
PART II.

AGRICULTURAL DESCRIPTIONS
OF THE
COUNTIES OF MISSISSIPPI.

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The counties are here grouped under the heads of the several agricultural regions, previously described, to which each predominantly belongs, or, in some cases, under that to which it is popularly assigned. Each county is described as a whole. When its territory is covered in part by several adjacent soil regions, its name will be found under each of the several regional heads in which it is concerned, with a reference to the one under which it is actually described. In the lists of counties placed at the head of each group the names of those described elsewhere are marked with an asterisk, (*) and the reference to the head under which these are described will be found in its place in the order of the list in the text itself.

The regional groups of counties are placed in the same order as that in which the regional descriptions themselves are given.

The statements of areas of woodland, prairie, etc., refer to the original state of things, irrespective of tilled or otherwise improved lands.

Appended to the description of each county from which a report or reports have been received is an abstract of the main points of such reports, so far as they refer to natural features, production, and communication. Those portions of the reports referring to agricultural and commercial practice have been summarized and placed in a separate division (Part III), following that of county descriptions. In making the abstracts of reports it has been necessary in most cases to change somewhat the language of the reporter, while preserving the sense. In some cases statements palpably incorrect or overdrawn have been altogether omitted, while explanatory words have been added, placed in parentheses.

NORTHEASTERN PRAIRIE REGION.

This embraces the following counties and parts of counties: Alcorn, Tippah, Prentiss, Union, Lee, Pontotoc, Chickasaw, Monroe, Clay, Oktibbeha, Lowndes, Noxubee, and Kemper.* The counties of Tippah, Union, and Pontotoc are largely embraced within what is known as the Pontotoc ridge, which is described as a separate region in the general part of the report.

ALCORN.

Population : 14,272.—White, 9,863; colored, 4,409.

Area : 400 square miles.—Short-leaf pine and oak uplands, 245 square miles; prairie belt, 155 square miles.

Tilled lands : 52,566 acres.—Area planted in cotton, 18,863 acres; in corn, 22,589 acres; in oats, 3,358 acres; in wheat, 1,078 acres.

Cotton production : 7,477 bales; average cotton product per acre, 0.40 bale, 570 pounds seed-cotton, or 190 pounds cotton lint.

Alcorn county, formed since the war from portions of Tippah and Tishomingo counties, is traversed almost centrally by the "prairie belt", here averaging about 10 miles in width, while in the rest of its area, east and west of that belt, sandy, short-leaf pine hills form the prevailing feature. The western pine-hill region belongs to the Hatchie valley; the rest of the county is drained by the Tuscumbia and its branches, excepting the heads of creeks tributary to the Tennessee, on the extreme east.

The "prairie belt" here has scarcely any open prairie land, except small "bald" prairies here and there. The white limestone, however, underlies it everywhere at no great depth, and materially influences the quality of the soil, even where it does not produce the black prairie soil. The surface is mostly gently undulating, and is timbered with oaks (post, black, Spanish, and black-jack), with more or less hickory, according to the proximity of the calcareous strata to the surface, and, in the higher ridges, is occasionally mingled with pine, the subsoil being a yellow loam. Where the rock lies nearer the surface we have either black or bald prairie or "mahogany" soil, and sometimes even the "beeswax". The yellow loam soils predominate more and more as we approach the Tennessee line, forming near Farmington, and Corinth especially, an excellent farming country.

The tilled lands of Alcorn county constitute 20.5 per cent. of the total area. Of these lands 35.9 per cent. is given to cotton culture, while about 43 per cent. of the same is devoted to corn, the latter having an unusually large proportion for a region possessing such facilities for communication. The cotton acreage per square mile is 47.2, and the average product per acre 0.40 bale, showing that the best lands are selected for cotton.

At Corinth, the county-seat, the Memphis and Charleston and the Mobile and Ohio railroads cross, affording excellent opportunities for communication. Cotton is shipped by either route as fast as baled to Mobile or New Orleans at the rate of \$3 per bale.

ABSTRACT OF THE REPORT OF W. L. WILLIAMS, RIENZI.

The upland is hilly and rolling; the lowland consists of first and second bottoms of Tuscumbia creek.

The soil is a light, fine sandy loam of a brown color, 4 inches deep; the subsoil is a red clay. This soil is early, well-drained, and easily tilled. Its natural growth is red, Spanish, black, and post oaks, chestnut, pine, etc. It covers all of this, and extends into other counties.

The chief crops are cotton, corn, and oats; but the soil is apparently best adapted to cotton, and three-fifths of the cultivated area is planted with the same. The plant grows from 2 to 3 feet high; is most productive at 2 feet. In wet seasons, or on soils rich in vegetable matter, it inclines to run to weed; but potash added to the soil restrains it and favors bolling. The seed-cotton product per acre of fresh land is 800 pounds; 1,780 pounds make a 475-pound bale of first-class lint. After two years' cultivation (unmanured) the product is 1,000 pounds, and the ratio of seed to lint remains the same. One-fourth of such land originally cultivated now lies "turned out", and when again cultivated it produces well after the first year. Weeds are numerous. Slopes are seriously injured by washing and gullyng, and the valleys are injured by being covered with sand. No efforts have been made to check these damages.

Cotton is shipped, as fast as gathered, by rail to Mobile, Memphis and New Orleans, at \$3 per bale.

ABSTRACT OF THE REPORT OF J. M. TAYLOR, M. D., CORINTH.

(The region described embraces about 108 square miles, or T. 1, 2, 3, R. 7 E.)

The surface of this part of the county is rolling; the ridges between the creeks and branches are light and thin, but in the lowlands the soil is rich, black, and loamy. Cotton is cultivated on three classes of land, viz, 1. *Gray upland*, with sandy branch bottoms. 2. *Black hummock* and alluvial bottoms. 3. "*Beeswax*" ridges.

The *gray uplands* are most extensive, and have a timber growth of red, post, and white oaks, and hickory; on the bottoms are poplar, sweet and black gums, walnut, elm, dogwood, cherry, beech, birch, maple, red-bud, sycamore, willow, hazel, sumach, and an undergrowth of grape-vines. The soil is a fine sandy loam, 3 or 4 inches deep, merging insensibly into the subsoil, which is a pale-red or yellowish clay, 10 to 20 feet thick, the lower part being known as "joint clay". Blue marl underlies this clay. The land is early, warm, and ill-drained, and produces all the crops. Cotton comprises from one-third to one-half of the tilled land, grows 2 to 5 feet high, and yields an average of 800 pounds of seed-cotton per acre both on fresh and old land. Crab-grass is the most troublesome weed. Very little of the land lies turned out; washes readily on slopes, but does no damage.

The *black or hummock land* occurs only in small areas in this region, but southward becomes the prevailing soil of the prairies. Its growth is white oak, walnut, red-bud, wild plum, buckeye, and grape-vines. The soil is a heavy loam, black and very tenacious, about 3 feet thick, and is difficult to till in all seasons when not broken early and in proper cultivation. It is best adapted to corn, and a less proportion is planted in cotton than on the gray lands. Cotton grows from 6 to 7 feet high; and runs to weed when gentle rains fall in July and August, though restrained by thorough drainage and barnyard manure. The yield per acre is from 1,000 to 2,000 pounds of seed-cotton, making one-fourth its weight of middling lint. Deeper plowing renews the soil when "tired". Cocklebur and morning-glory vines are most troublesome.

The *beeswax* soil also occurs only in small amount, and has a growth of post oak, hickory, wild plum, and black-jack. It is a heavy, putty-like clay, orange-red in color, difficult to till, and best adapted to cotton. The amount given to cotton, and the growth and yield per acre of cotton, is the same as on the gray land. A larger proportion of this land lies turned out, and does not recuperate as quickly as either of the other two classes of land.

While this region is a little north of the true cotton belt, and its capacity is not quite equal to lands farther south and west, yet the crop is more uniform and reliable, and is less liable to injury from diseases and insect enemies than in the true cotton belt. The average yield, therefore, for a series of years will quite equal that of the cotton belt, though the staple may not be quite as high.

TIPPAH.

Population: 12,867.—White, 9,802; colored, 3,065.

Area: 450 square miles.—Short-leaf pine and oak uplands, 140 square miles; brown-loam table-land, 115 square miles; flatwoods, 165 square miles; red land, 130 square miles; all woodland.

Tilled lands: 55,092 acres.—Area planted in cotton, 18,758 acres; in corn, 23,388 acres; in oats, 3,814 acres; in wheat, 3,587 acres.

Cotton production: 7,424 bales; average cotton product per acre, 0.40 bale, 570 pounds seed-cotton, or 190 pounds cotton lint.

In Tippah county three principal features are represented. In the central portion we find the continuation of the Pontotoc ridge, which to the northward narrows down to a mile or two in width, and presents only to a limited extent the "red-land" character. On the west the ridge country passes rather gradually into the post-oak flatwoods, which also in a measure lose their normal character and become undulating, and even hilly, in their northern portion. On the east the headwaters of the Hatchie occupy a sandy pine-hill country, rather broken, and with narrow valleys.

The Tippah flatwoods are, on the whole, less extreme in the character of their soils than those of Pontotoc and Chickasaw, and settlements are more numerous, the soil being fairly productive in most seasons. In the overflowed bottoms, however (as in that of Muddy creek), the soil is excessively heavy, ill-drained, and late for crops.

The Pontotoc ridge lands slope gently down into the flatwoods, and on the slope lie some of the largest bodies of cotton lands. The ridge lands themselves are less hilly than farther south. "Mulatto" soils are prevalent, and the extreme "red-land" character, as well as that of the intractable "beeswax hummock", is less common. Long spurs of pine ridges occasionally reach into the region from the Hatchie country, where, in the extreme southeastern corner of the county, some of the highest land in the state forms the divide between the Hatchie, Tallahatchie, and Tombigbee rivers.

Northward of Ripley the fertile ridge land falls off steeply into the bottom of Muddy creek on the one hand, while on the other it slopes off gently into the Hatchie valley. Jonesborough and Ruckersville lie within this narrow fertile belt.

Since the war Tippah has become more and more a region of small farms; the negro population has greatly diminished as compared with the white, and corn has taken precedence of cotton in acreage. The tilled lands of Tippah amount to 19.1 per cent. of the total area, and 34 per cent., or over one-third of these lands, is given to cotton culture, while 42.4 per cent. is occupied by corn. The cotton acreage per square mile is 41.7, and the average product per acre 0.40 bale.

Shipments are chiefly made from Ripley, the county-seat, by a branch of the Mobile and Ohio railroad, Memphis and Charleston railroad to New Orleans via Memphis, or to Mobile, at \$3 per bale.

ABSTRACT OF THE REPORT OF J. A. KIMBROUGH, RIPLEY.

Of the cultivated lands of this county the low bottoms along the water-courses comprise about one-tenth, the blackish and black clay loam upland one-third, and the yellowish-red and mahogany, fine sandy and gravelly clay upland forms one-fourth. Cotton and corn are the chief crops.

The bottoms bear a natural growth of beech, ash, hickory, and oak. The soil is a black and blackish, putty-like clay loam, 1 to 3 feet thick. The subsoil is clay, underlaid by rotten limestone at 10 feet. Tillage is difficult in wet seasons. The soil is late, cold, and ill-drained, is best adapted to cotton, and one-half its area is planted with the same. The plant grows from 5 to 6 feet high, but is most productive at 5 feet. In moderately wet seasons it inclines to run to weed, but this may be remedied by planting closely in rows farther apart. The seed-cotton product per acre of fresh land is 1,800 pounds; 1,485 pounds make a 475-pound bale of lint. The staple from all fresh lands here rates high. After five years' cultivation (unmanured) the product is 1,500 pounds, and 1,425 pounds make a bale of better lint. Cockleburrs are the most troublesome weeds. Not more than one-twentieth of such land lies "turned out". A rest of one or two years improves its yield.

The clay-loam upland extends beyond the county limits. Its natural growth is nearly all oak. Its soil is 6 to 12 inches deep, and rests upon yellowish clay, which is underlaid by rock at 10 to 20 feet. The soil is early, warm, easily tilled, but ill-drained. Two-thirds of it is planted with cotton. The plant grows from 3 to 3½ feet high, the latter being most productive. It rarely runs to weed; if so, in very wet seasons it may be checked by topping. The seed-cotton product per acre of fresh land is from 800 to 1,000 pounds; 1,425 pounds make a 475-pound bale of lint. After five years' cultivation (unmanured) the product is from 600 to 800 pounds, and 1,485 pounds then make a bale of lint differing but little from that of fresh land. The Spanish needle is the most troublesome weed. One-tenth of such land lies "turned out", and produces only tolerably when again cultivated.

The red-clay soil also extends beyond the county limits, and bears a natural growth of short oaks. Its soil is 6 inches deep, and rests upon a heavier, tenacious, and impervious clay, containing flinty, white, angular pebbles, underlaid by gravel and rock at 4 to 10 feet. The soil is late, cold, ill-drained, easily tilled in dry seasons, and one-tenth of its area is planted with cotton. The plant usually grows 18 to 24 inches high, but is most productive at 24, and never runs to weed. The seed-cotton product per acre of fresh land is 600 pounds; 1,425 pounds make a 475-pound bale of lint. Six years' cultivation (unmanured) reduces the yield to one-half, and 1,545 pounds then make a bale of inferior lint.

Rag-weed is the most troublesome. One-half of such cultivated land lies "turned out", and not much has ever been tried again. Slopes anywhere on the uplands wash and gully readily, and are thus seriously damaged. Some injury is also done the valleys by the washings, and to check the damage hillside ditching has been practiced with moderate success.

Cotton is shipped from the 1st of November to the last of December, by rail to Memphis and New Orleans, at \$3 per bale.

PRENTISS.

Population: 12,158.—White, 9,737; colored, 2,421.

Area: 410 square miles.—Woodland, all short-leaf pine and oak uplands, 290 square miles; prairie belt, 120 square miles.

Tilled lands: 59,738 acres.—Area planted in cotton, 18,610 acres; in corn, 23,018 acres; in oats, 3,806 acres; in wheat, 993 acres.

Cotton production: 7,207 bales; average cotton product per acre, 0.39 bale, 555 pounds seed-cotton, or 185 pounds cotton lint.

Prentiss county is divided by the Mobile and Ohio railroad into two unequal parts, the western and smaller one forming part of the "prairie belt", here generally known as the "white lime country" (excepting a small area in the northwest corner of the county belonging to the "Hatchie hills"). The portion lying east of the railroad, embracing the extreme heads of the Tuscumbia at the north and of the Tombigbee at the south, is, on the whole, a region of sandy pine hills, but with many wide and fertile bottoms and undulating tracts of loam uplands, particularly in its southern part, on Big and Little Brown's creeks, where excellent crops are made.

In the "white lime country" we find large tracts of black prairie soil, especially along the streams, mostly, however, timbered with oak and hickory, with which the honey-locust, mulberry, wild plum, sycamore, ash, black walnut, and tulip tree, or poplar, mingle the more the nearer the limestone is to the surface. Carrollville and Blackland are centers of "black prairie" tracts; Booneville, the county-seat, lies on the edge of the hills on the railroad.

The streams of the "white lime region" (tributaries of the Tuscumbia river in the northern part, and of Twenty-mile creek and the Tombigbee river in the southern) mostly head within it, and, not being fed by springs, mostly go dry in summer. The water supply is derived from deep wells or cisterns.

The tilled lands of Prentiss county amount to 22.8 of the total area, and 31.2 per cent. of such lands is occupied by cotton culture, while 38.5 per cent. is given to corn. The average cotton acreage per square mile is 45.4, and the average product per acre 0.39 bale.

Shipments are made by the Mobile and Ohio railroad mostly to Mobile direct, or via Memphis to New Orleans, at the rate of \$3 75 per bale.

ABSTRACT OF THE REPORT OF B. B. BOONE, BOONEVILLE.

East of the Mobile and Ohio railroad the lands are rolling and covered by sandy loam chiefly, with some patches of black prairie on the western edge. West of the railroad are the gray and black hummock lands, and along the streams are rich bottoms.

The prairie soil is a blackish and black, clayey loam, 18 inches deep, and covers one-eighth of this county, extending south to near the middle of the state and north to the state line. The subsoil is a heavy, stiff clay, retentive of moisture, which bakes hard on exposure if wet, but on continued exposure to freezes and air crumbles and is easily worked. It contains shells entire or decomposed, and is underlaid at from 3 to 10 feet by hard blue clay. The soil is early when well-drained, and is easily tilled, except when too wet; it is then too sticky, and weeds grow too rapidly. Of field crops, this soil is best adapted to cotton, the same being depended upon as the only source of cash returns. One-half the cultivated portion of this soil (also of the other uplands) is planted with cotton. The plant grows from 3 to 5 feet high, the medium being most productive. An abundance of animal and vegetable matter in the soil inclines the plant to run to weed; the remedy consists in the free use of mineral fertilizers. The seed-cotton product per acre of fresh land is from 800 to 1,200 pounds in good seasons; 1,425 pounds (from any soil in this region) make a 475-pound bale of good middling lint. After two or three years' cultivation (unmanured) production gradually decreases until it ceases to be profitable. The ratio of seed to lint and quality of staple are about the same as on fresh land. The same is true of the other soils here. All upland slopes wash and gully readily, and are thus seriously damaged. The washings seriously injure narrow valleys, but improve broad valleys. Only a few attempts have been made to check these damages, only with partial success, owing chiefly to imperfect execution of the work.

The timbered land surrounding these prairies bears a natural growth of most of the oaks, hickory, sycamore, ash, poplar, walnut, chestnut, pine, elm, gum, mulberry, persimmon, maple, catalpa, etc., and a great variety of undergrowth.

The creek bottoms occupy about one-fiftieth of the county area, and bear a natural growth of various oaks, walnut, hickory, chestnut, poplar, cottonwood, etc. The character of this land applies to all creek bottoms coextensive with the prairies just described. The soil is a black, alluvial clay loam, 2 to 6 feet deep, contains hard "black gravel" in many places, and is underlaid by blue rock at 15 feet. Tillage is difficult in wet, but rather easy in dry seasons. The soil is late, is cold and ill-drained, and is best adapted to corn, but in dry seasons produces the best cotton crops. One-third of its cultivated area is planted in cotton. The plant grows from 4 to 5 feet high, but is most productive at 4 feet. It inclines to run to weed on this and the soil next described in wet seasons and when deeply cultivated. Shallow cultivation is the best remedy.

The seed-cotton product per acre of fresh land is 1,000 pounds. This land deteriorates but little even after many years' cultivation (unmanured). Crab-grass and morning-glories are the most troublesome weeds.

The gray and black sandy lands occupy about two-thirds of this region, and are common over the state. Their natural growth is oaks, hickory, pine, and chestnut in the uplands, and maple, poplar, walnut, etc., in the bottoms. The soil varies from a fine sandy loam to a clay loam, and averages 10 inches deep. The heavier subsoil is a mulatto-colored clay, considerably mixed with sand, and sometimes containing "black gravel". It is underlaid by sand or blue clay at 15 to 20 feet. The soil is easily tilled, is early, warm, and ill-drained, and is best adapted to cotton. The plant grows from 3 to 4 feet high, and the seed-cotton product per acre of fresh land is 800 pounds. After four years' cultivation (unmanured) the product is 500 pounds. Crab-grass is the most troublesome weed. One-twentieth of such cultivated land lies "turned out"; when again cultivated it produces poorly, unless fertilized.

This location is near the northern limit of the cotton belt. The cotton crop suffers much from backward springs, does not start up vigorously, and is liable to be seriously affected by early frosts. Our northern location exempts us from the ravages of insects, and generally gives us a healthy plant, which in a great measure counteracts the disadvantages of the cold weather.

UNION.

Population: 13,030.—White, 9,932; colored, 3,098.

Area: 360 square miles.—Short-leaf pine and oak uplands, 55 square miles; prairie belt, 40 square miles; flatwoods, 95 square miles; red land, 170 square miles; all woodland.

Tilled lands: 56,999 acres.—Area planted in cotton, 21,255 acres; in corn, 25,834 acres; in oats, 2,695 acres; in wheat, 2,426 acres.

Cotton production: 8,259 bales; average cotton product per acre, 0.39 bale, 555 pounds seed-cotton, or 185 pounds cotton lint.

The agricultural features of Union county are very similar to those of Pontotoc, of which the southern half was originally a part. The Pontotoc ridge and the post-oak flatwoods form the two main features, occupying the middle of the county. A tract of sandy, short-leaf pine hills covers the extreme western portion, while on the east of the Pontotoc ridge there is a steep descent into the level black prairie country around Ellistown. The Tallahatchie and its tributaries drain almost the whole of the county, and have running water throughout the year.

A peculiar feature of the Pontotoc ridge lands occurs northeast of New Albany, the county-seat, viz, of a tract of ridge lands of most unpromising aspect at first sight, yet accounted among the most fertile uplands of the state, popularly designated the "Buncombes". The soil is deeply tinted with iron, light and loamy, and is filled with smooth concretionary pebbles of brown iron ore from the size of a pea to that of a fist, rendering tillage somewhat troublesome, but nevertheless very remunerative. It may be considered as land thoroughly marled by the underlying strata of sandy marls and limestones rich in greensand grains, and kept so by the continual disintegration of these materials and their admixture with the tilled soils. It is a good example of what can be done for most of the lands throughout the ridge by a free use of the marls by which it is underlaid.

The bottoms of the Tallahatchie and of tributary streams are very fertile. The former, however, are largely liable to overflows, and hence are not very extensively cultivated as yet. The second bottoms, or hummocks, are preferred for safety, and are almost equally productive. They are timbered chiefly with oaks, hickory, walnut, and poplar.

The tilled lands of Union county amount to 24.7 per cent. of the total area, and of these lands somewhat over one-third (37.3 per cent.) is given to cotton culture and a considerably larger proportion (over 45 per cent.) to corn. The average cotton acreage per square mile is 59, and the average product per acre 0.39 bale—a remarkably good showing for an upland county, which places it alongside of Marshall and Prentiss counties.

Communication is mainly with the Mobile and Ohio railroad, from the several stations of which (especially Baldwin) cotton is shipped, usually as fast as ginned, to Mobile, at the rate of \$4 25 per bale. The flatwoods being almost impassable for teams in winter, cotton is hauled westward to the New Orleans and Chicago railroad only from the country lying west of the flatwoods belt.

LEE.

Population : 20,470.—White, 12,656; colored, 7,814.

Area : 540 square miles.—Oak uplands, 35 square miles; prairie lands, 495 square miles; red land, 10 square miles; all woodland.

Tilled lands : 101,822 acres.—Area planted in cotton, 38,578 acres; in corn, 36,073 acres; in oats, 4,676 acres; in wheat, 1,400 acres.

Cotton production : 14,406 bales; average cotton product per acre, 0.37 bale, 528 pounds seed-cotton, or 176 pounds cotton lint.

Lee county lies wholly within the prairie belt, the chief exception being a small area in the northeast corner, where undulating oak uplands, with a sandy loam soil, form a gradual transition toward the prairie belt proper. The latter is mainly drained by Old Town creek and its branches, of which the Coonewah and Chirrapa are the chief, and, heading in the Pontotoc ridge, carry more or less water throughout the year.

Of the tilled area of this county (29.5 per cent.) but little was originally open prairie, interspersed in small bodies among the woodlands. Among these the "Chickasaw old fields" were the most notable. This tract, about 8 miles long by 2 wide, lies between Coonewah and Old Town creeks, west of Tupelo and Verona stations, and consists partly of black and partly of "bald" prairie, the soil on the latter being often so thin as to expose the white rock. Clumps of crab-apple and plum are their only growth. South of Chirrapa creek also small bodies of similar prairies exist.

The bottoms of the creeks, as well as the adjacent uplands, are also largely occupied by black prairie soil, the former heavily timbered, the latter more or less sparsely so, with an oak and hickory growth varying in character, as in approaching the low dividing ridges we meet the "black-jack" prairie and sometimes a lighter loam soil on the summits.

Lee county is well settled, and although long and exhaustively cultivated the predominance of the black prairie soil leaves its product per acre (0.37 bale) the highest of the prairie counties proper. Of the tilled area 37.9 per cent. is given to cotton culture and nearly an equal area to corn. The average cotton acreage per square mile is 71.4.

The Mobile and Ohio railroad traverses the county centrally from north to south, and its numerous stations afford ample facilities for shipments, which are mostly made to Mobile as fast as the cotton is ginned.

ABSTRACT OF THE REPORT OF H. L. HOLLAND, GUNTOWN, LEE COUNTY.

(Refers to a portion of the black prairie region 10 miles north and south of Sec. 35, T. 6, R. 5 E.)

The best soil for cotton is that of the old bottoms and second bottoms of creeks. These cover one-third of this region, and have a natural growth of white, red, black, and Spanish oaks, white and black walnut, hickory, ash, poplar, elm, dogwood, red-bud, cucumber, sassafras, sycamore, gums, beech, holly, ironwood, and grapes in abundance.

The soil is a blackish sandy loam, 12 to 36 inches thick in bottoms and 8 to 10 in second bottoms. The subsoil is a deep yellow or pale red clay, underlaid by marl at 8 to 10 feet. The soil is moderately early and warm when well drained, is easily tilled, and is well adapted to cotton, corn, and potatoes. These, with wheat and oats, are the chief crops of this region. Cotton occupies one-third of the cultivated part of this soil, and grows from 4 to 8 feet high, but is most productive at 4 feet. Wet seasons and deep culture incline it to run to weed; heavy manuring is the remedy.

The seed-cotton product per acre of fresh land varies from 1,000 to 1,500 pounds; 1,425 pounds make a 475-pound bale of fair lint. After twenty years' cultivation (unmanured) the product varies from 800 to 1,000 pounds, the ratio of seed to lint and quality being about the same. Cocklebur and smartweed are most troublesome weeds.

Another third of this region, designated as hillside land, is coextensive with the bottoms, and bears a natural growth of white, red, black, and Spanish oaks, elm, red-bud, mulberry, wild cherry, poplar, grape, brier, bramble, etc. The soil varies from fine sandy to clayey loam, is dark gray in color, and is from 3 to 8 inches thick. The subsoil is like that of the bottoms, but the underlying marl is 4 or 5 feet deeper. This soil is moderately early and warm when well drained, is easily tilled, and is best adapted to cotton and wheat, cotton occupying two-thirds of its cultivated portion. The plant attains a height of from 2 to 4 feet, but is most productive at 4 feet. It inclines to run to weed in wet seasons, but this can be remedied by topping and heavy manuring.

The seed-cotton product per acre of fresh land varies from 500 to 700 pounds, but twenty years' cultivation (unmanured) reduces the yield from 200 to 400 pounds. The ratio of seed to lint and quality of the staple are about as on the bottoms. About half of such originally cultivated land has been "turned out" and not again cultivated. The most troublesome weeds are crab-grass and hog-weed.

The remaining third of the region is designated poor beeswax ridge land. It is coextensive with the other kinds, and bears a natural growth of black-jack, some post and black oaks, hickory, and huckleberry. The soil is a beeswaxy or putty-like yellow clay; the similar subsoil is heavier, occasionally contains sand-rock, and is underlaid by sand, gravel, and marl at 20 to 25 feet. Tillage is very difficult, and the soil is best adapted to growing sedge-grass and sheep pasturage. Cotton is rarely planted on it. Cotton will grow 10 to 20 inches high, and produce from 100 to 300 pounds of seed-cotton per acre on fresh land, and none after twenty years' cultivation without manure. The ratio of seed to lint and quality are as on the other lands. All of such originally cultivated land now lies "turned out".

Slopes readily wash, and in a few cases are seriously damaged; the valleys also are to a small extent damaged by the washings. To check this a little hillside ditching has been done, generally inefficient, but it is successful when well done. In wet seasons cotton grows too tall, and, in consequence of luxurious foliage, does not open well. Cotton is shipped, as fast as ready, by rail to Mobile, at \$4 25 per bale.

PONTOTOC.

Population: 13,859.—White, 9,609; colored, 4,249.

Area: 530 square miles.—Woodland, all; short-leaf pine and oak uplands, 80 square miles; prairie belt, 15 square miles; flatwoods, 230 square miles; red land, 205 square miles.

Tilled lands: 72,848 acres.—Area planted in cotton, 21,448 acres; in corn, 26,588 acres; in oats, 2,169 acres; in wheat, 2,751 acres.

Cotton production: 8,085 bales; average cotton product per acre, 0.38 bale, 543 pounds seed-cotton, or 181 pounds cotton lint.

The two prominent agricultural features of Pontotoc county are the Pontotoc ridge (see p. 17), which, with a little black prairie, occupies the eastern half of the county, and the post-oak flatwoods (see p. 20), which, with a narrow strip of the adjacent uplands, occupies the western half.

The flatwoods are here at their maximum width of 10 miles, and are very characteristically developed, both as to the feature of the light, silty, whitish soil and that derived from the heavy flatwoods clay. Although settled to some extent by small farmers, and in favorable seasons yielding fair crops, especially near the foot of the ridge, the flatwoods contribute but little to the cotton production of the county. The cotton acreage shown by the returns may therefore be considered as belonging almost entirely to the eastern half of the county, the generous soils of the ridge showing their quality by the relatively high product per acre of nearly four-tenths of a bale. Considering that the Pontotoc ridge is one of the oldest settled regions of northern Mississippi, the fact that in this county, as well as in those of Union and Tippah, the average product per acre is higher than in the black prairie counties is quite remarkable. This is partly, no doubt, attributable to the prevalence of mixed farming, as shown in the large acreage of corn and other cereals, while in the prairie counties the cotton acreage mostly exceeds that of all the cereals combined.

The Pontotoc ridge is, properly speaking, a broad belt of rolling or hilly timbered uplands, to which there is a gradual ascent from the flatwoods on the west, while on the east there is quite an abrupt descent into the level prairie country. The subsoil is prevalently an orange-colored or "red" loam, mostly light enough to be easily tilled, rarely sandy, but in all cases thrifty ("red lands"), passing, on the one hand, into a pale-yellow, silty subsoil (somewhat resembling that of the ridges separating that of the black prairies), which occasionally occupies level upland tracts, and on the other through the "mahogany" or "mulatto" soils (generally lying on the slopes of ridges, and esteemed the best of all) into a true black prairie soil, or the heavy, intractable, greenish-yellow clay of the "beeswax hummocks". The whole country is underlaid by strata of sandy shell marls and limestones, to whose presence the thriftiness of the land is doubtless due, and the use of which on "tired" land is always followed by the best results.

The timber is a fine growth of oaks, black, Spanish, post, and, on the heavier soils, black-jack, with much hickory, and on the best lands black walnut, a tree not common elsewhere in the state; also, a good deal of tulip tree, or "poplar", especially in the valleys. On the inferior soils the scarlet oak is common.

The tilled lands of the county amount to 21.5 per cent. of the area. Of these lands, 29.4 per cent. is given to cotton and 36.5 to corn. The cotton acreage per square mile is 40.5, and the average product per acre is 38, being somewhat below Tippah and Union counties.

Communication is chiefly with stations on the Mobile and Ohio railroad, the flatwoods being impassable for teams during the winter months, when cotton is commonly shipped, chiefly to Mobile, at the rate of \$4 per bale.

ABSTRACT OF THE REPORT OF R. C. CALLAWAY, ALGOMA.

The east side of the county is hummock land; the west side is clayey land, and is the best for cotton. Its natural growth is oak, pine, gum, hickory, etc. The soil is quite various in color and constitution, and is from 2 to 4 inches deep to change of color. It is underlaid by sand, gravel, and rock at 1 to 10 feet, and is ill-drained, difficult to till when wet, but easy when dry. The chief crops of this region are corn, cotton, and potatoes. The soil is equally well adapted to all, but one-half its cultivated area is planted in cotton. The plant attains a height of from 2 to 3 feet, and inclines to run to weed in wet weather, which is remedied by topping. The seed-cotton product per acre of fresh land varies from 600 to 1,000 pounds; 1,600 pounds make a 475-pound bale of good lint. Old land produces from 400 to 800 pounds; the staple is then a little shorter. Hog-weed and crab-grass are most troublesome.

Slopes are seriously damaged by washing and gulying, and the valleys are injured to the extent of 10 per cent. by the washings. To check these horizontalizing and hillside ditching have been successfully practiced.

CHICKASAW.

Population: 17,905.—White, 7,696; colored, 10,209.

Area: 500 square miles.—Short-leaf pine and oak uplands, 30 square miles; prairie belt, 215 square miles; flatwoods, 180 square miles; red land, 75 square miles; all woodland.

Tilled lands: 97,233 acres.—Area planted in cotton, 38,477 acres; in corn, 34,258 acres; in oats, 3,735 acres; in wheat, 1,415 acres.

Cotton production: 12,861 bales; average cotton product per acre, 0.33 bale, 471 pounds seed-cotton, or 157 pounds cotton lint.

Chickasaw county is quite varied in the character of its surface and soils. Its eastern portion, embracing about two-fifths of its area and traversed by Suckatonche and Houlika creeks, lies within the prairie belt, and was originally spotted with numerous bodies of open prairie, separated by low woodland ridges. The lower slopes of these, as well as the bottoms of the streams, have almost the same soil as the prairies. Somewhat higher up lies the "mulatto" or yellow "black-jack prairie", of varying width, timbered with short, sturdy black-jack and post oaks; then on the plateaus or ridge tops a pale grayish soil, underlaid by a silty loam subsoil and of inferior quality, timbered with a somewhat scrubby growth of scarlet, post, and Spanish oaks, with some black-jack. The prairie

country is well settled, but much land has been thrown out of cultivation on account of exhaustion by improvident culture. As in the other prairie counties, the average product per acre has fallen from 1,200 to less than 500 pounds of seed-cotton per acre. The region around Okalona has, in times past, been especially noted for its high production of high-grade cotton, and there can be no doubt that this state of things can easily be restored.

Northward of Houston there reaches into the county the southern extremity of the Pontotoc ridge, with an average width of about 6 miles, forming a wedge between the prairie country on the east and the flatwoods belt on the west. The red loam soils of these somewhat broken lands are highly productive. They are timbered with a good growth of oaks, hickories, etc., mixed with black walnut and tulip tree ("poplar"), and produce excellent cotton.

The Pontotoc ridge flattens out and loses its peculiar character near Houston; but a belt of rolling oak uplands continues southeastward, and rises into a high ridge, sandy on its western slope, in the northwestern part of Clay.

The extreme western portion of the county is formed by the flatwoods belt, here 6 to 7 miles in width and of the usual character in its northern portion, where both the heavy and the light silty soils occur (see regional description, p. 21), and which is but very little settled. In the southern portion of the belt the peculiar soils of the "white-oak flatwoods" are quite extensively represented (see p. 23), and cultivation is more successful. The level region near Sparta forms a transition between the flatwoods proper and the wooded prairie country, which is more prominent in Clay and Oktibbeha.

The tilled lands of Chickasaw constitute 30.4 per cent. of the total area. Of these lands, 39.6 per cent. are given to cotton culture and about 35 per cent. to corn. The average cotton acreage per square mile is 77, and the average product per acre 0.33 bale, as in Monroe and Oktibbeha.

Cotton is shipped from Okalona, Egypt, and other stations on the Mobile and Ohio railroad, chiefly to Mobile

MONROE.

Population : 28,553.—White, 10,551; colored, 18,002.

Area : 790 square miles.—Short-leaf pine and oak uplands, 525 square miles; prairie belt, 265 square miles.

Tilled lands : 155,808 acres.—Area planted in cotton, 71,402 acres; in corn, 53,431 acres; in oats, 7,278 acres; in wheat, 4,114 acres.

Cotton production : 23,830 bales; average cotton product per acre, 0.33 bale, 471 pounds seed-cotton, or 157 pounds cotton lint.

Monroe county is divided by the Tombigbee river, which traverses it from north to south, into two unequal portions, of which the eastern one, a region of sandy uplands, timbered with short-leaf pine and oaks, has about twice the area of the western portion. The latter, however, possesses by far the richer soils, and the bulk of the population as well as of cotton production. A large proportion of its area (probably over one-third) was originally treeless (or almost treeless) black prairie, forming a belt from 3 to 5 miles wide, trending a little east of south, bordered by tracts bearing a timber growth of oaks and hickory and soils partly like that of the prairie itself, partly of a "mulatto" or yellow tint and much less thrifty, but still of such quality that nearly the whole of this western division is, or has been, under cultivation for many years, and has been claimed as being the best upland cotton region of the eastern part of the state. The fact shown by the returns that the present average production per acre is only one-third of a bale is due to long-continued exhaustive cultivation, whereby the product has fallen from about 1,300 pounds of seed-cotton to less than 500; yet the soil is so rich naturally, and so deep, that with better methods of culture the original productiveness can undoubtedly be restored in this as in the rest of the prairie country. The black prairie belt is traversed almost centrally by the Mobile and Ohio railroad.

The Tombigbee river is bordered on the east throughout the county by a flat varying from 4 to 6 miles in width, of which the portion nearest the river has the character of a bottom, is more or less liable to overflow, and bears a heavy growth of timber, indicative of a rich soil, while the inland portion, especially in the northern part, is timbered with upland oaks, with a large admixture of bottom pine. The soil is gray, the subsoil a pale yellow silty loam, and is fairly productive of both cotton and corn. Water is found 15 to 18 feet beneath the surface, and is brought up by sweeps. This country is as yet but little settled, partly, it is said, on account of unhealthfulness, due perhaps to the quality of the water. This could doubtless be obviated by the use of artesian wells.

Eastward of the flat the country rises into a sandy hill region, partly of the usual character of the "short-leaf pine hills", but also (as near Athens and on the dividing ridge between the Buttahatchie and Tombigbee generally) in part of a plateau character, with a good loam subsoil timbered with oak and hickory, and forming a fine upland farming country. The bottoms of the streams (Buttahatchie and Sipsie) are wide and fertile, and, with their tributaries, possess a large area of good valley land.

The tilled lands of Monroe county constitute 30.8 per cent. of the county area, and 45.8 per cent. of these lands is given to cotton culture, against 34.2 devoted to corn. The average cotton acreage per square mile is 90.4, and the average product per acre 0.33 bale.

Cotton is hauled from all parts of the county to the Mobile and Ohio railroad for shipment, chiefly to Aberdeen, which is also the head of navigation on the Tombigbee, though steamers now rarely ascend beyond Columbus.

CLAY.

Population : 17,367.—White, 5,255; colored, 12,112.

Area : 400 square miles.—Short-leaf pine and oak uplands, 15 square miles; prairie belt, 320 square miles; flatwoods, 65 square miles.

Tilled lands : 81,441 acres.—Area planted in cotton, 41,656 acres; in corn, 26,295 acres; in oats, 3,117 acres; in wheat, 431 acres.

Cotton production : 13,137 bales; average cotton product per acre, 0.32 bale, 456 pounds seed-cotton, or 152 pounds cotton lint.

Clay is essentially a prairie county, although only a small portion of its area was originally open prairie, viz, one body northward of Palo Alto, on Houlka creek, and two in the eastern portion of the county, north and

northeast of West Point. A large proportion of the woodland, however, has almost the same black soil as the prairie, especially near the streams, and has long been cleared and put into cultivation. On the higher portions of the rolling uplands, however, we find, first, the "mulatto" black-jack prairie skirting the black soil, and on the summits of the ridges the pale, silty loam, of inferior fertility, and bearing a rather indifferent growth of post, Spanish, scarlet, and some black-jack oaks.

A belt of rolling oak uplands, rising in the flatwoods northwest of Houston, Chickasaw county, and running thence southeastward, rises into a high sandy ridge in the northwestern border of the county. This ridge falls off steeply on the east, showing outcropping white limestone, but gradually flattens out to the southward, terminating in the fork of the Suckatonche and the Tibbee.

As in the other prairie counties, the rich soils have been depleted by improvident cropping, without returns or rotation; but their restoration, by a suitable rational system of culture, will be an easy task.

In its extreme western portion the county embraces a strip of the flatwoods belt from 4 to 6 miles wide, and of the usual character as given in the regional description, passing rather gradually from the whitish clay soil of the flatwoods to the black or yellow "prairie" soil, which is timbered with nearly the same kind of trees (with the exception of the pine), but of larger size and different type, sturdy and dense-topped, instead of lank and sparsely branched, and associated more or less with the plum and crab-apple.

The tilled lands of Clay county amount to 31.8 per cent. of the total area, and 51.1 per cent. of these lands is devoted to cotton culture, against 32.3 given to corn, a proportion of three to two. The average cotton acreage per square mile is 104.1, placing the county fifth (De Soto, Lowndes, Noxubee, and Tate taking precedence) in the state in this respect. The average cotton product per acre, however, is only 0.32 bale, the same as Newton and Neshoba counties.

Cotton is shipped, as fast as baled, from Muldoon, West Point, Tibbee, and other stations to Mobile.

OKTIBBEHA.

Population: 15,978.—White, 5,109; colored, 10,869.

Area: 430 square miles.—Short-leaf pine and oak uplands, 40 square miles; prairie belt, 190 square miles; flatwoods, 200 square miles.

Tilled lands: 65,365 acres.—Area planted in cotton, 29,679 acres; in corn, 25,251 acres; in oats, 3,288 acres; in wheat, 1,088 acres.

Cotton production: 9,929 bales; average cotton product per acre, 0.33 bale, 471 pounds seed-cotton, or 157 pounds cotton lint.

Oktibbeha county embraces three well-defined agricultural features. Its eastern portion (somewhat less than half of the total area) belongs to the prairie region, and is quite similar to the adjacent portions of Lowndes and Clay. Prairie tracts, interspersed with oak woodlands, of which some have the black prairie soil also, while others have either the less thrifty "post-oak prairie" soil, or, less frequently, the pale-yellow upland loam, are timbered with post, Spanish, scarlet, and other oaks, rather undersized. To the westward the level or gently undulating woodlands pass rather insensibly, in most cases, into the level post-oak flatwoods belt, which traverses the county in a southeastern direction from its northwestern corner with a width varying from 8 to 10 miles. The flatwoods here do not differ materially from the more northern portion of the belt and are little settled. Trim Cane creek drains the northern part, while the Noxubee and its various branches traverse the southern portion of the county, crossing both the flatwoods and the prairie region. In the southwestern corner the county embraces a small area of sandy hill lands, timbered with short-leaf pine and oaks. The streams heading in this region (like the Noxubee river itself) maintain a flow of water during the summer; those heading within the flatwoods or the prairie region are usually dry during the summer months.

The tilled lands of Oktibbeha county amount to 23.8 per cent. of the total area. Of these lands 45.4 per cent. is given to cotton and 38.6 to corn culture, showing an advantage in this regard over the neighboring county of Noxubee. The average cotton acreage per square mile is 69, and the average cotton product per acre 0.33 bale, about one-tenth higher than Noxubee.

Starkville, the county-seat (where the state agricultural college is located), is connected by a branch road with the Mobile and Ohio railroad at Artesia station, and cotton is shipped by rail to Mobile. The cotton product of the county is derived almost entirely from the prairie belt.

LOWNDES.

Population: 28,244.—White, 5,588; colored, 22,656.

Area: 500 square miles.—Short-leaf pine and oak uplands, 220 square miles; prairie belt, 280 square miles.

Tilled lands: 126,312 acres.—Area planted in cotton, 64,670 acres; in corn, 42,855 acres; in oats, 3,784 acres; in wheat, 1,618 acres.

Cotton production: 21,886 bales; average cotton product per acre, 0.34 bale, 486 pounds seed-cotton, or 162 pounds cotton lint.

Lowndes county is naturally subdivided into two strongly contrasted portions: the southern, characterized by tracts of black prairie, interspersed with more or less rolling oak uplands, and the northern (east of the Tombigbee river), which is hilly and sandy, and is timbered with oaks, intermingled with short-leaf pine. The river is skirted on the west by a narrow belt of hilly country, sometimes abutting on the stream in abrupt bluffs, back of which lies the prairie country proper, while on the east side there is a flat six or seven miles wide, of which only the portion nearest the river is subject to overflow and traversed by sloughs, the greater part being above high water, with a gradual ascent toward the base of the pine hills. This eastern portion is rather thinly settled, the bulk of the population, as well as of cotton cultivation, being found in the prairie country.

Of the latter probably about one-third or less was originally treeless or very sparsely timbered black prairie, with a heavy, "waxy" soil several feet in depth. Between the prairie tracts or belts there lie (generally at a

somewhat higher level, plateau-like) slightly rolling lands, timbered more or less with post, Spanish, black-jack, and sometimes black oaks and hickory, the soil being a clay or clay loam, varying from black to "mulatto" or mahogany tint, with yellow subsoil. This "post-oak land" is less productive and durable than the black prairie proper, but is much superior to the light loamy or silty ridges separating the prairies of Chickasaw, and is extensively cultivated in cotton. Considering the excellent quality of the lands chiefly cultivated, the low average per acre given by the enumeration is to be explained by the long practice of exhaustive culture without rotation or return to the soil, Lowndes being among the regions longest settled in the state. With rational culture, however, these prairie soils can probably be readily restored to their original productiveness.

The bottoms of the streams are narrow, and the soil, usually somewhat lighter than that of the prairie proper, is very productive in good seasons. All the streams heading within the prairie region go dry during the summer, and the water supply is dependent upon bored wells, from which it frequently rises above the surface, the depths varying from 250 to 400 feet.

East of the river, and northward of Columbus, cotton culture is not very extensive. The soil of the river flat is better adapted to sweet potatoes and grain than to cotton, being rather light, and is underlaid by gravel at 4 to 8 feet and timbered largely with water and willow oak, with occasionally some short-leaf pine. Water is found at 18 to 20 feet, and sweeps are largely used. In the hilly country the soil of the uplands is rather thin and sandy, and the valleys are chiefly cultivated by small farmers.

The tilled lands of Lowndes amount to 39.5 per cent. of the county area. Of these lands 51.2 per cent. is devoted to cotton culture, against 34 per cent. given to corn. The average cotton acreage per square mile is 129.3, placing it second in the state to De Soto. The average product per acre is, however, only 0.34 bale, against 0.47 in De Soto. Originally the product of the prairie country was the higher of the two.

Cotton is usually shipped as soon as baled from Columbus and the several stations of the Mobile and Ohio railroad to Mobile, New Orleans, and direct to eastern manufacturers at Fall River and Providence, and sometimes in winter by steamers to Mobile.

ABSTRACTS OF THE REPORTS OF JAMES O. BANKS, COLUMBUS, AND R. W. BANKS, COBB'S SWITCH.

The uplands consist of black and mulatto post-oak table-lands and gently rolling prairies. The lowlands are the first and second bottoms of creeks. The kinds of soil are rolling prairie, alluvial and hummock, and post-oak soils.

The prairie is the chief one, and includes about 70 per cent. of the cultivated land of this region. It extends about 50 miles north, 25 south, thence southeasterly to Montgomery, Alabama. The name is sometimes indiscriminately applied to all lime lands in what is known as the "prairie belt". The soil is a clay loam, waxy and putty-like, blackish and yellowish-black, and is from 2 to 6 feet thick. The underlying material is heavier, gradually becoming like the surface by exposure, is quite impervious, can easily be made to hold water for stock the year round, contains in places smooth brownish and whitish pebbles (the latter having a worm-eaten appearance), and is underlaid by blue joint-clay, and this by limestone, which crops out in some places and is 20 feet below the surface in others. The soil is early when well-drained, is easily tilled, except when too wet, and is best adapted to corn. But one-half of its cultivated area is planted in cotton. Corn and cotton are the chief crops of this region.

