The surface of Webster county is generally hilly and rolling, especially on the north, where the hills are covered with white sands and red clays over variegated clays and Cretaceous marls in places. Short-leaf pine forms a prominent growth.

The uplands on the west and south of Preston, the county-seat, are quite level, but the many small streams give the entire county a rolling character. Over this southern portion red-clay hills, more or less sandy, form a prominent feature, and ferruginous sandstone, often a hematite, is abundant. Siliceous shell-rock, or buhr-stone, is found in fragments over the country.

Tilled lands embrace 29.7 per cent. of the county area; irreclaimable swamp, 4 per cent. Sixty per cent. of the entire area is reported to be cleared of original timber growth. Cotton has a larger acreage than corn, comprising 39.4 per cent. of tilled land, and averaging 74.9 acres per square mile.

ABSTRACTS FROM THE REPORTS OF JAMES P. WALKER AND JUBILEE SMITH, OF PRESTON.

The lands vary materially in fertility and quality of soil. The hills are mostly coarse sand; the level lands usually have a clay subsoil from 3 to 10 inches under the surface. About three-fourths of the uplands are hilly and sandy, with sandy subsoils; the rest have a clay soil or a clay subsoil under 3 inches of sand. The natural growth of the sandy hills is pine; that of the sandy level lands black-jack and scrub pine. Those lands having a clay subsoil have a growth of pine, oak, and hickory. The clay subsoil hardens somewhat by exposure, but readily intermixes with the surface soil by cultivation, readily absorbing moisture and quite readily yielding it to the influence of the sun. The lands areunder laid by sand and rather soft lime-rock at 4 feet. Tillage is easy and pleasant in any weather, requiring but little exertion.

The chief crops are cotton, corn, wheat, oats, rye, pease, potatoes, sugar-cane, sorghum, and rice. Cotton succeeds best, though all are remunerative with proper cultivation. Cotton usually comprises about three-fourths of the crops, and yields from 600 to 800 pounds per acre in the seed on fresh land; from 1,425 to 1,545 pounds of this make 475 pounds of lint. On land four years under cultivation the yield is from 300 to 500 pounds, the lint being shorter and the fiber not so strong. The plant grows from 2½ to 6 feet high, yields best at 3 feet, and runs to weed on new ground and with continuous rains in the spring. This is prevented and bolling favored by an extensive use of home-made and commercial fertilizers. Hog- and poverty-weeds, crab- and crowfoot-grasses are most troublesome. From one-eighth to one-fourth of the land once under cultivation now lies out, and produces about three-fourths of a crop after a rest of three years. The uplands are much damaged by the washing and gullying of the lands. Before the late civil war efforts were made to check this, but very little since. When horizontalizing was properly executed the damage was successfully checked. The valleys are injured only in localities.

The swamp lands are from 200 to 600 yards wide, and run diagonally through the county. By proper drainage they could be made far more valuable than the uplands.

Cotton to succeed well on sandy land must be planted late, its cold nature in spring tending greatly to kill out the plants. The level or clay subsoil lands may be planted twenty days earlier, with a better prospect of a perfect stand and certainty of a more remunerative yield. Sandy soils usually produce more fruit than clay soils in proportion to size of weed and contingencies of seasons.

As soon as baled cotton is hauled by wagon to Americus.

SCHLEY.

Population: 5,302.—White, 2,229; colored, 3,073.

Area: 180 square miles.—Woodland, all; sand hills, 8 square miles; oak, hickory, and pine uplands, 172 square miles.

Tilled lands: 38,931 acres.—Area planted in cotton, 19,143 acres; in corn, 15,845 acres; in wheat, 1,944 acres; in oats, 1,447 acres; in rye, 444 acres.

Cotton production: 4,945 bales; average cotton product per acre, 0.26 bale, 369 pounds seed-cotton, or 123 pounds cotton lint.

The county of Schley is included almost entirely within the oak, hickory, and pine region. The northern part of the county is hilly and broken, the ridges being covered with deep white sands and red and yellow clays and a heavy growth of long-leaf pine and scrub oak. These extend to within 5 miles of Ellaville. The county then becomes level, with a dark clay loam soil and a hard red ferruginous clay subsoil. This belt, 2 miles wide, crosses the county southeastward into Sumter county. Its growth is red and post oak, short-leaf pine, and hickory. Blue Cretaceous clay marls are found at 50 and 60 feet in wells in this section, and come nearer the surface 5 miles northwest of Ellaville. The country south of Ellaville is slightly rolling, with a dark sandy loam soil and a red and yellow clay subsoil. The growth is long-leaf pine, interspersed with oak and black-jack.

Limestone and siliceous rocks or buhr-stone are found at Quebec on the southwest and under the clays of the hills.

Eastward from Ellaville, the county-seat, the country is rather broken for 7 miles, then becomes rolling, with much red land and ferruginous pebbles. In some places the beds of red sand and pebbles are several feet thick, and are underlaid by a white plastic clay. Long-leaf pine is a prominent growth, and the undergrowth is rather open. Ferruginous sandstone often occurs in fragments on the surface.

A small percentage of the lands of the county are too hilly or swampy for tillage, and 72 per cent. is said to have been cleared. Tilled lands comprise 33.8 per cent. of the county area, and are chiefly in cotton and corn, the acreage of the former being greater and comprising 49.2 per cent. of tilled land, Troup and Putnam counties alone having a greater proportion. Its average per square mile is 106.4 acres, the county thus ranking as thirteenth in the state.

ABSTRACT FROM THE REPORT OF THOMAS F. RAINEY, SR., OF ELLAVILLE.

There are but two extensive varieties of land in the county, viz, dark and red sandy loams. There is very little lowland, some of which has been cleared and produces well, but cotton is subject to rust in excessively wet seasons.

The *red sandy lands* comprise about 75 per cent. of the lands of the county, and have a growth principally of pine, with every description of oak. The soil is a sandy loam 6 inches deep, with a red or yellow sandy clay subsoil, underlaid by coarse gravel of various colors. The land is easy to till in all seasons, is early, warm, and well drained, and is best adapted to cotton, though corn, wheat, oats,

rye, sweet potatoes, and sugar-cane do well. Cotton comprises about half of the crops, yielding from 600 to 1,000 pounds in the seed per acre on fresh land, 1,485 pounds of which make 475 pounds of lint, rating as good middling. On land five years under cultivation the yield is 400 pounds. Cotton grows from 2 to 4 feet high, and runs to weed if shaded or in extreme wet weather. The most troublesome weeds are cockleburs, Spanish needles, and crab-grass. About one-fourth of the land now lies turned out, and when again taken into cultivation produces very well, and if fertilized continues to do so. The uplands are much damaged by the readily washing soils, and the valleys are injured to some extent. Hillside ditching and horizontalizing are practiced with success in checking the damage.

Cotton is hauled to Americus on wagons.

MACON.

Population: 11,675.—White, 4,288; colored, 7,387.

Area: 360 square miles.—Woodland, all; sand hills, 103 square miles; oak, hickory, and pine uplands, 257 square miles.

Tilled lands: 67,593 acres; area planted in cotton, 31,687 acres; in corn, 23,910 acres; in wheat, 2,702 acres; in oats, 4,313 acres; in rye, 284 acres.

Cotton production: 8,334 bales; average cotton product per acre, 0.26 bale, 375 pounds seed-cotton, or 125 pounds cotton lint.

Macon county is divided by Flint river, on whose banks at Montezuma are exposed hard fossiliferous limestones (Tertiary) 5 feet thick, with associated beds of fossil ostreas, underlying a light yellow marl and a bluish clay with concretions. This limestone is also found west of Oglethorpe in the beds of the creeks. On the east of the river there is a high table-land lying parallel with and 200 feet above the river on the north, with a gradual descent southward to Montezuma.

The lands of this table-land have a reddish or mulatto soil, a reddish clay subsoil, and a growth of pine, oak, and hickory.

From the river westward the county is not so high, and the lands are quite level for the most part, becoming undulating on the extreme west, with sandstone on some of the uplands near the Schley county-line.

The soil is usually a white sand, more or less dark, and in places several feet deep, over a red clay. Ferruginous pebble and gravel are plentiful in the soil in many places.

Of the lands of the county 10 per cent. is irreclaimable swamp; 52 per cent. of the remainder is reported to have been cleared. The county is well timbered, especially on the west, long-leaf pine entering largely into the growth.

Tilled lands embrace 29.3 per cent. of the county area, and of these 46.9 per cent. are in cotton, the chief crop, whose average is 88 acres per square mile.

ABSTRACT FROM THE REPORT OF A. J. CHEVES, OF MONTEZUMA.

The lands may be classed as gray land, gray sandy loam, and red stiff clay.

The *red lands* are considered the best for cotton, because in the latter part of July or August a dry spell is apt to put a stop to the bearing of cotton on the gray lands. The latter are, however, much quicker in maturing as well as in fruiting.

The *sandy loam* comprises about 75 per cent. of the lands of the county, and extend east 3 miles, south 18 or 25 miles, the same west, and 3 or 4 miles north. Its depth is 4 inches, and it is underlaid by sand at 1 foot. It is early, cold, and well drained, and is best adapted to cotton. The crops of the county are cotton, corn, pease, potatoes, ground-pease, oats, and chufas. Cotton comprises 65 per cent. of the crops, grows from 2½ to 4 feet high, and runs to weed on fresh land in warm, damp weather unless restrained by fertilizers. The yield on fresh land is 800 pounds of seed-cotton per acre, of which 1,665 pounds make 475 pounds of lint. On land five years in cultivation the yield is 200 pounds, and 1,545 pounds make 475 pounds of lint. Crab-grass is most troublesome.

About 5 per cent. of the lands once cultivated now lies out; when again taken in these lands are as productive as ever, but are exhausted sooner. But little damage is done by the washing of the lands.

As soon as baled, cotton is shipped by railroad to Savannah at $3 50 per bale.

DOOLY.

(See "Lime-sink and wire-grass region".)

SUMTER.

Population: 18,239.—White, 6,050; colored, 12,189.

Area: 520 square miles.—Woodland, all; lime-sink (wire-grass) region, 62 square miles; oak and hickory uplands, 458 square miles.

Tilled lands: 104,664 acres.—Area planted in cotton, 44,190 acres; in corn, 37,495 acres; in wheat, 1,984 acres; in oats, 8,742 acres; in rye, 443 acres.

Cotton production: 11,451 bales; average cotton product per acre, 0.26 bale, 369 pounds seed-cotton, or 123 pounds cotton lint.

Sumter county lies on the west side of Flint river, to which all the streams of the county are tributary. The surface of the country is rolling and broken, especially on the north and west, where the uplands are covered with white sands and underlaid by red clays.

The lands of the county vary greatly in character. In the northeast corner, and extending to Mountain creek, the clayey subsoils are covered with white sand, underlaid by variegated clays. Long-leaf pine and scrub oak is the growth of this section. Southward buhr stone is found, and becomes more and more abundant.

South of the area described, and extending across the county east and west, the gray sandy lands become interspersed with red hills and large areas of red clay lands. The country is high and rolling, underlaid by variegated and plastic clays, and has a growth of pine, with oak and hickory. Open pine lands occasionally occur.

On the west, at the Plains of Dura, the country is very level over a large area. Around Americus, and eastward nearly to Danville, buhr-stone or siliceous shell-rock occurs in quantities, and the fragments are frequently studded with fine quartz crystals. The sands that cover the northern portion of the county are here not so deep, and red clays prevail over this and the southwestern part. Ferruginous gravel and pebbles are abundant.

Five or more miles southeast from Americus changes again occur, and open long-leaf pine growth, wire-grass, and cypress ponds cover an area 5 miles wide, extending into Lee county on the southwest. The surface is flat, the soils sandy and poor, and but little under cultivation. Still to the southeast, and covering the rest of the county, are oak and hickory lands, quite level, underlaid by a very white and soft friable coral limestone, which frequently comes to the surface. (See analysis of soil, page 40.)

At Danville, on the river (east from Americus), there is a bed of white shell marl, with greensand beds 15 or 20 feet thick under 20 feet of red clay. It extends up the river a number of miles, but seems to become more clayey.

The limestone is the same as that at Albany, which shows about 74 per cent. of carbonate of lime. It has been used, pulverized, on a number of farms, and with marked and beneficial results, especially after the first year. The growth on streams where this limestone outcrops is poplar, magnolia, black and sweet gum, white oak, swamp dogwood, cypress, water oak, sweet bay, ironwood, wahoo, ash, sugar-maple, alder, and saw-palmetto.

Tilled lands embrace 31.4 per cent. of the county area; irreclaimable swamp lands 3 per cent; and of the entire county it is thought that 46 per cent. has been cleared. Cotton is the principal crop of the county, averaging 85 acres per square mile, and embracing 42.2 per cent. of tilled land. The county ranks as ninth, or next to Stewart, in its total cotton acreage.

ABSTRACTS FROM THE REPORTS OF S. S. BIRD, M. D., AND C. C. SHEPHARD, OF AMERICUS.

The lands of the county are about equally divided between the red mulatto and the gray soils. The growth of the gray lands is pine; of the red, pine and oak. The soils are from 5 to 10 inches deep; the subsoils usually hard and tough clays. The chief crops are corn, cotton, oats, pease, sweet and Irish potatoes, chufas, ground-pease, rye, and wheat. On good land, and with good culture, all flourish in seasonable years. On the gray lands in wet seasons cotton suffers from rust. Cotton comprises about half the crops, and on fresh lands yields from 400 to 700 or even as much as 1,000 pounds of seed-cotton per acre. On lands ten years under cultivation the yield is about one-half that of fresh lands, and over 1,600 pounds are required for 475 pounds of lint. Cotton grows from 3 to 4 feet high on red land and from 1½ to 2½ feet on gray. The plant runs to weed, when the fly stings the squares and they fall off. Crab-grass is by far the most common and most injurious weed. May-pop vines and coffee-weeds are also troublesome.

From one-tenth to one-fifth of these lands now lies turned out. If allowed to lie out long enough to produce a second growth of pines it yields, on cultivation, almost as well for a few years as when new. Washing and gullying are the most fruitful source of injury to the uplands; the valleys are generally improved by the deposit of fresh soil, and marshes and swamps are frequently so filled up with the soil from adjoining hillsides as to become the very best lands of the county. But little effort is made to check this washing.

As soon as cotton is ginned and baled it is shipped by railroad to Savannah.

LEE.

Population: 10,577.—White, 1,739; colored, 8,838.

Area: 360 square miles.—Woodland, all; lime-sink (wire-grass) region, 101 square miles; oak, hickory, and pine uplands, 259 square miles.

Tilled lands: 99,449 acres.—Area planted in cotton, 35,694 acres; in corn, 24,045 acres; in wheat, 367 acres; in oats, 6,721 acres; in rye, 149 acres.

Cotton production: 9,143 bales; average cotton product per acre, 0.26 bale, 366 pounds seed-cotton, or 122 pounds cotton lint.

The surface of Lee county is for the most part level or undulating, and is timbered with pine, oak, and hickory, with a more or less dense undergrowth. The county is mostly included in the oak, hickory, and pine region, and is drained into Flint river, its eastern boundary.

White limestone and marl (Eocene) underlies the entire county, outcropping along the streams, and often associated with siliceous shell-rock or buhr-stone, whose fragments are also found lying loose on the surface, especially on the northwest.

A cross-section of the county from northwest to the southeast would show first a rather open and level country, in which long-leaf pine predominates, with some undergrowth, and the lands sandy and interspersed with a few red areas—a continuation of the belt south of Americus, in Sumter county. Large cypress swamps and deep beds of white sands occasionally occur. The soil contains ferruginous pebble and gravel. On the south of Adams station, or 5 miles from Starksville, is a belt of open long-leaf pine and wire-grass very level, and having a width of about 2 miles, a continuation also of that of southeast Sumter. Oak and hickory lands then appear, forming a somewhat rolling northeast and southwest belt across the county, with an average width of 3 miles. (See analysis of soil, page 42.) The lands are red sandy clays several feet deep, the underlying limestone coming near the surface and by dissolution from underground streams producing many lime-sinks. When burnt it makes an excellent quality of lime. It is associated with marls, and their application to the lands has proved highly beneficial wherever tried. J. Shep. Green, on Chocky creek, in the northeastern part of the county, reports a great improvement in the soil and a better yield of seed-cotton. The marl or soft limestone contains about 80 per cent. of carbonate of lime (see analyses of similar marls, page 46). Buhr-stone and flint overlie this limestone, and their relative position is well seen at Palmyra, on the southwest. The rest of the county in the southeast of this oak and hickory belt is flat and open, with a tall growth of long-leaf pine, and is interspersed with many ponds. It has a sandy soil, clay subsoils, and limestone at 30 feet. Wire-grass covers the region, and the country is but sparsely settled. The lands of the county are almost entirely tillable, and one-half has been cleared.

The lands of the county under tillage embrace 43.2 per cent. of the area, and are largely planted in cotton, that crop having an average of 99.2 acres and 25.4 bales per square mile, its acreage being 35.9 per cent. of the tilled lands.

Shipments of cotton are made by railroad to Albany, and thence to Savannah or northward to other markets.

TERRELL.

Population: 10,451.—White, 4,268; colored, 6,183.

Area: 320 square miles.—Woodland, all; oak, hickory, and pine lands, all.

Tilled lands: 58,844 acres; area planted in cotton, 25,740 acres; in corn, 21,719 acres; in wheat, 1,928 acres; in oats, 6,210 acres; in rye, 246 acres.

Cotton production: 6,944 bales; average cotton product per acre, 0.27 bale, 384 pounds seed-cotton, or 128 pounds cotton lint.

Terrell county is included entirely in the oak, hickory, and pine region. Its surface is undulating, or rather rolling; its growth, oak, hickory, and long-leaf pine, the latter being very prominent, and in places almost exclusive, with little undergrowth, and giving to the country a very open appearance.

Soft white limestone underlies the county and outcrops in some of the streams, furnishing a valuable stimulant for these lands when properly applied. Buhr-stone or siliceous shell-rock, very flinty in character, occurs in fragments on the surface.

The lands of the county, part clayey and part sandy, are underlaid by red and yellow clays, and contain more or less ferruginous gravel.

The surface is drained southward by numerous streams, also by Kinchafoona creek, the eastern boundary to Flint river. Cypress swamps are abundant in the county.

Tilled lands embrace 28.7 per cent. of the county area, and are chiefly devoted to cotton and corn, the acreage of the former being 43.7 per cent. of the tilled lands, and averaging 80.4 acres per square mile.

Shipments of cotton are by railroad to either Columbus or Macon, though most of the crop is sold from the wagon at Dawson.

RANDOLPH.

Population: 13,341.—White, 5,545; colored, 7,796.

Area: 400 square miles.—Woodland, all; oak, hickory, and pine uplands, all.

Tilled lands: 91,249 acres; area planted in cotton, 34,204 acres; in corn, 27,484 acres; in wheat, 2,790 acres; in oats, 6,770 acres; in rye, 637 acres.

Cotton production: 8,467 bales; average cotton product per acre, 0.25 bale, 354 pounds seed-cotton, or 118 pounds cotton lint.

The surface of Randolph county is generally rolling, and is broken on the north, but more level on the south. The lands of the northern half are partly gray sandy and partly red clayey; the subsoil of each almost entirely a red or yellow clay. Some of the uplands have large level areas, and are largely under cultivation, yielding fair crops of corn and cotton.

A white fossiliferous limestone (Eocene), having occasionally calcite crystals, underlies the section, and several large caves exist on the northwest. Siliceous shell-rock and ferruginous sandstone are abundant on the surface, some of the former being quite large.

The lands near Cuthbert and southward, as well as west for some miles, are much more level. Along some of the creeks on the south there are a better class of red clay soils and subsoils, with a growth of oak, hickory, and pine; but the rest of the uplands are generally sandy, with a prominent growth of long-leaf pine, interspersed with oak and hickory. The lands contain ferruginous pebbles or gravel, and siliceous shell-rocks are found everywhere. A bed of this several feet thick, and containing quite a variety of well-preserved fossils, is found 4 miles south of Cuthbert.

Sixty per cent. of the county area is said to have been cleared of its original timber growth, but only 35.6 per cent. is under cultivation. Eight per cent. is of irreclaimable swamps. The chief crop is cotton, its average being 85.5 acres per square mile, or 37.5 per cent. of tilled lands.

ABSTRACT FROM THE REPORT OF M. A. M'NULTY, OF CUTHBERT.

The lands on the Nochway (on the southeast) are red calcareous clays, with some undulating sandy ridges; on the Pachitta (south) generally red clay, and on the Pataula sandy ridges prevail.

