SOIL SURVEY OF THE FORT VALLEY AREA, GEORGIA

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LOCATION AND BOUNDARIES OF THE AREA.

The area surveyed comprises parts of Macon and Houston counties. It is rectilinear in outline, being 9 miles north and south and about 21 miles east and west, and contains approximately 186 square miles (118,784 acres). Fort Valley and Marshallville, important shipping points for the fruit grown in this part of the State, are the principal towns in the area.

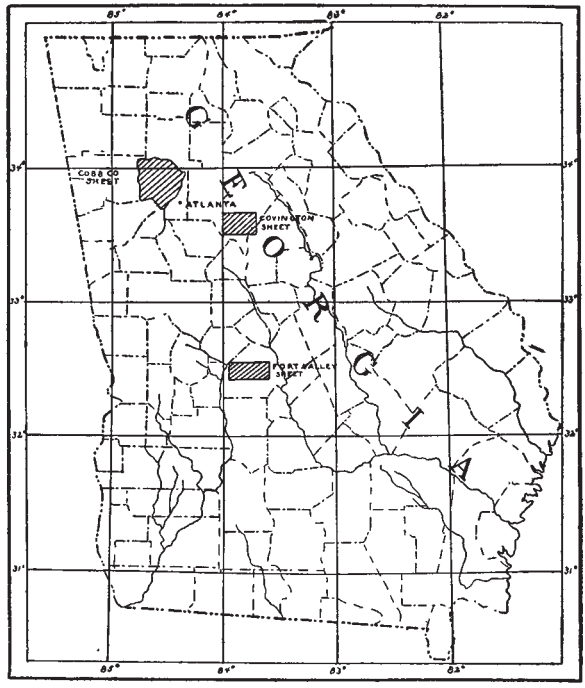

FIG. 12.—Sketch map showing location of the Fort Valley area, Georgia.

HISTORY OF SETTLEMENT AND AGRICULTURAL DEVELOPMENT.

That region of the United States of which Georgia is a part passed successively under the sovereignty of Spain, France, and England, but not until 1733, while the last-named power had possession, was the first permanent settlement established. This was founded on the present site of Savannah, and was followed by other settlements along the coast. Settlement farther inland took place more slowly, and it was nearly a hundred years later that the part of the country

included in the present survey was obtained from the Indians by treaty and sold to prospective settlers.

The early agriculture included rice, besides the other cereals, live stock, and garden vegetables. At one time it was thought that silk culture could be developed advantageously, and some silk was produced and exported to England. Cotton early became one of the products and later was the great staple, as it is to-day.

Georgia suffered severely in the financial panic of 1839–40, from the effects of which she had fairly recovered when the civil war occurred, again checking progress. To-day, however, the area surveyed is as prosperous as it ever has been. The industrial and agricultural activity is, indeed, greater than ever before. The specialty of peach growing has in the last fifteen or twenty years reached large proportions. It is estimated that about half the fruit shipments from Georgia are made from Houston County. The movement of the cotton-spinning industry South has also made a great change in the economic condition of Georgia, and has indirectly had a stimulating effect on the agriculture of all parts of the State.

CLIMATE.

The climate of the area is that of the warm temperate zone. The winters are never very severe, the mercury sinking to the freezing point now and then, but never remaining there long. The ground seldom freezes, and plowing and other field work may be done nearly all winter. The maximum temperature in summer is rarely above 100° F., but the warm periods coupled, as they often are, with a high relative humidity, when long continued, become rather oppressive. The nights, however, are usually cool.

Droughts are uncommon, the annual rainfall—about 50 inches—being so distributed as to supply the needs of growing crops. Most of the rains come in the winter, spring, and summer, while during the important cotton-picking season—September, October, and November—the precipitation is much less.

The following table gives the normal temperature and precipitation as recorded by the Weather Bureau stations at Marshallville and Macon:

Normal monthly and annual temperature and precipitation.

