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PART II.

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AGRICULTURAL DESCRIPTIONS

OF THE

COUNTIES OF ARKANSAS.

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# AGRICULTURAL DESCRIPTIONS

OF THE

## COUNTIES OF ARKANSAS.

The counties are grouped under the several agricultural regions, and each is described as a whole under that to which it predominantly belongs, its name alone being given with an asterisk (\*) in the county list of any other region which may include a minor part of its area, a reference also being made to that region in which it is described.

The statistical matter given at the head of each county description is derived from the Tenth Census reports; and there are also added abstracts from such answers to schedules of questions as have been received from correspondents in the 38 counties heard from.

The county descriptions, because of the large number of counties in the state, are necessarily short; and in order to keep the report within properly prescribed limits only general descriptions are given.

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### MISSISSIPPI ALLUVIAL REGION.

(Includes parts of Chicot, Desha, Phillips,\* Lee,\* Saint Francis,\* Cross,\* Poinsett,\* Craighead,\* Greene,\* and Clay,\* and the whole of Crittenden and Mississippi counties.)

#### CHICOT.

*Population:* 10,117.—White, 1,563; colored, 8,554.

*Area:* 840 square miles.—Woodland, all; yellow-loam region, 205 square miles; alluvial, 635 square miles.

*Tilled lands:* 38,658 acres.—Area planted in cotton, 26,941 acres; in corn, 7,309 acres; in oats, 80 acres.

*Cotton production:* 25,338 bales; average cotton product per acre, 0.94 bale, 1,410 pounds seed-cotton, or 470 pounds cotton lint.

Chicot county is included almost entirely within the low and level alluvial lands of the Mississippi river, which forms its eastern boundary, and those of bayous Maçon, Bœuff, and Bartholomew (on the north) and Big Bayou. These lands comprise the front or higher lands along the borders of the river and the large bayous, the back-lands away from the streams, cypress swamps, and canebrakes, and some high ridge or sandy pine uplands on the south and north, but not in the middle of the county.

The soil of the front-lands is a fine sandy loam, quite deep, and well-timbered with cottonwood, gum, walnut, etc. The lands of the river are celebrated for their productiveness, the yield being about two bales of cotton per acre. The back-lands have a stiff clayey buckshot soil, and are not as productive as those of the front-lands. This land is said to suffer from drought and to produce best in a tolerably wet summer. Cypress brakes occur frequently throughout their extent. The tilled lands comprise 7.2 per cent. of the county area, and of these 69.7 per cent. are devoted to the culture of cotton. The averages per square mile are 46 acres of tilled lands and 32.1 of cotton, the county ranking as fourteenth in the latter regard. In cotton yield per acre it is first in the state and second in the United States.

#### ABSTRACT OF THE REPORT OF DANIEL B. BRAWNER, LUNA LANDING.

The lowlands comprise the first and second bottom of Bayou Maçon, and the front-land, back-land, and cypress swamps of the Mississippi river. The uplands consist of the level table-lands drained by the Mississippi river, Chicot lake, and bayou Maçon.

The soils cultivated in cotton are the black sandy soil of the river bottom, the clay loam of bayou Maçon, and their intermixtures.

The most important of these is the black sandy land of the river bottom, covering about two-thirds of the surface of the county, and extending in the direction of the river about 50 miles. Almost every variety of timber can be found in this county. The soil is light, and is from 4 to 5 feet in depth. Sand is found at 6 feet. The land is easily cultivated in dry seasons, is early and well drained, and is best adapted to cotton and corn, which are the only crops raised in this county. About nine-tenths of the cultivated area is devoted to cotton, which grows to a height of about 5 feet, but inclines to run to weed on all lands of the county in wet seasons, no remedy as yet having been found to restrain it.

From fresh land, or from land after ten years' cultivation, the product per acre in seed-cotton is from 1,400 to 2,800 pounds; from very old land about 1,400 pounds, 1,665 pounds being required for 475 pounds of lint, rating from fresh land as good ordinary, and from old land not quite so high, as it has not the glossy color or silky feeling. Cocoa, crab, and several other grasses are quite troublesome. One-fourth of the land lies "turned out", producing, when again cultivated, as well as fresh land.

The clay loam, constituting about one-tenth of the tillable area, extends about 15 miles along bayou Maçon, and is many miles wide. The soil is a heavy clay loam, 2 feet deep, having a variety of colors, being yellow, brown, orange-red, and blackish in different places. It is heavy in breaking up, but becomes fine as it is cultivated. The subsoil is heavier than the surface soil, and is underlaid by clay at 17 feet. The land is easily tilled in dry seasons, is early and warm when well drained, and is best adapted to cotton and corn, the former comprising about nine-tenths of the crops planted. The plant usually attains a height of from 3 to 4 feet. About 1,200 pounds of seed-cotton per acre are obtained from fresh land, but after ten years' cultivation only one-half the above amount. In either case 1,425 pounds are required for a 475-pound bale of good ordinary lint. Crab, cocoa, and Bermuda grasses are the most troublesome weeds. About one-fourth of the land lies "turned out", producing, when again cultivated, only about three-fourths of its original yield.

The climate must be very warm when the seed is planted, and the most productive cotton crops are raised when there is very little rain. When there is much rain the plant runs to weed. Owing to the long seasons in this part of the county there is no trouble from frost.

Cotton is shipped, from the middle of September until December, by river to New Orleans, at the rate of \$1 per bale.

#### DESHA.

*Population* : 8,973.—White, 2,452; colored, 6,521.

*Area* : 730 square miles.—Woodland, all; yellow-loam region, 285 square miles; eastern prairie region, 55 square miles; alluvial, 390 square miles.

*Tilled lands* : 42,642 acres; area planted in cotton, 21,159 acres; in corn, 9,819 acres; in oats, 169 acres; in wheat, 18 acres.

*Cotton production* : 18,103 bales; average cotton product per acre, 0.86 bale, 1,290 pounds seed-cotton, or 430 pounds cotton lint.

Desha county, bordered on the east by the Mississippi river, is divided into two parts by the Arkansas, which flows southeastward, and the northern part is again divided by the White river, flowing southward into the Arkansas. The lands of the county, therefore, belong mostly to the level and flat alluvial region. In the southern portion of the county, and lying between the Arkansas river and bayou Bartholomew, there are some oak and pine uplands with sandy soils. The alluvial lands are the richest and best cotton lands, and embrace the usual front or high lands bordering the rivers, having dark sandy loams, capable of producing two bales of cotton per acre, and the back-lands away from the river, with their stiff black waxy and oftentimes ill-drained land, less productive and interspersed with cypress brakes. The lands are, for the most part, subject to overflow in high-water seasons, and levees have been constructed along the Arkansas and the Mississippi rivers for protection. The lands under cultivation in Desha county comprise 9.1 per cent. of the entire area, or an average of 58.4 acres per square mile. Of the latter, 29 acres are devoted to cotton, the county thus ranking as seventeenth in the state. In cotton yield per acre it ranks as second, or next to the adjoining county of Chicot.

#### ABSTRACT OF THE REPORT OF JAMES MURPHY, NAPOLEON.

The lowlands of the county comprise the first bottoms of the Arkansas river. The chief crops of the region are cotton, corn, vegetables of all kinds, and sweet and Irish potatoes. The soil does not seem to be well adapted to small grain.

The chief soils devoted to cotton are the sandy alluvial on the front of bayous, rivers, etc., and the clammy buckshot on back-land.

The *sandy alluvial* soil comprises the larger part of the Arkansas river valley. This soil is a fine silty loam, yellow or blackish colored, 2½ feet in depth, with a light yellowish sandy subsoil, underlaid by sand at 2¼ feet, and is easy to cultivate in all seasons, being early, warm, well drained, and best adapted to cotton. From two-thirds to three-fourths of the crops cultivated are in cotton. The plant usually grows about 5½ feet high, and is most productive at that height. It inclines to run to weed when there is too much rain, which may be remedied by throwing the dirt from the plant, and also by topping in August. The seed-cotton product per acre for fresh land is 1,800 pounds, and in October 1,780 pounds make a 475-pound bale of lint; later it takes less to make the same bale, the staple rating from middling to low middling. After ten years' cultivation the yield is 2,500 pounds of seed-cotton, when 1,660 pounds are necessary for a 475-pound bale of lint superior to that from fresh land. Cockleburrs, careless and iron weeds, crab-grass, and morning-glory vines are most troublesome. About one-half of these lands lie idle for want of labor and not from poverty of soil, and produce much better for not being in constant cultivation.

Cotton is shipped after 15th of October by steamboat to Memphis and New Orleans at \$1 per bale.

#### PHILLIPS.

(See "Crowley's Ridge region".)

#### LEE.

(See "Crowley's Ridge region".)

#### SAINT FRANCIS.

(See "Crowley's Ridge region".)

#### CROSS.

(See "Crowley's Ridge region".)

#### POINSETT.

(See "Crowley's Ridge region".)