The *red clay lands* of the county, in some places strongly impregnated with lime, are the best cotton lands. They cover about one-half the county area, and have a growth of oak, hickory, and pine. The soil is often a gray sand, 4 inches deep; the subsoil a red clay, impervious when dry, and becoming hard when not disturbed, but good cultivation assimilates it to the surface soil. The land contains ferruginous pebbles, is easily tilled in wet seasons, is early, warm, and well drained, and well adapted, when fresh, to cotton, corn, wheat, oats, sugar-cane, and sweet and Irish potatoes. Cotton comprises one-half the crops, grows 2 feet high, and is prevented from running to weed by the use of marl, which is abundant. Fresh lands produce 800 pounds of seed-cotton per acre; the lint is a fair upland staple. Lands under cultivation five years yield 250 pounds of seed-cotton per acre, of which 1,545 pounds make 475 pounds of lint of inferior quality. Crab-grass and hog-weed are most troublesome. One-half of the lands once cultivated now lies turned out, and when these lands are again taken in they produce well for two or three years. The valleys are ruined and uplands seriously damaged by the washing and gullying of these lands, and no efforts have been made to check it.

The *sandy lands*, comprising one-third of the area, extend diagonally across the county, and have a growth of pines. The soil is of a dark gray and fine sandy character, 10 inches deep, with an impervious red clay or sandy subsoil. The lands are late, cold, well drained, and are best adapted to cotton, which comprises two-thirds of the crops. Fresh lands yield 800 pounds of seed-cotton per acre; lands cultivated five years yield only 200 pounds, and 1,665 pounds are required for 475 pounds of lint. These lands also wash as readily as the clay soils, and as much damage is done.

There is a class of putty-like land occurring in spots on worn-out hillsides that is utterly unproductive, and which ruins bottom lands by washing.

As soon as cotton is ginned and baled it is shipped by railroad to Savannah at $3 50 per bale.

QUITMAN.

Population: 4,392.—White, 1,773; colored, 2,619.
Area: 160 square miles.—Woodland, all; oak, hickory, and pine uplands, all.
Tilled lands: 25,584 acres.—Area planted in cotton, 11,815 acres; in corn, 7,596 acres; in wheat, 560 acres; in oats, 2,202 acres; in rye, 29 acres.
Cotton production: 3,163 bales; average cotton product per acre, 0.27 bale, 381 pounds seed-cotton, or 127 pounds cotton lint.

The small county of Quitman lies on the Chattahoochee river, to which all of its streams are tributary. The surface of the country is hilly and broken, and its hills are covered with red clays and white sands. The former, occurring principally in the eastern and southern part of the county, are the continuation of those of the adjoining counties of Stewart and Randolph. Along the river at a number of points are level valley lands, a mile or more wide, having a dark sandy loam soil. The bluffs of the river are from 25 to 50 feet high, and in them, under a heavy bed of clay, is exposed the blue micaceous clay marls full of very well-preserved Cretaceous fossils (Ripley group). These marls are found also in the beds of the small streams that empty into the river. The most easterly outcrop is in a railroad cut on the upland at Hatchie station. A fossiliferous limestone forms thin layers in these river bluffs.

The sandy hills cover the largest part of the county, and have a prominent growth of pine. The red lands have a timber growth of oak and hickory; the bottoms, oak, hickory, and cottonwood. Ferruginous sandstone and pebbles are abundant on many of the hills.

Sixty-four per cent. of the lands of the county are said to have been cleared, but only 25 per cent. are under tillage. Cotton, the chief crop, has an average of 73.8 acres per square mile, or 46.2 per cent. of the lands are under cultivation.

The marls of the county are not very rich. An analysis of a sample from Hatchie station shows the presence of not more than 14 per cent. of carbonate of lime, the rest being chiefly sand and clay.

ABSTRACT FROM THE REPORT OF A. OGLETREE, OF GEORGETOWN.

The lands of the county may be classed as gray, red or stiff, and alluvial.

The *coarse gray sandy soils* comprise two-thirds of the lands of the county. They are from 4 to 8 inches deep, with a subsoil of similar character, and are best adapted to cotton and oats. Cotton grows 2½ feet high, the larger the better, and yields from 500 to 600 pounds in the seed per acre on fresh lands, 1,485 pounds making 475 pounds of lint. After a few years' cultivation the yield is about 300 pounds, and the same amount is needed for a bale of lint. Weeds are not troublesome, but crab-grass is a constant trouble. Of the lands once under cultivation about 10 per cent. now lies turned out. The productiveness when again taken in depends upon the length of time it has rested; if long enough, it yields as well as new. These lands are injured by washing and gullying, and the valleys are somewhat damaged. But little effort is made to check it.

The *red and stiff lands* have also a stiff clay subsoil and a growth of oak and hickory.

From September to January cotton is shipped by railroad to Savannah.

CLAY.

Population: 6,650.—White, 2,798; colored, 3,852.
Area: 200 square miles.—Woodland, all; oak, hickory, and pine uplands, all.
Tilled lands: 53,952 acres.—Area planted in cotton, 21,539 acres; in corn, 14,898 acres; in wheat, 156 acres; in oats, 2,844 acres; in rye 29 acres.
Cotton production: 4,576 bales; average cotton product per acre, 0.21 bale, 303 pounds seed-cotton, or 101 pounds cotton lint.

The small county of Clay is separated from Alabama by the Chattahoochee river, which is here very wide, and is lined with high bluffs along nearly the whole length. The county is included in the oak, hickory, and pine and red hills regions. Its surface is hilly and broken along the river, but more level on the east.

On the extreme north the hills are covered with dark sands, underlaid by yellow or variegated clays. Ferruginous sandstone and iron ores are abundant on some of the hills, giving their soils a yellow or red color. The river valley here is wide, level, and some 25 or 30 feet above the river, and is generally under cultivation.

In the bluffs of this section of the river north of Pataula creek, and in those of the creek itself for a short distance, are blue micaceous fossiliferous clay marls (Cretaceous) with ledges of limestone. These are well exposed at the "Narrows", a beautiful waterfall over one of these rocky ledges into the soft marl bed below. These blue marls a short distance below the mouth of the creek disappear below the water's surface, and are replaced or covered in the bluffs by white marls and limestones (Tertiary). An analysis made of the Pataula creek marl shows but about 8 per cent. of carbonate of lime, the rest of the ingredients being chiefly sand and clay. (See page 45.)

Southward from the creek the country is slightly rolling, and a few lime-sinks occasionally occur. The limestone underlying the land shows in the river an outcrop of at least 20 feet, and is hard and massive. It also dips under the water, and is covered in turn by a white friable marl (Claiborne), which still southward forms high bluffs, extending into the Early county section of the river.

Fort Gaines is situated on a bluff about 125 feet above the river. (See page 14.) The white marl here rises 15 feet above the water, and is covered by about 60 feet of alternate strata of blue fossiliferous clays and blue marls, and on top of this 50 feet of a reddish clay loam. These blue shelly clays have been used with advantage on the sandy lands of the Alabama side of the river, but are not as rich as the white friable marls and limestone below them, which contain over 80 per cent. of carbonate of lime.

On the bluffs large fragments of silicified wood are frequently found, and silicified shells and shell-rock occur in the southern red hills of the county.

The growth of the river uplands is pine, red oak, hickory, and black-jack.

The eastern part of the county is rather open and undulating, and has a growth chiefly of pine and a sandy soil, with ferruginous pebbles and fragments of silicified shell-rock. (See analysis of soil, page 40.)

All of the lands of the county are considered tillable, and 42.2 per cent. are under cultivation, chiefly in cotton and corn. The former embraces 39.9 per cent., and averages 107.7 acres per square mile, the county in this regard ranking as eleventh in the state. The average product per acre is very low, there being but eight counties having a less average. Negroes are here, as elsewhere in the region, the chief cotton producers.

ABSTRACT FROM THE REPORT OF F. K. FREEMAN, OF FORT GAINES.

The lowlands are not preferred for cotton, though they seem to produce more fruit to the plant. The uplands vary from gray and light to dark-gray sandy soils, with red clays in an easterly direction. The *gray sandy lands* prevail, with clay on the ridges and eastern slopes, after going half a mile east from the river. They comprise five-sixths of the county area; have a growth of yellow pine, cedar, and black-jack, a sandy, gravelly loam soil, 6 inches deep, and a red or light-yellow clay subsoil.

The crops of the county are corn, oats, sweet potatoes, and cotton. Cotton on fresh land yields 1,000 pounds per acre, and after six years' cultivation 800 pounds of seed-cotton, 1,485 pounds of which in each case make 475 pounds of lint. The plant grows 3 feet high, and runs to weed on bottom lands unless restrained by fertilizers. The most troublesome weeds are coffee-weed, cocklebur, and crab-grass. Very little land once cultivated now lies out, for, by the application of manures, they produce finely. Serious damage is done by the washing of the soils, and the valleys are injured very materially. Only feeble attempts are made to check the damage, but the results are satisfactory.

In October, November, and December cotton is shipped, by railroad and by river, to Savannah, Columbus, and New York, the rates being 50 cents per bale to Columbus and 50 cents per 100 pounds to Savannah.

CALHOUN.

Population: 7,024.—White, 2,354; colored, 4,670.

Area: 280 square miles.—Woodland, all; lime-sink (wire-grass) region, 3 square miles; oak, hickory, and pine uplands, 277 square miles.

Tilled lands: 57,804 acres.—Area planted in cotton, 24,429 acres; in corn, 19,642 acres; in wheat, 198 acres; in oats, 5,526 acres; in rye, 12 acres.

Cotton production: 4,670 bales; average cotton product per acre, 0.19 bale, 273 pounds seed-cotton, or 91 pounds cotton lint.

Calhoun county is well timbered, and is watered by the Chickasawhatchie and Ichawaynochaway creeks and their tributaries. The surface of the country is undulating or slightly rolling, and the lands are varied. On the north are the "oak and hickory lands", or yellow loam and red clay lands, with long-leaf pine. Southward the latter growth becomes more and more abundant, the country more open, and lime-sinks occur frequently.

On the extreme south wire grass and very open long-leaf pine areas extend into the county from the south.

A white and soft limestone underlies the entire county, through which underground streams have cut their passage, appearing frequently for short distances and as suddenly disappearing.

Buhr-stone or siliceous shell-rock and flint are found in fragments all over the county. Swamps are numerous, and those considered as irreclaimable comprise 5 per cent. of the area of the county.

The crops embrace corn, cotton, oats, sugar-cane, rice, peanuts, and chufas. Lands under tillage comprise 32.3 per cent. of the total area, and of these 42.3 per cent. are in cotton, the chief crop. The average of cotton acreage is 87.2 acres per square mile. In product per acre the county is very low, ranking only above Baker, Mitchell, and Glynn counties. The negro population here is about double that of the whites, while as laborers the proportion is far greater.

ABSTRACT FROM THE REPORT OF W. A. BECKCOM, OF ARLINGTON.

But a small quantity of lowland is cultivated in this county. The cotton lands may be classed as gray sandy uplands, red stiff uplands, and black sandy loam or hummock, the last being considered the best for cotton.

The *gray sandy lands* comprise two-thirds of the area of the county, and have a growth chiefly of pine, with some few oaks. The soil is about 5 inches deep, with a yellow, then red clay subsoil. It contains much soft, rounded, black ferruginous gravel. The land is best adapted to cotton and oats, but corn, sugar-cane, rice, ground-pease, and chufas are produced. Cotton comprises about one-half the crops, grows to a height of 4 feet, and yields about 1,000 pounds of seed-cotton per acre when fresh. The stalk runs to weed on fresh and rich land and when planted too close. To prevent this it is thinned when young and fertilizers are applied. After a few years' cultivation the yield is diminished to 300 or 500 pounds of seed-cotton per acre; 1,545 pounds make 475 pounds of lint from both fresh and old lands, but the staple on the latter is not as long as from the other. Coffee-weeds and cocklebur are most troublesome. One-third of the lands once under cultivation now lies out. When again taken into cultivation and fertilized it makes better cotton than any other land. But little damage is done to uplands or valleys by the washing of the soils. The lowlands, when well drained, are the best.

Shipments of cotton are made by railroad to Savannah at 80 cents, and to New York at $1 45 per bale.

DOUGHERTY.

Population: 12,622.—White, 1,952; colored, 10,670.

Area: 340 square miles.—Woodland, all; lime-sink (wire-grass) region, 194 square miles; oak, hickory, and pine uplands, 146 square miles.

Tilled lands: 85,885 acres.—Area planted in cotton, 40,996 acres; in corn, 23,263 acres; in wheat, 116 acres; in oats, 6,052 acres; in rye, 19 acres.

Cotton production: 9,736 bales; average cotton product per acre, 0.24 bale, 339 pounds seed-cotton, or 113 pounds cotton lint.

Dougherty county is divided into two equal portions by Flint river, and is bounded on the west by Chickasawhatchie creek. It is a rolling country, lying partly in the wire-grass and partly in the oak and hickory region, and is entirely underlaid by white limestone, outcrops of which occur in the streams and also furnish large springs. Blue spring, south of Albany, the largest of these, has a depth of 25 or 30 feet, and the water is very clear, allowing small objects to be distinctly seen at the bottom. The limestone forms the walls of the spring.

Buhrstone is also abundant, occurring often in large masses. Its position is above the limestone, as shown at the mouth of Fowltown creek north of Albany, where it shows a thickness of 10 feet. Lime-sinks occur frequently in various parts of the county.

The wire-grass region, or its lime-sink division, covers all of the country from the north county-line westward 2 miles beyond Albany, and thence southward to about the corner of the county. Long-leaf pine is almost the only growth on the uplands, the surface of the county being very open, and covered with wire-grass, interspersed with cypress ponds. The lands are sandy, with clayey subsoils, and are rather sparsely settled away from the river and from Albany. The rest of the county on the west of this region is of the yellow loam and red clay uplands character. The region begins 2 miles west of Albany, has a growth of oak and hickory, with much long-leaf pine, and a better character of lands than on the east; red clay lands predominate, though they have often a thin covering of sand.

The irreclaimable swamps of the county comprise 10 per cent. of its area; of the rest, 75 per cent. has probably been cleared.

Tilled lands embrace 39.5 per cent. of the total area, and of these 47.7 per cent. are in cotton. Dougherty is one of the chief cotton counties of the state in the average acreage of that crop (120.6 acres) per square mile, the county ranking as fifth. Its low product per acre, however, brings the number of bales per square mile (28.6) also very low.

ABSTRACT FROM THE REPORT OF MESSRS. WELCH AND BACON, OF ALBANY.

The lands of the county are classed as light sandy loam and red mulatto.

The *light sandy soil* comprises three-fourths of the county, and extends from 15 to 50 miles east and only a few miles west of Albany. The growth is pine. The soil has a depth of 7 inches, with mostly a sandy hard clay subsoil. Limestone underlies it at from 15 to 20 feet. The soil is easily tilled at all seasons, and is early, warm, and well drained by underground lime-sinks and streams. The crops of the county are cotton, corn, oats, sugar-cane, sweet potatoes, pease, and upland rice. Cotton, to which the lands are best adapted, comprises five-eighths of the crops, and grows 3 feet high, runs to weed in wet seasons unless topped, is troubled most with grass, and yields on fresh land about 800 pounds of seed-cotton per acre, 1,600 pounds making 475 pounds of lint rating as low middling. On land five years in cultivation the yield is 500 pounds, the lint rating as strict ordinary. About 25 per cent. of these lands now lie turned out, and improve by two or three years rest. The lands do not wash.

The *red mulatto clay lands*, comprising one-fourth of the county area, extend 15 or 20 miles west of Albany, and have a growth of oak and hickory. The soil is 8 inches deep, with a heavy impervious red-clay subsoil; it is early, warm, but ill drained, and easy to till, and is best adapted to cotton and corn. Cotton comprises five-eighths of the crops, grows 3 feet high, and yields 1,000 pounds of seed-cotton per acre on fresh land; it rates as low middling. On land ten years in cultivation the yield is 700 pounds, and the staple is strict good ordinary. About 10 per cent. of this land lies turned out. It produces better by rest and washes but little. Gullying is easily prevented by horizontalizing.

Between the months of September and February cotton is shipped by rail to Savannah at about $3 per bale.

BAKER.

(See "Lime-sink and wire-grass region".)

EARLY.

Population: 7,611.—White, 3,015; colored, 4,596.

Area: 510 square miles.—Woodland, all; oak, hickory, and pine uplands, 307 square miles; lime-sink (wire-grass) region, 203 square miles.

Tilled lands: 42,276 acres; area planted in cotton, 20,552 acres; in corn, 17,624 acres; in wheat, 39 acres; in oats, 4,750 acres.

Cotton production: 4,270 bales; average cotton product per acre, 0.21 bale, 297 pounds seed-cotton, or 99 pounds cotton lint.

Early county is separated from Alabama on the west by the Chattahoochee river. The surface of the country is rolling on the north, but becomes more level southward to the wire-grass region. The county is underlaid by limestone, and lime-sinks occur frequently. The rock outcrops in the banks of the river as far south as Columbia, and also in the various streams west of Blakely. Large masses of flint and siliceous shell-rocks are scattered over the entire county, but are most abundant in the southern portion.

The red clay lands extend for a mile or two into Early, on the northwest, near the river. South to Blakely, and 4 miles beyond, the yellow-loam lands prevail. The soil is sandy, with a yellowish clayey subsoil; growth, chiefly pine, with some oak and hickory. Cypress ponds are interspersed throughout. The limit of this yellow-loam region extends from 5 miles south of Arlington to 4 miles south of Blakely, and on to a few miles south of Columbia, on the Alabama side of the river. The growth of the entire country is very open.

The lower part of the county is covered with wire-grass and long-leaf pine, interspersed with a "blue-jack" undergrowth, the surface level, and the roads hard.

The swamps and lowlands of the county comprise a large proportion of the area, those irreclaimable being 5 per cent. of the surface.

The country is sparsely settled (15 persons per square mile) and well timbered. Thirteen per cent. only of its area is under cultivation, and but 20 per cent. in all is said to have been cleared, thus leaving 80 per cent. of the original growth still standing. Cotton and corn are the chief crops, the former embracing 48.6 per cent of the tilled lands, placing the county as fifth in the state in this regard.

The cotton average is 40.3 acres per square mile, and its product per acre is the same as that of Clay, Miller, and Morgan, and only above five other counties of the state.

ABSTRACTS FROM THE REPORTS OF J. B. MULLIGAN AND DENNIS M. WADE, OF BLAKELY.

The lands of the county are generally level, but sometimes rolling, and are classed as gray, red or stiff, and lowland.

The *gray sandy lands* comprise fully two-thirds of the lands of the county, and the soil is 5 inches deep, with a subsoil of red stiff or soft yellow clay. These lands are easy to cultivate in all seasons, are early and well drained, and have a growth mostly of pine and wire-grass. The crops of the county are corn, cotton, oats, sweet potatoes, ground-pease, chufas, rice, and sugar-cane. Cotton comprises one-half the crops, grows 2½ feet high, and runs to weed on fresh land in wet seasons unless restrained by a liberal use of fertilizers. Fresh lands yield 500 pounds of seed-cotton per acre. After cultivation of fifteen years the yield is 300 pounds, and the lint is generally shorter. Crab-grass is most troublesome. One-third of the land now lies turned out, and after resting it produces better than originally. It washes readily, but no damage is done.

The *red or stiff lands*, comprising two-ninths of the county area, have a growth of beech, hickory, oaks of all kinds, magnolia, cedar, poplar, etc. The soil is 6 inches deep, with a subsoil more or less hard, as indicated by the growth. It is early and well drained, and is best adapted to corn and wheat. Cotton comprises one-third of the crops, grows 3 feet high, and yields 600 pounds of seed-cotton on fresh land and 300 on land fifteen years under cultivation. Crab-grass is most troublesome. One-fourth of the land lies turned out, which produces as well when again cultivated.

The *swamp and river bottoms* comprise one-ninth of the lands of the county. These have a gum and cypress growth, a fine sandy soil from 18 to 36 inches deep, and when ditched are best adapted to corn. One-fourth is planted in cotton. The plant grows from 4 to 6 feet high, and yields 1,000 pounds of seed-cotton per acre when fresh and after fifteen years' cultivation. One-fourth of the land now lies turned out, which produces as well as ever when again taken in.

Cotton is shipped, as soon as ready, by railroad and by river to Columbus and to Savannah.

SOUTHERN OAK, HICKORY, AND PINE UPLANDS.

(Embraces parts of the counties of Decatur, Thomas, and Brooks.)

DECATUR.

Population: 19,072.—White, 8,889; colored, 10,183.

Area: 1,160 square miles.—Woodland, all; lime-sink (wire-grass) region, 833 square miles; southern oak uplands, 327 square miles.

