

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF CHEMISTRY AND SOILS
In Cooperation with the Georgia State College of Agriculture

SOIL SURVEY
OF
QUITMAN COUNTY, GEORGIA

BY
R. E. DEVEREUX, in Charge, and EARL D. FOWLER



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SOIL SURVEY OF QUITMAN COUNTY, GEORGIA

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COUNTY SURVEYED

Quitman County is in the southwestern part of Georgia. Chattahoochee River forms the western boundary of the county. The southern boundary is approximately 60 miles north of the Florida State line. Georgetown, the county seat, is 2 miles east of Eufaula, Ala., and approximately 45 miles south of Columbus, Ga. The county is very irregular in outline but is roughly rectangular. The greatest dimensions are 14 miles from east to west and 16 miles from north to south. This is one of the smallest counties in Georgia. It has a total area of 171 square miles, or 109,440 acres.

Quitman County lies in the coastal plain, and according to the Geological Survey of Georgia¹ the greater part of the county is within the Midway formation.

The surface relief of Quitman County varies widely. In general, the surface varies from smooth and almost level to rolling and even badly broken and eroded. The largest more level areas are on the river terraces and in the extreme southern part of the county, particularly along the Fort Gaines Road.

The greater part of the county is rolling or hilly. Some inter-stream areas, generally on the tops of the broader, uneroded divides, are gently rolling or fairly smooth. Throughout much of the county erosion has been very pronounced and is still very active. Many deep, wide gullies have been formed. Some of the largest are 5 miles northeast of Georgetown and 2½ miles east of Avreys Store. Small V-shaped gullies are prominent throughout the upland part of the county. The broken belt of country extending from 1½ miles north of Georgetown in a general northeasterly direction to the Stewart County line and varying in width from three-fourths mile to 3 miles constitutes the most hilly and roughest part of the county. In the southern part of the county, where the larger more level areas occur, are numerous flat depressions and ponds, most of which are filled with water through part or all of the year. These depressions are



FIGURE 1.—Sketch map showing location of Quitman County, Ga.

¹ VEATCH, O., and STEPHENSON, L. W. PRELIMINARY REPORT ON THE GEOLOGY OF THE COASTAL PLAIN OF GEORGIA. Ga. Geol. Survey Bul. 26, 466 p., illus. 1911.

small, ranging from 1 to 10 acres in size, and they vary widely in shape. They were probably formed by the dissolution of some of the soluble materials in the underlying formations, followed by a dropping in of the surface.

The natural drainage of Quitman County is good or excessive. The rain water runs off rapidly. Every farm is connected with some natural drainage way. Only a few small spots on the river terraces and a few small sinks on the smoother areas of Greenville sandy loam are poorly drained. The western part of the county is drained by Chattahoochee River and the eastern part by Hodchodkee and Pataula Creeks. These streams are swift flowing and apparently are still cutting deeper channels. This is particularly true of the creeks and branches. The gullies are cutting at their source and depositing the material at their base level.

The flood plains along the larger creeks range in width from one-eighth to more than one-half mile. However, little of this first-bottom land is available for agriculture, owing to the variability of the soil and to the poor drainage. The wider bottoms are covered with water most of the time and support a typical swamp growth.

A belt of well-defined terraces averaging 2 miles in width extends along Chattahoochee River almost continuously from the northern to the southern boundary of the county. Small areas of low terraces occur at intervals along the larger creeks.

The greatest elevation in the county is on the divide between Chattahoochee River and Hodchodkee and Pataula Creeks. At Wire Bridge the elevation is 360.3 feet above sea level. From this point northeastward the elevation increases rather rapidly to the Stewart County line, where it is about 500 feet above sea level. The elevation at Morris Station in the southeastern part of the county along Holanna Creek is 249.1 feet. At Georgetown, in the western part of the county, the elevation is 212 feet. The general trend of the slope in the county is to the south and southwest.

Quitman County was formed from parts of Randolph and Stewart Counties in 1858, about 28 years after the pioneers from the Carolinas, Virginia, and other parts of Georgia first settled in this section. The present white population is made up almost entirely of descendants of these early settlers. The 1920 census gives the population as 3,417, all classed as rural, and the average density as 23.7 persons to the square mile. Negroes constituted 78.1 per cent of the total population in that year. The most thickly populated parts of the county are in the vicinity of Georgetown and the other small villages of Hatcher Station, Union, and Morris Station, and along the principal roads.

Georgetown is the county seat and principal town. It had in 1920 a population of 244.

The Central of Georgia Railway (Macon and Montgomery division) crosses the county in a northwest-southeast direction. Although it is the only railroad in the county, it affords adequate transportation facilities to most parts, giving outlets on the west to Eufaula and Montgomery, Ala., and on the east to Dawson, where connection is

made with Macon and Atlanta and with the Seaboard Air Line Railway to Albany and Columbus.

The principal highways are graded and have a sand-clay surface. They are generally kept in good repair, especially the two main roads across the county, the Fort Gaines Road from Georgetown south and the Cuthbert Road east and west. The main roads are graded and kept in good condition by the State highway department. Some of the public roads and the secondary roads are in bad condition, owing to lack of attention. The entire county is reached by rural mail routes, and telephone lines are available throughout most of it. School busses carry children from the outlying sections to a centralized school at Georgetown.

Eufaula, Ala., about 2 miles from Georgetown, is the principal local market for the products of Quitman County. Most of the cotton and peanuts are marketed in the larger cities in Georgia, through exchanges and cooperative associations of growers.

CLIMATE

The climate of Quitman County is characteristic of that prevailing in southwest Georgia. The winters are short and mild, and the summers are long and warm. The coldest weather is usually in January, but the lowest recorded temperature occurred in the month of February. The temperature in this section of the State rarely goes below freezing. The cold spells continue for a short time only and are followed by warm weather, which usually terminates in rain. Generally the winters are such as to allow the farmers to proceed with their outside work most of the time without much discomfort. Grazing is afforded most of the year, and little or no shelter for livestock is needed. Commonly the spring is pleasant, although occasionally late cold snaps do considerable damage to fruit and early vegetables.

Although the summer temperature is high, at night the heat is tempered by cool Gulf breezes. The fall is usually warm and dry, affording ample time for the harvesting of crops.

The average annual rainfall is 51.02 inches. The rainfall in winter is about the same as in spring but is not so heavy as in summer. In fall, the driest season, the rainfall amounts to a little more than half that of summer.

The average date of the last killing frost is March 18 and of the first is November 13. The average frost-free season is about 8 months. The earliest recorded killing frost occurred on October 21 and the latest on April 26.

As a whole the climate in this section is well suited to a wide variety of crops. Wheat, rye, and oats, and vegetables such as cabbage, collards, beets, turnips, lettuce, and onions may be successfully grown during the winter and early spring.

Table 1, giving the normal monthly, seasonal, and annual temperature and precipitation, as recorded at the Weather Bureau station at Fort Gaines, Clay County, about 20 miles south of Quitman County, is representative of conditions here.

TABLE 1.—Normal monthly, seasonal, and annual temperature and precipitation at Fort Gaines, Clay County

[Elevation, 166 feet]

Month	Temperature			Precipitation			
	Mean	Absolute maximum	Absolute minimum	Mean	Total amount for the driest year (1904)	Total amount for the wettest year (1912)	Snow, average depth
	° F.	° F.	° F.	Inches	Inches	Inches	Inches
December.....	49.8	81	12	4.46	4.85	4.35	Trace.
January.....	49.0	83	13	4.24	4.50	9.15	Trace.
February.....	50.4	84	-2	5.70	4.25	4.84	.2
Winter.....	49.7	84	-2	14.40	13.60	18.34	.2
March.....	59.3	92	21	4.81	2.00	7.13	.0
April.....	65.7	94	32	3.76	2.02	9.87	.0
May.....	73.9	100	41	3.45	1.49	2.71	.0
Spring.....	66.3	100	21	12.02	5.51	19.71	.0
June.....	80.0	103	47	4.21	1.68	3.46	.0
July.....	81.4	105	56	6.43	2.02	7.51	.0
August.....	80.8	104	59	5.68	5.87	9.29	.0
Summer.....	80.7	105	47	16.32	9.57	20.26	.0
September.....	76.7	100	42	2.95	.80	4.95	.0
October.....	66.8	99	29	2.53	.00	2.57	.0
November.....	56.7	88	21	2.80	2.92	4.85	.1
Fall.....	66.7	100	21	8.28	3.72	12.37	.1
Year.....	65.9	105	-2	51.02	32.40	70.68	.3

AGRICULTURE

The earliest settlers selected the upland areas of Quitman County for their homes, as they considered the uplands a much healthier place to live than the lower lands or terraces along Chattahoochee River. When they arrived they found the land covered with a dense growth of forest. Shortleaf and longleaf pines predominated on the lighter-textured soils, and hardwoods, principally various species of oaks, hickory, and scattered dogwood, flourished on the heavy-textured soils. A great variety of hardwoods, including cypress, various gums, poplar, beech, and considerable magnolia, bay, and sycamore, and a very dense undergrowth of shrubs, grew in the swampy places.

