11	4.81
Winter.....	52.9			12.58	11.40	15.67
March.....	61.7	92	22	4.29	1.66	5.41
April.....	67.0	95	34	3.42	1.81	5.78
May.....	74.4	101	41	3.87	1.39	7.68
Spring.....	67.7			11.58	4.86	18.87
June.....	79.6	102	48	5.09	2.49	8.84
July.....	81.4	106	62	6.82	4.66	4.77
August.....	80.8	101	61	6.30	7.95	5.49
Summer.....	80.6			18.21	15.10	19.10
September.....	77.6	99	46	4.97	1.34	6.43
October.....	68.5	97	35	3.14	0.14	1.97
November.....	59.2	88	22	2.53	3.00	3.06
Fall.....	68.4			10.64	4.48	11.46
Year.....	67.4	106	2	53.01	35.84	65.10

AGRICULTURE.

Agriculture in Colquitt County is in a transitional stage. The early settlers located along the streams, which afforded the principal means of transportation, and fishing and hunting were of more importance than farming. The lands selected were often poor and unproductive and some of these early settlements have long been abandoned. Stock raising was extensively carried on, the hogs, sheep, and cattle running at large in the forests. Cattle and wool were the principal money products, and Thomasville and Albany the principal markets. Farming was practiced mainly on "cowpen" land, or small tracts of land which were enriched by keeping cattle on them, and no commercial fertilizer was used. In time commercial fertilizer in small quantities came to be used on cotton, and its use

was gradually extended to other crops. The quantity per acre also increased materially, and at the present time practically all crops grown in the county receive large applications.

Colquitt County originally was heavily forested with longleaf pine. About 25 years ago the turpentine business became an important one and it is still carried on quite extensively, although now confined largely to scattered small trees left by the early operators and to the pines in the slashes, branches, and creek bottoms. Many farmers and landowners collect considerable revenue through leasing their trees or collecting the gum themselves.

The lumber industry was important for many years. Trees which have not been chipped for turpentine are known as "round timber." Only a few areas of the original "round timber" remain in the county and these are being reduced year by year. Numerous small saw and shingle mills, however, are operated in the county, and furnish fairly cheap building material, though usually not of a very high grade.

As a result of lumbering operations large tracts of land have been partly or entirely cleared of the original forest growth, and these are being cultivated or prepared for farming. Approximately one-third of the county is under cultivation. The remainder consists mainly of partly cleared forest land (see Pl. XLIX, fig. 1). Tree trunks are thickly strewn over the ground, and stumps and trunks blackened by fires are abundant. A few standing trees, rejected by the lumbermen and heavily scarred by chipping for turpentine, remain. In many places the land supports a second growth of pine. On some of the ridges there is a growth of hardwood, consisting largely of blackjack, red, turkey, and water oak. On the bottom lands the forest consists of many species of trees.

The cost of putting wild land in cultivation, where it is near the railroad and the timber can be sold to advantage for wood and the best of it made into cross-ties, may be as low as \$3 or \$4 an acre. In other places it may be as high as \$10 or more. The average cost is about \$7.50 an acre. This, however, includes only the removal of the down timber and underbrush, deadening the standing timber, and plowing the land. Probably over 75 per cent of the land in the county is farmed without removing the stumps, and a large part of it without removing the standing dead trees. (See Pl. XLIX, fig. 2.) The large pine stumps do not decay rapidly, and many of them are now standing in fields which have been under cultivation for 75 years. The removal of these stumps is difficult, the cost averaging about 10 cents a stump, or \$10 an acre. Many of the best farmers are now clearing their fields. Owing to the increased amount of land which can be farmed, the saving of the time and labor required in working

around the stumps, and the use of larger teams and heavier farm equipment made possible by their removal, it is estimated that the increased profits in two or three years pay for the cost of removal.

The early settlers kept large numbers of stock, though of low grade. With increased population and the development of farming, large areas were fenced and the range became somewhat limited. The grass was closely pastured, and the raising of stock of all kinds declined in importance. At the present time the tendency is toward an increase in the number and an improvement in the quality of stock. Little progress can be made until the cattle tick is eradicated. In improving the stock, hogs receive the greatest attention. High-grade and registered hogs have been brought into the county for breeding purposes, and although most herds show traces of "piney woods" ancestry, there has been a marked improvement within recent years. A modern packing house, having a capacity of 60,000 hogs, is being built at Moultrie.

Nearly all the work stock used in the county is imported from Kentucky and Tennessee and other northern markets. Much of this could be raised at home, the principal requisite being more and better pasturage.

Land values have increased rapidly in Colquitt County during the last few years. The land lots were at one time sold by the State at \$5 a lot of 490 acres. These lots were purchased for lumbering and turpentineing 25 or 30 years ago for a few hundred dollars each, and in many cases for less than \$100. About 10 to 15 years ago much of the best land in the county was valued at only \$5 to \$20 an acre. At the present time \$20 to \$40 or more an acre is asked for new land, and the better improved farms are held at \$40 to over \$75 an acre.

Through the Colquitt County Produce Federation, which was organized early in 1914, the farmers of the county cooperate in the growing and marketing of truck crops. Trucking is engaged in extensively, and during the last few years the growing of watermelons and cantaloupes has assumed considerable importance.

The following table shows the approximate acreage planted to the various truck crops in Colquitt County during the spring of 1914, as reported by the produce federation:

Acreage in truck crops, Colquitt County, 1914.¹

Crop.	Acres.	Crop.	Acres.	Crop.	Acres.
Watermelons.....	1,200	Sweet potatoes.....	600	Cucumbers.....	150
Cantaloupes.....	200	Cabbage.....	30	Sweet corn.....	40
Irish potatoes.....	350	Tomatoes.....	80	String beans.....	150

¹ Estimates issued May 15 by the Colquitt County Produce Federation.

The following table, compiled from the census and showing the increase in acreage of the more important crops during the last 30 years, shows the development of general agriculture in the county:

Comparative acreage of various crops grown in Colquitt County, Ga.

Crop.	1879	1889	1899	1909	Crop.	1879	1889	1899	1909
	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>		<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Cotton.....	2,958	6,899	11,251	29,763	Tobacco.....	5		25	6
Corn.....	4,375	7,128	15,692	24,347	Sugar cane.....	113	151	475	708
Oats.....	2,198	2,518	2,402	4,733	Peanuts.....		313	3,472	5,692
Rice.....	125	35	240	53	Peas.....			435	107
Sweet potatoes..	313	363	518	1,337					

It will be noted that during the 30 years the acreage of cotton shows the greatest increase, though the acreage of corn also has rapidly increased. The acreage of oats practically doubled during the decade 1899-1909 and since 1909, owing to the introduction of better varieties and the use of oats for pasturage, the acreage has probably increased more rapidly than has that of any other of the general farm crops.

Sweet potatoes have shown a steady expansion in acreage. This increase is concurrent with the development of the trucking industry and the development of hog raising and fattening.

The acreage of peanuts has steadily enlarged since 1889, and with the development of hog raising this increase promises to be permanent. Sugar cane is also grown on a larger acreage than formerly. Only two crops, rice and tobacco, show a decrease. Along with this increase in acreage in most crops, it is the general opinion that there has been an increase in the yields per acre, though statistics to prove this are not available.

The crop of largest acreage in the county and by far the most important money crop is cotton. Both the long-staple, or Sea Island, and short-staple, or upland, cotton are grown. The methods used by different farmers vary widely, but as a rule the stalks of the preceding crop are cut with a stalk cutter and the ground carefully plowed during the late fall or winter, and allowed to remain in this state until early spring. It is then thrown up into ridges about 4 feet apart. Some farmers harrow or disk before bedding. A furrow is then opened along the middle of these ridges, and the fertilizer is applied and lightly covered or thoroughly mixed with the soil, after which the cotton is planted in the furrow immediately over but not in contact with the fertilizer. Two or three horses are used in some cases in plowing and disking the land, but planting and cultivation are practically always done with one-horse implements, and

much of the breaking is done the same way. As soon as the cotton is up, shallow cultivation is begun, being repeated at frequent intervals until the fruit is well formed.

The most successful farmers practice flat or nearly flat cultivation for both cotton and corn. By this method the plants are placed deep in the furrow, so that the soil may be gradually worked toward them at each cultivation. When the crop is laid by, the surface is practically level instead of being in high ridges. This method has several advantages.