Month.	Macon.		Marshallville.		Month.	Macon.		Marshallville.	
	Temperature.	Precipitation.	Temperature.	Precipitation.		Temperature.	Precipitation.	Temperature.	Precipitation.
	°F.	*Inches.*	°F.	*Inches.*		°F.	*Inches.*	°F.	*Inches.*
January	47.3	3.91	47.4	4.12	August	80.2	4.64	81.2	5.24
February	50.1	4.33	50.2	6.64	September	75.8	3.02	76.5	2.19
March	55.2	5.88	57.6	6.92	October	65.5	1.78	66.3	1.42
April	64.1	3.87	67.7	3.39	November	54.6	3.38	56.8	2.64
May	73.0	3.21	73.6	2.57	December	46.8	4.35	49.1	3.48
June	76.6	4.42	73.6	3.63	Year	64.2	47.74	65.6	49.19
July	81.4	4.95	80.8	6.95					

By reason of the extensive peach interests in the area, more injury is probably sustained from late spring frosts than from all other climatic factors. The peach trees blossom from about the 1st to the 15th of March, and late spring frosts may be looked for during that time. Perhaps three years out of five the peaches escape injury.

The first killing frost in the fall occurs about the last week in October or the first in November. The high elevation of Fort Valley, Marshallville, and the country in that vicinity, as compared with the surrounding country, is probably the reason for the greater immunity from damage from frosts there than in some other parts of the region. This fact, together with certain favorable soil conditions, adapts this section particularly to the culture of peaches and other early fruits.

PHYSIOGRAPHY AND GEOLOGY.

The elevation above sea level of Fort Valley is given as 531 feet, of Marshallville 491, of Macon 334, of Kathleen 318, and of Tivola about 258 feet.

Fort Valley and Marshallville are situated on the highest part of the divide between the Ocmulgee and Flint rivers. From the vicinity of these towns the land has a gradual slope eastward, the drainage being by way of the Big Indian and Mossy creeks, and their many branches, which empty into the Ocmulgee River. To the westward, as it approaches the Flint River, the country breaks into a rather deeply dissected plain. The drainage westward is by short streams flowing in rather deeply cut valleys. The streams draining eastward lie at from 10 to 80 feet below the general level of the interstream areas and their flow is usually moderate and continuous, while the streams draining westward have eroded deeper channels and are more erratic.

Along Mossy Creek considerable water power is utilized by grist and saw mills and cotton gins.

The sides of the stream valleys are generally well rounded and fairly steep. Usually the streams run through low, flat, narrow bottoms, covered with a thick growth of ash, gum, bay, willow, alder, gallberry, and cane.

The interstream areas are gently rolling, with occasional extensive flat areas. Most of the upland is cleared. Originally the forest growth consisted largely of longleaf pine and black jack oak.

The area surveyed lies within the Coastal Plain. Although no geological survey of this section has as yet been made, it clearly belongs to that subdivision of the Tertiary known as the Lafayette. The first 10 to 40 feet usually consists of a yellow or red sandy clay, beneath which occurs a stratum of mottled gray and yellow clay, having sometimes a distinct clay texture, and again a silty or even a sandy texture. Occasional gravel deposits are also found, though they are not very

extensive so far as now known, and sometimes pockets of white quartz sand are found beneath the clay stratum.

The red and yellow clays have a peculiar structure, standing so firmly in a wall as to make well curbing unnecessary. Occasionally they have been consolidated into ledges of sandstone, probably through cementation by iron salts. In the vicinity of such ledges sheets and nodules of dark-colored iron ore were frequently seen.

Usually good drinking water is obtained at a depth of 20 to 40 feet, the depth often being but little more than the thickness of this red and yellow clay stratum.

SOILS.

Six soils were recognized in the Fort Valley area, all but one of them being types already established in previous surveys. The distribution of the soils is very even. The following table gives the name and the actual and relative areas of each:

Areas of different soils.

Soil.	Acres.	Per cent.	Soil.	Acres.	Per cent.
Norfolk sand	33,792	28.5	Meadow	4,800	4.0
Orangeburg clay	31,168	26.2	Selma clay	640	.5
Orangeburg sandy loam	24,896	21.0	Total	118,784	.....
Norfolk sandy loam	23,488	19.8			

ORANGEBURG CLAY.

The Orangeburg clay consists of from 4 to 8 inches of red or brown loam, in which considerable coarse sand is apparent, underlain by a red clay or sandy clay subsoil. It is locally called "red land" or "mulatto land," according as the surface varies from red to brown in color. Although the surface soil of this type contains considerable sand, the soil often becomes very compact upon drying after heavy rains and clods badly when plowed. It has only fair natural drainage, but artificial drainage is usually readily effected by means of open ditches leading into some of the many convenient natural drainage channels.