CRAIGHEAD.

(See "Crowley's Ridge region".)

GREENE.

(See "Crowley's Ridge region".)

CLAY.

(See "Crowley's Ridge region".)

CRITTENDEN.

*Population* : 9,415.—White, 1,899; colored, 7,516.

*Area* : 660 square miles.—Woodlands, all; all Mississippi alluvial.

*Tilled lands* : 43,646 acres.—Area planted in cotton, 24,413 acres; in corn, 9,810 acres; in oats, 73 acres; in wheat, 20 acres.

*Cotton production* : 16,039 bales; average cotton product per acre, 0.66 bale, 990 pounds seed-cotton, or 330 pounds cotton lint.

The surface of Crittenden county is level, and is bounded on the east by the Mississippi river, other smaller streams flowing westward into the Saint Francis river. The county is entirely included in the alluvial region of the Mississippi, and is heavily timbered with an undergrowth of cane. The lands that border the river and cover one-half of the county are dark sandy loams, which are easily tilled and very productive, yielding from 70 to 80 bushels of corn or 1,500 pounds of seed-cotton per acre. Interspersed with this land, and lying mostly on the west at a lower level, are stiff black and clayey buckshot lands with a timber growth of cypress, cottonwood, and water oak. These soils are ill-drained and cold, and are not apparently desirable for the cultivation of corn, as cotton is said to be the exclusive crop. They are said to yield 1,500 pounds of seed-cotton per acre.

There are many small lakes and bayous interspersed throughout the interior of this county. The lands under cultivation comprise 10.3 per cent. of the area, an average of 66.1 acres per square mile. Of the latter, 37 acres are devoted to the culture of cotton, placing the county as sixth in the state in the amount of its cotton lands. In cotton yield per acre it is eleventh in the state and seventh in the number of bales. The greater part of the cotton is produced in the southern half of the county.

ABSTRACT OF THE REPORT OF A. C. BREWER, SCANLONS.

The lowlands of the county are the first bottom or front-land of the Mississippi river, the chief crops of which are cotton and corn. The soils cultivated in cotton are the flat, black sandy land, the dark loam soil, and the black buckshot soil subject to overflow. The chief soil is the *black sandy*, which comprises one-half of the county area, and extends from Missouri to the Gulf of Mexico, following the course of the Mississippi river. This soil is a fine sandy loam, blackish in color, 3 feet in depth, with a lighter, coarse white sandy subsoil. It is difficult to till in wet seasons, but easy when dry, and is early, warm, well drained, and best adapted to cotton, to which four-fifths of it is devoted. The usual and most productive height of the cotton plant is 5 feet. It inclines to run to weed in wet weather and on very rich land, for which baring off and topping are the remedies.

The yield of seed-cotton per acre from fresh land is 1,000 pounds; 1,660 pounds make a 475-pound bale of lint, which is long, strong, and first rate. After ten years' cultivation the yield is better than from fresh land, 1,500 pounds being then produced per acre, and 1,780 pounds making a 475-pound bale, the lint of which is not so long as that from fresh land, but is equally as strong. The troublesome weeds are cocklebur, tie-vines, and morning-glory. None of these lands lie "turned out".

The *dark loam* land comprises one-fourth of the county area, and extends throughout the Mississippi bottoms, with a timber growth of cottonwood, oak, pecan, dogwood, hackberry, box-elder, and honey-locust. This soil is a heavy clay loam, putty-like, with a brown or mahogany color, and is from 4 to 5 feet deep, the subsoil being lighter than the surface soil. The soil is difficult to till in wet seasons, but easy when dry; is early, warm, ill-drained, and best adapted to cotton, to which four-fifths of it is devoted. Five feet is the usual and most productive height of the plant, which runs to weed in wet weather. In other particulars the soil is like the first described, with the exception that the staple from older cultivated lands is not so good or so long as that from fresh land.

The *black buckshot* land comprises one-fourth of the area of the county, extending throughout the bottoms, and has a timber growth of cypress, cottonwood, and water oak. This soil, putty-like and black, 7 feet deep, with a lighter, coarse, white, sandy subsoil, is best adapted to cotton, to which it is all devoted. The plant usually is 3 feet high, and is longest and most productive in dry weather. The seed-cotton product per acre from fresh land is 900 pounds; 1,660 pounds make a 475-pound bale of good lint. After ten years the yield increases to 1,500 pounds of seed-cotton, when 1,720 pounds make a 475-pound bale of lint, comparing well with that from fresh land. The troublesome weeds are burs. None of this land lies "turned out".

The cotton is best with a small amount of rain and warm, sunny weather. What is most wished for is a dry spring, wet July, dry August and September, and a late frost.

Cotton is shipped, as soon as ginned, by steamboat to New Orleans at \$1 per bale.

MISSISSIPPI.

*Population* : 7,332.—White, 4,671; colored, 2,661.

*Area* : 810 square miles.—Woodland, all; all Mississippi alluvial.

*Tilled lands* : 29,330 acres.—Area planted in cotton, 13,326 acres; in corn, 9,858 acres; in oats, 181 acres; in wheat, 68 acres.

*Cotton production* : 10,430 bales; average cotton product per acre, 0.78 bale, 1,170 pounds seed-cotton, or 390 pounds cotton lint.

Mississippi county, which occupies one of the northeastern corners of the state, is bordered on the east by the Mississippi river, and is entirely included in its alluvial region. That part lying along the river embraces dark sandy loam lands, higher than the lands of the interior, which are easily tilled and very productive, yielding from 1,500 to 1,700 pounds of seed-cotton or 70 to 80 bushels of corn per acre.

The interior and western portions of the county are interspersed with lakes, bayous, sloughs, and cypress swamps, the soils of which are mostly stiff and clayey or buckshot in character. They are also ill-drained and cold, though, when properly cultivated, they are said to yield as much as 1,500 pounds of seed-cotton per acre. Their timber growth is cypress, cottonwood, and water oak. Comparatively little of the land of this county is in cultivation, the average being only 36.2 acres per square mile. Of these 16.5 acres are devoted to cotton, the yield of that crop being greater than in any other county except Chicot and Desha.

#### ABSTRACT OF THE REPORT OF HARRY S. WILLIAMS, OSCEOLA.

The lowlands of the county consist of the first bottom and alluvial plain of the Mississippi river, embracing front-land, back-land, and cypress swamps. The lands devoted to the cultivation of cotton comprise dark buckshot and white chalky crawfish and light sandy and dark loam soils of the Mississippi river bottom. The most important is the *dark sandy loam* of the river bottom, which covers about three-fourths of the surface of the county, and extends, with the exception of the Saint Francis river bottom, from the Mississippi river to Crowley's ridge, a distance of about 40 miles, and has a natural timber growth of oak, cypress, sweet gum, cottonwood, elm, hickory, ash, maple, some dogwood, etc. Its soil, clayey and putty-like in places, varies in color from gray to mahogany or black, and is 5 feet deep. The tillage is not usually difficult. Cotton and corn constitute the chief crops of the region, corn being best adapted to the soil.

About three-fourths of the crops are of cotton, which usually attains a height of from 4 to 5 feet, runs to weed when the soil is too fresh, and yields from fresh land 1,400 pounds of seed-cotton per acre, 1,700 pounds being the product after three years' cultivation (unmanured); 1,900 pounds are required from fresh land, and about the same quantity from old land, for a 475-pound bale of middling lint, that from old land being a little shorter. Hog-weed and crab-grass are the most troublesome weeds. No land lies "turned out". On account of the early frost cotton is liable to be cut short, unless farmers can plant their crops early in the spring.

Cotton is shipped throughout the season, by river, to Memphis and to Saint Louis at the rate of 75 cents per bale.

#### CROWLEY'S RIDGE REGION.

(Includes all or parts of Phillips, Monroe, Lee, Prairie,\* Woodruff, Saint Francis, Cross, Poinsett, Jackson Lawrence, Craighead, Greene, Clay, and Randolph.\*)

#### PHILLIPS.

*Population:* 21,262.—White, 5,444; colored, 15,818.

*Area:* 630 square miles.—Woodland, all; Crowley's ridge, 410 square miles; Mississippi alluvial, 220 square miles.

*Tilled lands:* 78,916 acres.—Area planted in cotton, 42,654 acres; in corn, 19,685 acres; in oats, 834 acres; in wheat, 36 acres.

*Cotton production:* 29,070 bales; average cotton product per acre, 0.68 bale, 1,020 pounds seed-cotton, or 340 pounds cotton lint.