Immediately before or soon after the first cultivation the crop is thinned by chopping, the stalks being left 10 to 18 inches apart. Cotton is frequently left too thick, and some farmers use planters which space the seed at 2-foot intervals. A second application of fertilizer is sometimes made along the side of the row before or about the time the crop begins fruiting. This is usually somewhat higher in potash than the first application, and is made to keep the plant from dropping its fruit.

Cotton may be planted from March 20 to June 1, but it is usually desirable to get it in the ground as soon as the soil is in good condition and the danger from frost is past.

Little if any cotton is grown without fertilizer. The common practice is to apply a 9-2-3 or 9-2-5 mixture at the rate of 200 to over 600 pounds per acre, but other grades are used. On new ground the percentage of nitrogen is reduced. Barnyard manure, cotton seed, and cottonseed meal are also used for cotton, usually being applied in the row. Many farmers mix their own fertilizer.

Many different varieties of cotton are grown. The Cook's Improved, Half and Half, Hastings Upright, and Toole's Prolific seem to be the most popular. Some farmers are improving their cotton by careful seed selection. The average yield for the county in 1909 was slightly less than one-half bale per acre, but according to data collected from farmers by means of circular letters of inquiry it is increasing gradually. The average yield on various soils as given by these farmers is as follows: On the Tifton sandy loam, 326.5 pounds of lint per acre; Tifton sandy loam, deep phase, 250; Norfolk sandy loam, 280; and Norfolk sandy loam, deep phase, 240.

Many farmers have obtained in small fields yields of 1 to 2 bales per acre. The principal reasons assigned for the increasing yield are the use of larger quantities of fertilizers, deeper plowing, with more thorough and frequent cultivation, the rotation of crops, and the use of better varieties.

Long-staple cotton is grown principally in the southeastern part of the county on the Norfolk sandy loam or "gray land." The cost of planting, cultivating, and fertilizing is practically the same as for

short-staple cotton, the principal difference being in the cost of picking. The risk from injury by frost and from damage to the lint in the field is somewhat greater. The yield per acre is about the same, or slightly less. Some farmers grow this variety almost exclusively, while others do not think that the difference in price justifies the additional risk and labor. The acreage seems to remain stationary or to be decreasing slightly.

This region has not yet been invaded by the boll weevil, but its arrival within a short time is looked for, and some of the farmers are substituting other crops for cotton, and are giving more attention to live stock. They are also using to some extent the methods adopted in infected regions to combat this pest, including fall and winter plowing and thorough preparation of the land, followed by early planting, the use of wide rows with sufficient space between the plants to permit the sunshine to reach the ground, and the use of early maturing varieties, hastening the development by the liberal application of fertilizer, early chopping, frequent shallow cultivation,¹ and the rotation of crops.

The best farmers prepare the land for corn in the same manner as for cotton, the corn being planted in the water furrow. The rows are 4 to over 6 feet apart, and the plants 12 to 20 inches apart in the row.

The same grades of fertilizers are used as for cotton and the applications range from 150 to 500 pounds or more per acre. Many farmers make a light application of complete fertilizer or of nitrate of soda alongside the rows about the time the corn begins to tassel, or in some cases earlier. The best results are obtained where frequent shallow cultivation is given throughout the growing season, but many farmers either consider three cultivations sufficient, or do not have time for more. Since the crop is subject to injury from the corn weevil, all the corn is pulled and stored in the husk.

The average yield of corn per acre for the county in 1909 was about 17 bushels, but through better methods of farming the yield is increasing, and on some test tracts, by intensive methods, yields of nearly 100 bushels per acre have been obtained.

In data collected from a number of farmers the estimated yield on various soil types is given as follows: Tifton sandy loam, 23.5 bushels; Tifton sandy loam, deep phase, 22.5; Norfolk sandy loam, 19.5; Norfolk sandy loam, deep phase, 17.5 bushels.

It is the custom of many farmers to plant peanuts between the rows of corn, alternating a row of peanuts with a row of corn or with two rows of corn. Some say that this does not reduce the yield of corn materially; others say that it reduces it about one-

¹ The Boll Weevil Problem, Farmers' Bulletin 512, U. S. Dept. of Agr.

third, but that the value of the peanuts more than makes up for the reduced yield of the corn. Velvet beans are also planted with the corn in some cases, and the estimates for the soil types given above are for corn grown with velvet beans or peanuts, or in some cases with both. The reasons given for the increase in the yield of corn are the use of leguminous crops and of larger quantities of fertilizer, deeper breaking, and more frequent shallow cultivation.

The acreage of oats in the county is increasing rapidly. The yield per acre in 1909 was a little less than 17 bushels. Only a small part of the crop is thrashed; the greater part of it is cut and fed in the sheaf or cut just before ripening and cured for hay. Most of it is used for winter and spring pasturage for hogs and cattle. Winter oats are grown exclusively, the principal varieties being the Texas Rustproof, Appler, Hastings One-Hundred Bushel, and Bancroft. The custom is to drill thickly in rows about $2\frac{1}{2}$ to 3 feet apart or to sow broadcast and plow under. When drilled in rows peanuts are planted between the rows and cultivated after the oats are cut. Some farmers use 100 to 300 pounds of the same grade of fertilizer as for cotton and corn. Others apply a top-dressing of nitrate of soda, while still others use no fertilizer with oats.

Peanuts constitute one of the most valuable crops of the county. They are grown alone and cultivated as other crops, the tops being cut for hay, or are planted in the corn or oats, as already noted. Peanuts are used almost exclusively for hog feed, the hogs being turned into the fields and allowed to root them out. They have a very high feeding value, but the pork produced is oily and should be hardened by feeding for about 30 days on corn or mixed feeds. Only a small part of this crop is marketed, and many farmers do not even harvest their seed, but pay high prices for it in the spring. Two varieties are grown—the small Spanish peanut, which matures in 100 to 120 days, and the North Carolina, which is somewhat longer in reaching maturity.

This region is well suited in both soils and climate to growing peanuts for the market. By the use of improved machinery for cultivating and harvesting, they could be made an important money crop.

Sweet potatoes are an important crop. They are especially well suited to the deep, sandy gray lands, and yields of 75 to over 200 bushels per acre are obtained. They are grown extensively for home use, for the market, and as a feed for hogs. About 600 acres for market are reported in 1914, and with the growth of hog raising they are being grown more extensively for feed. The estimated cost of raising a bushel of sweet potatoes is less than 20 cents, and they are usually sold at local markets in the spring for 50 to 75 cents. There has been little change in the average yield per acre during the last

30 years. The yield, however, can be materially increased and the cost of production lowered for this as for other crops.

Sugar cane has long been an important crop in Colquitt County. The acreage is not large, but almost every farm has a patch of sugar cane, and Georgia cane sirup is a standard article of diet throughout the county. Large quantities are sold at local markets. One hundred to 250 gallons per acre is a fair yield, although much larger yields are often obtained. The cost of production per gallon is estimated at 20 to 25 cents. The sirup sells at the local market at prices ranging from 30 to 45 cents per gallon. The quantity and quality of the sirup vary widely with the kind of soil and the quantity and grade of fertilizer used.

The velvet bean is a plant which requires a long growing season to mature seed. The beans are planted in the corn in April or early in May, the plants being 4 to 6 feet apart in the rows. The vines make a heavy growth, and if they stand too close smother the corn. They bear clusters of pods well filled with beans. The pods are tough and leathery and will remain in the fields for a long time without injury. The stock prefers other feeds when available, but during the late fall and winter the beans are pulled down and eaten by cattle, horses, and hogs, with great relish. This crop not only constitutes a good feed for stock, but also is of great value for adding humus and nitrogen to the soil.

Other legumes of importance are cowpeas and soy beans. Both do well in this county. Cowpeas may be planted in the corn instead of peanuts and pastured after the corn has been gathered, but they usually follow a crop of oats or melons and are cut for hay. The principal objection offered to cowpeas is that on new ground they tend to make a heavy growth of vine with little seed. Soy beans are planted in rows after oats or melons, and are cultivated and used for pasturage or cut for hay.

Although the acreage of watermelons and cantaloupes in 1909 was relatively small, these crops are rapidly becoming important. In 1914 about 1,200 acres are reported in watermelons and about 200 in cantaloupes.

For these crops the ground is flat broken, thoroughly disked as early as possible, and planted as soon as danger from frost is past. The hills are about 10 feet apart each way, and the crops are heavily fertilized with manure and commercial fertilizer when planted, a 7-4-5 or 7-3-5 mixture being used in quantities considerably larger than for cotton. The Tom Watson is the principal variety of watermelon grown in this section, and the Eden Gem, a variety of Rocky Ford cantaloupe, is planted extensively.