The lighter-textured soils in the central and western parts of the county were the first cleared of the forest growth and prepared for crops. The agricultural products at that time were almost entirely subsistence crops, such as corn, oats, wheat, potatoes, rye, sugar cane for sirup, and some cotton. Each settler raised just enough poultry, hogs, and cattle to supply his home needs. The hogs and cattle ranged in the open forest, where they found sufficient food throughout most of the year.

Transportation facilities were very poor. Chattahoochee River was the main outlet for the county. A small quantity of cotton was shipped out along this route direct to Liverpool. The development of agriculture was practically at a standstill until about the time when Quitman County was formed from parts of Randolph and Stewart

Counties, just prior to the Civil War. Agriculture received its first impetus with the growth of the lumber industry along Chattahoochee River, as large areas were thus opened up for cultivation.

The Civil War brought about a radical change in the methods of agriculture in this section and in the South generally. Prior to this time very little cotton had been grown. However, owing to the ravages of the war, the farmers were in dire need of a cash crop. They naturally turned to cotton, as this commodity was greatly needed in the North and brought ready cash. Consequently all available time and land were utilized in the production of cotton, and very few farmers raised sufficient food and feedstuffs for their own needs. With the change in the system of farming fertilizers were introduced, and the quantity used has increased steadily since that time. The Central of Georgia Railway, built in 1867 and 1868, gave the county a direct outlet to Montgomery, Ala., and Macon, Ga. This materially aided the growth and development of agriculture, lumbering, and the turpentine industry.

With the opening of additional farms, cotton remained the principal cash crop. The acreage increased more rapidly than that of all other crops until the advent of the boll weevil. In 1916 the weevil took its greatest toll, causing an almost complete failure in the cotton crop. Prior to this time the greater percentage of farms in the county were operated by tenants, credit was obtained on the future cotton crops, and bills were settled when the cotton was sold in the fall. After the failure in 1916, the tenants started in search of other work in near-by towns and cities, and families migrated to the North. Many farms were left vacant and a slump in property values, with a consequent heavy loss to landowners, followed. The total number of farms in operation dropped from 707 in 1910 to 537 in 1920.

Although cotton continued to be the principal crop after the Civil War, the corn acreage increased during each decade, reaching the maximum of 12,096 acres in 1899. Oats were formerly a rather important secondary crop, but in 1899 the acreage decreased considerably, and in the next two decades practically no oats were sown. After the ravages of the boll weevil in 1916 the acreage planted to corn increased somewhat, and peanuts became prominent as a cash crop.

Peaches were once a rather important special crop. However, since 1919 the trees have not been cared for, and at present this crop is declining. The coming special crop is pecans. At present pecan growing is in its infancy in the county, but the landowners are beginning to realize the great possibilities that the crop offers, and young pecan orchards are being set out. At first not much attention was paid to the kind of soil on which pecan plantings were made, but now most planters agree that the trees do much better on soils which have a good sandy clay or clay subsoil within 1 or 2 feet of the surface. The most thrifty looking orchards at present are on the more gently rolling areas of Greenville sandy loam and Cahaba fine sandy loam.

The present agriculture of Quitman County consists principally of the production of cotton and peanuts as cash crops, and corn, oats, cowpeas, and forage crops as subsistence crops.

According to the 1920 census report, the average yield in 1919 on 8,604 acres planted to cotton was less than one-sixth bale to the acre. The average yield in 1924 on 10,087 acres was slightly more than

one-fifth bale to the acre. This shows a slight increase in acreage planted and in acre yield. In 1919 corn was grown on 12,037 acres, with a yield of about 7.8 bushels to the acre, and 9,415 acres produced an average acre yield of 9.2 bushels in 1924. In 1919 peanuts were grown on 2,399 acres, with an average yield of 20 bushels to the acre; dry peas on 1,312 acres, with a yield of nearly 33 bushels to the acre; and legumes cut for hay on 629 acres, with a yield of about 1.22 tons to the acre. The reported acreages of sweet potatoes and oats were 317 and 103 acres, respectively. Hay and other feed-stuffs are shipped into the county every year, as local production does not equal the demand.

Most of the farmers in the county raise enough hogs and poultry for their own meat supply, but they have very little surplus. A few farmers are in the cattle business. The cattle are usually grazed on the rougher lands and wet bottoms, which make excellent pastures but are unfit for general farming. The cattle are fattened and sold to local markets at Eufaula, Ala. Practically no dairying is carried on in the county, but each farmer has a few milk cows to supply butter and milk for the family.

Sugar cane and sorgo are grown on nearly every farm for the manufacture of sirup, mainly for home use though a small quantity is sold in local markets. These crops are usually planted on narrow sandy terraces along small drainage ways where the soil is moist but well drained. The average yield is about 130 gallons of sirup to the acre.

The adaptation of crops to different soils is not generally recognized. Cotton is planted on all the arable soils in the county. However, the best farmers have learned through experience that peanuts and sweet potatoes do better on the lighter-textured soils, whereas cotton, grain, and hay crops require the heavier, more shallow surface soils for best results.

The methods of farming in this county are similar to those practiced throughout southwestern Georgia. Light 1-horse plows are in common use, but 2-horse plows, riding cultivators, and tractors are used by a few of the more progressive farmers. The slopes are terraced, especially on Greenville sandy loam and Orangeburg sandy loam, which are very susceptible to rainwash. However, after several years of cultivation many of the steeper slopes become badly eroded and are abandoned and allowed to grow up in broom sedge, briars, old-field pine, and wild persimmon. When fires are kept down for a few years such areas revert to forest through the rapid reproduction of old-field pine and oak. The sandy soils—that is, Norfolk sand and Ruston sand and the deep phases of Norfolk sandy loam and Ruston sandy loam—are usually cultivated for two or three years and are then allowed to lie fallow for a year or two. These soils are deficient in nitrogen and can not be profitably cropped over long periods of time unless some legume is sown and plowed under. This practice is followed by some farmers, but usually the land is allowed to become covered with broom sedge, which when turned under increases slightly the nitrogen content of the soil.

The use of any kind of poisoning material as a means of controlling the boll weevil has received very little favor in Quitman County. Some of the farmers pick up and burn the fallen bolls and depend on

frequent cultivation to decrease boll-weevil damage. The most popular method of control in use is a mechanical knocker. This device fastens to and is operated by the cultivator and is designed to knock the weevil from the cotton plant into a receptacle containing coal oil.

Many farmers plant velvet beans and cowpeas between the corn rows, at intervals ranging from 10 to 20 days after the corn has been planted. A part of these crops is harvested in the fall for feed or for seed, but generally the greater part is left in the fields to be grazed by cattle and hogs during the winter.

On some farms peanuts are planted in rows between the corn rows, but generally they are planted alone. The ground is prepared in about the same manner as for cotton and corn. It is customary to plant peanuts in rather shallow water furrows spaced about 3 feet apart. The light-textured sandy soils are preferable for peanuts. Very little hoeing is necessary. The crop is cultivated four or five times. The nuts are harvested in late summer or early fall and are dried, threshed, and marketed at Eufaula. Most farmers use the vines as hay for cattle and work animals, but some of the vines are baled and sold on local markets. The Spanish peanut is the variety most commonly grown in Quitman County.