Phillips county, bordered on the east by the Mississippi river, has a generally level surface, with the exception of that portion occupied by Crowley's ridge. This ridge, which reaches the river at or near Helena, the county-seat, is composed of sands, clays, and gravel of the Quaternary period, and is well timbered. The soil is sandy, red or yellow in color, with a clay subsoil, and is said to stand droughts well, producing 40 to 45 bushels of corn, 20 to 30 bushels of wheat, or 800 pounds of seed-cotton per acre. The ridge flattens out westward, forming large bodies of level land, which is watered by Big creek, and has for the most part a deep yellow or mulatto soil, with now and then small spots of an ashen color, probably the former beds of small ponds. These lands will produce on an average 1,000 pounds of seed-cotton, 25 to 30 bushels of corn, or 20 bushels of wheat per acre. The principal growth is sweet gum; but on the most elevated portions the growth is beech, poplar, red and white elm, mulberry, sweet gum, ash, white oak, black walnut, dogwood, sassafras, and red maple. Still westward the country is traversed by low ridges, with intervening clay flats and occasionally wet prairies. These ridges have, for the most part, a reddish, sandy clay soil, and occasionally a gray sandy loam.

In the southern part of the county are the broad bottom lands of the Mississippi river, interspersed with small old river lakes and bayous. Low ridges of a dark loam soil occur elevated a few feet above overflow, and these have a timber growth of sugar trees, large black walnut, red oak, persimmon, white and red elm, sweet gum, mulberry, large sassafras, papaw, and grape-vines. The buckshot lands of the low bottoms of lakes and sloughs lie 10 or 15 feet lower than the ridges, and the principal growth is large cottonwood, buttonwood, and blue ash, with occasionally overcup oak and mulberry. One bale of lint cotton, or 50 to 70 bushels of corn, may be raised per acre. The alluvial land immediately adjoining the Mississippi river is a sandy loam, easily cultivated, and very fertile, producing one bale of cotton per acre.

Phillips county is one of the principal agricultural counties of the state, its lands under cultivation comprising 19.6 per cent. of the total area, and averaging 125.3 acres per square mile, Benton alone having a higher number. It also ranks first in acreage per square mile devoted to the culture of that crop, 67.7 acres. Though second in total cotton acreage and total number of bales, its rank in product per acre in the state is seventh; and in its average population, 33.7 persons per square mile, it is surpassed only by Pulaski and Sebastian counties, in which are located the cities of Little Rock and Fort Smith.

Shipments of cotton are made by river boats either to New Orleans or Memphis.

## MONROE.

*Population:* 9,574.—White, 4,365; colored, 5,209.

*Area:* 660 square miles.—Woodland, nearly all; Crowley's ridge, 600 square miles; Mississippi alluvial, 60 square miles.

*Tilled lands:* 50,372 acres.—Area planted in cotton, 22,017 acres; in corn, 12,945 acres; in oats, 764 acres; in wheat, 60 acres.

*Cotton production:* 14,106 bales; average cotton product per acre, 0.64 bale, 960 pounds seed-cotton, or 320 pounds cotton lint.

The surface of Monroe county is level, and is bounded on the west by the White river. The bottom lands of this stream are broad, well timbered, and have dark sandy soils, rich and productive, yielding from 1,200 to 1,500 pounds of seed-cotton per acre when above overflow and properly cultivated. The rest of the county on the east, higher than the bottom lands, is cut up by sloughs and flats, and occasionally by a wet prairie, and has a sandy soil, similar to that of the uplands of Phillips county, having a timber growth of white, red, and post oaks, hickory, dogwood, sassafras, and some sweet gum. In the northeastern part of the county are the Big and Little prairies. The latter appears to have been the bed of a swamp. The soil and subsoil in this prairie are an ash-colored clay charged with small iron gravel, having a depth of two to two and a half feet, and resting on a substratum of red clay. To be suitable for cultivation these prairies require drainage.

The average population of Monroe county is a little more than 14 persons per square mile; its tilled lands, 76.3 acres, or 11.9 per cent. of the total area. Its cotton acreage is greater than that of any other crop, being an average of 33.4 acres per square mile, ranking in this regard eleventh in the state. In cotton product per acre it ranks as thirteenth.

Shipments of cotton are made either by rail eastward to Memphis, or by boat down the White and Mississippi rivers to New Orleans or Memphis.

## LEE.

*Population:* 13,288.—White, 4,138; colored, 9,150.

*Area:* 580 square miles.—Woodland, nearly all; Crowley's ridge, 405 square miles; Mississippi alluvial, 175 square miles.

*Tilled lands:* 61,307 acres.—Area planted in cotton, 33,009 acres; in corn, 16,124 acres; in oats, 806 acres; in wheat, 83 acre

*Cotton production:* 21,147 bales; average cotton product per acre, 0.64 bales, 960 pounds seed-cotton, or 320 pounds cotton lint.

Lee county, bordered on the east by the Mississippi river, is also traversed on the east by the Saint Francis and the L'Anguille rivers. That portion of the county between these streams is a level bottom land, embracing the sandy alluvial loams adjoining the rivers above overflow, and the stiff black buckshot soils a few feet lower, and more or less subject to overflow. The bottoms are heavily timbered, and the soils, when under cultivation, yield from 1,500 to 2,000 pounds of seed-cotton or from 50 to 70 bushels of corn per acre. Immediately on the west of L'Anguille river Crowley's ridge has a width of from 2 to 4 miles, which is timbered with oaks, large poplars, hickory, gum, ash, dogwood, etc. Its soils are sandy, from red to gray in color, with clay subsoils, and yield, when cultivated, about 800 pounds of seed-cotton or 30 to 40 bushels of corn per acre. West of the ridge the lands are almost level, watered by a number of small streams, and embrace low sandy ridges, with intervening clay flats and occasional wet prairies.

Lee county is one of the chief agricultural counties in the state, its lands under cultivation averaging 105.7 acres per square mile, or 16.5 per cent. of its area; and in this regard it is surpassed by only five counties. It is also among the best cotton counties, the acreage of that crop being 56.9 acres per square mile, the second highest number in the state; the bales, 36.5 per square mile, the third in the state. In product per acre it is, however, surpassed by thirteen counties.

## ABSTRACT OF THE REPORT OF J. A. GAINES, ASKEW.

The lands along the rivers are substantially the same in character. Immediately on the banks the soils are, as a general thing, light sandy loams, subject to overflow. The rich tough clayey land, called "buckshot", is generally higher above water, but back from the river this in a great measure is replaced by a tough clammy soil, sometimes sticky, like putty, which is called "crawlfishy", and is unfit for cultivation and very low, being always under water in the winter and spring. Many ridges reach from river to river, the soil of which is black sandy or loam approaching to buckshot.

The lands of the L'Anguille river are entirely different from the others mentioned, not receiving any of the fertilizing deposits from the Mississippi overflows, and are almost universally clammy, hard, and cold. East from the base of Crowley's ridge the "flatwoods" extend the whole length of the county, the soil of which is a black loam, frequently sandy, with a clay subsoil. West of Crowley's ridge (2 to 4 miles wide) is a country almost level, having a variety of soils, from light sandy to the black buckshot, all rich, and needing a great deal of ditching.

The description of one portion will, as a general thing, answer for the whole of the county. The chief crops are cotton, corn, oats, and millet.

The important soils on which cotton is cultivated are the Mississippi and Saint Francis river lands, comprising black buckshot, light yellow sandy, and black sandy soils; the black (loam) or stiff land and light clay, sometimes black sandy, of Crowley's ridge; and the black yellow loam, in swamps, and occasional buckshot on L'Anguille river. The black and yellow loam of the river bottoms covers a large part of the county. The natural timber growth is oak, ash, hickory, gum, pecan, hackberry, elm, walnut, cypress, papaw, etc. The soil is putty-like in a few places, and is from 2 to 4 feet in depth. The subsoil, lighter than the soil, is sandy, and very rarely contains pebbles. The soil is easy to till in dry seasons, is early and warm when well drained, and is well adapted to all of the crops of the county. About four-sevenths of this land is devoted to cotton culture, the plant usually attaining a height of 6 feet, but is most

productive at 4 feet. Wet seasons and new land inclines the plant to run to weed, and nothing restrains it. The seed-cotton product per acre from fresh land is 2,000 pounds, 1,545 pounds and more in the early part of the season making a 475-pound bale of lint, which rates the same as upland lint. After ten years' cultivation there is but little difference in productiveness, etc. The most troublesome weed is crab-grass. About 3 per cent. of these lands lie "turned out", which produce very well when again brought under cultivation.

On Crowley's ridge and west of that ridge the hills are not much cultivated. The black loam soil is about 8 inches in depth. The subsoil is a light clay, easily managed, as it readily pulverizes when turned over, is slightly impervious, and contains in places yellow and white sand, underlaid by clay and sand. The soil is early and warm when well drained, and is best adapted to cotton, one-half being devoted to that crop, which usually grows to a height of 3½ feet, 3 feet being the most productive. During extreme wet seasons, and when planted on new soil, the plant inclines to run to weed, and nothing remedies this unless the rows are wide on fresh soil. From 1,000 to 1,500 pounds is the seed-cotton product from fresh land, 1,545 pounds of which, in November, make a 475-pound bale of lint, which rates about the same as that from other lands. After ten years' cultivation the product per acre is 1,000 pounds on thin land and about 1,500 pounds on best land in good seasons; but the staple is much shorter, and will not bring the same price as that from fresh land. Crab-grass, careless weeds, and many others, if land has "laid out", trouble this soil. A very small portion of land lies "turned out", and when again cultivated it is hard to get a stand from it the first year, but it yields well the second year. The soils of the slopes of the flatwoods of Crowley's ridge do not wash readily, and the valleys at the foot of the ridge are but slightly injured by the washings.