Frequent shallow cultivations are given until the vines begin to run. Melons mature in about 90 days and are marketed usually

between June 10 and June 30. The profits from melon crops vary widely, being good when the crop is normal, but sometimes only a little above the cost of growing when there is an overproduction. One-half carload per acre is considered a fair yield of watermelons, and the cost of growing and marketing is about \$30 per car. They sell at prices ranging from \$45 to as high as \$150 per car. By far the most of the melons are shipped to northern markets, but some are shipped to Florida, and, arriving there after the close of the Florida season, command good prices. Florida also supplies a market for other truck crops. Cantaloupes mature in about 75 days and are crated before shipping. The cost of producing and harvesting is about \$60 per car, and they are sold at prices ranging from \$75 to \$200 per car.

Large areas of the Norfolk sandy loam, deep phase, Norfolk fine sandy loam, Norfolk sand, and the deep phase of the Tifton sandy loam are especially well suited to these crops. They can be successfully grown also on the typical Norfolk sandy loam and Tifton sandy loam.

Other truck crops of importance are string beans, cabbage, tomatoes, cucumbers, sweet corn, onions, and lettuce. The soils and climate of this region are well suited to the production of these crops at a low cost and at a season when they command good prices. The success of the trucking industry depends much upon the grading and marketing of the products.

One of the most important changes now taking place in the farm practice of Colquitt County is the introduction of the legumes as hay and forage crops. The most important of these is alfalfa. A considerable acreage of this has been sowed during the last year, and the crop promises to prove successful. Alfalfa requires a deep, well-drained, rich soil. It is ready for the first cutting about the 20th of April, and if weather conditions are favorable gives four cuttings a year, yielding one-half to over 1 ton at each cutting.

Bur clover is another good forage legume which is receiving attention and should prove successful. Lespedeza, Japan clover, which grows wild in many parts of the county, makes excellent pasturage.

Pecan growing receives much less attention in this county than in some other parts of southern Georgia, although it is well known that the trees do well on the Tifton sandy loam and Norfolk sandy loam. A few large groves and many small ones have been planted on these soils and are in a thrifty condition. Near Moultrie a 75-acre grove of the Delmas variety, 10 years of age, is said to be giving good returns. Figs for home use are grown throughout the county, but there are no commercial orchards. The soils and climate seem well

suiting to the profitable production of this fruit. Strawberries and blackberries do well, but little attention is given to them except for home use. Nearly every farm has one or more Scuppernong grape arbors, but on a large scale the production of grapes receives little attention.

According to the 1910 census 52.5 per cent of the farms are operated by the owners. Several forms of rental are practiced. Under the most common system the landlord receives one-third the corn and one-fourth the cotton, the tenant supplying work stock and equipment and one-half the fertilizer. Where the owner furnishes work stock and equipment he receives one-half the crop, the tenant furnishing one-half the fertilizer. If other live stock is kept on the farm, it is cared for by the tenant, being fed from crops grown on the farm, and the tenant receives one-half the increase when sold. Cash rentals range from \$2.50 to \$5 an acre.

SOILS.

The soils of Colquitt County are of Coastal Plain origin, and in general have a sandy surface soil and a gray, dark-gray, or reddish-gray color. They generally contain small, round iron concretions or gravel, and have a sandy clay subsoil. Since deposition they have been modified by erosion, oxidation, and leaching, and by the accumulation of organic matter. In those places where the subsoil, usually because of unusual drainage conditions, has been oxidized to a red color, the soils are grouped in the Orangeburg series, while if the subsoil is only reddish yellow they are grouped with the Ruston series. An inspection of the soil map accompanying this report will show that all these series are confined to the vicinity of the streams, where drainage, surface and internal, is exceptionally good. Where the subsoil consists of clay rather than sandy clay and where weathering has not gone very far the soils are grouped in the Susquehanna series. This clay bed, often mottled, as seen in deep road cuts, is in many places within 3 feet of the surface on the steep slopes of the hills bordering some of the larger valleys, and is frequently found in the floor of the valleys under 2 or 3 feet of alluvial soil. It is encountered in digging wells at various depths under the other soils of the county, and probably extends over its entire area.

Along the south side of Warrior Creek, in the north-central part of the county, there are outcrops of large masses of a gray, coarse-grained rock. This has the appearance of coarse quartz sand loosely cemented with lime, and shows a slight effervescence with acid. Portions of this rock are yellowish brown in color, very hard, and apparently cemented with iron. A short distance north of Norman Park an outcrop of this rock at the roadside is immediately overlain by the mottled drab and red clay.

The numerous ponds and sinks throughout the county and the amphitheaterlike depressions at the heads of many of the small streams indicate the presence of an underlying bed of readily soluble limestone. The yellow, red, and brown colors of the surface soil are due to oxidation upon exposure to the air, and its sandy texture to admixture with the overlying sandy soils and to the carrying down of the clay by percolation of the ground waters.

Although of considerable importance in some of the other counties of south Georgia, the Susquehanna, Ruston, and Orangeburg soils, owing to their comparatively small area, rather badly eroded character, low agricultural value, and unfavorable situation, are of little importance in this county. They were at one time no doubt entirely covered by the more recent deposits, but have been exposed by stream action and by erosion on the adjoining slopes. They occur, therefore, in the more broken sections of the county, where rather steep slopes border the valleys. These steeper slopes are not continuous, but are cut through in many places where small tributary streams enter. In the broad valleys and on the more gradual slopes these soils have a surface covering of alluvial or colluvial material. They are exposed principally as small, isolated patches around the points of the ridges and on the steep slopes below sharp breaks.

Overlying this group of soils and often closely associated with them is another group of soils, the members of which are characterized by a gray, grayish-brown or reddish-brown color at the surface, by bright-yellow, yellowish-brown or reddish-brown, friable sandy clay subsoils, and by the occurrence on the surface and throughout the soil and subsoil of small, round iron concretions and small rounded pebbles of sandstone. Soils of this kind are known locally as "pebbly" or "pimply" land and are often referred to as "hard pimply land."

These soils are considered the most durable and productive in the county. They are the most widely distributed and as a whole the best improved and best farmed. They are derived from the weathering of unconsolidated or only slightly consolidated Coastal Plain material, and are closely associated with the adjoining and probably younger gray soils. The gravel in places seems to be uniformly distributed, but in other places it occurs in thin beds which are encountered either quite near the surface or at considerable depth. In general, the areas of gravelly soil occur on the ridges, where conditions have been favorable for the erosion of the overlying soils. In many places, however, the reverse is true, and sand is found on the top of the ridge, with gravelly soil on the slopes and sometimes on the flats at the foot of the slopes. Areas of gravelly soil rarely occur immediately around the heads of small streams, probably on account of the

method of stream formation. Instead of being formed by surface erosion, these streams seem to be the result of underground solution and the letting down of the surface soil, the gravelly soil thus being protected by the overlying sandy soils. The soils of this group belong to the Tifton series.

Adjoining and closely associated with the Tifton soils are the so-called "gray" soils of the county. They are characterized by the gray or dark-gray color of the surface soil and the lemon-yellow color of the subsoil. The surface soil is sandy, and the subsoil, except in the case of the sand and fine sand types, is a loose, friable light sandy clay or yellowish sandy clay of heavy texture. These soils are derived from unconsolidated Coastal Plain deposits and have been modified to some extent by erosion, by leaching, and in places by the action of the wind. Next to the Tifton soils they are the most widely distributed and most extensively farmed soils of the county. The growing of long-staple cotton is confined almost exclusively to soils of this series, and they are also used for melons and truck crops to a greater extent than are any other soils. These soils are mapped as the Norfolk series.

Adjoining all the drainage courses of the county, large and small, are bodies of dark-gray, bluish-gray, or black soils which are not subject to overflow. Many small areas of these soils are well up on the slopes around the small heads and branches. Other areas are low and broad and adjoin the stream-bottom soils, which are subject to overflow. The surface material is dark in color and well filled with organic matter from decaying vegetation. A short distance below the surface the dark-gray color gives way to light gray or almost white, and in the lower subsoil frequently to gray mottled with splotches of yellow or brown. These soils are of the same origin as the Norfolk soils, but have been changed to their present condition principally through seepage and poor underdrainage. On all of these excessively wet areas a carnivorous plant, the pitcher plant; locally called "trumpet" or "huntsmans bugle," is abundant. The broader areas of dark-colored soil are influenced to a much less extent by seepage water. The characteristic plant growth on these soils is the gallberry bush. These soils are much more easily drained and more productive when cultivated than are the wetter soils. Between these dark-colored soils and the adjoining Norfolk soils there are in many places narrow strips of a transitional soil which has the dark surface of one and the light-yellowish subsoil of the other. As these areas are cultivated and the organic matter lost by oxidation they become more like the Norfolk soils.