Systematic crop rotations are not generally followed in Quitman County. After cotton has been grown on a field for about three years it is usually followed by corn and velvet beans for a year, and then cotton is grown again. A few farmers practice a 3-year rotation which consists of cotton, corn, and oats. After the oats are harvested in June some of the fields are sown to cowpeas, most of which are hogged down during the fall and winter.

Terracing is considered one of the most important practices on the farm, especially where the slopes are farmed. When the terraces are properly built and cared for they are a great aid in the control of washing and subsequent erosion. They can be, and in some places are, cultivated along with the rest of the field. However, most of them are allowed to grow up in broom sedge and other grasses which tend to make them stronger. Where the terraces are neglected during seasons of exceptionally heavy rainfall, gullies form rapidly, and these if not cared for soon get beyond control.

The quantity of commercial fertilizer used in Quitman County has increased so rapidly that fertilizer is now one of the chief items of expense to the farmer. According to the 1920 census, \$64,981 was spent for fertilizer in 1919. This is an average of \$135.38 to the farm. The total expenditure was nearly twice the amount expended for fertilizer in 1909 and five times that spent in 1879. The greater part of the fertilizer used at present consists of ready-mixed commercial grades, but some farmers mix their own fertilizer, especially for certain crops.

Labor is very scarce. This section of the country has always been practically dependent on negroes for hired help, and since the great exodus of colored people to the North the labor supply from this source has been seriously reduced. Many other negroes have recently moved to surrounding counties. The labor condition has resulted in the abandonment of large acreages of arable land. In 1919, 48.8 per cent of the farmers reported an expenditure of \$37,353 for labor, or an average of \$142.57 to the farm. This is about \$5,000 less than

was expended for labor in 1909. The daily wage ranges from 75 cents to \$1.50 without board.

In 1919 an expenditure of \$9,200 was reported for feedstuffs by 22.9 per cent of the farmers. This is an average of \$74.79 to the farm.

The number of farms increased rather rapidly from 1880 to 1910, when a total of 707 was reported for the county. Since that time, however, this number has been gradually decreasing, and the 1920 census reported 537 farms in the county, nearly 70 per cent of which were operated by colored farmers.

The average size of the farms in the county has decreased from 229 acres in 1880 to 161.7 acres in 1909. However, individual holdings range from a few acres to large plantations of 1,000 or more acres. The percentage of farms operated by owners has decreased from 54.6 per cent in 1880 to about 20 per cent in 1925.

Tenant farming is on a share basis. Under this system it is customary for the tenant to furnish the labor and one-half the fertilizer and for the owner to supply the land, livestock, and tools, and usually the seed. The products are divided equally between owner and tenant. Some contracts require a given quantity of cotton to be paid as rent, and a very few farms are rented for cash.

SOILS

Quitman County is in the southwestern part of Georgia in the high part of the coastal-plain region. With the exception of a few slight depressions on the terraces and in the first bottoms along the larger creeks all the soils are exceptionally well drained.

The soils are dominantly light colored, ranging in extensive areas from light gray or grayish yellow to red. These soils were developed under forest cover and in their natural condition are poor in organic matter. The surface in wooded areas is either covered by a very thin layer of leaf mold or the upper part of the soil, to a depth varying from 1 to 3 inches, is darkened by an admixture of partly decomposed organic matter. The organic matter is derived mainly from leaves and is acid and soluble. It is very unlike the organic matter in the prairie soils where grass roots have penetrated the soils for untold centuries.

In this region of temperate climate and fairly heavy rainfall, leaching or the washing out of the soluble material in the soils has been active and is still going on. This probably accounts for the fact that the surface layer does not contain so much plant food as the heavier subsoil layer. The soils seldom freeze during the winter and the leaching process continues throughout the year. Also, much of the soil in the county is bare during the winter and is used for clean-cultivated crops during the summer.

Erosion and gullying are serious in many places in the county. Deep V-shaped gullies have been formed, and the surface features of the county have undergone a change. Erosion has also caused changes in the soil texture, as in many places the light sandy surface material has been removed and the underlying heavier material is exposed.

Underlying the soils of Quitman County are the Midway and Vicksburg formations.² By far the greater part of the county is

² VEATCH, O., and STEPHENSON, L. W. Op. cit.

underlain by the Midway formation, although the southeastern corner is underlain by the Vicksburg formation. The Midway formation consists of sands, clays, marls, and flinty limestones. The Vicksburg formation consists of white, flinty, and siliceous limestone, sand, and clay. The limestone has been extensively solidified, and the formation in many places is represented by flinty fragments and large siliceous boulders. These formations have weathered deeply, and the weathered material appears as a covering of red or yellow sands and sandy clays.

Practically all the upland soils of Quitman County are medium textured. The fine-textured soils occur on the terraces along Chattahoochee River.

The most striking features of the texture profile of the well-developed soils in the county are a comparatively light-textured topsoil and a subsoil of heavier-textured material. The material which constitutes the substratum may vary considerably in texture, but in most places it is heavier than the surface material and lighter than the subsoil material. The texture of these layers varies greatly, the surface layer ranging from clay loam to sand and the subsoil from clay to very light sandy loam or sand. The substratum consists of unconsolidated geologic material that is extremely variable in color, texture, and structure. The thickness of these soil layers also varies widely, the surface soil ranging from a few inches in thickness in the clay loams to several feet in the most sandy soils.

The soils having the threefold arrangement of physical characteristics described include members of the Greenville, Orangeburg, Ruston, Norfolk, Chattahoochee, Cahaba, and Kalmia series. These may be considered the mature soils or the soils which have developed a normal soil profile. These soils may be divided into two groups on the basis of the color of their successive layers. The first group differentiated on this basis includes soils of the Norfolk, Kalmia, Ruston, and Cahaba series. In the virgin areas these soils are characterized by gray surface layers. In the Norfolk and Kalmia soils the subsoil consists of yellow friable sandy clays or sands, whereas in the Ruston and Cahaba soils the color of the subsoil is reddish yellow or yellowish brown.

The soils of the second group, including members of the Greenville, Orangeburg, and Chattahoochee series, have brown or red surface soils and bright-red or dark-red subsoils. The parent material underlying these soils commonly contains more red and purplish red than that underlying the yellow or reddish-yellow subsoils of soils of the first group. In these red soils a noticeable quantity of small rounded iron concretions is present, either on the surface or distributed through the subsoil. In many places the soft concretions may be seen in the top layer of the parent material.

The Cuthbert soils differ from the normally developed soils of the county. The surface soils are light textured and light colored but the subsoils are decidedly heavy, as is also the underlying material in many places.

Another group of soils contains those in which a normal soil profile has not been developed. This group includes the Myatt soils, rough gullied land, meadow, and swamp. In the Myatt soils the surface

soil is dark gray and the subsoil is mottled with gray, yellow, and rust brown.

Rough gullied land, meadow, and swamp are miscellaneous classifications of materials which, on account of their variable texture, color, and structure, could not be separated into definite soil types.

The soils of Quitman County have been grouped in series on the basis of similarity in origin, color, texture, and profile characteristics. The series are divided into soil types on the basis of the texture of the surface soil; that is, the proportion of sand, silt, and clay present. In this county 14 soil types and 3 phases, representing 9 series of soils, and 3 classes of miscellaneous material have been mapped.

Soils of the Greenville series have brown or red surface soils. The subsoils are heavy, stiff sandy clay. Small, rounded, brown or almost black iron concretions are present on the surface and through some of the heavier soils. Only one member of this series, Greenville sandy loam, is mapped.

Soils of the Ruston series have gray or grayish-brown surface layers, subsurface layers which vary from pale yellow to brownish yellow, and subsoils which vary in color from yellowish red to yellowish brown and in texture from friable, crumbly sandy clay to sand. These soils are closely associated with the Norfolk and Orangeburg soils. The sand, sandy loam, and sandy loam, deep phase, members of the Ruston series are mapped.