Cotton on the river lowlands is not as liable to be killed by frost as in the uplands east of the L'Anguille and Saint Francis rivers. These soils are richer and warmer, and more easily cultivated, and are more remunerative to the planter than the uplands.

The acreage of cotton is on the increase: first, because there are more whites working their own crop; second, because there are many who have moved to the cotton belt from northern and western states and from foreign countries who have bought or rented land, which they plant in cotton; third, because the negroes are becoming more thrifty, and depend more upon themselves than formerly, and, being ambitious to rise in the world, plant largely in cotton.

Cotton is shipped, as soon as ready, by river, and some by railroad, to Memphis, Helena, and New Orleans at \$1 per bale.

#### PRAIRIE.

(See "Gray silt prairie region".)

#### WOODRUFF.

*Population*: 8,646.—White, 4,163; colored, 4,483.

*Area*: 580 square miles.—Woodland, nearly all; all Crowley's Ridge region.

*Tilled lands*: 37,889 acres.—Area planted in cotton, 18,124 acres; in corn, 11,146 acres; in oats, 497 acres; in wheat, 307 acres.

*Cotton production*: 12,311 bales; average cotton product per acre, 0.68 bale, 1,020 pounds seed-cotton, or 340 pounds cotton lint.

The surface of Woodruff county is level or undulating, and is bounded on the west by White river and traversed from north to south by Cache river. Other small streams aid in draining the county. Along the rivers the lands are low and flat, more or less subject to overflow, while further back they have an elevation above overflow. The latter have sandy soils, a timber growth of oak, hickory, walnut, etc., and are capable of yielding from 1,200 to 1,500 pounds of seed cotton per acre. The lower lands have usually a black sandy loam soil, deep, rich, and very productive, interspersed with small uncultivated areas of a stiff buckshot character. These lands are easily tilled, are well timbered with black, white, and other oaks, hickory, poplar, cypress, dogwood, elm, ash, etc., and an undergrowth of papaw and vines, and are said to yield from 1,500 to 2,000 pounds of seed-cotton per acre.

Woodruff has a population that averages about 15 persons per square mile. The tilled lands comprise 10.2 per cent. of the area, or 65.2 acres per square mile, of which 31.2 acres are devoted to cotton culture. In the latter regard it ranks as fifteenth in the state. In cotton product per acre the county ranks as eighth.

#### ABSTRACT OF THE REPORT OF J. B. DENT, AUGUSTA.

The lowlands of the county comprise the first and second bottoms of White and Cache rivers and the alluvial plain lying between. The chief crop is cotton, the other crops being corn, Irish and sweet potatoes, sorghum, wheat, and clover. Corn yields 40 bushels per acre, and last year, with heavy cotton-seed fertilizer, 40 bushels of wheat per acre were raised, while the ordinary crop is only from 16 to 20 bushels. From 200 to 300 bushels is the yield of potatoes. The soils cultivated in cotton are the gum land, or a sort of "made earth", or dark sandy loam, the fine light sandy, and the "buckshot".

The *dark sandy loam* soil, or "gum land", as it is called, comprises two-thirds of the area of the county, extending throughout all of the White river valley, over 100 miles in length and from 20 to 40 miles in width. The timber growth is gum, all kinds of oak, dogwood, poplar, soft maple, papaw, cypress, etc. The soil is a blackish and rich dark brown loam, 14 inches in depth, with a heavy reddish-brown clay subsoil, known as mulatto, almost impervious. It is easy to cultivate, is early and warm, but ill-drained, and is well adapted to all of the crops of the region. One-half of this land is devoted to cotton, the usual height of the plant being 5 feet. It inclines to run to weed in wet seasons or on new land, which cutting off the top in August helps somewhat to restrain. The seed-cotton product per acre from fresh land is 1,500 pounds, and from 1,425 to 1,545 pounds make a 475-pound bale of middling lint. After ten years' cultivation the product is from 1,500 to 2,000 pounds, and 1,480 pounds make a 475-pound bale of lint, which is but little different from that of fresh land. The most troublesome weed is crab-grass; there is also some careless weed. None of this land lies "turned out".

The *fine sandy land* comprises nearly one-third of the county area, extending the whole distance of White River valley, and alternating with the gum land. The timber growth is oak, hickory, walnut, elm, and gum. The soil is fine and sandy, brown colored, and 12 inches deep, with a heavier brown or iron-rust colored clay subsoil, which is sticky when wet and is nearly impervious. The soil is early, warm, and well-drained, is easy to till, and is best adapted to cotton, sweet potatoes, and ground-pease. One-half of it is devoted to cotton, which usually grows to about 4 feet high, and only runs to weed on very new land. Topping restrains the plant. Fifteen hundred pounds of seed-cotton is the product per acre, of which 1,480 or 1,545 pounds make a 475-pound bale of middling lint. After ten years the product of seed-cotton is 1,200 pounds, and there is but little difference, if any, in the amount necessary for a 475-pound bale of lint, or in the rating between this and that from fresh land. Weeds scarcely trouble this soil, although crab-grass grows rapidly. None of this land lies "turned out".

The *buckshot* or white land is not cultivated, except in small patches, which are inclosed by the soils already described. It is always found in the swales or low places in the field, and is cultivated as other land. It makes the best grass and wheat land.

Shipments are made, from October to April, by steamer to Memphis at \$1 25, and to New Orleans at \$2 per bale.

SAINT FRANCIS.

*Population* : 8,389.—White, 4,921; colored, 3,468.

*Area* : 620 square miles.—Woodland, nearly all; Crowley's ridge, 370 square miles; Mississippi and Saint Francis alluvial, 250 square miles.

*Tilled lands* : 35,406 acres.—Area planted in cotton, 11,857 acres; in corn, 9,934 acres; in oats, 706 acres; in wheat, 354 acres.

*Cotton production* : 5,966 bales; average cotton product per acre, 0.50 bale, 750 pounds seed-cotton, or 250 pounds cotton lint.

The surface of Saint Francis county is quite level, with the exception of Crowley's ridge, which lies from north to south through the center of the county, and along the west side of the Saint Francis river. This ridge is here from 2 to 6 miles in width and is well timbered, and its soils produce, when well cultivated, from 1,000 to 1,200 pounds of seed-cotton or 30 to 40 bushels of corn per acre.

On the east of the ridge is the broad region of alluvial lands of the White and the Mississippi rivers. They comprise dark sandy loam and stiff buckshot lands, are heavily timbered with oaks, walnut, hickory, ash, cypress, elm, gum, etc., and where cultivated produce from 1,500 to 1,800 pounds of seed-cotton or 60 bushels of corn per acre. There is a marl bed near Madison (with very large fossil oyster shells) many feet thick, containing over 40 per cent. of lime, which would form a valuable fertilizer on the sandy lands of the ridge.

Crowley's ridge is much broken into hills, but westward the surface of the country is characterized by low sandy and clay ridges, with intervening flat clay land, the latter, for the most part wet and spouty and without drainage, being unfit for cultivation.

The county has a population averaging a little more than 13 persons per square mile; and tilled land 57.1 acres, or 8.9 per cent. of the total area. Cotton comprises about one-third of the lands under cultivation, and averages 19.1 acres per square mile. The average product per acre in 1879 was but half a bale of lint cotton, or 750 pounds in the seed.

ABSTRACT OF THE REPORT OF THOMAS B. HOY, MILLBROOK.

The lowlands consist of the second bottoms and alluvial planes of the L'Anguille and Saint Francis rivers.

The uplands are the level table-lands of Crowley's ridge, the west side of which slopes off into a beautiful level plain about three miles in width, and is very productive. The lands devoted to the cultivation of cotton comprise the gray loam of Crowley's ridge and some white buckshot in the sinks and the lowlands, varying in color from gray to nearly black, extending about 40 miles north, the same south, having a width of about 4 miles, a timber growth of white and black oaks, gum, elm, poplar, walnut, hackberry, dogwood, and papaw, and running parallel to Crowley's ridge. The most important is the *gray loam*, which occupies an area of 18 square miles, and has a natural timber growth of white and black oaks, poplar, sweet gum, hackberry, box-elder, and papaw. The soil is a fine sandy loam, from gray to blackish in color, and 6 inches deep. Its subsoil is a light leachy clay, which, when taken from ditches 2 feet deep and mixed with the soil, benefits it. Sand and gravel are found at 30 feet. The land is rather difficult to till in wet seasons, but not unusually troublesome; it is early when well drained, and is best adapted to cotton. The chief crops of the region are cotton and corn; sweet and Irish potatoes, pease, beans, etc., are also raised. Three-fourths of the cultivated area is devoted to cotton, which grows to a height of from 2 to 5 feet, being most productive at 4 feet. It inclines to run to weed in the fresher lands, which is obviated by planting the smaller varieties of cotton. About 1,600 pounds of seed-cotton per acre are produced from fresh lands, and 1,200 pounds after twenty-five years' cultivation (unmanured); 1,785 pounds are required from fresh land and 1,425 from old lands for 475 pounds of lint, rating in the former case from middling to good middling, and in the latter strict middling, if well handled. Crab-grass, cocklebur, careless weed, and morning-glory vines are the most troublesome weeds.