Two series of these dark soils are recognized—the Plummer, which embraces the more broken and poorly drained areas, and the Portsmouth.

In the flood plains of the larger streams are areas of wet, poorly drained soils which are variable both in surface character and arrangement of the substrata. These areas are not suited to agriculture and can be made so only through drainage and protection from overflow. Many of them are inaccessible, being cut off by sloughs and old channels. For these reasons accurate separations on the soil map are impracticable. Two types are recognized—the Thompson fine sandy loam, which is the predominant type, and the Chastain fine sandy loam, characterized by a mottled drab and red, tenacious clay subsoil.

Some rather large areas are partly or entirely submerged and covered with a dense growth of water-loving trees and shrubs. These are mapped as Swamp.

In some places along the edges of the larger valleys there are remnants of rather poorly defined terraces which represent the stream flood plain when the streams flowed at higher levels than at present. The soil on these terraces is recognized as the Kalmia.

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

Areas of different soils.

Soil.	Acres.	Per cent.	Soil.	Acres.	Per cent.
Tifton sandy loam.....	80,256	20.9	Chastain fine sandy loam.....	2,240	0.6
Deep phase.....	23,808		Portsmouth fine sand.....	1,792	.5
Norfolk sandy loam.....	41,472	23.5	Norfolk fine sand.....	1,664	.5
Deep phase.....	40,384		Susquehanna fine sandy loam.....	1,344	.4
Plummer sandy loam.....	59,648	17.1	Plummer fine sandy loam.....	1,216	.3
Thompson fine sandy loam.....	29,056	8.3	Tifton coarse sandy loam.....	1,088	.3
Portsmouth sandy loam.....	24,064	6.9	Ruston fine sandy loam.....	1,088	.3
Norfolk sand.....	8,960	2.6	Portsmouth loam.....	960	.3
Swamp.....	8,256	2.4	Ruston sandy loam.....	576	.2
Portsmouth fine sandy loam.....	8,128	2.3	Kalmia fine sand.....	576	.2
Tifton fine sandy loam.....	4,736	1.4	Orangeburg fine sandy loam.....	512	.2
Norfolk coarse sandy loam.....	3,200	.9			
Norfolk fine sandy loam.....	1,216	.9	Total.....	348,160	100.0
Deep phase.....	1,920				

NORFOLK SERIES.

The surface soils of the Norfolk series are prevailingly gray, ranging from light gray to grayish yellow. The subsoils consist of yellow sandy clay of friable structure. These soils occupy nearly level to rolling uplands throughout the Coastal Plain. They are derived from unconsolidated deposits of sand and clay. The series is represented in Colquitt County by five types—the sand, fine sand, coarse sandy loam, sandy loam, and fine sandy loam.

NORFOLK SAND.

The Norfolk sand is a gray to light-gray loose sand underlain at 4 or 5 inches by pale-yellow or yellow loose sand which extends to a depth of 3 feet or more without important change. Owing to its open structure the type is not retentive of moisture. The supply of organic matter is low, the surface soil often being almost white.

This type is most extensively developed in flat, gently sloping, and slightly hummocky situations adjoining the stream bottoms. The largest continuous body of the type lies along Warrior Creek northeast of Norman Park. Small areas are encountered throughout the county.

The characteristic vegetation is longleaf pine, scrub oak, and wire grass. On the lighter colored areas scattered clumps of saw palmetto are common. The Norfolk sand is farmed to only a very small extent, being droughty as well as low in organic matter.

NORFOLK FINE SAND.

The Norfolk fine sand is a pale-gray to pale yellowish gray fine sand. The subsoil is a fine sand of about the same color and texture. In places the lower subsoil consists of a loamy fine sand to light fine sandy loam.

Small areas of this type are scattered over various parts of the county. Little if any of the type is farmed.

NORFOLK COARSE SANDY LOAM.

The Norfolk coarse sandy loam is a grayish to yellowish-gray coarse sand to coarse sandy loam, which at a depth of a few inches passes into yellow or pale-yellow coarse sandy loam. This in turn generally grades into yellow, friable coarse sandy clay at depths ranging from 8 to 20 inches. The immediate surface is dark gray in places, and the lower subsoil is sometimes slightly mottled with reddish iron-stained material. There are present small, rounded or sharp quartz gravel fragments, mainly smaller than a pea. The clay subsoil in some areas is encountered at depths of 2 feet or more. The quartz gravel is locally known as white gravel, in distinction from the red or brown iron gravel, and the land is referred to as "white gravelly land" or "ricey land." When the heavy subsoil is covered by 18 inches or more of the lighter soil the type is droughty. It is considered a less desirable soil than the Norfolk sandy loam.

The surface is undulating or gently sloping to moderately rolling. The largest area of this type occurs in the extreme northeastern part of the county. Small, scattered areas occur elsewhere.

NORFOLK SANDY LOAM.

The typical Norfolk sandy loam consists of a gray or slightly brownish gray sand which grades at about 3 to 5 inches into a pale-yellow sand or loamy sand. This is underlain at about 10 to 20 inches by a yellow sandy loam, which grades quickly into yellow, friable sandy clay. Occasionally there are some reddish mottlings of ferruginous-stained material in the lower subsoil, and in the lower, more poorly drained situations faint grayish mottlings are common. The typical soil is nearly level or gently undulating to gently rolling, the slopes being smooth and gradual. Practically all the land is topographically well suited to cultivation. In the lower areas, where the drainage is not so well established, and along the border of the poorly drained soils (the Plummer and Portsmouth) and the bottom lands the surface few inches is usually darker, being dark gray to almost black, the content of organic matter is higher than typical, and the subsurface material and subsoil show a lighter shade of yellow. Some of the gradational strips represent the Scranton sandy loam, which is a type having a soil corresponding rather closely to that of the Portsmouth and a subsoil similar to that of the Norfolk.

In this type there is considerable variation in the depth to the subsoil and in the character of the subsoil material. Over a large part of the type this consists of a very light loamy sandy clay to a depth of 30 inches, below which it is somewhat heavier. In other places, especially in the more rolling and broken areas near the stream valleys, a rather heavy sandy clay subsoil usually somewhat redder in color than the typical subsoil is encountered within 10 or 15 inches of the surface. This really constitutes a shallow phase of the type. Such areas are more difficult to cultivate, and are more easily eroded and less productive than the typical soil. The most desirable part of this type is that which is fairly level and well drained, and in which a medium to light sandy clay is reached at depths of 15 to 18 inches. Some farmers consider such a soil the most desirable in the county. In places a few ferruginous pebbles are present on the surface and throughout the soil section, being ordinarily more abundant in the lower subsoil. There are areas which are somewhat difficult to separate from the less pebbly portions of the Tifton sandy loam, the two soils in many places grading into each other through an almost imperceptible change.

The principal areas of this type occur in the south-central part of the county, where they occupy the ridges and slopes. Smaller areas are encountered in other parts of the county, often on slopes, below areas of the Tifton sandy loam. This is the second type in

extent in the county, covering, with its deep phase, almost one-fourth the area.

The Norfolk sandy loam is used extensively for long-staple cotton, yields of two-fifths to three-fourths or more of a 400-pound bale being obtained. It is suited to all the crops of the county and gives good yields. Plate L, figure 1, shows a field of oats on this type. The soil is tilled with ease and under a wide range of moisture conditions. The characteristic vegetation is longleaf pine and wire grass.

Norfolk sandy loam, deep phase.—The deep phase differs from the typical Norfolk sandy loam principally in its greater depth to clay. The phase is prevailingly a gray sand, underlain at 2 or 3 inches by pale-yellow or yellowish-gray sand or slightly loamy sand, which grades into yellow sandy loam at about 20 to 30 inches. This passes quickly into yellow, friable sandy clay. In some areas the sandy clay is not reached within the 3-foot section, the subsoil being no heavier than a sandy loam or sandy clay loam. There are some included patches of Norfolk sand and a few spots of Norfolk coarse sand. Also on the lower slopes mottled clay, like the subsoil of the Susquehanna, is sometimes encountered in the lower subsoil. Such areas are of little importance, and are so small that they can not be mapped satisfactorily.