The usual and most productive height of the cotton-plant on the prairies is from 3½ to 4 feet. Excess of rain, especially in July and August, and the boll-worm's depredations incline the plant to run to weed on all soils here, and to restrain it topping is sometimes practiced, but is not always satisfactory. Early planting favors early bolting. The seed-cotton product per acre of fresh land varies from 1,200 to 1,400 pounds; in the average season 1,600 pounds make a 475-pound bale of middling to good middling lint. After ten years' cultivation (unmanured) the product varies from 400 to 1,000 pounds, according to season and kind of cultivation; from 1,665 to 1,720 pounds then make a bale of lint not so strong or so long as that from fresh land.

About 5 or 6 per cent. of such originally cultivated land lies "turned out", and when again cultivated it produces a small crop the first year, but improves after that. It is usual to plant corn on such land the first year. The troublesome weeds are crab-grass and morning-glory.

In addition to the above, Mr. J. O. Banks describes the following soils:

The alluvial creek bottom and hummock land has a natural growth of oak, hickory, gum, ash, mulberry, wild plum, etc. The soil is a blackish clayey loam from 2 to 4 feet thick. The underlying material is heavier, but rather similar to a considerable depth, rather leachy, and is underlaid by limestone at 10 to 12 feet. Tillage is generally easy, but is not so easy in wet as in dry seasons. The soil is later than the prairie, but is generally well-drained on the surface. It is best adapted to cotton after the first year's cultivation, and about 80 per cent. of the cultivated area is planted with it. The plant attains a height of from 4 to 6 feet, but is most productive at 5 feet. The seed-cotton product per acre of fresh land varies from 1,200 to 1,600 pounds, and about 1,620 pounds make a 475-pound bale of middling to good middling lint. After ten years' cultivation (unmanured) the product is from 500 to 1,000 pounds; the ratio of seed to lint is about the same, but the staple is a little shorter and weaker. Crab-grass, morning-glory, and purslane are the troublesome weeds. None of such land has been "turned out".

The black and mulatto post-oak land borders the prairies, is coextensive with them, and has a natural growth almost entirely of oak. The soil is a putty-like and waxy clay loam, varying in color from yellow to mulatto, blackish and black, and is 12 to 36 inches deep. The subsoil is heavier, but gradually becomes like the surface when turned up. It is impervious, packs like the prairie subsoil, and is underlaid by limestone at 18 to 24 feet. Tillage is difficult when the soil is wet, but easier when it is dry, and on the whole is more difficult than the other soils. The soil is early, well-drained, and is best adapted to cotton, nine-tenths or more of the cultivated part being planted with the same.

The plant grows from 4 to 4½ feet high on fresh land and 2 to 4 on old land, and is less inclined to weed than on other soils. The seed-cotton product per acre of fresh lands varies from 1,200 to 1,500 pounds; 1,600 to 1,665 pounds make a 475-pound bale of middling to good middling lint. After five years' cultivation (unmanured) the product varies from 400 to 800 pounds, and from 1,660 to 1,720 pounds then make a bale of lint, neither so long nor so strong as that from fresh land. This land deteriorates more rapidly than the other kinds. Five to 8 per cent. of it lies "turned out", and yields rather poorly when again cultivated. Crab-grass is the most troublesome weed. Slopes readily wash and gully, and are occasionally seriously damaged; but this may be easily checked if done in time, for which purpose horizontalizing and hillside ditching are successfully practiced.

On the lowlands cotton does best in dry, hot seasons, for in wet seasons it runs too much to weed and bears little fruit.

The yield of lint cotton depends more upon the seasons and the variety of seed than upon the soil. The stronger and fresher soil yields more seed than the poorer soils, but in 1878 all soils gave a poor yield, requiring about $3\frac{1}{2}$ pounds of seed-cotton to give one of lint. The crop of 1879 gave one of lint for $3\frac{1}{2}$ to $3\frac{3}{4}$ pounds of seed-cotton.

Cotton is shipped as soon as baled by rail or river from Columbus to Mobile and New Orleans, and to eastern manufacturers at Fall River and Providence. Rates of freight are 90 cents to \$1 per 100 pounds to the east, \$1 50 to \$2 per bale to Mobile, and \$2 50 to \$3 per bale by river and rail to New Orleans.

NOXUBEE.

Population: 29,874.—White, 5,302; colored, 24,572.

Area: 680 square miles.—Short-leaf pine and oak uplands, 55 square miles; prairie belt, 495 square miles; flatwoods, 130 square miles.

Tilled lands: 151,704 acres.—Area planted in cotton, 82,483 acres; in corn, 50,904 acres; in oats, 5,429 acres; in wheat, 39 acres.

Cotton production: 25,294 bales; average cotton product per acre, 0.31 bale, 441 pounds seed-cotton, or 147 pounds cotton lint.

Of Noxubee county by far the greater portion (about five-sevenths) lies within the prairie belt. A large body of originally open prairie lies northward of Macon, the county-seat, and smaller bodies of such prairie are found all over the county. All have long since passed into cultivation, and partly out of it again, and, as much of the woodland possesses the same soil, it is not now easy to circumscribe these open prairie tracts. Most of the area within the prairie belt is more or less timbered (post-oak prairie), and ridges of a sandy loam soil, timbered with a variety of oaks, form the divides between many of the streams.

The post-oak prairie land in this county, as well as in Kemper, has not unfrequently a dark-orange or red subsoil, differing from that of the more northern portion of the prairie belt, and giving rise to a very varied coloring of the plowed fields, ranging from gray, through mahogany, to orange and black. It will be noted that the average product per acre in this county is somewhat less than in the other prairie counties, owing partly to the more limited proportion of true black prairie and partly, no doubt, to the fact noted in the general description and discussion of soils (see page 14) that the proportion of phosphates in the prairie soil itself is less than in those of Monroe and Lowndes. The use of phosphate manures will probably be followed by a very great increase in productiveness.

Westward of the prairie country we find, as elsewhere, the flatwoods belt narrowing here to only 4 or 5 miles in the southern part of the county. Its agricultural and surface features are the same as in Oktibbeha, the soil perhaps a shade less heavy, but yet very refractory and unthrifty in cultivation, and hence the region is but little settled. It is drained by numerous creeks tributary to the Noxubee river, but, in the absence of springs, is mostly dry during the summer.

In the southwest corner of the county there is a small area of very sandy uplands, timbered partly with short-leaf pine forest and partly with oaks only, fairly productive, as in the Gholson neighborhood. From these sandy hill lands there is an abrupt descent into the flatwoods, and from these again there is an almost equally abrupt ascent into the high prairie plateau of Kemper.

The tilled lands of Noxubee form 34.9 per cent. of the area, and 54.4 per cent., or over one-half of these lands, is given to cotton culture, while only 33.5 per cent., or one-third, is given to corn. The cotton acreage per square mile is 121.3, the county standing fourth (to Tate, Lowndes, and De Soto) in this respect in the state. The average product per acre is, however, only 0.31 bale—a remarkable comment upon the exhaustive methods of culture that have depressed this ratio to a level with that of the adjoining county of Kemper, and nearly to that of the "pine hills" counties generally.

Almost all the cotton of the county is grown within the prairie belt, and is shipped via Macon and other stations on the Mobile and Ohio railroad, which traverses the county nearly centrally from north to south, keeping within the prairie belt. Cotton is shipped as soon as baled by rail to Mobile at \$4 per bale.

ABSTRACT OF THE REPORT OF F. R. W. BOCK, MACON.

The uplands are generally rolling, not hilly, and some are level table-lands. They consist of post-oak prairies and timbered lands in the ratio of two to one.

The prairies bear a scattered growth of post-oak and hickory. The soil is a clay loam, varying in color from gray to mahogany, orange, red, and blackish, and is underlaid at 13 inches by a subsoil of heavier buff and brick-red, hard and leachy material, which is again underlaid by limestone at 12 feet.

Such land extends east and west about 3 miles and through the entire townships north and south, with small portions of sandy lands. The soil is early, ill-drained, easily tilled, except when it is too wet, and is best adapted to cotton, three-fourths of its cultivated area being planted with the same. The plant grows from 3 to 4 feet high, and inclines to run to weed when the seasons are too wet and the stand is too much crowded and shaded. The remedy is topping in early August.

The average seed-cotton product per acre of fresh land is 1,000 pounds; 1,665 pounds make a 475-pound bale of good middling lint. After five years' cultivation (unmanured) the product is 600 pounds, and 2,135 pounds make a 475-pound bale of inferior and shorter lint. The most troublesome weeds are wild indigo, prairie weed, and vines. One-tenth of such cultivated land (also of that next described) lies "turned out". It produces well for three years when again cultivated, and then deteriorates. Slopes do not readily wash and gully.

The timbered land bears a natural growth chiefly of pine, white oak, red oak, hickory, etc., and occurs in bodies of 100 to 5,000 acres. The soil is a gray and blackish-gray, fine and coarse sandy loam, 12 inches thick. The subsoil is heavier, is of a dirty-yellow color, and readily becomes very hard on exposure, and is underlaid by sand and limestone at from 4 to 15 feet. Tillage is easy, the soil being early and warm in some places, late and cold in others, and is generally ill-drained. Two-thirds of its cultivated area is planted in cotton, to which the soil is apparently best adapted. The plant grows from 2 to 4 feet high, but is most productive at 4 feet, and runs to weed, etc., as on the prairie. The seed-cotton product per acre of fresh land is 900 pounds; 1,780 pounds make a 475-pound bale of good middling lint. Five years' cultivation (unmanured) reduces the product to 500 pounds, and from 1,900 to 2,130 pounds make a 475-pound bale of lint, which rates two points below the staple from fresh land. Wild indigo is the most troublesome weed.

Slopes wash and gully readily, but are not generally seriously damaged, the washings injuring the valleys, but to no great extent. Horizontalizing and hillside ditching are practiced, and pretty generally check the damage. The chief crops here are cotton, corn, oats, sweet potatoes, and pease. From April 15 to November 1 the weather is generally very warm and very favorable to cotton raising. The cotton-plant grows and matures very rapidly here, more especially on the prairie (termed here post-oak prairie) than on the sandy lands, and produces more fruit to the stalk on such lands than on sandy.

KEMPER.

(See "Short-leaf pine and oak uplands region".)

FLATWOODS REGION.

This embraces the following parts of counties, all of which are described under other regional heads: Tippah, Union, Pontotoc, Chickasaw, Oktibbeha, and Noxubee.

TIPPAH.

(See "Northeastern prairie region".)

UNION.

(See "Northeastern prairie region".)

PONTOTOC.

(See "Northeastern prairie region".)

CHICKASAW.

(See "Northeastern prairie region".)

OKTIBBEHA.

(See "Northeastern prairie region".)

NOXUBEE.

(See "Northeastern prairie region".)

SHORT-LEAF PINE AND OAK UPLANDS REGION.

(Embraces the following counties and parts of counties: East of the prairie region—Tishomingo, Alcorn,* Prentiss,* Tippah,* Itawamba, Lee,* Monroe,* and Lowndes,* west of the prairie region—Benton,* Union,* La Fayette,* Pontotoc,* Calhoun, Yalobusha,* Grenada,* Montgomery, Sumner, Choctaw, Oktibbeha,* Winston, Attala, Leake, Neshoba, Kemper, Lauderdale,* Newton, Scott,* Rankin,* Simpson,* Hinds,* Claiborne,* Jefferson,* Franklin,* Adams,* and Wilkinson.*)

TISHOMINGO.

Population: 8,774.—White, 7,611; colored, 1,163.

Area: 450 square miles.—Woodland, all; all short-leaf pine and oak uplands.

Tilled lands: 38,419 acres.—Area planted in cotton, 7,555 acres; in corn, 15,965 acres; in oats, 3,237 acres; in wheat, 702 acres.

Cotton production: 2,672 bales; average cotton product per acre, 0.35 bale, 498 pounds seed-cotton, or 166 pounds cotton lint.

Tishomingo county differs from all other parts of the state in its features, from the fact that it is underlaid by rocks not represented elsewhere in the state, though covering a large portion of northern Alabama, whence the sandstones and limestones of the coal formation extend into this county. They are prominent on the waters of Big Bear creek, which drains all the eastern part of the county, and likewise exist on Mackay's creek, a tributary of the Tombigbee, and on the other creeks directly tributary to the Tennessee, such as Yellow and Indian creeks.

The region underlaid by these rocks is generally gently undulating; the surface is gravelly, rather than sandy, at least on the lower slopes. The lands of the immediate valley of Bear creek are fine, and produce abundant crops of corn and cotton. They are largely "hummocks" or second bottoms, elevated 20 to 40 feet above the streams, and their timber is singularly various—Spanish, black, post, water, willow, chestnut-white, white, and black-jack oaks, hickory, sweet gum, pine, dogwood, walnut, tulip tree, and some red cedar—varying according as the underlying rocks are sandstones or calcareous shales. On the former the timber (post oak, black-jack, and pine) is remarkably sparse and quite small, as in the "barrens" of Alabama.

The Tennessee river has little or no bottom on the Mississippi side, the pine hills coming up pretty close to the bank, which is timbered with walnut and sycamore. Yellow creek, which at its head has remarkably wide

bottoms, has but a very narrow one in the lower part of its course. On the bordering hills shaly hydraulic limestone often lies close to the surface, while elsewhere gravel beds form the higher portion of the ridges.

The tilled lands of Tishomingo form 13.3 per cent. of the area.

Small farming is the rule in Tishomingo. Cotton occupies but one-fifth of the cultivated area, while somewhat less than half of the same is given to corn, it being the predominant crop. The cotton product per acre is relatively high (0.35 bale), most of it being grown in bottom lands.

Cotton shipments are made either by the Memphis and Charleston railroad to New Orleans or Mobile, or by steamer from Eastport, on the Tennessee river.

ABSTRACT OF THE REPORT OF J. M. D. MILLER, IUKA.

The uplands are hilly and rolling, and have a variety of soils and some patches of muck, but chiefly a thin, light sandy soil, on which cotton is liable to suffer from drought.

The lowlands consist of first and second bottoms of creeks; they are narrow, sometimes overflow, and are subject to early frosts.

Sandy and clay uplands and bottom soils are cultivated in cotton. The upland soils are chiefly cultivated, and constitute sevenths of the county's area. The same kinds extend 21 miles north, 40 south, 4 east, and 20 west. They bear a natural growth of red, post, black-jack, and Spanish oaks, and gum. The soils vary in color from whitish-gray to buff, yellow, brown, orange, red, and blackish, and are 2 to 6 inches thick, the chief variety being coarse, sandy, and gravelly. The subsoil is generally heavier and leachy, and consists of tougher reddish clay, with coarser gravel, or, in places, with whitish sand, underlaid by sand and gravel. The chief crops of the region are cotton and corn. The soil is early, warm, well-drained, always easily tilled, and is best adapted to cotton, three-fourths of the cultivated area being planted with the same. The plant grows from 12 to 24 inches high, but is most productive at 18, and is a little inclined to run to weed in wet weather. The product per acre of fresh land is about 800 pounds of seed-cotton; 1,425 pounds make a 475-pound bale of middling to good middling lint. After three years' cultivation (unmanured) the product is about 300 pounds; 1,545 pounds then make a bale of shorter lint. One-half or more of such originally cultivated land lies "turned out," which produces very well when again cultivated if the soil has not been washed away by rains. There is some crab-grass, but the soil is generally too poor for other weeds. Slopes wash and gully readily, but are not yet seriously damaged; perhaps 1 per cent. of the valleys have been injured by the washings. Horizontalizing has been practiced with fair success in checking the damage.

Cotton is shipped in November and December by rail to Memphis at \$2 15 per bale.

ALCORN.

(See "Northeastern prairie region".)

PRENTISS.

(See "Northeastern prairie region".)

TIPPAH.

(See "Northeastern prairie region".)

ITAWAMBA.

Population : 10,663.—White, 9,555; colored, 1,108.

Area : 550 square miles.—All short-leaf pine and oak uplands.

Tilled lands : 51,415 acres.—Area planted in cotton, 14,851 acres; in corn, 22,055 acres; in oats, 3,134 acres; in wheat, 1,918 acres.

Cotton production : 5,113 bales; average cotton product per acre, 0.34 bale, 486 pounds seed-cotton, or 162 pounds cotton lint.

Itawamba county is a region of rolling or sometimes hilly uplands, usually with sandy loam soils, timbered with oaks and pine, more or less mingled with hickory, according to the higher or lower grade of the soil. On the southwest a portion of these uplands bears more or less the character of the prairie belt. The main Tombigbee traverses the western part from north to south, receiving numerous tributaries from either side. Among these the Bull Mountain drains the eastern half of the county, joining the Tombigbee river just at the southern county line. In the fork there is an upland tract of fertile red loam soil, timbered with Spanish, scarlet, black, and white oaks, hickory, and some sturdy pine. Similar tracts occur at other points, as near Yocony. The bottoms of Bull Mountain, Hurricane, and other larger creeks are wide, heavily timbered, and very fertile; those of the smaller streams rather narrow, but with much good land on the lower slopes. The bottom of the Tombigbee within the county is from 1 to 1½ miles wide, and is very productive, but unfortunately it is subject to annual overflows. The wide flat skirting the Tombigbee on the east in Monroe and Lowndes counties begins just south of Bull Mountain creek.

Itawamba county is a region of small farms, the culture of corn occupying an area one-half larger than that of cotton, although the latter is universally grown as a "money crop". The tilled lands of Itawamba constitute 14.6 per cent. of the county area, and 28.9 per cent. of these is given to cotton. The cotton product per acre (0.34 bale) gives Itawamba a fair position among the counties of the short-leaf pine and oak upland region. Shipments are made from stations on the Mobile and Ohio railroad, to which cotton is hauled, chiefly in December.

LEE.

(See "Northeastern prairie region".)

MONROE.

(See "Northeastern prairie region".)

LOWNDES.

(See "Northeastern prairie region".)

BENTON.

(See "Brown-loam table-lands".)

UNION.

(See "Northeastern prairie region".)

LA FAYETTE.

(See "Brown-loam table-lands".)

PONTOTOC.

(See "Northeastern prairie region".)

CALHOUN.

Population: 13,492.—White, 10,191; colored, 3,301.*Area*: 580 square miles.—Short-leaf pine and oak uplands, 570 square miles; flatwoods, 10 square miles.*Tilled lands*: 60,576 acres.—Area planted in cotton, 19,028 acres; in corn, 22,414 acres; in oats, 4,464 acres; in wheat, 908 acres.*Cotton production*: 9,536 bales; average cotton product per acre, 0.50 bale, 714 pounds seed-cotton, or 238 pounds cotton lint.

Calhoun county is, generally speaking, a region of hilly or ridgy and sometimes even broken upland, timbered with a mixture of short-leaf pine and oaks, among which the black-jack and post oak predominate on the higher ridges, but on the lower slopes and broader ridges are largely replaced by black and Spanish oaks. The Loosha-Scoona and Yalobusha rivers, traversing the county in a southwesterly direction, divide it into three nearly equal portions, all copiously watered by numerous creeks, to the bottoms of which the cultivation, especially of cotton, is chiefly confined in the two northern divisions, while in the portion lying south of the Yalobusha river, and especially on the waters of Tapashaw creek, the upland ridges are broader and lower, the bottoms wider, and cultivation and settlement more general.

The bottoms of the two main streams are wide (1½ to 2 miles), and, judging by their large and heavy timber, have productive soils, but are liable to late annual overflows, which render crops precarious, particularly on the heavy soils of the Loosha-Scoona (derived from the flatwoods), which render its bottom impassable until late in the season. It is, however, bordered by a gently-sloping hummock, timbered with oaks and hickory, forming large bodies of good farming land but little settled as yet.

The eastern portion of the county adjoining the flatwoods has predominantly heavy upland soils, largely timbered with post oak (see regional description, page 26), while in the western portion the crests of the ridges are prevalently sandy, with a large proportion of black-jack oak.

Only a little over 16 per cent. of the area of the county is under tillage, and the lands cultivated lying chiefly in the creek bottoms, it will be noted that the average product per acre is remarkably high, making Calhoun county stand sixth in this respect among the upland counties of the state, while the cotton acreage per square mile is 32.8. As usual in regions of small farms, the area planted in cereals exceeds that in cotton by nearly one-half, and the white population outnumbered the colored in the proportion of nearly 3 to 1.

The communication of the county is chiefly with stations on the New Orleans and Chicago railroad, the flatwoods impeding communication eastward during the winter and spring months. The numerous streams render the maintenance of good wagon-roads somewhat difficult and expensive.

YALOBUSHA.

(See "Brown-loam table-lands".)

GRENADA.

(See "Brown-loam table-lands".)

MONTGOMERY.

Population: 13,348.—White, 6,671; colored, 6,677.*Area*: 430 square miles.—Short-leaf pine and oak uplands, 350 square miles; brown-loam table-lands, 80 square miles; all woodland.*Tilled lands*: 60,293 acres.—Area planted in cotton, 24,636 acres; in corn, 17,768 acres; in oats 3,178 acres; in wheat, 148 acres.*Cotton production*: 10,541 bales; average cotton product per acre, 0.43 bale, 612 pounds seed-cotton, or 204 pounds cotton lint.

Montgomery county embraces rolling, and in its northern portion, in part, quite hilly and broken uplands, timbered mostly with oaks, mingled more or less with short-leaf pine on the higher and more sandy ridges, on which also the black-jack and post oaks prevail; while on the lower and broader ones the post oak is largely accompanied by the black, Spanish, and especially the scarlet oak, indicating a soil of fair fertility, which is said to last remarkably well. The scarlet oak is especially abundant on a very pale yellow loam soil, which appears southward of the Duck Hill ridge and prevails in the southern part of the county, extending thence southeastward into Attala, Winston, Leake, and Neshoba, where it contrasts strongly, both in its color and its lightness, with the heavy "red hills" soils interspersed within it. These uplands, which produce from 800 to 1,000 pounds of seed-cotton per acre when fresh, slope off rather gently toward the Big Black river, the main body of which lies on the eastern side of the stream, while on the western side there is usually a strip of hummock or second bottom, timbered with post, water, and some willow oaks, and only moderately productive. The two last-named oaks are also very prevalent in the river bottom itself, which has rather a light soil, exceedingly productive, but unfortunately is much subject to overflows.

The tilled lands of Montgomery county constitute nearly 22 per cent. of its area, and of this amount nearly 41 per cent. is given to cotton culture, against about three-fourths as much devoted to corn. The average cotton product per acre is 0.43 bale, and the cotton acreage per square mile 57.3, slightly less than in Grenada.

Cotton shipments are made by the New Orleans and Chicago railroad, either direct to New Orleans or via Vicksburg and the Mississippi river steamers.

SUMNER.

Population: 9,534.—White, 7,239; colored 2,295.

Area: 400 square miles.—Short-leaf pine and oak uplands, 360 square miles; flatwoods, 40 square miles.

Tilled lands: 40,701 acres.—Area planted in cotton, 13,613 acres; in corn, 18,900 acres; in oats, 3,269 acres; in wheat, 1,874 acres.

Cotton production: 6,226 bales; average cotton product per acre, 0.46 per bale, 657 pounds seed-cotton, or 219 pounds cotton lint.

Sumner county is a region of undulating or sometimes hilly uplands, higher sandy or clayey ridges, timbered with short-leaf pine, black jack and post oak, alternating with rolling land bearing a growth of black, Spanish, post, and other oaks, mixed with hickory, and possessing a good, moderately heavy loam soil. The central portion of the county east and west is mainly of the latter character, while in the northern and southern portions pine ridges are more frequently seen. A broad belt of oak and hickory land borders the Big Black river on the north, while pine ridges prevail immediately south of the same.

The first bottom of the Big Black, about 1 mile wide, is so much subject to overflow that it has scarcely been settled as yet, though evidently very fertile and heavily timbered. It is bordered by a second bottom, 3 or 4 feet above the first, which is well settled and possesses a deep chocolate-colored mellow soil, timbered with beech, hickory, elm, ash, and lowland oaks, and is very productive. (For analysis, see general part.)

Cotton is grown on the uplands to some extent; and this, with a smaller area of bottom lands, depresses the average cotton product per acre (0.46) somewhat below that of Calhoun (0.50 bale), while the cotton acreage per square mile is slightly higher. The best uplands, when fresh, are stated to produce from 800 to 1,000 pounds of seed-cotton. The total area of tilled lands is a trifle less than 16 per cent. of the whole, divided chiefly among small farms. The area of corn culture is nearly one-half greater than that given to cotton.

Sumner, like Calhoun, communicates chiefly with stations on the New Orleans and Chicago railroad and partially, roads permitting, with the Starkville branch of the Mobile and Ohio railroad.

CHOCTAW.

Population: 9,036.—White, 6,537; colored, 2,499.

Area: 270 square miles.—All short-leaf pine and oak uplands.

Tilled lands: 42,779 acres.—Area planted in cotton, 13,497 acres; in corn, 18,139 acres; in oats, 3,931 acres; in wheat, 2,215 acres.

Cotton production: 5,757 bales; average cotton product per acre, 0.43 bale, 612 pounds seed-cotton, or 204 pounds cotton lint.

Choctaw county greatly resembles Sumner in its general features, being rolling or moderately hilly, without very high ridges, and also, except along the streams, without large continuous tracts of very productive soil. The higher ridges are characterized by the presence of the short-leaf pine, and are sandy in the western and rather clayey in the eastern portion of the county, while the lower ridges, or rolling lands, have an oak and hickory growth, with a soil varying from a light, pale-yellow loam in the western to a somewhat clayey loam in the eastern portion. Fine bodies of farming upland exist, especially in the southwestern portion, on the waters of McCurten's creek.

Choctaw is drained by numerous creeks, with fertile valley lands, flowing in three directions, viz, to Big Black, Pearl, and Noxubee rivers.

Nearly one-fourth (24.8 per cent.) of the county area is under tillage, the average product per acre being a little below that of Sumner county, probably because of a somewhat more extensive cultivation of the uplands.

The cotton acreage per square mile (50) is greater than that of Sumner in the ratio of 3 to 2. The corn acreage exceeds that of cotton by nearly one-half.

Choctaw is about equidistant from both the great trunk railroad lines of the state, and communicates partly with either, according to the season and the state of the roads.

ABSTRACT OF THE REPORT OF R. H. BIGGES, CHESTER.

(Refers to T. 16, 17, 18, and 19, R. 9, 10, 11, and 12.)

The lowlands are first and second bottoms of creeks; the uplands are hilly and sandy, but vary but little, and are in some localities extensively cultivated.

Cotton on the lowlands can generally be planted early, and in that case they yield more than the uplands.

The bottoms chiefly are cultivated, and the best soil for cotton is that of the second bottoms. This is the prevailing kind in this region, and it is a black, coarse sandy loam, 2 to 6 inches deep to change of color. The subsoil is heavy and white, and bakes on exposure, but becomes like the surface by cultivation. It contains flinty, rounded white gravel, and is underlaid by sand and gravel. The natural growth is chiefly oak, hickory, and gum. The chief crops of this region are cotton and corn. Tillage of this soil is not usually troublesome, but is difficult in wet seasons; the soil is early when well drained, and is best adapted to cotton, with which one-half its cultivated area is planted. The usual and most productive height of the plant is 4 feet; in wet weather it inclines to run to weed. Frequent plowing will restrain it and favor bolling. The seed-cotton product per acre of fresh land is 1,200 pounds; 1,545 pounds make a 475-pound bale of good middling lint. After five years' cultivation (unmanured) the product is 800 pounds; 1,665 pounds then make a bale of lint rating lower than that from fresh land. One-half of such originally cultivated land lies "turned out", and does not produce very well when again cultivated.

The upland soil washes and gullies readily, seriously damaging the slopes, and to some extent the valleys, by the washings. Some, with more or less success, have practiced hillside ditching to check these damages.

Cotton is shipped during fall, winter, and spring by rail, chiefly to New Orleans, at \$1 50 per bale.

OKTIBBEHA.

(See "Northeastern prairie region".)

WINSTON.

Population: 10,087.—White, 6,113; colored, 3,974.

Area: 690 square miles.—Woodland, all; short-leaf pine and oak uplands, 510 square miles; flatwoods, 50 square miles; red land, 130 square miles.

Tilled lands: 45,091 acres.—Area planted in cotton, 15,081 acres; in corn, 17,131 acres; in oats, 4,170 acres; in wheat, 902 acres.

Cotton production: 5,864 bales; average cotton product per acre, 0.39 bale, 555 pounds seed-cotton, or 185 pounds cotton lint.

Winston county embraces two chief varieties of uplands, which are throughout rolling, or sometimes hilly and broken. In the western and southern portion the uplands have a shallow, pale-tinted soil and a pale yellow, rather sandy, loam subsoil, the former often, the latter always, containing more or less concretions of bog ore ("black pebble"). This soil is timbered with short-leaf pine, post, Spanish, and scarlet oaks, generally accompanied with some hickory, black gum, and maple. The whole growth is disposed to be somewhat scrubby and the soil of inferior fertility, the creek bottoms forming the bulk of the land under cultivation. The central portion, near Louisville, and westward on the divide between the Big Black and Pearl rivers, is rather gently undulating or rolling, but in the southwest corner we find between the heads of Pearl river high, rocky ridges, strewn with sandstone blocks, which continue into the adjacent portion of Neshoba county, forming the highest and most broken land in the state south of the Hatchie hills, in Tippah county. In the southeastern portion the surface is less broken and the soil somewhat more coarsely sandy, occupied at times almost exclusively by the short-leaf pine. In the northern and northeastern portion of the county, and to within 3 miles of Louisville on the east, there prevails a heavy clay soil, generally only a few inches in depth, underlaid by a sometimes glaringly red clay subsoil, similar to that of the "red hills" of Attala. (See regional description, page 29.) The country it occupies is considerably broken and the hillsides are steep, and on them, as well as in the gullies, the "poplar" and ash occur. Occasionally on higher ridges we find sandy soils, ferruginous sandstone, etc., with scrubby black-jack and post oaks; but mainly the red soil prevails, and, whenever a space is afforded, settlements and plantations show the good estimation in which the land is held. The "Noxubee hills", on the extreme heads of the Noxubee and Pearl rivers, comprise the main body of these red lands, but smaller tracts occur on the Yoekanookana, in the northern part of the county. These uplands yield, when fresh, from 800 to 1,000 pounds of seed-cotton per acre, and are very durable. From the "Noxubee hills" there is on the east a sudden and steep descent into the post-oak flatwoods, which occupy the northeastern corner of the county and possess the usual heavy, gray, clay soil.

The tilled lands of Winston constitute only 10 per cent. of its area, and about one-third of them is devoted to cotton culture, or 21 acres per square mile. As this culture is restricted mainly to the bottom lands, the average product per acre (0.39 bale) is equal to that of the table-land counties. Winston communicates chiefly with stations on the Mobile and Ohio railroad; its western portion also with the Kosciusko branch of the New Orleans and Chicago railroad.

ABSTRACT OF THE REPORT OF WILLIAM T. LEWIS, LOUISVILLE.

The uplands are hilly and rolling, and have some prairies; the lowlands are on the first bottoms of rivers and creeks. The bottoms are very rich and productive, but cotton on such runs too much to weed, and suffers from rot of bolls in wet seasons if not picked out early. It is also liable to be prematurely frost-killed, while on the high, sandy ridges cotton has been seen in January with blooms uninjured by frost.

The chief crops of this region are cotton and corn; oats, sorghum, potatoes, and wheat are also raised. Wheat is very uncertain, but succeeds best on fresh or manured lands. About one-third of the cultivated area is planted with cotton.

The lands of the county comprise *black sandy bottoms* or *moderately undulating, light sandy or mulatto lands*, and *whitish or ash-colored*, rather stiff or heavy.

The chief soil, viz, the black sandy land, occupies about 30 per cent. of the county's area, and includes the bottoms. Its natural growth is oaks, chestnut, pine, poplar, gum, and hickory. The soil varies from coarse sandy to clayey loam, brown, mahogany, or blackish in color, and averages 12 inches deep. The subsoil is heavier, generally reddish or ash-colored clay, contains hard, rounded "black gravel", and is underlaid by sand, gravel, and sand-rock at 1 to 20 feet. Tillage is generally easy, excepting in wet seasons. The soil is early, warm, well drained, and is best adapted to cotton, corn, oats, sorghum, and potatoes. The usual and most productive height of the cotton-plant is from 3 to 4 feet. The seed-cotton product per acre of fresh land varies from 1,200 to 1,600 pounds; 1,425 make a 475-pound bale

of lint. Old land yields from 400 to 550 pounds of seed-cotton per acre. The weeds of this region are crab-grass, hog-weed, ragweed, cocklebur, Spanish needle, and broom-sedge. About one-tenth of this and the next soil described lies "turned out"; it produces very well for a few years when again cultivated.

About 50 per cent. of the county's area is chiefly a light sandy, mulatto-colored soil, but it is varied with more or less gravelly and clayey soils of brown, orange, red, and blackish colors from 8 to 10 and in places 24 inches deep. The subsoil is in all respects similar to that of the first-described soil, and is underlaid by sand and soft rock at 5 feet and less. Its growth is oaks, pine, hickory, dogwood, maple, walnut, beech, chestnut, gum, cypress, poplar, hornbeam, etc. One-tenth of this land is prairie. The soil is early, warm, well drained, and is easily tilled, except in wet weather. The usual height of the plant is from 3 to 4 feet, but it is most productive at 4 feet. The seed-cotton product per acre of fresh land is from 1,200 to 1,300 pounds; 1,425 pounds make a 475-pound bale of lint. Old land (unmanured) produces from 300 to 400 pounds of seed-cotton per acre. The remaining 20 per cent. of the county's area is distributed in the form of ridges, which have a growth of post, red, and black-jack oaks, pine, persimmon, sourwood, etc. The soil varies from fine sandy to gravelly and clay, and is whitish, brown, and orange-red in color, and from 3 to 6 inches deep. The subsoil is heavier, leachy, whitish or ash-colored, contains hard, rounded white and black gravel, and is underlaid by sand and gravel and some rock at 1 to 6 feet. Soil is early, warm, and well drained. Tillage is easy, except in wet weather. Cotton grows on this soil 2 to 3 feet high, but it is most productive at 3 feet. The seed-cotton product per acre is from 700 to 800 pounds on fresh land or 200 to 300 pounds on old (unmanured) land; 1,425 pounds from fresh or 1,545 from old land make a 475-pound bale of lint, that from old land being the shorter. About one-fifth of such originally cultivated land lies "turned out", but when again cultivated the yields are small and the soil does not long endure.

Sandy slopes are damaged to a serious extent by washing and gullyng. Low and marshy valleys are improved by the washings; others are damaged to the extent of 25 per cent. of their value. To check the damage, felling timber into the gullies and hillside ditching are practiced. They succeed very well if done in time, before the gullies get too deep. Their depths sometimes equal 20 feet, the sides exhibiting white sand.

The generally prevalent subsoil is clay, and in wells it extends 15 to 20 feet below the surface, and at 30 feet water is found in white sand. In some parts of the county water is 80 to 90 feet below the surface.

Cotton is hauled from October to December by wagon to railroad towns at 50 cents per 100 pounds in summer and 75 cents in winter.

ATTALA.

Population : 19,988.—White, 11,653; colored, 8,335.

Area : 720 square miles.—Woodland, all. Short-leaf pine uplands, 645 square miles; red land, 75 square miles.

Tilled lands : 93,034 acres.—Area planted in cotton, 35,950 acres; in corn, 33,784 acres; in oats, 6,888 acres; in wheat, 1,400 acres.

Cotton production : 15,285 bales; average cotton product per acre, 0.43 bale, 612 pounds seed-cotton, or 204 pounds cotton lint.

Attala county forms part of the hilly, sometimes broken, oak and short-leaf pine uplands region, whose character is very little varied within the limits of the counties of Attala, Winston, Leake, and Neshoba. With the exception of the "red land" areas, these uplands are in general not naturally very productive, though mostly capable of good improvement by the use of fertilizers. The bottoms of the numerous streams, however, form the larger part of the area planted in cotton, which is about one-third of the entire area of tilled lands in the county. Hence the cotton product per acre is comparatively high. These bottom soils are mostly light and easily tilled, and are very productive when fresh, as is indicated by the large size of their timber trees. The latter are largely bottom oaks, such as white, chestnut-white or basket, overcup, and bottom scarlet oak (*a*), hickories, and sweet gum, with more or less of the "poplar" or tulip tree, which appears especially where the greensand and red-clay strata of the Tertiary are not far off. The same oak growth ascends more or less the hillsides, and even forms a large proportion of the hill growth where these strata are near the surface. The higher and sandier ridges have a pale-yellow, sandy loam soil, bearing a growth of post and scarlet oaks, with more or less of the short-leaf pine, according to quality.

The country lying between the Yockanookany and the Big Black, in the southwestern portion of the county, is less hilly than is the case farther east and north. A broad belt of good farming land, gently rolling, and timbered with oaks and hickory, with but little pine, slopes gently down to the Yockanookany. The latter is bordered by a hummock or second bottom averaging half a mile in width, having a gray, ashy, but quite productive soil. The bottom itself has a light sandy soil, largely timbered with beech. Its timber growth shows it to be productive, but overflows have thus far prevented its cultivation.

In the northern and eastern portions of the county especially there are isolated or more or less continuous and extensive tracts of "red lands" (see p. 29), formed by the approach to the surface of the orange-colored, greensand-bearing clays above referred to. It is prominent in the country lying between the two prongs of Ponkta creek and south of the same to within a short distance of Kosciusko, and thence in a more or less continuous body northeastward, on the divide between the Ponkta and the Yockanookany. The soil is popularly known as that of the "red hills", and occasionally appears suddenly, occupying a short ridge among the sandy hills, contrasting by the glaringly "red" color of its soil and the prevalence of the white and black oak, with hickory, over the pine and post oak. Such localities are usually marked by upland farms, producing as much as half a bale of cotton per acre when the land is fresh and well tilled, which, on account of its stiffness, is very essential to success. It produces good oats and fair corn, but is too heavy for potatoes.

The greensand manures occurring at many points in the northern part of the county will serve to maintain and improve the fertility of the uplands especially.

One-fifth of the area of Attala is reported as under tillage. Of this amount over one-third (38.6 per cent.) is given to cotton culture, and somewhat less to corn. The average product per acre is high, 0.43 bale, the best lands being given to this culture. The cotton acreage per square mile is 49.9.

Cotton shipments are made by rail via the branch road connecting Kosciusko with the New Orleans and Chicago railroad. Freight to New Orleans, \$3 50 per bale.

^a An apparently undescribed variety, (?) with the leaves and habit of *Q. coccinea*, but out of the usual habitat; not uncommon in southern Mississippi.

ABSTRACT OF THE REPORT OF A. TUR, FRENCH CAMP.

About two-tenths of the county area consists of bottoms of creeks and smaller streams. These have the best soil, and this varies considerably, and is best where there is a good supply of lime. (a) It lies along the streams all over this and the adjoining counties. Its growth is gum, hickory, beech, cypress, poplar, holly, dogwood, etc. The soil is a blackish and black, fine sandy loam, which changes color at 2 or 3 inches below the surface. The subsoil is mostly clayey, the most of it pervious, and some impervious. It contains hard black and other gravel in places, and is underlaid by sand and sand-rock at 5 to 10 feet.

The chief crops of the region are cotton, corn, oats, and wheat, but the latter sometimes fails. The soil is early and warm when well-drained, and is rather difficult to till when too wet; but generally tillage is easy, and the soil is evidently best adapted to cotton, though good crops of corn and oats are also raised. More than half of all the cultivated lands here are planted in cotton. The height attained by the plant varies from 1 to 3 or 4 feet, but produces best at from 2 to 3 feet. The seed-cotton product per acre of fresh land varies from 800 to 1,000 pounds; 1,425 pounds make a 475-pound bale of good middling lint. After 6 to 8 years' cultivation (unmanured) the product varies from 400 to 800 pounds, and about 1,485 pounds then make a bale of lint about a grade below that of fresh land. Crab-grass is the most troublesome weed. About one-half of such land earliest cleared and cultivated now lies "turned out"; but its soil has been washed off by overflows, and when again cultivated it produces poorly.

The second quality of land occupies about one-half the area of the county, and is distributed all over this and adjoining counties. The greater part of its timber is pine, interspersed with black-jack and other oaks and some hickory. The soil consists of fine silt, and is gravelly in some places and black sandy in others. Its general surface color is whitish-gray, which changes at 1 to 2 inches below the surface. The subsoil is generally heavier, and varies from entirely sand in some spots to entirely clay—from leachy to impervious hard-pan. In places it contains hard, "black gravel," sometimes angular, underlaid by sand at 10 to 30 feet. The soil is early and warm when well-drained, is easily tilled, and is best adapted to corn and cotton. The cotton-plant grows from 18 to 24 inches high, and the seed-cotton product per acre of fresh land varies from 500 to 800 pounds, about 1,485 pounds making a 475-pound bale of low middling lint. After five years' cultivation the product varies from 300 to 500 pounds, 1,545 pounds then making a bale, the staple being equal to that of fresh land if picked when the bolls first open. Crab-grass is the farmer's great pest here. At least nine-tenths of that part of this land which was the earliest cleared and cultivated now lies "turned out", and when again cultivated it produces poorly.

About three-tenths of the county area consists of ridge tops, as widely distributed as the preceding soils, and bear a growth of black-jack and other oaks, scrubby pine, and an occasional switch hickory. The soil is a whitish-gray, fine sandy and gravelly loam, its surface color reaching no more than one-quarter or one-half an inch below. The subsoil is a grayish clay, largely mixed with whitish sand, often leachy, and sometimes impervious. It contains soft, white, angular pebbles, and is underlaid by sand and gravel and in places by rock, often at a few feet below the surface. The soil is early and warm when well-drained, is easily tilled, and is best adapted to oats and sweet potatoes. The cotton-plant attains a height of 10 to 12 inches on this soil. The seed-cotton product per acre of fresh land varies from 200 to 400 pounds, and about 1,485 pounds make a 475-pound bale of lint. The staple rates as that of the soil last described. After eight to ten years' cultivation the soil becomes unprofitable and is usually "turned out". None that was originally cultivated is now cultivated, as it is only suitable for sedge-grass and Lespedeza or Japan clover. Slopes wash and gully readily, and are in most cases seriously and often irreparably damaged. In some cases the valleys are badly injured by the washings, but where the latter is deposited in low, wet places it is beneficial. Horizontalizing and hillside ditching have been practiced, but have usually failed to check the damage, because the work was not properly attended to. The ditches were allowed to fill up after a few years, the heavy spring rains broke over, and gullies resulted.

The growth of cotton here is often checked by cool nights in April and May, but it usually recovers from their effects in the warm months of June and July.

LEAKE.

Population: 13,146.—White, 8,104; colored, 5,042.

Area: 580 square miles.—Short-leaf pine and oak uplands, 570 square miles; table-lands, 10 square miles.

Tilled lands: 58,469 acres.—Area planted in cotton, 24,000 acres; in corn, 21,390 acres; in oats, 4,749 acres; in wheat, 294 acres.

Cotton production: 9,016 bales; average cotton product per acre, 0.38 bale, 543 pounds seed-cotton, or 181 pounds cotton lint.

Leake county is traversed diagonally by Pearl river, with two chief tributaries on either side, viz: from the north, the Labutchka and the Yockanookany; from the south, the Standing and the Tuscalamite or Young Warrior.

The eastern portion, like the adjoining part of Neshoba, is mainly hilly and sometimes broken upland, timbered with short-leaf pine, intermixed with oaks, whose species, together with a greater or less admixture of hickory, indicate the varying fertility of the ridges, some of them possessing to a considerable extent the red-hills character, with walnut and "poplar" ascending into the hill lands. The western portion of the county is less hilly or only rolling, and west of the Yockanookany is undulating, passing gradually into the table-lands country westward. The largest tracts of good farming land found in this western portion are on the eastward slopes toward the Yockanookany, gradually passing into the wide second bottom of that stream; and throughout the county the second bottom terraces of the larger streams, timbered with oaks, hickory, bottom pine, and usually with some beech, are largely occupied by settlements. Their soil is usually whitish and silty, underlaid by a pale-yellow loam subsoil, with more or less bog ore or "black gravel". (See analysis, p. 36.) The soils of the first bottoms are somewhat similar in aspect, but generally somewhat darker and heavier, and are often underlaid at from 18 to 24 inches by "black gravel", which in its turn rests on gray clay. The timber is Spanish, white, and water oaks, hickory, and pine. These bottom soils are designated as "hot" by the inhabitants, being very droughty and easily exhausted. Hence the bottoms of small streams are cultivated by preference. They frequently widen out into bodies of canebrake swamps, similar to those occurring in Neshoba and equally fertile when drained, so as to constitute an important factor in the production of the county.

^a Referring probably to the bottoms passing through "red land" areas, lime being popularly, though erroneously, supposed to render soils heavy. In the present case the remark is, however, actually correct. (See analysis, p. 29.)

The tilled lands of Leake county constitute 15.8 per cent. of its area, and the cotton acreage slightly exceeds that devoted to corn, amounting to 41.4 acres per square mile. Owing to the predominant cultivation of bottom lands, the average cotton product per acre (0.38 bale) is equal to that of Madison and Pontotoc counties.

The communication of Leake county is partly with stations on the New Orleans and Chicago railroad and Kosciusko and partly to Meridian, on the Mobile and Ohio railroad. From these places it is shipped chiefly to New Orleans by rail or river at from \$2 to \$4 50 per bale.

ABSTRACTS OF THE REPORTS OF JOSEPH D. EADS, CARTHAGE, AND THOMAS C. SPENCER, LAUREL HILL.

About two-thirds of the county is upland, hilly, rolling, or level, bearing a growth of black-jack and other oaks, hickory, pines, etc. This upland soil is a fine sandy loam, reaching 6 inches below the surface. The subsoil is heavier, orange in color, contains soft red and rounded gravel, and is underlaid by gravel and sometimes by rock at 16 feet.

The chief crops of this region are cotton, corn, wheat, oats, and potatoes. The soil is early, warm, and well drained, is always easily tilled, and is best adapted to cotton, half of the cultivated area being planted with it.

The plant usually grows from 3 to 4 feet high, is most productive at 3½ feet, and inclines to run to weed on all the lands of this region in wet and sultry seasons, which may be restrained by topping late in July and plowing rapidly. The seed-cotton product per acre of fresh land is 1,000 pounds; 1,425 pounds make a 475-pound bale of good middling lint. After two years' cultivation (unmanured) the yield declines yearly, the ratio of seed to lint remaining the same, and the staple becomes shorter, but is otherwise considered superior to that from fresh land. At least one-third of such originally cultivated land lies "turned out", but if it rest long enough to have a considerable growth of scrub pine and briars it will produce as well as ever. The troublesome weeds are hog-weed, butter-weed, smart-weed, and Spanish needle. Slopes are seriously damaged by washing and gullying, and at least one-fifth of the valley lands are rendered worthless by the washings. Successful efforts have been made to check the damage by horizontalizing and hillside ditching.