The Orangeburg soils are characterized by surface layers varying from gray to light brown, by yellow and brownish-yellow subsurface layers, and by bright-red, friable and crumbly sandy clay or loamy sand subsoils which are lighter and more friable than the subsoils of corresponding soils of the Greenville series. Orangeburg sandy loam is mapped in Quitman County.

Soils of the Norfolk series have gray surface soils, yellow or grayish-yellow subsurface layers, and yellow friable and crumbly sand or clay subsoils. Norfolk sand, Norfolk sandy loam, and Norfolk sandy loam, deep phase, are mapped in this county.

The Cuthbert soils have gray surface layers, yellow subsurface layers, and hard, tough, compact clay subsoils which vary in color from reddish yellow to yellowish brown. The consistence of the subsoils constitutes the principal difference between the Cuthbert and the Ruston soils. Cuthbert sandy loam is mapped in Quitman County.

Soils of the Cahaba series have gray or grayish-brown surface soils and reddish-yellow or yellowish-brown subsoils. The fine sandy loam and sandy loam members of the series are mapped.

The Chattahoochee soils differ essentially from the Cahaba in that the subsoils are bright-red sandy clay. Only one soil of this series, the fine sandy loam, is mapped in Quitman County.

Soils of the Kalmia series have gray surface soils, pale-yellow subsurface soils, and yellow friable sandy clay subsoils. The fine sand, fine sandy loam, fine sandy loam, deep phase, and sandy loam members of the Kalmia series are mapped.

In the following pages of this report the soils of Quitman County are described in detail and their relation to agriculture is discussed; their distribution is shown on the accompanying soil map; and their acreage and proportionate extent are given in Table 2.

TABLE 2.—*Acres and proportionate extent of soils mapped in Quitman County, Ga*

Type of soil	Acres	Per cent	Type of soil	Acres	Per cent
Greenville sandy loam.....	23, 040	21. 1	Kalmia sandy loam.....	2, 240	2. 0
Orangeburg sandy loam.....	9, 664	8. 8	Kalmia fine sand.....	1, 216	1. 1
Ruston sandy loam.....	17, 344	19. 6	Chattahoochee fine sandy loam.....	1, 960	. 9
Deep phase.....	4, 032	2. 0	Cuthbert sandy loam.....	2, 178	2. 0
Ruston sand.....	2, 240		Myatt fine sandy loam.....	576	. 5
Norfolk sandy loam.....	1, 216	2. 5	Meadow.....	8, 000	7. 3
Deep phase.....	1, 536		Swamp.....	3, 968	3. 6
Norfolk sand.....	7, 872	7. 2	Rough gullied land.....	16, 832	15. 4
Cahaba fine sandy loam.....	3, 136	2. 9			
Cahaba sandy loam.....	1, 064	1. 5			
Kalmia fine sandy loam.....	1, 472	1. 6			
Deep phase.....	256				
			Total.....	109, 440	-----

GREENVILLE SANDY LOAM

In wooded areas the surface layer of Greenville sandy loam, to a depth ranging from 2 to 5 inches, consists of dark grayish-brown or brown loamy sand containing considerable organic matter. This material grades into reddish-brown or red light-textured, loose, mellow, and friable sandy loam or loamy sand. The subsoil, below a depth varying from 8 to 12 inches, is deep-red rather heavy sandy clay which is slightly tough and sticky and which breaks into irregular lumps showing no definite cleavage lines or stains along the breakage lines and which eventually crumbles into small particles or a structureless mass. The subsoil is heavier in texture than that of the Ruston, Orangeburg, and Norfolk soils. In most places, at a depth of 50 or 60 inches, the subsoil grades into mottled or streaked light-red, purplish, yellowish, and light-gray sandy clay material which is hard and brittle and which contains a few soft iron concretions.

In places the surface soil is deeper and consists of heavy sandy loam or loam that is somewhat darker red than typical Greenville sandy loam. Where this soil is associated with Orangeburg sandy loam, the surface soil is lighter brown and the two soils grade into each other. Along small drainage ways and on slopes the sandy surface material has been washed off and the red sandy clay subsoil is exposed. Such areas are too small to be shown on the map. In cultivated fields the surface soil is reddish-brown loamy sand, 6 or 8 inches thick.

Greenville sandy loam is the most extensive and the most important agricultural soil in Quitman County. Except in an area of about 24 square miles extending north from Georgetown to the Stewart County line, this soil occurs extensively throughout the county. It comprises slightly more than one-fifth of the area of the county.

The surface of Greenville sandy loam varies from undulating or almost level, in the region south of Wire Bridge, to steeply rolling in that part of the county drained by Hodchodkee and Pataula Creeks. Drainage is thorough. On the steeper slopes terracing is absolutely necessary to prevent erosion, but on the more level areas most of the normal rainfall is absorbed and retained in the soil.

This soil has a high agricultural value. Originally it supported a growth of deciduous trees consisting chiefly of oak and hickory and a scattered stand of shortleaf and longleaf pines. Practically all the land has been cleared and cultivated at some time, but now

about 25 per cent of it is abandoned and is growing up to wild persimmon, sassafras, old-field pine, and broom sedge. Some walnut, dogwood, and cedar grow on a few timbered areas.

Greenville sandy loam is utilized for general farming. The most important crop grown on it is cotton. Yields of this crop vary from one-fourth to one-half bale to the acre, corn produces from 15 to 30 bushels, and cowpeas from one-third to 1 ton of hay to the acre, depending largely on the preparation and cultivation of the soil and the kind and quantity of fertilizer used. This is an excellent pecan soil, and a few small orchards have been put out on the smoother areas south of Wire Bridge. In the Fort Valley section it is used for the production of peaches and in the vicinity of Albany for pecans.

Greenville sandy loam is managed in about the same way as other soils of the county, with the exception that care is taken not to cultivate it when too wet. From 200 to 400 pounds of a 3-9-3³ fertilizer is used for cotton and, with a top-dressing of about 100 pounds of nitrate of soda, for corn.

This kind of soil sells at prices ranging from \$15 to \$30 an acre, depending on location and improvements.

The productiveness of this soil could be materially increased by liming, by plowing under green-manure crops, by following crop rotations, including a legume every third year, and by deeper plowing. Greenville sandy loam is adapted to all the cultivated crops that are grown in the county, and the ease with which it may be cultivated renders it a most desirable soil.

ORANGEBURG SANDY LOAM

In wooded areas the surface soil of Orangeburg sandy loam, to a depth varying from 2 to 4 inches, is brown or grayish-brown loamy sand which contains a small quantity of organic matter. This layer grades into yellow, brownish-yellow, or slightly reddish-yellow loamy sand which contains very little organic matter. This subsurface layer continues to a depth ranging from 12 to 18 inches. The subsoil is bright-red friable and crumbly sandy clay which readily breaks into a granular structureless mass. The material of the upper 2 inches of the subsoil is commonly light-red, heavy sandy loam. At a depth ranging from 40 to 80 inches, the subsoil is underlain by mottled, streaked, or splotched red, light-gray, and yellow sandy clay material that is usually rather compact and hard but brittle. Small, rounded, brown iron pebbles are scattered over the surface and occur here and there in the lower part of the subsoil. Some quartz gravel ranging from one-half inch to 1 inch in diameter is present in a few places in the soil.

In cultivated fields the surface soil, to a depth varying from 5 to 8 inches, is light brown, brownish yellow, or grayish yellow, with yellowish-red spots. This soil is intricately associated with Greenville sandy loam in many places, consequently small areas of each soil are included with the other as mapped.

Orangeburg sandy loam is a very important soil in Quitman County, and though it does not occur in as large areas as Greenville sandy loam it is scattered throughout most of the county. The areas range in size from a few acres to 700 or more acres.

³ Percentages, respectively, of nitrogen, phosphoric acid, and potash.

The surface of Orangeburg sandy loam is gently rolling or strongly rolling, and drainage is good or excessive. The steeper slopes, where cultivated, are subject to destructive erosion and should be terraced.