The soil washes readily on the few slopes there are in this region, doing serious damage, but only injuring the valleys to a very slight extent. Very little of the land lies turned out, and that only on the spurs of Crowley's ridge. Very little effort has been made to check the damage.

Shipments of cotton are made, in November and December, by railroad, from Forest City to Memphis, at the rate of \$1 65 per bale.

CROSS.

*Population* : 5,050.—White, 3,261; colored, 1,789.

*Area* : 620 square miles.—Woodland, nearly all; Crowley's ridge, 425 square miles; Mississippi alluvial, 195 square miles.

*Tilled lands* : 19,225 acres.—Area planted in cotton, 7,607 acres; in corn, 6,985 acres; in oats, 835 acres; in wheat, 471 acres.

*Cotton production* : 4,768 bales; average cotton product per acre, 0.63 bale, 945 pounds seed-cotton, or 315 pounds cotton lint.

Cross county is watered by the Saint Francis river on the east and L'Anguille river on the west. The most prominent topographical feature between these two streams is Crowley's ridge, with a width of from 2 to 6 miles and a height of from 100 to 150 feet, which on the south is much broken into ridges. The timber growth comprises oaks, hickory, poplar, dogwood, and some pine, and its soils yield from 30 to 40 bushels of corn or 600 to 800 pounds of seed-cotton per acre. The rest of the county is quite level and flat; and on the west the ridge, flattening out, is cut up by numerous small streams and interspersed with small open prairies. The soils of this western part are sandy, varying in color from gray to red, and are quite productive. The Saint Francis river bottom lands are mostly black and sandy in character, and are heavily timbered. The lands are very rich and productive, yielding from 1,200 to 1,500 pounds of seed-cotton or 80 bushels of corn per acre. In the northeastern part of the county there are stiff or waxy black lands (similar to the buckshot lands of counties southward), which are said to yield from 50 to 70 bushels of corn per acre. The county is very sparsely settled, the average being about eight persons per square mile. The lands under cultivation average only 31 acres per square mile, of which 12.3 acres are devoted to cotton. In cotton product per acre the county ranks as nineteenth.

## ABSTRACT OF THE REPORT OF W. C. MALONE, WITTSBURG.

The lowlands are those of the Saint Francis river, and consist of bottom, alluvial, front-land, back-land, cypress swamp, etc. The uplands are rolling timbered land. The land in the eastern portion of the county is a level valley, in the middle portion rolling, and in the west flat and even. The chief crops are cotton, corn, oats, potatoes, and all kinds of vegetables. The cotton soils are the reddish, gray, and black sandy soil of the hills and valleys, and the kind known as buckshot soil, not so good as the former.

The *black sandy* or alluvial soil comprises the larger part of the county, extending east 15 miles, south 5 miles, north 17 miles, and in the west is mixed with other soils. The timber growth is poplar, gum, ash, pine, hackberry, haw, oak, elm, etc. The soil varies from fine sandy to gravelly loam, with some heavy clay loam. The color varies exceedingly, and the depth is from 3 inches to 10 feet. The color of the subsoil varies, being in some places light, in others dark; is partly leachy and partly impervious, and contains gravel, pebbles, etc., according to locality, underlaid by sand-rock at 10 feet. The soil is difficult to till in wet seasons, easy when dry, and is not well drained.

Cotton forms about one-half of the crops, the usual height of the plant being from 4 to 8 feet; but 6 feet is the most productive height. On low, wet land the plant inclines to run to weed; but early topping in some years and late culture in others restrains the plant. After three years' cultivation the seed-cotton product per acre is from 800 to 2,000 pounds; 1,780 or 1,900 pounds make a 475-pound bale of lint, which rates nearly the same as that from fresh land, depending on the season. Cocklebur, careless weed, and crab-grass are the most troublesome weeds. Very little of this land lies "turned out". When again cultivated it does not do as well as fresh land. The soil washes and gullies seriously on the slopes; but the valleys are not much injured, and in some instances are bettered by the washings. But little has been done to check the damage.

Cotton grows well on all the land when well cultivated; and in almost every season, with proper culture, it will make from 800 to 1,500 pounds of seed-cotton per acre. Cotton grows and matures best on the black loamy land. The implements used are not of the best quality, but the county is improving in this respect.

Shipments are made during the fall and winter by river to Memphis or New Orleans at \$1 50 per bale.

## POINSETT.

*Population:* 2,192.—White, 1,902; colored, 290.

*Area:* 760 square miles.—Woodland, nearly all; Crowley's ridge, 360 square miles; Mississippi alluvial, 400 square miles.

*Tilled lands:* 7,712 acres.—Area planted in cotton, 2,373 acres; in corn, 3,907 acres; in oats, 258 acres; in wheat, 237 acres.

*Cotton production:* 1,514 bales; average cotton product per acre, 0.64 bale, 960 pounds seed-cotton, or 320 pounds cotton lint.

The surface of Poinsett county is generally level, with the exception of Crowley's ridge, which occupies a central position north and south. This ridge, lying between the bottom lands of the Saint Francis and L'Anguille rivers, is high, and is timbered with black and white oaks, poplar, and some pine. These lands are drained by numerous branches, and have a growth of poplar, gum, ash, elm, and dogwood. The soils produce from 30 to 40 bushels of corn per acre.

On the west of the ridge is a level prairie region, comprising about one-tenth of the county area, the soil of which is sandy, with a clay subsoil, producing 40 to 50 bushels of corn per acre. The bottom land of L'Anguille river is mostly a bluish clay, and has a timber growth of red and white oaks and small scattering sweet gum, with some post oak on the "post-oak land." On the east of Crowley's ridge low, flat, bottom lands extend through the county, comprising mostly a black sandy soil, timbered with poplar, walnut, hickory, sweet gum, and dogwood, with an undergrowth of papaw, spicewood, and large grape-vines, and yielding from 1,200 to 1,500 pounds of seed-cotton or 80 to 100 bushels of corn per acre.

There is an area of black waxy lands in the southern part of the Saint Francis bottom, on the west side of the river, formerly overflowed by the back-water of the Mississippi, which is of extraordinary fertility, and yields from 50 to 75 bushels of corn per acre.

Poinsett is the most thinly populated county in the state, the average being only about three persons to each square mile. The lands under cultivation comprise but 1.6 per cent. of the total area, or 10.1 acres per square mile, of which 3.1 acres are devoted to the culture of cotton. The acreage in corn is the larger. In cotton product per acre the county ranks sixteenth in the state.

Shipments of cotton are made mostly by river.

## JACKSON.

*Population:* 10,877.—White, 8,113; colored, 2,764.

*Area:* 620 square miles.—Woodland, all; red-loam region, 110 square miles; Crowley's ridge, 510 square miles.

*Tilled lands:* 46,483 acres.—Area planted in cotton, 21,718 acres; in corn, 17,861 acres; in oats, 500 acres; in wheat, 910 acres.

*Cotton production:* 13,895 bales; average cotton product per acre, 0.64 bale, 960 pounds seed-cotton, or 320 pounds cotton lint.

Jackson county is very largely alluvial in character, the only hill land embraced within its limits being on the southwest. White and Black rivers form the western border of the lowlands, and Cache river and Village creek on the east flow southward almost parallel with Black river, and are tributary to White river. Between these streams the lands are elevated 6 or 8 feet above the overflowed bottoms and flats, and at a depth of 7 feet are underlaid by a tough yellow clay for 18 feet, and then by sand. They have a sandy soil, a timber growth of black, white, and post oaks, sweet gum, poplar, black walnut, and some hickory, and are capable of yielding an average of 800 pounds of seed-cotton per acre for many successive years. The spice-land of Cache river is very rich when drained and reclaimed, but in its natural state it is wet and miry. It supports a growth of large timber, viz, gum, ash, pin oak, and hackberry, besides the black spice. The average population of Jackson is not quite 18 persons,

and its tilled lands 75 acres per square mile. Of the latter 35 acres are given to cotton, the county ranking ninth in this regard. In cotton product per acre it ranks fifteenth in the state.

Shipments of cotton are made either by rail to Little Rock and Saint Louis, or by river boats to New Orleans and Memphis.

LAWRENCE.

*Population:* 8,782.—White, 8,315; colored, 467.

*Area:* 600 square miles.—Woodland, all; northern barrens, 300 square miles; Crowley's Ridge region, 300 square miles.