The red or mulatto soil covers about one-sixth of the county. There is a strip of this about 2 miles wide running from east to west about 20 miles. The natural growth is post and black oaks, hickory, pine, walnut, and poplar. The soil is a gravelly, heavy clay, orange-red in color, and about 8 inches deep. The subsoil is heavier than the soil, is waxy, and is inclined to adhere tenaciously. It contains hard "black gravel", underlaid by sand and rock at 6 to 8 feet. The soil is difficult to work in wet seasons, but easy in dry; is early, warm, and well drained, and is apparently best adapted to wheat and cotton, about 50 per cent. of the land being devoted to the latter crop. The usual and most productive height of cotton is 4 feet. It inclines to run to weed in wet weather, and may be restrained by topping the plant and working the soil rapidly. The seed-cotton product on fresh land is 1,200 pounds, and 1,425 pounds make a 475-pound bale of good middling lint. The seed-cotton product after three years' cultivation is reduced to 1,000 pounds, and then 1,425 pounds of seed-cotton make a 475-pound bale of lint, which rates favorably with that from fresh land. The troublesome weeds are the same as on the black, sandy land; crab-grass is, however, worse on this land. About one-third such land originally cultivated now lies "turned out", is growing up in pines, and produces well when again brought under cultivation if it is not too badly washed or gullied. This soil does not wash or gully as badly on the slopes as the black sandy soil; but little damage has been done, and the valleys are injured some (about one-eighth their value) by the washings. Horizontal ditching has been tried with success to remedy damages.

About one-sixth of the county area consists of creek bottoms, and bears a growth of many kinds of oak, pine, hickory, maple, sweet gum, cypress, etc. The soil is a black or blackish loam, has much vegetable matter, and averages 8 inches in thickness. The subsoil is heavier and more or less impervious. The soil is early, very easily cultivated except when too wet, is best adapted to cotton, corn, oats, and wheat, and about two-thirds of its cultivated area is planted with cotton. The plant attains a height of from 3 to 5 feet, and yields from 500 to 1,000 pounds of seed-cotton per acre. Crab-grass is a most troublesome weed. Very little of such land lies "turned out," and when again cultivated produces very well for a few years, especially if overgrown by briars during the rest.

There are in the county two other kinds of land: low, flat land of Pearl river bottom and reed-brake land. These are not adapted to raising cotton. The first occurs along the Pearl river and its larger tributaries, and bears large oaks, pine, sweet gum, and occasionally poplar, beech, etc. The soil is a fine black or blackish sandy loam, 12 to 24 inches deep. The leachy subsoil is similar, except in color, and the soil, in consequence, is "hot" in character. The soil is early, warm, well drained, easily tilled at any time, and is best adapted to those crops that mature early in the season, as pease, early corn, and the small cereals.

The reed-brake land includes about one-tenth of the cultivated soil of the county. It occurs about the heads of small streams, and bears a growth of green-bay, holly, tupole gum, briars, and reeds. The soil is a putty-like black loam, 4 to 6 feet thick, has a small proportion of coarse sand, and is underlaid by sand and gravel.

Tillage is easy in dry but difficult in wet seasons. The soil is late and in need of artificial drainage. It is best adapted to corn and oats, producing of either from 50 to 100 bushels per acre. It costs from \$25 to \$30 per acre to drain such land, after which, when in cultivation, it is worth from \$50 to \$100 per acre.

NESHOPA.

Population: 8,741.—White, 6,555; colored, 2,186.

Area: 580 square miles.—Woodland, all. Short-leaf pine and oak uplands, all.

Tilled lands: 45,979 acres.—Area planted in cotton, 14,021 acres; in corn, 16,752 acres; in oats, 3,512 acres; in wheat, 223 acres.

Cotton production: 4,477 bales; average cotton product per acre, 0.32 bale, 456 pounds seed-cotton, or 152 pounds cotton lint.

Neshoba county is drained almost wholly by Pearl river (which traverses its northern portion) and its tributaries, the extreme heads of the Chickasawhay reaching into its southeastern corner. In the western portion of the county the surface is quite broken, the ridges being sometimes steep and rocky and of considerable elevation, so that cultivation is mainly restricted to the bottoms, except where tracts of the red-clay soil occur. Apart from these, the soil is chiefly of the pale-yellow, sandy loam character so prevalent in Winston and Leake. The timber is short-leaf pine, mixed with oaks, prevalently the black-jack and post, with more or less of scarlet and Spanish oaks where the soil improves. The surface of the eastern portion of the county is less hilly, sometimes only undulating, and the black-jack and barren scrub oak prevail largely on the uplands, which are but little cultivated. The bottom of Pearl river is about 1½ miles wide near the western line, is liable to overflow, and is very boggy during the rainy seasons, rendering the roads impassable. While the main bottom is therefore but little cultivated, there are often

found in the bottoms of small tributary creeks on both sides dense swamps, timbered prevalently with sour gum and bay, some maple and sweet gum, with a dense undergrowth of cane. These swamps, which are quite numerous, have a very black soil when wet, but light gray when dry, which is a sort of swamp muck, sometimes 4 to 5 feet thick. When drained they are the most fertile, durable, and the best farming spots in the whole country. These places are said to produce as much as 80 bushels of corn per acre. Cotton does not do so well, being apt to run to weed.

One-eighth of the area of Neshoba county is reported to be under tillage, and corn culture predominates somewhat over cotton, which occupies 30 per cent. of the tilled lands. The average cotton product per acre (0.32 bale) is considerably below that of Winston and Leake counties.

Communication is divided between the three railroads east, south, and west, whose nearest points are about equidistant—"a three days' haul."

KEMPER.

Population: 15,719.—White, 7,100; colored, 8,619.

Area: 750 square miles.—Woodland, 720 square miles; short-leaf pine and oak uplands, 520 square miles; long-leaf pine hills, 90 square miles; prairie belt, 80 square miles; flatwoods, 60 square miles.

Tilled lands: 78,316 acres.—Area planted in cotton, 28,269 acres; in corn, 28,246 acres; in oats, 3,706 acres; in wheat, 56 acres.

Cotton production: 8,426 bales; average cotton product per acre, 0.30 bale, 429 pounds seed-cotton, or 143 pounds cotton lint.

Fully five-sevenths of the area of Kemper county is occupied by sandy uplands, timbered with short-leaf pine and oaks. The southeast corner embraces a few townships of long-leaf pine woods, which here attain their most northern point in the state. In the northeast corner lies the most fertile portion of the county, the extreme southern point of the prairie belt in the state, bordered on the west, as usual, by the flatwoods belt, here only about 3 miles wide. The ridge skirting the flatwoods on the west forms the divide between the waters of the Noxubee river (Scooba creek) and Turkey creek, one of the chief tributaries of the Sucarnochee, which drains the rest of the county. The flatwoods being narrow, and therefore considerably modified by the adjacent regions, are not quite so extreme in character as farther north. On the east they pass insensibly into the level "prairie" country on Wahalack creek; but east of that stream the country rises into a ridge of white prairie limestone, about 200 feet above the drainage, forming a kind of prairie plateau, which slopes off gently toward the Alabama line. The true black prairie is found only in small bodies on this plateau and in the valleys of the streams, where the limestone approaches the surface. The general level land of the region is timbered with large post and Spanish oaks and hickory, and has a loam soil, with a yellow loam subsoil—a fair soil for cereals. On the higher ridges there lies a heavy red clay soil, usually underlaid by limestone at no great depth, which produces small but heavily balled cotton and good wheat. Timber, sturdy black-jack and post oaks. The black prairie soil is found in patches and bands at lower levels; it is not very heavy, and produces good corn, but is apt to rust cotton where not intermingled with the red soil. That lying near the streams and in the level region west of Wahalack creek is less liable to rust cotton, and is very productive.

The flatwoods soil is said to produce well here in favorable seasons. Of the hilly pine and oak uplands a portion (as on the ridge on which De Kalb, the county-seat, is located) is very sandy, but the soil is not unproductive, being very deep, and sometimes oak and hickory prevail, to the exclusion of the pines. Cultivation is, however, mostly confined to the numerous creek bottoms. These have very sandy soils in the southern part of the county, while the ridges, on the contrary, become more clayey, and show, by their large oak and pine timber, a better promise for the farmer than the sandy ones timbered with black-jack and post oak, with which they are interspersed.

The tilled lands of Kemper county constitute 16.3 per cent. of the total area. Of these lands 36.1 per cent. is given to cotton culture and an equal area to corn. The average cotton acreage is 37.7, and the average product per acre 0.30 bale, rather remarkably low.

Cotton is hauled from the interior, as well as from the prairie country, to stations on the Mobile and Ohio railroad, which traverses the eastern half of the county from north to south. Freight to Mobile is \$3 25 per bale from Scooba, one of the chief shipping points.

ABSTRACT OF THE REPORT OF JOHN A. MINNIECE, SCOOPA.

Heavy yellow clay soil predominates, covering most of this township, and post-oak ridges and black prairie slopes (nearly level) are frequent. The lowlands consist of creek bottoms, having a productive soil, which averages 250 pounds of cotton lint per acre, but is not entirely above overflow. The bald prairie lying on the east is used mostly for corn; it is also well adapted to oak. The flatwoods lie on the west. Cotton, corn, and oats are the chief crops raised here. About half of all the cultivated lands are planted with cotton. The average product per acre of fresh land is 1,000 pounds of seed-cotton, and from 1,545 to 1,665 pounds make a 475-pound bale of middling lint. After five years' cultivation (unmanured) the average product is 600 pounds. Crab-grass is the most troublesome weed. The natural growth is post and red oaks on the uplands, and gum, white oak, hickory, and ash on the bottoms.

The soils vary in depth from 3 to 36 inches, and are mostly underlaid by yellow clay, under which, at 5 to 10 feet, is the impervious rotten limestone. The soil is late, cold, and ill-drained, but is easily tilled, except when too wet. The cotton-plant grows about 3 feet high on the uplands and 4 feet on the lowlands. In wet, warm weather it inclines to run to weed, for which the correspondent knows no remedy that would not injure the crop. More than one-half the upland originally cultivated now lies "turned out", and, where it has not been too badly washed, if plowed in the fall produces very well when again cultivated. Slopes are seriously damaged by washing and gullying, and when the uplands are sandy the lowlands are much damaged. Horizontalizing and hillside ditching are practiced to some extent, and when properly done they successfully check the damage. The climate is favorable to cotton production.

The rich bottom lands are most productive, and average half a bale of 500 pounds of lint per acre. The uplands are thin and worn, and with no fertilizers produce about 600 pounds of seed-cotton.

LAUDERDALE.

(See "Long-leaf pine region".)

NEWTON.

Population: 13,436.—White, 8,428; colored, 5,008.*Area*: 580 square miles.—Short-leaf pine and oak uplands, 225 square miles; long-leaf pine hills, 300 square miles; central prairie, 55 square miles.*Tilled lands*: 58,019 acres.—Area planted in cotton, 19,589 acres; in corn, 20,638 acres; in oats, 6,716 acres; in wheat, 127 acres.*Cotton production*: 6,341 bales; average cotton product per acre, 0.32 bale, 456 pounds seed-cotton, or 152 pounds cotton lint.

Newton county is drained chiefly by Chunky creek (the west fork of the Chickasawhay river) and its numerous tributaries, the bottoms of which constitute the bulk of the farming lands.

The uplands are mainly hilly, sometimes broken. In the southern part of the county the long-leaf pine forms the predominant timber, more or less mixed with oaks, according to the quality of the soil. In the northern portion the short-leaf pine, with oaks, prevails. In both sections there occur occasionally hills and ridges of the red-land character (see page 29), where the pine is subordinate or absent, and which give rise to upland farms of fair productiveness. Aside from these, but little cotton is grown in the sandy pine uplands. In the southwestern corner of the county, on the headwaters of Tallahala creek (a tributary of the Leaf river), the uplands have more or less the character of the "Central prairie region" (see regional description, page 50), the ridges being less abrupt, and in their lower portion sometimes showing the heavy clay soils, popularly known as "hog-wallow" or post-oak prairie. Occasionally, in the deeper bottoms, the soils approximate to the black-prairie character, which is more abundantly developed in the adjacent part of Jasper county.

The tilled lands amount to 15.6 per cent. of the area, the cotton acreage being somewhat below that given to corn, and amounting to 33.8 acres per square mile. The average cotton product per acre (0.32 bale) is equal to that of Clay and Neshoba counties.

The Vicksburg and Meridian railroad traverses the southern portion of the county, and communication is mainly with stations on that road, from which cotton is shipped either to New Orleans or Mobile.

SCOTT.

(See "Central prairie region".)

RANKIN.

(See "Central prairie region".)

SIMPSON.

(See "Long-leaf pine region".)

HINDS.

(See "Central prairie region".)

CLAIBORNE.

(See "Cane-hills region".)

JEFFERSON.

(See "Cane-hills region".)

FRANKLIN.

(See "Long-leaf pine region".)

ADAMS.

(See "Cane-hills region".)

WILKINSON.

(See "Cane hills region".)

BROWN-LOAM TABLE-LANDS.

(The region embraces the following counties and parts of counties: Benton, Marshall, De Soto, Tate, Panola, La Fayette, Yalobusha, Tallahatchie,* Grenada, Montgomery,* Carroll, Holmes, Yazoo,* and Madison.*)

BENTON.

Population: 11,023.—White, 5,777; colored, 5,246.

Area: 360 square miles.—Woodland, all. Short-leaf pine and oak uplands, 125 square miles; brown loam table-lands, 145 square miles; flatwoods, 20 square miles; sandy oak uplands, 70 square miles.

Tilled lands: 55,501 acres.—Area planted in cotton, 22,401 acres; in corn, 22,877 acres; in oats, 1,735 acres; in wheat, 1,285 acres.

Cotton production: 8,123 bales; average cotton product per acre, 0.36 bale, 513 pounds seed-cotton, or 171 pounds cotton lint.

The northern part of Benton county (around and north of Ashland, the county-seat) is a gently undulating plateau region of the "table-lands" character (see regional description, p. 31), timbered with a fine growth of upland oaks (black, Spanish, sturdy post, and black-jack) and hickory, naturally very productive, and quite thickly settled. This portion of the county is drained by Wolf river and its tributaries, and its features remain the same to the southward until the headwaters of Tippah creek are reached, which in its turn (with Ocklimita creek, its largest tributary) drains the southern portion. Here we find, first, a transition zone of more or less hilly and sandy loam uplands, timbered with oaks and hickory, occupying the country between the dividing ridge and Tippah creek, and continuing southwestward into Marshall and La Fayette counties (see description of "Sandy oak uplands", p. 30). Here the creek bottoms and lower slopes of the ridges are chiefly cultivated. Beyond Tippah creek and southward to the county-line the country is hilly and sandy, and outside of the bottoms is timbered with short-leaf pine and oaks, with more or less hickory on the hillsides, while the bottoms (e. g., that of the Ocklimita near Hickory flat) are quite extensive and very productive and constitute the bulk of the land under cultivation. In the southeastern corner of the county a portion of the post-oak flatwoods reaches in from the main body in western Tippah.

It is doubtless the comparative inferiority of the lands in the southern part of the county that renders the average product per acre of Benton the lowest among the table-land counties (0.36 bale), though still above the average of the prairie counties, of which only three rank above it.

The tilled lands of Benton county constitute 24.1 per cent. of the total area. Of these lands nearly 41 per cent. are given to cotton, and a slightly greater area to corn. The cotton acreage per square mile is 62.2.

Cotton shipments are mostly made by the New Orleans and Chicago and Memphis and Charleston railroads to Memphis, either by the producers or mostly by merchants who buy the cotton from them. Freight from Lamar station to Memphis is about \$1.75 per bale.

ABSTRACT OF THE REPORT OF H. T. LIPFORD, ASHLAND.

All the lands of this county produce cotton well. The bottoms do not usually dry early enough to admit of early planting, but when early planted they yield as well as uplands. Cotton on the bottoms, being usually planted late, opens late and not well.

The lowlands consist of the first and second bottoms of Wolf and Tippah rivers. About one-third of the county uplands are level, and the remainder hilly.

The chief soil is a *dark loam*, extending throughout the county and occupying about half its area. It becomes lighter and less productive in the southern part. Its natural growth is black-jack and other oaks and hickory. The soil varies from a fine sandy to a clayey loam, black, blackish, or lighter colored, and averages 6 inches thick; in some parts 2 inches. The heavier subsoil is generally a red or lighter colored clay, sometimes quite sandy. It generally absorbs much water, contains pebbles about upland ponds, and is underlaid by sand at 10 to 15 feet. The chief crops of this region are cotton, corn, potatoes, sorghum, wheat, oats, and rye. The soil is early when well drained, is always easily tilled, is best adapted to cotton and corn, and about two-thirds of its cultivated area is planted with cotton, but this proportion is diminishing. Potatoes do well; wheat tolerably. The cotton-plant grows from 2 to 4 feet high, but is most productive at 3 feet. It inclines to run to weed in wet weather, but this depends much upon the system of cultivation. As a remedy the crop should be cultivated judiciously. Some succeed by topping. The seed-cotton product per acre of fresh land varies from 1,000 to 2,000 pounds, 1,545 pounds making a 475-pound bale of lint. The yields gradually decline after five years' cultivation (unmanured), but the ratio of seed to lint and the quality of the staple remain as on fresh land, and may be improved by manuring. Nearly one-third of such originally cultivated land lies "turned out"; but when again cultivated it produces very well if it has soil enough left to produce sedge-grass. The most troublesome weeds are smart-weed and crab-grass. The latter is its great enemy, growing so rapidly as to ruin it even when the crop has the advantage of one working.

About a sixth or an eighth of the county is a *black, fine, sandy loam*, 6 to 8 inches thick. It generally occurs on slopes facing southward, and makes gradual transitions into other varieties. The subsoil is generally a red clay, as under the first described soil, but in some parts it is only sand. It contains pebbles, and is underlaid by sand at 8 to 10 feet. The soil is early, well-drained, always easily tilled, and is best adapted to cotton and potatoes. Two-thirds of the cultivated area is devoted to cotton. The seed-cotton product per acre varies from 800 to 2,000 pounds. It is hard to restore such land to fertility when once exhausted. Smart-weed is most troublesome. The sand washings are hard to control, and do great damage.

Another sixth or eighth of the county area consists of *bottoms of creeks and rivers*. Its growth is beech, white oak, maple, and walnut. The soil is a clayey loam, 2 to 8 inches thick, varying in color from gray to black. The heavier subsoil is generally a grayish clay, more or less leachy, containing soft, white, and frequently other pebbles, and is underlaid by clay to an unknown depth. Tillage is easy, except when the soil is too wet. The soil is late, cold, ill-drained, and best adapted to corn, and if well-drained to cotton. Cotton occupies about half its cultivated area. The plant grows from 3 to 5 feet high, inclines to run to weed under all circumstances, and may be restrained by judicious cultivation, not more than is absolutely necessary. The product per acre of fresh land varies from 600 to 1,600 pounds of seed-cotton, 1,665 pounds making a 475-pound bale of lint. After five years' cultivation yields generally decline. About one-

tenth of such originally cultivated land lies "turned out"; but a sufficiently long rest restores fertility. Smart-weed is most troublesome, and the washings of the slopes have done immense damage to many valleys. Many partially successful efforts have been made to check the damage by horizontalizing and hillside ditching.

Cotton is sold to merchants who ship during picking season to Memphis; freight per bale from Lamar, \$1 75.

MARSHALL.

Population: 29,330.—White, 10,992; colored, 18,338.

Area: 720 square miles.—Woodland, all. Short-leaf pine and oak uplands, 20 square miles; brown-loam table-lands, 590 square miles; sandy oak uplands, 110 square miles.

Tilled lands: 161,001 acres.—Area planted in cotton, 67,411 acres; in corn, 50,140 acres; in oats, 3,130 acres; in wheat, 3,094 acres.

Cotton production: 26,441 bales; average cotton product per acre, 0.39 bale, 555 pounds seed-cotton, or 185 pounds cotton lint.

By far the greater portion of Marshall county lies within the belt of "table-lands" with a brown-loam subsoil which extends through western Tennessee, gradually narrowing as far south as Baton Rouge, Louisiana (see p. 31). These lands are most characteristically developed in the northern part of the county, on the headwaters of Coldwater river, and on the northern confluent of Pigeon Roost creek. Here the country is gently undulating, and is scarcely more uneven than in the prairie country of eastern Mississippi, except where it breaks off into creek bottoms. It is, however (or rather was), uniformly, but somewhat sparsely, timbered with oaks and hickory. Among the former the black, Spanish, and black-jack oaks, with some post oak, predominate, the hickory being most abundant on the lower slopes, and hence these slopes are often designated as "hickory hummocks". On the southern branches of Pigeon Roost creek, and especially on the creeks directly tributary to the Tallahatchie river, the country is more undulating, somewhat abruptly so on the edge of the Tallahatchie bottom, and sandier ridges are more or less interspersed with the table-lands, forming a gradual transition to the "Sandy oak uplands" of La Fayette county.

The bottoms of the larger streams, and especially of the Tallahatchie, are not extensively cultivated, though very fertile, on account of their liability to overflows. In the smaller bottoms much cotton is grown, but they, as well as the adjacent uplands, are liable to grievous damage from the cutting of gullies into the hillsides, undercutting the subsoil, and causing it, with the underlying sand, to be washed into the valleys, in some of which the original flood-plain is now covered with from 15 to 20 feet of sand, in which only willows, briars, and Bermuda grass find a congenial existence.

Prior to its subdivision in the formation of Benton and Tate counties, Marshall was considered (next to Hinds) the banner upland county for cotton production, the crop being less liable to failure from extreme seasons than in the competing counties of the prairie region. As now circumscribed, it stands fourth in cotton acreage, Hinds, Noxubee, and Monroe ranking above it in this respect, while in total production it stands third to Hinds and De Soto among the upland counties, while in product per acre it ranks nearly even with the highest of the prairie counties. Its cotton area is still over one-fourth greater than that planted in corn.

Cotton is shipped during the picking season by rail from Holly Springs and other stations of the New Orleans and Chicago railroad at from \$2 to \$3 per bale to Memphis, \$3 75 to New Orleans, or at from \$5 to \$7 per bale to eastern cities.

ABSTRACT OF THE REPORTS OF A. J. WITHERS AND F. B. SHUFORD, HOLLY SPRINGS.

The chief crops are cotton, corn, oats, wheat, sweet and Irish potatoes, and pease. The certainty of a cotton yield, and of realizing reasonable returns for the same, and the cheaper transportation of it than other crops that might be raised, cause cotton to keep its place as the exclusive export product. Fully one-half of all the arable land of the county is planted with cotton, although it is equally well adapted to all of the chief crops mentioned.

The river bottoms are usually too wet, and are therefore but little cultivated. The level and rolling uplands, valleys, and creek bottoms are cultivated chiefly. They occupy about three-fourths of the county area, and bear a natural growth of post, red, white, and black-jack oaks and hickory, generally on ridges, and poplar, ash, hickory, and gum in the valleys. The soil presents much variation of constitution and color, but differs little in productiveness, and is 3 to 12 inches deep. The subsoil is most generally a sticky, red clay, often a mahogany-colored, impervious hard-pan, containing iron. It is underlaid by sand, gravel, and flat rock at 2 to 6 feet. Tillage is easy, and the soil early, warm, and generally well drained. The usual and most productive height attained by the cotton plant is 3 feet. On fresh land, and in wet seasons, it inclines to run to weed. Good and shallow cultivation is the remedy. The seed-cotton product per acre of fresh land varies from 800 to 1,800 pounds, according to soil and season. The higher lands are more certain, while the valleys give the greater yields. About 1,660 pounds make a 475-pound bale of good lint. After five years' cultivation (unmanured) the yields perceptibly decline, and the staple is coarser and shorter. About 1,720 pounds then make a bale. Crab-grass and smart-weed, iron and hog-weed, cocklebur and fextail, and crow-foot and tickle-grass are troublesome. One-fourth of the originally-cultivated land is now "turned out". It is improved 10 per cent. by rest when not washed, gullied, or covered with sand deposits. Nearly everywhere slopes are seriously damaged by washings and gullying, and the lowlands (on larger streams especially) are also badly injured by the washings. Many valleys are now submerged by sand and clay and abandoned to willows and briars. To save the soils, horizontalizing and hillside ditching have been practiced. The former has been in some cases satisfactorily successful, but both methods have, in the majority of cases, failed, and so have other means.

Cotton is shipped during the picking season, by rail, at from \$2 to \$3 per bale to Memphis, or \$3 75 to New Orleans, and to eastern cities at from \$5 to \$7 per bale.

DE SOTO.

Population: 22,924.—White, 7,581; colored, 15,343.

Area: 460 square miles.—Mississippi bottom, 65 square miles; cane hills, 45 square miles; brown-loam table-lands, 350 square miles; all woodland.

Tilled lands: 118,342 acres.—Area planted in cotton, 60,488 acres; in corn, 37,452 acres; in oats, 1,688 acres; in wheat, 1,236 acres.

Cotton production : 28,469 bales ; average cotton product per acre, 0.47 bale, 669 pounds seed-cotton, or 223 pounds cotton lint.

De Soto county, occupying the northwestern corner of the state, and fronting on the Mississippi river for about 9 miles, has about one-seventh of its area in the bottom of the latter river, the rest being brown-loam "table-lands" of the best quality, with a belt of "bluff" lands, several miles in width, skirting the bottom.

The Mississippi state line strikes Horn lake nearly at its vertex, leaving about half of it in Tennessee. Horn Lake pass issues from the lake not far below the state line and flows near the foot of the bluff, joining Coldwater river, which forms the southern line of the county, near the southwestern corner. The upland drainage is divided between the tributaries of Coldwater river and Horn lake.

The upland soils of De Soto are, on the whole, somewhat heavier than those of Marshall, which they otherwise resemble in "lay" and in timber, especially in the eastern portion. In the western a good deal of sweet gum, tulip tree or "poplar", and walnut commingles with the oak and hickory, increasing as the bluff is approached. The uplands generally slope off gently into the creek bottoms, forming extensive second bottoms or "hummocks", which are highly esteemed both for productiveness and the quality of the staple grown on them.

De Soto county is quite thickly settled, standing third (to Tate and Holmes) in the state as to the percentage of its total area under tillage (40 per cent.), and, notwithstanding its smaller area, third (to Hinds and Madison) among the upland counties for total production. In product per acre it stands even with its neighboring county, Tate (0.47 bale), a fact showing that the average product is not materially influenced by that of the lowland plantations on Horn lake and pass, however excellent. The above figure is next to the highest among the upland counties (Calhoun showing 0.50, or half a bale per acre, the cotton being there, however, chiefly grown on bottom lands). De Soto stands second only to Noxubee in the percentage of the tilled area occupied by cotton (51 per cent.), and the area in corn is only three-fifths of the latter. It is thus evident that the growing of home supplies is little practiced, the nearness to the Memphis market presenting a great temptation to buy supplies. The Mississippi and Tennessee railroad traverses the county centrally from north to south, and cotton is shipped, as ginned, to Memphis at the rate of \$1.40 per bale, and thence from 75 cents to \$1 to New Orleans.

ABSTRACT OF THE REPORT OF T. C. DOCKERY, LOVE STATION.

The county has every variety of soil, chief among which are alluvium of Mississippi bottom, the loams along creeks and smaller streams (which produces our best staple, and often a 500-pound bale per acre), and the red and yellow stiff clay soils of the uplands. The latter class occupies three-fifths of the county area, extending 16 miles east and 18 miles west; its chief growth is oak, hickory, and poplar. The surface color, which is gray, reaches 3 inches below to yellow clay, which extends 5 feet downward, then becoming a shade lighter. About 20 feet below the surface sand, hard pan, and pipe-clay in strata are encountered. About one-tenth of this kind of soil originally cultivated now lies "turned out". When again cultivated it produces finely for two or three years. Slopes wash and gully readily, and are seriously damaged in this way. The washings also injure the valley lands. To check the damage, horizontalizing and hillside ditching are practiced, and when such work is well done the results are entirely satisfactory.

TATE.

Population : 18,721.—White, 9,094; colored, 9,627.

Area : 390 square miles.—Woodland, all; Mississippi bottom, 15 square miles; cane hills, 35 square miles; brown-loam table-land, 340 square miles.

Tilled lands : 124,980 acres.—Area planted in cotton, 48,245 acres; in corn, 33,321 acres; in oats, 1,763 acres; in wheat, 1,100 acres.

Cotton production : 22,653 bales; average cotton product per acre, 0.47 bale, 669 pounds seed-cotton, or 223 pounds cotton lint.

The surface and agricultural features of Tate county are substantially the same as those above given for De Soto: undulating table-lands sparsely timbered, with oaks and hickory, and with a deep subsoil of brown loam of high fertility, and hence more largely under cultivation than the uplands of any other county in the state, viz, one-half of the total area, Holmes standing next and De Soto third. The county is drained by the tributaries of Coldwater river (which forms part of its northern boundary), chief of which are Bear Tail, Hickahala, and Arkabutla, their fertile first and second bottoms contributing largely to the cultivated area and total production.

As in De Soto and Panola, the soil and subsoil within a few miles of the edge of the bluff are similar to those prevailing near Memphis, being formed of the calcareous silt of the bluff or loess formation, and bearing a corresponding timber growth, among which sweet gum, tulip tree, and others indicative of a calcareous soil, are prominent.

One-half of the county area is actually under tillage, the county standing first in the state in this respect, and of these lands 38.6 per cent. is given to cotton. Tate county stands third (to Lowndes and De Soto) in the proportion of its area cultivated in cotton, viz, 123.7 acres per square mile, corn occupying only about two-thirds as much.

In view of the nearly equal division of the population between the white and colored races the high and predominant production of cotton is remarkable.

Cotton shipments are made chiefly to Memphis by rail, or direct to New Orleans via Granada.

PANOLA.

Population : 28,352.—White, 9,521; colored, 18,831.

Area : 680 square miles.—Woodland, all; Mississippi bottom, 140 square miles; cane hills, 85 square miles; brown-loam table-land, 455 square miles.

Tilled lands : 148,445 acres.—Area planted in cotton, 67,060 acres; in corn, 43,091 acres; in oats, 2,119 acres; in wheat, 1,603 acres.

Cotton production : 30,055 bales; average cotton product per acre, 0.45 bale, 642 pounds seed-cotton, or 214 pounds cotton lint.

The greater portion of Panola county is of the "table-land" character (see p. 32), modified in the southeastern portion especially by more or less sandy ridges extending in from the neighboring portion of La Fayette county. The county is timbered, as in Marshall, with oaks and hickory, to which, as the edge of the bottom or "bluff" is approached, the sweet gum, ash, and the tulip tree ("poplar") are more and more frequently added, the former especially sometimes becoming predominant. Within from 1 to 3 miles of the bluff the subsoil and underlying material are largely of the character of the calcareous silt or "loess" which prevails more extensively in the river counties south of Vicksburg as well as in Tennessee, the surface being somewhat broken, but the soil very productive. Farther inland gravel beds underlie to a considerable extent and at varying depths, sometimes contributing largely to the soil and subsoil.

The extreme western portion of the county lies within the Yazoo bottom plains (here designated as the Cold-water and Tallahatchie bottoms), which form a deep embayment into the uplands at the entrance of the Tallahatchie river. The latter traverses the northern part of the county from northeast to southwest. Though liable to overflow, and apparently not quite as productive as the more southerly portions of the great plains, these bottoms are quite as extensively under cultivation; but as their product has not been segregated in the returns from those of the uplands its influence upon the total production and products per acre in the county cannot be determined. The product per acre of the uplands is evidently somewhat below that of Tate, though probably higher than that of Marshall. As in the last-named county, the cotton acreage exceeds considerably that planted in corn, and is 44 per cent. of the total of tilled lands.

Panola stands second among the upland counties in total production, and sixth in cotton acreage per square mile. Outside of the bottoms the county is well settled, especially along the Mississippi and Tennessee railroad (from Memphis to Grenada), which traverses the county from north to south.

Cotton shipments are made on this road, from October to July, to Memphis at \$3.75, or to New Orleans at \$4, per bale.

ABSTRACT OF THE REPORT OF D. B. STEWART, COURTLAND.

There are three kinds of soil cultivated in cotton: the shelly and gravelly loam of the bottoms, the "buckshot" and crawfishy land, and the upland. The first includes about one-fourth of the river and creek bottoms of the county, and bears a natural growth of oak, poplar, ash, gum, hickory, cypress, and maple. The soil is about 2 feet thick, is generally dark colored, and is underlain by rock and gravel at 3 to 4 feet. The chief crops of this region are cotton and corn; some wheat, oats, potatoes, onions, fruits, etc., are also raised. The soil is easily tilled, except when too wet. It is best adapted to cotton and corn, and about three-fourths of the cultivated part is planted with cotton. The plant grows from 3 to 6 feet high, but is most productive at 4 feet. It inclines to run to weed on very rich, fresh land in wet seasons, which is restrained by topping and shallow cultivation. The seed-cotton product per acre of fresh land varies from 1,000 to 1,500 pounds; 1,780 pounds make a 475-pound bale of middling lint. After four years' cultivation the product is no less in good seasons. The most troublesome weeds are smart-weed and crab-grass. Very little of the land lies turned out. The "buckshot" and crawfishy land occupies in some localities about half the acreage, and occurs in bodies of one to several miles in extent along the rivers. The soil is a marshy, crawfishy, and sandy loam, containing fine sand, varying in color from gray to yellow, brown, blackish, and black, and is 2 feet deep. The subsoil, often lighter, contains hard, rounded "black gravel", sometimes pebbles as large as eggs and is underlain by sand, gravel, and rock at 3 to 4 feet. The soil is early, warm, and well drained, and when not too wet is easily tilled. About three-fourths of its cultivated area is planted with cotton. The plant often grows from 7 to 8 feet high, but is most productive at 3 to 4 feet. Topping and late cultivation restrain it from growing as high as it otherwise would in wet seasons. The seed-cotton product per acre of fresh land varies from 800 to 1,200 pounds, and after several years from 1,000 to 1,500 pounds, 1,780 pounds making a 475-pound bale of middling lint. Smart-weed is most troublesome.

The upland soil occupies about half the county area, and bears a natural growth of oak, poplar, sweet gum, ash, and hickory. The soil is a coarse, sandy, and gravelly loam, of buff, yellow, brown, and mahogany colors, is 12 inches deep, and is underlain by sand and gravel at 3 feet. The soil is early, easily tilled, and three-fourths of its cultivated area is planted with cotton. The usual and most productive height of the plant is 3 to 4 feet. The seed-cotton product per acre of fresh land varies from 800 to 1,000 pounds, and the ratio of seed to lint and quality of staple (land fresh or old) are the same as on other lands described. The most troublesome weeds of this region are smart-weed and crab-grass. About 2,500 acres lie "turned out" in this county, which, when again cultivated, produces as well as when freshly cleared. Slopes wash and gully readily, but the extent of damage is not serious; the valleys are also to a slight extent injured by the washings. Horizontalizing and hillside ditching have been successfully practiced in checking the damage. When the seasons are too wet cotton runs to weed, producing large stalks and small bolls, which open late.

Cotton shipments are made, from October to July, to Memphis at \$3 75, or to New Orleans at \$4 per bale.

LA FAYETTE.

Population: 21,671.—White, 11,385; colored, 10,286.

Area: 720 square miles.—Short-leaf pine and oak uplands, 280 square miles; brown-loam table-lands, 115 square miles; sandy oak uplands, 325 square miles; all woodland.

Tilled lands: 86,493 acres.—Area planted in cotton, 35,309 acres; in corn, 35,809 acres; in oats, 4,091 acres; in wheat, 2,052 acres.

Cotton production: 15,214 bales; average cotton product per acre, 0.43 bale, 612 pounds seed-cotton, or 204 pounds cotton lint.

La Fayette county exhibits quite characteristically the several features of the yellow-loam uplands. It is traversed diagonally from northeast to southwest by the broad dividing ridge between the streams flowing directly into the Tallahatchie river and those tributary to the Yockney-Patafa. In its higher portions this ridge is prevalently sandy, and is timbered with black-jack oak of the "sprangling" type, especially where the brown sandstone of the stratified drift caps the summits, and the soil is unproductive (see analysis, p. 31, No. 345), while in the lower and broader portions the sand is covered by the more or less fertile varieties of the yellow or brown loam to the depth of 3 to 4 feet. Southeast of the main divide and of the line running from the mouth of Pouskous creek up to the head of Yellow Leaf creek, and down that creek to its mouth, the short-leaf pine and post oak prevail mainly on

the ridges, with black and Spanish oaks and hickory in the valleys; and as we progress eastward the soil gradually becomes heavier and assumes the character of the "flatwoods hills". A large amount of excellent creek-bottom land, originally heavily timbered, is cultivated in cotton. The fertile bottom of the Yockeney is unfortunately subject to almost annual overflows.

Northwest of the main divide the ridges gradually flatten down, the sandy knolls become more rare, and the loam subsoil layer deeper and darker colored, bearing a timber growth prevalently of black and Spanish oaks and hickories, with large and compact black-jack and post oaks, thus forming a gradual transition from the ridgy country of the "Sandy oak uplands" to the gently undulating character of the "table-lands". The latter are quite characteristically developed in the northwestern corner of the county, on Toby-Tubby and Clear creeks, and at several points reach and even cross the railroad near Abbeville. These fertile and well-settled uplands fall off with a gentle slope toward the Tallahatchie River bottom. The latter is itself profusely fertile and about a mile in width, but is so much subject to overflows that but little of it is in regular cultivation.

Much and often irreparable damage has been done to the uplands as well as to the valleys of this part of the county by hillside washes, which soon cut through the loam subsoil into the underlying sand, baring the latter on the hills and deluging the valleys with it.

The tilled lands of La Fayette constitute 18.8 per cent. of the total area, standing in this respect between Tippah and Grenada counties. Of the tilled lands, 40.8 per cent. is given to cotton production, while an equal amount is devoted to corn. The average cotton product per acre is 0.43 bale, being the same as in Montgomery, Choctaw, and Yalobusha counties. The cotton acreage per square mile is 49.

Shipments are made by the New Orleans and Chicago railroad, either direct to New Orleans or northern markets, or largely to Memphis, which is the chief market of northern Mississippi. Freight to New Orleans, \$3 75 per bale.

ABSTRACTS OF THE REPORTS OF P. FERNANDEZ, P. H. SKIPWITH, AND S. W. E. PEGUES, OXFORD.

Tallahatchie and Yockeney rivers are in this county about 14 miles apart, and pass through it southwesterly. They have wide, flat, alluvial bottoms, needing drainage in some places. The higher portions alone are cultivated, and are very productive. From these bottoms the hills rise with gentle slopes and form the uplands, which are hilly, rolling, and level, and comprise four-fifths of the cultivated land of this county.

The *light sandy loam* of the table-lands, etc., is the chief cotton-producing soil, and covers about two-thirds of the county. It extends eastward 10, south 25, west 25, and north 20 miles, interrupted occasionally by lowlands and swamps, having a growth of red, post, and black-jack oaks, dogwood, gum, etc. The soil is generally 5 to 6 inches thick and blackish in color. The subsoil is a red clay, underlain by sand at 5 to 10 feet, sometimes less. The soil is a little tenacious when too wet, but tills quite easily otherwise; it is early, warm, and well-drained naturally. The chief crops of this region are cotton, corn, oats, wheat, sorghum, and sweet potatoes; but the soil is best adapted to cotton, and five-eighths of it is planted with the same. The usual and most productive height of the plant is from 3½ to 4 feet; the extremes are 2 and 6 feet. Deep cultivation and wet seasons incline the plant to run to weed, and to restrain it shallow tillage, early planting, and topping are practiced. The seed-cotton product per acre of fresh land varies from 600 to 1,000 pounds, 1,545 pounds of September picking or 1,425 pounds of December picking making a 475-pound bale of lint. After ten years' cultivation, when the land is kept from washing, the product is 800 pounds, the ratio of seed to lint is the same, and the quality of the staple is not known to differ from that of fresh land. About one-tenth of such land lies "turned out", and when again cultivated it produces well if it is not washed and gullied and has borne sedge-grass seven or eight years. Crab-grass, smart-weed, and hog-weed are most troublesome on this soil.

The *sandy hillside* soil comprises about one-eighth of the lands of this region, occurs in small areas, and has a growth of black-jack and some Spanish and post oaks. The soil is a fine sandy loam of a gray to brown color, in some places black before cultivation, and 1 to 2 inches deep to change of color. The lighter subsoil consists of sand, with strata of white clay, contains sand-rock occasionally, and is underlain by sand and white clay. The soil is early, warm, well drained, easily tilled, and is best adapted to sweet potatoes and watermelons, but five-eighths of its cultivated area is planted with cotton. The plant attains a height of 3 feet for five or six years only. The seed-cotton product per acre of fresh land is 800 pounds; after five years' cultivation (unmanured) the product is 400 pounds. More than one-half such land lies "turned out" and cannot be reclaimed. Hog-weed and mullein are most troublesome as weeds. The uplands wash readily, doing serious damage. The valleys joining such land are narrow and sandy, and the sand constantly encroaches. Hillside ditching is only temporarily successful; the best plan is either not to clear these slopes adjoining the valleys or to stop cultivating where there is soil enough to grow broom-sedge.

ABSTRACT OF REPORT OF IRA B. ORR, WATER VALLEY (SOUTHWESTERN PART OF THE COUNTY).

The *black or dark sandy loams* occur on dry branches in bodies of from 10 to 50 acres each, and comprise one-half of the cultivated land of the county. They have a natural timber growth of all the oaks, hickory, walnut, dogwood, ash, gum, beech, elm, sumach, and hazel-nut. The soil is a light, fine, sandy clay loam from brown to black in color and from 1 to 12 inches deep. The subsoil is heavier than the soil, is a yellow and red clay, sometimes whitish, and is beneficial when mixed with the surface soil. The soil is early, warm, and ill-drained, and is apparently best adapted to cotton and corn. Cotton forms two-thirds of the crops cultivated. It usually is from 2 to 7 feet high, is most productive at 3 feet, and inclines to run to weed if planted close and well cultivated or in wet seasons, and may be restrained by giving distance to plants and topping during the last of July. The seed-cotton product per acre on fresh land is from 1,200 to 2,000 pounds in good seasons; 1,545 pounds are necessary for a 475-pound bale, which rates as good as any. After twenty years' cultivation the yield is from 500 to 1,000 pounds per acre; about the same amount is necessary for a bale as from fresh land, and the staple is the same. The troublesome weeds are crab-grass and careless and hog-weeds. About one-sixth of such lands now lie "turned out". They do well when again cultivated, but not so well as fresh lands. These soils wash very much on the slopes, and are damaged beyond estimate. The valleys are greatly injured by the washings of the slopes, but horizontalizing and hillside ditching have been a successful check to such injuries.

ABSTRACT OF REPORT OF S. E. RAGLAND, DE LAY (SOUTHEASTERN PART OF THE COUNTY).

The upland soils vary greatly from one ridge to another, being in tillable areas of from one-half to 20 acres each.

The black, loose, sandy land comprises about seven-eighths of the lands of the region, extending the entire length of the township on the south side of the Yockeney and Patapha creeks and to the southern limit.

The natural timber growth is white, red, and post oaks, hickory, pine, and chestnut. The soil is a fine sandy clay loam, gray to black in color, and 8 inches deep. The subsoil is a heavy, tough, bluish-yellow clay, baking hard when exposed, but gradually becoming like the surface soil by continued exposure to the air. It is impervious when undisturbed, and is underlaid by a grayish, gravelly pipe-clay at from 2 to 3 feet. The soil is rather difficult to till in wet seasons, though not usually troublesome, and is early when well drained. It is best adapted to cotton, although all the crops of this region do well; also the grasses and red clover. Over one-half of the cultivated land is devoted to cotton, which is usually 3½ feet high, and produces best at that height. Fresh land, wet seasons, and late planting incline the plant to run to weed, but this is remedied by early planting on older land and shallow cultivation. The seed-cotton product per acre on fresh land is 1,000 pounds, and 1,425 pounds are required to make a 475-pound bale of lint; but on land after fifteen years' cultivation 800 pounds is the yield under ordinary rotation of crops. The staple from old land is not as good as that from fresh land. The troublesome weeds are smart, cocklebur, and morning-glory; crab-grass is the greatest trouble. Probably about 10 per cent. of such lands lie "turned out", and they produce well when again cultivated. The slopes wash and gully readily, are seriously damaged, but the valleys are not injured. Horizontalizing has been practiced to prevent this, and has been successful until neglected.

At various places in the valleys of running streams occur bodies of land designated *swamp* or *crayfish land*. Its growth is white oak, gum, and cypress, and its soil is a heavy clay loam of a whitish-gray color. The impervious subsoil is heavier, whiter, and sometimes gravelly; otherwise it is similar to surface. After cultivation white gravel appears in it, which is underlaid by sand at from 5 to 20 feet. The soil is tilled with difficulty either in wet or dry seasons, and is late, cold, ill-drained, and best adapted to corn planted in June. Cotton is rarely planted on it. Its troublesome weeds are ox, bear, and crab grasses. Very fine soil is being made by running the washings from uplands into this land. Cotton matures well in this region after the soil has been cultivated one or two years. Uplands are earlier and more easily cultivated, and the bolls open earlier than on the lowlands. Cotton is liable to be late and prematurely frost-killed on the lowlands; hence some prefer uplands. When lowlands are well cultivated they endure drought well, and the plant has a steady growth and sheds less than on the uplands. Soil and work being equal, the yields of uplands and lowlands will be about the same.

Cotton is sold during the picking season at railroad stations, whence it is shipped mostly to New Orleans at \$3 75 from Oxford.

YALOBUSHA.

Population: 15,649.—White, 7,533; colored, 8,116.

Area: 460 square miles.—Short-leaf pine and oak uplands, 160 square miles; brown-loam table-lands, 290 square miles; sandy oak uplands, 10 square miles; all woodland.

Tilled lands: 71,850 acres.—Area planted in cotton, 30,398 acres; in corn, 23,609 acres; in oats, 1,728 acres; in wheat, 594 acres.

Cotton production: 12,989 bales; average cotton product per acre, 0.43 bale, 612 pounds seed-cotton, or 204 pounds cotton lint.

Yalobusha county is divided into two somewhat unequal portions by the Great Northern railroad, which traverses it from north-northeast to south-southwest. Most of the country lying east of the railroad is ridgy and sandy, and is timbered mainly with short-leaf pine and black-jack and post oaks, many high rocky knolls crowning the abrupt ridges and the narrow creek bottoms being almost alone in cultivation. West of the railroad the country bears mostly the character of the brown-loam table-lands, and is very productive, cotton being altogether the prevalent crop. The divide between the waters of Yockeney and Loosha-Scoona, running almost east and west across the county, is a gently undulating country, with only a few knolls of sandy land. The uplands fall off gently into the bottoms of the two main streams, these bottoms being densely timbered and profusely fertile, but subject to annual overflows, rendering their cultivation precarious. They are bordered by a second-bottom terrace of varying width, having a pale-yellow loam subsoil and a timber growth of willow and water oaks. Where these are large the soil is very productive, but where the growth is small it is ill-drained and of a whitish tint, and is of inferior productiveness.

The cotton of Yalobusha county (which then included the adjacent portion of Grenada county) was of old reputed to be the best upland cotton grown in the market. The deterioration of the soils by improvident culture and washing away of the surface has somewhat diminished both in quantity and quality, but improved methods of culture can probably restore these lands to their old standing in both respects.

TALLAHATCHIE.

(See "Mississippi alluvial region".)

GRENADA.

Population: 12,071.—White, 3,236; colored, 8,835.

Area: 440 square miles.—Short-leaf pine uplands, 165 square miles; Mississippi bottom, 75 square miles; cane hills, 10 square miles; brown-loam table-lands, 190 square miles; all woodland.