The Orangeburg clay owes its origin to the weathering of the red sandy clays of the Lafayette formation. The texture in some areas is probably much the same as when first raised above the ocean. Its generally level surface has greatly reduced erosion, and less of the clay particles have been removed than in the case of soils with a more irregular surface. The upper few inches, while in some cases quite sandy, usually contain considerable clay, and the proportion increases with depth. In places plowing has changed the texture of this soil by bringing up some of the underlying red clay.

There are two fairly distinct phases of this soil, the difference being in the proportion of clay and sand in the surface soil. In some cases the more sandy phase grades imperceptibly into the "gray land" (Orangeburg sandy loam). The type as a whole is quite distinct from the other soils in the area.

The Orangeburg clay is the strongest soil in the area. It is productive and responds rapidly to careful methods of cultivation. The more yellow areas have the characteristic quality of holding moisture well, but they are not naturally as productive as the areas of redder soil.

Cotton, corn, grass, forage crops, and small grain are commonly grown on this type. The yield per acre of cotton ordinarily ranges from one-half to three-fourths bale, but where well fertilized over a bale to the acre is often secured. Corn yields under ordinary cultivation from 20 to 40 bushels, wheat from 15 to 20 bushels, oats from 20 to 60 bushels, and grass from 1 to 2 tons of hay per acre. Small fruits and garden vegetables are also grown to some extent. Some peaches are produced, but the soil is not so good for peaches as the sandy loam soils.

The Orangeburg clay is best adapted to the staple crops and stock raising, for which purposes it surpasses the other soils of the area. Almost all of it is cleared and under cultivation. Its market value is fully as high as that of any of the other soils, ranging from $10 to $40 per acre, according to location and character of improvements.

The following table of mechanical analyses shows the texture of samples of the soil and subsoil of this soil type:

Mechanical analyses of Orangeburg clay.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
8086	2 miles E. of Fort Valley.	Red loam, 0 to 8 inches.	0.59	1.10	5.18	5.44	36.80	36.16	5.14	9.60
8088	3 miles NW. of Fort Valley.	Red loam, 0 to 4 inches.	1.21	3.20	10.84	7.96	26.56	24.28	9.78	17.00
8089	Subsoil of 8088.....	Red clay, 4 to 36 inches.	.81	1.80	8.20	6.30	19.50	17.90	9.88	36.34
8087	Subsoil of 8086.....	Red clay, 8 to 36 inches.	.33	.70	4.38	4.68	23.48	20.40	7.34	38.72

ORANGEBURG SANDY LOAM.

The Orangeburg sandy loam is a loose gray sandy loam from 8 to 15 inches deep, underlain by a red clay or sandy clay. The surface soil is open, friable, and easy to till.

This soil, which is known locally as "gray land," occurs as flat areas in the upland, or as gently inclined slopes flanking areas of the Orangeburg clay. The surface varies from flat to gently rolling, the latter topography being more common.

By reason of its texture and location the soil has good natural drainage, and only occasionally are open ditches used to carry off surplus water. These are easily constructed, are easily maintained, and do not have to be carried far to reach some natural drainage way.

The Orangeburg sandy loam, like the preceding type, owes its origin to the weathering of the Lafayette sands and clays.

Cotton, corn, grain, forage crops, truck, small fruits, and orchard fruits are successfully grown on this soil. The yield per acre of cotton ranges from about one-fourth to three-fourths bale per acre, of corn from 15 to 40 bushels, of wheat from 15 to 25 bushels, and of oats from 20 to 40 bushels per acre. It will thus be seen that there is not much difference in productivity between this soil and the one last described, although the general opinion is that the sandy loam is not so fertile.

Of all the crops grown on the Orangeburg sandy loam none does better than peaches. The yield, flavor, and general appearance of the fruit is superior to that grown on any of the other soils of the area. For this reason, and because of the ease of cultivation, this soil is in great demand. It is almost all cleared and under cultivation, and is valued at from $10 to $40 an acre.