The topography averages a little more rolling than that of the main type, yet the phase comprises many almost level or only gently undulating areas. Some of it is rolling, particularly that near the larger streams, and there are some rather sharp slopes. The slopes are smooth, however, and nearly everywhere can be cultivated readily without danger of erosion. The drainage is good to rather excessive. Longleaf pine, some scrub oak, and wire grass constitute the characteristic vegetation.

The principal areas of the deep phase of the Norfolk sandy loam occur in the south-central part of the county, in the north-central part, and in a broad strip along the south side of Warrior Creek in the eastern section.

The phase is farmed extensively, but the yields of cotton and corn are much lower than on the typical soil or the Tifton sandy loam. It is well suited to the growing of melons, sweet potatoes, and peanuts.

NORFOLK FINE SANDY LOAM.

The essential difference between the Norfolk fine sandy loam and the sandy loam member of the series is one of texture. The typical Norfolk fine sandy loam is a gray or brownish-gray loamy fine sand, passing quickly into pale-yellow loamy fine sand, which is underlain at about 10 to 20 inches by a yellow fine sandy loam, grading quickly into yellow, friable fine sandy clay. There is frequently some dark

material at the immediate surface, especially in the more nearly level and lower lying areas where the drainage is not well established. Also faint mottlings of reddish yellow or brownish yellow are usually present in the lower subsoil of this less well drained part of the type. Small ferruginous pebbles are sparsely scattered over the surface and throughout the soil section of some areas. The topography is perhaps somewhat smoother on the average than that of the Norfolk sandy loam. The entire type is well suited to cultivation.

Only a few small areas of this type are encountered in Colquitt County, the largest of these being near Murphy, in the southern part of the county.

Norfolk fine sandy loam, deep phase.—The deep phase differs from the typical Norfolk fine sandy loam in the greater depth to clay. The subsoil is encountered below a depth of about 20 inches. In places the clay is just within the 3-foot section, or only a heavy fine sandy loam or fine sandy clay loam is reached at depths of less than 3 feet. This greater depth to clay has the effect of making the phase less retentive of moisture than the main type.

A few small areas of this phase occur in various parts of the western half of the county. Its topography is gently rolling to rolling. It often occupies low ridges, some of which originally were forested with blackjack oak. A part of the phase is under cultivation, but the yields of corn and cotton are rather low. Where the subsoil is fairly heavy and is within 24 inches of the surface it is a good trucking soil.

TIFTON SERIES.

The Tifton soils are prevailing gray, ranging to brownish gray. The subsoils consist of bright-yellow, friable sandy clay. Small iron concretions or accretions occur on the surface and throughout the soil section. The topography varies from flat to gently rolling, and drainage is good. The Tifton series is found within a belt extending through southern South Carolina across Georgia into Alabama. The soils are sedimentary from the sandy clays of the Coastal Plain region. Three members of the Tifton series, the coarse sandy loam, sandy loam, and fine sandy loam, are recognized in Colquitt County.

TIFTON SANDY LOAM.

The Tifton sandy loam is typically a brown to brownish-gray loamy sand, underlain at about 3 to 6 inches by brownish-yellow or yellowish-brown sandy loam, which passes at about 8 to 15 inches into yellow, bright-yellow, or light greenish yellow, moderately friable sandy clay. In the lower part of the subsoil the clay is often

rather compact, and in many places it has a reddish cast or is mottled with reddish iron-stained material. The type includes spots and narrow strips, particularly on well-drained slopes, the crests of knolls, and the sharper ridges, and near the break between the smoother upland and the steeper slopes, in which the subsoil has a dull-red to red color like that of the Ruston and Orangeburg subsoils. The larger of these areas are separated and mapped as either Ruston or Orangeburg soils. This red condition apparently represents an advanced stage in the weathering of the material. Small ferruginous pebbles are distributed throughout the soil section and over the surface. They are generally most abundant in the subsoil, and are present in such large quantities that the subsoil can not be penetrated readily with a soil auger. In the more gravelly areas plowing is difficult, especially when the soil is dry.

Although the characteristic position of the Tifton sandy loam is on or near the tops of ridges and knolls, very pebbly areas of this type are of common occurrence on slopes and in nearly level tracts. The drainage is well established.

There is a wide variation in the type in the depth to the heavy subsoil, in the quantity and position of the gravel, and in the topography. In the areas where the subsoil has a red color it is usually much nearer the surface, and the soil contains a higher percentage of gravel than is typical. This represents really a shallow phase of the type. This phase is readily affected by drought, is more easily eroded, and usually less productive. It is also more difficult to cultivate, as it is sticky when wet and hard when dry.

The percentage of gravel in the Tifton sandy loam varies widely from place to place, constituting 10 to over 25 per cent of the soil mass. In places the pebbles are fairly uniformly distributed throughout the soil and subsoil, while in other places they occur on or near the surface. They are usually most abundant in the subsoil, and frequently occur in beds varying in thickness from 4 to 10 inches. Associated with these iron concretions in many places are rounded fragments of ferruginous sandstone.

This type has the largest total area of any soil in the county, covering, with its deep phase, more than one-fourth the area. Its greatest development occurs in the western part of the county, but considerable areas are found north and northeast of Moultrie, east of Crossland, in the northeastern part of the county, and in the vicinity of Berlin, in the southeastern part.

This is considered the most productive and desirable soil of the county. The most highly improved farms are located on this type. The soil is well suited to all the crops of the county, except long-staple cotton, sweet potatoes, watermelons, and cantaloupes. With

proper management cotton yields three-fourths to 1 bale, corn 20 to 40 bushels, and oats 20 to 30 bushels per acre. Plate L, figure 2, shows a field on this type.

Tifton sandy loam, deep phase.—The deep phase of the Tifton sandy loam comprises areas which have a greater depth to clay and generally a lighter colored surface soil and lower content of ferruginous pebbles than the typical soil. It usually consists of gray to slightly brownish gray sand to loamy sand, underlain at about 3 to 5 inches by pale-yellow, incoherent loamy sand which becomes heavier and brighter yellow with increase in depth, passing below 15 inches into a bright-yellow or light greenish yellow, moderately friable sandy loam which is underlain by sandy clay. Ferruginous pebbles are mixed with the material of this phase in quantities large enough to give the representative areas a gravelly character, but generally they are not sufficiently abundant to interfere with cultivation. As the Norfolk loam is approached the quantity of pebbles decreases, and the two soils merge so gradually that a definite boundary is difficult to establish.

The deep phase of the Tifton sandy loam is subject to considerable variation in crop value from place to place. Where the surface soil is rather loamy and a fairly heavy subsoil is encountered at about 20 inches, it is a fairly good soil, approaching in value the typical Tifton sandy loam or Norfolk sandy loam, and giving good yields of all crops common to the region. Where, however, the surface soil is sandy and deep and the subsoil light, this soil differs little in crop value from the deep phase of the Norfolk sandy loam, and is best suited to long-staple cotton, melons, and truck crops.

The largest area of this phase occurs in the eastern part of the county to the north of Ellenton. Smaller areas occur throughout the county in close association with the typical sandy loam.

TIFTON COARSE SANDY LOAM.

The Tifton coarse sandy loam differs from the Tifton sandy loam principally in having a coarser texture, both the soil and subsoil being largely composed of coarse, rather well rounded sand. Small quartz gravel is scattered over the surface and throughout the soil, and the type is often known as "rice land" or "ricey land." The soil is usually rather deep, the sandy clay rarely being encountered at depths of less than 18 or 20 inches. In this respect the type resembles the deep phase of the Tifton sandy loam.

The principal areas of this type occur in the northeastern part of the county. The type is not extensive.

A large part of the Tifton coarse sandy loam is cleared and farmed, and fairly good yields are obtained, but it is somewhat droughty.

The results of mechanical analyses of samples of the soil and subsoil of this type are given in the following table:

Mechanical analyses of Tifton coarse sandy loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay.
		<i>Per cent.</i>						
253407.....	Soil.....	7.6	19.4	16.8	29.5	12.4	7.0	7.2
253408.....	Subsoil.....	7.9	18.7	15.2	20.6	7.6	8.1	21.8

TIFTON FINE SANDY LOAM.