Tilled lands: 49,600 acres.—Area planted in cotton, 25,390 acres; in corn, 15,906 acres; in oats, 568 acres; in wheat, 6 acres.

Cotton production: 10,228 bales; average cotton product per acre, 0.40 bale, 570 pounds seed-cotton, or 190 pounds cotton lint.

Grenada county, like Yalobusha, is approximately divided by the Great Northern railroad into a hilly and sandy eastern portion, where sandy ridges, timbered with short-leaf pine, black-jack and post oaks, form the prevailing feature, and a western one, which in the upland and larger portion is of the "table-lands" character, while the most westerly part lies within the Mississippi bottom plain. The county is traversed near its middle,

from east to west, by the Yalobusha river, whose extensive "second-bottom" plain, gradually rising to the level of the table-lands proper, forms a large proportion of the best and most thickly-settled farming lands. Of these those lying south and west of the town of Grenada are held in especial esteem.

Down to its junction with the Loosha-Scoona the Yalobusha river has a bottom from $1\frac{1}{2}$ to 2 miles in width, bordered by abrupt pine ridges and subject to annual overflow. The same is true of the Loosha-Scoona, but the bottom soils of the two streams differ materially, those of the latter being very heavy and "sobby", while those of the Yalobusha are rather light and more easily tilled (see analyses, p. 35), and its channel near Grenada is obstructed by sand-bars. The joint bottom of the two streams is in places over 3 miles in width, and is traversed by numerous and very large sloughs, rendering it difficult of access in all but the lowest stages of water. Being subject to annual overflows, but little of this profusely fertile and densely-timbered plain is in cultivation. The second-bottom terrace, varying from 1 to 3 miles in width, and lying from 5 to 10 feet above the level of the bottom, hence above overflow, is also highly productive. Its timber is mainly willow, water, and chestnut-white oaks, with which, near the margin, much post and white oaks mingle. The soil is a pale-yellow loam, easily tilled, and mostly well drained. It is occasionally traversed by low, sandy ridges, with a poor soil bearing an inferior growth of black-jack, post, and Spanish oaks. This second-bottom land constitutes a large body of the densely-settled farming land south and southwest of the town of Grenada, on the waters of Beadupanbogue and Perry's creeks, passing into gently undulating loam uplands on the water-shed between these streams and those flowing directly toward the great bottom plain. The lands on the immediate "bluff" of the latter are somewhat broken, and their soil differs from those farther inland by an admixture of the calcareous loam of the "loess" formation (see analyses, p. 31), which manifests itself by the appearance of such lime-loving trees as the tulip tree, or "poplar", the linden, sweet gum, sassafras, etc., among the oaks.

The tilled lands of Grenada county constitute 17.6 per cent. of its area, and a little over half of this amount (51.2 per cent.) is given to cotton culture, while only two-thirds as much is devoted to corn. The cotton acreage per square mile is 57.7. The cotton product per acre (0.40 bale) is slightly less than that of Yalobusha and Montgomery, the adjoining counties.

ABSTRACT OF THE REPORT OF J. D. LEFLORE, GRENADA.

The chief soil is that of the black sandy bottoms of all the creeks for 10 miles around, which bears a natural growth of many kinds of oak, hickory, walnut, poplar, sweet gum, and ash. The soil is a blackish and black sandy loam 2 feet deep; the subsoil a yellow clay, not very hard, and becomes like the surface when turned up. It is underlaid by sand at 5 to 10 feet. The soil is early when well drained, always easily tilled, and is best adapted to cotton and corn, the chief crops of this region, and one-half its cultivated area is planted with cotton. The plant grows from 5 to 8 feet high, but is most productive at 5 feet. It inclines to run to weed in wet weather. The remedy consists in barring off to check growth. The seed-cotton product per acre of fresh land varies from 1,800 to 2,200 pounds; 1,425 pounds make a 475-pound bale of lint. After ten years' cultivation the product is from 800 to 1,000 pounds, 1,545 pounds being then needed for a bale, and the staple is much shorter than that from fresh land. Cocklebur and crab-grass are the troublesome weeds. Not much of such land lies "turned out", and it produces very well when again cultivated.

At the foot of the hills, in the western part of the county, lies the Yalobusha valley, which extends many miles up and down along the hills. The soil is a blackish and black loam 1 to 2 feet deep, generally alike for hundreds of miles, being varied only by bodies more sandy and gravelly and by bodies of clayey prairie. Its natural growth is oak, gum, hickory, walnut, poplar, cypress, and in some places pine, etc. The subsoil is yellow clay, not very hard when turned up. It contains white gravel in places, and is underlaid by sand or gravel at 5 to 10 feet. Tillage is not very difficult in wet seasons, and very easy in dry seasons. The soil is early when well drained, well adapted to cotton and corn, and one-half its cultivated area is planted with cotton. The plant attains the height of from 4 to 6 feet, but is most productive at $4\frac{1}{2}$ to 5 feet. The seed-cotton product per acre of fresh land varies from 1,800 to 2,200 pounds; 1,425 pounds make a 475-pound bale of good middling lint. After ten years' cultivation the product varies from 800 to 1,500 pounds, and 1,545 pounds then make a 475-pound bale of lint inferior to that of fresh land. Other details are as on land previously described.

The uplands are no less productive than the lowlands, and occur in bodies of several hundred acres, bearing chiefly pine; also hickory and oak. The soil is a blackish and black clay loam, 1 to 2 feet thick, with a yellow clay subsoil, underlaid by sand at 5 to 10 feet. Some of this land has been cultivated over forty years. Morning-glory, cocklebur, and crab-grass are the troublesome weeds. The remaining details are as given for the lowlands. Slopes are seriously damaged by washings and gullyng, and the valleys are, to some extent, injured by the washings. To check the damage hillside ditching is practiced in some places, and with success when attended to.

Shipments are made, as soon as cotton is ginned, by rail from Grenada to New Orleans at \$3 50, or by river at \$2 50 per bale.

ABSTRACT OF THE REPORT OF M. K. MISTER, GRENADA.

About one-fourth of the cultivated soil of this region is the black, light, sandy soil of the second bottoms of the Yalobusha river and tributaries. It often occurs in bodies of thousands of acres, and bears a natural growth of hickory, poplar, and white and black oaks. The depth of soil to change of color is, in many localities, 30 inches. The subsoil is much heavier, more clayey, and of lighter color, but it is very productive if not too dry. The soil is moderately well drained, always easily tilled, and is well adapted to cotton, corn, oats, sweet and Irish potatoes, and a great variety of vegetables. These are the chief crops of the region. Wheat is also raised, but is not so certain to succeed. About two-thirds of the cultivated area is planted with cotton. The plant grows from 3 to 4 feet high, and when early summer is too dry and late summer is too wet the plant inclines to run to weed, for which there is no remedy whatever. Fresh land produces 1,200 pounds of seed-cotton per acre; 1,425 pounds make a 475-pound bale of No. 1 lint. After six to eight years' cultivation (unmanured) the cotton yield declines with constant tillage at the rate of 2 per cent. per annum, and 1,545 pounds then make a 475-pound bale. The lint is generally inferior, but that depends on the season. Crab-grass is the most troublesome weed. About one-sixth of such cultivated land lies "turned out", but produces pretty well when again properly cultivated. Slopes wash very badly, and are thus seriously damaged; but the washings do little or no damage to the valley lands. Efforts to check this damage have been entirely neglected lately, but were formerly made to great advantage.

The uplands are rather level, and embrace the second quality of soil. There are also white, clayey, rolling lands, whose soil is inferior. The bottoms are very rich, but are liable to be overflowed once or twice annually. They produce abundantly when cultivated, but the cotton crop is liable to be late, and is sometimes injured by early frosts.

Many sell their crop as soon as it is baled, a large proportion of which is sold at Grenada, from which place it is shipped to New Orleans at \$3 50 per bale.

MONTGOMERY.

(See "Short-leaf pine and oak uplands region".)

CARROLL.

Population: 17,795.—White, 7,831; colored, 9,964.*Area*: 640 square miles.—Short-leaf pine and oak uplands, 190 square miles; Mississippi bottom, 50 square miles; cane-hills, 80 square miles; brown-loam table-lands, 320 square miles; all woodland.*Tilled lands*: 86,739 acres.—Area planted in cotton, 37,957 acres; in corn, 30,019 acres; in oats, 1,877 acres; in wheat, 337 acres.*Cotton production*: 17,423 bales; average cotton product per acre, 0.46 bale, 657 pounds seed-cotton, or 219 pounds cotton lint.

Carroll county, since the formation of Le Flore in 1871, comprehends but a small area of the Mississippi bottom plain, and its uplands are mostly undulating "table-lands", somewhat broken near the edge of the "bluff" and in the eastern and central portions, where the continuation of the "Duck hill" ridge from the adjacent county of Montgomery forms the divide between the waters of the Big Black and Yazoo rivers. The latter is sandy and timbered with black-jack and post oaks, mingled with short-leaf pine, while the "bluff" lands show the usual marks of increased fertility through the admixture of the calcareous "loess" in the mingling of the poplar, linden, sweet gum, large sassafras, and sometimes walnut, with the upland oaks. The valleys of the numerous streams are wide, and are very productive where the washing of the uplands has not been allowed to damage them.

In the southeastern portion of the county, near Vaiden especially, the pale-yellow loam of the more northerly region becomes of a deeper tint, evidently from the admixture of the orange-red, clayey soil of the "red hills" character, which is prominent at the town of Vaiden. Here in the railroad cuts there appears one of the beds of "greensand", to the admixture of which with the soils the high productiveness of the "red lands" is mainly due. (See p. 20.)

The uplands in this region often come down to the bottom of the Big Black with a decided slope, but in places there intervene tracts of level hummock or second bottom, lying 3 to 4 feet above the first bottom, and of very variable fertility. These are nearly or quite destitute of timber, excepting small groups of post oak, and, in low spots, scrubby sweet gum. The soil is a light, gray silt, unretentive, suitable for good wheat and sweet potatoes, but unsuited to cotton and corn (see analysis of this soil, p. 36). The main body of the first bottom in this region lies on the east side of the river.

HOLMES.

Population: 27,164.—White, 6,911; colored, 20,253.*Area*: 750 square miles.—Woodland, all; Mississippi bottom, 205 square miles; cane hills, 60 square miles; brown-loam table-lands, 485 square miles.*Tilled lands*: 204,993 acres.—Area planted in cotton, 62,556 acres; in corn, 37,355 acres; in oats, 1,237 acres; in wheat, 59 acres.*Cotton production*: 30,463 bales; average cotton product per acre, 0.49 bale; 699 pounds seed-cotton, or 233 pounds cotton lint.

The features of the upland portion of Holmes county are very similar to those of Carroll (see above), save that in general the surface is more gently undulating and the loam soil is, on the whole, somewhat heavier and deeper, acquiring in the southern part of the county a thickness of as much as 18 and even 20 feet. The Big Black river is mostly bordered on the west by a "hummock" belt from one-half to one mile wide, timbered with post oak, willow, and water oak and some short-leaf pine. From this there is a gradual ascent into a gently-undulating oak upland region a few miles in width, beyond which, on the divide, the country becomes more hilly, and, in consequence, less convenient for cultivation, though apparently not less fertile, the timber being the same, viz, large post, Spanish, and scarlet oaks, with an occasional large black-jack and hickory. The short-leaf pine appears on the higher portions of the dividing ridge in the northern part of the county; and the southern, the fine agricultural region about Richland, though lying on the Big Black side, is separated from the Big Black hummock by a strip of hilly country in which the pine is occasionally seen. The upland soils, when fresh, produce from 1,200 to 1,300 pounds of seed-cotton per acre, and are very durable when washing away is prevented.

The lowland portion of Holmes county embraces the wonderfully productive portion of the Yazoo bottom known as Honey Island, famed equally for the quality and quantity of its cotton product, and hence quite extensively in cultivation; the proprietors, however, residing mostly in the uplands, on account of the peculiarly insidious malaria, attributed to the island formed by the forking of the Yazoo river near the northern line of the county and the reunion of the two streams on the southern. It seems that the best quality of the "buckshot soil" (see pp. 38 and 42) prevails over the larger portion of this area.

The tilled lands of Holmes county constitute 42.8 per cent. of the total area, the county standing second in this respect in the state; 30.5 per cent. of these lands is devoted to cotton. The cotton acreage per square mile is 83.4, and the average cotton product per acre, 0.49, Holmes standing eighth in this respect among the upland counties in the state; but, considering the influence of the Honey Island (Yazoo bottom) region upon this average, that of the uplands alone must be very much less.

The cotton product of this lowland region is shipped by water to Yazoo City or Vicksburg, while that of the upland portion of the county is mainly transported on the Great Northern railroad, which here closely skirts the Big Black river.

ABSTRACT OF THE REPORT OF CHARLES C. THORNTON, M. D., CHEW'S LANDING.

The lands are a little undulating, though frequently in large areas, with little or no fall; but as a general rule there is sufficient fall for drainage. Two-thirds of the cultivated land is blackish and black loam, composed of fine silt, sand, and clay. It is commonly designated black loam. The same extends 5 to 8 miles east, 10 to 20 south, 15 to 20 north, and to the Mississippi river 75 to 100 miles west. Its natural growth is oaks, gum, elms, sassafras, walnut, holly, red-bud, cypress, pecan, ash, ironwood, and palmetto. The soil is from 3 to 5 feet deep. The darker soils have a lighter subsoil, while the clayey soils have a waxier and heavier subsoil, which is very hard when dry. The underlying material at 20 to 30 feet is quicksand. In good seasons the dark and sandy lands work like an ash-bed, but the clayey lands are easy to till in wet seasons, especially when in crops like tobacco. These soils are early and warm when well drained.

The chief crops of the region are cotton, corn, potatoes, pease, pumpkins, tobacco, and vegetables; anything that will grow elsewhere will grow in the Yazoo bottom. The soil is equally well adapted to all. Corn will grow almost without culture, but about two-thirds of the cultivated part of this land is planted with cotton. With rows $4\frac{1}{2}$ to 5 feet apart, the plant is most productive at 5 feet high, though it frequently grows to 10 feet. The height makes little difference if it has sufficient space. The plant inclines to run to weed when it has not space enough, or when the weather is excessively wet and when planted late or cultivated too much on fresh land. The remedy consists in allowing ample space between the rows and drills, laying by early, cultivating little while the plant grows rapidly, and keeping weeds down with hoes and shallow-plowing sweeps.

The seed-cotton product per acre of fresh land varies from 1,200 to 5,000 pounds with proper cultivation, and from 1,425 to 1,665 pounds make a 475-pound bale of lint. After three years' cultivation the product varies from one to three bales (400 pounds each) or 600 to 800 pounds of lint if properly cultivated. The staple is a little inferior, if at all different, and perhaps is not quite so silky and a little coarser, though much of this is due to neglect in the selection of seed. Cocklebur is the greatest pest; other weeds are crab-grass, morning-glories, hog-weeds, careless-weeds, purslane, and wild tea that pulls like twine. Nearly one-fourth of the best lands are now idle; and, considering the small yields that are gathered from some of the best lands in the county, much more might as well lie idle. When again cultivated such lands produce from 1,000 to 1,500 pounds of seed-cotton, and with early breaking and good cultivation they sometimes come fully up to their original standard. Lands suffer from washings only near the foot of the hills, where several large plantations have been nearly or quite ruined. Horizontalizing has not been successful as a check.

One-sixth of the cultivated land has a surface soil of *fine silt and sandy loam* of a gray and yellow color. It is coextensive with the black loam, has the same depth (3 to 5 feet) and about the same kind of growth, with perhaps more pecan, hickory, and oaks, and less gum. The underlying material is sand. When too wet, the soil is mucky; when dry, it tills like an ash-bed. It is early and warm when well drained, and is best adapted to corn and potatoes, but is also good for cotton, and the latter occupies from five- to seven-eighths of its cultivated area. The seed-cotton product of fresh land per acre varies from 800 to 1,200 pounds, and usually 1,665, or in dry seasons 1,425 pounds, make a 475-pound bale of lint. After three years' cultivation the product varies from 1,200 to 2,000 pounds, and frequently 3,000 pounds are raised. The ratio of seed to lint remains the same, but the staple is not so soft nor so silky as that from fresh land. The weeds are the same in kind, but fewer and less luxuriant than on the black land. About one-fourth of such originally cultivated land lies "turned out". When again taken into cultivation the land does not produce as well unless broken early.

The remaining sixth of the cultivated land, or much more than one-third of the unimproved, consists of *low wet lands, palmetto flats, and white-oak ridges*. It is commonly designated white "buckshot" soil, and occurs more or less on each plantation, and bears a natural growth of white oak, hickory, ironwood, elm, bitter pecan, palmetto, grape, bamboo, briars, and vines generally. The soil is a whitish-gray, stiff clay, 12 inches thick; the subsoil is a stiff waxy, mottled clay, hard and impervious, which breaks into gravel-like fragments. At 2 feet it is underlaid by a stiff mucky clay. Tillage is easy if the soil is not too wet; if dry, it is almost impossible to break it, except in clods as large as one's head. The soil is late and cold when well drained, and is best adapted to cotton and pease. Cotton does not shed its fruit as on other land, and is not, like them, subject to drought. Nearly all the cultivated portion is planted with cotton, as it is fit for little else. The plant grows from 3 to 4 feet high, and is most productive at that. It does not run to weed nor shed its fruit, nor does it suffer from drought as on other lands. The seed-cotton product per acre varies from 400 to 1,000 pounds; 1,665 pounds make a 475-pound bale. After three years' cultivation the product varies from 200 to 800 pounds. The ratio of seed to lint remains the same, but the staple is coarser than that of fresh lands, and generally coarser than that of other lands. The cocklebur is the most troublesome weed; it grows where nothing else will.

Nearly one-half of such land originally cultivated has been "turned out". It produces but little better after rest, and the first five years of cultivation generally exhausts it. This land resists washing as would a rock, and would be benefited by the intermixture of an ocean of sand.

Cotton on the lowlands or flats where there is great moisture suffers from rust and sheds greatly, and is perhaps more affected by early frosts than on uplands; but the correspondent concludes, from his twenty years' experience as an experimental farmer and cotton planter, that the most serious hinderances to profitable cotton culture are due more to the methods of cultivation than to soil or climate. Alternations of wet and dry extremes cause shedding of forms, squares, and blooms; but this, he believes, would not be so did not that partial hard-pan formed by the plow-soles repeatedly running at the same depth prevent the roots from descending far enough to be beyond the reach of, and unaffected by, those sudden surface changes. With suitable treatment these lands are not excelled in yields by any in the world. Cotton shipments continue from October to March, by steamboat generally, to New Orleans, at \$1 50 per bale; also, to Yazoo City at 75 cents, and to Vicksburg at \$1 per bale.

ABSTRACT OF THE REPORT OF J. W. C. SMITH, BENTON.

The lowlands of the county comprise the first and second bottoms of the creeks. The soil of the first bottom is a black alluvial, with much decayed vegetable matter. The growth is walnut, hickory, pecan, magnolia, beech, holly, water, live, and white oaks, buckeye, cucumber tree, etc. The subsoil is a yellowish or bluish clay, nearly impervious to water unless disturbed.

The chief soil of the county is the hilly uplands, which comprises about 80 per cent. of the area, and has a timber growth of white, red, black, and overcup oaks, hickory, poplar, and dogwood. The subsoil is a yellowish clay at but from 2 to 6 inches from the surface.

Tillage is difficult in wet seasons, but easy in dry. The soil is early when well drained, is best adapted to cotton, and seven-tenths of its cultivated area is planted with the same. The usual and most productive height of the plant is $4\frac{1}{2}$ or 5 feet. Frequent light surface cultivation in moist, warm weather inclines the plant to run to weed. The remedy is deep cultivation to cut the lateral roots and check the plant's growth while the moisture continues, and this is not likely to cause shedding of young bolls. The seed-cotton product per acre of fresh land varies with the land from 1,200 to 3,000 pounds; 1,665 to 1,780 pounds make a 475-pound bale of fair lint if free of trash. After two years' cultivation the product is from 5 to 10 per cent. more; and a little less is needed to make a bale. Crab-grass, purslane, and

kellis are the most troublesome, and where there is a sod of Bermuda grass cotton cannot be cultivated. About one-fourth of the originally cultivated lands here now lie "turned out", and produce very well when again cultivated. Slopes are seriously damaged by washings and gulying, especially when not cultivated, and valley lands are injured to the extent of 30 to 50 per cent. by the washings. Very little effort to check the damage is made, and some efforts at hillside ditching have met with poor success. Most of the lands here are rented, and tenants do not keep such ditches open.

Wet weather accompanies overflows of the Mississippi river; for during such overflows the prevailing winds are from the west-southwest and are heavily laden with moisture, which is precipitated every time there comes a cold breeze from the north. The chief crops are cotton, corn, sorghum, and pease. Cotton is shipped in November and December, by steamboat, to New Orleans at \$1.25 per bale.

YAZOO.

(See "Mississippi alluvial region".)

MADISON.

(See "Central prairie region".)

MISSISSIPPI ALLUVIAL REGION.

(Embraces the following counties and parts of counties: North of Vicksburg—Tunica, De Soto,* Coahoma, Quitman, Panola,* Tallahatchie, Grenada,* Le Flore, Sunflower, Bolivar, Washington, Holmes,* Yazoo, Sharkey, Issaquena, and Warren;* south of Vicksburg—Claiborne,* Jefferson,* Adams,* and Wilkinson.*)

The counties of this region are very similar in their topographical and agricultural features, and, in order to avoid a very large amount of unnecessary repetition, their descriptions are made as short as possible, and the reader is referred to the more general description in the first part of this report.

TUNICA.

Population: 8,461.—White, 1,256; colored, 7,205.

Area: 440 square miles.—All Mississippi bottom; wooded.

Tilled lands: 39,318 acres.—Area planted in cotton, 29,881 acres; in corn, 9,447 acres; in oats, 137 acres.

Cotton production: 18,008 bales; average cotton product per acre, 0.60 bale, 855 pounds seed-cotton, or 285 pounds cotton lint.

Tunica is the most northerly of the alluvial counties, and is bordered on the west by the Mississippi river, while on the east the cane hills lie along a portion of the border. The surface is very level. Its eastern portion is drained southward by the Coldwater river, a tributary of the Yazoo, and interspersed with numerous lakes and bayous. The entire country is heavily timbered with the usual bottom growth, and is sparsely settled, except along the immediate Mississippi river front, where also lie the large cotton plantations. The average of tilled lands for the county at large is 89.3 acres per square mile, and of these 67.9 acres are given to the cultivation of cotton.

DE SOTO.

(See "Brown-loam table-lands".)

COAHOMA.

Population: 13,568.—White, 2,412; colored, 11,156.

Area: 500 square miles.—Mississippi bottom, 416 square miles; dogwood ridge, 84 square miles; woodland.

Tilled lands: 51,741 acres.—Area planted in cotton, 32,964 acres; in corn, 14,297 acres; in oats, 138 acres; in wheat, 76 acres.

Cotton production: 26,287 bales; average cotton product per acre, 0.80 bale, 1,140 pounds seed-cotton, or 380 pounds cotton lint.

Coahoma is one of the river counties of this region, and is interspersed with lakes, bayous, and creeks, which mostly flow southward and are tributary to the Yazoo river. Of these streams the Sunflower river is the largest.

The surface of the county is level, with the exception of Dogwood ridge, on the east, is subject to overflow when not protected by levees, and is heavily timbered with the usual swamp growth. The lands comprise the alluvial loams and buckshot soils described in the general part of the report, and along the river front are largely under cultivation, cotton comprising the chief crop. The Dogwood ridge alluded to is a low ridge above overflow, trending in an irregular course north and south, with a width varying from 2 to 5 miles, and having a light sandy and deep soil, timbered with a growth of dogwood, sweet gum, holly, ash, sassafras, and prickly pear. The lands under cultivation average 103.4 acres per square mile for the county at large, and of this number 65.9 acres are given to cotton. The large plantations, however, lie along the river front, convenient to shipping facilities.

QUITMAN.

Population: 1,407.—White, 592; colored, 815.

Area: 400 square miles.—Mississippi bottom, 395 square miles; dogwood ridge, 5 square miles; woodland.

Tilled lands: 5,714 acres.—Area planted in cotton, 3,420 acres; in corn, 1,477 acres; in oats, 24 acres.

Cotton production: 2,337 bales; average cotton product per acre, 0.68 bale, 969 pounds seed-cotton, or 323 pounds cotton lint.

Quitman county borders Coahoma on the east, its eastern boundary-line reaching to within a few miles of the bluff region. The surface is very level, is drained by the Coldwater river, which flows southward, and by its numerous

creeks and bayous, and is heavily timbered with a swamp growth of sweet gum, swamp-chestnut oak, some white oak, holly, and an undergrowth of cane. While most of the county is subject to overflow, there is a great deal of high and sandy land along the streams, nearly all of which is under cultivation, yielding large crops of cotton. The lowlands are chiefly dark loams or buckshot clays, and are very highly productive when properly drained. "White land" also occurs in some localities, having a sweet gum and swamp-chestnut oak growth. Along the Tallahatchie river the bottom lands are from 10 to 15 miles wide, and have a light yellowish sandy loam soil. The average of lands under tillage for the county at large is 14.2 acres per square mile, and of these 8.5 acres are given to the culture of cotton.

PANOLA.

(See "Brown-loam table-lands".)

TALLAHATCHIE.

Population: 10,926.—White, 4,168; colored, 6,758.

Area: 640 square miles.—Mississippi bottom, 549 square miles; cane hills, 53 square miles; dogwood ridge, 38 square miles; all woodland.

Tilled lands: 42,501 acres.—Area planted in cotton, 22,463 acres; in corn, 16,169 acres; in oats, 772 acres; in wheat, 108 acres.

Cotton production: 11,570 bales; average cotton product per acre, 0.52 bale, 741 pounds seed-cotton, or 247 pounds cotton lint.

Tallahatchie county, lying in the eastern part of the region, includes within its limits a large area of the high bluff lands described in the general part of this report. By far the greater part of the county, however, is covered by the level and heavily-timbered swamp lands of the alluvial region with the exception of the narrow and sandy Dogwood ridge which crosses the southwest corner. The county is drained southward by the Coldwater river and its several tributaries.

The lands under cultivation are found chiefly on the bluff uplands, and here, too, the greater part of the population reside. It is thought that about 15 per cent. of the total area of this bluff section and from 1 to 5 per cent. of the alluvial region is planted in cotton.

The average of tilled lands for the county at large is 66.4 acres per square mile, of which 35.1 acres are in cotton.

GRENADA.

(See "Brown-loam table-lands".)

LE FLORE.

Population: 10,246.—White, 2,230; colored, 8,016.

Area: 610 square miles.—Mississippi bottom, 434 square miles; dogwood ridge, 176 square miles; woodland.

Tilled lands: 40,158 acres.—Area planted in cotton, 17,730 acres; in corn, 10,965 acres; in oats, 76 acres.

Cotton production: 11,925 bales; average cotton product per acre, 0.67 bale, 954 pounds seed-cotton, or 318 pounds cotton lint.

Le Flore county, lying in the eastern part of the alluvial region, is entirely included in it, though bordered on the east by the bluff region. The Dogwood ridge, here reaching its maximum width of from 5 to 8 miles, passes north and south through the county, is low, and has a sandy loam soil timbered with dogwood, sweet gum, holly, ash, sassafras, etc.

The rest of the county is low and swampy, is heavily timbered except in small spots or "prairies" (which seem to be old Indian mounds and "clearings"), and is subject to overflow.

The county is sparsely settled with an average of 16.8 persons per square mile, the average of tilled lands being 65.8 acres per square mile. Cotton is the chief crop, its average being 29.1 acres per square mile.

ABSTRACT OF THE REPORT OF JOHN A. AVENT, GREENWOOD.

The lands of the county comprise two varieties of soil, a *black sandy loam* and *heavy clay putty-like soil* (second class). The *black sandy soil* is chiefly cultivated. The same extends 50 miles west, 20 east, and about 100 north and south, and covers three-fourths of this region. Its natural growth is gum, oak, hickory, cottonwood, ash, box-elder, ironwood, and cane. The soil is a black, fine sandy and gravelly loam 30 inches deep. The subsoil is an impervious, putty-like clay, contains white gravel, and is underlaid by sand at 10 feet. The chief crops of this region are cotton and corn. The soil is easily tilled, except when too wet. It is well-drained, but early and warm, and is best adapted to cotton, three-fourths of its cultivated area being planted with the same. The usual and most productive height of the plant is from 4 to 5 feet, and it inclines to run to weed when rains are excessive in August. The product per acre of fresh land is 2,000 pounds of seed-cotton; 1,900 pounds make a 475-pound bale of good middling lint. After ten years' cultivation (unmanured) the product is 1,500 pounds, and 1,780 pounds then make a bale of lint slightly superior to that of fresh land. One-tenth of such originally cultivated land has been "turned out", but produces well when again cultivated. The most troublesome weed is crab-grass. The soil washes and gullies readily on slopes, but they are not seriously damaged yet; neither are the valleys by washings.

Cotton is shipped during the picking season by steamboat, generally to New Orleans, at \$1.50 per bale.

SUNFLOWER.

Population: 4,661.—White, 1,764; colored, 2,897.

Area: 720 square miles.—Mississippi bottom, 708 square miles; dogwood ridge, 12 square miles; woodland.

Tilled lands: 13,998 acres.—Area planted in cotton, 7,107 acres; in corn, 3,730 acres; in oats, 80 acres.

Cotton production: 5,707 bales; average cotton product per acre, 0.80 bale, 1,140 pounds seed-cotton, or 380 pounds cotton lint.

Sunflower is a narrow but long county lying in the central part of the alluvial region. Its surface is very level, with some higher lands along the larger streams; the lowlands are subject to overflow. The county is drained southward by the Sunflower river and its tributaries, though the greater part is low and swampy and is interspersed with many lakes. The lands of the swamps are what are termed "white lands", the soil being somewhat sandy, of a grayish color, and underlaid by a whitish close-textured clay, with reddish ferruginous spots, and its vegetation comprises sweet gum and swamp-chestnut oak. The front-lands along the streams also comprise "white lands", perhaps a little more sandy, having an additional timber growth of hickory, holly, willow oaks, dogwood, some ash, and an undergrowth of cane. These front-lands only are under cultivation, the swamps being too low and subject to overflow.

The county is sparsely settled, the average of population being 6.5 persons and that of tilled land 19.4 acres per square mile. The lands in cotton average but 9.9 acres per square mile. The northern half of the county is hardly inhabited.

BOLIVAR.

Population: 18,652.—White, 2,694; colored, 15,958.

Area: 900 square miles.—All Mississippi bottom; wooded.

Tilled lands: 73,467 acres.—Area planted in cotton, 43,330 acres; in corn, 16,624 acres; in oats, 187 acres.

Cotton production: 36,419 bales; average cotton product per acre, 0.84 bale, 1,197 pounds seed-cotton, or 399 pounds cotton lint.

Bolivar county lies along the eastern side of the Mississippi river, and is entirely included within the alluvial region. Its surface is very level, with higher lands along the river, and is heavily timbered with the usual swamp growth. Sunflower river enters the county a short distance on the east in its southward course, while in the central portion are the headwaters of Deer creek, which flows parallel with the Mississippi river through several counties on the south. A few small bayous enter the latter river, but the drainage is mostly to the south. The entire county is dotted over with small lakes, especially in the eastern half, which is little else than a great swamp, scarcely inhabited, and subject to overflows. The lands of the county largely embrace buckshot clays in the lowlands, covered on the higher portions along the river by light alluvial loams from 6 to 8 feet thick.

The lands under cultivation for the county at large average 81.6 acres per square mile, and of these 48.1 acres are given to the culture of cotton. The cotton plantations, however, lie chiefly adjoining the Mississippi river, convenient to transportation.

ABSTRACT OF THE REPORT OF G. W. WISE, CONCORDIA.

As far as productiveness is concerned, it is hard to tell which is better, the black sandy loam or the black "buckshot" soil, as neither can be excelled. These together constitute about four-fifths of this region and extend from 50 to 75 miles up and down the Mississippi river and about 10 miles east of it. Its natural growth is chiefly sweet gum and hackberry, and some elm, oak, ash, cottonwood, etc. Both soils are black or blackish; one is fine sandy loam, the other is a stiff, clayey loam. Their depths vary from 1½ to 9 feet. The subsoil is apparently heavier, but when exposed to the sun and air it becomes like the surface soil. They are underlaid by sand or clay. The heavier soil contains black pebble.

Tillage is always easy except in wet seasons. The soil is early and warm when well drained, but most of it is ill-drained. Cotton and corn are the chief crops. Both do well, but the soil seems best adapted to cotton, and five-sixths of its cultivated area (the same is true of other soils here) is planted with cotton. The plant usually attains the height of 4 to 5 feet on the "buckshot", 6 to 7 feet on the black sandy soil, and 3½ to 4½ feet on the white sandy soil. It inclines to run to weed on fresh land or when July and August are very rainy. No remedy has here been tried except shallow cultivation, and this is believed to be the best remedy. The seed-cotton product per acre of fresh land is 1,500 pounds (gathered), but sometimes a part is destroyed by rains or by early frosts; from 1,545 to 2,135 pounds make a 475-pound bale of lint. After twenty years' cultivation (unmanured) the product varies from 1,300 to 1,800 pounds, and about 1,750 pounds then make a bale of lint slightly better than that from fresh land. Yellow-top and the morning-glory are the most troublesome weeds, the latter being worst on the sandy land. Perhaps one-twentieth of such land originally cultivated now lies "turned out", but it produces just as well as ever, excepting the first crop, which is uncertain.

About one-fifth of this region along the river consists of a whitish-gray or muddy-yellow fine sandy loam. This reaches up and down as far as the land last described, but does not extend so far east or back from the river. Its growth is cottonwood, hackberry, ash, elm, and cane. This soil varies from 2 to 10 feet in depth. When 10 feet deep, it is generally followed by quicksand; when 2 feet, it is underlaid by a clayey subsoil; and in either case quicksand prevails at 10 to 20 feet. The soil is easily tilled, is early, warm, generally well drained, and is best adapted to cotton. The plant usually grows about 5 feet high, but is most productive at 4½ feet. The seed-cotton product per acre of fresh land, or after twenty years' cultivation, varies from 1,200 to 1,500 pounds, according to seasons. The morning-glory is the troublesome weed. Not much of this land is "turned out". Other details are as on the soils before described.

There is considerable swamp, white oak, and hickory land occurring in bodies from 10 miles east of the river to the uplands. Its chief growth is swamp, white oak, hickory, elm, and some red oak, gum, pecan, and cane. The soil is a sandy loam of a whitish-gray color, 8 inches thick. The subsoil is lighter in color and material, and is underlaid by white or yellowish sandy clay.

Tillage is easy, more so when dry than wet. The soil is early and warm, but ill-drained, and is best adapted to cotton and vegetables. The usual and most productive height attained by the cotton-plant is from 3½ to 4 feet. The seed-cotton product per acre of fresh land is about 1,500 pounds; 1,750 pounds make a 475-pound bale of lint. After ten years' cultivation the product varies from 1,000 to 1,500 pounds. A little less is needed to make a bale, and the staple is a little better. Crab-grass is the troublesome weed. Not more than one-fortieth of such land originally cultivated now lies "turned out"; it improves by rest, producing better for the first two or three years. In the ordinary good season the sandy soils produce best, but they cannot endure drought as the "buckshot" soil, and in very wet seasons the plant sometimes takes the second growth. Therefore the "buckshot" soil is best in either extremes of wet or dry seasons. Cotton is shipped at all times, by river chiefly, to New Orleans, at 75 cents to \$1.25 per bale.

WASHINGTON.

Population: 25,367.—White, 3,478; colored, 21,889.

Area: 900 square miles.—All Mississippi bottom; wooded.

Tilled lands: 95,893 acres.—Area planted in cotton, 60,409 acres; in corn, 16,515 acres; in oats, 65 acres.

Cotton production: 54,873 bales; average cotton product per acre, 0.87 bale, 1,239 pounds seed-cotton, or 413 pounds cotton lint.

Washington county extends eastward from the Mississippi river to the Yazoo, the greater part, however, bordering the former river. It is entirely included within the alluvial region, and is watered by the Big Sunflower river, Deer creek, and Black bayou, all flowing southward into the Yazoo river. The Mississippi river receives scarcely any drainage water from the county direct, the lands along its border being higher than elsewhere. The general surface of the county is very level and heavily timbered with bottom growth. In the eastern part of the county, from about half way between Deer creek and Sunflower river, the variety of land known as white land prevails. The soil is mostly rather sandy, but is underlaid by a stiff, white clay, and has a growth of sweet gum and swamp-chestnut oak. The banks of the Sunflower are low, and have a sandy loam soil. To the westward the buckshot clays are found overlying this clay, and, with the still higher alluvial loams of the streams, are the chief lands under cultivation. The lowest lands are cypress swamps. Cotton is the principal crop of the county, its acreage on the west embracing from 15 to 20 per cent. of the total area of that section. For the county at large the average is 70.5 acres per square mile out of an average of 106.5 acres of tilled lands. Washington is the second "banner county" of the state in its average product per acre, and ranks as fourth among the counties of all the cotton states.

HOLMES.

(See "Brown-loam table-lands".)

YAZOO.

Population: 33,845.—White, 8,498; colored, 25,347.

Area: 1,000 square miles.—Mississippi bottom, 430 square miles; cane hills, 260 square miles; brown-loam table-lands, 310 square miles; all woodland.

Tilled lands: 156,228 acres.—Area-planted in cotton, 83,184 acres; in corn, 38,207 acres; in oats, 454 acres.

Cotton production: 48,321 bales; average cotton product per acre, 0.58 bale, 828 pounds seed-cotton, or 276 pounds cotton lint.

Yazoo county is almost evenly divided between the uplands and the lowlands traversed by the Yazoo and lower portion of the Big Sunflower river, the fertility of which is scarcely less noted than that of Honey island. The uplands are of two chief types. In the eastern and northeastern part there are brown-loam "table-lands", traversed more or less by higher ridges, on which the loam stratum is thin, and therefore liable to damage by hillside washes cutting into the underlying sand. On the westward slope of the divide between the Yazoo and the Big Black these are timbered with black-jack and post oaks, with occasional pines, while on the lower slopes and broader ridges the black, Spanish, and scarlet oaks, with hickory, predominate. Toward the westward slope of the divide between the Yazoo and Big Black rivers, in the western and southern parts of the county, the influence of the calcareous silt of the "cane hills" becomes perceptible in the admixture of lime-loving trees with the oak timber (see Holmes county), and the country assumes the character of the "walnut-hills" region near Vicksburg. (See description of cane-hills region and of Warren county.)

The tilled lands of Yazoo amount to 24.4 per cent. of the total area. The form of the returns does not admit of the segregation of the lowlands from the uplands, and hence it is not possible to draw definite conclusions regarding the relative statistics of production. The high cotton product per acre (0.58 bale) as compared with the adjoining county of Madison (0.38 bale) shows the influence of the lowland plantations upon this factor; and as the uplands are apparently as well settled as are those of Holmes, adjoining on the north, the remarkable difference in the proportion of tilled lands, as compared with Holmes, seems to be attributable to the thinly-settled lowlands. Over one-half of the tilled area (53.2 per cent.) is occupied by cotton, against only 30.5 in Holmes, and less than one-half as much is given to the production of corn. The cotton acreage per square mile is, however, essentially the same in both counties (83.2 and 83.4).

Cotton shipments are made chiefly by steamers down the Yazoo river to Vicksburg or New Orleans, and some cotton is sold to commission merchants at Yazoo City. Freight per bale to New Orleans, \$1 25.

ABSTRACT OF REPORT OF J. W. C. SMITH, BENTON.

The uplands of the county are hilly and rolling and well timbered, having a growth of white, black, red, and overcup oaks, hickory, poplar, and dogwood.

The lowlands of the county comprise the first and second bottoms of Spring creek, the former having a black sandy alluvial soil, the second bottom, or table-lands, having a yellow loam subsoil, with 3 to 6 inches of black humus on the surface. These bottoms have a growth of walnut, hickory, magnolia, beech, pecan, holly, buckeye, cucumber tree, and water, live, and white oaks.

The *table-lands and hills* having the black vegetable mold soil and yellow-loam subsoil are the chief lands devoted to cotton culture, and comprise 80 per cent. of the county area, embracing all of the lands except the swamps of the creeks and Big Black river. The soil is a buff-colored, coarse sandy or clayey loam, 8 inches in depth, with a heavier yellowish clay subsoil nearly impervious to water unless disturbed by the plow, contains hard, white and reddish pebbles, frequently mixed with shells on creek bluffs, and is underlaid by sand and gravel. The soil is easily tilled if dry, difficult if wet; is early when well drained, and is best adapted to cotton. About 70 per cent. of

the cultivated land is devoted to cotton, which is usually from 4½ to 5 feet high, and is most productive at that height. The plant, inclined to run to weed in moist, warm weather, and with frequent light surface plowing, may be sustained by deep plowing, to cut the roots and check growth while moisture continues, and is not likely to shed young bolls, even though the roots be injured.

The seed-cotton product per acre from fresh land is from 1,200 to 3,000 pounds; from 1,720 to 1,780 pounds are required to make a 475-pound bale of middling lint. After two years' cultivation the product of seed-cotton is from 5 to 10 per cent. better than the first year, and from 1,600 to 1,665 pounds (in wet season, when the seeds are large) are then required to make a 475-pound bale of lint, which does not rate any better than first year's crop. Careless, purslane, silk, and crab-grass are the most troublesome weeds, and where there is a mat or turf of Bermuda grass cotton cannot be cultivated. Probably about 25 per cent. of such land originally cultivated now lies "turned out", and produces excellently when again brought under tillage. The slopes wash very much where not cultivated, and are damaged seriously. The valleys are injured to from 30 to 50 per cent. of their value, but very little has been done to check the damage, as the renters do not keep the sidehill ditches open.

The chief crops of the county are cotton, corn, sorghum, and pease. No circumstances of "local climate" influence the cotton crop, except in years when the Mississippi river overflows the swamp; then, as our spring and summer winds are west-southwest, the atmosphere being heavily laden with moisture, every chilly wave from the cold regions causes a shower and makes the overflow springs in the Mississippi bottoms and causes wet springs in the adjacent uplands.

Shipments are made in November and December by steamboat to New Orleans at \$1 25 per bale.

SHARKEY.

Population: 6,306.—White, 1,405; colored, 4,901.

Area: 540 square miles.—All Mississippi bottom; wooded.

Tilled lands: 23,328 acres.—Area planted in cotton, 17,041 acres; in corn, 7,540 acres; in oats, 35 acres.

Cotton production: 14,162 bales; average cotton product per acre, 0.83 bale, 1,182 pounds seed-cotton, or 304 pounds cotton lint.

Sharkey, an inland alluvial county, is separated from the Mississippi river by the county of Issaquena. Its surface is very level, is well timbered with bottom growth, and is drained southward by the Little Sunflower river and Deer creek. The lands of the eastern half of the county seem to be of the low and swampy "white land" variety, comprising rather sandy soils and white clay subsoils, with a growth of sweet gum, swamp-chestnut, oak, etc. The banks of the Sunflower are rather low, and have a light-gray sandy loam soil and a growth of sweet gum, maple, elm, and hackberry. In the western half, along Deer creek, the lands are chiefly buckshot clays, covered with sandy soils, near some of the streams. The prevailing growth on this land is sweet gum, hackberry, and cottonwood, with an undergrowth of cane and bamboo. On the sandy portions there is honey-locust, sycamore, and cottonwood, with a less amount of cane.

The buckshot lands along Deer creek comprise the principal cotton lands of the county, and above Rolling Fork are wide and generally in cultivation. The lands under cultivation for the county at large average 43.2 acres per square mile, and of these 31.6 acres are given to cotton.

ABSTRACT OF THE REPORT OF THOMAS F. SCOTT, ROLLING FORK.

Two-thirds of the land is sandy alluvial, one-fourth is alluvial "buckshot", and one-twelfth is waxy or putty-like prairie. The sandy alluvial occupying the margins of streams is called front-land, and has a natural growth (as have the other soils) of four species of oak, ash, pecan, cypress, and hackberry. The soil is a fine silt and sandy loam of a brown and black color from 2 to 20 feet deep, and the underlying material is scarcely different, except that it has more or less stratified pipe-clay. The chief crops of this region are cotton, corn, rice, and sorghum. This soil is early, warm, well drained, easily tilled, and is best adapted to cotton and corn, but the other crops can be satisfactorily and profitably produced.

Two-thirds of its cultivated area is planted with cotton. On all lands here the plant usually attains the height of 6 to 8 feet (the maximum is 10), but is most productive at from 5 to 6 feet. In very moist or moderately wet seasons, and with clean cultivation, the plant inclines to run to weed. On this and the next soil described it can be remedied by running one furrow with a subsoil colter midway between rows and cutting lateral roots. The seed-cotton product per acre of fresh land varies from 2,500 to 4,000 pounds; 1,545 pounds (on all soils here) make a 475-pound bale of lint. After twenty years' cultivation (unmanured) the yields vary from 2,000 to 2,600 pounds, and 1,485 pounds (on all old soils here) make a 475-pound bale of lint which rates a grade below that of fresh land, except in case of the third-named soil, where it equals that of fresh land. The difference is in the length of the staple. The troublesome weeds are crab-grass, rag-weed, and hog-weed. One-twentieth of such cultivated land is at present used for summer pasturage. It yields 2,500 pounds of seed-cotton when again cultivated.

The alluvial buckshot soil comprises one-third of the county area, extending to its limits. Its growth is similar to that of the soil already described. The soil is a mahogany, blackish, and black-clay loam, 5 feet thick, overlaid by pipe-clay. The soil is late, warm, well drained, is easily tilled except in wet seasons, and is best adapted to cotton and corn. Four-fifths of its cultivated area is planted in cotton. The seed-cotton product per acre of fresh land is 2,500 pounds; after twenty years' cultivation it is 2,000 pounds. As weeds and cocklebur are most troublesome, none of this land lies "turned out", but it improves, when rested, about 25 per cent.

The black waxy or putty-like prairie has 12 to 24 inches of soil resting upon a leachy, sandy mold. The soil is late, cold, ill-drained, and difficult to plow when too wet. It is best adapted to cotton and corn, and all that is cultivated is planted with cotton. The plant grows to a height of 6 or 8 feet, and is most productive at 5 to 6 feet. The product per acre is equal to that of the soil last described, but this soil does not deteriorate during twenty years' cultivation, and the staples from fresh and old land are equal in quality. Beggar lice and cocklebur are most troublesome as weeds. One-half of this land originally cultivated now lies "turned out".

The climate is favorable to cotton growing. During the fruiting season a damp atmosphere prevails during evening, night, and early morning, the rest of the 24 hours being arid sunshine or dry and parching heat, that is absolutely necessary to the successful production of cotton. The county has two streams navigable during the year. Cotton is shipped by water, from December to June, to New Orleans, at \$2 75 per bale; also to Vicksburg.

ISSAQUENA.

Population: 10,004.—White, 826; colored, 9,178.

Area: 390 square miles.—All Mississippi bottom.

Tilled lands: 32,639 acres.—Area planted in cotton, 18,293 acres; in corn, 3,849 acres; in oats, 17 acres.

Cotton production: 16,150 bales; average cotton product per acre, 0.88 bale, 1,254 pounds seed-cotton, or 418 pounds cotton lint.