The following table of mechanical analyses shows the texture of samples of the soil and subsoil of this type:

Mechanical analyses of Orangeburg sandy loam.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
8082	4 miles E. of Fort Valley.	Loose gray sand, 0 to 10 inches.	1.16	1.90	6.90	6.68	27.10	40.40	10.28	6.28
8084	1½ miles NE. of Dennard.	Dark gray sand, 0 to 15 inches.	1.49	.90	5.58	6.12	36.52	34.24	9.76	6.72
8085	Subsoil of 8084.....	Red sandy loam, 15 to 36 inches.	.23	.66	3.70	4.50	33.60	23.20	13.00	21.36
8083	Subsoil of 8082.....	Red sandy clay, 10 to 36 inches.	.31	.52	3.42	4.44	21.86	29.56	9.00	30.58

NORFOLK SANDY LOAM.

The Norfolk sandy loam has much the same physical characteristics as the Orangeburg sandy loam, the principal difference being in the subsoil, which is a yellow clay under the former and a red clay under the latter. The typical section is from 8 to 18 inches of loose gray sandy loam underlain by a yellow clay or sandy clay. Like the Orangeburg sandy loam, it is locally called "gray land," but the difference in value between "gray land" with a red subsoil and that with a yellow is very well known to the farmer.

The Norfolk sandy loam occurs in the upland, sometimes in flat areas, but more often on easy slopes skirting the "red land" areas. Approaching the streams the soil grades into the deep sandy type—Norfolk sand.

By reason of its open texture and slightly uneven surface the type is quite well drained. In the few instances where artificial drainage is necessary this can readily be effected by the use of open ditches.

This soil type has probably been derived from the materials of the Lafayette formation, modified by the surface wash of rain water. In respect of its origin it differs in no particular from the types already described.

As a rule, the local variation in this type is not very great, though the soil becomes heavier in texture as it approaches the Orangeburg clay and more sandy in positions contiguous to the Norfolk sand.

The distinctive characteristic of this type, as compared with the Orangeburg sandy loam, is its yellow clay subsoil. While this material retains moisture and fertilizer well, the yields of crops show that it is not so productive. Still, by the application of fertilizer and with good cultivation this soil can be made quite productive. In considering the question of fertility, the fact that there are two phases of the yellow clay subsoil should not be overlooked. The real yellow or lemon-yellow clay is less productive than the moderately yellow or orange-yellow clay. Indeed, in some instances peach trees seemed to do quite as well on soil having the latter subsoil as on the Orangeburg sandy loam, which has a red clay subsoil. The areas of this soil are nearly all cleared and under cultivation.

Cotton, corn, grain, forage crops, truck, small fruits, and orchard fruits are successfully grown on this soil type. Cotton yields from one-fifth to three-fourths bale, corn from 15 to 40 bushels per acre, and other crops in like proportion. The soil is fairly well adapted to the production of peaches. It is in good demand, but does not have quite so high a valuation as the Orangeburg sandy loam.

The following table of mechanical analyses shows the texture of the soil and subsoil of this type:

Mechanical analyses of Norfolk sandy loam.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
8076	½ mile S. of Myrtle..	Loose gray sand, 0 to 12 inches.	1.35	1.30	5.64	5.94	38.20	32.02	11.84	4.78
8074	2 miles S. of Myrtle.	Loose gray sand, 0 to 10 inches.	1.12	1.40	6.10	7.40	38.78	30.18	10.80	5.06
8077	Subsoil of 8076.....	Yellow clay, 12 to 36 inches.	.33	.26	2.90	3.50	27.50	18.00	25.70	21.88
8075	Subsoil of 8074.....	Yellow clay, 10 to 36 inches.	.85	1.10	4.14	4.90	28.14	15.82	20.14	24.22

NORFOLK SAND.

The Norfolk sand is composed of loose gray or dark-gray sand from 8 to 15 inches in depth, beneath which is usually found a loose yellow or red sand 3 to 10 or more feet in depth.

The type occupies the valley slopes. The surface is frequently steep, but occasional flat or gently inclined areas are found at the confluence of some of the streams. The areas of this type rarely reach back from the valley slope into the more level upland, although in some cases such a position is found. Owing to the open, porous texture and the position of this type the drainage is apt to be excessive, and all of the areas, except those on the flatter slopes near the streams, suffer from drought.

The occurrence of the Norfolk sand mainly along the streams indicates that its origin is probably due largely to stream action. The clay in the material as it originally existed has here been eliminated more thoroughly than in the case of the soils where the wash of rain water has been the sole factor in its removal. There has also been considerable deposition of material brought down by the streams, which accounts for the great depth of the sand in certain locations.