Tilled lands: 79,219 acres; area planted in cotton, 29,509 acres; in corn, 30,847 acres; in wheat, 22 acres; in oats, 9,282 acres; in rye, 6 acres.

Cotton production: 6,396 bales; average cotton product per acre, 0.22 bale, 309 pounds seed-cotton, or 103 pounds cotton lint.

Decatur is the most southwesterly county of the state and also one of the largest. Chattahoochee river separates it from Florida on the west, while Flint river, after flowing in a southeasterly course across the county, unites with the former river, the point of junction being the western terminus of the southern boundary-line of the state.

The county is well timbered, mostly with a tall growth of long-leaf pine. Limestone underlies the entire country, outcropping in many places, and showing its presence in others by lime-sinks. The most noted of the latter is on the northeast. It has a depth of 105 feet, with a diameter of about 50 yards, the soft white limestone being exposed all the way down. A stream of water falls into it from the surface and disappears. A large cave has also been formed in the side of this sink, and a number of what are termed "blowing caves" occur in this section. Spring creek, on the western side of the county, derives its name from the large number of springs that supply the water. These springs come up through the limestone, frequently cover large areas, and are very deep.

The agricultural regions represented in this county are the wire-grass (lime-sink division) and southern oak, hickory, and pine uplands. The former covers the northern part of the county, extends 7 miles south of Bainbridge, and includes two classes of lands, designated, by the character of their subsoils, as clay lands and sandy lands. The clay lands cover the eastern half of that portion of the county lying between the Flint river and the Thomas county-line, and extend southward to the railroad. Another area is on the west of Spring creek, reaching half way to the Chattahoochee river. Clay underlies it at depths of 4 to 24 inches. The soil is sandy, and covered with wire-grass in abundance, and the country is very open and undulating. The sandy lands of this upper section lie on each side of Flint river for many miles, and also along the Chattahoochee on the northwest. They are very level and open, and are interspersed with a few lime-sinks and cypress ponds. The hummock lands are extensive and productive, though not durable. (See analysis, page 43.)

Siliceous shell-rock is found in abundance along the river banks and in fragments on the upland. The rock, on decomposition, forms a light white or reddish powder. Limestone (Vicksburg) underlies it at Bainbridge.

Live-oak trees form the chief growth around this town, and southward 7 miles to the hills there is much oak undergrowth.

The oak, hickory, and pine uplands occupy a high ridge across the county from near Fowltown, on the Chattahoochee river, southward to the mouth of Spring creek, thence up Flint river to 7 miles south of Bainbridge, and turning east and northeastward to and beyond Climax, 9 miles east of Bainbridge, into Thomas county. The elevation of this ridge is 315 feet above the sea, 130 above the river, or 75 above the pine lands, and is rather abrupt on the north.

In the northern part of this southern region red clays form a portion of the lands. To the south the country becomes more sandy and broken, and long-leaf pine forms a very prominent growth. The soil is rather thin, over a red or yellow clay subsoil and a pipe-clay. Limestone containing some calc-spar also underlies this, outcropping in the banks of the streams. At the foot of the ridge, and apparently underlying this limestone, is found the siliceous shell-rock of the wire-grass counties.

The following abstracts give the features and productiveness of these various lands. Outside of the town of Bainbridge, the county is but thinly settled.

One per cent. of the lands is irreclaimable swamp; 10.7 per cent. is under cultivation. Of these tilled lands 37.3 per cent. is in cotton, which has an average of 25.4 acres per square mile. The average product per acre is very low, the county ranking above but nine counties of the state in this regard.

ABSTRACT FROM THE REPORT OF JOHN E. DICKENSON, OF BAINBRIDGE.

The cotton lands of the county are the pine lands, river lands, creek hummock lands, and what are generally known as *clay lands*. Beginning on the northern portion of the eastern side of the county, these lands extend westward some 12 or 14 miles, running entirely across the county north and south. About half way down this line, 18 miles from the northeast corner, the lands widen rapidly until they reach the river, and extend down its banks to the lower edge of the county. Inside of this boundary-line there are spots here and there that are sandy, with clay from 4 to 12 inches under the surface. West of Spring creek, between Flint and Chattahoochee rivers, there is a strip from 5 to 8 miles wide across the county. Here the subsoil of clay is from 12 to 24 inches below the surface. Much the larger portion of these clay lands has a pine growth.

The *pine lands*, with their fine sandy soils from 3 to 5 inches deep, cover four-fifths or nine-tenths of the county, and have a long-leaf pine growth. The subsoil is generally lighter than the soil. The crops of the county are cotton, corn, oats, pease, potatoes, and sugar-cane. These lands are easy to till, early, warm, well drained, and best adapted to oats, though one-half of the plowed or hoed crops is of cotton. The yield in seed-cotton on land four years under cultivation is from 600 to 800 pounds per acre, 1,665 pounds of which make 475 pounds of lint. Cotton grows from 2½ to 4 feet high, and runs to weed on fresh land in very wet seasons. Crab-grass is most troublesome.

The *creek and hummock lands* have a growth of oak, hickory, ash, magnolia, poplar, and various undergrowth. The soil is a fine sandy loam from white to yellow and mahogany in color, and has a depth of 6 inches, with a clay subsoil. These lands are not as durable as the bottoms. The fresh lands are good for tobacco and afterward for any other crop. This land is easy to till, late, cold, and ill drained. Cotton comprises one-half the crops, and grows to a height of 5 or 6 feet, producing from 1,000 to 1,200 pounds of seed-cotton per acre. Very little of this land lies out. It is injured in some places by washing, which can be prevented by horizontalizing and hillside ditching.

The *river bottoms* cover but a small proportion of the county in a narrow strip bordering the rivers. The timber is oak, hickory, walnut, magnolia, dogwood, and a great variety of smaller growth. The soil is a dark and fine loam, 1 foot or 2 feet in depth, underlaid by a clay. It is early, cold, and ill drained, and good for any crop. Cotton comprises one-half the crops, and grows from 6 to 7 feet high, producing from 1,200 to 1,800 pounds in the seed for a number of years; 1,545 pounds are required for 475 pounds of lint. Cockleburs and morning-glory vines are most troublesome. None of the land lies turned out.

Cotton on all wet lands is late and subject to rust, and is apt to shed its leaves and fruit.

Planters sell their cotton to local merchants, and it is then shipped to Savannah by railroad at 75 cents per 100 pounds.

THOMAS.

Population: 20,597.—White, 8,384; colored, 12,213.

Area: 780 square miles.—Woodland, all; lime-sink (wire-grass) region, 312 square miles; southern oak, hickory, and pine uplands, 468 square miles.

Tilled lands: 89,760 acres.—Area planted in cotton, 35,895 acres; in corn, 35,839 acres; in wheat, 34 acres; in oats, 18,281 acres; in rye, 19 acres.

Cotton production: 8,773 bales; average cotton product per acre, 0.24 bale, 348 pounds seed-cotton, or 116 pounds cotton lint.

Thomas county is well timbered with a tall growth of long-leaf pine on the uplands and magnolia, bay, oak, and hickory along the creeks and Ocklockony river. Limestone underlies the entire county, outcropping in numerous places, and producing lime-sinks over the northern portion.

Along the Florida line the country is rolling, and the ridges are covered with ferruginous gravel. The soil is a red sandy clay from 4 to 5 feet deep, with underlying light or variegated-colored joint-clay. The growth is chiefly pine, with gum and white oak and a small undergrowth of gum. The siliceous shell-rocks peculiar to the lime-sink region are found in wells 40 feet from the surface.

Northward to Thomasville the pine becomes more exclusive and larger, and black-jack becomes a prominent feature to within 3 miles of town, the lands being sandy and filled with ferruginous gravel or bog ore. (See analysis, page 43.)

North from Thomasville, and also eastward, are the comparatively level lands of the wire-grass region, with its clay subsoils, long-leaf pine growth, "lime-sink" depressions, and buhr-stone or siliceous shell-rock fragments. The position of the latter with regard to the limestone is there shown. On the river 4 miles north of Thomasville limestone, 12 feet thick, is exposed in the banks, while on the surface the flinty shell-rocks form a solid stratum some 4 feet thick. Of the county area 2 per cent. is irreclaimable swamp; 18 per cent. is under cultivation in cotton and corn, with a slight difference in acreage in favor of the former crop. Cotton has an average of 46 acres per square mile. The product per acre is low. It is thought that 33 per cent. of the lands suitable for tillage have, from time to time, been cleared of their original timber growth.

ABSTRACTS FROM THE REPORTS OF R. H. HARDAWAY, OF THOMASVILLE, AND JAMES H. HAYES, OF CAIRO.

Good uplands are much preferred for cotton, because of the certainty of making a crop. On the lowlands cotton matures later, and is liable to overflow and also to the boll-worm. The lands may be classed as gray loam, black loam, and chocolate lands, all with impervious red-clay subsoils.

The *gray sandy and gravelly lands* comprise two-thirds of the county, and have a growth of yellow pine, with hickory, oak, ash, cherry, maple, magnolia, cedar, and red bay. The soil has a depth of from 12 to 15 inches, is easy to till in wet or dry seasons, and early, warm, and well drained (being a hilly country). The crops are cotton, corn, rice, sugar-cane, potatoes, oats, wheat, fruits, and melons. The gray lands are best adapted to small grain and cotton. The latter comprises one-half the crops, and yields on fresh land 600 pounds in the seed per acre, the lint rating as middling. After five years' cultivation the yield is from 300 to 400 pounds, and the lint is not so soft, silky, or long. Cotton grows from 2 to 7 feet high, but is most productive at 3 or 4 feet, and runs to weed with too heavy manuring and too much rain. Light manuring, early planting, and topping prevent this tendency and favor bolling. Cockleburs, coffee-weeds, crab-grass, or crowfoot are most troublesome. One-third of the land now lies out, and when again taken is almost equal to the virgin soil. It washes readily, but does no serious damage if properly ditched. On the west of the county the damage is serious, and the valleys are also much injured, though some effort has been made to check it.

Cotton is shipped from Thomasville by railroad to Savannah at $3 50 per bale.

BROOKS.

Population: 11,727.—White, 5,670; colored, 6,057.

Area: 530 square miles.—Woodland, all; lime-sink (wire-grass) region, 293 square miles; southern oak, hickory, and pine uplands, 237 square miles.

Tilled lands: 75,962 acres.—Area planted in cotton, 21,255 acres; in corn, 23,027 acres; in wheat, 46 acres; in oats, 14,087 acres; in rye, 161 acres.

Cotton production: 6,288 bales; average cotton product per acre, 0.30 bale, 423 pounds seed-cotton, or 141 pounds cotton lint.

Brooks county lies on the Florida line, is well timbered with long-leaf pine, oak, and hickory, and is, with the exception of the northeastern corner and a strip of land on the north, included in the oak, hickory, and pine region of the southwest and Florida. Little and Withlacoochee rivers and Ocopilco creek are the chief streams, all uniting on the east.

The oak and hickory region comprises the best lands of the county. Along Mule creek, some 15 or 20 miles north of Quitman, the country is broken, the hills being some 50 feet or more above the streams and covered with a hard light-red clay soil containing ferruginous gravel. The growth of these hills is red, white, and post oak, hickory, and a scrub-oak undergrowth. The subsoil is a yellowish clay, with some 30 feet of a "calico" or spotted underclay. (See analysis of soil from Ocopilco, page 43.)

These hills give way to pine and level lands 8 miles north of Quitman, which extend southward for some distance. Three miles north of Quitman there is a fall of some 50 feet to a flat, on which cypress ponds are very abundant; but southward to the Florida line the county again becomes rolling, with open long-leaf pine growth, some oak and hickory, and a little wire-grass. Cypress ponds are also numerous, and their white sand beds are covered with a muck deposit of several inches. Ferns grow luxuriantly on these lowlands. The lands of this section have a sandy soil with a yellow-clay subsoil. Limestone (Vicksburg) underlies the region, appearing only on the east of Quitman, at Blue or Mineral spring. Here, through a lime-sink, the clear water from an underground stream has found its way upward through the rock, and flows off in a regular channel into the river, affording 6,000 gallons per minute.

The wire-grass region of the northern part of the county is of the better class, or lime-sink division. The soil is sandy, with a clay subsoil, the country somewhat rolling, especially near the oak and hickory region, and the growth is almost exclusively long-leaf pine. Cypress ponds occur occasionally. The sand flats and lowlands are covered with a dense growth of saw-palmetto. Of the county area 10 per cent. is probably irreclaimable swamp land; 22.4 per cent. is under cultivation, though 37 per cent. is thought to have been cleared of its original growth. Corn is here the chief crop, its average being 43.4 acres, and that of cotton 40.1 acres per square mile.

ABSTRACT FROM THE REPORT OF R. I. DENMARK, OF QUITMAN.

The soils cultivated in cotton are the red clay, gray and sandy hummock, and pine soils.

The chief soil, commonly designated as *red clay soil*, is a gray soil with a red clay subsoil, and covers about 30 per cent. of the county, extending about 15 miles north, 30 south, 10 east, and 150 miles west. Its natural timber is red, white, and post oaks, hickory, and other hard-wood trees. This soil varies from a fine sandy to a gravelly loam, and in color from gray to yellow, orange, red, and blackish, and is 18 inches thick. The subsoil is a red clay, heavier than the surface soil, and contains soft "black gravel" and rounded pebbles, underlaid by gravel, and sometimes rock, at from 5 to 20 feet. Tillage is easy in dry seasons; the soil is early and warm, but only a portion is well drained. It is apparently best adapted to cotton and oats, but corn is also raised. About one-third of the cultivated area of this soil is planted in cotton. The plant attains a height of from 3 to 7 feet, but is most productive at from 3½ to 4 feet; it inclines to run to weed in wet seasons, and is best restrained by shallow cultivation and topping. The seed-cotton product per acre of this soil, when fresh, is from 1,000 to 1,500 pounds, the lint rating in market as middling. After six or eight years' cultivation (unmanured) the product is from 500 to 600 pounds of seed-cotton, of which about 1,545 pounds make a 475-pound bale of lint, which rates one or two grades below that from fresh land. The most troublesome weeds are beggar-weed, crab-grass, and in localities cockleburs. Very little of this land now lies turned out. It washes badly in some localities, but no serious damage is done, except to the valleys, which are injured 5 per cent. Hillside ditching and horizontalizing are very successful in checking this.

The second quality of soil bears yellow pine, and is designated as *pine land.* It extends from 50 to 100 miles to the north, northeast, and northwest. The soil is a fine sandy loam, varying in color from whitish-gray to yellow and brown, and is from 3 to 6 inches thick. The

subsoil is heavier than the surface soil, and contains soft "black gravel" and rounded pebbles, underlaid by clay at from 1 foot to 3 feet. This pine land is easily tilled in any season, and the soil is early and warm, but ill drained. It is best adapted to oats, sweet potatoes, and vegetables; but one-fourth of its cleared area is planted in cotton. The plant attains a height of from 3 to 4 feet, and the seed-cotton product per acre of fresh land is from 500 to 800 pounds, of which 1,365 to 1,425 pounds are needed to make a 475-pound bale of lint, which rates as good middling. After five years' cultivation the product is from 300 to 500 pounds, and 1,425 to 1,545 pounds are required for a 475-pound bale of lint, the staple rating one or two grades below that from fresh land. The most troublesome weed is crab-grass. Very little of such land once cultivated now lies turned out. The soil does not readily wash or gully on slopes. Washing is successfully checked by horizontalizing and hillside ditching. This pine land is now attracting attention, and will ultimately be brought into cultivation.

Cotton is shipped, as soon as ready, by rail to Savannah at $3 50 to $4 per bale.

LONG-LEAF PINE AND WIRE-GRASS REGION (LIME-SINK DIVISION).

(Counties of Screven, Bulloch,* Dodge, Dooly, Wilcox,* Worth, Lee,* Dougherty,* Baker, Early,* Miller, Decatur,* Thomas,* Mitchell, Colquitt, Brooks,* and Lowndes.)

SCREVEN.

Population: 12,786.—White, 6,173; colored, 6,613.

Area: 720 square miles.—Woodland, all; oak, hickory, and pine uplands, 97 square miles; pine barrens (wire-grass), 5 square miles; lime-sink (wire-grass) region, 618 square miles.

Tilled lands: 77,143 acres.—Area planted in cotton, 21,716 acres; in corn, 24,154 acres; in wheat, 69 acres; in oats, 3,502 acres; in rye, 7 acres.

Cotton production: 8,166 bales; average cotton product per acre, 0.38 bale, 537 pounds seed-cotton, or 179 pounds cotton lint.

Screven county, lying between the Savannah and Ogeechee rivers, has a surface generally rolling or undulating, though somewhat hilly in places, and all well timbered. The sandy lands, clay subsoil, and long-leaf pine growth of the wire-grass region covers nearly the entire county. Oak, hickory, and pine lands occur on the northeast corner and in a narrow offshoot from the main belt on the northwest, as well as along the borders of the creeks and rivers southward, where their width is from half a mile to one mile. The growth is chiefly long-leaf pine, with some oak and hickory. White marls and limestone underlie the entire county, and over this northern section siliceous shell-rock, buhr-stone, and flint are abundant in fragments on the surface or in beds several feet thick.

Lime-sinks are found in a narrow section of country extending from Millen in a northeast course to Mill Haven, some of them being quite large and deep.

The uplands in the vicinity of the rivers and Brier creek are better than those in the interior; the growth is also better, the long-leaf pine not being so prominent. The underlying marls outcrop in the high bluffs along the streams with a thickness of many feet, and are easily reached for purposes of fertilization of the land or conversion into slack lime. The beds of red and yellow clays that overlie these marls are in many places uncovered by the gradual slope of the uplands, and afford, by their admixture with the sand of the hills, areas of good farming land. These yellow-loam uplands extend southward in broken areas along the Savannah river into Effingham county, the growth changing somewhat.

The lands of the greater portion of the county are of the better class of pine and wire-grass lands, with usually yellow clay at depths of from 6 to 18 inches, though quite a proportion has yellow sandy subsoils. Long-leaf pine is almost the exclusive upland timber, and "turpentine farms" have largely utilized this pitchy growth. The trees stand at distances of from 50 to 100 or 200 feet apart, have little undergrowth, and the "turpentine boxes" cut into the sides of the tall bare trunks can be seen over large areas.

On the west, near the Ogeechee river, is a prominent point (Parramore's hill) 144 feet above the river, composed of sandstone (presumably equivalent to the Grand Gulf of Mississippi). The rock also outcrops in the bank of the river, but is too soft for building purposes. The sample of soil from these wire-grass lands taken for analysis (see page 48) does not represent the best class.

There are in various parts of the county hills of deep white sand, very unproductive, and fortunately covering but small areas. Sylvania, the county-seat, is situated on one of these sand-hills, which also is part of the ridge separating the tributaries of the two rivers. Of the area of the county 3½ per cent. is irreclaimable swamp. The bottom lands of the Savannah and Ogeechee rivers are wide and very rich, but more or less subject to overflow. The soil is a dark sandy loam, covered with a dense bottom growth.

Brier creek, in its lower and eastern course, has also rich valley lands, containing a very large amount of decayed vegetation (see analysis, page 49). These lands are largely under cultivation, though rather subject to overflow. The water of the creek is dark and blackish, as is also that of the smaller streams and flats.

A number of the ponds of the northeastern corner of the county were drained and cleared and put under cultivation before the war. Mobley's pond, the most noted of these, is 7 miles in circumference, and was put in cultivation at a cost of about $10,000. Large crops were produced for a number of years, but it was abandoned finally because of the great injury done to the lungs of laborers by the fine dust of the soil, apparently formed from siliceous sponge spicules, as explained on page 44 of the general part.

In the lower half of the county there are abundant small flats or cypress and bay ponds having other low swamp trees and gallberry bushes along the margins. The noted "Georgia bark", or *Pinckneya pubens*, is a prominent growth of the smaller streams.

Screven county is sparsely settled with an average of eighteen persons per square mile. Lands under cultivation embrace 16.7 per cent. of the total county area. Corn is the chief crop, its average being 33.5 acres, while that of cotton is 30.2 acres per square mile, or 28.2 per cent. of the tilled land. The average product per acre is quite high, far above the counties of the central belt and the majority of those of the metamorphic region, the county ranking thirtieth in the state.

ABSTRACT FROM THE REPORT OF HON. GEORGE R. BLACK, OF SYLVANIA.

The surface of the country is partly level, partly hilly, partly rolling, the soil varying from sandy to stiff pebbly, with clay subsoil, and, along the rivers, stiff clay soil.