Issaquena is a narrow river county, having the shape of the letter L, the foot reaching eastward to the Yazoo river. The surface of the county is level and subject to overflow, against which a system of levees have been built. The drainage is southward through Steel's bayou, Deer creek, and their tributaries. Numerous lakes occur in the lowlands. The lands embrace a front-land along the streams of light sandy or loam soils, and a back-land of stiff buckshot clays occupy the lowland away from the streams. The growth here is sweet gum and Spanish oak, with a dense undergrowth of cane. The soil along the Mississippi is a dark, sandy loam, 1 or 2 miles wide, mostly cultivated. The immediate banks are sandy, and have an almost exclusive growth of cottonwood trees.

The lands under cultivation average 83.7 acres per square mile, and of these 46.9 acres are given to the culture of cotton. The cotton plantations lie chiefly along the river, covering from 15 to 20 per cent. of the total area of that section. In average product per acre Issaquena ranks as first in the state and third among the cotton counties of all the cotton states.

ABSTRACT FROM THE REPORT OF W. E. COLLINS, MAYERSVILLE.

The lands embraced in this description are of the alluvial plain of the Mississippi river, and extend back from the river for 4 miles to Steele bayou. They embrace black buckshot and sandy loams of the river bank. The chief one is the *black buckshot*, which occupies fully two-thirds of the region, extending from the upper line of Bolivar to the lower line of Issaquena county. The soil is black when first turned up, changing to light gray, and is about 20 inches deep; the subsoil, to a depth of 4 feet resembling red clay, is the buckshot proper, crumbling into small pieces about the size of buckshot after being exposed to the sun and air. This is underlaid by fine sand to a depth of 6 feet, and then by blue mud. The timber growth is cottonwood, sweet gum, ash, oak, hickory, elm, box-elder, holly, sycamore, cypress, and many other trees, with an undergrowth of wild grapes and cane.

The soil is early and warm when well drained, always easily tilled, and is best adapted to cotton. It produces from 2,000 to 3,000 pounds of seed-cotton per acre of fresh land, and just as much after fifteen years' cultivation (unmanured). The plant grows from 5 to 7 feet high. In townships 11 and 12 about 600 acres lie "turned out". When again cultivated it produces nearly the original yields. The most troublesome weeds are hog-weed, morning-glory, and cocklebur.

The *sandy land*, with its growth of cottonwood, sweet gum, hackberry, etc., has a light, sandy, gray soil 10 feet deep, ill-drained, but early, easily tilled at any time, and is best adapted to cotton and corn. The cotton-plant grows from 3 to 5 feet high, but is most productive at 4 feet. The seed-cotton product per acre of fresh land varies from 1,200 to 1,400 pounds (400 of lint); old land produces about as much. Very little of such land lies "turned out", and it produces finely when again cultivated. Crab and Bermuda grasses are most troublesome as weeds.

Cotton is shipped chiefly in November by river to New Orleans at from 75 cents to \$1 per bale.

WARREN.

(See "Cane-hills region".)

CLAIBORNE.

(See "Cane-hills region".)

JEFFERSON.

(See "Cane-hills region".)

ADAMS.

(See "Cane-hills region".)

WILKINSON.

(See "Cane-hills region".)

CANE-HILLS REGION.

(It embraces the following counties and parts of counties: Warren, Yazoo,* Hinds,* Claiborne, Jefferson, Adams, and Wilkinson.)

WARREN.

Population: 31,238.—White, 8,717; colored, 22,521.

Area: 600 square miles.—Mississippi bottom, 240 square miles; cane hills, 360 square miles; woodland.

Tilled lands: 60,031 acres.—Area planted in cotton, 34,127 acres; in corn, 10,371 acres; in oats, 69 acres.

Cotton production: 22,950 bales; average cotton product per acre, 0.67 bale, 954 pounds seed-cotton, or 318 pounds cotton lint.

Warren is emphatically a "river county", fronting on the Mississippi for about 60 miles of its course. The Yazoo enters the county from the north and empties into the great river a few miles above Vicksburg. The eastern and southern boundary is formed by the Big Black river, which joins the Mississippi a little beyond the southern end of the county.

All the uplands west of the Big Black are characteristically of the cane-hills character, if we except a few spots of heavy black prairie soil which appear on the hills near the city of Vicksburg, where the cane hills fall off abruptly toward the river, which encroaches upon their base. From about a mile above to some 9 miles below the city, at Haynes' bluff, 12 miles above Vicksburg, the Yazoo river strikes the bluff and continues from its base to its mouth. This bordering ridge, originally heavily timbered, has long been known as the "Walnut hills". Like the rest of the cane-hills country, it is now mostly treeless, the slopes being covered with Bermuda grass, and the original large upland plantations are giving way to smaller holdings, although here, as in Claiborne county, the damage from washing away of the soil is much less than farther south, the country being less deeply broken. A great deal of the upland lies "turned out". In the valley lands cultivation has steadily continued, but the land is in small bodies, though very productive. The bottom or hummock lands of the Big Black river are largely on the Hinds county side.

In the portion of the county lying within the Mississippi bottom the excellent cotton-producing lands on Steel's bayou and Deer creek are especially noted. There are many lakes in the region, and its location at the confluence of the Mississippi and the Yazoo renders it especially liable to overflow in its present unprotected condition. In favorable seasons it is profusely productive.

The tilled lands of Warren in 1879 amounted to only 15.6 per cent. of the total area; a remarkable contrast with the neighboring counties of Claiborne, Copiah, Hinds, and Yazoo, in which that percentage ranges from 24.4 per cent. in Yazoo to 36 per cent. in Hinds. We have a parallel case of depression in consequence of abandonment of cultivated lands in the old county of Wilkinson (14.9 per cent.). Of the tilled area of Warren, 56 per cent. is given to cotton culture, and less than one-third as much to corn. The average cotton product per acre is 0.67 bale, a figure indicating plainly the influence of the high production on the plantations of the Mississippi lowland.

The communication in Warren county is mainly by rail and steamer with the city of Vicksburg, and thence to New Orleans, chiefly by river, at \$1 per bale.

YAZOO.

(See "Mississippi alluvial region".)

HINDS.

(See "Central prairie region".)

CLAIBORNE.

Population: 16,768.—White, 3,910; colored, 12,858.

Area: 460 square miles.—Short-leaf pine and oak uplands, 195 square miles; Mississippi bottom, 25 square miles; cane hills, 240 square miles; all woodland.

Tilled lands: 97,175 acres.—Area planted in cotton, 33,121 acres; in corn, 15,744 acres; in oats, 82 acres.

Cotton production: 18,518 bales; average cotton product per acre, 0.56 bale, 798 pounds seed-cotton, or 266 pounds cotton lint.

Claiborne county is drained centrally to westward by the north and south forks of bayou Pierre. A few short creeks are tributary to the Big Black river, which forms most of its northern boundary and joins the Mississippi a few miles above Grand Gulf. At the latter point, as well as at Bruinsburg, 10 miles below, the Mississippi river washes the foot of high bluffs; elsewhere bodies of bottom land intervene between the river and the cane hills. The latter are, on the whole, less broken in Claiborne than farther south, and the damage done by the washing away of the soil and gulying of the hillsides is less extensive, though still quite serious. In some tracts in the southwestern part of the county the hills are timbered almost exclusively with magnolia of large size, the soil being a dark-colored, deep, and easily-tilled loam. Elsewhere oaks (among which the chestnut-white oak is prominent), sweet gum, tulip tree, linden, walnut, etc., form the upland timber, while beech is abundant on the lower hillsides and in the valleys. With ordinary care to prevent damage by washing, and small farms instead of the plantation system, a large proportion of the cane-hills lands of Claiborne can be cultivated to great advantage. (For analyses of Claiborne upland soils, see regional description, p. 44.)

To the eastward the cane-hill ridges interlace with those of the sandy uplands, with which they contrast quite strongly both as to soil and as to the sudden appearance of short-leaf pine, copiously intermingled, even on the hills, with beech and magnolia. The surface here appears to be that of the pine hills, while the subsoil in which the trees have their roots is a fertile brown loam (for analyses and discussion, see regional description, page 47). In this eastern portion of the county the hummocks of the valleys and the lower hillsides are chiefly cultivated. The streams frequently meander in wide sandy beds with little or no first bottom.

Within the cane-hill region the bayou Pierre flows in a deep channel bordered by a hummock above ordinary overflows. Near the river the soil is sometimes light and silty, and bears a growth of water and post oak; farther back, beech, black walnut, sycamore, etc., prevail, and the soil is very productive.

The tilled lands of Claiborne county constitute one-third (33 per cent.) of its area. One-third (34.1 per cent.) of the tilled lands is devoted to cotton, and about one-half as much to corn.

The average cotton product per acre is 0.56 bale, and the average cotton acreage per square mile is 72.

The communication of Claiborne county is chiefly with Port Gibson, and thence by narrow-gauge railroad to Grand Gulf; thence by river steamers to New Orleans, at the rate of \$1 25 per bale. From the northern part of the county some hauling is done to Vicksburg, or to stations on the Vicksburg and Meridian railroad.

ABSTRACT OF THE REPORT OF GEORGE P. M'LEAN, ROCKY SPRING.

The soils of this region are the light, buff-colored, calcareous loam of the cane-hills region and brown and blackish, clayey loam, lying just east of and adjoining that region. The two belts extend along the Mississippi river from Louisiana to Vicksburg (and farther), and are together about 25 miles wide. Their natural growth is oak, beech, poplar, magnolia, sweet gum, and some hickory. The soils are 2 to 3 feet; the subsoils are of like material to 8 feet at least.

The chief crops are cotton, corn, cow-pease, and sweet potatoes. The soil is naturally well drained, always easily tilled, is best adapted to cotton, and about three-fourths of its area is planted with the same. The plant usually grows 3 feet high, but inclines to run to weed in wet weather, which cannot be remedied if such weather long continues. The seed-cotton product per acre of fresh land varies from 1,000 to 2,000 pounds, but thirty years' cultivation (unmanured) reduces the yield to about 1,000 pounds; 1,300 to 1,660 pounds make a 475-pound bale of middling lint (whether from fresh or old land). Hog-weed, cocklebur, Spanish needle, and crab-grass are the troublesome weeds. At least one-third of such cultivated land lies "turned out", and when again cultivated produces almost as well as when fresh.

Slopes are seriously damaged by washings and gullying of their surfaces, but valleys are improved by the washings, because the subsoil is very rich. Horizontalizing and hillside ditching have been practiced, and successfully check the damage.

JEFFERSON.

Population: 17,314.—White, 4,260; colored, 13,054.

Area: 510 square miles.—Short-leaf pine and oak uplands, 250 square miles; long-leaf pine hills, 50 square miles; Mississippi bottom, 50 square miles; cane hills, 160 square miles; all woodland.

Tilled lands: 62,218 acres.—Area planted in cotton, 32,141 acres; in corn, 16,365 acres; in oats, 312 acres.

Cotton production: 18,512 bales; average cotton product per acre, 0.58 bale, 828 pounds seed-cotton, or 276 pounds cotton lint.

Jefferson county is drained centrally to westward by the two forks of Cole's creek, its eastern portion being partly drained to the northward by creeks tributary to the south fork of bayou Pierre and partly to the southward by the headwaters of the Homochitto. The county presents four different surface features. The southeastern corner, with drainage toward the main Homochitto, forms part of the broken "Homochitto hills" country, with long-leaf pine and the sandy soil on the higher ridges. To the westward the long-leaf pine is replaced by the short-leaf species, more and more mingled with oak and hickory as we progress westward. Beyond the divide between the Homochitto and Cole's creek the ridges flatten and the country becomes rolling or gently undulating, the yellow-loam subsoil, similar to that of the Hamburg hills (see description of Franklin county), being gradually replaced by the unbecolored loam of the fine agricultural upland region, in which Fayette, the county-seat, is located. Thence westward there is a gradual transition to the character of the cane hills. The latter are of the usual character (see regional description, page 43) and fall off steeply into the Mississippi bottom, or, at Rodney and at the mouth of Cole's creek, into the river itself, which washes the base of the bluff. The area of Mississippi bottom land within the county is small, but very productive.

The valley of Cole's creek within the cane hills is rather narrow and of a hummock character. Among its timber black walnut, sycamore, and honey-locust are very prominent, and the soil is especially well adapted to corn. Higher up, the valleys of the streams are usually divided between first and second bottom, prevalently timbered with beech and oaks, with more or less magnolia. They are productive, easily tilled, and form a large proportion of the cultivated area of the region.

The tilled lands of Jefferson county constitute 19.1 per cent. of its area. Somewhat more than one-half of such lands (51.7 per cent.) is occupied by cotton, against about one-half as much given to corn culture, showing here also a great deficiency in the home production of supplies. The average cotton product per acre is 0.58 bale, while the average cotton acreage per square mile is 63.

The communication of Jefferson county is chiefly via Fayette and other stations of the Jackson and Natchez railroad with Natchez, and thence by river steamers with New Orleans. The freight from Natchez to New Orleans is 75 cents per bale; from Fayette to Natchez, by rail, \$1 10.

ABSTRACT OF THE REPORT OF J. W. BURCH, FAYETTE.

The west half of the county comprises bluff lands, hilly and very fertile; the east half is rolling, with light sandy soils.

The soils cultivated in cotton are on the rolling uplands of the east half of the county, the second bottoms of creeks above overflow, and the Mississippi bottom.

The *upland soil* extends into other counties, covers five-eighths of this region, and bears a natural growth of hickory, gum, magnolia, beech, pine, various oaks, poplar, etc. The soil is a fine sandy loam of brown, mahogany, and blackish colors, and is 10 inches deep. The subsoil is a heavier, brown clay loam, very productive when manured or mixed with surface soil. It contains hard, rounded, and angular pebbles, and is underlaid by orange sand and sand-rock at 5 to 10 feet. The soil is early, warm, well drained, easily tilled, and is best adapted to cotton, which occupies three-fourths of its cultivated area. The other chief crop is corn. The usual and most productive height of the cotton-plant on this soil is 4½ feet. In warm, wet weather it inclines to run to weed, but this may be remedied by shallow cultivation. The seed-cotton product per acre of fresh land is 1,000 pounds; 1,600 pounds make a 475-pound bale of lint. After ten years' cultivation (unmanured) the product is 500 pounds, and the ratio of seed to lint and quality of staple are the same as on fresh land. One-half of such originally cultivated land lies "turned out", but when well turfed it again produces a few good crops. Cocklebur, purslane, crab, and Bermuda grasses are the troublesome weeds. The slopes wash very fast, and do serious damage, except to the valleys, which are rather benefited. Horizontalizing makes the lands last twice as long.

The *second bottoms of creeks* occupy about one-fourth of the county area, and have a natural growth much like that of the uplands. The soil is a brown, blackish, and black loam, 12 inches deep. The subsoil is a dark-brown and yellow clay, containing hard, rounded, and angular pebbles, underlaid by blue potters' clay at 10 feet. The soil is early, warm, well drained, easily tilled, except when too wet, and is best adapted to cotton, with which three-fourths of its cultivated area is planted. The plant's usual and most productive height

is 5 to 6 feet. The seed-cotton product per acre of fresh land is 1,600 pounds, or a 475-pound bale of lint, in quality equal to that of uplands. After 10 years' cultivation the product is 1,000 pounds of seed-cotton. Very little of such land lies "turned out"; it recuperates rapidly, and produces as well as ever. The troublesome weeds are rag, carrot, and smart weeds, cocklebur, crab and Bermuda grasses.

The remaining soil, designated *Mississippi swamp land*, consists of a narrow belt along the river, extends through the county, and contains only a few plantations. Its natural growth is cypress, gum, cottonwood, hackberry, and willow. The soil is a black alluvium, 10 feet thick, underlaid by sand. Tillage is generally easy, but is difficult when the soil is either too wet or too dry. The soil is early and warm when well-drained; it however needs ditching. It is best adapted to cotton and corn, and nine-tenths of its cultivated part is planted with cotton. The usual and best height of the plant is 6 feet. The seed-cotton product per acre of fresh or old land is 1,500 pounds; 1,720 pounds make a 475-pound bale of lint. Ten years' cultivation have made no difference in the quantity or the quality of yields. The cocklebur is the most troublesome weed.

ADAMS.

Population: 22,649.—White, 4,796; colored, 17,853.

Area: 410 square miles.—Short-leaf pine and oak uplands, 110 square miles; Mississippi bottom, 125 square miles; cane hills, 175 square miles; all woodland.

Tilled lands: 67,853 acres.—Area planted in cotton, 32,117 acres; in corn, 9,037 acres; in oats, 57 acres.

Cotton production: 19,026 bales; average cotton product per acre, 0.59 bale, 840 pounds seed-cotton, or 280 pounds cotton lint.

Adams was the first county organized within the present limits of the state, and Natchez, the county-seat, is, next to New Orleans, the oldest town on the lower Mississippi. The county fronts on the Mississippi river for over 70 miles, and about one-third of its area is bottom land, lying in the bends of the river, which, though long cultivated, is still very productive. From the bottom level there is rather an abrupt ascent into the cane-hills country. The base of the bluff, however, is washed by the river at Natchez and at Saint Catherine's bend (Ellis' cliffs), about 10 miles below; also at Rifle point, 6 miles above. Natchez is located on a plateau level about 200 (?) feet above the river.

The southern part of the county is drained by short creeks tributary to the Homochitto river, of which Second and Sandy creeks are the chief. The middle portion, back of Natchez, is traversed by Saint Catherine's creek, along the course of which deep and steep ravines have been cut into the soft material of the cane hills. The latter are of the usual character (see regional description, page 43), and long cultivation, with shallow tillage, has greatly reduced the area of uplands not too broken for convenient culture. With proper treatment, nevertheless, good crops are still grown on these lands.

The country east of the cane hills is undulating or rolling land, originally timbered with oak and hickory, and on the ridges with short-leaf pine, or in part with oaks only, the subsoil being an umber-colored loam, similar to that overlying the calcareous silt of the cane hills, and forming a durable and originally very productive soil, of which, however, a not inconsiderable proportion has been thrown out of cultivation.

The tilled lands of Adams county amount to somewhat over one-quarter (25.9 per cent.) of the total area, and nearly one-half (47.3 per cent.) of such lands is given to cotton, while only 13.3 per cent. are planted in corn, showing a remarkable deficiency in the home production of supplies. The average cotton product per acre is 0.59 bale; the average cotton acreage per square mile is 78.3.

The communication of Adams county is altogether with Natchez, and thence by river steamers with New Orleans.

WILKINSON.

Population: 17,815.—White, 3,570; colored, 14,245.

Area: 650 square miles.—Short-leaf pine and oak uplands, 395 square miles; Mississippi bottom, 70 square miles; cane hills, 185 square miles; all woodland.

Tilled lands: 62,065 acres.—Area planted in cotton, 33,720 acres; in corn, 15,068 acres; in oats, 204 acres.

Cotton production: 16,620 bales; average cotton product per acre, 0.49 bale, 699 pounds seed-cotton, or 233 pounds cotton lint.

Wilkinson county is one of the oldest in the state, having been organized in 1802, and is second only to Adams county. This county fronts on the Mississippi river for about 20 miles, its northern line being formed by the Homochitto river. The central portion is drained by the Buffalo river and the southern by Bayou Sara and Thompson's creek. The county embraces three chief surface features, viz, on the east, rolling and more or less sandy and gravelly upland, timbered with oak, hickory, and short-leaf pine, which extends westward a few miles beyond Woodville, the county-seat. Here the country assumes rather suddenly the character of the cane hills (see regional description, page 43): steep and mostly sharp-backed ridges, separated by deep and narrow valleys, now mostly bare of timber, but originally bearing a heavy growth of cane and timbered with oaks (among which the chestnut-white oak is prominent), poplar, sweet gum, magnolia, linden, sassafras, etc. This belt has a width varying from 6 to 12 miles, skirting the Mississippi bottom, into which the hills fall off steeply, the river washing at Fort Adams the base of ridges which rise abruptly to over 300 feet above low-water mark. The bottom here is low and subject to overflow, and is studded with lakes, but contains some excellent plantations.

The *cane-hills lands*, originally covered with a deep black mold soil and highly productive, have been grievously damaged by long, shallow, and exhaustive cultivation. The surface soil has, to a great extent, been washed off, and large bodies of the uplands, originally constituting level or gently undulating plateaus, have been deeply scored with gullies and ravines, impeding and restricting cultivation, the slopes being mostly too steep for tillage and sometimes forming almost vertical caving walls, supported by loose sand and gravel. The Bermuda grass, which has taken possession of almost the entire region, now acts in a measure as a preventative of farther inroads and affords pasturage to cattle. But the large upland plantations are, of necessity, giving way to small farms, which by more careful husbandry can restore to cultivation the "worn-out" lands.

In the eastern portion of the county the bottoms and hummocks of the streams form the bulk of the cultivated lands, especially in the somewhat broken country on the Homochitto, which is a continuation of the "Devil's Backbone", a sandstone ridge which, beginning in the southwest corner of Copiah, is more or less distinctly traceable through Franklin and Wilkinson counties to fort Adams.

The tilled lands of Wilkinson county constitute at present only 14.9 per cent. of its area, but they have doubtless greatly diminished since 1860. More than one-half of these lands is given to cotton; less than one-quarter to corn. The cotton area per square mile is 51.9, with the high average product of 0.49 per acre, due doubtless in part to the bottom plantations.

The communication of Wilkinson county is partly with landings on the Mississippi river, partly by railroad from Woodville to Bayou Sara, and thence by steamer to New Orleans; freight on cotton is \$1 per bale.

ABSTRACT OF THE REPORT OF D. L. PHARES, A. M., M. D., WOODVILLE.

Nearly all the soil here, both on the rolling uplands and the bottoms, was originally a black or dark loam; now only one-third of the cultivated land is of this kind, the balance, having changed its character by being allowed to have its soil washed off, being now yellow and brown clay. The same kind of black land occurs 20 miles east, 8 north, and 20 west and south. Its natural growth is tulip tree, linden, magnolia grandiflora, holly, sweet and black gums, beech, six species of oak, and many other trees.

The soil varies in depth from 4 inches to 10 feet. The subsoil is a tenacious yellow and brown clay with considerable sand, and in some places gravel. It is slowly pervious to water, contains hard rounded gravel, and is underlaid by yellow or red sandstone at 1 to 20 feet. Tillage is easy in dry and difficult in wet seasons. The soil is early on well-drained slopes facing the east and south, and is adapted, in the order named (best first), to clover, grasses, pease, potatoes, cotton, sorghum, sugar-cane, oats, and corn. These are the chief crops of this region. Two-thirds of its area is planted with cotton. The plant usually grows from 5 to 8 feet high on fresh soil, and from 3 to 5 feet on worn soil; but the most productive height is from 4 to 6 feet. It inclines to run to weed on rich, fresh land when there is much rain and little root pruning. When the soil is not too wet and heavy, this is prevented by deep plowing, so as to restrain root and stem growth until fruiting time. The seed-cotton product per acre of fresh land varies from 2,000 to 2,500 pounds, about 1,460 pounds making a 475-pound bale of good middling lint. After forty years' cultivation (unmanured) the yield varies from 600 to 1,200 pounds, according to the extent the soil has been washed off. About 1,520 pounds then make a 475-pound bale of lint, the staple of which is much shorter, and rates two or three grades lower than that of fresh land.

The troublesome weeds are several species of crab-grass, two of water-grass, crowfoot-grass, in many places Bermuda grass, and the cocklebar. One-third of such land originally cultivated now lies "turned out"; when again cultivated it often produces from 30 to 100 per cent. better than when first "turned out". The soil on slopes washes and gullies readily only where marked by a plow, wagon rut, or path, and many slopes are thus seriously damaged, and the washings cover many parts of the valleys to the extent of 6 to 48 inches deep. Horizontalizing and hillside ditching are practiced and completely check the damage.

Very little clay land occurs in this county, none originally, and now produced by bad management of other lands, in allowing the original soils to be washed off. Its depth varies from 2 to 10 inches, and it bears a growth of pine trees more commonly than the original land.

Most of the above statements apply to the whole of township —, range 1 west, and sections 19, 20, 21, and 31, all parts of which are well supplied with streams, making up east and middle Thompson creeks. Proper cultivation here has always brought good yields of cotton, except perhaps in 1846, when it rained almost daily throughout the planting and growing season and the caterpillar came early and in large numbers.

Cotton is shipped as fast as it is baled, by river and rail, to New Orleans, at \$1 per bale.

CENTRAL PRAIRIE REGION.

(Embraces the following counties and parts of counties: Madison, Hinds, Rankin, Scott, Newton, * Smith, * Jasper, Clarke, and Wayne.)

MADISON.

Population: 25,866.—White, 5,946; colored, 19,920.

Area: 720 square miles.—Short-leaf pine and oak uplands, 5 square miles; cane hills, 5 square miles; central prairie, 530 square miles; brown-loam table-lands, 180 square miles; all woodland.

Tilled lands: 127,594 acres.—Area planted in cotton, 56,393 acres; in corn, 37,989 acres; in oats, 1,490 acres; in wheat, 22 acres.

Cotton production: 21,538 bales; average cotton product per acre, 0.38 bale, 543 pounds seed-cotton, or 181 pounds cotton lint.

Madison county presents almost throughout a gently undulating surface, similar to that of the table-lands farther north.

Lying between the Pearl and Big Black rivers, which, flowing nearly parallel, approach to within 15 miles of each other, its drainage and slope are almost entirely toward the Big Black, the dividing ridge running within a few miles west of the Pearl river. The northeastern part of the county, as far south as Doak's creek, is of the table-land character, and is similar to the adjoining portion of the Yazoo. A few sandy ridges, with pine, appear at the extreme northeast. Southward the table-land character continues as to the general aspect of the country, but the soil is to a great extent materially modified by the influence of the stiff calcareous clays of the Tertiary formation, which manifests itself partly in the presence of a stiff, greenish-yellow subsoil and frequently in the occurrence of spots and smaller or larger bodies of black-prairie soil, accompanied by the appearance of lime-loving trees, such as honey-locust, wild plum, haw, crab-apple, walnut, etc. The prairie lands, as well as the general face

of the country, are generally sparsely timbered with oaks (among which stout black-jack and post oaks, with more or less of the black and Spanish oaks, are conspicuous) and hickory. The uplands slope gently toward the creek bottoms, or flats, and the soils of these vary materially with the location and length of the streams. In the northern part of the county they are mostly of a whitish, silty character, and are underlaid by impervious bog ore, thus forming many "crawfishy" tracts, ill-drained and little cultivated, timbered chiefly with water oak and sweet gum. Such is also, in part, the character of the Big Black bottom, which is moreover subject to overflow, and is but little cultivated. The bottom of the Pearl river, on the contrary, has prevalently a sandy soil, alternating in the southern portion with tracts and "ridges" of tough clay soil of greater fertility, but difficult to till. The soils of the creek bottoms of the southern part of the county are more similar to those of the adjoining uplands, are very productive, and are largely under cultivation.

Madison is an old and well-settled county, and its present area of tilled lands, as given in the returns (27.7 per cent.), does not adequately represent its position in respect to improvements among the counties of the state. It has been pre-eminently a region of large upland plantations, of great productiveness; but its soil has been so severely drawn upon by heavy cropping, without returns or rotation, that large tracts once cultivated in cotton have passed out of cultivation, only awaiting, however, a rational system of small farming to restore the productiveness. The cotton acreage, nevertheless, still exceeds that of corn in the ratio of 4 to 3, and the average product per acre (0.38 bale) is but slightly below that of the northern table-land counties. In cotton acreage per square mile (72.5 acres) Madison stands fourteenth in the state.

The New Orleans and Chicago railroad, which traverses the county centrally, carries cotton to New Orleans either directly or via Jackson and Vicksburg and river steamers.

HINDS.

Population: 43,958.—White, 11,675; colored, 32,283.

Area: 800 square miles.—Short-leaf pine and oak uplands, 175 square miles; long-leaf pine hills, 245 square miles; cane hills, 125 square miles; central prairie, 255 square miles; all woodland.

Tilled lands: 184,607 acres.—Area planted in cotton, 80,013 acres; in corn, 47,510 acres; in oats, 1,962 acres; in wheat, 16 acres.

Cotton production: 36,684 bales; average cotton product per acre, 0.46 bale, 657 pounds seed-cotton, or 219 pounds cotton lint.

Hinds county is one of the largest and the most populous counties in the state, and contains the state capital, Jackson, with 5,204 inhabitants. Its drainage is in three directions, the largest area being occupied by streams tributary to the Big Black, a region of gently undulating table-lands similar to those of southern Madison, the same being true of the narrow belt of country drained by the numerous short streams tributary to the Pearl river. The southern part of the county around the heads of the bayou Pierre is a region of high sandy ridges, timbered with long-leaf pine and more or less oaks, interspersed with lower and broader ridge lands of fair productiveness. The country immediately contiguous to the Big Black river is somewhat ridgy and at times broken, and in timber and soil is similar to the adjoining upland portion of Warren county, viz, more or less of the bluff or cane-hills character.

The prairie character of the soil is, on the whole, much less frequent in Hinds than in Madison county, and is most pronounced on the Pearl river slope, the soil of northern Hinds being more strictly of the table-land character, easily tilled, and originally very productive—in aspect a very attractive farming country. Near Jackson the heavy "black-jack prairie" soil is quite prominent in the uplands, though frequently overlaid by the lighter and more easily tilled table-land soil. The characteristic cracking and fissuring of the tenacious subsoil during the dry season not unfrequently interferes with the stability of foundations and cistern walls, and on steep slopes (as where the uplands break off into Pearl river bottom) sometimes give rise to land-slides. Here also heavy clay soils predominate in the river bottom, which is subject to overflow, the main portion of it, however, lying on the opposite side. (See description of Rankin county.)

Agriculturally, Hinds is situated very nearly like Madison. It has been, and is still to some extent, a region of large upland-cotton plantations, upon many of which the soil has materially deteriorated by long and exhaustive culture; yet the average cotton product per acre (0.46) is materially higher than that of Madison (0.38), as is also its cotton acreage per square mile (100), both together placing it first on the list of total production among the upland counties of the state. This, unfortunately, is offset by an inadequate production of corn, the acreage of the latter being to that of cotton as 3 to 5.

The abundance of excellent marls, easily accessible in a large part of the county (as mentioned in the regional description, page 54), will greatly facilitate the maintenance of fertility of lands in Hinds county whenever a rational system of small farming shall replace the improvident practice of the past.

The New Orleans and Chicago and the Vicksburg and Meridian railroads both traverse the county, intersecting at Jackson, and cotton is shipped either direct or via Vicksburg and the river to New Orleans at \$2 75 per bale, most of it being marketed by the producers at Jackson.

ABSTRACT OF THE REPORT OF H. O. DIXON, JACKSON.

Much the greater part of the soil of the county is an upland clay loam, yellow, brown, and blackish, 8 inches thick, with a heavier subsoil of yellow and red clay, 3 to 6 feet thick, underlaid by gypsum and white clay at 15 to 20 feet. The red subsoil is pervious to water and indicates the best land. Such land extends 40 miles north, 8 to 10 south, 5 east, and 30 miles west, and has a natural growth of post, red, and black-jack oaks, hickory, walnut, and mulberry.

The chief crops are cotton, corn, pease, oats, and sweet potatoes. The soil is early, warm, well drained, is well adapted to the chief crops named and to clover and many varieties of cultivated grapes, but three-fourths of its cultivated area is planted with cotton. The plant grows from 2 to 4 feet high, but is most productive at 3 feet, and inclines to run to weed in wet seasons on fresh land or when planted late; the remedy consists in early planting and frequent deep plowing. The seed-cotton product per acre is from 1,000 to 1,500 pounds on fresh land, or 600 to 1,000 pounds after eight years' cultivation on level or mowed land. In either case about 1,485 pounds

make a 475-pound bale of lint. The seeds are lighter on old land. The fresh-land staple rates as middling; that of old land differs but little. Old land is more easily affected by unfavorable seasons. One-half of such originally cultivated land lies "turned out"; when grown up with broom sedge it produces nearly as well as originally. The old fields are generally burnt off each year, but the great need of such land is vegetable matter.

Slopes are damaged to a serious extent by washings and gullying of the soil, and the valleys are injured to a slight extent by the washings. To check the damage hillside ditching is practiced, and is successful when properly done.

The farmer or planter in this section, however great his desire may be for improvement in modes of cultivation or treatment of his soil, finds himself checked by the uncertain and uncontrollable labor he has to depend on.

Cotton culture, to be remunerative, requires unceasing attention for twelve months, and the work must be properly done and at the right time. Intelligent experience alone can meet these imperative demands under the many contingencies which are certain to occur through the season. Hence it is that cotton cannot be produced as cheaply with the present free labor as with that of the slaves, it being both ignorant and uncertain as well as unmanageable as to both the quantity and the quality of the work, resulting in producing less and costing more.

RANKIN.

Population: 16,752.—White, 7,193; colored, 9,559.

Area: 800 square miles.—Short-leaf pine and oak uplands, 360 square miles; long-leaf pine hills, 155 square miles; central prairie, 285 square miles.

Tilled lands: 69,516 acres.—Area planted in cotton, 30,151 acres; in corn, 23,450 acres; in oats, 5,781 acres; in wheat, 4 acres.

Cotton production: 11,775 bales; average cotton product per acre, 0.39 bale, 555 pounds seed-cotton, or 185 pounds cotton lint.

The surface of Rankin county is a good deal diversified, but may be classed under three chief heads, to wit: Skirting Pearl river on the east, a broad but more or less interrupted belt, timbered with oak and in part with short-leaf pine, and possessing a light loam soil, sometimes deeply colored with iron. It is about 4 miles wide, well settled, and is drained mainly by short creeks directly tributary to the Pearl river. East of this belt, and interlacing with it, we have in the northern portion of the county an undulating or rolling oak upland region, interspersed with spots and bodies of black calcareous as well as post oak and gypseous prairies, the former being found chiefly in the valleys and the latter on the hillsides and lower ridges, while the higher portions of ridges are frequently sandy, sometimes with an admixture of pine to the oak growth. This region is drained by the heads of Funnegusha and Pelahatchie creeks and a few tributaries of Strong river. The southeastern portion of the county, drained by Sander's, Dobb's, Campbell's, and other creeks tributary to Strong river, is a sandy long-leaf pine region, which rises abruptly from the prairie belt into high ridges of sand and clay stones, but becomes gently undulating to the southward. In this region, as usual, the valleys and their slopes are alone cultivated, and it is but thinly settled. The level country extends westward to within a few miles of Pearl river, the long-leaf pine stopping at the divide between Strong river and Steel's creek. On the waters of the latter there is quite a variety of upland soils, partly sandy loam ridges, partly bearing a "flatwoods" aspect, with heavy, gray clay soils, which in places are productive and well settled, in others quite poor. Their timber varies accordingly, from black and Spanish oaks, with hickory, to short leaf pine, with scrubby black-jack. Between this country and Pearl river there intervene the red-ridge lands previously mentioned.

The part of the county lying within the prairie belt is agriculturally the richest portion, but its soils are so variable within small areas as to render it difficult to give an average estimate of its productiveness. The black prairie soil is profusely fertile, but is not always adapted to the cultivation of cotton, which is liable to rust, probably on account of the stiff, clay subsoil, which the tap-root cannot penetrate. Such soils (naturally timbered with sweet gum, mulberry, crab-apple, and honey-locust) produce heavy crops of corn. The same is true more or less of the post-oak prairie, especially in the low land. The best cotton is grown where the lighter upland soils are naturally or artificially marled by the prevailing materials of the Tertiary formation, which offer an inexhaustible store of natural fertilizers for the improvement and restoration of the fertility of the lands of this region. (See regional description, page 54.) The gypseous prairies are, perhaps, the least promising, on account of their intractable clay subsoil.

The first bottom of Pearl river, which lies chiefly on the Rankin side, is little cultivated, on account of overflow, although the soil is very fertile. It is from one-half to three-quarters of a mile wide. From it there is an ascent of 5 or 6 feet into a flat or second bottom, timbered with post, willow, and water oaks, bottom pine, some hickory, and magnolia. The soil is gray and silty, with a pale yellow loam subsoil, not very productive, and but little settled.

The tilled lands of Rankin county are reported to be but 13.6 per cent. of its large area, the cotton acreage per square mile being 37.7. The average product per acre is 0.39 of a bale, ranking in this respect with Marshall and Union counties, and slightly above Madison. The corn acreage is slightly below that devoted to cotton.

The communication of Rankin is partly with stations on the Vicksburg and Meridian railroad, especially with Brandon, where much of the crop is marketed, and partly across Pearl river, with stations on the New Orleans and Chicago railroad. The freight to New Orleans is about \$3 per bale.

ABSTRACT OF REPORT OF E. JACK, BRANDON.

The uplands of the county comprise three-fourths of its area, and on the north are hilly, with sandy soils and clay subsoils, interspersed with prairies of different sizes having stiff clayey soils. In the southern part of the county the lands are loose and sandy.

The usual depth of the upland soils is from 3 to 6 inches, and the timber growth comprises pine, oak, hickory, gums, dogwood, black-jack, elm, etc. The subsoils are usually clay, having a small proportion of sand. Very little hard-pan occurs, and a few small patches are impervious to water. Some parts are underlaid by sand at 6 to 10 feet. The upland soils are tilled with moderate ease, excepting the prairies, which are difficult in wet weather, but easy to till in dry seasons after being once broken up.

Cotton, corn, and oats are the chief crops of this region, and during later years making molasses from sorghum and Louisiana cane has received some attention. The soil seems best adapted to cotton, about one-half the cultivated area being planted with the same. The

plant inclines to run to weed in wet seasons, and as a restraining remedy some suggest running a center furrow in bedding up. The seed-cotton product per acre of fresh land is 1,000 pounds, or 800 pounds after ten years' cultivation; 1,425 pounds make a 475-pound bale of lint. The staple from fresh land is the better, but by a little manuring old land can be kept equal to fresh, both in quantity and quality of the cotton product. Hog-weed and crab-grass are the most troublesome. About one-fifth of such originally cultivated upland lies "turned out". The soil on slopes washes and gullies, but not so much but that it can be remedied, for which purpose horizontalizing and hillside ditching are successfully practiced. The washings improve the valley soils.

The lowlands embrace the first and second bottom lands of the Pearl river and its tributaries. They have a loose, sandy soil and sufficient fall for good drainage.

The cultivated portion of the lowlands consists of dry ridges about 2 feet above high water. Between these are cold, wet sloughs, which can be drained and cultivated, but they remain stiff and cold in spring. It is generally believed that the river bottoms are better suited to cotton production than the uplands.

Cotton is shipped as fast as baled, by rail and river, to New Orleans, at about \$3 per bale.

SCOTT.

Population: 10,845.—White, 6,633; colored, 4,212.

Area: 580 square miles.—Short-leaf pine and oak uplands, 150 square miles; central prairie, 430 square miles.

Tilled lands: 39,711 acres.—Area planted in cotton, 16,282 acres; in corn, 15,664 acres; in oats, 5,129 acres; in wheat, 111 acres.

Cotton production: 6,227 bales; average cotton product per acre, 0.38 bale, 543 pounds seed-cotton, or 181 pounds cotton lint.

The greater part of Scott county is similar to eastern Rankin in its surface features. The undulating and sometimes hilly uplands are timbered partly with oaks and hickory only and partly with the same trees mingled more or less with pine (short-leaf in the northern and long-leaf in the southern portion), such admixture indicating always an increasing sandiness of the soil, and occurring mostly on the higher dividing ridges. Other and usually lower ridges, as well as the lower portions of the more elevated ones, exhibit the post oak or "hog-wallow" prairie character; while in the deeper valleys, according to elevation and position, either the same or the black-prairie soil prevails (see regional description, page 50), forming rich bodies of several square miles' area. The feature of the gypseous prairie is less frequent than in Rankin, and much of the black prairie yields excellent crops of cotton; but here also the heavy black or chocolate-colored bottom prairie is liable to blight or rust cotton, though producing abundant crops of corn.

The northeastern portion of Scott county, traversed by the Tuskalamite and its tributaries, is a sandy hill country, timbered with short-leaf pine and oaks, and resembles the adjacent part of Leake county.

The tilled lands of Scott amount to 10.7 per cent. of its area, and 41 per cent. of these lands are cultivated in cotton, and nearly an equal amount in corn. The cotton acreage per square mile is 28.1, being below that of Rankin (37.7). The average product per acre is 543 pounds of seed-cotton.

The communication of Scott is with Forest and other stations on the Vicksburg and Meridian railroad, which traverses the county almost centrally from west to east. Cotton is shipped to New Orleans at from \$3 50 to \$4 per bale.

ABSTRACT OF THE REPORT OF W. T. ROBERTSON, FOREST.

The chief soil is the *black upland prairie*. It covers one-eighth of the county, occurs in spots of 5 to 150 acres, is 2 to 3 feet thick, and bears a scattered, natural growth of post oak, hickory, ash, plum, and haw. The subsoil is a tough, yellow, waxy clay, which bakes very hard on exposure to sun, but after a rain becomes mellow. It contains soft, white, limy, angular gravel, and some large pebbles. The soil is early, but ill-drained, and is rather difficult to till in wet seasons. It is best adapted to cotton, and half its cultivated area is planted with the same. The height attained by the plant varies with seasons from 3 to 6 feet, and it inclines to run to weed on any soil here when the same is fresh and rich, for which the correspondent knows no remedy. The seed-cotton product per acre varies from 800 to 1,800 pounds; 1,425 pounds from fresh or 1,485 pounds from old land make a 475-pound bale of lint. The same is true of the two remaining kinds of land. After eight years' cultivation (unmanured) the yield varies from 400 to 800 pounds. Staple from fresh land rates as good middling; that from old land differs very little. The troublesome weeds on this and the next soil to be described are crab-grass, morning-glory, cocklebur, and tea-weed. Very little of this land lies "turned out", but it improves by rest.

The *black-prairie creek bottoms* form one-sixth of the county area. They are from one-half to 1 mile wide, and occur in bodies of 1 to 5 miles long. They are subject to overflows. Where timber occurs, it consists of red and white oaks, hickory, ash, poplar, elms, and many others. The soil is 2 to 6 feet deep, rests upon a stiff, yellowish clay, which bakes very hard when first exposed, but pulverizes after a rain. It contains limy pebbles. Tillage is difficult only in wet seasons. The soil is late, cold, and ill-drained, but produces corn and cotton well. One-half its area is planted with cotton. The plant usually attains a height of from 4 to 8 feet, but is most productive at from 4 to 5 feet. The seed-cotton product per acre is from 1,000 to 1,800 pounds, and the staple rates as good middling. After fifteen years' cultivation (unmanured) the product is 800 pounds with good tillage. The staple is not very different from that of fresh land. A great deal of this kind of land has not yet been brought into cultivation.

A small proportion of the cotton land consists of *dark sandy hummock soil*, in spots of from one-half to three-fourths of a mile in extent. Its growth is hickory, ash, dogwood, mulberry, walnut, poplar, and various oaks. The soil is a brown and mahogany-colored coarse sandy loam 2 feet thick; the subsoil is a light, reddish clay, easily worked, and becomes like the surface on exposure. It contains soft, angular "black gravel". The soil is early, warm, well-drained, easily tilled in all seasons, and is very well adapted to cotton, corn, pease, and almost any southern crop. About one-half its area is planted in cotton. The plant grows from 4 to 6 feet high, and is most productive at 4 feet.

The seed-cotton product per acre of fresh land averages 1,200 pounds; the staple is the best produced here. Ten years' cultivation (without manure) reduces the yield to 600 pounds, and the staple becomes inferior. Crab-grass is the troublesome weed. None of this land has been "turned out", and some has never been improved. The soil washes and gullies readily and seriously damages the slopes. Horizontalizing and hillside ditching are successfully practiced, and are the only means of saving the soil of the slopes. Bottom lands are also sometimes damaged by deposits of clay from overflowing waters. Ditches are cut to facilitate the passage of such waters and prevent such deposits. The chief crops of this region are cotton, corn, oats, sweet potatoes, and sugar-cane.

NEWTON.

(See "Short-leaf pine and oak uplands region".)

SMITH.

(See "Long-leaf pine region".)

JASPER.

Population: 12,126.—White, 6,244; colored, 5,882.*Area*: 680 square miles.—Long-leaf pine hills, 220 square miles; central prairie, 460 square miles.*Tilled lands*: 58,318 acres.—Area planted in cotton, 20,305 acres; in corn, 19,934 acres; in oats, 5,467 acres; in wheat, 5 acres.*Cotton production*: 6,228 bales; average cotton product per acre, 0.31 bale, 441 pounds seed-cotton, or 147 pounds cotton lint.

Jasper county, drained chiefly by confluents of the Leaf river (the east and west Tallahala, Tallahoma, and others, flowing southward), is traversed almost centrally from northwest to southeast by the prairie belt, leaving the northeast and southwest corners occupied by sandy, hilly uplands, timbered with long-leaf pine and more or less of oaks and hickory. From these sandy pine ridges extend more or less into the central belt, which is itself a country of ridges interspersed with valleys, on the slopes or in the bottoms of which the "hog-wallow" and black prairie soils appear to a greater or less extent. Thus on the west Tallahala and its tributaries, in the northwestern part of the county, we find the extreme of heavy "hog-wallow" soil, timbered with scrubby black-jack and post oaks, forming the lower ridges and the lower portion of the higher ones, often leaving narrow crests or isolated knolls of sandy land, with oak and pine growth, perched on a broader plateau of the tough, brown-clay soil, while in the bottoms of the streams we find either the same, somewhat modified and often covered with a gray ashly surface soil, or else the calcareous black prairie soil appears. These extreme clay soils contrast oddly with those of the opposite character, which form the body, *e. g.*, the ridge intervening between the west Tallahala and the Tallahoma, west of Garlandville. This ridge is timbered only with oaks and hickory, and the soil is very productive, but is so extremely sandy that its best portions are liable to be blown away by the wind when plowed dry (see page 54). Similar ridges form the higher divides elsewhere in the county, Paulding, the county-seat, being located on one of them, the soil, however, being inferior to that of the Tallahoma ridge.

The black prairie feature is somewhat extensively developed near Garlandville, on Suanlovev creek, some of it being of the "bald" character, the white marl coming to the surface. The bottom soil, also of the black prairie character, is profusely fertile, but is liable to rust or blight cotton (see analysis and discussion, page 52). A similar state of things exists more or less southeastward across the county.

In the southern part of the prairie belt the features are somewhat similar, but the "hog-wallow" feature is less pronounced, and the black prairie soil less heavy, as, *e. g.*, in the neighborhood of Claiborne. Limestone hills replace in a measure those formed of the heavy clays, and small bodies of black prairie soil, often only a few acres or even less in extent, are found on the hillsides or on the lower ridges.

Besides the more extreme types of soil, there are, especially in the northern portion of the county, tracts of gently rolling oak uplands with a loam soil, quite productive and easily tilled, and on that account often preferred to the heavier though more fertile soils.

The tilled lands of Jasper county amount to 13.4 per cent. of its total area, being about the same as that of Rankin. About one-third of these, or 29.9 acres per square mile, are in cotton, the corn acreage being about the same. The average product per acre is 0.31 of a bale; somewhat low, owing, doubtless, to the growing of corn in the richest bottom lands.

The communication of Jasper county is partly with stations on the Vicksburg and Meridian railroad, in Newton, or with those on the Mobile and Ohio railroad, in Clarke county, both of which approach within 6 miles of the county line.