This soil was originally wooded with longleaf pine, various oaks, hickory, and some dogwood and shortleaf pine. Nearly all this timber has been removed and practically all the land has, at some time, been used for farming. Some areas of this soil are now idle and are growing up to loblolly pine, wild plum, blackberry bushes, and broom sedge.

Most of the Orangeburg sandy loam is used for the same purposes and is adapted to the same crops as Greenville sandy loam. Cotton yields from one-fourth to one-third bale to the acre, corn from 10 to 20 bushels, and peanuts from 20 to 30 bushels.

A few farmers in the county use this soil for growing melons, for which purpose it is well adapted. It is also used for growing peaches and pecans in other sections of southwest Georgia.

The price of this soil ranges from \$10 to \$30 an acre, depending on location, condition, and improvements.

The first requirement for the improvement of this soil is an increase of the organic-matter content, which is very low. Liming, deeper plowing, and rotation of crops would also increase the productiveness.

RUSTON SANDY LOAM

In wooded areas the surface soil of Ruston sandy loam, to a depth ranging from 1 to 3 inches, consists of gray or brownish-gray loamy sand, which contains a small amount of organic matter. This layer grades into pale-yellow or brownish-yellow loamy sand which continues to a depth ranging from 12 to 18 inches. In these two layers the soil is mellow and friable. In most areas an intervening layer, from 2 to 4 inches thick, of brownish-yellow heavy sandy loam or friable sandy clay occurs just above the heavier subsoil. This layer ranges from yellowish brown to yellowish red. It is friable and crumbly and in most areas continues to a depth ranging from 30 to 50 or more inches. Beneath this layer is light-red or yellowish-red mottled with yellow sandy clay which, at a depth of 50 or 60 inches, grades into streaked or blotched whitish, yellowish, and light-red hard but brittle sandy clay material. Most of the whitish layers are silty clay which has a smooth soaplike feel, whereas the yellow and reddish bands are sandy and very friable.

In cultivated fields the surface soil is light gray or light brown and the remainder of the soil is similar to that described. The sandy surface layer varies in thickness from a few inches to as much as 20 inches. In places where this soil borders Cuthbert sandy loam, the subsoil is rather compact clay or heavy sandy clay. A few small rounded iron concretions are present here and there on the surface, and a few soft pebbles occur in the subsoil. In a few areas some thin layers of iron rust appear in the soil.

This is one of the extensive and important soils in the county. It occurs in large areas in the southern and southeastern parts and in small areas well distributed over the county.

This soil occupies level, gently rolling, or rolling areas, most of which are favorably situated for cultivation. Natural drainage is good. On the steeper slopes and even on the gentle slopes, terraces are necessary to prevent erosion.

Practically all the land has been cleared of its native growth, which consisted of longleaf and shortleaf pines, and at one time it was all farmed. Probably one-fourth of the area has been reforested to old-field pine and the remainder is partly under cultivation and partly lying idle.

At the present time this land ranges in price from \$15 to \$30 an acre, depending on location, physical condition, and improvements.

This soil is deficient in nitrogen, but this may be supplied by growing and turning under soy beans, velvet beans, cowpeas, corn stubble, or clover. The soil is well suited to the production of pecans, peaches, and peanuts.

Ruston sandy loam is used for practically all crops grown in the county. The yield of cotton varies from one-fifth to one-half bale to the acre, of corn from 10 to 20 bushels, and of peanuts from 20 to 40 bushels. Larger yields are obtained by some of the better farmers. A few young pecan orchards on this soil are doing well.

Ruston sandy loam, deep phase.—Ruston sandy loam, deep phase, differs from the typical soil in that the surface layer of sand or loamy sand is much deeper over the sandy clay subsoil, in most areas ranging from 20 to 30 inches in thickness. The relief varies from almost level to sloping and the sand is deepest at the base of the slopes. Probably one-third of the land is under cultivation and the remainder is either reforested to old-field pine or is lying idle. About the same crops are grown on this as on the typical soil, but yields are lower under similar treatment.

RUSTON SAND

In wooded areas the surface layer of Ruston sand, to a depth ranging from 1 to 3 inches, is medium-textured, dark grayish-brown loose sand. This layer is underlain by a subsurface layer of brownish-yellow sand which continues to a depth ranging from 10 to 20 inches. Beneath this layer is yellowish-brown or reddish sand which continues to a depth varying from 40 to 60 inches. Yellowish-red or brownish-red light sandy clay material which is variable both in color and texture underlies the subsoil.

In cultivated fields the surface soil, to a depth of about 6 inches, is light grayish brown.

Ruston sand occupies a small acreage in the county. The largest area, comprising about 700 acres, is in the northeastern corner of the county. Smaller areas are scattered throughout the eastern half of the county.

This soil occurs principally on high ridges between small drainage ways, on slopes, and around stream heads, but some areas are more nearly level. The level areas occur in the northeastern corner of the county and about 1 mile south of Morris Station.

Practically all the original growth of longleaf and shortleaf pine has been removed. At present about one-fourth of this soil has grown up in blackjack oak, scrub oak, and pine. Like Norfolk sand most of this soil is used for the production of cotton and corn. It is managed in the same manner as Norfolk sand, and approximately the same yields are obtained under similar treatment.

This kind of soil sells at prices ranging from \$5 to \$10 an acre, depending on location and condition. The best use of Ruston sand is for forestry.

NORFOLK SANDY LOAM

In virgin areas the surface soil of Norfolk sandy loam is dark-gray loamy sand containing a small quantity of organic matter. This layer varies from 2 to 4 inches in thickness. The subsurface layer is pale-yellow or grayish-yellow loamy sand which continues to a depth varying from 10 to 18 inches. Beneath this layer is the true subsoil of yellow friable sandy clay, which continues to a depth ranging from 36 to 40 inches. The lower part of the subsoil layer is brownish yellow, in some places streaked with rust brown and red. It grades into the incompletely oxidized material, which consists of mottled red, yellow, and gray hard but brittle sandy clay.

Where cultivated the surface soil, to a depth of 6 or 8 inches, is light-gray or yellowish-gray loamy sand. The color depends on the amount of organic matter present and on the method of handling the soil.

Norfolk sandy loam is an inextensive soil, occurring in small areas scattered throughout nearly all parts of the county. Most of this soil is closely associated with Ruston sandy loam. The areas range in size from a few acres to about 300 acres. The largest area is in the extreme southern part of the county, about one-half mile north of the Clay County line.

This soil occupies rolling areas and gentle slopes, which are favorable for cultivation. It is well drained. All of it has been cleared of its original forest cover, which consisted of longleaf pine, shortleaf pine, some oak, hickory, and dogwood. About 80 per cent of the soil is now farmed, and the remainder is either lying idle or is used for pasture.

Norfolk sandy loam is a good soil for the production of all crops commonly grown in this section of the country. With similar treatment, Norfolk sandy loam produces about the same yields of cotton, corn, oats, peanuts, and other crops as Ruston sandy loam. In other parts of the State it has proved a very good soil for bright tobacco, peanuts, and truck crops. Some farmers prefer this soil for sugar cane, as it produces a fine-flavored and light-colored sirup.

This soil is managed in the same manner as other soils in the county, and about the same quantity and the same kind of fertilizer is used on it for cotton and corn.

Land of this kind varies in value from \$15 to \$30 an acre, depending on location, condition, and improvements.

This soil, like Ruston sandy loam, is very deficient in nitrogen. This may be supplied largely by growing and turning under leguminous crops.

Norfolk sandy loam, deep phase.—This soil differs from typical Norfolk sandy loam in that the surface layer of sand or loamy sand continues to a greater depth before the heavier sandy clay layer is reached. The thickness of the surface layer ranges from 24 to 30 inches. The greater part of this soil lies on slopes where sand from higher areas has accumulated through surface wash, but in some places the soil occurs as ridges. About two-thirds of it is under cultivation, and the remainder is either reforested in old-field pine or is lying idle. The same crops are grown as on typical Norfolk sandy loam, but yields are lower under similar treatment.