The bay bottom lands produce cotton finely for three or four years after clearing and first cultivation, but afterward the cotton, growing off finely in the spring, is almost certain to be affected with rust before maturity. The sandy lands do not produce well, but the more generally prevailing stiffer sandy soils with clay subsoils produce cotton finely, especially when fertilized. All are, however, at times subject to rust, but never so badly as to prevent the production of a fair crop. The cotton lands of the county may be classed as (1) clay lands on the margin of the rivers and clay and sand mixed; (2) stiff sandy lands with clay subsoil; (3) sandy lands and reclaimed pond bottoms. The good and poor lands are intermixed throughout the county in bodies of from 10 to 100 acres, though some soils, in general aspect and growth of timber, extend for many miles.

The *stiff sandy lands* comprise one-tenth of the lands of the county. The soil, a brownish clay loam, is 1 foot deep; the subsoil is a clay without intermixture of sand, as is the surface soil, and is underlaid by clay. The lands contain hard, rounded black gravel. The growth is red oak, hickory, and dogwood. These lands are easily tilled in all seasons, are early, warm, and well drained, and produce crops of corn, cotton, sweet potatoes, sugar-cane, chufas, oats, rye, pease, and rice. Wheat is successfully raised here, but is subject to rust. Cotton comprises one-half the crops, grows from 2 to 6 feet high (the higher the better), and runs to weed on newly cleared land and in wet seasons. Bolling is facilitated by the use of fertilizers. Fresh lands produce from 500 to 750 pounds of seed-cotton per acre, the lint rating as low middling. Cultivation of eight years reduces the yield to 400 pounds, and the lint is not quite so good. The staple depends upon the seasons and the variety of the cotton. Crab-grass is the most troublesome weed. One-third of the land once under cultivation now lies turned out, and is generally thereby recuperated. These clay loam lands are generally so level that they do not wash.

The sandy, and in some places gravelly, *pine and wire-grass lands*, having clayey and leachy subsoils at from 1 foot to 2 feet, comprise about 75 per cent. of the lands of the county. They contain much black ferruginous gravel, are underlaid by clay indefinitely, and are best adapted to corn, cotton, potatoes, pease, etc. Cotton grows 4 feet high, yields 500 pounds of seed-cotton per acre on fresh land and 350 pounds after eight years' cultivation, the lint rating as low middling in each case. With 200 or 400 pounds of guano per acre the yield with good management is 1 or 2 bales per acre. Ten per cent. of the lands now lie turned out, and are much improved. They wash readily, but no damage is done. Hillside ditching is practiced successfully to a limited extent.

The *white sandy uplands*, from 5 to 10 feet deep and underlaid by clay, comprise but 10 per cent. of the county lands, and are found in spots of not more than a mile in each direction. The growth is black-jack oak and pine. The soils are best adapted to pease, corn, chufas, and potatoes, though 10 per cent. of the crops is cotton, which grows only 1 foot or 2 feet high. The yield on fresh land is only 100 pounds of seed-cotton per acre, or 300 pounds after eight years' cultivation, the lint from each rating as good ordinary.

The *black mucky lands* of Brier creek are similar to the bay lands already mentioned as regards cotton. For corn they are famous, producing very fine crops for a long series of continuous years without fertilization. They are from 1 foot to 3 feet deep, underlaid by sand or pipe-clay; growth, cypress and black gum chiefly.

ABSTRACT FROM THE REPORT OF R. D. SHARPE, OF PARRAMORE'S HILL.

The lands of the county may be classed as sandy or loamy, with stiff or clay bottoms and red gravel land, oaky ridges and flats, river bottoms, and drained ponds.

The *clay subsoil lands* comprise 60 per cent. of the county area, with a growth of long-leaf pine, post oak, and round- and pronged-leaf black-jack. Red gravel is abundant in the soil. The land is best adapted to cotton and corn. Cotton grows 4 feet high, and is most productive at 5½ feet, but runs to weed in wet seasons and when planted late unless topped in full moon in July and August, and yields 300 pounds of seed-cotton per acre the first and 400 pounds the second year, 1,365 pounds of the second year's growth making 475 pounds of lint, the staple then rating one grade higher, viz, low middling. One-third of this land now lies out. It washes readily on slopes, injuring the valleys 40 per cent., and is successfully checked by horizontal plowing, though only a few farmers attempt it.

The *sandy lands*, with a growth of pine, black-jack, sweet gum, and wire-grass, comprise 50 per cent of the lands, and yield 300 pounds of seed-cotton per acre the first and 350 pounds the second year, 1,395 pounds from the latter making 475 pounds of lint. Hog-weeds are most troublesome. Twenty per cent. of the lands originally cultivated now lie turned out, and are improved 25 per cent. over original soil.

The *river bottoms*, comprising 10 per cent. of the lands of the county, have a growth of pine, water oak, hickory, black gum, maple, ash, poplar, and cypress. Cotton on this land comprises 20 per cent. of the crops, grows 5 feet high, is most productive at 4 feet, and yields 500 pounds of seed-cotton per acre the first and 600 pounds the second year, 1,544 pounds of the first and 1,485 pounds of the second making 475 pounds of lint, rating respectively as good ordinary and low middling. Crab-grass, butter-weed, and crowfoot-grass are most troublesome. Ten per cent. of the lands originally cultivated now lie out and are much improved.

Shipments of cotton are made to Savannah, as fast as ginned, either by Savannah river boats or by railroad, as most convenient. Freight by boat is 75 cents per bale; by railroad, 25 cents per 100 pounds.

BULLOCH.

(See "Wire-grass and pine barrens region".)

DODGE.

Population: 5,358.—White, 3,506; colored, 1,852.
Area: 580 square miles.—Woodland, all; oak, hickory, and pine uplands, 30 square miles; lime-sink (wire-grass) region, 417 square miles; pine barrens (wire-grass), 133 square miles.
Tilled lands: 23,471 acres.—Area planted in cotton, 6,002 acres; in corn, 9,132 acres; in wheat, 23 acres; in oats, 2,054 acres.
Cotton production: 1,916 bales; average cotton product per acre, 0.32 bale, 456 pounds seed-cotton, or 152 pounds cotton lint.

The surface of Dodge county is quite level, and is covered entirely with long-leaf pine and wire-grass, the growth being very open and the timber tall, furnishing excellent lumber. The drainage of the county is to the Ocmulgee river, the western boundary; but the streams of the eastern part of the county do not unite with it until near its junction with the Oconee, in Telfair county.

Both divisions of the wire-grass region are represented in this county. The "lime-sink" and siliceous shell-rock division comprise the lands north of a line extending from near the southwest corner to 4 miles northwest of Eastman, and thence to the northeast corner. Hard, white limestone underlies this area, and is exposed in the banks of the various streams and as far south as Abbeville, on the river, though not continuously. Siliceous shell-rock also occurs frequently. The surface of this section is undulating, and the soils sandy and gray, with clayey subsoils. Much ferruginous gravel or pebbles is intermingled with the land.

On the southeast of this area the soils are of the poorer class of wire-grass lands, and are underlaid by sandy subsoils and an argillaceous sandstone a foot or two in thickness. This latter is exposed in the excavations along the railroad.

The county is very sparsely settled, the average being but 9 persons per square mile. It is thought that about 15 per cent. of the county area has been cleared, but only 6.3 per cent. is now under cultivation, and is chiefly devoted to corn. Cotton embraces 25.6 per cent. of tilled land, and averages but 10.3 acres and 3.3 bales per square mile. It is produced more generally in the northern part of the county, and fertilizers are used extensively to increase the yield. Five per cent. of the county is irreclaimable swamp. Lumber and turpentine industries largely occupy the attention of the people.

The Macon and Brunswick railroad and the Ocmulgee and Altamaha rivers afford easy transportation to the coast at Brunswick and Darien.

ABSTRACT FROM THE REPORT OF DAVID SAPP, OF DUBOIS.

The lands of the county are all *gray and sandy,* and the growth pine and wire-grass. The crops are corn, cotton, sweet potatoes, and cane. The sandy lands are best for potatoes and cane, the gravelly for cotton and corn. Cotton grows from 2 to 4 feet high, and when planted without fertilizers it grows taller but yields less. The yield on fresh lands is from 500 to 800 pounds of seed-cotton per acre, and that from land three years in cultivation is from 200 to 500 pounds, the staple of which rates as low middling. That from fresh land rates as middling, and in both cases 1,425 pounds make 475 pounds of lint. Crab-grass gives the only trouble. None of these lands now lie turned out; they wash readily on slopes, but are too level to be much injured, but the valleys are benefited.

Cotton is shipped by railroad, from October to January, to Macon and to Savannah at 50 cents per 100 pounds.

DOOLY.

Population: 12,420.—White, 6,592; colored, 5,828.
Area: 780 square miles.—Woodland, all; oak, hickory, and pine uplands, 128 square miles; lime-sink (wire-grass) region, 652 square miles.
Tilled lands: 117,113 acres.—Area planted in cotton, 38,495 acres; in corn, 40,334 acres; in wheat, 1,569 acres; in oats, 9,522 acres; in rye, 122 acres.
Cotton production: 9,666 bales; average cotton product per acre, 0.25 bale, 357 pounds seed-cotton, or 119 pounds cotton lint.

Dooly county is somewhat rolling, especially on the west, and is well timbered throughout. The water-shed between the Atlantic and the Gulf passes through the county in a southeasterly course. With the exception of the northwest corner, the county is included in the lime-sink division of the wire-grass region. This region extends north to within 2 miles of Henderson and 10 miles west of Vienna.

Lumpkin's creek, flowing from Henderson, in the south of Houston county, southwest to Flint river below Drayton, very nearly marks the limit of the region in this section. The lands of the yellow-loam region cover the country northwest of the creek from Houston to Sumter with a thin growth of oak, hickory, and pine.

Along the river outcrops of white limestone and marls occur, and the same rock underlies the entire county. It is overlaid by the siliceous shell-rocks, whose scattered fragments are found on the surface throughout the county. The lands of this western yellow-loam region are the best in the county, and the country is more thickly settled than on the east.

The wire-grass region is very open, its growth of long-leaf pine having but little undergrowth, with only scattered patches of oak and hickory. Its sandy soils and clay subsoils have usually the brown ferruginous pebble or gravel which occurs frequently over the southern part of the state, and which is indicative of a better class of land.

Cypress swamps, with thin, sandy, and mucky soils, and gallberry flats are abundant. Irreclaimable swamps comprise 2½ per cent. of the area of the county, and only 28 per cent. of tillable lands have been cleared. Lumber interests are important. Lands under tillage embrace 23.5 per cent. of the county area, corn and cotton being the chief crops, with averages respectively of 51.7 and 49.4 acres per square mile.

ABSTRACT FROM THE REPORT OF JOHN H. WHITSETT, OF VIENNA.

The lands of this county have a sandy loam soil on a clay subsoil, with "cast-iron" pebbles interspersed through both soil and subsoil. They may be classed as dark pebbly or pimply soil, having a red clay subsoil; gray land, having a yellow sandy clay subsoil; and hummocks on Gum creek with gallberry flats.

The *dark pebbly lands* comprise about half of the county, and have a growth of pine, oak, and hickory. The soil is a fine sandy loam from 6 to 9 inches deep, and the red subsoil is underlaid at several feet by pipe-clay and sand. The land is easy to till at all times, is early, warm, and well drained, and is best adapted to cotton. The crops of the county are cotton, corn, wheat, oats, and rice; also sugar-cane and potatoes. Cotton comprises one-third of these crops, and yields from 600 to 750 pounds per acre on fresh land, or from 400 to 600 pounds on land cultivated ten years, 1,425 pounds of seed-cotton making 475 pounds of lint, rating about the same from old and fresh land, only the former "motes" worse in ginning. The cotton grows from 3 to 6 feet high, and runs to weed during wet seasons in the earlier stages of its growth. Deeper cultivation and the application of phosphatic manures prevent this tendency and favor bolling. The troublesome weeds are crab-grass and burdock. The lands "turned out" comprise but a small proportion, and lie only on the long slopes. When again taken in they do not produce remunerative crops unless precautions are taken against washing.

The *gray sandy uplands* cover about one-fourth of the county and have only a pine growth. The soil is a whitish-gray, fine sandy loam, from 4 to 6 inches deep, and has a yellow sandy clay subsoil. These lands are easy to till in all seasons, are late, cold, and ill drained, and best adapted to oats, though one-third of the crops is of cotton. Two feet is the usual height of cotton, which produces 500 pounds of seed-cotton per acre on fresh land, or 300 pounds on lands cultivated ten years. The lint of this latter is not as long as from fresh land, and is "nappy" and productive of motes. Crab-grass is most troublesome. One-fourth of this land now lies out. It washes readily, doing serious damage, and injures the valleys by its sand floods to the extent of 20 per cent. Horizontalizing and hillside ditching meet with moderate success in checking the damage.

The *creek bottoms*, or hummock lands, have a small area in this county. They have a growth of oak, hickory, ash, and cypress. The soil is a fine sandy loam, 10 inches deep, over a yellowish clay and sand; is easy to till, late and cold and ill drained, and is best adapted to corn. Very little cotton is planted on these lands, as they do not last long, though producing well at first. Cotton grows to a height of from 5 to 7 feet, yielding 1,000 pounds of seed-cotton per acre when fresh, but after three years' cultivation from 300 to 500 pounds. The land seems to sink or lose its friability. The staple also is shorter, and the seed does not mature well on old lands. Crab-grass is the chief enemy to crops on this land. The lands gully readily on slopes, and the valleys are very much injured by the washing, the product being often decreased 10 per cent.

Cotton is shipped by wagon to Hawkinsville, and thence to Savannah by railroad at $1 80 per bale.

WILCOX.

(See "Wire-grass and pine barrens region".)

WORTH.

Population: 5,892.—White, 4,068; colored, 1,824.

Area: 710 square miles.—Woodland, all; pine barrens (wire-grass), 40 square miles; lime-sink (wire-grass) region, 670 square miles.

Tilled lands: 37,526 acres.—Area planted in cotton, 12,157 acres; in corn, 13,671 acres; in wheat, 101 acres; in oats, 4,687 acres; in rye, 7 acres.

Cotton production: 2,893 bales; average cotton product per acre, 0.24 bale, 339 pounds seed-cotton, or 113 pounds cotton lint.

Worth is a well timbered and open county, included almost entirely in the lime-sink division of the wire-grass region, and having its characteristic lands and growth. The surface is quite level on the east and rather rolling or undulating on the west, and is drained chiefly by the headwaters of the Withlacoochee river. White limestone outcrops on Flint river, on the northwest; buhr-stone in fragments and in masses is found chiefly on the western half; while on the east there are occasional beds of white quartz pebbles.

Cypress ponds and flats, with their mucky sands, are also frequent in the various sections, but chiefly on the south and east. The irreclaimable bottoms and swamps comprise over 1 per cent. of the county area.

But about one-fifth of the county has been cleared, the remainder being still covered with a forest growth. The county is sparsely settled, there being but eight persons to the square mile. Lumber interests largely absorb the attention of the people, and but 8.3 per cent. of the county is under tillage, or but little over 6 acres per inhabitant. Corn has the largest acreage, that of cotton averaging but 17.1 acres per square mile, or 32.4 per cent. of tilled land.

ABSTRACT FROM THE REPORT OF W. A. HARRIS, OF ISABELLA.

The county is covered with a *light gray sandy soil*, 8 inches deep, with a subsoil of red clay and a growth of long-leaf pine. The soil is covered with black ferruginous gravel, and salamander hills are seen everywhere over the surface.

The crops of the county are cotton, corn, oats, sugar-cane, rice, potatoes, and tobacco. Cotton comprises one-half the crops, grows 3 feet high, and runs to weed during wet spells in July and August, to prevent which it is topped about the first of August. Fresh lands yield 550 pounds of seed-cotton per acre, 1,545 pounds of which make 475 pounds of lint, the staple rating as middling. Cultivation of six years reduces the yield to 350 pounds, 1,425 pounds of which, if ginned clean, make 475 pounds of lint, the staple being one grade lower. Hog- or rag-weeds are most troublesome. One-fourth of the land now lies turned out, and when taken in again it yields 20 per cent. less than when fresh. The bottom lands are much injured by the sands from the hills, and very little effort is made to check the damage.

As fast as ginned cotton is shipped by railroad to Albany.

LEE.

(See "Central cotton belt".)

DOUGHERTY.

(See "Central cotton belt".)

BAKER.

Population: 7,307.—White, 1,742; colored, 5,565.

Area: 340 square miles.—Woodland, all; oak, hickory, and pine uplands, 32 square miles; lime-sink (wire-grass) region, 308 square miles.

Tilled lands: 66,767 acres.—Area planted in cotton, 28,670 acres; in corn, 20,606 acres; in wheat, 68 acres; in oats, 5,614 acres; in rye, 54 acres.

Cotton production: 4,870 bales; average cotton product per acre, 0.17 bale, 243 pounds seed-cotton, or 81 pounds cotton lint.

Baker county is well timbered, and drains into Flint river, its eastern border, and is almost entirely covered with wire-grass. The entire county is underlaid by a white limestone (Tertiary), which outcrops in a number of places. Buhr-stone or siliceous shell-rock overlies it, and is found in fragments on the surface. The surface of the country is very open and level, though undulating in places, and is interspersed with cypress ponds and small open lakes.

On the north, along Kiokee and Ichawaynochaway creeks, the yellow-loam region extends a short distance into the county; but the county is generally covered by the sandy soils and clayey subsoils of the lime-sink division of the wire-grass region, with much ferruginous brown gravel.

Of the area of the county 7 per cent. is irreclaimable swamps, 49 per cent. is said to have been cleared, and 30.7 per cent is under tillage, chiefly in cotton, which averages 84.3 acres per square mile, a number exceeded by but thirty-seven counties of the state. Its average product per acre is, on the contrary, extremely low, and is, with that of Glynn county, the lowest in the state.

Cotton is shipped either by boat to Albany, Columbus, or Bainbridge, or hauled to Camilla and shipped by rail to market.

ABSTRACT FROM THE REPORT OF J. H. HAND, M. D., OF LEARY, CALHOUN COUNTY.

The lowlands of the county comprise first bottoms of the creeks and Flint river, hummocks, and cypress swamps, interspersed with lagoons. The uplands are principally pine, mixed with oak lands, with generally a gray sandy soil having a clay subsoil, red or yellow in color and mixed with sand; some of it is porous, light, and loose.

The summers of this section are long, and if the crop is planted the last of March or before the 20th of April and well cultivated a good crop may be matured by the 20th of August.

The *reddish clay lands* are best for cotton, though they comprise not more than one-tenth of the lands. The growth is oak, hickory, gum, ash, and short-leaf pine. The soil is a tenacious clay loam, 10 inches in depth, with a crawfishy subsoil, varying from red to yellow or whitish. It contains soft black gravel and rounded and angular pebbles, and is underlaid by limestone at from 10 to 40 feet. The land is early, warm, and well drained. The crops of the county are cotton, corn, oats, cane, potatoes, pease, and rice. Cotton yields on fresh lands from 400 to 800 pounds of seed-cotton per acre, or from 300 to 600 pounds after ten years' cultivation. In the latter case the lint is lighter, softer, and not so long. Cotton grows from 24 to 60 inches, is most productive at 36, and runs to weed on new land in wet summers, which tendency is restrained by deep culture, but bolling is not thereby favored. Crab-grass is most troublesome; other weeds are coffee-weed, beggar-weed, and cocklebur. One-tenth of these red lands now lies turned out.

The *gray sandy pine lands* cover three-fourths of the county. The soil is 10 inches deep, with a heavier clay subsoil, and is underlaid at from 10 to 40 feet by limestone. The land contains ferruginous gravel, is easy to till, early and late, and colder than the red land. It is best adapted to oats, corn, pease, and potatoes, though one-third is planted in cotton. The latter grows from 2 to 4 feet high, and yields from 500 to 700 pounds of seed-cotton per acre when the lands are fresh, or from 250 to 500 pounds after ten years' cultivation. About one-fourth of this land now lies turned out, and produces nearly as well as when fresh.

EARLY.

(See "Central cotton belt".)

MILLER.

Population: 3,720.—White, 2,327; colored, 1,393.

Area: 240 square miles.—Woodland, all; lime-sink (wire-grass) region, all.

Tilled lands: 23,527 acres.—Area planted in cotton, 8,980 acres; in corn, 9,229 acres; in oats, 4,188 acres; in rye, 10 acres.

Cotton production: 1,905 bales; average cotton product per acre, 0.21 bale, 303 pounds seed-cotton, or 101 pounds cotton lint.

Spring creek, flowing through the center of Miller county southward, is the principal stream. The surface of the country is very level, open, and well timbered, with an almost exclusive growth of long-leaf pine and wire-grass.