ABSTRACT OF THE REPORT OF S. G. LOUGHRIDGE, M. D., GARLANDSVILLE.

In the order of their productiveness the three kinds of soils cultivated in cotton are, according to their common designations, first, black slough prairie; second, black, "hog-wallow," and shell prairie, with sandy hummock land along creeks; third, sand hills and waxy prairie. The *first and second* are coextensive, and occur in bodies of 20 to 1,000 acres throughout the county. Their soils are 18 to 24 inches deep. The subsoil is in either case a tough, yellow, hard, impervious clay, which bakes hard on first exposure, but becomes by cultivation like surface soil. It contains soft, limy, white, rounded, and angular pebbles, and the second more shells than the first, and is underlaid by rotten lime-rock at 10 feet. The first is late and ill-drained, but is easily cultivated when broken deep. The second is early when well drained, and is difficult to till when too wet, but easy when dry, if well drained. Both soils are best adapted to cotton, corn, oats, rye, and sugar-cane. About one-half their cultivated area is planted in cotton. On the first the plant grows usually 4 feet high, and is most productive at from 4 to 5 feet. The seed-cotton product per acre of fresh land varies from 1,000 to 2,000 pounds; from 1,425 to 1,545 pounds from any fresh soil here make a 475-pound bale of lint, which commands the highest price. This soil deteriorates but little in ten years of good deep cultivation (unmanured); 1,425 pounds from old land make a bale of lint inferior to that of fresh land. Crab-grass, morning-glory, and a kind of water-grass are the most troublesome weeds.

On the second quality of soil the usual and most productive height of the plant is 3 feet. The seed-cotton product per acre of fresh land varies from 1,000 to 1,200 pounds; but after ten years' cultivation (unmanured) it is from 800 to 1,000 pounds, and the staple is coarser. Crab-grass, morning-glory, purslane, and careless-weed are most troublesome. About one-third of such land lies "turned out"; in the second year after it is again taken in it produces as fresh land. The upland growth outside of the prairies is hackberry, ash, hickory, oak, red-bud, red haw and plums. The hummocks have hickory, oak, pine, dogwood, and grape-vines. The lands wash readily, doing much damage, and the valleys are injured by the washings when the hills are poor. But little is done to check the damage.

The *sandhills and waxy prairie* occupy about one-half of the area of this region. They occur in patches, and vary greatly from ridge to ridge, their timber being pine and post oak. The soil is 8 to 10 inches thick; the subsoil is heavier, and is underlain by rather soft limestone at 5 to 20 feet. The soil is early, well drained, difficult to till in wet, but generally easy in dry seasons. It is best adapted to cotton, and about two-thirds of its cultivated area is planted with the same. The plant usually grows about 2 feet high. The seed-cotton product per acre of fresh land is from 600 to 800 pounds, but after ten years' cultivation (unmanured) it is from 400 to 600 pounds. The staple is then inferior, and it takes a little more seed-cotton to make a bale. Crab-grass is the most troublesome weed. About one-half such land originally cultivated lies "turned out". The plant inclines to run to weed on fresh land (of any kind described) in wet seasons, and drainage and deep plowing constitute the remedy. The uplands wash readily, and the valleys are somewhat injured. Clean staple sells for much more than the same quality not clean. The prairies that are black produce best in dry seasons; the sandy soils require most rain.

All creeks running east or west have poor sandy soil on the north side and rich black prairie on the south. The chief crops of this region are cotton, corn, rice, sugar, sorghum, oats, pease, and sweet potatoes.

Cotton is shipped as soon as baled, by rail, to Mobile, at \$3 per bale.

CLARKE.

Population: 15,021.—White, 7,181; colored, 7,840.

Area: 650 square miles.—Long-leaf pine hills, 425 square miles; central prairie, 225 square miles.

Tilled lands: 45,888 acres.—Area planted in cotton, 15,936 acres; in corn, 17,338 acres; in oats, 3,193 acres.

Cotton production: 4,693 bales; average cotton product per acre, 0.29 bale, 414 pounds seed-cotton, or 138 pounds cotton lint.

Clarke county is drained to the southward by the Chickasawhay river and its tributaries, of which Chunky, Okatibbee, and Buckatunna are the chief. The northern portion is a region of rolling or hilly long-leaf pine lands, whose quality varies in accordance with a greater or less admixture of oaks and hickory, cultivation being, however, thus far mainly restricted to the lowlands. Of these the wide "hummock" of the Chickasawhay, with a good sandy loam soil, forms an important part, the more so as beds of greensand and marls occurring at and below the town of Enterprise afford an important means of improving and maintaining the fertility of the soil. A line drawn from northwest to southeast through De Soto marks the northern limit of the prairie belt proper, although the influence of the marly beds which crop out in the creeks appears in the valleys as far north as Quitman in the occurrence of the tulip tree, walnut, ash, etc.

The prairies of southern Clarke form plateaus between the streams and differ in some respects from those farther west, the extreme hog-wallow character being less pronounced. There are few treeless tracts. The prevalent timber is sturdy post oak and short-leaf pine, thickly hung with long moss, and accompanied by an undergrowth of crab-apple, wild plum, honey-locust, etc. It is a very heavy soil, producing in rainy times a fearfully tenacious mud. The black surface soil is from 6 to 12 inches deep, below which lies an equally heavy, deep orange-tinted subsoil, and beneath this, at from 3 to 10 feet, there are yellowish clay marls. The open prairie tracts, with occasional clumps of crab-apple and honey-locust, have a much lighter soil, sometimes whitish from the admixture of the underlying marl. Both soils produce cotton finely, but the open prairie is the safer and more easily tilled, the heavy black soil standing intermediate in character between the intractable hog-wallow of Smith and Jasper and the true black prairie soil. Besides this, we find to the southward a belt about 3 miles wide of a tawny-colored soil, more of the true "hog-wallow" type, timbered with lank post oak and short-leaf pine and black gum, which has not thus far been brought into cultivation. Southward of this belt there are, in the southwest corner of Clarke and in the adjacent parts of Wayne county, ridgy lands, with small upland prairies, similar to those of southern Jasper. The Chickasawhay river here runs between rocky banks in a deep channel.

Most of the cotton grown in the county is from this southern prairie region and the Chickasawhay flat.

The percentage of tilled lands is 11, and the cotton acreage is one-seventh less than that devoted to corn, making it 24.5 per square mile. The cotton product per acre is 0.29, being somewhat below that of Jasper county, and the same as in Lauderdale.

The Mobile and Ohio railroad traverses the western part of the county from north to south and affords ample opportunity for shipment and communication. Freight to Mobile, \$3 per bale.

ABSTRACT OF THE REPORT OF W. SPILLMAN, M. D., ENTERPRISE.

(Refers to T. 4, R. 14 east, the northwestern corner of the county.)

The best land is that of the bottoms of the Chunky and the Chickasawhay rivers, which occupies about one-sixth of the township and extends through the county. Its growth is magnolia, maple, beech, bay, swamp oak, sycamore, and a few cottonwoods. The soil is a fine, sandy loam of a gray, buff, and blackish color, and varying depths. The subsoil is leachy, and is underlain by sand-rock at 15 to 20 feet. The soil is early, warm, well drained, always easily tilled, is best adapted to cotton, and three-fourths of the cultivated area is planted with the same. The usual and most productive height attained by the plant is from 3½ to 4 feet. In wet seasons it inclines to run to weed on all soils here, and the remedy consists in topping at about 3 feet.

The seed-cotton product per acre of fresh land varies from 800 to 1,000 pounds, and from 1,425 to 1,545 pounds make a 475-pound bale of lint. After five years' cultivation the product varies from 400 to 600 pounds seed-cotton. Crab-grass is the most troublesome of all weeds.

About one-fifth of the township consists of cane-brake or hummock land, and its chief natural growth is walnut, poplar, sweet gum, water oak, and maple. The soil is a deep blackish and black loam. Tillage is difficult in wet seasons, but easy in dry. The soil is well drained, but late and cold. It is best adapted to corn and cotton, and three-fourths of its cultivated area is planted with cotton. The plant grows from 4 to 6 feet high, but is most productive at 4 feet. The seed-cotton product per acre of fresh land varies from 1,000 to 1,500 pounds; 1,425 pounds make a 475-pound bale of lint. After five years' cultivation the product varies from 800 to 1,000 pounds. The cocklebur is the most troublesome weed.

The remainder, or nearly two-thirds of the township, is hilly upland, which extends 11 miles west, 30 east, and from 20 to 30 north, and bears a natural growth of pine chiefly; also hickory, dogwood, black-jack, and other oaks. The soil is formed of clay and fine sand, is whitish, gray, and brown in color, and from 4 to 6 inches deep; the subsoil is impervious red and yellow clay, with a large proportion of sand. The soil is early, warm, always easily tilled, does not endure drought well, is best adapted to oats and cotton, and three-fourths

of its cultivated area is planted with cotton. The plant rarely exceeds 3 feet in height. The seed-cotton product per acre varies from 400 to 500 pounds on fresh land; 1,425 pounds make a 475-pound bale of lint. After five years' cultivation the product varies from 300 to 400 pounds. The most troublesome weed is crab-grass. About one-fourth of such land originally cultivated now lies "turned out". The slopes are seriously damaged by washing and gullying, but the valleys are not much injured by the washings. To check the damage a little horizontalizing and hillside ditching have been practiced with good success.

The chief crops are cotton, corn, oats, potatoes, and cow-pease. Cool nights in May retard the growth of cotton, and aphides just then kill a large portion of it, causing thin stands.

The southern portion of the county (about one-third) consists of very productive *calcareous prairie land*. It produces 40 bushels of corn or from 1,000 to 1,500 pounds of seed-cotton per acre in favorable seasons and deteriorates but slightly.

Cotton is shipped, as soon as ready, by rail from Enterprise to Mobile at \$3 per bale.

ABSTRACT OF THE REPORTS OF JOHN A. BASS, CHARLES W. MOODY, AND J. E. WELBORN, SHUBUTA.

(Refers to T. 10, R. 6, 7, 8, and 9.)

The lands of the county comprise the black and yellow prairies and stiff bottoms, the sandy pine hills, hummocks, and level creek bottoms, and the light sandy bottoms of Chickasawhay river and Shubuta and Dry creeks.

The chief cotton-producing soil is the *black and yellow prairies* of the level and rolling uplands, occurring in bodies of from 50 to 1,000 acres. One-half or more of the cultivated soil of this region is of this kind. Its chief growth is ash, red elm, hickory, post, black-jack, and some white and red oaks. The soil is a clayey loam 6 to 30 inches deep; the subsoil is heavier, but otherwise similar, and is putty-like and adhesive when wet. It contains flinty, brownish pebbles, with shells and bones, and is underlaid by sand, gravel, and soft rock at 18 inches or more. When once broken, the soil is generally easily tilled; but it is difficult to till when too wet, especially if level. The rolling portions are early and well-drained; the level parts are late and ill-drained. The soil is equally well adapted to all of the chief crops of this region, viz, corn, cotton, oats, pease, potatoes, and sugar-cane, and the shelly lands are especially well adapted to corn and oats. About one-half of the cultivated area is planted with cotton. The plant attains heights of from 3 to 7 feet, but is most productive at from 4 to 5 feet. It inclines to run to weed in excessive rainy seasons, especially when the clay is at a depth of from 2 to 3 feet, but in stiff yellow or black prairies it scarcely ever goes too much to weed. Early planting and proper or uniform cultivation has generally succeeded in preventing too great a growth and has induced bolling. The seed-cotton product per acre of fresh land varies from 800 to 1,000 pounds; 1,660 pounds make a 475-pound bale of middling lint. The soil being fresh and all things favorable, 3 pounds of seed-cotton usually yield 1 pound of lint. After twenty-five years' cultivation (unmanured) the product varies from 500 to 600 pounds, and ratio of seed to lint remains the same, but the staple is inferior. About one-half of such originally cultivated land lies "turned out", and when again cultivated it produces well after the first year, but little in that year. The troublesome weeds are crab-grass, morning-glory, coffee-weed, tea-weed, and purslane.

The *sandy lands* cover one-half of the county area, though occurring only in spots. Its natural growth is short-leaf pine, chincapin, red and black-jack oaks, black and sweet gums, hickory, some ash, chestnut, dogwood, etc. The soil is various, and besides the generally prevailing coarse, sandy loam there are gravelly and clayey loams, the colors of which are whitish-gray, buff, and yellow, the depth averaging 18 inches. The heavier subsoil is yellowish and red clay, and contains small pebbles. The soil is early, well drained, easily tilled, and one-half to three-fourths of its cultivated area is planted with cotton. The usual and most productive height of the plant is from 3 to 4 feet, and when showery weather continues for a time it inclines to run to weed. The seed-cotton product per acre of fresh land varies from 800 to 1,200 pounds; 1,660 pounds make a 475-pound bale of low middling to good middling lint, according to seasons, etc. Ten years' cultivation (unmanured) causes a decline in yields of from 33 to 50 per cent., and about 1,935 pounds then make a 475-pound bale of lint rating one or two grades below that of fresh land. A small amount of this land has been "turned out", but after ten or fifteen years' rest it produces as well as originally. Slopes in some localities are seriously damaged by washings and gullying of the soil. Valleys are usually so much benefited by the washings as to double their yields; but if the valley lands and the hillside washings are both stiff and clayey they are damaged. A little hillside ditching has been done, and the damage successfully checked to that extent.

North of the locations described are extensive areas of "*poor pine land*", timbered chiefly with long-leaf pine, with occasionally some post, red, and black-jack oaks, and hickory. The soil is a gray clay loam 18 to 24 inches thick; the subsoil is similar to that of the bottoms last described, and is underlaid at from 15 to 20 feet by blue marl. The soil is easily cultivated, early, warm, and well drained, but only a small proportion of it is cultivated.

Cotton on the uplands may be planted earlier and matures earlier than on the lowlands, even if planted at the same time. It is rarely frost-killed in this region.

Cotton is shipped during all the picking season chiefly to Mobile, by rail, at \$3 per bale; distance, 96 miles.

WAYNE.

Population: 8,741.—White, 4,971; colored, 3,770.

Area: 790 square miles.—Long-leaf pine hills, 490 square miles; central prairie, 300 square miles.

Tilled lands: 20,977 acres.—Area planted in cotton, 7,559 acres; in corn, 10,411 acres; in oats, 1,408 acres; in wheat, 7 acres.

Cotton production: 1,979 bales; average cotton product per acre, 0.26 bale, 372 pounds seed-cotton, or 124 pounds cotton lint.

Wayne county is traversed in a southerly direction by the Chickasawhay river, and in the east by Buckatunna creek, both crossing the prairie belt, which may be defined as lying north of a line passing a short distance south of Waynesboro', in a northwestern and southeastern direction. South of this line lie hilly or rolling lands, heavily timbered with long-leaf pine, which are thinly settled, cultivation being restricted to the narrow bottoms.

The uplands and bottoms of the northern part of the county, lying within the prairie belt, produce the bulk of the cotton grown. The surface features of this region are a counterpart of southern Clarke county (see page 130), the largest tracts of heavy upland prairie occurring in the northern portion, while in the southern (as on Yellow and Limestone creeks) are rolling or hilly lands with a loam soil, timbered with oak and more or less pine, interspersed with small tracts and patches of black upland prairie, with here and there a tract of the hog-wallow soil.

From the county-line to near Waynesboro' the Chickasawhay river flows in a deep channel cut into limestone strata, which it rarely fills, the bordering hummock or flat being practically above overflow and cultivated to advantage. The same is true more or less of the tributary creeks within the limestone region. Southward, in the pine region, the river channel is more shallow, and its bottom liable to overflow.

Winchester, in this county, was one of the early settlements in this part of the state, and at one time was quite a thriving town, with brick houses and other improvements and some social reputation. It was until lately the county-seat, now removed to Waynesboro'.

At present the cultivated lands of Wayne amount to only 4.1 per cent. of its area, the cotton acreage being 9.6 per square mile, against one-third more given to corn. The average cotton product per acre is 0.26 bale.

The Mobile and Ohio railroad follows the Chickasawhay river nearly through the county, leaving it and the state at its southeast corner. Shipments go by this road to Mobile.

LONG-LEAF PINE REGION.

(It embraces the following counties and parts of counties: Copiah, Claiborne,* Jefferson,* Hinds,* Lincoln, Pike, Franklin, Amite, Lawrence, Simpson, Rankin,* Smith, Jasper,* Newton,* Lauderdale, Clarke,* Wayne,* Covington, Jones, Marion, Perry, Greene, Jackson, Harrison, and Hancock.)

COPIAH.

Population: 27,552.—White, 13,101; colored, 14,451.

Area: 750 square miles.—Short-leaf pine and oak uplands, 60 square miles; long-leaf pine hills, 690 square miles.

Tilled lands: 119,866 acres.—Area planted in cotton, 54,616 acres; in corn, 38,292 acres; in oats, 5,320 acres.

Cotton production: 23,726 bales; average cotton product per acre, 0.43 bale, 612 pounds seed-cotton, or 204 pounds cotton lint.

The greater part of Copiah county is drained by bayou Pierre and its tributaries, and on the east by creeks flowing toward Pearl river, of which Copiah and Big Bahala creeks are the chief. The heads of the Homochitto reach into the southwest corner.

The surface of Copiah is rolling or hilly, sometimes broken, with sharp sandstone ridges, especially in the southwestern part, long-leaf pine prevailing on all the higher ridges, interspersed more or less on their flanks and on the lower ridges with the oaks and short-leaf pine, which are there predominant. The upland soil is sometimes very sandy, but chiefly a light brownish yellow loam, underlaid by yellow or orange loam subsoil, forming a good foundation for improvement. These oak and pine uplands are moderately productive, and are cultivated to a considerable extent; but the numerous valleys are the preferred culture lands. These valleys are usually wide and largely of a hummock or second-bottom character, the first bottoms being mostly narrow and sometimes altogether wanting, when the streams often meander in wide sandy beds. The hummock soils are usually gray or whitish and rather fine, silty, and sometimes sandy and gravelly, according to the nature of the adjacent uplands, which are often traversed by gravelly ridges. The timber of these hummocks usually consists of oaks and bottom pine, mingled with more or less of hickory, magnolia, holly, and, when sandy, a good deal of beech. (For analyses of these hummock soils, see regional description, page 62.)

In the northwest corner of Copiah the long-leaf pine is absent, while oaks, hickory, and short-leaf pine, with more or less beech and magnolia on the slopes, constitute the timber of the rolling country. On the Pearl river side also there is a belt of country, from which the long-leaf pine is absent, skirting the river valley, which is here formed of a wide hummock timbered with large bottom pine, post, scarlet, and Spanish oaks, hickory, and land, but the creek bottoms adjacent are even more highly esteemed.

Copiah county is a region of small farms, was early settled, and stands ninth in population among the counties of the state, and in density of population is next above Monroe county. The tilled lands amount to one-fourth of the total area. Not quite one-half of them are devoted to cotton culture, and a little over two-thirds as much to corn. The average cotton acreage per square mile is 72.8, and the average product per acre is 0.43 bale. This is a remarkable showing for what is popularly classed as a pine-hills county.

The communication of Copiah is chiefly with Hazlehurst and other stations on the New Orleans and Chicago-railroad, which traverses the eastern part of the county from north to south on the dividing ridge between bayou Pierre and Pearl river. To avoid the hilly roads the western portion communicates partly with Port Gibson and Grand Gulf landing, whence cotton is shipped by steamer to New Orleans.

CLAIBORNE.

(See "Cane hills region".)

JEFFERSON.

(See "Cane hills region".)

HINDS.

(See "Central prairie region".)

LINCOLN.

Population: 13,547.—White, 7,701; colored, 5,846.

Area: 580 square miles.—Woodland, all; long-leaf pine hills, all.

Tilled lands: 55,409 acres.—Area planted in cotton, 17,272 acres; in corn, 19,843 acres; in oats, 5,704 acres.

Cotton production: 6,286 bales; average cotton product per acre, 0.36 bale, 513 pounds seed-cotton, or 171 pounds cotton lint.

Lincoln county is drained by streams flowing in five different directions, viz: Centrally and chiefly by the Bogue Chitto and its tributaries; in the northeastern portion by Fair river and Bahala creek, tributary to Pearl river; in the northern part by the extreme heads of bayou Pierre; in the northwestern by those of the Homochitto river; and in the southwestern by the east fork of the Amite, tributary to lake Pontchartrain. It is naturally, therefore, a region of rolling, hilly, and sometimes broken uplands (rising to the elevation of 480 feet at Brookhaven), which are timbered chiefly with long-leaf pine, largely interspersed, especially in the western part, with oaks and hickory, indicating a corresponding improvement in the soil as we approach the oak and short-leaf pine belt bordering the cane hills (see regional description, page 56). The numerous bottoms afford equally numerous though usually small bodies of good farming land, on which the cotton produced is chiefly grown. The uplands are as yet cultivated on a small scale only, having thus far been given to the lumbering industry, which has been extensively developed since the establishment of railroad communication.

The tilled lands of Lincoln constitute nearly 15 per cent. of its area, over one-quarter of them (31.2 per cent.) being given to cotton, and nearly one-third more (35 per cent.) to corn. The average cotton product per acre is 0.36 bale, with an average of 29.8 acres per square mile.

The communication of Lincoln county is by way of the New Orleans and Chicago railroad, which traverses it centrally, chiefly with New Orleans.

PIKE.

Population: 16,688.—White, 8,572; colored, 8,116.

Area: 720 square miles.—Woodland, all; long-leaf pine hills, all.

Tilled lands: 53,803 acres.—Area planted in cotton, 19,842 acres; in corn, 19,248 acres; in oats, 6,003 acres; in wheat, 8 acres.

Cotton production: 6,507 bales; average cotton product per acre, 0.33 bale, 471 pounds seed-cotton, or 157 pounds cotton lint.

Pike county is covered throughout with a heavy forest of long-leaf pine. The Bogue Chitto river traverses it in a northwestern and southeastern direction, and the country eastward of that stream is drained by its tributaries, of which Magee's and Tapashaw creeks are the chief. West of the Bogue Chitto the dividing ridge between it and Tangipahoa comes in so closely as to leave room only for short creeks, so that the country to the westward is drained almost wholly by the tributaries of the last-named stream, nearly all of which carry running water throughout the season.

The northern portion of Pike county is hilly or rolling pine land. In its eastern portion it is quite sandy, but as the Bogue Chitto is approached the increasing admixture and the appearance of black-jack oaks indicates the approach to the surface of a brown-loam subsoil, which becomes more and more prevalent to the westward, and forms a good foundation for the cultivation and improvement of the uplands, which thus far has not been inaugurated to any great extent, but on a small scale has been quite successful. (For analysis and discussion of this soil, see regional description, page 59.)

In the southern portion of the county, within 10 miles of the Louisiana line, the level of the country (which at Summit station reaches the height of 425 feet) sinks visibly, the surface becoming gently undulating, still, however, underlaid by sand and gravel at the depth of a few feet. In the northern part of the county, where the upland has been denuded of its timber or thrown out of cultivation, the existence of these substrata gives rise to deep hillside washes or ravines. At some points the soil itself is very gravelly.

The immediate valley of the Bogue Chitto varies from 1 to 2 miles in width. The bottom proper, usually not very wide, has rather a light soil, which is timbered with beech, magnolia, bottom white pine, elm, and some black and sweet gums, and is productive, but subject to overflow. The soil of the second bottom is generally preferred for cultivation. It is a dark-colored loam, sometimes as much as 2½ feet in depth, more or less traversed by sandier "beech ridges," and the usual timber, which is very large, is magnolia, sweet gum, poplar, hickory, sassafras, and some beech; also chestnut-white oak and holly. It is a very fine and durable soil. The soils and timber on the smaller streams are quite similar in character.

The tilled lands of Pike county constitute 11.7 per cent. of its area. Of these over one-third (36.9 per cent.) is devoted to cotton culture, with an average product of 0.33 bale per acre, the cotton acreage being 27.6 per square mile. The corn acreage is a trifle less than that of cotton.

The lumber industry has been extensively developed in this county since the completion of the New Orleans and Chicago railroad, utilizing not only the long-leaf pine, but also the large "poplar" (white-wood) and magnolia and other timber of the bottoms. Other manufacturing industries have been started at stations on the line of the railroad, such as a cotton-mill, factories of agricultural implements, etc. Magnolia and stations south of the same also serve as summer resorts for health and pleasure for the population of New Orleans.

Cotton is shipped, as fast as baled, to New Orleans, at \$2 30 per bale.

ABSTRACT OF THE REPORT OF W. W. VAUGHT, MAGNOLIA.

The surface of the country is rolling, the uplands comprising pine hills, covered with a dense pine growth. The first and second bottoms of creeks and rivers is the chief cotton-producing soil. It occupies about one-fifth of the area of this region, and extends about 25 miles west, to the state line east and south, and to Crystal Springs, 50 miles north. The land is somewhat subject to overflow, and has a natural growth of oak, gum, poplar, beech, hickory, etc.

The soil is a fine sandy loam of blackish and black colors, extending 4 to 8 inches below the surface. The subsoil is rather sandy and leechy, and is underlaid by sand. The soil is early and warm when well drained, and is generally easily tilled, except in wet weather. The chief crops of this region are cotton, corn, oats, sweet potatoes, and sugar-cane, and the soil seems best adapted to these crops. It yields from 30 to 50 bushels of corn. About half its cultivated area is planted with cotton. The usually attained height of the cotton-plant is from 3 to 5 feet; at greater heights it is less productive. It inclines to run to weed in wet seasons and on fresh land, and the remedy consists in applying phosphates or bone-meal to the soil, and thus favors bolling. The seed-cotton product per acre of fresh land varies from 1,200 to 1,500 pounds, or, after ten years' cultivation (unmanured), from 300 to 500 pounds; in either case 1,425 to 1,545 pounds make a 475-pound bale of lint. The quality of staple from old land is but little different from that of fresh land. All the cotton from this region rates generally as middling. About one-fourth of such land lies "turned out", but by deep plowing and systematic manuring it can be made to produce as well as ever. Crab-grass is the only troublesome weed, hog and rag weeds giving but little trouble.

The pine hills are but little in cultivation, but about two-fifths of the area being suitable for tillage when cleared. Besides its natural growth of pine, it has more or less oak, hickory, and gum, and it is coextensive with the lowland described. The soil is a yellow, sandy loam, 4 to 8 inches thick; the subsoil a heavy red clay, 1 to 3 feet thick, containing some fine sand and a variety of gravel, underlaid by sand and gravel. The soil is early, warm, well drained, and easily tilled, producing about 500 pounds of seed-cotton per acre from fresh lands and 300 pounds after ten years' cultivation.

Slopes are seriously injured by washings and gulying of the soil, the washings to some extent damaging the valleys. To check the damage considerable horizontalizing and hillside ditching have been done, and where the work has been well done this has been successful. When droughts occur here it is rarely before July 15, when the plant is so nearly matured as not to suffer.

FRANKLIN.

Population: 9,729.—White, 4,852; colored, 4,877.

Area: 560 square miles.—Short-leaf pine and oak uplands, 250 square miles; long-leaf pine hills, 310 square miles; all woodland.

Tilled lands: 37,680 acres.—Area planted in cotton, 18,211 acres; in corn, 12,045 acres; in oats, 1,012 acres.

Cotton production: 8,042 bales; average cotton product per acre, 0.44 bale, 627 pounds seed-cotton, or 209 pounds cotton lint.

The greater part of Franklin county is drained by the Homochitto river, which traverses diagonally the eastern half of the county and is joined by numerous creeks from both sides. The surface is throughout hilly, especially along the main Homochitto, where the "Homochitto hills" constitute a country of narrow and steep, sometimes rocky, ridges, the uplands being largely too broken for cultivation. The county is nearly equally divided into an eastern portion, timbered with long-leaf pine, more or less mingled with oaks, hickory, and short-leaf pine on the slopes and lower ridges, and a western one, in which oaks, hickory, and short-leaf pine alone prevail, save occasionally on higher ridges extending in from the east. In both sections the bulk of the cultivated lands lies in the valleys of the streams, in which (as is generally the case in southwestern Mississippi) the second bottom or hummock lands predominate over the first bottoms, and are most generally under cultivation.

The soils of the Homochitto hills and of the eastern portion of the county generally are mostly quite sandy, yet not infertile, as is shown by the vigorous growth of oaks and hickory laden with long moss. The poorer and excessively sandy tracts are characterized by the presence of the upland willow, oak, or narrow-leaf black-jack among the post, Spanish, and white oaks, resembling exceedingly the sandy ridge lands of Smith and Jasper counties. The soils of the first bottoms in this region are correspondingly sandy, and so continue almost to the mouth of the Homochitto river. Their depth, however, compensates so far for the excess of sand that some of these bottom lands (*e. g.*, on the middle fork of the Homochitto) are reputed to be among the most durable and productive cotton lands of the state. (For details regarding these soils, see regional description, p. 63.) The beech and magnolia are the most prominent timber trees of these bottoms, together with the chestnut-white oak, sweet gum, poplar, maple, etc. The hummock soils of this region, elevated from 2 to as much as 6 feet above the first bottom, are only moderately light, of a buff color, underlaid by a pale-yellow loam, the timber of which is the beech, white oak, hickory, holly, sweet gum, cherry, sourwood, etc. Some of these hummock soils produce from 1,200 to 1,300 pounds of seed-cotton per acre. While the average width of the valleys in this region is the same as elsewhere, the wide, shallow, sandy beds which the streams excavate for themselves in flood-time often diminish seriously the amount of valley land suitable for cultivation, the smaller streams especially sometimes occupying in this way the entire width of their valleys. The uplands of the western section of the county are much less sandy, and the bottom lands correspond in this respect, especially in the northwestern portion, on the heads of Well's creek and Morgan's fork. Here the "Hamburg hills" form a body of rolling or ridgy uplands, partly of a plateau character, having an excellent subsoil of light-brown loam, which makes itself felt by the scarcity of the pine, hickory, white, Spanish, and black oaks, together with the large-leaved magnolia, occupying the ridges, while on the slopes the sweet gum, ash, and poplar, or tulip tree, are also found. The uplands are quite productive, and the valley lands are excellent.

In the southwestern part of the county the Homochitto hills continue to form a ridgy, broken country, of which the portion lying between Well's creek and the Homochitto is known as "The Devil's Backbone", so called among teamsters from the unenviable reputation of its clayey slopes. The summits of the ridges, however, are sandy and partly rocky.

The table-lands of Franklin county constitute 10.5 per cent. of its area. Of these nearly one-half is occupied by cotton, only two-thirds as much being given to corn. The average cotton product per acre is 0.44 bale, a trifle less than that of Panola county. The communication of Franklin county is chiefly with Natchez, whence cotton is shipped to New Orleans. The eastern portion also communicates with stations on the New Orleans and Chicago railroad.

AMITE.

Population: 14,004.—White, 5,494; colored, 8,510.

Area: 720 square miles.—Short-leaf pine and oak uplands, 85 square miles; long-leaf pine hills, 635 square miles; woodland.

Tilled lands: 62,095 acres.—Area planted in cotton, 27,749 acres; in corn, 22,589 acres; in oats, 3,184 acres.

Cotton production: 9,952 bales; average cotton product per acre, 0.36 bale, 513 pounds seed-cotton, or 171 pounds cotton lint.

The greater part of Amite county resembles closely in its surface features the portion of Pike county lying west of the Bogue Chitto, and is drained centrally and chiefly by the several forks and tributary creeks of the Amite river. In the northwest corner some of the tributaries of the Homochitto interlock with the Amite, and the southeast corner is drained by the heads of the Tickfaw river.

The bulk of the cultivated lands of Amite county still lies in the bottoms and hummocks of the streams. Outside of these, in the rolling and hilly uplands, the long-leaf pine forest prevails over all but the extreme western portion of the county, where short-leaf pine and oaks take possession first of the flanks, and then of the summits of the ridges, being more or less commingled with the long-leaf pine throughout. The upland soil, when dry, is of a pale brownish-yellow tint with an orange loam subsoil, which, besides common gravel, usually contains more or less of black pebble. In level places, where huckleberry bushes prevail, it is sometimes white, and is also underlaid by the yellow subsoil. It is fairly productive. In the northwestern portion the Homochitto hills form a belt of broken ridge lands, mostly sandy, occupied by oaks and hickory, heavily curtained with long moss, the pine being quite subordinate; but these hill lands, though having a productive soil, are almost too broken for cultivation. The southern part of Amite county, like the corresponding part of Pike, is a more gently rolling, sometimes almost level, pine-woods region.

The valleys of the various forks and tributaries of the Amite river, though not usually very wide (1 to 2 miles on the main Amite), contain bodies of excellent farming land, chiefly on the second bottom level. These bodies alternate more or less with apparently ill-drained tracts of a white, "crawfishy" soil, underlaid by black pebbles, which increase proportionally as we descend the streams. Such tracts are characterized by a growth of bottom pine and a great deal of water oak among the timber, which is otherwise the same in species as that of the better class of bottom lands, but is rather under size. In the well-drained portions of the bottoms the soil is a dark or mulatto-colored loam from 1½ to 2 feet in depth, with a large timber growth of magnolia, holly, white and chestnut-white oaks, ash, sweet gum, beech, and some poplar. The soil is very productive, though crops are liable to damage from overflows.

The tilled lands of Amite county amount to 13.5 per cent. of the total area, placing the county in this respect above Pike and Franklin, but below Lincoln (14.9 per cent.), and nearly on a level with Rankin. The cotton acreage exceeds that of corn by one-fourth, and the average product per acre is the same as that of Benton county (0.36 bale).

The communication of Amite county is chiefly with stations on the New Orleans and Chicago railroad, or via the Clinton narrow-gauge railroad to Bayou Sara, and by steamer to New Orleans. Freight on cotton, \$2 to \$2 25 per bale.

ABSTRACT OF THE REPORTS OF J. R. GALTNEY AND GEORGE F. WEBB, LIBERTY.

By long experience planters have found it safest to plant the rolling uplands in cotton and the lowlands in corn. The bottoms of creeks and smaller streams are, in comparison with river bottoms, easily tilled, and, being the safest for all crops, they are regarded by most farmers as the best lands in the region. The river bottoms are subject to overflows, and cotton is liable to be prematurely frost-killed, besides suffering more from insect pests than on other lands. The chief crops of this region are cotton, corn, sugar-cane, oats, field pease, sweet potatoes, and sorghum.

All the soils are apparently best adapted to cotton, although the other crops succeed well, and more than half the cultivated land is planted with that staple. The chief soil is a *brown or mahogany upland loam*, 5 inches thick, with a subsoil of red, clayey loam, rather impervious, containing a variety of gravel, large and small, and underlaid by sand and gravel. Three-fourths of the cultivated land of the county is of this kind. Its natural growth is red, white, and black oaks, chincapin, long-leaf pine, sweet gum, cherry, sassafras, etc. The soil is early, warm, and well-drained, and the cotton-plant usually grows from 2½ to 3½ feet high. On this, as well as on all other lands described, it inclines to run to weed in wet seasons, but may be restrained by using the hoe instead of the plow in after-cultivation. The seed-cotton product per acre of fresh land is from 700 to 800 pounds, 1,445 pounds (or 1,425 late in the season) making a 475-pound bale of lint. After five years' cultivation (unmanured) the product is from 500 to 600 pounds, and then from 1,455 to 1,485 pounds make a bale of lint shorter and weaker than that from fresh land. The troublesome weeds on all of the lands are crab-grass, cocklebur, and morning-glory. About one-half of such originally cultivated land lies "turned out"; when it is overgrown with briars, it again produces as well as originally, but not so well if overgrown with sedge and pine.

A comparatively small part of this region consists of *second bottom or hummock land*, which occurs in strips less than half a mile in average width, next to parallel and continuous with the swamp or river bottom lands. Its growth is oak (red, white, and black), pine, beech, hickory, ash, gum, holly, poplar, magnolia, etc. The soil is a loam varying from clayey to fine sandy, and in color from mahogany to black, and is 6 to 12 inches deep; the subsoil is clayey, tough, hard, and impervious, but by cultivation and exposure it gradually becomes like the surface soil. It contains a variety of gravel, and is underlaid by sand and gravel and sometimes large pebbles. The soil is early and warm when well-drained, and the cotton-plant grows from 3 to 5 feet high, but is most productive at 5 feet. The seed-cotton product per acre of fresh land is about 1,000 pounds; 1,600 pounds make a 475-pound bale of lint. After five years' cultivation (unmanured) the product is 800 pounds, and 1,630 pounds then make a bale. About one-third of such originally cultivated land lies "turned out"; when again cultivated, it produces about the same.

The remaining kind is usually designated *swamp land*, and includes river and creek bottoms, the greater part of it lying along the Amite river, where its width is about 2 miles. Its growth is red, white, water, and pin oaks, poplar, ash, hickory, magnolia, sweet and black gums, cypress, holly, etc. The soil is a loam of a mahogany, blackish and black color, 1 to 3 feet deep; the subsoil is a compact, impervious hard-pan while undisturbed, which bakes very hard when first exposed, but gradually becomes like the surface by tillage. It is underlaid by sand in some places; in others by clay. The plant grows from 3 to 6 feet high, but is most productive at 4 feet. The product per

acre of fresh land is from 1,000 to 1,500 pounds of seed-cotton, 1,580 pounds making a 475-pound bale. After five years' cultivation (unmanured) the product is from 600 to 1,000 pounds, about 1,545 pounds then making a bale. Nearly half of such land originally cultivated now lies "turned out", and the longer it rests the more it yields when again cultivated.

When slopes are sandy they are seriously damaged by washings and gullying, and the washings injure the valleys to the extent of reducing their yields from one-fourth to one-third. To check the damage many efforts have been made by filling the gullies with cotton stalks, etc., and by horizontalizing and hillside ditching. The success has been sufficient to justify the labor and expense involved.

Cotton is shipped, as soon as ready, by rail from Osyka, 88 miles, to New Orleans, at \$2 20 per bale, or at \$2 per bale from Clinton, Louisiana, by rail and river.

LAWRENCE.

Population: 9,422.—White, 4,937; colored, 4,485.

Area: 620 square miles.—All long-leaf pine hills.

Tilled lands: 47,320 acres.—Area planted in cotton, 17,806 acres; in corn, 20,758 acres; in oats, 4,845 acres; in wheat, 6 acres.

Cotton production: 5,967 bales; average cotton product per acre, 0.34 bale, 486 pounds seed-cotton, or 162 pounds cotton lint.

Lawrence county is a region of rolling, hilly or sometimes broken, and mostly sandy uplands, heavily timbered with long-leaf pine, the flanks of some, and sometimes entire ridges, being occupied by the short-leaf pine, mingled more or less with post and black-jack oaks and hickory. The western portion of the county is traversed in a southern direction by Pearl river. Its valley being rather deeply and abruptly impressed into the surface, the bordering hills, composed of soft sandstones and sandy clay materials, have a tendency to form steep slopes or high bluffs, which sometimes offer the unusual spectacle of waterfalls. Through these hills the tributary streams, which carry running water throughout the season, have worn narrow valleys with steep sides, so that outside of the main valley the larger bodies of cultivated creek-bottom land are chiefly found in the upper course of the streams. Of these, Silver, White Sand, and Green's creeks are the chief on the east and Fair river and Hall's creek on the west side of the valley.

Pearl river has but little bottom proper, and its hummock or second bottom is timbered with bottom pine, sweet and black gum, water and willow oaks, elm, etc. Its soil is productive, and is of a pale gray tint, but possesses a heavier whitish or yellowish subsoil, which will retain manure, underlaid at 15 to 24 inches from the surface by a loose whitish sandy material with spots of bog ore, and beneath this by tenacious gray clay, which sometimes causes a lack of proper drainage, and thus gives rise to "crawfishy" spots and tracts. Between Silver and Green's creeks the drainage of the hummock is less defective.

On the heads of White Sand creek, in the eastern portion of the county, there is a gently undulating upland tract, timbered to a considerable extent with oaks and hickory, and possessing a subsoil of a deep orange-red, sandy hard-pau several feet in thickness. This soil produces good cotton and very fine corn, and lasts well. In the long-leaf pine hills themselves we not unfrequently find a good loam subsoil at a depth of 8 to 12 inches.

The tilled lands of Lawrence amount to nearly 12 per cent. of its area. Of these over one-third (37.2 per cent.) is given to cotton, making an average cotton acreage of 29.7 per square mile, with an average product of 0.34 bale per acre. The corn acreage exceeds that of cotton about one-sixth.

The communication of Lawrence county is westward to stations of the New Orleans and Chicago railroad in Lincoln and Copiah counties.

SIMPSON.

Population: 8,005.—White, 4,993; colored, 3,012.

Area: 580 square miles.—Woodland, all. Short-leaf pine and oak uplands, 80 square miles; long-leaf pine hills, 500 square miles.

Tilled lands: 31,479 acres.—Area planted in cotton, 8,855 acres; in corn, 14,165 acres; in oats, 4,211 acres; in wheat, 5 acres.

Cotton production: 3,501 bales; average cotton product per acre, 0.40 bale, 570 pounds seed-cotton, or 190 pounds cotton lint.

The greater part of Simpson county is a region of long-leaf pine hills, interspersed with more or less ridges of short-leaf pine and oak. This pine region is drained chiefly by Strong river and its tributaries, and in their eastern part by the headwaters of Okahay, Okatoma, and Bouie creeks. The western and smaller portions, drained by the smaller creeks directly tributary to Pearl river, is timbered with oaks and short-leaf pine, and its soils and surface conformation resemble that of Rankin county, immediately north. This belt of oak lands continues with a width of several miles as far south as the mouth of Strong river. Beyond, it gradually loses its character, becoming merged with the hummock of Pearl river. It is chiefly in this belt that the uplands are cultivated to any considerable extent in Simpson county, while the bottom lands are excellent. East of the dividing ridge between Pearl and Strong rivers the soil becomes more and more sandy, and the bodies of good valley land are small, though sometimes very productive. Strong river usually runs in a deep channel, and has little or no first bottom subject to overflow. Its valley or hummock is from 1 to 2 miles wide, and near Westville is timbered prevalently with bottom pine and post oak, with some Spanish, scarlet, and black oaks and hickory. Its soil is generally light gray, with a pale-yellow loam subsoil, and is particularly well adapted to sweet potatoes, but produces good crops of corn and cotton also, especially in the portion nearest Pearl river. In the eastern part of the county, on the headwaters of Bouie and Okatoma creeks, oaks and hickory sometimes become quite prevalent among the pine, indicating a good brown-loam subsoil and generally wider valleys of good productiveness. The dividing ridge between these streams and Strong river is a very sandy plateau, on which the water quickly sinks, so as to form few definite channels, but only shallow, rounded troughs, while springs of great volume gush out at the levels where impervious strata shed the water, thus suddenly forming creeks of considerable size and of the clearest and purest water.

In the southwestern portion of Simpson, on Silver and Crooked creeks, the country is somewhat ridgy and broken, and the sandy pine hills are interrupted by ridges, along the slopes of which, and sometimes on the summits,

heavy gray clays, alternating with sandstone ledges, form level terraces covered with long grass and stunted pine, and a different class of soils occur more frequently on the west side of Pearl river. When not too heavy they are more productive than the pine-hill soils. The hilly country breaks off rather abruptly into Pearl river hummock, the soil of the latter partaking more or less of the character of the uplands so modified.

The tilled lands of Simpson constitute 8.4 per cent. of its area, being the same as in Smith and a trifle more than in the case of Covington. Of these lands nearly 28 per cent. is planted in cotton. The area given to corn is somewhat less than double. The average cotton product per acre is quite high (0.40 bale), showing the productiveness of the bottoms in which the staple is mainly grown.

The communication of Simpson is partly with Brandon, on the Vicksburg and Meridian railroad, and partly with Hazlehurst and other stations on the New Orleans and Chicago railroad.

ABSTRACT OF THE REPORT OF J. C. M'LAURIN, MOUNT ZION.

The chief soil devoted to cotton is that of *creek bottoms* above overflow, which includes one-tenth of the cultivated land of this region. The soil is a black, coarse sandy and gravelly loam 4 to 6 inches thick. The impervious subsoil is a very hard red clay in some places, and a mixture of yellow sand and clay in others. It contains a variety of pebbles, and in some places large quantities of black iron-rock, and is underlaid by sand. The chief crops of this region are corn, oats, and cotton. The soil is tilled with difficulty if too wet, is not troublesome when dry, and is generally easy when once well broken. It is early when well drained, and is best adapted to corn. About 45 per cent. of it is planted with cotton. The plant grows from 4 to 6 feet high, but is generally most productive at 4 feet. It inclines to run to weed in wet seasons and on low, wet lands; but early planting, early cultivation, and the application to the soil of well-rotted leaves and straw, with barn-yard manure, will restrain it and favor bolling. The seed-cotton product per acre of fresh land varies from 500 to 1,500 pounds, 1,545 to 1,665 pounds making a 475-pound bale of middling lint. After ten years' cultivation (unmaured) the product varies from 400 to 700 pounds, and 1,665 to 1,780 pounds then make a bale of lint inferior to that from fresh land. Three-tenths of such land originally cultivated lies "turned out", but if nearly level it produces very well when again cultivated. The troublesome weeds of this region are red-joint, careless, and pepper weed, crab-grass, etc.

The second quality of soil is that of the dark uplands or second bottoms, comparatively level. About 45 per cent. of it is planted with cotton, and its yields equal those of first soil described.

The third quality is the *light sandy soil* of Pearl and Strong-river bottoms, 30 per cent. of which is planted with cotton; its yields are 80 per cent. of those of the chief soil. The details of these second and third qualities are in all respects but slightly different from those of the first quality. Slopes wash and gully readily, and, unless very carefully prevented, those which have not a clay subsoil are seriously damaged. The valleys are injured to the extent of from 5 to 20 per cent. by the washings. Efforts have been made to check the damage by circling and hillside ditching, and with success when made in time.

Cotton is hauled by ox-wagons to Beauregard, Hazlehurst, Jackson, and Brandon at 75 cents per hundred pounds.

RANKIN.

(See "Central prairie region".)

SMITH.

Population: 8,084.—White, 6,452; colored, 1,632.

Area: 600 square miles.—Long-leaf pine hills, 325 square miles; central prairie, 275 square miles; wooded.

Tilled lands: 32,155 acres.—Area planted in cotton, 10,543 acres; in corn, 14,614 acres; in oats, 5,009 acres; in wheat, 78 acres.

Cotton production: 3,721 bales; average cotton product per acre, 0.35 bale, 498 pounds seed-cotton, or 166 pounds cotton lint.

Smith county is nearly evenly divided between two surface features by a line traversing the county centrally in a northwestern and southeastern direction. South of this line we find hilly or undulating, sometimes almost level, sandy upland, covered by heavy forests of long-leaf pine, with occasional ridges, where a more generous and retentive soil bears the short-leaf pine, mingled with oaks. The region is thinly settled, the narrow bottoms being alone under cultivation.

In the northern part of the county the surface features resemble those of Scott in the alternation of ridges timbered with oaks, or oaks and short-leaf or long-leaf pine, with tracts having more or less of the "hog-wallow", and in the valleys and bottoms the black-prairie character. The latter feature is less prominent than in Scott county, the bodies of the prairie being smaller and less frequent in the uplands at least, while in the bottoms, especially in the eastern part of the county, the heavy black prairie and "hog-wallow" soils predominate, not only within the region of occurrence in the uplands, but for a considerable distance below the line above mentioned. These profusely rich bottoms, now subject to overflow, have hardly been touched by cultivation as yet, for the reason, it is stated, that cotton rusts or blights when grown on them. In any case, however, they would produce abundance of corn and other crops adapted to such soils. (For analysis and discussion of the latter, see regional description, p. 63.) Among the oak ridges and prairie bottoms skirting the creeks tributary to the heads of Leaf river and West Tallahala many extensive and attractive sites for settlements lie untouched.