The surface soil of the Tifton fine sandy loam consists of a brown to brownish-gray loamy fine sand, underlain at about 3 to 5 inches by yellow or brownish-yellow loamy fine sand to fine sandy loam. The heavier portion of the subsoil, beginning at about 8 to 15 inches, grades into yellow or cottonseed-meal yellow, moderately friable, fine sandy clay. Small ferruginous pebbles are present on the surface and throughout the soil section in varying quantities, being so abundant in the subsoil in places that boring with the soil auger is difficult. The type is well drained.

The Tifton fine sandy loam is encountered in only a few small areas. These occur mainly in the southern part of the county, near Murphy.

On account of the fine texture of this soil, which permits the upward movement of soil moisture by capillarity, and the favorable depth, usually about 15 inches, of the surface soil over the greater part of the type, it is probably the most productive soil in the county for short-staple cotton, corn, oats, clover, and alfalfa.

In the following table the results of mechanical analyses of samples of the soil and subsoil of this type are given:

Mechanical analyses of Tifton fine sandy loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay.
		<i>Per cent.</i>						
253405.....	Soil.....	2.3	7.6	7.8	40.8	29.7	8.0	3.8
253406.....	Subsoil.....	2.4	6.3	6.0	35.4	31.6	6.4	12.2

PORTSMOUTH SERIES.

The Portsmouth soils are dark gray, ranging to black. The surface soils are high in organic matter. The subsoils are light gray to mottled gray and yellow. The material of the heavier members is plastic, although carrying noticeable quantities of sand. These soils



FIG. 1.—TYPICAL SCENE IN CUT-OVER AND BURNED FOREST WHICH AT PRESENT COVERS MORE THAN ONE-HALF OF THE TOTAL AREA OF COLQUITT COUNTY.

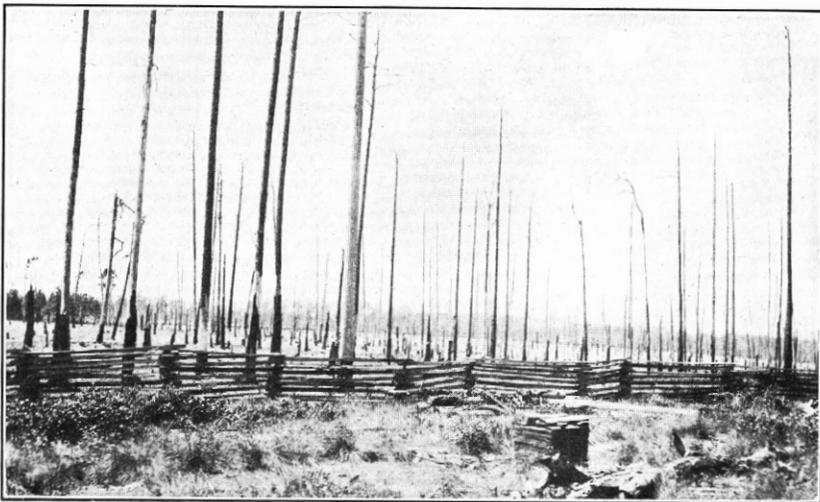


FIG. 2.—TYPICAL SCENE SHOWING CULTIVATED FIELD IN STANDING DEAD TIMBER.
[Many fields are thus cultivated in Colquitt County, and less than 25 per cent of the cultivated fields are clear of both standing trees and stumps.]



FIG. 1.—FIELD OF OATS ON NORFOLK SANDY LOAM.



FIG. 2.—A FIELD ON THE TIFTON SANDY LOAM.

occupy flat to slightly depressed, poorly drained areas, and are most extensively developed in the low, seaward part of the Atlantic Coastal Plain and that part of the Gulf Coastal Plain east of the Mississippi River. The Portsmouth soils are sedimentary from Coastal Plain deposits. Four members of this series—the fine sand, sandy loam, fine sandy loam, and loam—are mapped in Colquitt County.

PORTSMOUTH FINE SAND.

The Portsmouth fine sand consists of a black to dark-gray loamy fine sand, underlain at about 6 to 10 inches by a pale yellowish gray to almost white or mottled pale-yellowish and light-gray fine sand, which is usually compact in the lower part. In places there is a hardpan layer in the subsoil, consisting of dark-brown to black, compact fine sand, which grades below into brown or coffee-colored fine sand.

Only a few small areas of this type are mapped. These occur in poorly drained locations along some of the larger streams. There are a number of other areas which on account of their small size can not be indicated on the map and are included with the surrounding Portsmouth fine sandy loam or sandy loam. The type supports a growth of pine, gallberry, and saw palmetto.

PORTSMOUTH SANDY LOAM.

The soil of the Portsmouth sandy loam consists of black or nearly black sand or loamy sand, underlain at an average depth of about 10 inches by a brownish or dingy gray to gray sand, which grades downward into light-gray or mottled gray and pale-yellow sand. The subsoil, beginning at about 15 to 34 inches, consists of gray, drab, or mottled grayish and yellowish sandy loam to sandy clay. Like the fine sandy loam, this type characteristically occurs in poorly drained flats and slight depressions.

The Portsmouth sandy loam has the same relation to the adjoining Plummer and alluvial soils as has the Portsmouth fine sandy loam. It corresponds with that soil also in drainage conditions.

The Portsmouth sandy loam is a much more extensive type than the fine sandy loam. It occurs principally in the eastern part of the county.

A few small areas of this type, adjoining the more thoroughly drained Norfolk soils, are farmed, being used for corn and chufas. These areas are really the Scranton sandy loam, having a Portsmouth surface soil and Norfolk subsoil, sometimes being slightly lighter in color than the Scranton, but on account of their small size and the difficulty of accurate separation such areas are included with either the Portsmouth or the Norfolk type.

PORTSMOUTH FINE SANDY LOAM.

The Portsmouth fine sandy loam is a black or nearly black loamy fine sand, underlain at about 8 to 12 inches by light-gray or pale yellowish gray to dingy-gray fine sand which usually passes into a lighter colored fine sand, frequently almost white. This at 18 to 36 inches grades into light-gray, light-drab or mottled yellowish and gray or drab fine sandy loam to fine sandy clay. The subsurface stratum as well as the subsoil is often mottled somewhat with yellowish. Occasionally the lower subsoil shows mottlings of reddish yellow. The type characteristically occupies almost level or somewhat depressed situations, having poor drainage. Over the greater part of the type the material in its natural condition is saturated to or nearly to the surface. Artificial drainage is necessary for its successful utilization, except for rice. "Slash" longleaf pine, gallberry bushes, and broom sedge constitute the principal growth.

The principal areas of the Portsmouth fine sandy loam occur in the south-central part of the county. This type is closely associated with the Portsmouth sandy loam, from which it is in many places separated by rather arbitrary boundaries. It is also closely associated with the Plummer sandy loam and fine sandy loam, these soils usually occurring around the "heads" and along the steep slopes of the small streams, where seepage is excessive, while the Portsmouth occurs on longer slopes, in broader depressions, and in almost flat areas. In places along the larger valleys it extends up gentle slopes immediately above the alluvial soils of the flood plains. The line of separation between the Portsmouth soils and the adjoining Norfolk or Tifton soils is usually quite definitely marked by the growth of gallberry bushes on the former. The line of separation between the Portsmouth and the Plummer soils as a rule is clearly marked by the growth of pitcher plants on the latter. Very little, if any, of this type is under cultivation.

PORTSMOUTH LOAM.

The Portsmouth loam consists of a black loam or mucky loam, underlain at about 8 to 10 or possibly 15 inches by a dingy-gray to gray sandy clay loam, which grades below into rather plastic clay of a gray, drab or mottled gray, or drab and yellowish or reddish color. The subsoil ranges from sand to fine sandy loam. The surface soil ranges to a sandy clay loam in places.

Characteristically, this soil occurs in small depressions in which water often stands for considerable periods. The type is confined almost entirely to such ponds and sinks. A few of these have been drained and are being cultivated. Some in which cypress is the principal growth had at the time of the survey a white sand in the

bottom, but most of these were filled with water, so that an examination of the soil was impracticable. On this account and because of their importance all of these sinks are included with the Portsmouth loam, which seems to be the prevailing type.

The principal vegetation comprises bay, cypress, gallberry, a variety of huckleberry, smilax vines, and a small-leaved evergreen. Drainage is necessary to bring land of this kind into proper condition for cultivation to crops other than rice.