The material of this soil is made up largely of white quartz sand, the soil not being naturally very productive. In areas having a fair admixture of decayed vegetable matter and where the subsoil has a higher proportion of clay the yields are higher. Red clay, although in very small proportions in the subsoil, is said to give a more productive soil than where the included clay is yellow.

As a rule the Norfolk sand type is not desirable for growing the staple crops, being too light and droughty. Still the easy slopes,

where moisture conditions are better, are fairly productive of cotton, corn, grain, and forage crops, and such areas as are cleared are used for these crops. Heavy fertilization is necessary to secure good yields. The soil is typically a truck soil, and its value will depend upon the development of this industry. At present not much attention is given to these crops, although some watermelons are grown in the area. These produce very well, but the marketing of melons at a profit is very uncertain, and in the area surveyed they are not extensively grown for this reason.

The original forest growth on this soil consisted of long-leaf pine and scrub oak, and a great part of the area still retains this covering.

Standing alone, the Norfolk sand has the lowest value of any soil in the area, but associated, as it usually is, with more productive upland types, it brings a fair price.

The following table of mechanical analyses shows the texture of the soil and subsoil of this type:

Mechanical analyses of Norfolk sand.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
8080	¼ mile SW. of Myrtle.	Loose gray sand, 0 to 15 inches.	0.80	1.70	10.40	11.60	42.90	22.72	6.38	4.10
8078	1¼ miles NW. of Myrtle.	Loose gray sand, 0 to 12 inches.	.83	8.00	13.20	9.04	35.10	21.56	7.68	5.10
8079	Subsoil of 8078....	Loose yellow sand, 12 to 36 inches.	.23	7.40	12.64	8.60	34.24	20.50	8.36	7.96
8081	Subsoil of 8080....	Loose sand, 15 to 36 inches.	.31	.94	9.56	9.46	37.06	25.68	5.76	11.10

SELMA CLAY.

The Selma clay is a silty dark-gray clay loam to clay from 6 to 8 inches deep, underlain to a depth of 36 inches or more with a gray silty clay.

The type occurs in the upland in depressions from 2 to 10 feet lower than the surrounding land, usually with rounded outlines, and from one-sixteenth to one-fourth mile in diameter. The surface is flat, and the soil in its natural state is wet and swampy. The general characteristics of the surface suggest the "Savanna" of other areas.

The areas are usually poorly drained, lacking outlets for the water running in from the higher surrounding land. A number of them could be drained by cutting a short open ditch from 3 to 6 feet deep

through the intervening high land into near-by streams, and in some cases this has been done.

The Selma clay has been derived from the clay and silt washed into depressions from the surrounding soils and the accumulation of organic matter common to areas subject to long periods of swampy conditions. As is generally the case with soils formed in this way, the type is very productive, and it needs only drainage to be one of the most productive in the area surveyed.

The staple crops common to the area are grown. Cotton yields from three-fourths to over 1 bale to the acre, corn from 25 to 75 bushels, and the other crops in like proportion.

In its virgin state the type supports a growth of long-leaf pine, bay, and willow, with an undergrowth of cane, coarse grass, and shrubbery. It affords good pasture.

The following table of mechanical analyses shows the texture of the soil and subsoil of this type:

Mechanical analyses of Selma clay.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
8072	3 miles N. of Dennard.	Gray sandy loam, 0 to 12 inches.	1.82	0.14	2.86	3.82	36.46	29.16	17.04	10.04
8070	1 mile SE. of Fort Valley.	Gray clay loam, 0 to 8 inches.	4.02	.16	1.38	1.98	13.18	15.40	30.24	37.60
8073	Subsoil of 8072.....	Gray sandy clay, 12 to 36 inches.	.56	.30	1.90	3.20	30.30	28.28	12.70	23.06
8071	Subsoil of 8070.....	Gray clay, 8 to 36 inches.	.68	.30	2.20	2.80	17.90	17.02	15.24	44.00

MEADOW.

The Meadow, usually consisting of from 6 to 8 inches of dark sandy loam underlain by a rather loose, plastic, sandy subsoil, occurs as low, flat, wet, and poorly drained bottoms along the streams. The areas rarely exceed one-fourth mile in width. The higher lying areas of the type are sometimes drained and used to produce forage crops, which yield very well. If drained a great part of the Meadow would produce good crops of cotton, corn, and sugar cane.