NORFOLK SAND

In wooded areas the surface soil of Norfolk sand, to a depth varying from 2 to 4 inches, is grayish-brown sand. This layer is underlain by a subsurface layer of pale brownish-yellow or yellow loose sand which continues to a depth ranging from 30 to 40 inches. Beneath this layer is grayish-white and yellowish-brown sand which continues to a depth varying from 50 to 65 inches. Below this depth is yellowish-red, yellow, and brown light sandy clay which, at a depth of 80 or 90 inches, immediately overlies mottled red, bright-red, light-gray, and yellow slightly cemented sandy clay material. Small rounded oxide of iron concretions, which become less hard with depth, occur throughout the soil.

As mapped in Quitman County this soil is somewhat variable in texture. Some inextensive areas in which the material is coarser or finer than typical are included. In cultivated fields the surface soil, to a depth varying from 5 to 6 inches, is light-gray loose sand.

Norfolk sand occurs in nearly all parts of the county, in areas ranging from a few acres to 700 or more acres in extent.

The surface of this soil ranges from smooth and almost level, as in areas 2 miles northeast of Union, to steeply rolling and broken, as in areas in the steep or hilly country $2\frac{1}{2}$ miles northeast of Georgetown and extending northward to the Stewart County line. Drainage is well established and in many places is excessive.

In its natural condition Norfolk sand was forested with longleaf and shortleaf pines, but practically all of it has been cleared and farmed at one time or other. About half the land is farmed at present, and the remainder is growing up in old-field pine, sand jack, blackjack oak, and some longleaf pine. Most of the cultivated land is used in the production of corn and cotton. Unless large quantities of fertilizer are used, which is seldom the case, yields are very low. Cotton ordinarily yields less than one-fifth bale to the acre and corn 8 or 10 bushels.

This soil sells at prices ranging from \$5 to \$10 an acre, depending on condition and improvements.

Norfolk sand is better adapted to the production of vegetables and early truck crops than to general farming, but where used for truck crops it needs heavy applications of barnyard manure. A large part of this soil should be devoted to forestry.

CAHABA FINE SANDY LOAM

In virgin areas Cahaba fine sandy loam, to a depth varying from 1 to 4 inches, is medium dark-brown fine sand or loamy fine sand. This layer is underlain by a subsurface layer of pale brownish-yellow loamy fine sand which continues to a depth varying from 12 to 16 inches. At this depth the subsurface layer grades into the true subsoil consisting of friable and crumbly yellowish-brown or yellowish-red fine sandy clay. This layer continues to a depth ranging from 30 to 50 inches. Beneath the subsoil is a transitional layer of light reddish-yellow light fine sandy clay varying from 10 to 18 inches in thickness. This layer overlies the more or less unweathered parent material consisting of mottled whitish-yellow, gray, and rust-brown fine micaceous sandy clay material, light but brittle. In cultivated fields the surface layer, to a depth varying from 4 to 6 inches, is grayish brown.

In small areas included with this soil in mapping the fine sandy clay is much nearer the surface and in some places is exposed, causing the surface soil to appear dull red. Had such areas been extensive they would have been differentiated as Cahaba clay loam.

This is one of the most extensive and most important terrace or second-bottom soils in the county. It occurs in large areas on the lower level terraces along Chattahoochee River. The surface is gently rolling or almost level, and drainage is good except in some of the flatter areas.

The original growth of white oak, gum, poplar, beech, sycamore, bay, and pine has been removed. About three-fourths of the land is cultivated at present, and the remainder is used for pasture or is lying idle.

Cahaba fine sandy loam is cultivated almost exclusively to cotton, although some corn and a small acreage of oats are grown. The soil is easily worked. An application of 200 or 300 pounds of a 3-9-3 fertilizer is generally used for cotton but less frequently for corn. Cotton yields from one-fifth to one-half bale to the acre, depending on the cultural methods employed and on the season. Corn yields from 10 to 30 bushels.

At present the price of this soil ranges from \$20 to \$35 an acre, depending on its proximity to Georgetown, its physical condition, and improvements.

The productiveness of Cahaba fine sandy loam might be increased by deeper plowing and more thorough preparation of the seed bed. The soil is deficient in nitrogen, which can be supplied by growing and turning under leguminous crops. The acreage of corn and oats should be increased, and crop rotation should be practiced.

CAHABA SANDY LOAM

The surface soil of Cahaba sandy loam in wooded areas is grayish-brown loamy sand 2 or 3 inches thick. This layer is underlain by grayish-yellow light sandy loam which continues to a depth varying from 10 to 14 inches. Below this depth is the true subsoil of friable, crumbly yellowish-red sandy clay, which continues to a depth of 40 or 50 inches. The lower part of the subsoil is in most places somewhat lighter in color than the upper part and is splotched with reddish brown and gray where it grades into the unweathered material underlying it. This underlying material is variable but is in most places mottled red, yellow, and gray slightly compact but brittle sandy clay. Beneath this layer is yellow or brownish-yellow compact sand which in places is gravelly. In cultivated fields most of the surface soil is somewhat leached and is grayish brown in color.

Most of the Cahaba sandy loam occurs on the high terraces along Chattahoochee River. One area of about 450 acres is $1\frac{1}{2}$ miles south of Georgetown and several smaller areas are about 6 miles southeast of Georgetown. Small scattered areas occur along the terraces of Pataula Creek. The surface is undulating or gently rolling, and drainage is good.

All the original forest growth of pine, oak, gum, poplar, beech, and sycamore has been removed. At present about two-thirds of the land

is under cultivation, and the remainder is lying idle or is used for pasture.

Cahaba sandy loam is not only suited to general farm crops but also to special crops, but in this county it is used chiefly in the production of cotton and corn. It is handled and fertilized much as other soils of the county. The soil is capable of producing higher yields than are now obtained, because the land is largely in the hands of tenants. Under present conditions cotton yields from one-fourth to one-half bale to the acre, corn from 10 to 25 bushels, and cowpea hay from one-half to 1 ton.

Land of this kind ranges in price from \$15 to \$35 an acre, depending on location, condition, and improvements.

This soil is deficient in nitrogen, but this may be supplied largely by growing and turning under leguminous plants such as soy beans, velvet beans, and crimson clover.

KALMIA FINE SANDY LOAM

In virgin areas Kalmia fine sandy loam is medium dark-gray or grayish-brown fine sand, varying from 1 to 4 inches in thickness. The dark color results from the organic matter present. This layer is underlain by pale grayish-yellow light sandy loam varying in depth from 8 to 10 inches. Beneath this subsurface layer is the comparatively heavier layer or true subsoil. The subsoil consists of friable, crumbly yellow fine sandy clay which continues to a depth varying from 30 to 40 inches. In many places the lower part of this layer is slightly splotched with gray, bright yellow, and rust brown. The splotches increase with depth as the subsoil layer grades into the more or less weathered mottled layer below.

Where cultivated the color of Kalmia fine sandy loam bleaches out to light gray.

This is one of the important terrace soils of the county. It occurs in comparatively large areas on the lower level terraces of Chattahoochee River and in smaller areas along the smaller drainage ways.

Most of this soil is favorably situated for agriculture. The surface is gently rolling or nearly level. Drainage, except in a few of the more level areas, is good.

Practically all of this land was cleared of its original forest growth and farmed at one time. About one-fourth of the area has been reforested to old-field pine, scrub oak, and hickory. The remainder is now either farmed or is lying idle.

Cotton and corn are the principal crops grown on this soil. Yields are somewhat higher than on Norfolk sandy loam, which Kalmia fine sandy loam closely resembles. Cotton yields from one-fourth to one-half bale to the acre and corn from 10 to 25 bushels. A few young pecan orchards which have been set out appear to be doing well.

The soil is easily cultivated and is farmed successfully with light farm implements. Light applications of a 3-9-3 fertilizer are generally used for cotton, but practically none is used for corn.

This kind of land sells at prices ranging from \$15 to \$25 an acre, depending on location, condition, and improvements.

Kalmia fine sandy loam is deficient in nitrogen. This can best be supplied by growing and turning under leguminous plants, such as velvet beans, soy beans, and crimson clover.