Limestone (Tertiary) underlies the county, as shown by the lime-sinks which occur frequently, and by the siliceous shell-rocks which are found in fragments and in masses over the surface. These latter rocks have less of the flinty character that belongs to those of counties northward. They disintegrate more readily, forming a fine, gritty powder, varying from white to red. But few fossil shells are found in them, their former presence being usually indicated by the cavities they have occupied, which show the surface outlines of the fossil. Large masses of these light siliceous rocks occur at Colquitt, the county-seat, both on the ridge in an old excavation for a

proposed railway and on the banks and in the bed of Spring creek. The lands of the county have generally fine sandy soils and clayey subsoils, and the roads are hard and firm. Cypress swamps are abundant, and patches of "blue-jack" oak occur frequently on the north. Of the area of the county 5 per cent. is of irreclaimable swamp and 15.3 per cent. is under cultivation, chiefly in corn and cotton, the average of the latter being 37.4 acres per square mile, about the same as in Lowndes county. The character of the lands and methods of culture are similar to that of the adjoining counties.

Cotton is hauled in wagons to Bainbridge, in Decatur county.

DECATUR.

(See "Southern oak and pine uplands".)

THOMAS.

(See "Southern oak and pine uplands".)

MITCHELL.

Population: 9,392.—White, 4,189; colored, 5,203.

Area: 500 square miles.—Woodland, all; lime-sink (wire-grass) region, all.

Tilled lands: 72,367 acres.—Area planted in cotton, 30,265 acres; in corn, 23,806 acres; in wheat, 51 acres; in oats, 8,721 acres; in rye, 17 acres.

Cotton production: 5,559 bales; average cotton product per acre, 0.18 bale 261 pounds seed-cotton, or 87 pounds cotton lint.

Mitchell county is well timbered, and is very generally level and open, its surface being interspersed with lime-sinks, cypress, and other ponds. Limestone (Tertiary) is found outcropping in a number of places. Good lime is made of this rock at a kiln 7 miles south of Camilla. Buhr-stone fragments also abound, though not as plentiful as in counties north of this.

The drainage is partly to the Flint river, the western boundary, and partly southward with the headwaters of Ocklockony river.

Eight miles east of Camilla the country becomes rolling, with a yellow ferruginous gravel in the soil. The ridges between the streams are rather abrupt on the west side, but gradually fall to the east. The marshes or low grounds have here a poor sandy land, as indicated by the dense growth of the pitcher-plant.

The county is sparsely settled. Of its area 3 per cent. is of irreclaimable swamp; but about one-third has been cleared, and 22.6 per cent. is under cultivation, chiefly in cotton. The average of this crop is 60.5 acres per square mile, and it embraces 41.8 per cent. of the tilled lands. In average product per acre the county ranks very low, and only above two counties of the state.

ABSTRACT FROM THE REPORT OF W. W. SPENCE, OF CAMILLA.

The lands of the county are much the same throughout, and comprise *level pine land*, with light sandy soil and a clay subsoil. There is some bottom land, the nature of which varies but slightly from the above. The soil of the uplands is 6 inches deep, with a red sandy clay subsoil and very little gravel; is easy to till in all seasons, and early, warm, and well drained. The crops of the county are cotton, corn, sweet potatoes, and oats. Cotton comprises half of these crops, and yields on fresh land 600 pounds in the seed per acre. On land ten years under cultivation the yield is 300 pounds. Cotton grows 3 feet high, and runs to weed in wet seasons, to avoid which it is best to select prolific seed and manure highly. Crab-grass interferes most with growing crops. None of the land lies turned out, and no washings occur on these level lands.

The Savannah, Florida, and Western railroad affords means of transportation of cotton to Savannah at about $2 50 per bale.

COLQUITT.

Population: 2,527.—White, 2,422; colored, 105.

Area: 550 square miles—Woodland, all; pine barrens (wire-grass), 8 square miles; lime-sink (wire-grass) region, 542 square miles.

Tilled lands: 13,006 acres.—Area planted in cotton, 2,958 acres; in corn, 4,375 acres; in wheat, 8 acres; in oats, 2,198 acres; in rye, 12 acres.

Cotton production: 736 bales; average cotton product per acre, 0.25 bale, 354 pounds seed-cotton, or 118 pounds cotton lint.

Colquitt county is entirely within the wire-grass region. The surface is undulating, the ridges lying usually north and south. On the lowlands and between the ridges saw-palmetto is often more abundant than wire-grass.

Moultrie, the county-seat, is located on a low sandy ridge which forms the divide between Ocklockony and Little rivers. This ridge extends 3 miles north of the village, and has an undergrowth of black-jack. On the west of Moultrie ferruginous sandstone and gravel occurs on the ridges, giving to some of the lands a reddish character. The pitcher-plant grows luxuriantly on the lowlands of this section.

The irreclaimable swamps of the county comprise 1 per cent. of its area. The country is very sparsely settled, and has an average of but 5 persons per square mile. Its tilled lands average but a little more than 25 acres per square mile, or 4 per cent. of the county area, and of these 21.3 per cent. is in cotton, whose average is 5.4 acres per square mile, or a little more than 1 acre per inhabitant. Corn has a larger acreage, its average being 8 acres per square mile.

ABSTRACT FROM THE REPORT OF J. B. NORMAN, OF MOULTRIE.

The lands of the county have *fine sandy soils*, 18 inches deep, and yellow or red subsoils. The growth of the county is pine, white oak, chincapin, sweet gum, sumac, and grape-vines. The soil contains brown pebbles, and is underlaid by clay at from 3 to 6 feet. The crops are cotton, corn, rice, sweet potatoes, field-pease, oats, chufas, etc. Cotton grows from 2 to 5 feet high, and is most productive at 3½ or 4 feet. It runs to weed on rich lands in wet seasons, and is restrained by the use of fertilizers. Fresh land yields 500 pounds of seed-cotton per acre, 1,425 pounds of which make 475 pounds of lint, rating from ordinary to middling fair. After five years' cultivation the yield is from 300 to 400 pounds. Crab-grass and cocklebur are most troublesome. Not much of the land now lies turned out, neither does it wash much.

As fast as ginned cotton is shipped to Thomasville at $2 per bale.

BROOKS.

(See "Southern oak and pine uplands".)

LOWNDES.

Population: 11,049.—White, 5,412; colored, 5,637.

Area: 470 square miles.—Woodland, all; pine barrens (wire-grass), 261 square miles; lime-sink (wire-grass) region, 209 square miles.

Tilled lands: 53,373 acres.—Area planted in cotton, 17,664 acres; in corn, 20,016 acres; in wheat, 64 acres; in oats, 9,945 acres; in rye, 32 acres.

Cotton production: 4,981 bales; average cotton product per acre, 0.28 bale, 402 pounds seed-cotton, or 134 pounds cotton lint.

The surface of Lowndes county is level, or in places undulating, and is drained by the Withlacoochee and the Allapaha rivers, respectively the west and east boundaries, and which unite with the Suwanee in Florida. The county is well timbered, and the view for great distances between the pine trees is uninterrupted by undergrowth. The country north of Valdosta, and reaching a few miles south, is interspersed with many cypress swamps and palmetto flats, while in the southern part of the county an interesting feature is a limestone region, interspersed with large lakes (filling probably huge lime-sinks) upon the uplands. Of these lakes Ocean pond and Long pond are the largest. This region, which reaches into Florida on the south, is uneven in its surface, due probably more to the lime-sink and lake depressions than to erosion, for its altitude is apparently not above that of the country northward.

The fresh and clear waters of the lakes maintain a constant level, though not the same in all, that of Ocean pond being 60 feet above that of Lake pond. In two or three instances they seem to be connected by underground passages. Moss and aquatic plants abound in great profusion, often making it difficult to propel a light boat through the water. There is very little swamp land around the lakes, the sandy uplands extending nearly or quite to the water's edge, in this respect resembling the lime-sinks. A few of what were once shallow lakes have gradually become dry, their dense growth of water moss, etc., becoming changed by decay into muck. One of these dry muck ponds covers about 200 acres with a depth of from 2 to 4 feet, with a number of large logs buried in the mass. The growth of this lake region embraces a very large variety, occurring, however, only in spots on the uplands, viz, long-leaf pine (everywhere and in greatest abundance), red oak, hickory, dogwood, beech, water and white oaks, magnolia, short-leaf pine, sweet and black gum, some poplar, red bay, scrub live oak, small post oak, narrow-leaf and round-leaf white oak, persimmon, cherry, white and scrub hickory, black-jack, sassafras, black haw, "granny graybeard," "queen's delight", sumac, sweet myrtle, wild mulberry, wild plum, wahoo, and very large chincapins. From the lake region the country gradually falls eastward to the river.

On the Withlacoochee river the outcropping limestone is covered by 10 feet of siliceous claystone, with quantities of chalcedony of every form and color. Over this are 40 feet of clay and soils. The siliceous rocks are found also at Troupville, and at the water's edge are of a peculiar and apparently semi-siliceous character, easily cut, and hard on drying. The rocks on the bluff are flinty in character, with interior white concretions (siliceous Vicksburg).

The lands of the southern part of the county are of the better class of the wire-grass region, viz, the "lime-sink" division. The soils are sandy, the subsoils a yellow clay. The water of the streams, dark or often nearly black from decayed vegetation, is in strong contrast to that of the ponds or lakes.

The lands of the northern part of the county are less fertile, the soils and subsoils sandy, and belong to the wire-grass region proper. Brown or yellow ferruginous pebbles are in abundance in this section of the county, and especially on the low water-divide between the two rivers.

The bottom lands along the rivers are very wide, and are covered with a luxuriant growth of saw-palmetto. The soils are sandy and dark on the surface. Of the county area 1 per cent. is irreclaimable swamp, and 17.7 per cent. tilled land, chiefly in corn. Cotton comprises 33.1 per cent. of the tilled land, and averages 37.6 acres per square mile.

ABSTRACT FROM THE REPORT OF N. B. OUSLEY, FORMERLY OF THIS COUNTY, BUT NOW OF FORT VALLEY, HOUSTON COUNTY.

The seasons in this section are sufficiently long to insure a crop. The lands are level in some parts of the county, in others rolling. The lands are classed as follows: (1) Sandy soils and clay subsoils at from 6 to 12 inches; (2) sandy soils and clay at from 6 to 10 feet from the surface; (3) flat lowlands, not swamps. The first of these is most important, and is called "*clay land*"; comprises 55 per cent. of the area of the county, and has a growth of long-leaf pine. The subsoil is sometimes of a yellowish, sometimes reddish color. When turned up it bakes hard and is impervious to water. The land contains much black gravel, and is inclined to bog in wet and becomes hard in dry seasons, but is early and warm. The crops are cotton, corn, oats, sugar-cane, and sweet potatoes. These lands are best for oats.

Fresh land yields from 500 to 800 pounds of seed-cotton per acre, and from 25 to 40 per cent. less after six years' cultivation. The amount required for 475 pounds of lint varies with the kind of seed. The lint is finest from fresh lands, but no difference in price is made. Only crab-grass is troublesome. Very little land now lies turned out. Old lands lying out for a year or two are covered with dog-fennel, and are as good as when first cleared. The lands do not wash readily, and if a little care is taken, by hillside ditching or other means, no damage results. The valleys are usually benefited by the washings of the uplands.

The *gray, fine sandy and gravelly lands*, from 6 to 10 feet in depth to a clay stratum, comprise about 30 per cent. of the area of the county. Cotton occupies 60 per cent. of these lands, grows from 2½ to 5 feet high, and yields from 400 to 800 pounds of seed-cotton per acre on fresh lands, and from 30 to 50 per cent. less after six years' cultivation.

The *lowlands of the flats* have a pine timber growth, a dark sandy soil from 6 to 10 feet deep, with an underlying clay. From 600 to 1,200 pounds of seed-cotton per acre is the product on fresh lands, and from 500 to 1,000 pounds after six years' cultivation. These lands are on a dead level, and no washing occurs.

As soon as cotton is ginned and baled it is shipped by railroad to Savannah at 85 cents per 100 pounds.

WIRE-GRASS AND PINE BARRENS DIVISION.

(Embraces the counties of Johnson, Jefferson,* Washington,* Laurens,* Montgomery, Emanuel, Bulloch, Effingham, Tattnall, Bryan,* Liberty,* McIntosh,* Wayne, Appling, Coffee, Telfair, Dodge,* Wilcox, Irwin, Berrien, Lowndes,* Ware,* and Pierce.)

JOHNSON.

Population: 4,800.—White, 3,455; colored, 1,345.

Area: 260 square miles.—Woodland, all; oak, hickory, and pine uplands, 50 square miles; pine barrens (wire-grass), 210 square miles.

Tilled land: 39,762 acres.—Area planted in cotton, 11,705 acres; in corn, 14,288 acres; in wheat, 404 acres; in oats, 1,826 acres; in rye, 107 acres.

Cotton production: 3,323 bales; average cotton product per acre, 0.28 bale, 405 pounds seed-cotton, or 135 pounds cotton lint.

Johnson county lies partly in the oak, hickory, and pine upland and partly in the wire-grass and long-leaf pine region, the latter covering fully three-fourths of its area. Oconee river, the western boundary, and other streams which flow southward to the Altamaha, drain the surface.

The northern and western portions of the county are hilly and rolling, and belong to the oak, hickory, and pine region (see description, page 41), and comprise the best lands of the county. White marl is found some miles west of Wrightsville, the county-seat, and in other places. At present it is not utilized.

The wire-grass region covers all that portion of the county lying east and south of Wrightsville, and extends 5 miles northward toward Sandersville and several miles west. The surface is underlaid by sandstone, exposed 2 feet or more in thickness near Wrightsville. The soils are of the usual dark sandy character, rather stiff, and with sandy subsoils.

The swamps subject to overflow and irreclaimable comprise 5 per cent. of the county.

Lands under tillage comprise 23.9 per cent. of the total area, and are chiefly in corn. Cotton embraces 29.4 per cent. of the tilled lands, and has an average of 45 acres per square mile.

ABSTRACT FROM THE REPORT OF JAMES H. HICKS, OF WRIGHTSVILLE.

The uplands in the upper part of the county, partly of gray oak and pine land and partly inclined to red clay, are all productive. The middle and lower portions (piny woods) have a light gray soil, which produces well when fertilized. Cotton on lowlands is subject to rust, in fact hardly ever escapes it, and is also liable to be killed by early frosts before maturity. The light gray sandy piny-woods soils and the red clay, freely intermingled with sand, are the chief cotton lands, the former extending east, south, and southwest to the county limits.

The soil, a *fine sandy loam*, is 20 inches in depth. The subsoil is of rather red clay, sometimes mixed with gravel, and contains brownish, hard, rounded pebbles underlaid by joint clay, then rock, at 50 feet. The land is easily tilled, unless in very dry seasons, and produces corn, cotton, and sweet potatoes. Oats are coming into prominence, but the land is best adapted to oats, potatoes, and corn. Cotton comprises two-fifths of the crops, grows 2½ feet high, and yields 300 pounds of seed-cotton per acre, the lint rating as middling to fair on fresh and good ordinary to middling on old lands. Crab-grass is most troublesome. One-fourth of these lands now lies out, and produces pretty well for two or three years when again cultivated. These lands wash readily, suffering serious damage, and very little effort has been made to check the injury, though hillside ditching is moderately successful.

The *red clay soils* of the northern part of the county comprise one-third of the lands, and have a growth of oak, hickory, and pine.

The *brownish clay loam soil* has a thickness of 2 feet and a heavier mahogany clay subsoil, and contains hard white gravel and rounded pebbles. It is early when well drained, and rather difficult to till in wet weather. Cotton grows to a height of 2 feet, runs to weed with too much rain and manure, and yields from 400 to 600 pounds of seed-cotton per acre, the lint rating as strict middling. Cultivation of six years reduces this yield to 400 pounds, and the staple is somewhat shorter. Crab-grass and cockleburs are the chief enemies to the crop. One-tenth of this land now lies out, but after a rest of several years it produces very well, especially if fertilized. It is seriously damaged by washing and gullying, and the valleys are also slightly injured. Hillside ditching meets with only partial success.

Cotton is carried, as fast as ginned, to Tennille, on the Central railroad, by wagons, and is thence sent to Savannah at 40 cents per 100 pounds.

JEFFERSON.

(See "Central cotton belt".)

WASHINGTON.

(See "Central cotton belt".)

LAURENS.

(See "Central cotton belt".)

MONTGOMERY.

Population: 5,381.—White, 3,510; colored, 1,871.
Area: 720 square miles.—Woodland, all; pine barrens (wire-grass), all.
Tilled lands: 29,211 acres.—Area planted in cotton, 2,356 acres; in corn, 10,231 acres; in wheat, 142 acres; in oats, 4,904 acres; in rye, 9 acres.
Cotton production: 852 bales; average cotton product per acre, 0.36 bale, 516 pounds seed-cotton, or 172 pounds cotton lint.

Montgomery county is divided by the Oconee river, which flows southward and unites with the Ocmulgee on the boundary-line, forming the Altamaha river. The surface of the country is rolling on the north and more level southward.

Along the eastern side of some of the streams are low banks or ridges of white sand deposits from one-half to a mile wide, having a low growth of scrub oak and little or no grass, entirely unproductive. They have an elevation of about 50 feet above the streams. Over a large portion of the county the lands are a dark sand loam with yellow sandy subsoil, quite compact. Saw-palmetto is prominent on the lowlands. In some places the subsoil is a clay, but this is rather an exception.

The uplands, covered with the yellow ferruginous gravel or pebbles peculiar to southern Georgia, are said to be the most productive. Two per cent. of the upland area is too broken for successful cultivation.

The bottom lands on the Oconee river are wide and densely covered with a growth of hickory, maple, poplar, cypress, etc. The trees are draped with the long, hanging moss (*Tillandsia usneoids*). These lands are subject to overflow, and are not much under cultivation. The soil is a deep black sandy loam, rather marshy. From these bottoms there is a rise of 15 or 20 feet to the uplands. The irreclaimable swamp lands comprise 4 per cent. of the county area.

The country is sparsely settled (an average of seven persons per square mile), and the country people devote their attention largely to the cutting and shipment of pine lumber down the Oconee and Altamaha rivers to Darien, where it is sold for European markets. The turpentine industry is also largely followed.

Lands under tillage embrace 6.3 per cent. of the county area, and are very largely devoted to corn. Cotton acreage forms but 8.1 per cent. of the whole, and averages 3.3 acres per square mile.

ABSTRACT FROM THE REPORT OF E. M'RAE, OF MOUNT VERNON.

The most productive lands of the county are the stiff river swamps, but the larger portion of them is subject to overflow. Cotton grows very well on the *pebbly uplands*, but not on the light sandy and pine lands. The growth of the level uplands is invariably long-leaf pine. The crops are corn, cotton, sugar-cane, sweet potatoes, oats, and a little wheat and rye. The uplands are best adapted to oats, corn, pease, and potatoes. Cotton comprises only one-eighth of the crops planted. The most productive height of the cotton stalk is 2½ and 3 feet. It runs to weed in excessively wet weather unless topped in the month of August. The yield is generally from 700 to 800 pounds per acre on fresh lands and 200 after ten years' cultivation. From old lands 1,545 pounds are required for a bale of 475 pounds, the staple becoming inferior. One-tenth of the land now lies turned out, and the greater portion is growing up in old-field pine. When again taken in, this land produces well for several years. The lands do not gully or wash much. Crab-grass is most troublesome. Cotton has not been cultivated in this county to any extent heretofore because of other industries, such as stock-raising and lumbering. It is now on the increase, and under the present system of culture, with favorable seasons, is found to be profitable.

Shipments are made, from December to March, generally to Savannah, at $2 per bale.

EMANUEL.

Population: 9,759.—White, 6,660; colored, 3,099.
Area: 1,040 square miles.—Woodland, all; pine barrens (wire-grass), all.
Tilled lands: 46,439 acres.—Area planted in cotton, 10,749 acres; in corn, 24,300 acres; in wheat, 950 acres; in oats, 3,957 acres; in rye, 33 acres.
Cotton production: 3,669 bales; average cotton product per acre, 0.34 bale, 486 pounds seed-cotton, or 162 pounds cotton lint.

Emanuel, one of the large counties of the wire-grass region, is rolling and open, the growth of the uplands being almost exclusively long-leaf pine. Swainsboro', the county-seat of Emanuel county, is on a low divide between the tributaries of the Ogeechee and Ohoopee rivers. In the western and southern portions of the county the lands are underlaid by a sandstone outcropping from 5 to 8 miles west of Swainsboro' in a bluff from 18 to 25 feet, and continuous for some distance. There is a large deposit of pebbles near this place. A few miles south of this town there is an area of one-quarter of a square mile covered by a non-fossiliferous siliceous rock, which, by decomposition, yields a soft white porous mass. The siliceous rocks are also found in other places in the northern part of the county.