The tilled lands of Smith county amount to only 8.4 per cent. of its area, the cotton acreage per square mile being 12.6, about half as much as is given to corn. The average cotton product per acre, however, is 0.34 of a bale, being equal to that of Lowndes in consequence of the predominant cultivation of creek bottoms and prairie spots.

The communication of Smith county is chiefly with stations on the Vicksburg and Meridian railroad; in its southern part with the Mobile and Ohio railroad, in Clarke county.

ABSTRACT FROM THE REPORT OF A. S. BAUGH, POLKVILLE.

About one-eighth of the county area is black sandy hummock, two-eighths swamp, and five-eighths hill or upland. The natural growth consists of black-jack and other oaks and pine on the uplands, and poplar, gum, hickory, cypress, beech, sycamore, and walnut on the bottoms. The soils vary greatly in depth, the best class being underlaid by red clay subsoils, loose and porous for 8 to 12 inches, then very hard and firm for 6 to 10 feet, and underlaid in turn by red sand 20 to 30 feet thick. The inferior soils have a yellowish white sand subsoil. Tillage is generally easy; the clayey land is sticky when too wet, and when too dry is cloddy unless well broken in early spring. The chief crops of the county are corn, cotton, oats, rice, potatoes, sugar, and sorghum-cane, and all do well. From one-fourth to one-third of the cultivated lands are planted in cotton. The plant attains a height of 4 to 8 feet, but is most productive at 5 feet. It inclines to run to weed in wet weather, but is remedied by topping early in August. The seed-cotton product per acre of fresh land is 700 pounds; 1,425 pounds make a 475-pound bale of strict middling lint. After six years' cultivation (unmanured) the product is 500 pounds of seed-cotton, when 1,425 pounds make a bale of lint rating one grade lower. Hog-weed, butter-weed, crab-grass, and cocklebur are most troublesome.

One-fifth or more of the land originally cultivated now lies "turned out". When again cultivated, it produces 12 to 25 per cent. less than fresh land. Slopes are seriously damaged by washings and gullying, and when the *débris* is carried upon the valleys it damages them to the extent of one-tenth their value. Horizontalizing and hillside ditching are practiced, and successfully check the damage.

Cotton is shipped to New Orleans in November at \$3 50 per bale.

JASPER.

(See "Central prairie region".)

NEWTON.

(See "Short-leaf pine and oak uplands region".)

LAUDERDALE.

Population: 21,501.—White, 9,960; colored, 11,541.

Area: 680 square miles.—Short-leaf pine and oak uplands, 105 square miles; long-leaf pine hills, 575 square miles; all woodland.

Tilled lands: 70,249 acres.—Area planted in cotton, 32,372 acres; in corn, 23,345 acres; in oats, 5,967 acres; in wheat, 5 acres.

Cotton production: 9,350 bales; average cotton product per acre, 0.29 bale, 414 pounds seed-cotton, or 138 pounds cotton lint.

Lauderdale county is drained mainly by small creeks forming the heads of the Chickasawhay river, of which Okatibee, in the western part, is the largest. In the eastern a few streams flow toward the Tombigbee. The surface is mostly hilly, and, except in the northwestern part, the long-leaf pine is altogether the predominant tree, mingled more or less, however, with oaks, and interspersed with ridges of oak and short-leaf pine, which in the northwestern portion predominate and constitute a region of good upland farms having a moderately light-brown loam subsoil, such as in the south Atlantic states would be considered very desirable, and is well adapted to improvement. The country rock (sandstone) comes near the surface in some of the ridges, which are strewn with blocks and fragments of the same, rendering tillage somewhat troublesome. In the southern part of the county the valleys form the body of the cultivated lands and yield well, the ridge soils being more sandy and less durable than in the northern part.

Settlement and good cultivation have been greatly stimulated in Lauderdale county by the facilities of communication and transportation afforded by the two railroads, the Vicksburg and Meridian (continued eastward in the Alabama and Great Northern) and the Mobile and Ohio railroad, which intersect at Meridian, and have made that town an important railroad and manufacturing center, with a rapidly increasing population. The southeastern part of the county, on the heads of the Buckatunna, is the most thinly settled, and appears to be the least fertile. The Lauderdale springs, in the northeastern part, have long been a popular place of resort; the water is a chalybeate sulphur, and is highly esteemed for its curative effects.

The lands under tillage constitute 16.2 per cent. of the total area, of which somewhat less than half is given to cotton, while the acreage given to corn is but a little over one-third of that devoted to cotton, doubtless in consequence of the ready communication with the markets. The cotton acreage per square mile is 46.5, and the average product per acre is 0.29 per bale, the same as Clarke and a little less than Kemper county (0.30).

The cotton produced is mostly sold at Meridian, and thence shipped to Mobile.

ABSTRACT OF REPORT OF J. J. SHANNON, MERIDIAN.

The uplands of the county are rolling and sometimes level. They vary greatly in quality, and are best near small branches or in valleys between hills.

The lowlands comprise the first bottoms of Sowashee creek and Chickasawhay river and of small branches leading into the former, in which there is a low alluvial soil.

The uplands are generally regarded as the best and most certain for cotton cultivation. It is difficult to get a good "stand" in the bottoms, and in wet summer seasons the stalks go to weed too much and the bolls rot. The uplands comprise from 70 to 80 per cent. of the county area, and prevail throughout eastern Mississippi. They have a timber growth of post and red oaks, pine, hickory, gum, dogwood, and chestnut, though the first five predominate. The soil varies from a fine sandy to a clayey loam, has gray, brown, and blackish colors, and is 5 to 12 inches thick. The subsoil is various, mostly a hard, orange-red clay, which is considered the best; and in some places it is whitish and sandy. In places it contains various kinds of gravel, underlaid by clay marl at 3 to 5 feet. The chief crops of this

region are cotton, corn, oats, sweet and Irish potatoes, sorghum, and sugar-cane. The soil is early, naturally and generally well-drained, easily tilled, except when too wet, and apparently is equally well adapted to cotton, oats, sweet potatoes, and sorghum. From 50 to 60 per cent. of its cultivated area is planted with cotton. The plant grows from 2½ to 5 feet high, but is most productive at 4 feet, and inclines to run to weed during excessively rainy weather, for which there is no remedy. The seed-cotton product per acre of fresh land varies from 500 to 1,000 pounds; 1,485 pounds make a 475-pound bale of lint, as good as any in market if well handled. Five years' cultivation (unmanured) reduces the yield one-fifth, or much more if the soil washes or gullies in the meantime. Cotton is rarely the first crop raised on new land. After the first year there is very little observed difference between fresh and old land in respect to the ratio of seed to lint and quality of the staple. From 15 to 20 per cent. of this land lies "turned out", and if the soil is not washed away it produces well when again cultivated. Crab-grass is the greatest enemy to cotton, but sometimes cocklebur and morning-glory are troublesome. The lands wash and gully readily on slopes, doing sometimes serious damage, though not generally to the lowlands. Hillside ditching is practiced with success.

One-fourth of the cotton crop is raised on *creek bottoms*. These have a natural growth of gum, oak, beech, pine, hickory, ash, and poplar. The soil is a black and blackish clay loam, more or less sandy, and 7 to 15 inches thick; the subsoil is heavier, often whitish clay, sometimes like that of the hill land. It is a hard-pan, generally impervious, contains flinty, angular, and sometimes rounded white gravel, in some places none, and is underlaid by clay marl at 3 to 5 feet. Tillage is generally easy, except in wet seasons, and the soil is later than upland unless well drained. It is apparently best adapted to corn and sugar-cane. In dry seasons it produces very good cotton, but it is planted mostly with corn. The most productive height of the cotton-plant is about 5 feet; it inclines to run to weed in rainy seasons, for which there is no remedy.

The seed-cotton product per acre of fresh land varies from 800 to 1,000 pounds. More is needed to make a bale of lint than on the uplands, and the staple is of average quality. The yield is but little less after ten years' cultivation; 1,485 pounds then make a 475-pound bale of lint equal to that of fresh land. Scarcely any of such land lies "turned out", and it produces as well as ever when again cultivated. The troublesome weeds of this region are crab-grass, cocklebur, and morning-glory.

Farmers sell their cotton in Meridian as soon as it is baled.

CLARKE.

(See "Central prairie region".)

WAYNE.

(See "Central prairie region".)

COVINGTON.

Population: 5,993.—White, 3,991; colored, 2,002.

Area: 580 square miles.—All long-leaf pine hills.

Tilled lands: 30,390 acres.—Area planted in cotton, 6,968 acres; in corn, 10,682 acres; in oats, 3,553 acres.

Cotton production: 2,071 bales; average cotton product per acre, 0.30 bale, 429 pounds seed-cotton, or 143 pounds cotton lint.

The surface of Covington is rolling, occasionally hilly, traversed in a northwestern and southeastern direction by the Okahay, Okatoma, and Bouie, with numerous tributary creeks, while Leaf river passes through the northeast corner, and Holliday's creek, tributary to the Pearl river, heads in the southwestern corner. In the larger part of the county the long-leaf pine, with its sandy and comparatively inferior soils, prevails; but there are numerous ridges timbered exclusively or on their flanks with oaks and short-leaf pine, possessing a good, brown-loam soil, and usually falling off into valleys, with gentler slopes and wider bottoms than is the case with the long-leaf pine ridges. This is more especially true of the eastern part of the county, on the waters of Bouie and White Sand creeks. On the latter, partly in Covington and partly in Lawrence county, there is a tract of oak uplands with a deep red-loam subsoil where the pine is scarcely seen. (See analysis, p. 59.) On the whole, however, the bottoms are chiefly cultivated, the dwellings being located on the adjacent hills. The bottom soils are almost all light and easily cultivated, but the frequency with which bog ore occurs in their subsoil shows the need of drainage. Some of these bottoms are very productive.

There is a great deal of excellent pine timber in Covington, but its remoteness from market and transportation routes has caused lumbering to be neglected. The streams have running water throughout the season, but, on account of the slow drainage from the sandy uplands, are not well adapted to logging.

The tilled lands of Covington constitute 8.4 per cent. of the total area, being slightly less than that of Smith and Simpson counties. Somewhat less than one-fourth of these lands is devoted to cotton and about three-eighths to corn, the average cotton product per acre being 0.30 bale, the same as in Kemper and Jasper counties.

The communication of Covington is chiefly westward to the New Orleans and Chicago railroad (Brookhaven and Hazlehurst); in time of high water in Pearl river, to stations on the Mobile and Ohio railroad.

ABSTRACT OF THE REPORT OF C. WELCH, STATION CREEK.

The uplands are level and rolling; the lowlands consist of second bottoms of creeks; the first bottoms are not cultivated. The kinds of land are hummock and pine land in the southern and "hollow" lands in the northern half of the county.

The *sandy pine lands* include most of the cultivated soil, and extend 100 miles west, 50 east, 30 south, and 20 miles north, with a natural growth of pine (long- and short-leaf), red, white, and post oaks, hickory, gums, and dogwood. The soil is a coarse sandy loam, whitish-gray, brown, and blackish in color, and 3 to 4 inches deep. The subsoil is a yellowish sandy loam, contains white gravel, and is underlaid by sandy clay. The soil is early, warm, well-drained, always easily tilled, and is probably best adapted to corn and oats; but cotton occupies about one-third of its cultivated area. The other important crops are corn, oats, and sweet potatoes. The cotton-plant grows from 2½ to 4 feet high, but is most productive at about 3 feet. It inclines to run to weed in excessively wet weather and on some fresh lands, for which a dressing of lime might be beneficial.

The seed-cotton product per acre of fresh land is from 500 to 600 pounds, and 1,545 pounds make a 475-pound bale of low middling lint. After five years' cultivation (unmanured) the product is from 400 to 500 pounds, and a little more is needed for a bale and the staple is perceptibly inferior. From one-half to three-fourths of such originally cultivated land lies "turned out", and it is said to produce about half the original yields when again cultivated. The hog-weed, red careless-weed, and butter-weed are troublesome on some varieties of soil, but crab-grass is the most so. The slopes wash readily, doing some damage, but the valleys are not injured very greatly. Horizontalizing and hillside ditching retards, but does not entirely prevent, the damage.

The "hollows" or small valleys include about one-fourth of the cultivated soil of the northern half of the county. Their natural growth is oak of several species, some pine, hickory, poplar, and sweet gum. The soil is a fine sandy loam of gray, brown, and black colors, 3 to 10 inches deep; the subsoil is a dense red or yellowish-red clay loam, contains "black gravel" in some places, and is underlaid by sand and some gravel. The soil is easily tilled, except where too wet; is early and best adapted to corn, cotton, and oats, and about 35 per cent. of its cultivated area is planted with cotton. The usual and most productive height of the plant is from 3 to 4 feet.

The seed-cotton product per acre of fresh land is about 800 pounds; 1,485 pounds make a 475-pound bale of lint. After five years' cultivation the product is from 600 to 700 pounds, but the staple is said to be shorter than that from fresh land. About one-half such originally cultivated land lies "turned out"; when again cultivated, it produces about half its original yields. Crab-grass and cocklebur are the most troublesome weeds.

The cotton crop suffers from cool rains and chilly, dry north winds in spring and heavy rains and protracted moist weather in summer; frequently also from severe drought in August and September, while cotton is maturing.

Cotton is hauled by wagon, in December and January, to railroad stations, at \$2 to \$2 50 per bale.

JONES.

Population: 3,828.—White, 3,469; colored, 359.

Area: 700 square miles.—All long-leaf pine hills.

Tilled lands: 12,822 acres.—Area planted in cotton, 2,794 acres; in corn, 5,664 acres; in oats, 3,481 acres.

Cotton production: 624 bales; average cotton product per acre, 0.22 bale, 315 pounds seed-cotton, or 105 pounds cotton lint.

The whole of Jones county is covered with long-leaf pine forest, and is traversed in its northern and southern directions by the Bogue Homo, Tallahala, Tallahomo, and Leaf rivers, with their tributaries. The northern part of the county is the more populous and productive, the bottoms of the larger streams preserving in a measure the fertility brought down from the prairie region, while in the southern portion these bottoms possess sandy and more or less acid and ill-drained soils, as is evidenced by their growth of gallberry, wax myrtle, and similar shrubs. The uplands are little cultivated, except where the sandy soil of the long-leaf pine is underlaid by the brown loam, of which the presence is ordinarily indicated by the prevalence of the short-leaf pine, mixed with oaks. It is on ridges of such character, commonly skirted by broader valleys or bottoms, that settlements are generally located. Lumbering and turpentine-making might, with better means of communication, occupy a considerable population, as they now do a portion of the inhabitants.

Not quite 3 per cent. of the area of Jones county is under tillage, and somewhat over one-fourth of this is in cotton, with an average yield of 0.22 of a bale per acre. The corn acreage is double that of cotton.

Communication is with stations on the Mobile and Ohio railroad in Wayne and Clarke counties, and thence with Mobile.

MARION.

Population: 6,901.—White, 4,451; colored, 2,450.

Area: 1,500 square miles.—All long-leaf pine hills.

Tilled lands: 18,080 acres.—Area planted in cotton, 4,717 acres; in corn, 9,087 acres; in oats, 1,348 acres.

Cotton production: 1,579 bales; average cotton product per acre, 0.33 bale, 471 pounds seed-cotton, or 157 pounds cotton lint.

Marion, the largest county in the state, is traversed by Pearl river in its western portion, and is drained by its tributaries and by the heads of Black and Red creeks on the east and by those of the Wolf and Habolo Chitto rivers on the south. It is throughout a region of long-leaf pine hills and plateaus with narrow sandy valleys and sandy soils, which, though mostly possessing a loam subsoil, renders them capable of improvement; are naturally of inferior productiveness and durability; and partly on this account and partly because of its remoteness from lines of communication Marion county is very thinly settled, the population being but 4.6 persons per square mile, second in this respect in the state, Perry being the most thinly settled. The chief settlements are in the belt of country adjoining Pearl river and on its smaller tributaries. Within the county the bottom proper, subject to the overflow of Pearl river, is rather narrow, save in the extreme southern part, where it widens to as much as 2 miles, and is timbered with a very large growth of sweet gum, shellbark hickory, water, Spanish, chestnut, white, and black oaks, holly, ironwood, some mulberry, and magnolia. The soil is quite heavy, but is not as difficult to till as might be supposed. It is very productive, but crops are often belated by overflows. In this region the long-leaf pine descends into the river hummock. Farther north (as at Spring Cottage post-office) there intervenes between the pine uplands and the river a narrow belt of sandy land, timbered with tall, graceful willow oaks, with some Spanish, red, and black oaks, and hickory. The soil is very fertile, but does not last long. Similar belts and patches also occur higher up, but usually a hummock, varying from 1½ to 3 miles, with a light, whitish, often sandy and sometimes ill-drained soil, timbered generally with bottom pine, water, willow, Spanish and post oaks, and more or less sweet gum and hickory, according to the quality of the lands. Near the river bank the beech is sometimes abundant. The greater part of the hummock or flat is here usually on the east side of the river, and breaks off into its channel in very sandy bluff bank, underlaid by solid, green and blue clays. On the west bank of Pearl river, in the northwestern part of the county, the hills frequently approach close to the channel, forming high and precipitous bluffs, or, when receding, slopes timbered with oak or oak mixed with short-leaf pine, in striking contrast to the heavy long-leaf pine forest which crowns the summit, from which extensive and beautiful views of the Pearl river country can be obtained.

The lumber resources of Marion county are very great, and have hardly been developed to any notable extent. At some points turpentine-making is extensively carried on. The tilled lands of Marion are reported at 8.9 per cent. of the area, of which one-fourth is devoted to cotton, producing on an average 0.33, or one-third of a bale per acre. The cotton acreage per square mile is 2.9.

The communication of Marion county is mostly with stations on the New Orleans and Chicago railroad in Pike county, and to some extent, in times of high water, down Pearl river in flats or small steamers to Shieldsborough.

PERRY.

Population: 3,427.—White, 2,357; colored, 1,070.

Area: 1,000 square miles.—All long-leaf pine hills.

Tilled lands: 10,081 acres.—Area planted in cotton, 537 acres; in corn, 4,466 acres; in oats, 2,615 acres.

Cotton production: 146 balés; average cotton product per acre, 0.27 bale, 384 pounds seed-cotton, or 128 pounds cotton lint.

Perry county is, throughout a region of sandy, long-leaf pine uplands, traversed by numerous streams, mostly with narrow, sandy valleys. The northern portion is drained by Leaf river, which is here joined by its largest tributaries—the Okatoma, Tallahala, Boguehomo, Thompson's, and Gaines creeks, while Black creek, with its numerous branches, drains the southwestern portion. Perry is as a whole the most thinly inhabited county of the state, there being only 3.4 inhabitants per square mile, while the tilled lands amount to 1.6 per cent. of its area, being in this respect ahead of Greene, Hancock, Jackson, and Harrison counties.

The bottoms as well as the uplands of Perry are timbered with a heavy growth of long-leaf pine, proving that the soil, though sandy, is not devoid of productiveness even in the uplands. Some saw-logs are rafted down Leaf river, and turpentine orchards have from time to time been run on a large scale in this county; but its remoteness from lines of communication has prevented any extensive development of either industry.

GREENE.

Population: 3,194.—White, 2,382; colored, 812.

Area: 790 square miles.—All long-leaf pine hills.

Tilled lands: 5,997 acres.—Area planted in cotton, 35 acres; in corn, 3,563 acres; in oats, 891 acres.

Cotton production: 12 balés; average cotton product per acre, 0.29 bale, 414 pounds seed-cotton, or 138 pounds cotton lint.

Greene county is almost throughout a region of undulating and sometimes hilly, sandy uplands, covered with a heavy forest of long-leaf pine. It is very thinly settled, and only along the water-courses, of which the Chickasawhay and Leaf rivers, uniting on the southern line of the county to form the Pascagoula, are the chief. Rogers and Big creeks, the latter traversing the county almost centrally from north to south, are the chief tributaries.

The immediate valley of the Chickasawhay, from 1 to 3 miles in width, is formed chiefly by a high hummock or second bottom above overflow, the first bottom being usually quite narrow, but possessing rather heavy and fertile soils heavily timbered. Occasionally there are tracts of high bottom land of a sandy character, but very productive. The second bottom proper has mostly silty or sandy, whitish soils, ill-drained, as shown by the growth of gallberry appearing in all low spots, which, with the long-leaf pine, constitutes almost its exclusive growth in the middle and southern parts of the county. The same is true of the hummock of Leaf river within the county.

In the uplands east of the Chickasawhay, in the southern part of the county, the feature prevailing in the adjacent portion of Alabama, viz, a loam subsoil, bearing a growth chiefly of oaks and hickory, sparingly mingled with pine and with tulip tree and magnolia on the hillsides, is more or less prevalent, giving rise to some upland settlements.

The tilled lands of Greene county form but 1.2 per cent. of its area, and but 11 acres were reported as having been planted in cotton in 1879, producing 4 balés; 3,563 acres of corn were planted. The chief products of the county, however, are lumber and turpentine.

ABSTRACT OF THE REPORT OF J. H. M'OLEAN, ADAMSVILLE.

The lowlands consist of first and second bottoms of the Chickasawhay river. The country is moderately undulating, and has no very high hills nor impenetrable swamps. The soils are mostly sandy, are based on the *orange-sand formation*, and are naturally well drained.

Labor is engaged chiefly in producing turpentine and pine lumber. Cotton is raised only to a small extent, and is planted chiefly on the uplands. The lowlands are very liable to overflow, and are therefore rarely planted. The natural growth of the upland is chiefly long-leaf pine.

The soil is a coarse sandy loam of an orange-red color about an inch deep. The lighter subsoil consists mostly of sand to considerable depth. The soil is early, warm, easily tilled, and equally well adapted to corn, potatoes, winter oats, and sugar-cane, which, with rice on the lowlands, constitute the chief crops of the region.

A very small proportion of cotton is planted, which grows to a height of 3 feet and produces 800 pounds of seed-cotton per acre of fresh land, 1,425 pounds making a 475-pound bale of lint. After the first year (without manure) the yield increases and the staple improves. Three-fourths of such land, originally cultivated, now lies "turned out", and in four or five years it again produces very well. White clover is the most troublesome weed.

Slopes and valleys are damaged to a serious extent by the washing of the soil from the former down upon the latter, and where the lowland is covered by the washings it is entirely ruined. No efforts have been made to check the damage.

Cotton is shipped in December by rail to State Line station at \$2 25 per bale.

JACKSON.

Population: 7,607.—White, 5,122; colored, 2,485.

Area: 1,140 square miles.—Long-leaf pine hills, 550 square miles; pine flats, 590 square miles.

Tilled lands: 4,195 acres.—Area planted in cotton, none; in corn, 138 acres; in oats, 5 acres.

Jackson county forms the southeastern corner of the state and fronts on the Gulf of Mexico, and includes also a number of sandy islands, of which Horn island is the largest, and forms part of the outer reef of Mississippi sound. The northern part of the county is rolling pine uplands with a pale-tinted sandy soil, mostly of very inferior quality, especially where underlaid by impervious clay, which is frequently the case on the very summits of ridges and plateaus, where bogs covered with sour grasses and rushes appear. The ridges flatten out to the southward, and pass insensibly into a gently undulating or level country, sparsely timbered with stunted long-leaf pine and cypress, forming an open, park-like landscape. This "pine-meadow" country extends to within a few miles of the sea-shore, where it passes into the sand hummocks of the coast.

The soil of the pine-meadow country is scarcely fit for cultivation, and in its natural condition affords but scanty pasturage, the only use to which thus far it has been put. It is little else but a white sand or silt, which at the depth of from 2 to 3 feet is underlaid by impervious gray clay; hence it remains water-soaked until late in the season, the drainage progressing slowly toward the flat, shallow channels of the streams, which carry clear, coffee-colored water. The bottom lands of the larger streams, such as Black and Red creeks, are almost too sandy for cultivation, but they are sometimes bordered by ridge lands possessing a yellow sandy loam subsoil above the impervious clay, and are thus rendered cultivable. Such lands extend, for example, along the south fork of Bluff creek, and bear a fair though not heavy growth of long-leaf pine timber.

Few settlements exist in the country west of the Pascagoula river, save on the bluff immediately overlooking its valley, the inhabitants, however, cultivating the valley lands almost exclusively. These are quite productive (see analysis and discussion in the regional description, p. 63). The heavy, fertile bottom soil is, however, mostly liable to overflow, and hence the lighter soil of the second bottom, 2 or 3 feet above the first, is chiefly cultivated. No cotton, and but little corn, was grown in the county in 1879, and the tilled lands are reported as constituting but 0.6 per cent. of the total area.

The chief industries of the county are the raising of cattle and sheep on the natural pastures, charcoal-burning, and the cutting and sawing of lumber, with headquarters at Scranton (the county-seat) and east Pascagoula, whence shipments are made by rail or schooner to New Orleans and Mobile. The logs are floated down the Pascagoula and its tributaries from the pine lands of the interior.

The towns mentioned, as well as Ocean Springs and, more or less, the entire coast, are places of summer resort for Mobile and New Orleans. The sandy coast belt, elevated usually from 18 to 25 feet above the beach and timbered with live-oak and pitch pine, affords fine sites for residences, and sometimes, where shell-heaps exist or have existed, there is a light but very fertile soil for gardens and small fields (see in regional description "shell hummock soil", p. 67). The small streams emptying into the sound are usually bordered by small marshes. The coast is, however, exceedingly healthy.

HARRISON.

Population: 7,895.—White, 5,746; colored, 2,149.

Area: 1,000 square miles.—Long-leaf pine hills, 735 square miles; pine flats, 265 square miles.

Tilled lands: 2,649 acres.—Area planted in cotton, 26 acres; in corn, 1,064 acres; in oats, 142 acres.

Cotton production: 11 bales; average cotton product per acre, 0.42 bale, 600 pounds seed-cotton, or 200 pounds cotton lint.

Harrison, the middle one of the three counties bordering on the Gulf, is very similar to Jackson in its general features, the northern part, a rolling pine hills country, being drained chiefly by Red creek. It is very thinly settled, and is occupied chiefly by stock-raisers and lumbermen. The southern part, drained by Wolf river and the streams emptying into Biloxi bay, is largely of the pine-meadow character within from 7 to 12 miles of the coast, but lower ridges, possessing a moderately fertile yellow-loam subsoil, accompany most of the streams, and give rise to some cultivation inland. The upper portion of the streams mentioned lies within the sandy rolling pine country, the resort of the stock and lumbermen and charcoal-burners.

Mississippi City, on Pass Christian, and other points on the coast, through which passes the New Orleans and Mobile railroad, are well-known places of summer resort and points of shipment for lumber, charcoal, wool, stock, and turpentine. Handsborough is a manufacturing town.

Only 0.4 per cent. of the area of Harrison county is reported as being under tillage, the smallest proportion of any county in the state. Only 18 acres were planted in cotton in 1879, producing 9 bales (probably of sea-island cotton, 250 to 300 pounds to the bale), the soil cultivated being probably of the shell-hummock character. Low ridges, possessing a yellow-loam subsoil, approach the sea-shore at several points, as, *e. g.*, near Pass Christian, affording opportunity for cultivation.

HANCOCK.

Population: 6,460.—White, 4,643; colored, 1,817.

Area: 940 square miles.—Long-leaf pine hills, 610 square miles; pine flats, 330 square miles.

Tilled lands: 4,390 acres.—Area planted in corn, 41 acres; in oats, 29 acres.

The northern and greater part of Hancock county is a rolling, more rarely hilly, upland region, heavily timbered with long-leaf pine, and traversed by numerous streams with narrow sandy valleys. On the east this rolling country reaches the head of bay Saint Louis, while in the Pearl river country it terminates southward at the junction of the eastern and western prongs of the Habolo Chitto. In this region there is little cultivation away from Pearl river valley (the river bottom, however, lies almost wholly on the Louisiana side), and lumbering, tar- and charcoal-making, and stock-raising are the chief occupations of the inhabitants, settlements being very sparse. The soil

of the pine country is light and of little productiveness, but the yellow or reddish subsoil of light sandy loam renders it quite capable of improvement by fertilizers. Within a few miles east of Pearl river, especially near the smaller tributary creeks, there is a gently undulating country—a kind of high hummock or second bottom of Pearl river—where there is a large admixture of oaks among the pine, and the soil, though still very light, has a substantial subsoil, fairly productive, and settlements are more numerous.

South of the Habolo Chitto a level country extends to the coast. It corresponds in many respects to the pine-meadow country farther east, and open meadow lands, with stunted pine growth as well as boggy spots, occur to a greater or less extent throughout. The greater part of the area, however, is occupied by pine timber, though less heavily than on the rolling lands, and the trees are rather lank in growth. The entire region appears to be underlaid, usually at a depth of from 2 to 3 feet, but sometimes much nearer to and even at the surface, by the same heavy gray clay which forms the pine glades of Jackson county. This clay and the overlying whitish, putty-like subsoil is frequently brought up by the crawfish, which inhabit the lower lands in great numbers. But the soil is less sandy, more substantial, and better drained. Its best quality is found on the western heads of Mulatto bayou, being there occupied chiefly by a growth of post, Spanish, water, and live oaks. The subsoil, a pale yellow loam, is evidently well drained. The high hummock of Pearl river, northward from Pearlington to the Habolo Chitto, averages about half a mile in width, and is timbered with large bottom pine, sweet gum, and fine water, willow, and white oaks. It has a pale yellow loam subsoil (a good brick-clay), and is fairly productive.

Along the coast we find the bluff bank, on the whole, less elevated than in Jackson and Harrison counties—say from 10 to 15 feet—and not so much of the sand-hummock character, sometimes consisting of yellow loam or brick-clay. A great abundance of shell heaps has largely transformed the sterile sandy soil into "shell hummocks" (see regional description, p. 66), which occur scatteringly along the coast line, and along lower Mulatto bayou extend some distance inland, forming a body of several hundred acres between the marsh and the pine woods. Here before the war the sea-island or long-staple cotton was cultivated with considerable success; but this industry has not been resumed since, and no cotton is reported as having been grown in this county in 1879. The cultivated lands of Hancock amount to 0.75 per cent. of its area, of which 41 acres were in corn, producing 10 bushels per acre. Apart from the town of Shieldsborough, which is a favorite place of summer resort, the whole coast of Hancock county is largely occupied by residences and smaller places of resort, which are easily reached by rail or steamer from New Orleans. The marsh at the mouth of Pearl river lies chiefly on the Louisiana side, forming part of the great Pontchartrain marsh plain in the adjoining parishes of Saint Bernard and Saint Tammany; but it, as well as the smaller marshes bordering bay Saint Louis, does not appear to affect injuriously the health of the region.

Communication with the interior is greatly facilitated throughout the level region by the deep canal-like channels of the tide-water bayous, some of which are navigable for sloops and schooners nearly to their heads, greatly to the surprise of the cross-country traveler, who finds no bridges and cannot ford the streams.

ABSTRACT OF THE REPORT OF BEN. LANE POSEY, BAY SAINT LOUIS.

The uplands consist of gently undulating table-lands (the hills are few and small), occupying the northern half of the county and extending to within 20 miles of the coast. The lowlands consist of bottoms and hummocks of Pearl and Jourdan rivers and of tide-water marshes along the coast and streams. The mild sea-coast climate is favorable to the production of the sea-island or long-staple cotton. In 1860, 80 bales of it were produced in this county, but since the war no cotton of any kind has been raised. Sea-island cotton might be raised with profit; so might rice and sugar, the production of which is small, but annually increasing. The soil is poor, but the elements of fertility are abundant, and it costs only care and labor to utilize them.

The industry and small capital are devoted to the preferred pursuits of rearing cattle and sheep and in producing lumber, wood, charcoal, and turpentine, and some are engaged in the coast fisheries and small coastwise commerce.

The lowland and richest soil of this region is a *fine black alluvial mud or muck* of the tide-water marshes, frequently overflowed, and well adapted to rice culture. Its natural growth is live and water oaks, cypress, hickory, cedar, magnolia, and bay; a few small prairies occur on it.

The *second quality of soil* occurs on the low flat lands in the southern half of the county, and occupies one-third its area. It is a whitish-gray, fine sandy soil, 2½ feet thick, and rests on pipe-clay which makes good brick. Its tillage is always easy. The natural growth is pine, cedar, oaks, hickory, cypress, magnolia, and bay. The remaining kind of soil covers the uplands of the north half of the county, and extends 50 miles north, 100 east, and 30 west. Its growth is pine exclusively. The soil is light, varies from fine to coarse sandy, is gray, and 3 feet thick; the subsoil is a leachy red clay. The soil is early, warm, well drained, and easily tilled. One-tenth of such originally cultivated soil lies "turned out"; it produces but poorly until fertilized.

The soil on cultivated or "turned out" slopes washes and gullies readily, but the damage to slopes or adjoining lower lands is not serious, and no efforts have been made to check it. This soil is well adapted to sea-island cotton, sugar-cane, sweet potatoes, small fruits, and vegetables generally. Some cotton is raised for domestic use, but not a bale in the county is raised for export. The soil is poor, and especially deficient in lime, but sea-shells and other natural fertilizers in abundance are near at hand.

PART III.

CULTURAL AND ECONOMIC DETAILS
OF
COTTON PRODUCTION.

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REFERENCE LIST
OF
NAMES AND ADDRESSES OF CORRESPONDENTS.

NORTHEASTERN PRAIRIE REGION.

- Alcorn*.—W. L. WILLIAMS, Rienzi, December 19, 1879; J. M. TAYLOR, M. D., Corinth, October 27, 1880.
Prentiss.—B. B. BOONE, Booneville, January 25, 1880.
Tippah.—J. A. KIMBROUGH, Ripley, January 8, 1880.
Lee.—H. L. HOLLAND, Guntown, March 16, 1880.
Pontotoc.—R. C. CALLAWAY, Algoma, March 1880.
Lowndes.—JAMES O. BANKS, Columbus, March 18, 1880; R. W. BANKS, Cobb's Switch, March 16, 1880.
Noxubee.—F. R. W. BOCK, Macon, January 25, 1880.

SHORT-LEAF PINE AND OAK UPLANDS REGION.

- Tishomingo*.—J. M. D. MILLER, Iuka, December 22, 1879.
Choctaw.—R. H. BIGGES, Chester, February 23, 1880.
Winston.—W. T. LEWIS, Louisville.
Attala.—A. TUR, French Camp, January 24, 1880.
Leake.—J. D. EADS, Carthage, March 26, 1880; T. C. SPENCER, Laurel Hill.
Kemper.—J. A. MINNIECE, Seoba, February 3, 1880.

BROWN-LOAM TABLE-LANDS.

- Benton*.—H. T. LIFFORD, Ashland, February 27, 1880.
Marshall.—F. B. SHUFORD, Holly Springs, February 24, 1880; A. J. WITHERS, Holly Springs, January 4, 1880.
De Soto.—T. C. DOCKERY, Love Station, March 24, 1880.
Panola.—D. B. STEWART, Courtland, April 28, 1880.
La Fayette.—S. W. E. PEGUES, Oxford, March 10, 1880; IRA B. ORR, Water Valley, April 1, 1880; S. E. RAGLAND, De Lay, May 1, 1880;
P. H. SKIPWITH, Oxford, March 6, 1880; P. FERNANDEZ, Oxford, March 8, 1880.
Grenada.—M. K. MISTER, Grenada, February 5, 1880; J. D. LE FLORE, Grenada, April 1, 1880.
Holmes.—CHARLES C. THORNTON, M. D., Chew's Landing, February 1, 1880; J. W. C. SMITH, Benton.

CANE-HILLS REGION.

- Warren*.—L. WAILES, Vicksburg, March 10, 1880.
Claiborne.—G. P. MCLEAN, Rocky Springs, March 10, 1880.
Jefferson.—J. W. BURCH, Fayette, January 12, 1880.
Wilkinson.—D. L. PHARES, M. D., Woodville.

MISSISSIPPI ALLUVIAL REGION.

- Le Flore*.—JOHN A. AVENT, Greenwood, March 1, 1880.
Bolivar.—G. W. WISE, Concordia, March 8, 1880.
Yazoo.—J. W. C. SMITH, Benton, January 2, 1880.
Sharkey.—T. F. SCOTT, Rolling Fork, December 30, 1879.
Issaquena.—W. E. COLLINS, Mayersville, July 3, 1880.

CENTRAL PRAIRIE REGION.

- Hinds*.—H. O. DIXON, Jackson, March 31, 1880.
Rankin.—E. JACK, Brandon, March, 1880.
Scott.—W. T. ROBERTSON, Forest, January 10, 1880.
Jaeger.—S. G. LOUGHRIDGE, M. D., Garlandsville.
Clarke.—JOHN A. BASS, C. W. MOODY, J. E. WELBORN, Shubuta, April 20, 1880; W. SPILLMAN, M. D., Enterprise, February 4, 1880.

LONG-LEAF PINE REGION.

- Lauderdale*.—J. J. SHANNON, Meridian, February 21, 1880.
Greene.—J. H. MCCLEAN, Adamsville, January 27, 1880.
Hancock.—BEN. LANE POSEY, Bay Saint Louis, June 16, 1880.
Covington.—C. WELCH, Station Creek, March 11, 1880.
Simpson.—J. C. MCLAURIN, Mount Zion, March 5, 1880.
Smith.—A. S. BAUGH, Polkville, January 1, 1880.
Pike.—W. W. VAUGHT, Magnolia, March 15, 1880.
Amite.—J. R. GALTNEY, Liberty, April 8, 1880; GEORGE F. WEBB, Liberty, January 2, 1880.

SUMMARY OF ANSWERS TO SCHEDULE QUESTIONS.

[Special answers, when given, are either preceded by the name of the county (from which it is taken) in italics alone, or followed by that name in italics and parentheses.]

TILLAGE, IMPROVEMENT, ETC.

1. Usual depth of tillage (measured on land-side of furrow). What draft employed in breaking up?

- NORTHEASTERN PRAIRIE REGION:** From 3 to 6 inches, and with two mules in all of the counties except Tippah and Pontotoc, in which from 1 to 3 inches, with one mule only, is reported.
- YELLOW-LOAM REGION:** Usually 2 to 4 inches; sometimes 5, or even 8 and 9, in all of the counties. The draft employed is one mule, though sometimes two.
- MISSISSIPPI BOTTOM REGION:** In three counties, 2 to 3 inches; in the rest, 4 and 5 inches. The draft is one mule or horse in three counties and two mules in two counties.
- CANE-HILLS REGION:** Depth, 2 to 3 inches; draft, one mule or horse in Wilkinson; two mules usually in the other counties.
- CENTRAL PRAIRIE REGION:** From 3 to 5 inches, with one or two mules or horses.
- LONG-LEAF PINE REGION:** From 2 to 4 inches in five counties; 4 to 6 in Pike and Amite, and 8 in Hancock. Draft, usually one horse or mule.

2. Is subsoiling practiced? If so, with what implements, and with what results?

- NORTHEASTERN PRAIRIE REGION:** Very rarely. The bull-tongue follows the turn-plow. Results are good where the subsoil is a red clay (*Alcorn*). Subsoiling would be decidedly beneficial if done in the fall, when the ground is dry, but not so if done when the ground is wet (*Prentiss*).
- YELLOW-LOAM REGION:** But little in any of the counties, except Benton, where with subsoil plows "it is beneficial to clay lands, and but little to the sandy". The subsoil plow is used in five counties, while in others one plow is usually made to follow another in the same row. Results always good, except in La Fayette, where "it is a disadvantage, unless the soil be heavily manured".
- MISSISSIPPI BOTTOM REGION:** Only in Holmes county, one plow following another in the same row. In Sharkey "it is unnecessary, the soil being sandy".
- CANE-HILLS REGION:** Only a little in Wilkinson, with Brinley's or Murfee's subsoil plow. The result is excellent if the subsoil is dry; otherwise, damaging.
- CENTRAL PRAIRIE REGION:** To some extent only in Rankin, with Murfee's subsoiler, with satisfactory results. In Hinds "it has been found to be useless, and sometimes injurious".
- LONG-LEAF PINE REGION:** A little in Clarke, Pike, Lauderdale, Simpson, Amite, and Covington, subsoil plows and scooters being used, and usually with good results. In Pike county "the subsoil packs again, so that the process should be repeated".

3. Is fall plowing practiced, and with what results?

- NORTHEASTERN PRAIRIE REGION:** To some extent in all the counties except Tippah and Noxubee, and with beneficial results. *Prentiss:* By turning under stubble, and if done while vegetation is green, it is decidedly beneficial; but if after frost, it is damaging.
- YELLOW-LOAM REGION:** Yes; in Panola and Choctaw; very little in six counties, and not at all in four. *Marshall:* When stubble and green vegetation are turned under in such manner and at such time that they will rot rather than dry. *Benton:* The practice would result well if it did not facilitate washing and gullyng, to which the sandy soil here is much inclined.
- Winston and Leake:* The soil is again packed by the heavy winter rains.
- MISSISSIPPI BOTTOM AND CANE-HILLS REGION:** Very little in Holmes; a much better and more easily cultivable condition of the soil is the result.
- CENTRAL PRAIRIE REGION:** A very little, only in Hinds and Rankin. "It benefits soil not cultivated during the summer, but it is injurious to those cultivated" (*Hinds*).
- LONG-LEAF PINE REGION:** A little only in five counties; opinions as to results differ. "If vegetation be well turned under the results are very good" (*Amite*).

4. Is fallowing practiced? Is the land tilled while lying fallow, or only "turned out"? With what results in either case?

- NORTHEASTERN PRAIRIE REGION:** Fallowing is not practiced. The land is only "turned out" when rest is necessary. *Lee:* It grows up in briars and sedge-grass, and the slopes wash and gully. *Noxubee:* When pastured it slowly improves.
- YELLOW-LOAM REGION:** Fallowing is generally practiced in Attala; but little in two other counties, and not in the rest. *Winston, Attala, and Panola:* Land is generally tilled while lying fallow, and is much improved if green vegetation be turned under, without which tillage is of no benefit. *Leake and Benton:* It is rarely tilled while lying fallow, but improves in a short time if allowed to grow up in briars. *De Soto:* The land is damaged by treading of stock; it also washes and gullies much worse without than with tillage while fallow. *Marshall:* Some improve the fallow soil by green manuring in the meantime with cow-pease and weeds.
- MISSISSIPPI BOTTOM AND CANE-HILLS REGION:** Lands are only turned out in these counties. *Holmes:* It is sometimes turned out just for one year, because the grass has formed a sod which cannot easily be plowed or hoed; a grass pasture results, but the grass is usually burned off preparatory to plowing, so that no benefit results from the vegetation. *Wilkinson:* The soil becomes mellow, easier to cultivate, and richer in vegetable matter. *Warren:* It is only "turned out" for want of labor to cultivate it; the result is washing and gullyng.
- CENTRAL PRAIRIE REGION:** Land is only turned out for rest. In Hinds a great quantity has thus grown up in sedge, briars, and weeds, which, when turned under and left undisturbed a year, much improves the land.
- LONG-LEAF PINE REGION:** Lands are usually only "turned out", and are much improved by rest. In Covington some is tilled while lying fallow, increasing the yields for a year or two.

5. Is rotation of crops practiced? If so, of how many years' course, in what order of crops, and with what results?

NORTHEASTERN PRAIRIE REGION: To a limited extent only in the counties, and usually of three years' course with cotton, corn, and oats or pease. *Alcorn:* Rotation is indispensable with either corn or cotton to insure good crops.

YELLOW-LOAM REGION: It is practiced in seven counties, and very little or not at all in the rest. No regular order is observed, except that cotton never follows immediately after corn; the course is usually three or four years with cotton, corn, and small grain. *Yazoo:* Each change results well; pease especially leave the soil much better. *Leake:* Cotton is often planted for five consecutive years on the same land; so is corn on the bottoms and reed-brakes. Results of rotation are good. *Benton:* Yields invariably decline without manuring.

MISSISSIPPI BOTTOM AND CANE-HILLS REGIONS: In Bolivar cotton only has been planted for the last forty years. In other

counties rotation is practiced to some extent with cotton and corn, and sometimes sweet potatoes and oats, and with good results; and in Issaquena, material improvement both to soil and crop. Fresh land will produce fine crops of cotton for several years without change.

CENTRAL PRAIRIE REGION: To some extent in this region corn and small grain or sweet potatoes usually following cotton. *Hinds:* Result is an exhaustion of the vegetable matter and consequent washing and gullyng of the soil. *Scott:* Without rotation the soil would soon fail to produce any other crop.

LONG-LEAF PINE REGION: Yes, in Covington, Pike, and Amite, and to some extent in other counties. In Pike and Amite the order is cotton, corn, oats, etc. In some counties cotton and corn alternate, while in others sweet potatoes are also brought in. Results are said to be good.

6. What fertilizers or other direct means of improving the soil are used in your region? Is green manuring practiced? With what results in either case?

NORTHEASTERN PRAIRIE REGION: No commercial fertilizers are used in the region. Composts of stable manure and cotton-seed are often applied to lands with good results, increasing the yields one-fourth. Green manuring is practiced by but very few farmers; cow-pease, weeds, and stubble turned under produce good results. In Alcorn, pease are generally planted with corn at second plowing for pasturage when the crop is gathered.

YELLOW-LOAM REGION: Commercial fertilizers are scarcely used in the region; composts of stable manure, cotton-seed, etc., used only by small planters in some of the counties. *Winston:* Cotton-seed renders the least and bone-dust the most permanent improvement to the soil. *De Soto:* Cotton-seed almost doubles the grain crops. *La Fayette:* With barnyard manure and cotton-seed crops may be doubled, except in very dry seasons. *Yazoo:* Barnyard manure increases the yields one-fourth. Green manuring is practiced in some of the counties with good results and improvement of the soil. *Marshall:* It is regarded as the best and cheapest means of restoring fertility to the soil on the large scale. *Yazoo:* Cow-pease are best, as they grow luxuriantly on the poorest soil and increase crops from 3 to 6 per cent. The large planters only turn under dry weeds, grass, etc.

MISSISSIPPI BOTTOM: Neither fertilizing or green manuring are generally practiced in the region. *Sharkey:* Some apply cotton-seed to corn land, and thus increase the yields 30 to 50 per cent. *Grenada:* Cotton-seed is put into the center furrow if

sound, or spread broadcast if rotted; its good results may be observed for several years. In Holmes county green manuring has been tried on very stiff lands and found to be satisfactory.

CANE-HILLS REGION: Both fertilizing and green manuring are practiced to some extent; cotton-seed and stable manure are used either alone or with leaves, straw, etc., in compost, and in Jefferson county double the crop. In Wilkinson the corn crop is sometimes increased 50 per cent. by green manuring.

CENTRAL PRAIRIE REGION: Some commercial fertilizers are used in some of the counties, but composts of cotton-seed, barnyard manure, etc., are most common. *Scott:* Sandy soils cannot be made to produce without these. *Clarke:* They pay well on these lands. *Jasper:* They add 300 pounds of seed-cotton to the yield per acre. *Rankin:* A crop of cow-pease will improve the soil, even if the pease are gathered and the vines eaten by stock.