PLUMMER SERIES.

The Plummer soils are gray. They are frequently mottled with dark brown and are underlain at 8 to 20 inches by light-gray, compact material, more or less mottled with streaks of brown and yellow. The lower part of the subsoil usually consists of sandy clay or sticky sandy material, with pockets or layers of yellowish plastic sandy clay. The soils are derived from reworked Piedmont-Appalachian material. They are nearly always in a sticky condition, and water frequently stands on the surface after heavy rains. This series is typically developed in the flatwoods region of the Coastal Plain. The Plummer sandy loam and fine sandy loam are encountered in Colquitt County.

PLUMMER SANDY LOAM.

The Plummer sandy loam in its typical development consists of a gray or dingy-gray to mottled gray, dark-gray, and rusty-brown, sand or loamy sand which grades at about 10 to 15 inches into a light-gray to almost white compact sand or loamy sand. This is underlain at about 20 to 36 inches by gray, drab or mottled gray or drab and yellow or reddish-yellow sandy clay, usually having a plastic structure. The soil ranges to dark gray in many places, and as mapped there are many included spots of Portsmouth sandy loam, too intricately associated with the dominant soil to be shown separately on the soil map.

The characteristic occurrence of this type is on gentle slopes adjoining streams or small sloughlike drainage ways. The soil is permanently saturated from seepage or underground water. An impervious clay substratum probably accounts for the poor drainage. Gallberry bushes, pitcher plants, sumac, and pine constitute the principal vegetation.

The type is not cultivated, except in narrow strips included with the better drained soils. In places it can be improved to a considerable extent by drainage. For this purpose open ditches are used principally, these being extended along the slope and around the heads of the streams at about the point where the seepage first appears at the surface.

The Plummer sandy loam is the third most extensive soil in the county. The type occurs throughout the county in branching, narrow strips. In places narrow belts of it extend along the edges of the broader valleys immediately above the flood plain. Narrow strips of this soil extend into all the other upland soils, reaching into almost every farm, so that few large rectangular fields are possible. Few of these strips have been cleared of trees and underbrush, and they impart a patchy, ragged appearance which would be much less noticeable if the areas were cleared and put in permanent pasture. Owing to the patchy occurrence and low agricultural value of this type, it is included with the more desirable and extensive types with which it occurs. Many of the strips mapped are quite narrow, and in order to show them it is necessary in some cases slightly to exaggerate their width.

PLUMMER FINE SANDY LOAM.

The Plummer fine sandy loam is essentially similar to the sandy loam type, except that it has a finer texture. It occupies small, poorly drained slopes, often extending nearly to the crests of some of the lower interstream elevations, and reaches out in strips into the better drained soils along small drainage ways, even where there are no permanent streams. This type occurs adjoining areas of other fine sandy soils.

ORANGEBURG SERIES.

The Orangeburg soils are predominantly gray, ranging to reddish brown, and the subsoil is red and consists of friable sandy clay. This series is confined to the uplands of the Coastal Plain Province, being most extensively developed in a belt extending from southern North Carolina to central Texas. The Orangeburg series is represented in this county by only one type, the fine sandy loam.

ORANGEBURG FINE SANDY LOAM.

The Orangeburg fine sandy loam consists of a brownish-gray loamy fine sand, grading at about 2 or 3 inches into yellowish-red or reddish-yellow fine sandy loam. This is underlain at about 6 to 8 inches by a red, friable fine sandy clay. Some ferruginous pebbles are present. The topography is nearly level to gently sloping.

A few small areas of this type are encountered in the western part of the county, although they are not very typical of the type as it occurs in larger areas in other counties. The soil is mixed to a considerable extent with the Ruston sandy loam, and in places contains a rather high percentage of iron gravel.

The greater part of the Orangeburg fine sandy loam is farmed, but it is only fairly productive.

RUSTON SERIES.

The Ruston soils are gray, varying to grayish brown. The subsoils are reddish yellow to yellowish red or dull red, and are moderately friable, consisting generally of sandy clay. Occasionally the lower subsoils are mottled with gray and shades of yellow. This series is intermediate between the Orangeburg and Norfolk series in the color of its subsoil, and between the Orangeburg and Norfolk on the one hand and the Susquehanna on the other in point of subsoil structure. All these soils are derived from material of similar origin, namely, unconsolidated deposits of the Coastal Plain. In Colquitt County the Ruston series comprises two types—the sandy loam and fine sandy loam.

RUSTON SANDY LOAM.

The Ruston sandy loam is a grayish sand underlain at about 5 inches by yellowish loamy sand. At depths of 10 to 15 inches a yellowish sandy loam is encountered, and this quickly passes into yellowish-red or pale-red, friable sandy clay. Ferruginous pebbles are present in places.

The type occurs along slopes and on the tops of ridges and knolls, in situations of good drainage. The principal areas mapped are in the western part of the county. In places the type occurs in "gall spots" where it has been exposed by the erosion of the overlying soils. Where the surface soil is of good depth it is a durable, rather productive soil, but it is somewhat more difficult to cultivate than the lighter soils of the county. In many places along the breaks bordering the larger valleys patches of this type occur on the steep slopes, but these are so small and so intricately associated with other soils that they have in most cases been included with the surrounding soils, usually the Norfolk sandy loam or Tifton sandy loam. The greater part of this type is farmed in connection with other types.

The results of mechanical analyses of samples of the soil and subsoil of the Ruston sandy loam are given in the following table:

Mechanical analyses of Ruston sandy loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay.
		<i>Per cent.</i>						
253425.....	Soil.....	3.5	12.0	12.4	35.4	22.2	5.8	8.7
253426.....	Subsoil.....	4.0	7.6	8.0	26.9	18.0	5.3	30.4

RUSTON FINE SANDY LOAM.

The Ruston fine sandy loam is a yellowish-gray or reddish-gray smooth fine sand grading at 3 to 5 inches into a reddish fine sandy loam. This, at a depth of 10 to 15 inches, passes into a red, friable sandy clay. In places ferruginous pebbles are present on the surface and throughout the soil.

The principal area of this type occurs in the extreme northwestern part of the county.

The Ruston fine sandy loam is fairly well suited to the crops common to the region.

SUSQUEHANNA SERIES.

The Susquehanna soils are gray, ranging to reddish. The subsoils are mottled gray and red or gray, red, and yellow, and consist of plastic, heavy clay. The color of the subsoils varies, often being red, white, drab, yellow, and sometimes purple, although red practically always predominates, the other colors appearing only as mottlings in the lower part of the section. The Susquehanna series is most extensively developed in the higher part of the Coastal Plain from the vicinity of Chesapeake Bay to central Texas. It is represented in this county by a single type, the Susquehanna fine sandy loam.

SUSQUEHANNA FINE SANDY LOAM.

The Susquehanna fine sandy loam is a gray to reddish-yellow fine sand to fine sandy loam, underlain at 3 to 6 or 8 inches by a red, plastic clay which grades below into mottled grayish to drab and red, plastic clay. In places the upper subsoil is a rather friable clay, like the Ruston subsoil, but this passes within the 3-foot section into plastic mottled clay. In some cases the heavy clay subsoil is encountered at about 12 inches. The type includes some eroded spots of Susquehanna clay or sandy clay loam and a few small areas of sandy loam too small to be shown separately on the map. The material appears to be derived from a stratum of heavy clay underlying the sandy clay, which gives rise to the sandier soils.

This type occupies sloping areas. The largest bodies occur along the south side of Warrior Creek, in the northeastern part of the county, and along the Little Ocklocknee River, in the southwestern part. These areas have been cultivated in places, but are now abandoned.

KALMIA SERIES.

The surface soils of the Kalmia series are gray, ranging to grayish yellow, and the subsoils are mottled gray and yellow. The series is developed along streams of the Coastal Plain region on terraces lying largely above overflow. It occurs most extensively in Mississippi and

Alabama. The soils are formed largely of material washed from Coastal Plain soils, although along the larger streams issuing from the Appalachian Mountains and Piedmont Plateau more or less sediment from these regions is mixed with the deposits. In the better drained situations the subsoils are yellow, the soils of such areas resembling very closely the corresponding members of the Norfolk series. Only one member of the Kalmia series, the fine sand, is encountered in Colquitt County.

KALMIA FINE SAND.