The soils are sandy and dark from decayed vegetation; the subsoil is usually a yellow sand. Four per cent. of the county area is irreclaimable swamp, and but little of the lowlands is under cultivation. The county is thinly settled (nine persons per square mile), and but 7 per cent. of the area is under tillage. The lumber and turpentine industry receives largely the attention of the people. By the introduction of commercial fertilizers into the county the acreage, as well as the yield of cotton, has been largely increased in the last few years.

The acreage of corn is more than double that of cotton, the latter having an average of but 10.3 acres per square mile.

ABSTRACT FROM THE REPORT OF E. H. EDENFIELD, OF SWAINSBORO'.

The *uplands* only are devoted to cotton, 40 per cent. being planted in that crop. The land is rolling enough to be well drained, the climate is mild, and the summers are long, allowing the crop to mature before frost. The growth of the uplands is only pine, the soil a dark gray, coarse, sandy loam from 6 to 10 inches deep, and the subsoil a yellow sand from 6 inches to 3 feet deep, underlaid by clay, then sand-rock at from 10 to 40 feet. The lands are early, warm, and well drained, and easy to till in all seasons, producing corn, cotton, and oats; in fact, all crops, but are best adapted to those mentioned. Cotton grows from 2½ to 3 feet high, and yields on fresh lands 500 pounds of seed-cotton per acre. Cultivation of five years reduces the yield to 300 pounds, and 1,485 pounds are then required for 475 pounds of lint. The staple is inferior on old fields. May-apple and poverty-weeds are most troublesome. Not more than one acre in twenty now lies turned out. The land produces well, and even better than at first when again cultivated. No damage is done by washing.

Shipments are made, from September to January, by the Central railroad to Savannah, at 40 cents per 100 pounds.

BULLOCH.

Population: 8,053.—White, 5,797; colored, 2,256.

Area: 900 square miles.—Woodland, all; lime-sink (wire-grass) region, 21 square miles; pine barrens (wire-grass), 879 square miles.

Tilled lands: 35,626 acres.—Area planted in cotton, 9,140 acres; in corn, 15,394 acres; in wheat, 15 acres; in oats, 7,661 acres; in rice, 852 acres.

Cotton production: 3,724 bales; average cotton product per acre, 0.41 bale, 582 pounds seed-cotton, or 194 pounds cotton lint.

Bulloch county, lying between the Ogeechee and Canoochee rivers, has an undulating surface, broken and rolling in places, and lying wholly in the wire-grass and long-leaf pine region. The northern portion of the county is embraced in the "lime-sink" subdivision, the underlying limestone making the lands superior to those in the southern part. Lime-sinks are of frequent occurrence in this section. One known as the "watering hole", 5 miles northwest of Statesboro', the county-seat, is full of water to within 5 feet of the top and "has no bottom". Limestone and white marl occurs on the Emanuel county-line, and might be profitably used on these sandy lands. Siliceous shell-rock, or buhr-stone, is found in many places.

In this lime-sink section the prevailing growth of long-leaf pine is interspersed in places with oak and hickory.

The soils of the county are very generally dark and sandy, with some clay subsoils in the northern sections. The clays are, however, generally several feet below the surface. The lands of the lower portion of the county are very level, and the growth of long-leaf pine very open.

The bottom lands, where not subject to overflow, afford excellent farming lands. Gallberry bushes, cypress, and a low swamp growth occurs on the smaller streams. Six per cent. of the area of the county is irreclaimable swamp. Of land suitable for tillage, 21 per cent. is said to have been cleared.

The county is sparsely settled, with an average of 9 persons per square mile, while 6.2 per cent. only of the area is under tillage. Corn has by far the greatest acreage, that of cotton averaging 10.2 acres per square mile. Its product per acre is far above that of the other counties of the southern part of the state.

ABSTRACT FROM THE REPORT OF J. F. BROWN, OF OGEECHEE.

Most of the lands of the county are level, but occasionally in some sections they are hilly and broken.

The *dark or black alluvial soils* comprise one-fourth of the lands of the county, and have a depth of 12 inches and a heavier yellow subsoil. The land is easily tilled in all seasons, is early, warm, and well drained, and produces cotton, corn, rice, potatoes, and oats. Cotton comprises one-third of the crops planted, grows 3 feet high, runs to weed on new land, boiling being favored by high fertilization. The yield in seed-cotton on unfertilized fresh land is 400 pounds per acre; on land four years under cultivation, 250 pounds. In both cases 1,544 pounds are required for a 475-pound bale of lint, and the staple rates as good middling. Crab-grass is most troublesome during cultivation. One-fourth of the land now lies turned out, but it produces well when again taken in. It does not wash or gully.

The *sandy second bottom lands*, comprising but a small proportion of the area, extend up and down the Ogeechee river, and have a growth of oak, hickory, and cypress. The soil is fine, sandy, and gray, and is 2 feet deep; the subsoil is lighter, underlaid by sand and gravel at several feet. The land is early, warm, and well drained, easy to till in all seasons, and best adapted to corn and grain, only one-tenth being planted in cotton. Cotton grows from 4 to 5 feet high, but yields only 200 pounds of seed-cotton per acre when fresh, or 250 pounds after four years' cultivation. In the latter case the staple is inferior. The greater part of these lands once in cultivation now lies out, but produces well when again taken in.

The *gray sandy land*, covering one-third of the county, has a growth of pine and post oak, is a fine sandy, gravelly soil 6 inches deep, and has a lighter subsoil. It contains red gravel, is easy to till, early, warm, and well drained, and adapted to the general crops. One-third is planted in cotton, which grows 3 feet high and yields 300 pounds of seed-cotton per acre both on fresh land and after four years' cultivation.

Cotton, as fast as it is ginned and packed, is shipped by the Central railroad to Savannah, at 30 cents per 100 pounds.

EFFINGHAM.

Population: 5,979.—White, 3,228; colored, 2,751.

Area: 420 square miles.—Woodland, all; savanna, 76 square miles; pine barrens (wire-grass), 292 square miles; lime-sink (wire-grass) region, 52 square miles.

Tilled lands: 22,747 acres.—Area planted in cotton, 1,767 acres; in corn, 9,337 acres; in rice, 1,970 acres; in oats, 2,096 acres; in rye, 11 acres.

Cotton production: 686 bales; average cotton product per acre, 0.39 bale, 552 pounds seed-cotton, or 184 pounds cotton lint.

Effingham county lies between the Savannah and the Ogeechee rivers, the dividing ridge being very near the latter, and is well timbered with long-leaf pine, the surface of the country being quite level and open. Along the Savannah river, in the upper part of the county, there is a low ridge, the soil of which is dark gray with a clay subsoil, on which the pine is associated with a black-jack undergrowth. This belt extends to Sister's Ferry, from which place northward along the river white limestone and marls outcrop similar in many respects to that of the counties on the north. From the ferry southward along the river, and southwest to the corner of the county, are the pine flats of the coast region, with bay and cypress swamps interspersed through the open level lands.

The sandy wire-grass lands extend from Springfield west to the Ogeechee and east to within 1 mile of the Savannah, the growth of which is very open, the country quite level, and the soil sandy, with a yellow sandy subsoil. On the northwest are the better class of wire-grass lands, with thin clay subsoils and underlying limestone.

Ten per cent. of the area of the county is irreclaimable swamp, and but 8.5 per cent. is under tillage, chiefly in corn. Cotton has an average of but 4.2 acres per square mile. The marls of the upper part of the county show the following composition: Carbonate of lime, 28.4; phosphoric acid, 0.075 per cent.

Lumbering is a prominent industry, as the rivers furnish easy transportation to the coast by rafts or by steamboats.

ABSTRACT FROM THE REPORT OF O. E. SMITH, OF EGYPT.

The lands of the county are classed as sandy and hummocks. The latter are found near the rivers, and have a growth of red oak, hickory, and walnut.

The *sandy lands*, interspersed with gallberry flats and gum ponds, cover nine-tenths of the county, and have a growth of long-leaf pine and black-jack. The soil is coarse sandy, 4 inches deep, with a yellowish sandy subsoil, somewhat clayey. It is easy to cultivate, early, warm, but ill drained, and is best adapted to corn, oats, and potatoes. The crops of the county are, in addition to these, cotton, upland rice, and West India sugar-cane. Cotton comprises one-tenth of the crops, grows 3½ feet high, runs to weed in very wet seasons, which is prevented by better drainage, and yields 600 pounds of seed-cotton per acre on fresh land, 1,485 pounds of which make 475 pounds of lint and rates as middling. Land ten years under cultivation yields 300 pounds of seed-cotton per acre. The lint is then not so good, and 1,840 pounds of seed-cotton are required for 475 pounds of lint. Crab-grass is most troublesome. One-eighth of the land now lies turned out, and after a rest produces well for a few years. The lands wash readily, but no damage is done.

Shipments of cotton are made every week during the picking season by steamboat to Savannah at 75 cents per bale.

TATTNALL.

Population: 6,988.—White, 5,014; colored, 1,974.

Area: 1,100 square miles.—Woodland, all; pine barrens (wire-grass), all.

Tilled lands: 23,166 acres.—Area planted in cotton, 2,618 acres; in corn, 10,991 acres; in wheat, 8 acres; in oats, 4,802 acres; in rice, 376 acres; in rye, 19 acres.

Cotton production: 964 bales; average cotton product per acre, 0.37 bale, 525 pounds seed cotton, or 175 pounds cotton lint.

Tattnall county, lying between the Canoochee and Altamaha rivers, is divided diagonally by the Great Ohoopee river, flowing south into the latter river. The county is entirely within the long-leaf pine and wire-grass region, and the surface of the country is quite level on the south, but rolling on the north and middle, Reidsville, the county-seat, being situated on a high sandy hill.

The county is rather sparsely settled (6 persons per square mile), and the people are not apparently much devoted to agriculture, as only 3.3 per cent. of its area is under tillage, averaging 3.3 acres per person. Corn and oats are the chief crops, the acreage of cotton being 11.3 per cent. of the tilled lands, and averaging but 2.4 acres per square mile.

Lumber and turpentine industries chiefly occupy the attention of the people, the rivers affording transportation to the Atlantic coast markets by rafts and by steamboats.

The bottom lands have sandy soils of a deep black color on the surface, from decayed vegetation. In many places this muck is quite thick.

B. H. Clifton, of Perry's Mills, says of these uplands:

Fresh wire-grass land will yield about 200 pounds of seed-cotton per acre without fertilizers, and after a few years' cultivation will average 10 bushels of corn per acre and about 200 bushels of potatoes.

John Hughey, of Reidsville:

This is a pine woods county. The land is sandy and dark, with yellow sand subsoil, and is best adapted to sea-island cotton. Cotton comprises one-third of the crops, and yields 600 pounds of seed-cotton the first and second years after clearing. Shipments are made by wagon to the nearest railroad station, or by boat down the Altamaha river.

BRYAN.

(See "Coast region".)

LIBERTY.

(See "Coast region".)

McINTOSH.

(See "Coast region".)

WAYNE.

Population: 5,980.—White, 4,060; colored, 1,920.
Area: 740 square miles.—Woodland, all; pine barrens (wire-grass), 239 square miles; pine flats, 501 square miles.
Tilled lands: 8,766 acres.—Area planted in cotton, 331 acres; in corn, 4,243 acres; in oats, 2,188 acres.
Cotton production: 119 bales; average cotton product per acre, 0.36 bale, 513 pounds seed-cotton, or 171 pounds cotton lint.

The county of Wayne, lying between the Altamaha and Little Satilla rivers, is mostly within the savanna and pine-flat region, which extends as far north as the Savannah and Gulf railroad. The country is flat and interspersed with many bay and cypress swamps (saw-palmetto flats), the better part having sandy lands and an open long-leaf pine growth. North of the railroad the country is higher and more rolling and the lands are better, having a sandy clay subsoil. The county is sparsely settled, with an average of 8 persons per square mile.

Ten per cent. of the area of the county is too swampy for successful tillage. But 1.9 per cent. of the area is under tillage, chiefly in corn, oats, and wheat. The acreage of cotton is small, averaging but 0.4 acres per square mile. Lumbering is one of the chief industries.

G. W. Stansell, of Jessup, thus describes the county:

> The lands of the northern part are rolling and sandy, with clay subsoils, and produce good crops. Cotton is raised almost entirely along Big and Little Goose creeks, and fertilizers are largely used. The short upland staple alone is cultivated in this section. Other crops along these creeks and Satilla river do equally well under good management, 8½ barrels of sugar being the reported product from half an acre, the work of one man. Fruits do well on these uplands. The flat country south of the railroad is suitable only for rice, sugar-cane, and sea-island cotton, of which little is raised.

ABSTRACT FROM THE REPORT OF JAMES W. HARPER, OF GARDI.

The *light sandy lands* of this part of the county have a growth of yellow pine, oak, hickory, and cypress. The soil is 8 or 10 inches deep, with a yellow clay subsoil, which becomes like the surface soil when cultivated, and contains soft gravel and sometimes large pebbles. The crops are corn, oats, sweet potatoes, sugar-cane, and cotton. The land is early when well drained, and produces 800 pounds of seed-cotton per acre when fresh and 400 pounds after four years' cultivation. Cotton comprises one-fourth of the crops, grows from 3 to 4 feet high, and is troubled most with "red-top" weeds. Fifteen hundred and forty-five pounds of seed-cotton make 475 pounds of lint. On rolling lands the soil washes readily, but no serious damage is done.

Cotton is shipped by railroad in November to Savannah at $1 50 per bale.

APPLING.

Population: 5,276.—White, 4,084; colored, 1,192.
Area: 1,080 square miles.—Woodland, all; pine barrens (wire-grass), all.
Tilled lands: 13,172 acres.—Area planted in cotton, 1,069 acres; in corn, 6,816 acres; in oats, 4,097 acres; in rye, 8 acres.
Cotton production: 379 bales; average cotton product per acre, 0.35 bale, 501 pounds seed-cotton, or 167 pounds cotton lint.

A low ridge or water-divide, entering Appling county from the west, separates the tributaries of the Altamaha on the north from those of the Satilla river on the south.

Appling is included in the long-leaf pine and wire-grass region proper, with its characteristic poor sandy lands, soil and subsoil. Clay sometimes is found comprising the latter, and yellow or brown ferruginous pebbles are also abundant on the surface in some localities.

The surface of the country is rather rolling and very open, the undergrowth being chiefly along the low marshy places and on streams. The county is but sparsely settled (5 persons per square mile), and the people give their attention largely to the cutting and shipment of lumber down the Altamaha river and to the production of turpentine and resin from the yellow pine timber.

But 1.9 per cent. of the county area is under cultivation, mostly in corn and oats. Six per cent. is said to be too swampy for tillage. The average of cotton is but one acre per square mile, or 8.1 per cent. of the tilled area.

J. J. Carter reports that cotton is produced chiefly in the southern portion of the county, where the land is rolling and somewhat clayey.

ABSTRACT FROM THE REPORT OF BENJAMIN MILIKIN, OF HOLMESVILLE.

The only lands devoted to cotton in this county are the *gray sandy uplands*, which are light, friable, early, warm, well drained, and easily worked, and cover the entire county, except in creeks and branches. Yellow long-leaf pine is the exclusive growth. The soil is from 4 to 6 inches deep, has a yellow sandy subsoil, slightly mixed with clay, and contains sometimes red and rough clay-like pebbles.

The crops of the county are cotton, corn, oats, sweet potatoes, sugar-cane, pease, rice, melons, and all kinds of vegetables and fruits. The sea-island or black-seed variety of cotton, which sells for two or three times as much as the short staple green-seed or upland variety, succeeds admirably. The sea breezes and salt dews are supposed to aid in its growth. The short staple does well also, producing about 600 pounds of seed-cotton per acre on fresh land and 400 pounds after three years' cultivation, the lint rating as middling and good middling. The short staple grows 3½ feet high, the sea-island 4½ feet. The stalk runs to weed in wet seasons and when too highly fertilized. This is prevented by applying a moderate amount of manure, and also by topping. The staple from either new or old lands rates equally well. The most troublesome weeds are crab-grass and a small sprangled poor-land weed.

One-tenth of the land originally under cultivation now lies out, and when again taken in does as well for the first three years as when new. The slopes of the uplands are damaged by washing, and the valleys are also sometimes injured by the deposit of sand, though in most cases the fresh material adds to the fertility of the valley lands. No effort is made to check the damage.

Shipments are made by railroad in February and March to Savannah, the freight being 40 cents per 100 pounds.

COFFEE.

Population: 5,070.—White, 4,028; colored, 1,042.

Area: 980 square miles.—Woodland, all; pine barrens (wire-grass), all.

Tilled lands: 17,618 acres.—Area planted in cotton, 1,825 acres; in corn, 6,925 acres; in oats, 5,450 acres; in rye, 5 acres; in rice, 525 acres.

Cotton production: 591 bales; average cotton product per acre, 0.32 bale, 462 pounds seed-cotton, or 154 pounds cotton lint.

Coffee county lies within the southern wire-grass region. Its surface is undulating, slightly rolling in places, on the north of the Brunswick and Albany railroad, while in general long-leaf pine is the exclusive timber, without undergrowth, the country presenting an open character.

The soil is a gray sandy loam with much ferruginous gravel, not easily washed away, and forms firm and level roads. The lowlands have a dense undergrowth of cypress and small undergrowth, are usually marshy and almost impenetrable, and the water black and mucky. The soil is covered often with a good muck, but otherwise it is white, sandy, and worthless.

On the south of the railroad the country is very level and more marshy, and saw-palmetto is abundant, mixed with sedge-grass in places. A blue clay is found at 9 feet, but above this there is little else than sand.

Sandstone seems to underlie the upper portion of the county, an outcrop 4 feet in thickness being exposed on the river bank near the railroad crossing of the Satilla river. Twenty-five per cent. of the county area is said to be irreclaimable swamp.

The county is sparsely settled, and has an average of only 5 persons per square mile. The tilled lands comprise but 2.8 per cent. of the area, and are devoted mostly to corn and oats. Cotton acreage is small, averaging but 1.9 acres per square mile. The people devote much attention to lumbering and turpentine making. The Ocmulgee and the Altamaha rivers on the north furnish easy passage for large rafts to Darien, while the Albany and Brunswick railroad carries large amounts of sawed pine lumber from the many mills along its route.

A. M. Fraser, of Hazlehurst, writes:

Most of the cotton of the county is produced in the southwest portion, where the lands are naturally more productive. In the upper part, bordering on the Ocmulgee river, the land is hilly and poor, and is best adapted to orchards and vineyards and to cattle and sheep raising. In the swamps of the river, where alluvial deposits are made to a considerable depth, corn yields from 30 to 40 bushels per acre.

ABSTRACT FROM THE REPORT OF TIMOTHY FUSSELL, OF KIRKLAND.

The upland soil does not vary much from one ridge to another, being in ridges and hills of from 1 acre to 100 acres each. On the lowlands cotton is liable to go too much to weed, and the climate being warm, it is also apt to shed badly; hence the uplands are preferred when the land is fair.

The best soils are the *clay lands* of the hills, which lie in patches and large bodies, but comprise a very small per cent. of the lands of the county. The growth is oak and yellow long-leaf pine. The depth of the soil is 2 feet, with a heavy buff subsoil, sometimes hard and rocky and quite impervious. Red sandstone underlies this at from 10 to 20 feet. The soil is easily tilled, producing corn and cotton. The lowlands are best for corn and the uplands for cotton. Cotton comprises one-third of the crops, and grows to a height of 3 feet, producing with fertilizers from 800 to 1,000 pounds of seed-cotton per acre, but after seven years' cultivation only 700 pounds under good circumstances, rating as good ordinary. Cotton from fresh land rates as middling; 1,544 pounds from old lands make 475 pounds of lint. Crab-grass gives the most trouble. One-half of these lands formerly under cultivation now lies out only because of lack of laborers. Rest improves it very much. These clay lands wash readily, doing serious damage in wet seasons, but improving the valleys.

The *open pine woods* have a sandy soil about 9 inches deep, and but little in cultivation, cotton comprising one-tenth of the crops, and producing from 400 to 500 pounds of seed-cotton per acre when fresh, but only 400 pounds the second year. One-half of these cultivated lands now lies out. The staple from old land is not as good as from fresh. Crab-grass is the most troublesome.

Cotton shipment is governed by the market. Transportation is by the Albany and Brunswick railroad to Savannah at $4 per bale.

TELFAIR.

Population: 4,828.—White, 2,666; colored, 2,162.
Area: 420 square miles.—Woodland, all; lime-sink (wire-grass) region, 12 square miles; pine barrens (wire-grass), 408 square miles.
Tilled lands: 14,124 acres.—Area planted in cotton, 2,228 acres; in corn, 6,302 acres; in oats, 2,032 acres.
Cotton production: 740 bales; average cotton product per acre, 0.33 bale, 474 pounds seed-cotton, or 158 pounds cotton lint.