*Tilled lands:* 43,805 acres.—Area planted in cotton, 10,768 acres; in corn, 19,902 acres; in oats, 3,256 acres; in wheat, 2,591 acres.

*Cotton production:* 6,480 bales; average cotton product per acre, 0.60 bale, 900 pounds seed-cotton, or 300 pounds cotton lint.

Lawrence county is about equally divided by Black river. The portion east of the river is an almost level alluvial plain, belonging to the general division of the Crowley's Ridge region. The soil is a black loam, largely subject to overflow, and well timbered with oaks, elm, ash, walnut, gum, and hickory. This soil is easily cultivated, has a yellow clay subsoil, and is very productive, yielding from 50 to 60 bushels of corn or 1,200 to 1,500 pounds of seed-cotton per acre. Some portions of the bottoms are much above overflow and are termed ridges, the chief one being "Buncombe ridge".

On the west of Black river the surface of the county is hilly and broken, comprising sandstones and cherty limestones, these being capped with ferruginous sandstone, clays, and gravel of the Quaternary period. They have a timber growth of black-jack and post oaks, and small hickory, with pine. The lands, when tillable, are sandy and gravelly, with subsoils somewhat clayey, and capable of yielding good crops for a few years.

The county has a population averaging about 15 persons, and tilled lands averaging 73 acres per square mile. As in other counties in the northeast part of the state, corn is the chief crop, cotton being next, with an average of 17.9 acres per square mile. In cotton product per acre the county ranks with Craighead on the east, Lafayette on the southwest, and Baxter and Logan on the north and west of the state.

CRAIGHEAD.

*Population:* 7,037.—White, 6,776; colored, 261.

*Area:* 730 square miles.—Woodland, nearly all; Crowley's ridge, 410 square miles; Mississippi alluvial, 320 square miles.

*Tilled lands:* 35,514 acres.—Area planted in cotton, 7,246 acres; in corn, 15,023 acres; in oats, 1,374 acres; in wheat, 2,734 acres.

*Cotton production:* 4,374 bales; average cotton product per acre, 0.60 bale, 900 pounds seed-cotton, or 300 pounds cotton lint.

Craighead county is largely included within the alluvial region of the Saint Francis river, which lies on the east. The distance from the river westward to the uplands of Crowley's ridge is said to be 20 miles, and this portion of the county is low, heavily timbered with walnut, poplar, dogwood, sweet gum, hickory, and hackberry, and an undergrowth of spicewood, papaw, and grape-vines, and is generally subject to overflow. The higher and tillable portions of these lands have a black sandy soil, which is easily tilled, and produce from one to two bales of lint cotton or 80 to 100 bushels of corn per acre. The upland known as Crowley's ridge has a width of about 10 miles. The lands have occasionally some pine, with the usual hard woods. The surface is undulating, sometimes broken, and is watered by small streams. On the southwest there are some open prairies with sandy soils, which yield, it is said, from 30 to 40 bushels of corn per acre.

The bottom lands of Cache river are broad, and comprise black sandy soils, similar to those of the Saint Francis river, and what are termed "post-oak lands", with wet and ill-drained soils, and are not much in cultivation. The population of this county is sparse, the average being about ten persons, while that of the lands under cultivation is 48.6 acres per square mile. The county is situated in the northeastern part of the state, and we naturally find that the acreage in cotton, only 9.9 acres per square mile, is much smaller than that of corn. The product per acre compares favorably with other counties of this region.

ABSTRACT OF THE REPORT OF J. W. RANSOM, JONESBORO',

The land of Crowley's ridge is finely timbered and watered by creeks and river branches, which have first-class bottom soils, generally black sandy, on which, in a good season, a 500-pound bale of lint per acre is sure. Any land of the county, if not too broken or wet, will produce cotton, corn, wheat, oats, sorghum, and buckwheat. On the east of this ridge a low, heavily-timbered rich bottom country begins and continues for 20 miles to the Saint Francis river, and from here to the Mississippi river the soil is a fine black sandy one, and the country is a little more elevated, but level and richly timbered.

On the west of Crowley's ridge begins the Cache river bottoms, extending about 15 miles to the river, a considerable portion of which cannot be cultivated with profit unless drained, though some of the land makes a 500-pound bale of lint or 60 bushels of corn to the acre. West of Cache river the country is more elevated, but is level to the White river.

In the western part of the county a prairie, with an average width of 3 miles, begins, extending 30 miles, which is chiefly devoted to stock raising.

The most important cotton soil is the *dark mulatto* uplands, comprising two-thirds of the cultivated lands of the county, extending from the Saint Francis to the Cache river bottoms, with a plentiful miscellaneous timber growth. The soil is a fine sandy and gravelly loam, with some prairie, the color of which varies; the depth is from 1 to 3 feet. The subsoil is a heavy yellow clay, underlain by sand and gravel. This soil is difficult to fill when wet, but quite easy when dry, and is well adapted to all of the crops of the region.

Cotton forms about one-half of the crops, which grows usually from 3 to 8 feet in height, and runs to weed on very rich land and during wet seasons, the remedy for which is to bar off, throwing the soil from the cotton plants. The seed-cotton product per acre is about 1,500 pounds, making one-third of its weight of lint. After 30 years' cultivation the seed-cotton product per acre and the proportion of seed-cotton to lint is about the same as on fresh land. The troublesome weeds are white and careless and cockleburrs. No very large amount of this land lies "turned out", and when properly plowed it produces very well. The slopes wash, but not very seriously, if injudiciously plowed. To some extent the valleys are injured by washings of slopes. Very little has been done to check the damage.

Shipments are made, chiefly in May, to Newport, Louisville, and Saint Louis, at from \$2 50 to \$5 per bale.

#### GREENE.

*Population*: 7,480.—White, 7,405; colored, 75.

*Area*: 640 square miles.—Woodland, all; Crowley's ridge, 480 square miles; Mississippi alluvial, 160 square miles.

*Tilled lands*: 29,109 acres.—Area planted in cotton, 6,886 acres; in corn, 14,068 acres; in oats, 1,802 acres; in wheat, 1,702 acres.

*Cotton production*: 3,711 bales; average cotton product per acre, 0.54 bale, 810 pounds seed-cotton, or 270 pounds cotton lint.

Greene county is bordered on the east by the Saint Francis river and on the west partly by the Cache river. Between these two streams Crowley's ridge, with its sandy lands, occupies the greater part of the county, and is timbered with black oak, hickory, black and white walnut, and large poplar. Where gravelly the growth is principally post oak and pine. The ridge lands yield an average of 40 to 50 bushels of corn and 20 to 30 bushels of wheat per acre.

The flat Cache river lands comprise black sandy lands and post-oak flats, the latter too wet for cultivation unless well drained. The black sandy lands of both this river and the Saint Francis are deep and rich, and are said to yield from 80 to 100 bushels of corn or from 1,000 to 2,000 pounds of seed-cotton per acre. The timber growth is poplar, walnut, gum, dogwood, and oaks, with an undergrowth of spicewood, papaw, and grape-vines.

This county has an average population of nearly 12 persons and 45.5 acres of tilled lands per square mile. Corn is the chief crop. The acreage of cotton is greater than in the more southerly counties of Craighead and Poinsett, and averages 10.8 acres per square mile, or 23.7 per cent. of the tilled lands. The product per acre is also greater than that of Saint Francis county, which is more favorably situated.

Comparatively little cotton is produced in the lowlands of the Saint Francis river on the east, while in the small townships of Poland and Saint Francis, in the southern part of the county, the average acreage is greatest.

#### CLAY.

*Population*: 7,213.—White, 7,191; colored, 22.

*Area*: 580 square miles.—Woodland, all; Crowley's ridge, 330 square miles; Mississippi alluvial, 235 square miles; northern barrens, 15 square miles.

*Tilled lands*: 26,337 acres.—Area planted in cotton, 4,239 acres; in corn, 13,979 acres; in oats, 977 acres; in wheat, 2,240 acres.

*Cotton production*: 2,307 bales; average cotton product per acre, 0.54 bale, 810 pounds seed-cotton, or 270 pounds cotton lint.

Clay, the extreme northeastern county of the state, is comparatively level, and is drained by the Saint Francis river on the east, Cache river in the center, and Black river on the west. These rivers are bordered by low, flat bottom lands, heavily timbered, and subject to overflow. Between the Black and the Cache rivers there is a low ridge, which extends southwestward through several counties. Between the Cache and Saint Francis rivers there is a still more prominent and wider ridge, which is the beginning of what is known as Crowley's ridge. Chalk bluff, where it abuts against the Saint Francis river, has an elevation of 135 feet above the river, and, as its name implies, is formed largely of white siliceous or potters' clay, overlaid by heavy beds of sand and gravel. The surface of the ridge is undulating and the soils sandy, covered with a timber growth of black oak, hickory, black and white walnut, and large poplar. In the southern part of the county there is a large area of gravelly lands, whose growth is mostly a barren oak.