Kalmia fine sandy loam, deep phase.—Soil of this phase differs from typical *Kalmia fine sandy loam* in that the surface layer of sand overlying the sandy clay subsoil is much thicker. This layer in most places ranges from 24 to 30 inches in thickness. The yellow sandy clay subsoil is not so heavy as that of the typical soil.

This deep soil occupies the gently undulating terraces of Chattahoochee River. The larger areas are in the northwestern part of the county in the vicinity of Avreys Store. Other areas are mapped west of Georgetown. Drainage is well established.

Practically all of this soil is now under cultivation, and the same crops are grown as on the typical soil. Yields are slightly lower. In neighboring counties such special crops as sweet potatoes, melons, and vegetables are grown with fair success.

KALMIA SANDY LOAM

The surface soil of *Kalmia sandy loam* in wooded areas consists of medium dark-gray single-grained sand, varying from 1 to 4 inches in thickness. The dark color results from the presence of organic matter. This layer grades into pale-yellow loamy sand which continues to a depth varying from 12 to 18 inches. At this depth an intervening layer, 4 or 6 inches thick, of yellow sandy loam immediately overlies the true subsoil of yellow friable sandy clay, which continues to a depth ranging from 34 to 40 inches. The lower part of the subsoil is in many places slightly splotched with yellow, red, brown, or gray where it grades into the more or less unweathered material below. This unweathered material is mottled yellow, red, and gray slightly cemented sandy clay. Here and there iron pebbles are scattered over the surface.

In some areas the surface soil is very much deeper than typical, notably in the vicinity of Georgetown. In cultivated fields the surface soil is gray or light-gray sand, and the remainder of the soil profile is similar to that of the typical soil.

This is one of the more extensive and more important terrace soils in the county. It occurs in rather large areas in the vicinity of Georgetown and in comparatively smaller areas in the southwestern part of the county.

This soil occupies the highest level terraces along Chattahoochee River. Most of it is favorably situated for agriculture, as the surface of the areas is gently rolling or nearly level. In most places drainage is excellent, but in a few small flat areas in the more level country east of Georgetown drainage is not well established, and ditching must be resorted to in order to take care of the excess surface water.

The original tree growth, principally longleaf and shortleaf pine, has been removed. About one-quarter of the area has been reforested to old-field pine, and the remainder is now farmed or is lying idle. The idle fields are covered with a heavy growth of broom sedge and briars.

Cotton and corn are the principal crops grown on this soil. Yields are slightly higher than those obtained under similar treatment on Norfolk sandy loam, which soil *Kalmia sandy loam* very closely resembles. This soil is handled in the same manner as the Norfolk soil, and about the same kind and quantity of commercial fertilizers are used for cotton but none is used for corn.

A 6-year-old pecan orchard which seems to be doing fairly well is located on this soil 1 mile east of Georgetown. However, the trees do not appear so vigorous as those growing on the lower level terraces of Cahaba fine sandy loam and Kalmia fine sandy loam.

Kalmia sandy loam is deficient in organic matter, and its productivity could be materially increased by growing and turning under leguminous plants such as velvet beans, soy beans, cowpeas, and crimson clover. This practice would not only increase the nitrogen content of the soil but would also render it more retentive of moisture.

KALMIA FINE SAND

The surface soil of Kalmia fine sand in wooded areas is medium dark-gray fine sand varying from 1 to 4 inches in thickness. This layer is underlain by grayish-yellow fine sand which continues to a depth ranging from 10 to 14 inches. Beneath the subsurface layer is pale-yellow fine sand which becomes lighter in color with depth. This layer continues to a depth varying from 40 to 50 inches and is underlain by a stratum of yellowish-brown sandy clay splotched with yellow, gray, and dark-brown iron stains. Some areas of Kalmia sand are included with this soil in mapping.

Kalmia fine sand is inextensive in Quitman County. The largest areas occur on the lower terraces of Chattahoochee River in the northwestern part of the county. Smaller areas are along Pataula Creek and along the smaller creeks of the county.

The surface is gently rolling or almost smooth, and drainage is good. About one-third of the soil is reforested with pine, and the remainder is either farmed or is lying idle.

Kalmia fine sand is used chiefly in the production of cotton, but some corn and hay are grown. Yields are slightly higher than those obtained on Norfolk sand. Most farmers use small quantities of commercial fertilizers for cotton.

This soil should either be used for early truck crops or should be allowed to revert to forest.

CHATTAHOOCHEE FINE SANDY LOAM

In wooded areas the surface soil of Chattahoochee fine sandy loam is dark-gray mellow loamy fine sand, varying from 1 to 4 inches in thickness. This layer is underlain by brownish-yellow, single-grained, light fine sandy loam which is 6 or 8 inches thick. The lower part of the subsurface soil grades into the true subsoil which consists of red or reddish-brown friable fine sandy clay and continues to a depth varying from 30 to 40 inches. An intervening layer, from 4 to 6 inches thick, of reddish-yellow light fine sandy clay occurs between the subsoil and the somewhat unweathered material below. The underlying material is yellow friable fine sandy clay, most of which is more or less mottled with reddish brown, red, and gray.

On account of their small extent a few areas of Chattahoochee sandy loam are included with Chattahoochee fine sandy loam in mapping, as are also a few small areas of fine red sandy loam.

In cultivated fields the surface soil of Chattahoochee fine sandy loam, to a depth of 5 or 6 inches, is light grayish-brown or brownish-yellow light fine sandy loam.

This soil occupies a small acreage in the county. The largest area, comprising about 600 acres, occurs about 2 miles southwest of Georgetown, and smaller areas are in the southern part of the county along the Clay County line. The surface is gently undulating or level, and drainage is good. The natural growth consisted principally of longleaf and shortleaf pines. Practically all the land is under cultivation at the present time.

Cotton and corn are the principal crops grown on this soil, and yields are slightly higher than those obtained on the corresponding upland soils under similar treatment. With the use of the usual quantity of a 3-9-3 commercial fertilizer, cotton yields from one-third to one-half bale to the acre. Corn yields from 15 to 25 bushels to the acre. Fertilizer is seldom used for this crop.

Land of this kind ranges in value from \$15 to \$30 an acre, depending on location, improvements, and condition. The productiveness of the soil could be materially increased by plowing under green-manure crops.

CUTHBERT SANDY LOAM

In wooded areas the surface soil of Cuthbert sandy loam consists of gray or brownish-gray loamy sand, varying from 2 to 4 inches in thickness. The subsurface layer is pale-yellow or grayish-yellow loamy sand or light sandy loam, which continues to a depth ranging from 8 to 12 inches. In cultivated fields the surface layer is light gray or yellowish gray. The subsoil is yellowish-red or reddish-yellow, heavy, tough, compact clay. It is hard but brittle, cracks on drying, and breaks into irregular lumps which have no definite cleavage and which eventually crumble to a coarsely granular mass. In most places, at a depth varying from 20 to 24 inches, the subsoil is mottled or streaked light-red and yellow clay. It has about the same structure as the layer above, to a depth of 40 or 50 inches. The underlying material is mottled purplish, reddish, yellowish, and whitish hard but brittle clay or sandy clay material, or in some places consists of beds of light-gray laminated clay.

This soil is inextensive in Quitman County. No large areas are mapped, but small areas, some of them 300 or more acres in extent, are scattered throughout the eastern and southeastern parts of the county.

Most of this soil occurs on slopes and around the heads of small drainage ways, and the surface is rolling or broken. Surface drainage is good or excessive, but the compact subsoil retards aeration and percolation, thereby accelerating erosion.

Practically all the original stand of shortleaf pine, oak, and hickory has been removed. Very little of the soil is farmed at present but is growing up in scrub pine, blackberries, and broom sedge.

Cuthbert sandy loam should be used for forestry. The smoother areas, when fertilized, produce fair yields of cotton.

MYATT FINE SANDY LOAM

The surface soil of Myatt fine sandy loam is dark-gray loamy fine sand or fine sandy loam, varying from 6 to 10 inches in thickness. The subsoil is dark-gray fine sandy clay or clay, mottled or streaked with rust-brown stains. In most places at a depth of 20 or 24 inches the subsoil is heavier in texture and is somewhat stiff and plastic.