The Kalmia fine sand is a gray, loose sand, underlain at shallow depths by pale-yellow sand, which in the lower situations has in the deeper subsoil a grayish to faintly mottled grayish and pale-yellowish color. This type occurs on low stream terraces. Its surface configuration is rather hummocky to nearly level.

Only a few small areas of this type are recognized. These are partly sand and partly fine sand, but the fine sand seems to predominate. The type has a low agricultural value.

THOMPSON SERIES.

The surface soils of the Thompson series are brown, in places being grayish brown, while the subsoils are predominantly yellow, with mottlings of gray and various shades of brown and yellow. The subsoil of the heavier members is slightly plastic, but not too compact to permit good underdrainage where drainage outlets are provided. These soils occupy the first bottoms of streams in the Coastal Plain region and are subject to overflow. They are characteristically poorly drained, although their drainage is somewhat better than that of the related Bibb soils. The Thompson soils consist of material washed largely from other Coastal Plain soils. In Colquitt County only one type is recognized, the Thompson fine sandy loam.

THOMPSON FINE SANDY LOAM.

The fine sandy loam is the first-bottom equivalent of the Kalmia. As mapped, the soil is mixed with other soils, including chiefly the Bibb fine sandy loam. The typical soil is a gray or dark-gray to almost black fine sand or loamy fine sand, underlain at 2 or 3 inches by a grayish-yellow loamy fine sand or fine sand, which passes into pale-yellow material of about the same texture, and this, at about 12 to 30 inches, grades into yellow fine sandy clay, mottled usually with grayish but occasionally with reddish yellow. The surface material is essentially loose. There are some slight swells and hummocks where the clay is encountered at greater depths than in typical

areas. This soil is subject to inundation, and in places it is not well drained between overflows.

The type is forested with "slash" pine, mostly longleaf pine. Under present conditions of poor drainage and frequent overflows, it has no agricultural value except for pasturage.

Long strips, varying in width from a few rods to more than one-fourth mile, extend along all the larger streams of the county.

The following table gives the average results of mechanical analyses of samples of the soil and subsoil of this type:

Mechanical analyses of Thompson fine sandy loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay.
		<i>Per cent.</i>						
253436, 253445.	Soil.....	0.4	1.8	2.9	28.0	33.0	24.7	9.1
253437, 253446.	Subsoil.....	.4	1.9	2.9	26.4	35.0	20.7	12.9

CHASTAIN SERIES.

The Chastain series includes grayish to dark-gray surface soils with gray to mottled gray and yellow subsoils. There is usually a substratum of mottled red and gray, impervious, plastic clay, which hinders drainage. These soils occupy first bottoms of streams in the southern Coastal Plain region. The material consists of sediments derived from Coastal Plain soils. This series is represented in Colquitt County by a single type, the Chastain fine sandy loam.

CHASTAIN FINE SANDY LOAM.

The Chastain fine sandy loam is a grayish to black fine sand, underlain at a depth of a few inches by light-gray to pale-yellow or mottled grayish and yellowish fine sand, which passes below into mottled red and drab or gray plastic clay. Where the clay is near the surface, the surface soil has more of a brownish color.

The type occurs in the overflowed bottoms of streams. Both the Chastain fine sandy loam and the Thompson fine sandy loam include many patches of Swamp which can not be mapped separately on account of their small size.

MISCELLANEOUS MATERIAL.

SWAMP.

The areas mapped as Swamp comprise very low, overflowed stream bottoms which are inundated most of the year. The soil material seems to consist mainly of an admixture of Johnson and Bibb fine sand and fine sandy loam. There is a thick growth of water-loving trees, shrubs, and vines.

SUMMARY.

Colquitt County is in the southwestern part of Georgia. It has an area of 544 square miles, or 348,160 acres. The topography is mainly gently undulating to rolling. In the south-central and eastern parts of the county there are some low, flat, and poorly drained areas, and a part of the northwestern section is hilly and somewhat broken. The county is well drained by the Little River, the Ocklocknee and Little Ocklocknee Rivers, and Bridge Creek. The county has been settled for over 75 years, but the principal industry for many years was stock raising, and farming was carried on in an indifferent manner.

The entire county was originally forested with longleaf pine. About 25 years ago the lumber and turpentine industries became important, and the greater part of the county has been rapidly and wastefully cleared.

About one-third of the total area is under cultivation, and the improved area is being rapidly extended. The unimproved sections include strips forested with large pine along the small streams, which could not be easily reached by the lumbermen, and, on the upland, areas of partly cleared land.

The cost of putting this wild land under cultivation averages about \$7.50 per acre, and the additional cost of removing the stumps is about \$10 per acre. The greater part of the cultivated area is farmed without removing the stumps.

Land prices have increased materially during the last 10 years, and lands which could be bought for \$5 to \$15 an acre, now sell for \$40 to over \$60.

The population of the county, and especially of the principal towns, has shown a marked increase during the last 30 years, and settlement now seems to be more rapid than at any time in the past. The population of the county is given in the census of 1910 as 19,789. Moultrie, the county seat, has a population of about 3,500 and the two towns next in size about 700.

Within recent years there has been a marked increase in the acreage of the principal crops grown, and also in the yields per acre.

Cotton is the principal money crop, but the relative importance of corn, oats, peanuts, hay and forage crops, and truck crops is rapidly increasing. Clover, alfalfa, and other legume crops are being introduced.

The growing of more and better live stock, especially hogs, is receiving the attention of farmers and business men throughout the county.

Colquitt County is well supplied with railroad facilities. It also has a good system of sand-clay roads which is being developed by convict labor at a cost of about \$450 per mile.

The soils of Colquitt County are of Coastal Plain origin, and are almost uniformly sandy in texture at the surface, with a sandy clay subsoil, making them easy to cultivate and retentive of moisture.

The principal agricultural lands of the county are popularly divided into two classes, the "pimply lands" and the "gray lands."

The "pimply lands" belong to the Tifton series and embrace the most extensive and productive and also the most highly improved sections of the county. They are mapped as the Tifton sandy loam, fine sandy loam, and coarse sandy loam. The most important of these both in extent and crop value is the Tifton sandy loam. Where the sandy clay subsoil is fairly friable and covered by 12 to 18 inches of good sandy loam, which is not too gravelly, it is the best soil in the county for short-staple cotton, corn, oats, clover, and alfalfa.

The Tifton fine sandy loam is as high in crop value as the best part of the sandy loam, but the area of this type is very small.

The Tifton coarse sandy loam in most places has a rather deep subsoil, so that it approaches the deep phase of the Tifton and Norfolk sandy loams. Its coarse texture makes it somewhat subject to drought. This type has only a comparatively small total area.

The "gray lands" are included with the Norfolk series, which is represented in this county by five types.

The Norfolk sandy loam generally has a fairly heavy subsoil with a covering of 12 to 18 inches of good sandy loam, and has about the same productiveness as the best parts of the Tifton sandy loam. Where the heavy subsoil is within 10 or 12 inches of the surface or where the surface soil is very light to depths of more than 18 inches it is less desirable for agriculture. The deep phase of the Norfolk sandy loam is less productive than the typical soil for corn, short-staple cotton, or oats. Both the typical soil and the deep phase are used extensively for long-staple cotton, and for melons and other truck crops.

The Norfolk fine sandy loam and its deep phase have about the same crop adaptation as the sandy loam, but the areas are small and scattered. The coarse sandy loam type is moderately extensive. This is a less desirable soil than the sandy loam.

The Norfolk sand and fine sand have a low natural crop value, but are used to a small extent for melons and other truck crops.

The Orangeburg fine sandy loam, the Susquehanna fine sandy loam, and the Ruston sandy loam and fine sandy loam are farmed successfully, but these types occur as small, isolated tracts and on account of their small area are of little importance.

The Kalmia fine sand is a terrace soil, inextensive and not of high agricultural value.

Of the dark-colored, poorly drained soils only very small areas, adjoining and influenced by the drier soils, have been brought under cultivation. These dark soils are classed with two series. The Plummer sandy loam and fine sandy loam comprise wet, "crawfishy" land. The broader, more nearly level, and somewhat better drained areas are mapped as the Portsmouth sandy loam and fine sandy loam. The fine sand type comprise small tracts closely associated with the sandy loam. The gum and mayhaw ponds and bogs are mapped as the Portsmouth loam.

In the flood plains of the larger streams the Thompson fine sandy loam is the principal type. Small areas of Chastain fine sandy loam and of Swamp also are recognized. These soils, on account of poor drainage conditions and frequent periods of overflow, are nonagricultural.

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