Very little of this soil is cultivated. It is usually covered with a growth of ash, bay, gallberry, alder, willow, and gum, with an undergrowth of shubbery, coarse grass, and cane. It makes an excellent stock range.

AGRICULTURAL CONDITIONS.

During the past fifteen years there have developed in Houston and Macon counties, and especially in those parts covered by the present survey, a very large and important peach industry and other important, though less extensive, special truck and fruit interests. This has had the effect of diversifying the agriculture, has attracted to the area men of special agricultural training, and has brought about the investment of much outside capital and the annual disbursement of large sums for wages and supplies. As a result a degree of prosperity is found much above that of the typical southern agricultural community dependent almost entirely on cotton and corn.

About three out of four of the inhabitants are negroes. These furnish almost all the unskilled labor of the farm and orchard. The wages for such labor range from 50 to 75 cents a day, without board, the usual wage being 50 cents. In picking fruit the rate is 5 or 6 cents per hour.

It is impracticable to give accurate figures showing the size and condition of tenure of the farms of the area surveyed, but the conditions are probably fairly well represented by county and State averages. According to the Twelfth Census, 137.6 acres was the average size of farms in Houston County and 132 acres in Macon County. In the compilation of these figures each tenant's holding was taken as a farm, and as many plantations are divided up into a number of tenant farms, the figures do not represent the average area of land owned by one person, which is much greater. The Fort Valley area has some tracts ranging from 600 to 1,500 acres under one management, but there are a considerable number of smaller farms ranging from 80 to 200 acres. The value of the farm lands varies widely, but there is little in a state of cultivation that can be purchased for less than $10, and the maximum price, except where improved by orchards, is not far from $40 an acre.

A large proportion of the farms are operated by share and money tenants, principally negroes, but the system is slowly being displaced by operation by resident managers. A money rent of from $1 to $4 an acre is usually charged, while where land is worked on shares the landlord usually furnishes the mules and tools and receives from one-third to one-half the crop. The system of credit liens, under the improvident methods of the tenant class, often leaves the tiller of the soil in debt at the end of the season.

The principal agricultural products of the area surveyed are cotton, fruit, corn, sugar cane, and truck. The staple crops have been abundantly and, on the whole, profitably produced since the first settlement of the country, eighty-two years ago. The better soils are very productive and the yields of cotton and other staple crops are above the

average of the upland soils of the South. The value of the cotton crop about equals the value of the fruit crop. The bulk of the cotton crop is produced by the smaller farmers. Many of these also have a few acres in peaches, which, besides supplying the family, often bring in considerable ready money. Trucking and fruit growing on a large scale are, however, of only recent introduction. Of these the peach industry is at present the most important.

The district surveyed is within the area of distribution of a wild peach supposed to have sprung from seed brought to this country by Spanish missionaries. The trees are now found in the forests, and the fruit, which is generally of the clingstone variety, sometimes is of very good flavor. From this wild peach some excellent domesticated varieties have been evolved; the Elberta, which is the kind most largely grown in the area, having been so derived. This peach was originated by Mr. S. H. Rump, who now has an orchard of 800 acres (140,000 trees) near Marshallville, and to its earliness, fine appearance, good flavor, and excellent shipping qualities much of the reputation of Georgia as a producer of peaches is due.

The peaches, other fruit, and the truck crops are grown chiefly for the Northern markets. In 1898, when a full crop was secured, 1,800 carloads, or 1,000,000 ¾-bushel crates, were shipped from Fort Valley alone. Since then partial crops have been profitably harvested. If crops can be obtained in three out of five years the production of peaches is considered very remunerative. In the last five-year period this proportion has been exceeded.

While the beginning of the fruit industry was due to the foresight and enterprise of the residents of the area, the great extension of the industry is the result of investments of outside capital. Fruit growers from Ohio, Illinois, Michigan, New York, Connecticut, and other Western and Northern States have become largely interested, and the orchards have been extended until they include approximately 12,000 acres. This development has taken place chiefly since 1889, and is still going on.

Up to this time the attention of the fruit growers has been given mainly to the production of peaches; yet apples, plums, raspberries, and blackberries are grown to some extent, and there is no doubt that all these will increase in relative importance, as the soils and climate are both favorable. Of these minor fruits, the apple is the least promising. Both this fruit and the pear suffer from blight. The most modern methods of fighting this and other diseases and insect pests are in use in the area.