This soil occurs on poorly drained depressions on the terraces of Chattahoochee River. In wet seasons the land is covered with water practically all the time. At present it is little used for agriculture and is valued mainly for the timber and the pasture it affords.

If properly drained and seeded this soil would provide fair pasturage for cattle.

MEADOW

Meadow consists of alluvial first-bottom material along the smaller streams and is so variable in color, texture, and structure that it could not be separated into soil types. In most places this material is gray, yellow, or reddish-brown fine sand or coarse sand in the surface layer, underlain by grayish sand or sandy clay subsoils, mottled with rust brown, yellow, and gray. The surface soil is continually being modified by colluvial wash from the uplands and by the addition of materials deposited by the streams at each overflow. Meadow occurs along the flood plains of the smaller drainage ways throughout the county and here and there along the larger streams. In most areas the surface is nearly level, and the soil is very slightly elevated above the normal flow of streams. In places the streams flowing through these bottoms have no definite channel, and water spreads rapidly over the entire stream bottom after each rainfall.

The forest growth on meadow consists of oak, pine, alder, gum, poplar, and willow. A heavy growth of blackberry briars, water-loving shrubs, and switch cane comprises the undergrowth.

Owing to its sandiness and lack of adequate drainage meadow has very little agricultural value. It is best suited for summer pasture for cattle or for forestry.

SWAMP

Swamp includes first-bottom areas along the larger streams. It is subject to frequent overflow and remains covered with water the greater part of the time. The material is made up of wash from the upland soils and, like meadow, is variable in texture and color. The surface soil is in places reddish-brown or dark-brown silty clay loam, and the subsoil is yellow, mottled with dark gray and rust brown. Much of the material is very sandy from the surface down. It is always saturated.

The larger areas of swamp are in the flood plains of Pataula and Hodchodkee Creeks. The land is covered with a heavy growth of swamp-loving plants, including swamp maple, sweetgum, beech, magnolia, willow, and water-loving shrubs of various kinds. At present swamp has very little value except for its forest growth and for pasture.

When reclaimed this kind of land is well suited to the production of corn, oats, and forage crops. However, reclamation would be very expensive, as in many places there is no definite stream channel.

ROUGH GULLIED LAND

Rough gullied land includes areas that are so steep and broken that they are unfit for agricultural use. In some places where the slopes are not too steep they are covered with a scattered forest growth of pine and oak. This kind of land occurs mainly on the slopes to stream valleys and is mapped throughout the county.

One phase of rough gullied land includes deep gullies or gorges ranging in depth from 50 to 200 feet. No vegetation can grow on the steep, almost perpendicular sides of these gullies. The largest areas of this kind are in the northern part of the county about $2\frac{1}{2}$ miles east of Avreys Store. Unless something is done to check the progress of the gullies, they extend with destructive effect at a rapid rate and encroach on cultivated areas.

SUMMARY

Quitman County is in the southwestern part of Georgia bordering Chattahoochee River. It is one of the smallest counties in the State, containing only 171 square miles. The relief varies from almost level to rolling and hilly. Many of the hilly areas have been cut by deep gullies. All the county is naturally well drained. Hodchodkee and Pataula Creeks and Chattahoochee River receive all the drainage waters of the county.

Quitman County was formed in 1858 from the southern part of Stewart County and the western part of Randolph County.

Transportation facilities are fairly good throughout the county. Good roads with a sand-clay surface connect most of the towns. The Central of Georgia Railway traverses the county from east to west. Chattahoochee River is navigable, and a few boats ply its waters.

Eufaula, Ala., just outside the western boundary, is the principal market for the products of Quitman County.

The climate in this section is favorable, as the winters are short and mild and the summers are long and warm but usually comfortable, owing to the Gulf breezes.

With the exception of a short period following the advent of the boll weevil in 1916, cotton has been the principal crop. It holds this place at present, and corn and peanuts are secondary crops. Some oats also are grown. All these crops are grown on every type of soil in the county.

About 80 per cent of the farms in the county are operated by tenants. Since 1880 the size of farms in the county has gradually decreased, and the percentage of farms operated by tenants has increased with each decade.

The soils of the county are predominantly gray or reddish-brown sandy loams, mellow and easy to till, and the subsoils range from yellow to deep-red sandy clays. These soils respond readily to the addition of manure, to turning under green-manure crops, and to the application of commercial fertilizers. In other counties in Georgia and in some of the neighboring States these soils are used for growing peaches, pecans, and truck crops on a commercial scale.

Fourteen soils and three phases of soils, exclusive of meadow, swamp, and rough gullied land, are differentiated and mapped in Quitman County.

The Greenville, Orangeburg, Ruston, Norfolk, Kalmia, Cahaba, and Chattahoochee soils are the important soils in the county, both in extent and in agricultural importance. The less important soils are the Cuthbert, the Myatt, and meadow. The Myatt soils and meadow are the poorly drained soils of the county.

[PUBLIC RESOLUTION—No. 9]

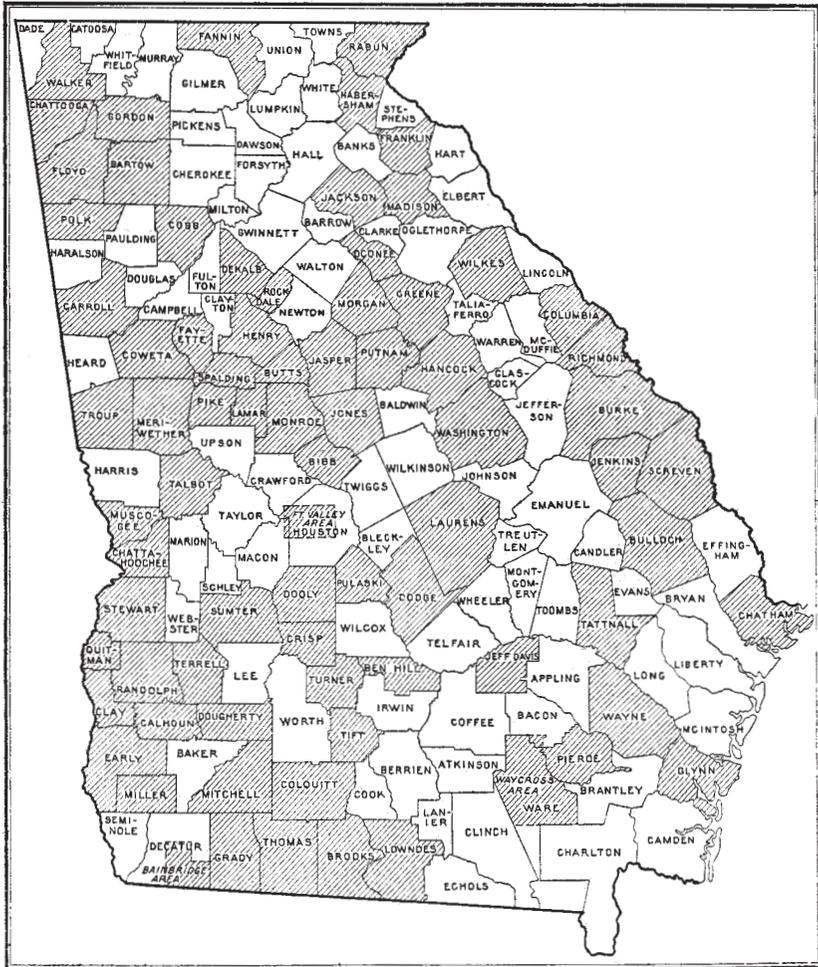
JOINT RESOLUTION Amending public resolution numbered eight, Fifty-sixth Congress, second session, approved February twenty-third, nineteen hundred and one, "providing for the printing annually of the report on field operations of the Division of Soils, Department of Agriculture."

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

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

Approved, March 14, 1904.

[On July 1, 1901, the Division of Soils was reorganized as the Bureau of Soils, and on July 1, 1927, the Bureau of Soils became a unit of the Bureau of Chemistry and Soils.]



Areas surveyed in Georgia, shown by shading

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