Telfair county, lying between the Little Ocmulgee and Ocmulgee rivers, the latter forming the southern boundary, has a somewhat rolling surface, and is covered with an open and exclusive growth of long-leaf pine and wire-grass, except in some localities, where oak and hickory occurs. A large proportion of the uplands has a stiff, sandy soil with an abundance of rounded ferruginous pebbles, forming a better class than the sandy lands with their thin sandy subsoils. Hills of white sand frequently occur, covered only with an undergrowth of scrubby black-jack, devoid of wire-grass and unproductive.

Specimens of soil and subsoil were selected from this county for analysis as typical of the lands of the wire-grass region proper (see page 50). The yield from fresh lands is given by many practical farmers in the county at 500 pounds of seed-cotton per acre; others claim more. The lands, however, are not durable.

The irreclaimable swamp lands, with their heavy growth of timber, comprise 8 per cent. of the county area, and their soils, a black and mucky sand or loam, are deep. The waters of the small streams are also very dark from decayed vegetation.

Only about 17 per cent. of the lands of the county have been cleared, the country being rather sparsely settled (11 persons per square mile), and the lumber industry occupying a large share of the attention of the people, as in other counties of this region. The Ocmulgee and Altamaha rivers furnish easy transportation to the Atlantic coast for rafts, while river steamboats and the Macon and Brunswick railroad carry sawed lumber and other products to Macon, Brunswick, and other markets.

But 5.3 per cent. of its area is under tillage, chiefly in corn, cotton, and oats. Cotton averages 5.3 acres per square mile.

ABSTRACT FROM THE REPORT OF I. F. M'RAE, OF LUMBER CITY.

The *sandy lands* occupy two-thirds of the county and have a growth of pine timber. The soil is 3 inches deep, with a subsoil varying from stiff to rocky and sandy. The crops of the county are corn, sugar-cane, sweet potatoes, cotton, and oats. Cotton comprises one-fourth of the crops, grows 3 feet high, and runs to weed on fresh, moist land and with heavy fertilizing unless prevented by topping. The yield on fresh land is 900 pounds of seed-cotton per acre, or 500 pounds after five years' cultivation, 1,544 pounds from old lands making 475 pounds of lint rating from low to good middling. Hog-weeds are most troublesome. One-half of the land lies turned out. These lands yield as well as when fresh when again taken into cultivation, and wash readily, but no serious damage is done.

The *pine, oak, and hickory lands* yield about 1,200 pounds of seed-cotton, making 400 pounds of lint, and rating as low middling in market. Cotton comprises one-third of the crops planted on these lands. Hog-weeds are most troublesome. One-half the lands now lies out, increasing in productiveness in proportion to the length of time lying out.

Cotton is shipped, between October and January, by railroad to Savannah at 31 cents per 100 pounds.

DODGE.

(See "Wire-grass and lime-sink region".)

WILCOX.

Population: 3,109.—White, 2,411; colored, 698.
Area: 500 square miles.—Woodland, all; pine barrens (wire-grass), 110 square miles; lime-sink (wire-grass) region, 390 square miles.
Tilled lands: 18,229 acres.—Area planted in cotton, 5,278 acres; in corn, 7,804 acres; in wheat, 6 acres; in oats, 3,086 acres.
Cotton production: 1,331 bales; average cotton product per acre, 0.25 bale, 360 pounds seed-cotton, or 120 pounds cotton lint.

Wilcox county, lying along the west side of the Ocmulgee river, is situated on the Atlantic and Gulf water-divide, the low ridge entering from Dooly on the northwest and passing southward into Irwin county. The Gulf tributaries (the headwaters of the Allapaha river) flow in a southerly course, while the small streams emptying into the Ocmulgee flow eastward. The surface of the country is on the north and middle rather rolling, but quite level on the south.

The best lands are found along the streams and on their immediately adjoining uplands, their subsoil being generally a clay under sandy soils of varying depths. Shell marls, with siliceous strata overlying, are found outcropping in the river bluff 4 miles southeast of Abbeville, the county-seat, and a few lime-sinks occur on the southwest of the village on the lowlands. The growth is largely interspersed with post oak and black-jack. All the uplands away from the streams are sandy, with ferruginous gravel, and have a yellowish sandy subsoil, though underlaid by clays. Their growth is long-leaf pine and wire-grass, with some scrubby black-jack. These lands cover the largest part of the area of the county.

Two and one-half per cent. of the county is said to be too broken for cultivation, and 8 per cent. to be of irreclaimable swamp. The county is thinly settled (6 persons per square mile), and but about 5.7 per cent. of its area is under tillage. The lumber industry occupies a large share of the attention of the population, the Ocmulgee river affording easy transportation for rafts.

Corn and cotton are the chief crops, the latter having an average of 10.6 acres per square mile and a lower product per acre than other county of the region.

ABSTRACT FROM THE REPORT OF S. D. FULLER, OF HOUSE CREEK.

The lands of the county may be classed as ash-colored hummocks, lying mostly on rivers and creeks, and having a clay subsoil; dark gray soils on creeks, and having red-clay subsoils; light sandy soils with iron-ore pebbles on the inland uplands.

The *hummocks* comprise one-tenth of the lands, and occur along very nearly the whole length of all the rivers and creeks. The growth is pine, with some oak. In the swamps themselves oak, hickory, ash, and other valuable timber are found. The soil of these hummocks is a dark fine sandy loam, or what might be termed a mixed soil, 12 inches deep, with a subsoil of stiff red or yellow clay with pebbles, becoming soft after being plowed up and mixed with the top soil. The lands are early and warm when well drained, and well adapted to cotton, corn, cane, and potatoes. Cotton comprises one-third of the crops, grows to a height of 4 feet, and yields about 800 pounds of seed-cotton per acre on fresh land. It also runs to weed on fresh lands, but the use of superphosphates checks it. This land yields from 300 to 500 pounds per acre after ten years' cultivation, and is troubled mostly with hog-weeds. Lint from fresh lands rates as middling; that from old, low middling; in each case 1,425 pounds of seed-cotton are required for 475 pounds of lint. Very little of this land now lies out, as it produces as well after resting as at first. Very little damage is done by washing.

The *dark gray gravelly and sandy soils* along the creeks cover one-fourth of the area of the county, and have a growth of pine, with some oak and black-jack. The soil has a depth of 15 inches, contains pebbles, and has an impervious yellow-clay subsoil that becomes soft after being plowed up. This land is early and warm when well drained, and well adapted to all the crops. One-third is planted in cotton, which grows to a height of 4 feet, yielding 600 pounds of seed-cotton per acre on fresh land and 500 after ten years' cultivation.

The *light sandy, pebbly soil* covers a large proportion of the county, has a growth of pine and scrub black-jack, and lies mostly off from the rivers and creeks. Its depth is 5 inches, with a light yellow sandy and pebbly clay subsoil underneath. It is also early and warm, and well adapted to all crops. Cotton grows to a height of 2 feet, yielding 400 pounds of seed-cotton per acre on fresh land; also after ten years if the land has been rested, 1,900 pounds being required for 475 pounds of lint. The land produces well after a rest, and does not wash.

Cotton is shipped, from September to January, by steamboat to Savannah at $2 per bale.

IRWIN.

Population: 2,696.—White, 2,161; colored, 535.

Area: 680 square miles.—Woodland, all; lime-sink (wire-grass) region, 71 square miles; pine barrens (wire-grass), 609 square miles.

Tilled lands: 11,658 acres.—Area planted in cotton, 1,800 acres; in corn, 4,049 acres; in oats, 3,319 acres.

Cotton production: 595 bales; average cotton product per acre, 0.33 bale, 471 pounds seed-cotton, or 157 pounds cotton lint.

Irwin county is included in the wire-grass region. The surface is broken or slightly rolling on the north and east, but falls and is more level southward. Long-leaf pine is the almost exclusive growth, between whose tall and bare trunks long views may be obtained, broken only by the undergrowth of cypress ponds or small streams.

On the east, along the Ocmulgee river, there are some good lands, but over the county generally the soils and subsoils are sandy and unproductive after a few years' cultivation.

Sandstone underlies the lands near Irwinville, and ferruginous gravel is abundant in many places, giving rise to a better class of soil.

About 15 per cent. of the area is irreclaimable swamp. The county is sparsely populated (4 persons per square mile). Much attention is given to cattle and sheep.

Only about 2.7 per cent. of the area of the county is under cultivation, and of that 15.4 is devoted to cotton, commercial fertilizers being advantageously used in its culture.

The lands are similar in character, and the methods of culture the same as in Coffee and Telfair and other adjoining counties. The Brunswick and Albany railroad affords transportation facilities to the southern part of the county, while on the east boats ply between Macon and Darien on the Ocmulgee, which also bears down rafts of lumber to the coast.

BERRIEN.

Population: 6,619.—White, 5,783; colored, 836.

Area: 760 square miles.—Woodland, all; lime-sink (wire-grass) region, 96 square miles; pine barrens (wire-grass), 664 square miles.

Tilled lands: 26,214 acres.—Area planted in cotton, 5,583 acres; in corn, 8,429 acres; in wheat, 15 acres; in oats, 8,199 acres; in rice, 398 acres.

Cotton production: 2,008 bales; average cotton product per acre, 0.36 bale, 513 pounds seed-cotton, or 171 pounds cotton lint.

Berrien county, lying between the Allapaha and Little rivers, is covered by an open growth of long-leaf pine and wire-grass. The surface of the county on the north of Nashville is rolling, the soils containing a black or brown ferruginous gravel. On the south the country is quite level, its flatness being broken only by the streams and the cypress marshes and ponds. A feature of this low land is the number of large areas of tall "pitcher-plants".

The waters of the small streams are slow and sluggish in motion, and, with those of the ponds, are colored black from decayed vegetation. The soil of these swamps and marshes is but little else than a white sand filled with rootlets and decayed vegetation, and sometimes covered for an inch or two with muck. These lands are considered worthless, though the muck might be profitably used on the farms. Fifteen per cent. of the area of the county is reported as being of these irreclaimable swamp lands. The growth is poplar, cypress, gum, titi, and pine, with occasionally a little oak and hickory.

But 5.4 per cent. of the county area is under tillage, and mostly in corn and oats, cotton being third, with an average of 7.3 acres per square mile. The county has a population averaging but nine persons per square mile.

ABSTRACT FROM THE REPORT OF HENRY T. PEEPLES, OF NASHVILLE.

The rolling as well as the flat lands of the county are well adapted to the culture of cotton, but are all thin. The lands are all sandy and dry very rapidly, and in some seasons there is a failure to get a stand at the proper time. They are very easily cultivated, and produce remunerative crops. Manuring and fertilizing add greatly to the production. The lands may be classed as chocolate, gravelly, or pimply, with a shallow subsoil shelving to the south; flat sooty, sandy soil, with a deep subsoil; high sandy lands, which in wet weather produce finely.

The *chocolate or pimply gravelly* lands are the best cotton lands, but they do not exceed one-twentieth of the area of the county. They occur in all the piny woods of the state. The soil is a fine sandy gray loam from 6 to 10 inches deep, underlaid by a hard, variegated clay, red, brown, chalk-like, and sticky. It contains red ferruginous gravel or concretions, and is early, warm, ill drained, and difficult to till in wet but easy in dry weather. The chief productions are cotton, corn, oats, pease, rice, potatoes, chufas, peanuts, and turnips. Cotton grows to a height of from 2 to 6 feet, is most productive at 3 or 4 feet, and runs to weed on fresh land. It produces on fresh land only from 300 to 400 pounds of seed-cotton per acre, but from 500 to 600 pounds after two years. The lint rates as low middling from fresh land, and one grade better from the second year's crop. "Dog-fennel" and "chicken-weed" are most troublesome. These lands wash but slightly.

The *sandy "sooty" land*, with its growth of long-leaf pine and wire-grass, is the second-grade cotton soil of the county, covering two-fifths of its area and extending over the southern portion of the state. It has a depth of 6 or 8 inches and a subsoil of compact clay, hard and variegated, with gravel at 2 feet. Its growth is mostly pine. It is easily cultivated, is early, warm, and ill drained, producing from 400 to 600 pounds of seed-cotton per acre when fresh and from 500 to 800 pounds after two years' cultivation. One-tenth of these lands now lies out, but they are very thrifty when again cultivated. They wash but little.

White sandy soil occurs in localities comprising one-tenth of the lands of the county, having a growth of pine, scrub oak, and black-jack. Its depth is only from 2 to 4 inches, and is underlaid by a stiff clay and gravel at from 2 to 4 feet. It produces from 200 to 400 pounds of seed-cotton per acre when fresh and from 300 to 500 pounds after four years' cultivation. One-tenth of this land lies out, and it recuperates very slowly. It washes readily, doing serious damage sometimes.

Cotton is shipped, as fast as ginned, by the Albany and Brunswick and other railroads to Savannah.

LOWNDES.

(See "Wire-grass and lime-sink region".)

WARE.

(See "Pine flats and coast region".)

PIERCE.

Population: 4,538.—White, 3,065; colored, 1,473.

Area: 540 square miles.—Woodland, all; pine barrens (wire-grass), 200 square miles; pine flats, 340 square miles.

Tilled lands: 9,496 acres.—Area planted in cotton, 994 acres; in corn, 4,105 acres; in oats, 2,209 acres.

Cotton production: 369 bales; average cotton product per acre, 0.37 bale, 528 pounds seed-cotton, or 176 pounds cotton lint.

Pierce county resembles Wayne very greatly in its topographical features as well as in the character of its lands. On the southeast the country is level and covered with cypress ponds and palmetto and gallberry flats; on the northwest it is slightly rolling or undulating, and the lands are better. The soils are sandy, contain ferruginous gravel, and have a yellowish subsoil more or less clayey. The growth of long-leaf pine is very open, with but little undergrowth, and wire-grass prevails everywhere.

Satilla, Little Satilla, and Hurricane rivers flow through the county in an east and southeast course, and lumber and turpentine industries absorb largely the attention of the people. The country is sparsely settled (8 persons per square mile), and but 2.7 per cent. of the lands are under tillage, chiefly in corn and oats. The average of cotton is 1.8 acres per square mile.

Irreclaimable swamps cover about 7½ per cent. of the county. Muck is very abundant on all the lowlands or swamps, and rests usually on a white sandy soil.

ABSTRACT FROM THE REPORT OF HENRY J SMITH, M. D., OF BLACKSHEAR.

The lands of the county are very much the same everywhere, with the exception of the ponds and branch bottoms. The soil is universally thin and sandy, but capable of any amount of improvement. Very little lowland is in cultivation, and the little that has been cleared has been abandoned as being very uncertain for cotton, making too much foliage and causing the bolls to rot. Even for corn and rice the same uncertainty exists because of a worm that attacks them. Both varieties, upland and sea-island cotton, do well in the uplands, except when attacked by rust and the caterpillar.

The lands suitable for cotton hardly exceed one-fifth of the lands of the county, and do not occur in very large bodies. The *fine sandy loam soil* is from 10 to 20 inches deep, has a yellowish sandy subsoil, often filled with brown pebbles (sand held by iron), and underlaid by an impervious clay stratum at from 1 foot to 3 feet. The crops of the county are corn, cotton, sugar-cane, pease, potatoes, oats, rice, ground-pease, and chufas. With fertilizers corn yields about 40 bushels per acre. Cotton comprises but one-fourth of the crops, yielding on fresh land possibly 300 pounds per acre in the seed, 1,665 pounds being required for 475 pounds of lint, which rates as middling. After four or five years' cultivation the yield would be almost nothing unless fertilizers were used.

Cotton grows tall and weedy on natural lands, but does not fruit well without manures. Fertilizers restrain the tendency to run to weed on new land and also favor bolling. Crab-grass alone is troublesome. Old lands are generally improved by rest after being worn out, and farmers prefer improving them than to taking in new. The lands are too level to suffer by washing and gullying. Oats are the favored of all crops on this land, the soil being too light and friable for such a tender plant as cotton, unless it could be filled with humus to absorb the sun's rays in summer and prevent its scorching reflection upon a growing and luxuriant cotton-plant. The effect of a few such days is sufficient to cause to fall every bloom and form from the plant.

The lumber and turpentine industries are much more remunerative, and the higher prices offered to laborers by those engaged in these industries make it almost impossible to secure farm hands at fair prices.

The railroads furnish means of transportation of cotton to Savannah, and shipments are made, as fast as ginned, at 40 cents per 100 pounds.

PINE FLATS AND COAST REGION.

(Embraces all or parts of the counties of Ware, Clinch, Echols, Charlton, Camden, Pierce,* Wayne,* Glynn, McIntosh, Liberty, Bryan, and Chatham.)

WARE.

Population: 4,159.—White, 3,015; colored, 1,144.

Area: 620 square miles.—Woodland, all; pine barrens (wire-grass), 151 square miles; pine flats, 469 square miles.

Tilled lands: 8,332 acres.—Area planted in cotton, 524 acres; in corn, 3,388 acres; in rice, 565 acres; in oats, 1,953 acres; in rye, 8 acres.

Cotton production: 158 bales; average cotton product per acre, 0.30 bale, 429 pounds seed-cotton, or 143 pounds cotton lint.

All of the southern portion of Ware county is included in the Okefenokee swamp (see page 51), and is almost uninhabitable. The upper portion of the county has a slightly rolling surface, a tall open growth of long-leaf pine, and a carpet of wire-grass. These approach to within a short distance of the swamp, when broad and flat areas of saw-palmetto appear, largely replacing the grass. The lands of the wire-grass region are stiff and sandy, with ferruginous gravel and sandy subsoils. Cypress swamps are interspersed throughout the area. The creeks which flow into the swamp on the north unite and form Suwanee river, which passes out on the west and turns southward.

The county is sparsely settled (7 persons per square mile), and but 2.1 per cent. of its area is under tillage, corn and oats being the chief crops. Cotton has an average of eight-tenths of an acre per square mile.

Two railroads cross at Waycross and furnish the means of transportation direct either to Savannah or to Brunswick.

CLINCH.

Population: 4,138.—White, 3,300; colored, 838.

Area: 900 square miles.—Woodland, all; pine barrens (wire-grass), 141 square miles; pine flats, 759 square miles.

Tilled lands: 14,346 acres.—Area planted in cotton, 1,622 acres; in corn, 5,524 acres; in rice, 1,268 acres; in oats, 3,359 acres.

Cotton production: 511 bales; average cotton product per acre, 0.32 bale, 450 pounds seed-cotton, or 150 pounds cotton lint.

The surface of Clinch county is very level and flat, and is covered with an open growth of long-leaf pine, saw-palmetto, and some wire-grass, interspersed with cypress ponds, gallberry flats, and small swamps of cassino, maple, titi, water oak, tupelo and black gums, and short-leaf pine. Eighteen per cent. of the area is irreclaimable swamp. The streams are black and very sluggish. Muck is abundant on the lowlands, and is several inches deep over a white sand bottom. The soils and subsoils of the county are sandy, and but 15 per cent. of the lands have been cleared.

The yellow long-leaf pine timber affords lumber of fine quality. The county has an average population of but 5 persons per square mile, and but 2.5 per cent. of its area is under tillage. Corn and oats are chief crops, the average of cotton being 1.8 acres per square mile. J. Tomlinson, of Homerville, reports that the greater part of the sea-island cotton is produced on the Allapaha river and Suwanoocha creek.

ABSTRACT FROM THE REPORT OF P. STOTESBURY, OF STOCKTON.

The surface of the country is very flat and level, and is not strictly uplands, neither is it what is known as lowlands. It is drained by creeks emptying into the Suwanee and Allapaha rivers. The higher lands are preferable for short staple and the lowlands for long staple, "black-seed" or sea-island. The lands are interspersed with ponds and gallberry flats. The growth is long-leaf pine, scrub oaks, saw-palmetto, and wire-grass. The soil is from 2 to 3 inches deep; the subsoil sandy, leachy, and yellow. The higher lands contain reddish-brown pebbles. The crops are long and short staple cotton, sugar-cane, pease, sweet and Irish potatoes, corn, oats, some wheat, rye, turnips, etc. This is the best oat-growing section, the lands being especially adapted to that crop. Cotton comprises one-fourth of the crops, grows from 3 to 5 feet high, and yields from 600 to 800 pounds of seed-cotton per acre on fresh lands. After five years' cultivation the yield is from 300 to 400 pounds. Crab-grass alone is troublesome. The lands do not wash, and but little now lies turned out.

Sea-island cotton is produced chiefly on the rivers and creeks. The average weight is 350 pounds to the bale.

Cotton is shipped by railroad to Savannah from October to January.