In the particular discussion of each soil type the special adaptability of the soils to crops has been pointed out, but because of the importance of this subject it seems advisable to give a brief review of the matter here.

The Orangeburg clay, lying as flat, interstream areas in the upland, is a soil of considerable natural productiveness which, by reason of its relatively heavy texture, is better adapted to growing cotton, sugar cane, grain, and forage crops and for stock raising than for peaches or truck crops.

The Orangeburg sandy loam is a friable soil of good depth, underlain by a red clay subsoil, and is particularly well adapted to growing peaches and other fruits. The staple crops also do well, but do not yield quite so heavily as on the Orangeburg clay.

The Norfolk sandy loam is fairly well adapted to peaches and other fruits, as well as to the staple crops, but it is not naturally so productive as the Orangeburg sandy loam.

The Norfolk sand, a deep sand usually occurring in proximity to streams, is a comparatively thin, poor soil. It is not well adapted to the production of staple crops at best, nor to other crops without heavy fertilization. At present it has a low value, but as the section becomes more thickly populated, and the trucking industry is developed, this type will doubtless be quite as valuable as any in the area. It is well adapted to melons, but they are not extensively grown at present.

The Selma clay, occurring as small, pondlike depressions in the level upland stretches, when drained is exceedingly productive of cotton, corn, grain, grass, forage crops, and sugar cane. As a rule, most of these areas are yet in a wild state, rather wet and swampy the year around, and used chiefly as stock ranges.

The Meadow type of this area occurs as low, wet bottom land along many of the streams. Much of it is sandy in texture and contains considerable vegetable mold, and where cultivated excellent yields of sugar cane and forage crops are secured. As a rule the Meadow areas are forested with water-loving trees and thick undergrowth of coarse grass and cane, and are well adapted as stock ranges.

The transportation facilities of the area are exceptionally good. Three railways—the Central of Georgia Railway and the Southern Railway, which connect at Fort Valley, and the Georgia Southern and Florida Railway, which passes through the eastern part of the area—serve the area surveyed. During the fruit-shipping season special trains with refrigerator cars are rushed through to northern markets on fast express time. Provision is made for re-icing cars en route, so that the fruit comes to market after a two to four days' journey quite as fresh as when first loaded on the cars. Between the railroads and the fruit growers there is very close cooperation in the matter of expediting in every possible way the movement of orchard products. Spur tracks are run into the peach orchards in many cases, and the facilities for icing the fruit cars are very good. As many as 100 cars have been iced at Fort Valley in a day. At that place there is an ice

warehouse capable of holding sufficient ice for 700 cars. A plant for manufacturing ice is also established at Fort Valley. Good facilities of this kind also exist at Marshallville.

The dirt roads of the area are as a rule very good for the greater part of the year. They are kept in repair largely by county convict labor.

By reason of the efficient transportation service afforded by the railroads, the market conditions are very good. The activity incident to the fruit industry has also developed a good local market for garden produce, poultry, dairy products, and beef. The cotton factory at Fort Valley consumes some of the cotton grown here, and the fruit-box manufacturing plant affords a market for the long-leaf pine and poplar timber yet remaining in the area, some of which is too short and scrubby for high-grade lumber, but is very good for boxes.

Owing to the very rapid extension of the peach orchards, the question naturally arises as to the possibility of glutting the market. The recent remarkable production of peaches in Texas has also occasioned some concern to the Georgia growers. It costs about a dollar a crate to place peaches in New York City, so that when they sell for $1.50 or more per crate there is a good profit. It has happened that they have sold for less than $1 a crate. Unless larger markets than those now in sight are opened up, such low prices may obtain more often in the future. The opening up of a foreign market or the conversion of the fruit into some less perishable form by canning or otherwise are matters worthy of consideration if the present profits in fruit growing are to be maintained.

Along with the development of the industrial side of the area there has been quite an advance in the educational system. Good schools for both whites and negroes are found in the towns and country. While education in the South a half century ago was mainly for literary accomplishments and polish, that of to-day seems to be more practical. This is particularly true of the area surveyed, where the example of the industrial growth has shown so unmistakably the value of commercial and scientific training as applied to special agricultural pursuits.

There has also been quite an extension of the telephone and the rural free-delivery systems in this area, both of which aid much in social and business intercourse.

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