LONG-LEAF PINE REGION: Very little commercial fertilizers is used in the region. Composts of cotton-seed, stable manure, with sometimes swamp muck, ashes, etc., are applied to lands with excellent results. Hancock and Simpson alone report the use of pine straw with manure and leaves. *Simpson:* The general practice is to keep the floors of stock-yards and stables covered with pine straw and remove it every two months; this makes a good fertilizer. Green manuring is but little practiced in any of the counties.

7. How is cotton-seed disposed of? If sold, on what terms or at what price?

NORTHEASTERN PRAIRIE REGION: It is largely fed to cows and sheep in most of the counties, and in all of the counties is used more or less as a fertilizer. Its price is usually from 8 to 10 cents per bushel; in Lowndes, Alcorn, and Prentiss some is sold to oil-mills at from 10 to 15 cents (or \$6 per ton), delivered at railroad stations, or exchanged at the rate of one ton of seed for 700 pounds of seed-cake meal.

YELLOW-LOAM REGION: It is fed to stock or used as manure in most of the counties. The usual price is from 8 to 10 cents, and in but few of the counties it is sold to oil-mills.

MISSISSIPPI BOTTOM: It is seldom returned to the soil, but mostly sold to oil-mills, delivered at the river landings at from \$4 50 to \$7 per ton. In Sharkey it is chiefly burned in plantation

furnaces. *Issaquena:* Before a combination was effected between oil-mill companies the price was \$15 per ton.

CANE-HILLS REGION: It is partly fed to cattle, partly returned to the soil in Jefferson and Wilkinson, partly wasted in Claiborne, or sold at the river stations or factory at from \$2 to \$5 per ton.

CENTRAL PRAIRIE REGION: It is used as feed for cattle and as manure in all of the region; where convenient for shipment in Hinds and Clarke, it is mostly sold to oil-mills at from 8 or 10 cents per bushel.

LONG-LEAF PINE REGION: It is fed to stock or used as manure in all of the region, but little going out of its county. Its price, when sold, is from 10 to 15 cents per bushel.

8. Is cotton-seed cake used for feed? Is it used for manure?

NORTHEASTERN PRAIRIE REGION: Very little is used in the region either for feed or manure; in the former case it is always mixed with other food, as cattle do not like it alone.

YELLOW-LOAM REGION: In seven counties it is not used at all for either food or manure. In other counties it is used to a slight extent for both purposes. *Grenada:* Some is used as stock feed, is valuable as such, and is much wanted; some is used

as manure, generally alone, and when properly applied is very effective.

MISSISSIPPI BOTTOM: But two counties in this region report its use either as food or as manure.

CANE-HILLS REGION: Not used in Warren and Claiborne. In Jefferson a little is fed to milch cows, and it is coming into use as a manure for cotton and corn. In Wilkinson a little is fed

to stock, and it is used rarely as manure alone or mixed with stable manure and phosphates for cotton and corn.

CENTRAL PRAIRIE REGION: Not at all in three counties, and but little in the others either as food or as manure.

LONG-LEAF PINE REGION: Not in Simpson, Covington, and Han-

cock; in the others both as manure and as food for stock to some extent. In Amite, when cheap or when damaged, it is used as food for cows and sheep, for which it is highly approved.

PLANTING AND CULTIVATION OF COTTON.

9. What preparation is usually given to cotton land before bedding up?

Throughout the state no other preparation is given to the land other than knocking down (sometimes burning) and plowing under the cotton stalks of the previous year, though this spring

plowing is not done in very many of the counties. Stubble land, when intended for planting, is usually plowed in the fall season.

10. Do you plant in ridges, and how far apart?

It is almost the universal practice throughout the state to plant in ridges. In the bottom lands of the Mississippi river the distance between rows is from 4 to 5 feet, though Issaquena and Sharkey report as much as 6 and 7 feet. In the upland

counties, Noxubee reports from 1½ to 2 feet, while in all the rest the distances are from 3 to 4 feet on the sandy lands and from 4 to 5 feet on the richer; in Wilkinson and Warren, from 5 to 7 feet on the rich and fresh lands.

11. What is the usual planting time?

The earliest date given is March 20, in Claiborne and Jefferson counties, of the cane-hills region (southwestern part of the state); March 25 in Warren and Lowndes, lying respectively in the western and eastern center of the state. In all other upland counties the earliest dates given are the 1st of April in the southern and middle counties, with Tippah and La

Fayette on the north, and from the 10th to the 15th of April in other of the northern counties. Planting time closes in the state about the middle of May. In the Mississippi bottom the time is from the 1st the 10th of April, the season closing as late as May 31 in Bolivar.

12. What variety of cotton is preferred?

Of the many short staple varieties named often two and more from a single county. The Dixon is more generally reported throughout the state, or from three counties in each region, except the yellow loam, in which it is mentioned once. The Peeler variety comes next from nine counties, the Petit Gulf from eight counties, the Herlong from five, Boyd's Prolific from four, Cheatham two, and the other varieties once or

twice each; these comprise the Baggary, Brock, Callahan, Edwards, Browns, Golden Prolific, Magnolia, Java, Chambers South American, Chaplin, etc. In Hancock county the sea-island or long-staple cotton is planted. *Grenada, La Fayette, Sharkey:* Dixon for quantity, and Peeler for fine staple. *Wilkinson:* Dixon prolific for poor soil, and Chambers South American for rich soils.

13. How much seed is used per acre?

Twenty-eight counties report from 1 to 3 bushels per acre, while in the rest from 1 to 5, 6, and 10 bushels are given. One bushel

is the minimum given in nearly all of the counties.

14. What implements are used in planting?

In all of the regions a narrow instrument or plow, either a drill or bull-tongue, is used to open the furrow. The seed is then

usually dropped by hand and covered with a harrow or by means of a block or board attached to a shovel-plow stock.

15. Are cotton-seed planters used? What opinion is held of their efficacy or conveniency?

NORTHEASTERN PRAIRIE REGION: They are used in the northern counties, and approved; in Noxubee and Kemper the old method of planting is preferred.

YELLOW-LOAM REGION: Not used in Tishomingo, but in other counties are considered efficient and satisfactory so far as tried; in La Fayette said to be "not worth their cost".

MISSISSIPPI BOTTOM: They are used to a greater or less extent in the region, but are considered unnecessary in Bolivar, and are not popular in Le Flore. In Issaquena "they are held in high esteem as a labor-saving implement, and one by which crops can be more cheaply and evenly tilled; but here our lands are tenanted by a class who adhere strictly to the old idea generated during slavery, and which will never be eradicated; hence cotton and corn planters are never used on our plantations".

CANE-HILLS REGION: Not in Warren and Claiborne, "because they require better preparation of the soil and more labor, for which there is no compensation; and the negroes will not use improvements." In other counties they are used, but not extensively. *Wilkinson:* "They do better work and save half the labor of the old way."

CENTRAL PRAIRIE REGION: They are not used in Clarke; in Jasper some are found to be advantageous; in Scott are the only means of planting regularly; in Hinds they are a convenience, though farmers sometimes fail to get a "stand" with them, while in Rankin most farmers reject them.

LONG-LEAF PINE REGION: They are used in Lauderdale and a little in Pike, where they do well on land freshly plowed and clear of rubbish. In other counties they are not much used or liked.

16. How long usually before the seed comes up?

The least time given is three days in the yellow-loam region, four in the Mississippi bottom, cane-hills, and long-leaf pine regions, and five in the central and northeastern prairies. In some of the counties ten days is given as the least time. Unfavorable circumstances, such as depth to which the seed has been planted, the temperature and moisture of the soil, etc., may lengthen the time to an unusual extreme, reported as ten days in the cane-hills, fifteen in the central and northeastern prairie regions, twenty days in the yellow-loam and

long-leaf pine regions, and twenty-eight in the Mississippi bottom. An average of all the reports in each region would give the probable usual time as seven days for the cane-hills region, eight days for the central and northeastern prairie regions, nine for the long-leaf pine, ten for the yellow-loam region, and eleven days for the Mississippi bottom. *Holmes:* If seed is planted by machine, and, therefore, at uniform depths, the "stand" is all up in from seven to ten days; otherwise, it takes from fourteen to twenty-eight days to get a "stand".

17. At what stage of growth do you thin out the stand, and how far apart?

Throughout the state the practice is general to thin out the plants when they are from 6 to 10 inches high, at which time they are two or more weeks old and have put out three or four leaves. They are then chopped out with a hoe, leaving one or two plants at distances of from 8 to 12 inches, except on

18. Is the cotton liable to suffer from "sore shin"?

Not at all in three counties; to a greater or less extent in the rest of the state, and mostly during cool, wet spring weather, or when bruised in hoeing. *Holmes*: It is caused by bruising the plant with the hoe, and by allowing it to stand too long

19. What after-cultivation do you give, and with what implements?

NORTHEASTERN PRAIRIE AND FLATWOODS REGION: *Tippah* and *Alcorn*: Usually two shallow plowings are given with broad shovel plows and rows kept clean with hoes. *Kemper*: Sweeps and hoes are used constantly until August 1; crab-grass is not troublesome later. *Prentiss*: After scraping and thinning to a stand, solid sweeps and cultivators are run through as often as once in fifteen days. *Lee*: Scrape or harrow, hoe and thin out, and run through with a 20-inch cultivator about every ten days till July 15 to 30. *Lowndes*: Deep plowing while the plants are small; after thinning out, the sweep is run 1 to 1½ inches deep; when there is rather much rain and crab-grass the turn plow is used.

YELLOW-LOAM REGION: *De Soto* and *Panola*: First use the turn plow or scraper, afterward the shovel plow or cultivator. *Tishomingo*: Bar off, throw dirt back to the row with the bull-tongue plow, and afterward use light sweeps. *Benton*: Bar off or scrape, then use an 8-inch, next a 12-inch, and finally a 16-inch shovel plow; some use large shovels or sweeps exclusively. *Marshall*: Usually scrape, sometimes bar off with turn plow or harrow with side harrows; after this the crop is plowed successively with larger shovels or sweeps, throwing the soil about the plants; the middles are sometimes turned out with the turn plow. *La Fayette*: Bar off or scrape, thin to a stand and hoe, throw dirt to the plants with a shovel plow, then use a larger shovel plow, and at the same time an 18-inch sweep for the middles; finally throw dirt to the row successively with 16- and 18- or 20-inch sweeps or cultivators, or in wet seasons with turn plows. Weeds are chopped out with hoes three times. *Winston*: Bar off, generally with the scraper, sometimes with turn plow; next thin to a stand, hill up with shovel or turn plow, then cultivate as corn; harrows and sweeps are used by some. *Yazoo*: Scrape, hoe to a stand, hill up, and plow the middles; if the soil was at first well broken, cultivation is shallow; otherwise, it is deep, and the turning plow is used for the purpose. *Leake*: After barring off, the crop is generally hoed, then, until late in summer; two or three hoeings and as many plowings are given with large sweeps.

MISSISSIPPI BOTTOM: 2. *Grenada*: Scrape out and then use shovel plows and sweeps. *Le Flore*: Generally bar off, run scrapers and 18- or 20-inch sweeps, respectively. *Sharkey*: The majority give shallow cultivation with sweeps; some plow deep,

20. What is the height usually attained by cotton before blooming?

NORTHEASTERN PRAIRIE REGION: 24 to 36 inches in *Alcorn*, *Tippah*, and *Kemper*; 12 to 18 inches in the other counties.

YELLOW-LOAM REGION: 24 to 30 inches in six counties; 12 to 20 inches in the others.

MISSISSIPPI BOTTOM: 12 in *Issaquena*, 15 to 20 in *Sharkey*, and 30 to 36 in other counties.

21. When do you usually see the first blooms?

May 20 in Pontotoc county; from the 1st to the 10th of June in the cane-hills region, and in *Holmes*, *Bolivar*, and *Issaquena* counties, and several counties of the long-leaf pine region.

22. When do the bolls first open?

From six to eight weeks after blooming. About the last of July in five counties of the yellow-loam region, and in *Noxubee* and *Jasper* counties. From the 1st to the middle of August in four counties of the northeastern prairie region, five of the

the very rich lands, where as much as 18 or 20 inches space is given. In *Issaquena* county the thinning is postponed till all danger of frost is past. *Leake*: Thinning should not be completed before May 15. *Benton*: In cold, backward seasons it is well to leave several plants in a hill for a while.

after scraping and hoeing before throwing the soil back to it, thus permitting the soil to dry and contract around the plant, so as to interfere with circulation of moisture and air.

and such are always in debt. *Issaquena*: Bar off, hoe to a stand, throw dirt to the row, then cultivate with plow, and sweep till the crop is laid by. *Holmes*: After scraping and hoeing the crop the soil should, if possible, be thrown back and well up around the plant the same day by a sweep, shovel, or turn plow, so as to lap in the drill from both sides. Correspondent always observes this, and his cotton never dies out, nor has the "sore-shin", except when the plants are barked or bruised by hoes, or suddenly bent at right angles against the baked crust of the bed.

CANE-HILLS REGION: *Jefferson*: The plow, harrow, and all sorts of cultivators are used. *Wilkinson*: The crop is sometimes harrowed; various hoeings and plowings are given and repeated, as required; cultivation must vary with soil and season. *Warren*: Two thorough plowings and hoeings; three are better for the crop. *Claiborne*: After thinning out, the soil is twice molded up to the row with sweeps and the middles are broken out with plows, and the crop is hoed as often.

CENTRAL PRAIRIE REGION: *Smith* and *Scott*: Cultivating is done chiefly with steel sweeps, but may be done almost wholly with plows. *Rankin*: Bar off with turn plow or scraper; next use sweeps and hoe about twice. *Hinds*: Scrape, hoe, plow the soil to the row, plow the middles again thoroughly, after which plow and hoe when necessary. 1. *Clarke*: Bar off, hoe to a stand, throw soil gently back to the row with a small sweep, and continue by cultivating the crop every ten to fifteen days until it is laid by.

LONG-LEAF PINE REGION: *Greene*: Bar off, thin to a stand, then plow with solid sweeps. *Pike*: Bar off and scrape, throw soil to the row, plow and hoe, then run through once or twice with sweep, side harrow, or cultivator. *Simpson*: After thinning out and throwing soil to the row with a half shovel the crop is cultivated with sweeps about three times. *Covington*: Run a furrow on each side of the row with the scooter, next use a half shovel, and when the crop is too large for close plowing use sweeps. *Lauderdale* and 2. *Clarke*: Three or four plowings and two or three hoeings are generally necessary to produce a crop; the sweep or wide shovel is used almost exclusively; the crop is often injured by plowing. *Amite*: Bar off with a turn plow or scrape, thin to a double stand, throw soil to the row, thin to stand, break out middles with a turn plow, then use sweeps until the crop is laid by.

CANE-HILLS REGION: *Jefferson*, 18 inches; 24 to 36 inches in the rest.

CENTRAL PRAIRIE REGION: *Scott*, 24 to 36 inches; in the other counties, 12 to 18 inches.

LONG-LEAF PINE REGION: 24 inches in *Lauderdale* and *Pike*; 12 to 18 inches in other counties.

In the rest of the state the time varies from the middle of June to the 10th of July.

yellow-loam region, four in *Mississippi* bottom, three of the cane-hills region, and three of the long-leaf pine region. In other counties the latest time given is October 1, in *Alcorn* county.

23. When do you begin your first picking?

About August 15 in Noxubee, Grenada, Le Flore, Jasper, and Clarke; August 25 in Lowndes, Kemper, De Soto, Panola, Yazoo, Sharkey, Issaquena, and Jefferson. Of the other counties, nineteen

report September 1, eight September 15, and the rest from that time to October 15, Alcorn and Lee giving the latest dates.

24. How many pickings do you usually make, and when?

NORTHEASTERN PRAIRIE REGION: Three pickings usually in October, November, and December. *Lowndes:* Farmers strive to gather as fast as the cotton is ready, beginning when 25 or 30 pounds per hand can be picked, and ending when the winter rains begin.

usually in September, October, and November. *Hinds:* As many as possible with the force at command; the sooner cotton is picked the cleaner and better the staple and the less the waste in the field or at the gin. *Clarke:* The top crop is never all open until a killing frost, after which picking soon ends.

YELLOW-LOAM REGION: Three pickings usually; a light one in September, second and chief one in October, and often only gleanings in November and December.

LONG-LEAF PINE REGION: Three pickings usually as fast as cotton opens sufficiently to admit of a fair day's gathering. *Amite:* First when one or two bolls per plant are open, second when most of them are open, and third when all are open; but the number and times depend upon the yield, weather, and the picking force employed. Picking is continuous and as rapid as possible.

MISSISSIPPI BOTTOM AND CANE-HILLS REGIONS: Usually three or four. *Holmes:* The first, in August and September, rarely amount to 200 pounds per acre; the chief pickings are in October, November, and December.

CENTRAL PRAIRIE REGION: Three pickings as rapidly as possible,

25. Do you ordinarily pick all your cotton?

It is very generally all gathered throughout the state, excepting of course that lost by bad weather and live-stock. *Holmes:* Sometimes when the price is low it does not pay to glean the fields. *Lee:* Owing to indolence, some cotton is not gathered.

Winston: Some farmers, however, have been observed to plow their stalks under with cotton on them, having failed to pick it in time for plowing the next crop.

26. At what date does picking usually close?

The last of November in Noxubee, Winston, and Pike; in December in twenty-nine counties, comprising the cane-hills, central prairie, long-leaf pine, and most of the yellow-loam regions;

in January and later in the other counties; the latest date is that of March 31, in Sharkey county.

27. At what time do you expect the first black frost?

The earliest date is from the 20th to the 30th of September in Prentiss and Tippah counties. October 1 to 15 in eight counties, viz, Alcorn, Pontotoc, De Soto, Choctaw, Winston,

Claiborne, Clarke, and Amite. From the 15th to the 30th of October in twenty-two counties, while in other counties it is expected from the first to the last of November.

28. Do you pen your seed-cotton in the field, or gin as picking progresses?

Both are practiced in all of the counties. On the small upland farms it is usually customary to pen in the field near the tenants' houses until enough is gathered to justify ginning. If there is a gin on the plantation, it is usually run as picking progresses. *Clarke* and *Amite:* The larger farmers gin as they pick; others generally house their cotton for safe-keeping and finish picking before they gin. Private gins have been superseded by neighborhood gins in Amite county. On the

bottom lands "it is impossible to gin as fast as it is picked; it is therefore penned and afterward hauled to the gin". In *Holmes* it is generally kept near the tenants' dwellings in houses or pens, or sometimes left in heaps in the field exposed to rains and storms. *Issaquena:* House it at each tenant's cotton-house; never pen it in the field, as the handling would be double.

GINNING, BALING, AND SHIPPING.

29. What gin do you use? How many saws, and what motive-power? How much clean lint do you make in a day's run of ten hours?

There are fourteen different gins mentioned in the state, one county often reporting the use of two or more patents, while others simply state that several are used.

Carver's gin: 75 saws, by steam, 4,000 to 4,500 pounds.

Eagle gin: 60 saws, by mules, 1,400 pounds; 40 saws, by mules, 1,000 pounds.

Pratt's gin is mentioned by sixteen counties; *Gullett's* by thirteen counties; *Brown's* by five counties; *Carver's* by four counties; the *Eagle* gin by three counties. The following are each mentioned once: *Atwood*, *Hurt*, *Manuel*, *Cunningham*, *Eclipse*, *Emery*, *Dubois*, and *Avery*. Their ginning capacity in ten hours' run may be summed up from the different reports as follows:

Atwood gin: 50 saws, by mules, 900 pounds of lint (*Amite*).

Hurt gin: 50 saws, by mules, 1,275 pounds of lint (*La Fayette*).

Eclipse gin: 70 saws, by steam, 3,500 pounds of lint (*Bolivar*).

Dubois gin: 50 saws, by mules, 1,300 pounds of lint (*Hinds*).

The capacity of other gins are not given.

Pratt's gin: 60 saws, run by steam-power, 3,500 to 5,000 pounds of lint; by mules, 2,000 pounds; 50 saws, by mules, 1,500 to 1,600 pounds, and by water 2,000 pounds; 45 saws, by steam, 2,000 pounds of lint.

"With a gin of 160 saws 8,000 pounds of lint are made in a run of ten hours with a steam-engine of 20 to 40 horse-power" (*Sharkey*). "The steam-engine is far more economical than mule power even for a small planter; it is less expensive in every particular; the risk of fire is less than that of the mortality of stock" (*Holmes*). "Steam-engines would be preferred if they were not so expensive; the county is well supplied with water-power, but has not the capital to utilize it" (*Leake*).

Gullett's gin: 60 saws, by steam, from 2,500 to 3,500 pounds; by mules, 2,000 pounds; 50 saws, by steam, 1,750 pounds; 45 saws, by mules, 1,000 to 1,200 pounds.

Brown's gin: 80 saws, by steam, 5,000 pounds; 50 saws, by steam, 2,500 to 3,000 pounds; 45 saws, by mules, 1,000 to 1,500 pounds.

30. What mechanical "power" arrangement is preferred when horses or mules are used?

Tippah county: Schofield's. *Noxubee:* Peacock's iron "horse-power" from Selma, Alabama. *Lauderdale* and *Sharkey:* The Faust Deering power of Louisville, Kentucky. *Benton:* The 12-foot cogwheel and treadwheel. *Marshall:* Segment and pinion power; an 8-foot band wheel and 10- or 12-foot master wheel,

with horizontal lever, to each end of which a team is hitched. In many other counties the old-style power is preferred, the old wooden screw, with two mules and one or two men, turning out 8 bales per day; the old style compress with eight men and two mules, making from 20 to 25 bales.

31. How many pounds of seed-cotton, on an average, is required for a 475-pound bale of lint?

Claiborne: 1,306 to 1,665, according to kind of seed. *Prentiss, Lee, De Soto, Winston, Attala, Jefferson, Rankin, Scott, and Pike*: 1,425. *Leake and Grenada*: 1,425 to 1,545. *Pontotoc, La Fayette, and Amite*: 1,425 to 1,600. *Clarke*: 1,425 to 1,665. *Smith*: 1,455. *Wilkinson, Hinds, and Jasper*: 1,485. *Lauderdale*: 1,485

to 1,545. *Tippah, Benton, Tishomingo, Sharkey, and Covington*: 1,545. *Lowndes*: 1,545 to 1,600. *Kemper*: 1,545 to 1,665. *Choctaw, Warren, and Simpson*: 1,660. *Marshall, Yazoo, Holmes, and Issaquena*: 1,665. *Alcorn, Panola, Le Flore, Bolivar, and Greene*: 1,780. *Noxubee*: 1,900.

32. What press is generally used in your region, and what is its capacity per day?

There are eighteen different presses mentioned among the counties as being in use, and very often several patents are found in one county.

Brooks' press is mentioned in eight counties. Its capacity, with six men and one mule, is 25 bales per day; with four men and one mule, 12 bales, or as fast as ginned. "It will press in one day all that two 80-saw stands can gin in a week" (*Issaquena*).

Scotfield's iron-screw press from 3 counties; with two men and one mule a day's ginning can be baled.

Paul Williams' press from 3 counties; with one mule, 10 bales.

Paul Pitman's press from 3 counties; with four men and one mule, 20 bales.

Southern standard; with four men and one mule, 10 to 20 bales.

Way's hand-lever press; with six men, 15 bales.

Lewis' press, by hand, 12 bales.

The following is a list of the other presses named, and their capacity is about that of those already given: Provost, Wright's, Churchill's, Reynold's, Simmonds, Wilson's, Shaw's, Ku-Klux, Newel's, Grasshopper, and Nesbit's. They are mentioned but once or twice each among all the counties.

33. Do you use rope or iron ties for baling? If the latter, what fastening do you prefer?

Iron ties are used exclusively throughout the state. The arrow fastening is preferred in 21 counties; the buckle in 10 counties.

Among the other counties, the Wallis, button, Harper, and Root fastenings are mentioned.

34. What kind of bagging is used in your region?

Chiefly jute in 16 counties; chiefly hemp in 9 counties; while in the

rest both are given without choice.

35. What weight do you aim to give your bales? Have transportation companies imposed any conditions in this respect?

Farmers in *Claiborne* and *Wilkinson* aim to make the weight of bales 400 pounds; in *Holmes*, 400 to 500 pounds; 450 pounds in 8 counties; 500 pounds in 24 counties, and 600 pounds in *Sharkey*.

The freight charges are usually by the bale, regardless of weight, except, perhaps, to the eastern and northern cities. The bales are required to be well covered. *Amite*: A bale under 300 pounds' weight is not considered merchantable, the freight being by bale. In a number of counties buyers deduct \$1

from the price of bales under 400 pounds' weight. *Holmes*: Transportation companies usually agree to deliver a 450-pound bale at contract prices, and frequently specify that they will charge for each additional 100 pounds, but rarely do so on boats. Taking advantage of this, merchants urge producers to make bales of 500 and 600 pounds. Insurance companies specify and hold themselves accountable only for 450-pound bales.

DISEASES, INSECT ENEMIES, ETC.

36. By what accidents of weather, diseases, or insect pests is your cotton crop most liable to be injured? At what dates do these several pests or diseases usually make their appearance? To what cause is the trouble attributed by your farmers?

NORTHEASTERN PRAIRIE REGION: The caterpillar appears in *Lowndes* county in July in *Lee* in September, and in *Kemper* and *Noxubee*. The boll-worm appears in August and September in most of the counties. Shedding and rust also do much damage when dry weather follows an excessively wet season. Boll-rot and blight are reported only in *Noxubee, Lee, Lowndes, and Pontotoc* counties, and are supposed to be due to wet weather. Aphides are reported in *Lowndes* and *Tippah* in June on isolated spots, and are attributed to cold nights.

YELLOW-LOAM REGION: The caterpillar appears in *Marshall, Choctaw, Yazoo, and Leake*, and sometimes in *De Soto, Panola, Attala, and La Fayette*, "though rarely, and has not hurt this region in twelve years." The boll-worm occurs in most of the counties in July or August, while boll-rot, rust, and shedding also do much damage, and is attributed to weather extremes, either wet or dry. Blight is reported in seven of the counties, though rarely in most of these.

MISSISSIPPI BOTTOM: The caterpillar appears in *Grenada* in August, in *Holmes* in September and October, and in *Sharkey* and *Issaquena*. The boll-worm appears throughout the region, and usually a month earlier. Boll-rot occurs to some extent, and in *Bolivar* is attributed to the overgrowth of the plant. Blight in June, rust in July and August, and shedding in July to September also occur to some extent, and are usually attributed to weather extremes. *Holmes*: They are due to plowing too near and disturbing the roots of the plants.

Issaquena: Diseases and insects generally attack cotton on sandy soils first.

CANE-HILLS REGION: The caterpillar usually appears in *Warren* county "in numbers about July, the earlier the most destructive, but most so in September", at which time it is reported in other counties. The boll-worm appears in July and August, or sometimes much later. Shedding, boll-rot, blight, and rust also occur.

CENTRAL PRAIRIE REGION: The caterpillar appears in *Hinds, Scott, and Clarke* late in August. The boll-worm does some damage in all of the counties, while excessive rains and extreme dry weather cause boll-rot and shedding and rust. In *Jasper* the latter is attributed to shallow plowing and lack of vegetable matter in the soil. Aphides appear in *Clarke* as soon as cotton is up.

LONG-LEAF PINE REGION: The boll-worm in July and August, the caterpillar in August and September, are reported in this region. Aphides appear on the plants in the spring in *Covington* county. Boll-rot and shedding are thought to be respectively produced by wet and dry weather, and occur throughout the region. Boll-rot in *Covington* is attributed to insects, rust to stagnant water near the roots of the plants, and shedding to irregularity of seasons or injudicious tillage. In *Amite* all diseases are thought to be due to improper cultivation, while in *Simpson* rust is attributed to insect life.

37. What efforts have been made to obviate these diseases and pests? With what success?

Throughout the state but few efforts have been made, and these with indifferent success. *Holmes*: It is considered dangerous to use destroyers for insects; those who cultivate cotton with care have less of these evils. *Bolivar* and *Sharkey*: A favorable

dry season at the time of these pests and good cultivation always insure greater yields than can be gathered by the cultivating force. *Wilkinson*: Early planting, so as to favor early fruiting, has met with but little success. *Lowndes*: Early

planting and thorough cultivation have been successful. *Panola*: Change of crop and culture have been successful against rust and blight. *Grenada*: A plenty of manure is considered to be the best remedy for rust, blight, shedding, and boll-rot. *Rankin* and *Hinds*: Attraction of the moths by lights at night and catching them in some liquid has been only partially successful. *Lauderdale*: Shedding may be partly prevented in some seasons by shallow plowing, but not wholly

38. Is rust or blight prevalent chiefly on heavy or ill-drained soils? Do they prevail chiefly in wet or dry, cool or hot seasons? On what soil described by you are they most common?

NORTHEASTERN PRAIRIE REGION. They prevail mostly on the black and stiff and ill-drained lands of this region, and on the hummock lands and light, shelly prairie-ridge soils of Pontotoc county. They occur chiefly in wet and cold seasons in three counties, in dry seasons after much rain in two counties, and in cold seasons, whether wet or dry, in Pontotoc county. In Lee rust prevails chiefly on dry lands in dry seasons, and commonly on the uplands; blight chiefly on wet lands in wet seasons, and commonly on the bottoms. In Alcorn rust is limited to small spots, and is supposed to be due to microscopic parasites.

YELLOW-LOAM REGION: They prevail in wet and cool seasons on heavy and ill-drained soils in De Soto, Panola, Winston, and Attala; on loose, sandy, or fresh soils in Benton; on black, sandy loam in Leake; on white, cold clay soil in any season in Grenada; on heavy, ill-drained soils having the largest gravel and lightest colored subsoil, and are worse on the gray gravelly or buckshot soil in Yazoo county; on heavy and ill-drained soils in Marshall county. "The red rust chiefly in dry seasons on dry, rich, alluvial and mellow soils, sometimes extending, as the season advances, to clayey soils, in which it is not liable to start, and if it does will not spread rapidly. Blight prevails chiefly in wet seasons." Rust on light, sandy

39. Is Paris green used as a remedy against the caterpillar? If so, how, and with what effect?

It is not used in 31 of the counties from which reports have come. *Noxubee*: When properly used it has generally saved seven-eighths of the crop. *Marshall*: The worm generally begins in the center of the field, but in a few days is all over it, stripping the plants. Paris green would undoubtedly destroy it, but the damage is great before it is discovered. *Grenada*: Its efficacy is not doubted, but its use is entirely neglected. *Holmes*: Its use would prevent keeping of calves in the cotton-fields, and it is, besides, regarded as far too troublesome to apply this poison. 1. *Clarke*: It destroys both worm and

in very wet or dry weather. *Amite*: Deep preparatory plowing of the soil and after-cultivation adapted to the varying conditions of the weather and soil. The first generation of worms is destroyed by hand; at the second coming of the moth it is decoyed by lights at night; when the third generation of worms appears all is lost. These methods have not proved successful.

soils, and blight on heavy and ill-drained soils and in wet seasons in La Fayette. "Close observers have noticed them most frequently in fresh soils of any kind that have borne cotton for three or four consecutive years" (*La Fayette*).

MISSISSIPPI BOTTOM: They prevail on light and sandy soils in most of the counties; in cool and wet seasons in three counties; in hot periods, preceded by excessive rains, in Holmes, and in any season in other counties. In Bolivar, on rich loams where the severest cases of blight are generally connected with late plowing, which is very likely to disturb the roots of the plants.

CANE-HILLS REGION: Chiefly on wet and ill-drained soils; in all seasons in Claiborne, and in wet and hot seasons in other counties.

CENTRAL PRAIRIE REGION: On heavy and ill-drained soils in Rankin and Scott; on all soils in Hinds and Jasper, and on light, shelly soil in Clarke; in cool weather in Jasper; in extreme states of weather in the other counties.

LONG-LEAF PINE REGION: On ill-drained, sometimes sandy and sometimes heavy, soils. Chiefly on the bottom lands in four counties; in wet and cool seasons in Greene, and hot and wet seasons in Simpson and Amite.

plant, and has been abandoned in the last two years. 2. *Clarke*: Mixed with flour and land plaster it generally kills the caterpillar, but his place is soon taken by another generation. *Amite*: Its solution has been sprinkled and its powder dusted on the plants while wet with dew, and has done but little good. *Scott*: It has been sprinkled on the plant with water, and is pronounced a failure. *Yazoo*: By sifting it upon the leaves while wet with dew, if commenced in time, it will materially check the ravages of the caterpillar.

LABOR AND SYSTEM OF FARMING.

40. What is the average size of farms or plantations in your region?

UPLAND COUNTIES: Less than 100 acres in 11 counties; from 100 to 200 acres in 6 counties; 200 to 300 acres in 5 counties; 300 to 500 acres in 6 counties. In the cane-hills region, and in a few counties of the yellow-loam and northeastern prairie regions, some of the farms have as much as 1,000 to 3,000 acres, and in Rankin county, of the central prairie region, a maximum

of 6,000 acres. In Amite plantations vary from 500 to 3,000 acres, and are divided into farms of 40 and 120 acres, which are rented to families.

MISSISSIPPI BOTTOM REGION: There are a few small farms of less than 300 acres, but mostly large plantations of from 500 to 3,000 acres.

41. Is the prevalent practice "mixed farming" or "planting"?

UPLAND COUNTIES: Mixed farming in 22 counties, and planting in 11 counties.

MISSISSIPPI BOTTOM AND CANE-HILLS REGIONS: Planting exclusively.

42. Are supplies raised at home or imported? If the latter, where from? Is the tendency toward raising them at home increasing or decreasing?

NORTHEASTERN PRAIRIE REGION: In 4 counties supplies are mostly imported; in the others a portion only is imported, from Saint Louis, Louisville, and Cincinnati, and in 1 county in part from Mobile.

YELLOW-LOAM REGION: In all of the counties a portion of the supplies, comprising the meat, flour, and part of the corn, is obtained from Memphis and the cities of the western states.

MISSISSIPPI BOTTOM AND CANE-HILLS REGIONS: Supplies are chiefly imported from the north and west in all of the counties except Grenada, in which the corn is mostly raised at home. In Holmes some of the supplies are brought from New Orleans.

CENTRAL PRAIRIE REGION: Largely imported in 4 counties from

the northern cities; corn from Tennessee and Kentucky. In Hinds many raise all of their supplies, some a part, and others none at all. In Rankin supplies are chiefly raised at home; sugar and coffee from New Orleans.

LONG-LEAF PINE REGION: Mostly imported in all of the counties from New Orleans and the northern cities; a part from Tennessee, Kentucky, Missouri, and Ohio.

The tendency toward raising home supplies is said to be increasing in all of the counties of the state except five, in which there is no perceptible change in either direction, and in Le Flore, in which it is decreasing.

43. Who are the laborers chiefly?

Negroes, chiefly, in 25 counties, embracing the cane-hills and the Mississippi bottom regions, and some of the upland counties. Whites chiefly in 7 counties, while in the other counties of the state the two races are about equally divided. The nation-

alities represented are some Germans and Irish in Winston, and various in Holmes, Tippah, and Rankin counties; otherwise, all Americans.

44. How and at what rates are their wages paid, and when payable?

Daily wages are very generally 50 cents with board and 75 cents without board, usually at the end of the week. In Clarke, 30 cents to women and 40 cents to men, with board in each case, are paid. Monthly wages are usually from \$8 to \$12 throughout the state with a few exceptions, while to yearly laborers from \$100 to \$150, at the end of the year, or when needed, are paid to men, and a less amount to women and boys. A house and

sometimes rations are also given to the yearly laborer. In many of the counties, however, the laborers work on shares in preference to regular wages. Monthly wages are paid when the time of service ends, or at the end of the season, when crops are sold, in most of the counties. Monthly payments are made in a few counties, while in many cases a portion is paid as it is needed by the laborer.

45. Are cotton farms worked on shares? If so, on what terms?

The share system prevails very generally throughout the state, though in a few counties the farms are rented, the renter paying 400 pounds of lint per 10 or 15 acres for the use of land, houses, and utensils. The terms vary but little in all of the counties. If the land-owner furnishes the land, implements, and teams, he receives one-half of the crop; otherwise

for the land alone he receives one-fourth to one-third of the cotton, and one-third of the corn, if any is produced. In some counties the owner furnishes the ginning and ginning material instead of the farming implements. When the laborer is boarded, and has everything else furnished to him, the owner receives three-fourths of the crop.

46. Does the share system give satisfaction? How does it affect the quality of the staple? Does the soil deteriorate or improve under it?

In ten of the counties the system does not give satisfaction, but in the rest of the state there is but little complaint. In Marshall one or the other party complains every year. When the crop is not promising, or too liberal advances have been made to the laborer, he is likely to become dissatisfied, quit working his own crop, and hire out by the day to other farms. The staple is thought to be injured by the share system in 11 of the counties; in a few of the others it is said to improve, while in the rest of the state no change is apparent. In Holmes the negroes are very careless and indifferent as to

gathering and housing their cotton; they allow a great deal of it to rot. In Sharkey the staple is two grades below that of 1860 from the same soil. In Tishomingo and Covington the staple is shorter. In Amite the laborer is usually more careful in picking when he owns a share. In almost all of the counties the soils are thought to deteriorate, in some very rapidly, unless manures are used or rotation practiced. *Issaquena*: The best cotton is grown by the "one-half-crop" system, for then the owner or his agent sees that the crop is properly tilled.

47. Which system (wages or share) is the better for the laborer? Why?

The share system is thought to be the best in 19 counties of the state. *Lowndes*: "The negro, being thriftless and improvident, will by no other system have so much for his family at the end of the year." The following summary of reasons are given: He can make more money; have garden land free of rent; can double his wages and have all the extra time to himself; he becomes interested in the results of his labor; he is more industrious and improves his habits; the entire family can be employed. In the other counties of the state the wages system is thought better. *Hinds*: "He is sure of a living, while under the share system the shiftless laborer often obtains credits to the extent of his interest in the crop and has nothing in the end. When under control, he makes more, spends less, and has a surplus of cash at the end of the year. There are exceptions, of course." The following summary of reasons

are also given: He is certain of his earnings, and takes no risks of failures of crops; supplies consume his profits under the share system; he works better, and always has money. He receives his money more certainly and at shorter intervals. They cannot receive credit beyond their wages; he must work for wages, while under the share system he is indolent and careless. *Issaquena*: He is assured a livelihood as long as willing to work, his labor being in demand at good prices from January to January, at 75 cents to \$1 per day. Under any other system shiftlessness prevails to a more or less extent with serious neglect of crops. Renters average three bales of cotton per hand, while with wages eight or ten will be produced, the latter thus bringing into circulation more money and creating a greater demand for the laborer's services.

48. What is the condition of the laborer?

In the river counties their condition is generally good, except in Le Flore and Bolivar, where "it might be good if they were more industrious". *Holmes*: They are usually able to pay their merchants and have some money besides. *Issaquena*: "They generally own their teams, have cows, hogs, etc., and are usually supplied with money to meet all necessary wants. A beggar was never known here, except in that characteristic

habit of our colored friends to beg tobacco." In 18 upland counties the condition of the negro laborer is said to be good where industrious; but in many other counties they are in rather a destitute condition, due to improvidence and indolence. White laborers are usually in good circumstances. In Claiborne and Rankin "the laborers are fat and lazy".

49. What proportion of the negro laborers own land or the houses in which they live?

In seventeen counties, not 1 in 100; in twelve counties, not one in 20, and often not one in 50. In twelve other counties, a larger proportion own their lands and houses. In Claiborne they

seem to have no desire to own lands. In Wilkinson and Winston they are securing homesteads on government land.

50. What is the market value of land in your region?

In the Mississippi bottom counties the prices vary from \$2 50 to \$10 for unimproved and \$25 to \$50 for improved. The rent is from \$5 to \$10 per acre or one-third of the crop raised, or 85 to 100 pounds of lint per acre.

What rent is paid for such land?

or \$15 and even \$25 for improved lands; in the remaining counties the prices are from \$1 to \$3, and even as low as 25 or 50 cents for poorer lands in some regions. Rents are from \$2 to \$5 for the best classes of land, or are one-fourth of the cotton produced on it, or 30 or 40 pounds of lint per acre.

UPLAND COUNTIES: In sixteen counties the prices are from \$5 to \$10

51. How many acres or bales of cotton, per hand, is your customary estimate?

NORTHEASTERN PRAIRIE REGION: About 10 acres, or 3 bales with supplies and 5 bales without supplies. *Lee:* A good hand can cultivate 12 or 15 acres. *Kemper:* 9 acres of cotton and 6 of corn per hand. *Alcorn:* 7 or 8 acres of cotton and corn each.

YELLOW-LOAM REGION: 12 to 15 acres of land per hand, yielding from 4 to 6 bales. *La Fayette:* Two hands with one mule raise about 4 bales of cotton and 100 bushels of corn.

MISSISSIPPI BOTTOM: Usually 10 or 12 acres of from 3 to 5 bales. *Issaquena:* A steady worker who gives his fields proper attention frequently produces from 10 to 18 bales. *Holmes:* Man

and wife 20 acres, from which they frequently gather 12 to 20 bales and raise one-fourth to one-third more than they gather.

CANE-HILLS REGION: Usually 15 acres of cotton and corn or 3 bales of cotton. *Warren:* The negro produces from 1 to 4 bales, formerly 6 to 8 bales. *Wilkinson:* 6 acres or 2 bales; good hands can cultivate and raise four times as much.

CENTRAL PRAIRIE REGION: 2 to 3 bales in four counties; 6 to 8 bales from 15 acres in Scott.

LONG-LEAF PINE REGION: Usually 3 bales, with some corn. "White laborers have made 6 bales, besides corn", etc.

52. To what extent does the system of credits or advances upon the growing cotton crop prevail in your region?

MISSISSIPPI BOTTOM: It prevails very generally throughout the region and to the extent of the whole or three-fourths of the growing crop. In *Holmes*, it is exceptional that any one, white or black, pays cash for an article. Deeds of trust are the rule. In *Issaquena*, frequently the tenants (all negroes), when they have sufficient money and are able to pay cash as they go, prefer to keep their money and exhaust their credit.

UPLAND COUNTIES: The system prevails generally throughout the region and in most of the counties to the extent of one-half or more of the prospective value of the crop. It is not prevalent in *Greene* and *Hancock* counties, while in *Benton*, *Grenada*, *Clarke*, *Covington*, and *Amite* the practice of getting advances is declining. *Alcorn:* Hands occasionally desert the crop after getting all the advances they can. *Marshall:* At least one-half of the crop is virtually raised on credit at ruinous rates.

Noxubee, *Pike*, and *Simpson:* But few laborers can get along without credit. *Hinds:* It is due to this that land has no market value and that labor is taken from the land-owner's control and forced into cotton production exclusively. *Scott:* It is one of the farmer's misfortunes that he is in debt and at the mercy of the merchant. *Simpson:* It is one great cause of the laborer's extravagance and wastefulness. *Leake:* Necessitates the exclusive production of cotton; the land-owner advances provisions, clothing, etc., to the laborer at such ruinous profits as to absorb his share. *Amite:* Especially among the negroes, most of whom are very extravagant and greatly abuse the credit which this system gives them; the system is now less prevalent and more restricted than formerly. Both farmers and merchants were once bankrupted by it and have learned to be cautious.

53. At what stage of production is the cotton crop usually covered by insurance?

BOTTOM COUNTIES: Not at all in *Grenada* and *Sharkey*, and rarely in *Bolivar*. When on the steamboat, *Le Flore*. When gathered in the gin-houses in *Issaquena* and *Holmes*. The practice is general only in two counties.

UPLAND COUNTIES: Not practiced in 14 counties. Sometimes, when picking begins, in *Wilkinson*. When put in the gin-house in *Clarke* and *Pike*. When in market, in five counties. It is practiced also in eight other counties.

54. What are the merchants' commissions and charges for storing, handling, shipping, insurance, etc., to which your crop is subject? What is the total amount of these charges against the farmer per pound or per bale?

Commissions throughout the state are usually 2½ per cent. on gross sales; storage, drayage, and weighing, 75 cents per bale, or 50 cents for storage for the first month and 25 cents for each additional month. For shipping, 25 cents per bale. Brokerage, one-fourth per cent. Insurance, fire, three eighths per cent.; river, one-fourth to one-half per cent, and railroad, one-fourth per cent. In many of the counties the crop is sold to local buyers at a little below New Orleans quotations, the farmer paying 20 cents a bale for weighing. *Winston:* 75 cents per 100 pounds for hauling to a shipping point, \$5 per bale for shipping; adding to this storage, commission, etc., the total is about \$20 per bale.

The total per bale exclusive of freight is \$1 80 to \$2 40 in *Lowndes*, about \$2 25 in *Amite*, and \$3 25, with some loss of weight while stored, in *Hinds*.

Including freight charges the total amounts from \$2 to \$5 in *Pontotoc*; \$4 to \$6 in *Warren*, *Issaquena*, and *Claiborne* (with some loss of weight while stored); about \$4 15 in *Wilkinson*; about \$4 50 in *Attala*; \$4 75 in *Alcorn*, *Benton*, *Yazoo*, *Lauderdale*, *Simpson*, and *Pike*; \$5 in *Panola*, *Tishomingo*, *Rankin*, *Jasper*, and *Clarke*; \$5 to \$6 in *Grenada*; \$5 40 in *Prentiss*; \$5 50 in *Lee*; \$5 50 to \$6 in *Holmes* (if shipped to New Orleans); \$5 60 in *Kemper*; \$6 in *Noxubee*, *Bolivar*, and *Jefferson*; \$7 in *Scott* and *Sharkey*.

55. What is your estimate of the cost of production per pound in your region, exclusive of such charges and with fair soil and management?

In fourteen counties, about 8 cents; in seven counties, about 7 cents; in seven counties, about 10 cents; in four counties, from 5 to 6 cents; in *Sharkey*, 9 cents; in *Attala*, 4½ cents; in other counties the number given is indefinite, but between these extremes. *Panola:* About one-fourth of its market value. *Pontotoc:* About one-half its market value. *Warren* and *Claiborne:* 10 cents where supplies are bought. *Wilkinson:* 8 cents ordinarily, but 5 cents with hired labor and good management. *Hinds:* 10 to 12 cents, according to season, wear and tear of implements, taxes, and interest on investment. *Issaquena:* About \$25 per bale.

borne: 10 cents where supplies are bought. *Wilkinson:* 8 cents ordinarily, but 5 cents with hired labor and good management. *Hinds:* 10 to 12 cents, according to season, wear and tear of implements, taxes, and interest on investment. *Issaquena:* About \$25 per bale.

56. What is usually paid for extra work in picking cotton? How much seed-cotton is ordinarily picked in a day?

Holmes: "Fifty to 65 cents per 100 pounds of seed-cotton, without board, and 40 to 50 cents with board." In all other counties 75 cents without or 50 cents with board is usually paid. In some counties the pickers are sometimes paid daily wages, at \$1 per day without or 50 cents with board.

Jasper: Ordinary hands usually pick from 40 to 100 pounds of seed-cotton, and will not pick "by the 100 pounds", but are paid wages. The best hands pick an average of 300 pounds, and

will only pick by the 100 pounds. *Tippah:* "Ordinary hands pick 200 to 250 pounds per day." In other counties the amount is usually 175 pounds in full crops, and 150 when the crop is light.

On the bottom lands, the best hands pick from 500 to 600 pounds per day in full crops. Some have even reached 750 pounds, with a boy to wait on them, empty the sacks, and bring them water and food.

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