The better class of these ridge lands are said to produce from 40 to 50 bushels of corn and 20 to 30 bushels of wheat per acre. About two-thirds of the Cache lands are black sandy lands and one-third post-oak lands. The latter are too wet for cultivation without a complete system of drainage. The black sandy soils of both this and the region east of Crowley's ridge are deep and rich, and are said to be warm and to stand both dry and wet seasons well, yielding from 80 to 100 bushels of corn per acre. The timber growth is sweet gum, hickory, walnut, poplar, dogwood, and occasionally hackberry and box-elder; undergrowth, papaw, spicewood, and large grape-vines.

Clay county has a somewhat larger average population than either Greene or Craighead, over 12 persons per square mile. The average of tilled lands is 45.4 acres per square mile, but of these only 7.3 acres are devoted to the culture of cotton. The product per acre is also the same as in Greene, and in Newton, Scott, and Garland counties of the western uplands of the state.

#### RANDOLPH.

(See "Northern barrens and hill region".)

GRAY SILT PRAIRIES.

(Includes the northwest corner of Desha,\* most of Arkansas and Prairie, and the southern part of Lonoke counties.)

DESHA.

(See "Mississippi alluvial region".)

ARKANSAS.

*Population*: 8,038.—White, 4,971; colored, 3,067.

*Area*: 1,000 square miles.—Woodland, one-third; eastern prairie, 760 square miles; alluvial, 240 square miles.

*Tilled lands*: 35,128 acres.—Area planted in cotton, 12,611 acres; in corn, 10,248 acres; in oats, 685 acres; in wheat, 48 acres.

*Cotton production*: 8,508 bales; average cotton product per acre, 0.67 bale, 1,005 pounds seed-cotton, or 335 pounds cotton lint.

Arkansas county is bordered on the south by the Arkansas river and on the east by White river. The surface of the country is mostly undulating or gently rolling and open prairie land, with timber growth along the streams. The soil of these prairies is rather clayey, and is underlaid by a yellow impervious clay, which renders it difficult to cultivate in wet seasons. The woodlands are preferred for tillage, and are said to yield 1,000 pounds of seed-cotton or 30 bushels of corn per acre.

The river lands are broad, and have dark sandy loam soils, heavily timbered with cottonwood, gum, cypress, etc., and are very highly productive. Their average yield is said to be 1,500 pounds of seed-cotton per acre.

This county has a smaller population than either of the other counties of the region, the average being 8 persons per square mile. The lands under cultivation also average but 35.1 acres per square mile, or 5.5 per cent. of the county area, and are nearly equally divided between corn and cotton, the acreage of the latter being the greatest, 12.6 acres per square mile. In product per acre the county ranks as ninth in the state.

ABSTRACT OF THE REPORT OF JAMES A. GIBSON, DE WITT.

The uplands consist of prairie and timbered lands, and are drained by Lagrue bayou. The lands devoted to cotton culture are the rich black loam of the Arkansas river and the uplands.

The most important is the *upland clay loam*, the soil of which is about 8 inches in depth, with an impervious yellow clay or hard-pan subsoil, underlaid by sand at 8 feet. This land is easily tilled in dry seasons, but quite the reverse in wet ones, and is late, cold, ill-drained, and best adapted to cotton and sweet potatoes. The chief crops of the region are cotton, corn, sweet potatoes, pease, and all kinds of vines. About three-fourths of the tilled area is devoted to cotton, which grows to a height of 3½ feet, running to weed on fresh land, either bottom or upland, when there is too much cultivation, or in wet seasons. Shallow cultivation is the remedy applied. The yield per acre from fresh land in seed-cotton is 1,000 pounds; after ten years this is reduced one-third; but in either case 1,425 pounds are necessary for 475 pounds of middling lint. Crab and cocoa grass and cocklebur are the most troublesome weeds. No land lies "turned out". The soil washes on slopes, but the damage done is not of serious extent, and no efforts have been made to check it.

The *black loam* of the bottoms is about 6 miles wide, and extends the whole length of the county along the Arkansas river. This soil is 6 to 8 feet in depth, and is underlaid by sand. It is easily cultivated in all seasons; is early, warm, and well drained, and is best adapted to cotton, to which about four-fifths of the cultivated area is devoted. The plant usually attains a height of about 5 feet. The product per acre from fresh land in seed-cotton is about 1,500 pounds; after ten years of cultivation the yield and rating of the staple are about the same; 1,425 pounds are requisite for a 475-pound bale of lint, rating as middling. Cocklebur and cocoa grass are the most troublesome weeds. No land lies "turned out", because of exhaustion. Drought or too much rain are about the only sources of injury to the cotton crop in this county.

Shipments of cotton are made as fast as it is ginned by river to Memphis, freight being \$1 25 per bale.

PRAIRIE.

*Population*: 8,435.—White, 5,691; colored, 2,744.

*Area*: 710 square miles.—Woodland, probably one-half; eastern prairie region, 535 square miles; red-loam region, 175 square miles.

*Tilled lands*: 35,032 acres.—Area planted in cotton, 12,124 acres; in corn, 10,113 acres; in oats, 2,191 acres; in wheat, 457 acres.

*Cotton production*: 6,977 bales; average cotton product per acre, 0.58 bale, 870 pounds seed-cotton, or 290 pounds cotton lint.

The surface of Prairie county is undulating or slightly rolling, and is bordered on the east by White river, by whose tributaries it is mostly watered.

The uplands of the county are mostly open prairies, especially in the central and southern portions, interspersed with areas timbered with red, post, black-jack, white and Spanish oaks, and hickory. The land of the prairies is clayey in character, underlaid by a yellow impervious clay subsoil, and, being difficult to till in wet seasons and ill-drained, is mostly devoted to grazing purposes. The timbered lands are sandy to a depth of several feet, and are underlaid by clays. While yielding well at first, they are said to deteriorate rapidly under cultivation, and after 20 years produce but 300 pounds of seed-cotton per acre. The bottom lands of the river and larger streams comprise the usual front-land of sandy loams and back-lands of stiffer soils, sometimes buckshot in character. These have a timber growth of white and black oaks, elm, walnut, ash, sweet gum, hickory, etc., and yield from 1,500 to 1,800 pounds of seed-cotton per acre.

The extreme northern part of the county is underlaid by material of the millstone grit formation, and is well timbered with the growth of that region. The prairies reach to within two or three miles of Des Arc from the south, their northern limit extending westward into Lonoke county.

Prairie county has an average population of nearly 12 persons, and 7.7 acres of tilled lands per square mile. The acreage of corn and cotton is nearly the same, that of the latter being the greatest, with an average of 17.1 acres per square mile. In product per acre the county ranks much below Arkansas, but equal with a number of counties of the red-loam region. The greater part of that crop is produced in the northern or timbered portion. A small part of the county area—that east of White river—is covered by the sands and clays of Crowley's Ridge region, and is not only largely planted in cotton (producing more than one-fourth of the total yield of the county), but has a higher product per acre—1,010 pounds of seed-cotton.

#### ABSTRACT OF THE REPORT OF R. CARL LEE, DEVAL'S BLUFF.

The lowlands comprise the first and second bottoms, front- and back-lands of White river. The uplands are level table-lands, partly black when first cultivated, watered by White river and many of its tributaries. These lands vary greatly, and many flats occur of from 5 to 50 acres in area, which are marked by the timber growth.

The soils cultivated in cotton are the very porous light black sandy bottom loams, mostly above overflow, and those comprising the hill, branch bottoms, and prairie land. The bottom land covers one-half the area of the county, extending east to the Cache river and west to the White river. The soil is a light, fine sandy loam, mahogany to black-colored, 18 inches in depth, with a heavier but light and sandy subsoil. The chief crops are corn and cotton, the soil being best adapted to the latter crop, to which from one-third to one-half of it is devoted. The usual height of cotton is from 6 to 8 feet. The plant inclines to run to weed in wet weather, and nothing restrains it; however, some farmers top it.

The seed-cotton product per acre from fresh land is 1,800 pounds, 1,660 pounds of the first picking or 1,425 after frost making a 475-pound bale of middling to fancy lint. After twenty years' cultivation 1,500 pounds is the seed-cotton product, and the same amount is necessary for a 475-pound bale of lint as from fresh land. On new land cotton does not open as well as on old land. Crab-grass and careless and rag weeds are most troublesome on this soil. None of this land lies "turned out".

The hill and prairie lands cover one-half the county, extending east to White river and west to bayou Meta, with a timber growth of post, black, white, Spanish, willow, and black-jack oaks, and hickory.