420

ECHOLS.

Population: 2,553.—White, 2,053; colored, 500.

Area: 400 square miles.—Woodland, all; pine barrens (wire-grass), 81 square miles; pine flats, 319 square miles.

Tilled lands: 15,785 acres.—Area planted in cotton, 3,578 acres; in corn, 5,159 acres; in oats, 1,650 acres; in rice, 106 acres.

Cotton production: 731 bales; average cotton product per acre, 0.20 bale, 291 pounds seed-cotton, or 97 pounds cotton lint.

Echols county is drained by the Suwanoochee and Allapaha rivers, both flowing southward. The lands along this latter river and in this section of the county belonging to the better class of the wire-grass region are underlaid by limestone, and have a growth of long-leaf pine, with some red oak and hickory. The surface of the country is very level.

On the east cypress ponds and palmetto flats become abundant, and wire-grass ceases almost entirely as Okefenokee swamp is approached. The surface is covered with a tall growth of long-leaf pine. The lands are not as fertile as on the west.

Of the area of the county, one-third is irreclaimable swamp. The population averages but six persons per square mile, and 6.2 per cent. of the county is under cultivation. These are chiefly in the western part, and are devoted to corn, cotton, and oats. Cotton has an average of 8.9 acres per square mile.

Sea-island cotton is chiefly cultivated, the bales being about 350 pounds weight. This variety is not as prolific as the short staple, and hence perhaps the low productiveness that returns show.

ABSTRACT FROM THE REPORT OF JOHN HERNDON, OF STATENVILLE.

The *gray and sandy lands* are the best in the county. The growth is pine, with some red oak and hickory. The soil is 15 inches deep, and produces corn, cotton, oats, sweet and Irish potatoes, and ground and field-pease. One-half the crops is of cotton, and chiefly of the sea-island or long-staple variety. The yield is from 800 to 1,000 pounds per acre on fresh land and from 600 to 700 pounds after three years' cultivation. The lint rates as middling upland. Short-staple upland cotton grows from 2 to 3 feet high; sea-island from 4 to 6 feet. The latter should be topped on the first of July to favor bolling. The weed most troublesome is "dog-fennel". None of this land lies out for more than one year, as even that short time greatly improves it. No damage is done by the small amount of washing to which this soil is liable.

Cotton is shipped as early as the first of November, by railroad, to Savannah at $3 per bale.

CHARLTON.

Population: 2,154.—White, 1,794; colored, 360.

Area: 1,060 square miles.—Woodland, all; all in pine flats region and Okefenokee swamp.

Tilled lands: 5,077 acres.—Area planted in cotton, 258 acres; in corn, 1,980 acres; in oats, 684 acres; in sweet potatoes, 179 acres; in rice, 47 acres.

Cotton production: 62 bales; average product per acre, 0.24 bale, 342 pounds seed-cotton, or 114 pounds lint.

A large part of Charlton county, embracing the western half, is included in Okefenokee swamp. From the eastern edge of the swamp the surface of the county rises to a low sandy ridge, about 20 feet above the swamp and about 118 above tide-water at Trader's Hill. This ridge, the Atlantic and Gulf water-divide, slopes rapidly to eastward and passes on the south into Florida. The lands are sandy, often a deep whitish sand bed, and is timbered with an open growth of long-leaf pine. The two rivers, Saint Mary's and Satilla, flowing respectively from the south and north, approaching each other to within a few miles, and, suddenly and abruptly turning to the coast, flow between high banks for the most part, Trader's Hill being located some 74 feet above tide-water. A bed of white marl is exposed in the banks of the Satilla at Burnt Fort. (For further description of the region, see page 50.) Corn and oats are the chief crops; cotton is but little planted. Lumbering, and especially turpentine-making, are the chief industries.

Shipments are made by schooner along the rivers to seaport cities.

CAMDEN.

Population: 6,183.—White, 2,091; colored, 4,092.

Area: 620 square miles.—Woodland, all; all pine flats, savannas, and live-oak and coast lands.

Tilled lands: 9,106 acres.—Area planted in cotton, 206 acres; in corn, 3,195 acres; in oats, 138 acres; in sweet potatoes, 370 acres; in rice, 2,463 acres.

Cotton production: 68 bales; average product per acre, 0.33 bale, 471 pounds seed-cotton, or 157 pounds lint.

Camden county embraces a belt of high sandy islands covered with live-oak timber, low coast marsh lands along the immediate border of the mainland, and a belt of live-oak and higher lands reaching inland to the level savannas region, the growth also fringing the streams to the foot of the Atlantic and Gulf water-shed in Charlton county. The savannas, with their level lands, interspersed with palmetto and swampy flats, cover the greater part of the county. A narrow strip of the county surface along its western border rests upon a terrace some 15 or 20 feet above the savannas. (See further description of the county in general part, page 51.) Corn, rice, and vegetables are the chief crops, cotton having an average of but three-tenths of an acre per square mile.

ABSTRACTS FROM THE REPORTS OF E. A. M'WHORTER AND JOSEPH SHEPARD, OF SAINT MARY'S.

All of the lands are level and sandy. Cotton is usually planted on the dry sandy upland, though a little is grown on reclaimed marshes. Being near the sea-coast and under the influence of the salt atmosphere, the sea-island variety alone is planted. The largest part of the county is covered with pine timber, the swamps having oak, hickory, beech, gum, cypress, etc.

The *fine silty soil* of the lowlands is devoted almost exclusively to rice; the *sandy uplands* produce cotton, potatoes, and sugar-cane. The subsoil is generally a sand, though red and yellow clays are found in places. The crops of the county are corn, rice, cotton, sweet potatoes, sugar-cane, and vegetables of all kinds. The lands produce from 10 to 15 bushels of corn per acre, and from 400 to 500 pounds of sea-island seed-cotton, or 300 pounds after four years' cultivation. Cotton grows from 4 to 10 feet high, but is most productive at from 4 to 8 feet. Running to weed is prevented by planting on rich natural land or by moderate manuring. The troublesome weeds are tea- and bitter-weed, cocklebur, Jerusalem oak, dog-fennel, and crab-grass. At least one-third of the lands now lies turned out, but produce well when again brought into cultivation. They are all too level to wash or gully.

Shipments are made in the winter by coast steamboats to Savannah.

PIERCE.

(See "Wire-grass and pine barrens region".)

WAYNE.

(See "Wire-grass and pine barrens region".)

GLYNN.

Population: 6,497.—White, 2,195; colored, 4,302.

Area: 430 square miles.—Woodland, all; all coast lands, live-oak lands, and savannas.

Tilled lands: 5,615 acres.—Area planted in cotton, 58 acres; in corn, 1,565 acres; in oats, 241 acres; in rice, 2,749 acres.

Cotton production: 10 bales; average product per acre, 0.17 bale, 246 pounds seed-cotton, or 82 pounds cotton lint.

Glynn county resembles the adjoining counties in all of its topographical and agricultural features, and their repetition is unnecessary. The county, outside of the city of Brunswick, is very sparsely populated. Corn, oats, rice, and sweet potatoes are the chief crops. There is less cotton planted here than in any other county of the state excepting the mountain counties of the extreme north. Sea-island cotton is chiefly raised, its product per acre being low.

Shipments of every kind are mostly made by ship from the city of Brunswick, which is also connected by railroad with Savannah and the interior cities.

McINTOSH.

Population: 6,241.—White, 1,546; colored, 4,695.

Area: 530 square miles.—Woodland, all; pine barrens (wire-grass), 153 square miles; pine flats, 12 square miles; savanna, 170 square miles; live-oak, marsh, and islands, 195 square miles.

Tilled lands: 8,898 acres.—Area planted in cotton, 339 acres; in corn, 2,825 acres; in rice, 4,035 acres; in oats, 354 acres.

Cotton production: 104 bales; average cotton product per acre, 0.31 bale, 438 pounds seed-cotton, or 146 pounds cotton lint.

McIntosh county in its general features resembles the adjoining county of Liberty. Along the coast the marsh and live-oak lands extend inland for several miles, while up the Altamaha river tide-water reaches 16 miles from the marshes. The tide swamp lands produce a great abundance of rice and sugar-cane.

The savanna and pine flat region covers the county westward from these marshes to the pine hills, and includes the largest part of its area. The growth of long-leaf pine is very open, as in other counties, and palmetto flats and cypress or gum ponds are also scattered throughout its area. The slightly rolling pine and wire-grass lands are found in the northwest, where the soil contains much ferruginous gravel.

Irreclaimable swamps comprise 15 per cent. of the area of the county. The soils are dark or white sands, covered with several inches of muck. The Altamaha river furnishes the means of transportation for immense quantities of timber each year from this and the counties above to Darien.

It is thought that 30 per cent. of the area of the county has been cleared, though but 2.6 per cent. is now under cultivation. Corn and oats are the chief crops. The cotton acreage is small, averaging but six-tenths of an acre per square mile. The lands are best suited to sea-island cotton. Lumbering is one of the chief industries of the county.

Darien, the county-seat, is situated 4 miles from the mouth of the Altamaha river in a large grove of live oaks. It is the chief lumber port of the South Atlantic coast, receiving its supplies by rafts floated down the river. It is not properly a cotton port, as its only means of communication with the cotton-producing counties is by the river steamboats.

William C. Wylly, of Darien, says:

There is not enough cotton made in this district to justify a report. Previous to 1865 this county had a productive interest in the sea-island cotton crop, but this has not as yet been revived, although of late there has been a growing interest and belief in the re-establishment of the old industry.

LIBERTY.

Population: 10,649.—White, 3,581; colored, 7,068.

Area: 720 square miles.—Woodland, all; pine barrens (wire-grass), 420 square miles; savanna, 166 square miles; live oak, marsh, and islands, 134 square miles.

Tilled lands: 23,047 acres.—Area planted in cotton, 2,084 acres; in corn, 8,565 acres; in rice, 4,211 acres; in oats, 3,597 acres.

Cotton production: 679 bales; average cotton product per acre, 0.33 bale, 465 pounds seed-cotton, or 155 pounds cotton lint.

Liberty county includes in its area Saint Catherine and smaller islands. Four agricultural regions are represented in the county, viz: coast marsh, live-oak lands, savannas or pine flats, and the sandy wire-grass lands.

The lands are generally level, and two of the three large divisions occupy what might be termed terraces. The marsh lands are low and but little above tide-water. The first terrace, 15 feet above these, is a level plain 15 miles wide, covered by the savannas, with their open growth of long-leaf pine and "carpet of flowers" and saw-palmetto. The live-oak lands border these savannas along the marsh and the various streams. (For description of these lands by Mr. King, and for analysis, see page 52.) Another terrace, rising quite abruptly 10 or 15 feet above this, forms a north and south line across the county, Hinesville being situated on and Walthourville below the plain. This also marks the southern limit of the wire-grass region. Its surface is more or less undulating, and the growth of long-leaf pine is very open, with very little undergrowth. Near Hinesville the terrace is covered with deep heavy sands and gravel, and is called "the gravel hills". The pine and wire-grass lands, comprising the sandy soils peculiar to the entire region, have a coarse, brown gravel, and frequently pebbles one or two ounces in weight. It is reported that the wire-grass in some places is being displaced and crowded out by a dog-fennel weed.

Of the county area 5 per cent. is under cultivation, chiefly in corn, oats, and cotton, the latter embracing 9 per cent. of the tilled lands and averaging 2.9 acres per square mile.

A report gives the sea-island cotton production in 1879 as 5 per cent. of the entire number of bales raised in the county.

ABSTRACT FROM THE REPORT OF JAMES A. M. KING, OF DORCHESTER.

The *yellow sandy soils*, from 4 to 8 inches deep, with white or yellowish sandy subsoils, are the best for cotton, being surest against rust. They comprise 1 per cent. of the lands, and extend from the Savannah to the Altamaha river and adjoining tide-water, and have a growth of live and water oaks, chincapin, hickory, pine, and cedar. The soil is compact and leachy, and is underlaid by sand for 20 feet. It is early, warm, and well drained, and is best adapted to corn as a remunerative crop. Corn, highland rice, and potatoes are the crops of the county. Cotton is planted only in small patches. Fresh lands yield 600 pounds of sea-island cotton, in the seed, per acre, and 400 pounds after six years' cultivation, the rule being to rest the land one year in three. From fresh land 1,425 pounds if ordinary and 1,780 pounds, if fine, make 475 pounds of lint, and the lint is longer and more silky than that from old, which is harsh. Sea-island cotton grows from 4 to 10 feet high, and is most productive at 6 feet, but runs to weed in wet seasons or with deep cultivation, the remedy being "wholesome neglect" or leaving it alone until as large as desired, when it must be cleaned. Weeds generally termed herbaceous plants are not troublesome. The grasses, crab, Bermuda, and nut-grass, are hard to manage in wet weather. The sea-island cotton lands are not as good as when they were abandoned at the breaking out of the war in 1861. They are too level to wash any.

The *gray, fine and coarse sandy lands*, with clay subsoils, are the second best in quality, but with too much rain, while growing, the crops suffer from rust. They are the savannas or pine flats, and comprise 50 per cent. of the area of the county. The growth is pine, water oak, cypress, gum, etc. The lands are best adapted to corn, oats, rice, and in some places to upland cotton. The cotton area is very small.

The *swamp lands above tide-water*, with their growth of cypress, water oak, gum, some ash, maple, and beech, comprise 10 per cent. of the area, have a depth of from 1 foot to 4 feet, and are best adapted to rice, and when safe from floods yield large crops of upland cotton. But little of the latter crop is planted.

The choice sea-island cotton lands are not suited to upland or short-staple cotton; therefore but little is planted. Labor is also too unreliable. I am manuring our cotton lands on the sea-coast with marsh mud, and hope to make upland cotton of the most productive kind a success in small and then in larger areas.

ABSTRACT FROM THE REPORT OF L. B. NORMAN, OF M'INTOSH.

The *fine sandy loam lands* cover two-thirds of the county, and have a growth of long-leaf pine, oak, and hickory. The soil is from 3 to 9 inches deep, with a yellow subsoil near the surface and a red clay below at from 2 to 5 feet. The crops of the county are rice, corn, potatoes, cotton, sugar-cane, pease, and oats. Cotton grows from 3 to 5 feet high, and yields on fresh lands 900 pounds of seed-cotton per acre, which makes "middling" lint. Ten years' cultivation reduces this to 200 pounds, and 1,485 pounds making 475 pounds of lint. Red-weed or horse-sorrel, brown-sedge, and crab-grass are most troublesome. The lands are much improved by lying out.

The *black swamp or hummock lands* are found in occasional strips from a quarter of a mile to 2 miles wide along the streams. They are best adapted to sea-island cotton, but very little is planted. The yield on fresh land is 1,500 pounds of seed-cotton per acre, 1,900 pounds making 475 pounds of lint. Crab-grass gives the most trouble. After five years' cultivation the yield is 1,900 pounds of seed-cotton, and the staple is better.

The railroad furnishes convenient transportation to Savannah.

BRYAN.

Population: 4,929.—White, 2,368; colored, 2,561.

Area: 400 square miles.—Woodland, all; pine barrens (wire-grass), 228 square miles; savanna, 102 square miles; live oak, marsh, and islands, 70 square miles.

Tilled lands: 15,588 acres.—Area planted in cotton, 764 acres; in corn, 5,000 acres; in rice, 4,999 acres; in oats, 1,786 acres.

Cotton production: 304 bales; average cotton product per acre, 0.40 bale, 567 pounds seed-cotton, or 189 pounds cotton lint.

In Bryan county, on the coast, the marsh and live-oak lands cover the islands and extend inland for several miles. The savannas or pine flats form the largest part of the county, and extend inland to near the north corner, the northwestern part of the county being in the pine and wire-grass country. This region widens out as it passes northeastward into the adjoining counties and into South Carolina, its limit forming a line almost north from Hinesville, in Liberty county, through Bryan.

The slightly rolling pine and wire-grass lands on the northwest occupy the terrace that passes southward from Jenks' bridge, on the Ogeechee river, into Liberty county. This terrace is 50 feet above the savannas on the north, but only about 20 feet above where it enters Liberty county. It does not present a regular front, but is merely a low and broken upland, contrasting strongly with the low and flat lands of the savannas.

The lands of the open wire-grass and pine regions are sandy, and contain much ferruginous gravel. The county has about 15 per cent. of irreclaimable swamp; the lowland growth is pine, magnolia, red bay, live oak, cedar, and cabbage palmetto. But 6.1 per cent. of the county area is under cultivation, and that mostly in corn and oats. The acreage of cotton is small, averaging but 1.9 acres per square mile. The lands are well adapted to sea-island cotton, but its culture, since 1861, has largely ceased, and turpentine making and lumbering are now the chief industries.

Tide-water extends about 10 miles above the coast marshes on the Ogeechee river, and the tide swamps are largely devoted to rice culture.

Transportation is furnished by means of the railroad to Savannah, or by boats down the rivers to the coast.

ABSTRACT FROM THE REPORT OF A. G. SMITH, OF MALDEN BRANCH.

All the land of this region may be called lowland. With the exception of the bottoms, the lands are higher along the water-courses than elsewhere. Even the pine lands are low and level, and much is sandy and poorly drained. The cotton-plant, though very fine, is often scantily fruited. Summer rains, followed by hot weather, cause shedding of bolls.

The chief cotton lands are the hummocks along rivers and creeks and the higher bottom lands. They are commonly designated *pine and wire-grass lands*, and bear a natural growth of pine and scrubby oaks. One-fourth of the region is of this kind. The soil is a fine and coarse sandy loam of a brown color, and is 8 inches thick. The subsoil is like the surface soil, except that it has a greater proportion of yellow sand. The soil is warm but ill drained, and is easily cultivated if not too wet. The chief crops of the region are corn, cotton, and rice. The soil is apparently best adapted to rice, which occupies one-fourth of the tilled area. The cotton-plant grows from 3 to 4 feet high, and is generally most productive at 4 feet. Too much rain causes it to run to weed, the remedy consisting in drainage. From 600 to 800 pounds is the product of seed-cotton per acre of fresh land. Old land produces from 400 to 600 pounds per acre, and the amount needed for a 475-pound bale varies from 1,425 to 1,545 pounds. There is no observable difference in the quality of staples from fresh and from old lands. Crab-grass in great abundance is the only troublesome weed. One-tenth of such land originally cultivated lies "turned out", and when again cultivated produces very well for two or three years.

Cotton is shipped, when ginned, mostly by wagons to Savannah.

CHATHAM.

Population: 45,023.—White, 17,494; colored, 27,529.

Area: 400 square miles.—Woodland, all; about 200 square miles of savannas and 200 square miles of live-oak and coast lands.

Tilled lands: 23,496 acres.—Area planted in cotton, 289 acres; in corn, 2,224 acres; in oats, 619 acres; in sweet potatoes, 758 acres; in rice, 8,069 acres.

Cotton production: 65 bales; average cotton product per acre, 0.22 bale, 321 pounds seed-cotton, or 107 pounds cotton lint.

Chatham county lies between the Savannah and Ogeechee rivers, and reaches the immediate coast. It is included entirely in the savanna and live-oak regions, the latter including in its limits the city of Savannah, whose parks are well shaded with the magnificent live-oak growth. The county resembles in its features the other counties of the coast belt, and a repetition is not necessary. (See general description and analysis of soil, page 52.)

The city of Savannah has several cottonseed-oil mills and cotton compresses, and probably receives, for shipment to foreign markets, the greater part of the cotton production of the state.

ABSTRACT FROM THE REPORT OF GEORGE P. HARRISON, OF SAVANNAH.

The fresh-water overflowed lands of this county are very fertile; the sea islands and uplands are devoted to cotton culture. This soil is a *gray, fine sandy loam*, 6 inches thick, and covers about one-fourth of this region, extending 100 miles north and south and 20 miles east and west. Its natural growth is live and other oaks, magnolia, sweet gum, and pine. The subsoil is an impervious, brownish clay in some places, in others it is a leachy, yellowish sand; in either case the same kind of material continues to greater depths. Tillage is easy at any time, and the soil is early, warm, and for the greater part well drained. The chief crops are rice and garden produce for the northern markets. The lowlands are apparently best adapted to rice, the sandy lands to garden produce. The most productive and usual height of the cotton-plant is 5 feet. The tendency to run to weed, whatever the cause may be, is a peculiarity of the coast region, but it prevails to a greater degree in wet seasons. The remedy consists in topping. Fresh land produces 475 pounds of seed-cotton per acre. The production of old land varies with cultivation and manuring. There is little or no difference between old and fresh land so far as the quality of staple and ratio of seed to lint are concerned. About seven-tenths of such land originally cultivated now lies "turned out", but with a little manure produces very well when again cultivated. Crab and Bermuda grasses are the most troublesome weeds.