The soil of the upland is a fine sandy loam; that of the prairies clayey; and the color varies from whitish and gray to blackish, with a depth of 3 inches. The subsoil is yellow and sandy, gradually changing into clay at a depth of 2½ feet, then to hard-pan, which is impervious. The soil is easy to till when dry, but difficult when wet, and is cold and ill-drained, and best adapted to cotton, sweet potatoes, and pease. About one-half of this land is devoted to the cultivation of cotton, which usually grows from 3 to 6 feet in height. Wet weather inclines the plant to run to weed, and nothing restrains it. The seed-cotton product per acre from fresh land is 1,200 pounds, but after twenty years' cultivation it is 300 pounds per acre, 1,545 pounds from both fresh and old lands making a 475-pound bale of middling lint. Crab-grass is the most troublesome weed. One per cent. of this land lies "turned out". The soil washes readily on the slopes, doing serious damage to them and to the valleys, which, on the average, are injured 25 per cent. No efforts have been made to check this damage.

Shipments are made, from October to May, by rail and by boat to Saint Louis at \$2, to Memphis at \$1, and to New Orleans at \$1 50 per bale.

#### LONOKE.

*Population*: 12,146.—White, 8,143; colored, 4,003.

*Area*: 760 square miles.—Woodland, two-thirds or more; red-loam region, 295 square miles; alluvial, 280 square miles; eastern prairie region, 185 square miles.

*Tilled lands*: 63,652 acres.—Area planted in cotton, 20,910 acres; in corn, 17,502 acres; in oats, 3,310 acres; in wheat, 1,131 acres.

*Cotton production*: 11,704 bales; average cotton product per acre, 0.56 bale, 840 pounds seed-cotton, or 280 pounds cotton lint.

The surface of Lonoke county is rolling, and is mostly timbered, open prairies being a prominent feature on the east. The northern part of the county is somewhat hilly and the soils sandy, varying in color from gray to red, with reddish clay subsoils and underlying shales and sandstones of the millstone-grit formation.

The prairies, as in the counties on the east, are clayey in character, and at depths of a few inches are underlaid by light-colored and impervious clays, which renders artificial drainage a matter of some importance in the cultivation of the land.

On the south there is, according to Mr. Lee, the correspondent from Prairie county, a large region of swamp lands covering all that part of the county except a belt of prairies extending southeast from Lonoke, the county-seat, along bayou Two Prairies. The lands of this region have a dark sandy loam soil several feet deep and a timber growth of sweet gum, walnut, oaks, hickory, elm, ash, etc. They are very productive and durable, yielding an average, from one season to another, of nearly 1,000 pounds of seed-cotton per acre. Lonoke, with its average of 16 persons per square mile, is more thickly populated than either of the other counties of the region, the lands under cultivation also averaging 83.8 acres.

Cotton is the chief crop, with an acreage not much above that of corn, and averaging 27.5 acres per square mile. As in Prairie county, cotton is planted chiefly in the timbered portion of the county, and comparatively little in the prairies. As a whole, Lonoke ranks with Sevier on the southwest, Crawford on the west, and Stone on the north in product per acre. There is, however, a very great difference in the respective lands within the county in this regard, and we find from the statistics that the richest are those of the alluvial lands of the southwest, their yield being 1,165 pounds of seed-cotton per acre, while that of the north is from 675 to 750 pounds.

## YELLOW-LOAM REGION.

(Including also the region of black Cretaceous prairies on the southwest. It embraces the whole or parts of the counties of Ashley, Union, Columbia, Lafayette, Miller, Little River, Sevier, Howard, Pike,\* Hempstead, Nevada, Ouachita, Calhoun, Bradley, Drew, Chicot,\* Desha,\* Lincoln, Dorsey, Dallas, Clark, Hot Spring,\* Saline,\* Pulaski,\* Grant, and Jefferson.)

## ASHLEY.

*Population:* 10,156.—White, 5,026; colored, 5,130.

*Area:* 950 square miles.—Woodland, nearly all; yellow loam region, 700 square miles; alluvial, 250 square miles.

*Tilled lands:* 48,455 acres.—Area planted in cotton, 19,555 acres; in corn, 15,335 acres; in oats, 1,411 acres; in wheat, 14 acres.

*Cotton production:* 11,371 bales; average cotton product per acre, 0.58 bale, 870 pounds seed-cotton, or 290 pounds cotton lint.

The surface of Ashley county is undulating, and is watered by numerous streams that are tributary to the Saline and the Ouachita rivers on the west, or by bayou Bartholomew in the eastern part.

The uplands are well timbered, and are interspersed with small open prairies, bordered with a scattered growth of oak, known as "oak openings". Both of the latter are dotted over with small mound-like elevations composed of materials that have for a greater time resisted denudation. These prairies are not under cultivation, their soils being stiff and poorly drained and underlaid by impervious clays. The timbered uplands have usually gray sandy soils and red or yellow clay subsoils, and are easily tilled, the best producing from 25 to 30 bushels of corn and about 1,000 pounds of seed-cotton per acre. The western part of the county is rolling, and the soil contains more gravel. The highest and most broken part is on Beech creek. East of the prairies and toward Holly Point there is a ridge of good land, on which gum trees are the principal growth.

The bottom lands are the best adapted to cotton, and are the richest lands of the county. Those of the river and bayou Bartholomew comprise front-lands of gray alluvial loam soils along the river fronts and back-lands of clayey or buckshot soils. The bottoms have often a width of several miles, with a timber growth of oak, gum, hickory, ash, elm, dogwood, holly, etc., and are above overflow. They are largely in cultivation, and produce from one to two bales of cotton per acre.

The population of Ashley county averages more than 10 persons, and the tilled lands 51 acres per square mile. Cotton and corn are the chief crops, the former predominating, with an average of 20.6 acres per square mile.

## ABSTRACT OF THE REPORT OF J. P. HARBISON, HAMBURG.

The lowlands consist of the first and second bottoms of Saline river, bayou Bartholomew, and their tributaries. The uplands are level table-lands, lying in areas of from 10 to 200 acres, with some uncultivated prairie. The lands devoted to the culture of cotton are the gray alluvial front-lands and the buckshot soils of the back-land of the bottoms of the large streams, the light sandy soils of the pine table-lands mixed with enough loam to make them productive, and the reddish clay soils of the oak uplands. The chief crops of the county are cotton, which is the staple product, corn, oats, pease, and potatoes, which are not produced in sufficient quantity for home consumption.

The *gray alluvial* land on bayous and creeks has a timber growth of oak, gum, hickory, ash, elm, dogwood, and holly, and has a fine sandy clay loam soil, gray in color, with a depth of 2½ feet. The subsoil is a very hard white clay, quite impervious when not disturbed, and contains white gravel and angular pebbles, underlaid by clay at 1 to 3 feet. The soil is difficult to till in wet seasons, is early, warm, and ill-drained, and apparently is best adapted to cotton. Oats, pease, and potatoes yield good crops, while corn yields poorly. Cotton forms one-half of the crops, and usually grows to a height of 5 feet. It inclines to run to weed in wet seasons, and many farmers practice topping during the last of July to restrain the plant and favor bolling. The seed-cotton product per acre on fresh land is from 2,000 to 2,400 pounds, 1,425 pounds making a 475-pound bale of lint, which brings from 1 to 1½ cents per pound more than that from old land. After ten years' cultivation the product is from 1,000 to 1,500 pounds of seed-cotton, 1,545 pounds making a 475-pound bale of lint, which is about 10 per cent. poorer than that from fresh land. Crab-grass is the worst enemy cotton-planters have to contend with here, as it cannot be killed in wet weather unless it is covered up. Burs are quite troublesome on low land. But very little bottom land lies turned out.

The *light sandy alluvial* soil of the uplands, with a timber growth of pine, oak, hickory, and dogwood, is gray in color and from 6 to 10 inches deep, with a hard yellow subsoil, inclined to be red, mixed with gravel and underlaid by clay at 1 to 3 feet. The soil is easily tilled, and one-half of its tilled area is devoted to cotton, which usually reaches 3 feet in height. The seed-cotton product per acre of fresh land is from 1,000 to 2,000 pounds, but after ten years' cultivation the product is reduced 500 to 700 pounds. Two-thirds of this land lies turned out, and when allowed to grow up in briars and pine for twelve or fifteen years it produces nearly as well as when first brought into cultivation. The slopes wash and gully seriously, and the valleys are injured to about 10 per cent. of their value by the washings. Some horizontalizing and hillside ditching has been practiced with success.

The *gray sandy* land, comprising about one-fourth of the uplands, and the black sandy and alluvial land, comprising about one-eighth of the bottoms, are very much alike in general character. The soil varies in color from whitish and gray to black, with a depth of 2 feet; but the subsoil is heavier, and contains hard white gravel and angular pebbles, underlaid by gravel and rock at from 1 to 2 feet. The soil is difficult to till in wet seasons, is early, warm, and ill-drained, and apparently is best adapted to cotton, oats, and potatoes. About 50 per cent. of the crops are cotton, which reaches 3 to 4 feet in height, runs to weed in wet weather, and is topped to restrain it and favor bolling.

The seed-cotton product per acre of fresh land is from 1,200 to 1,500 pounds, 1,425 pounds of which make a 475-pound bale of lint. After ten years the product is from 700 to 900 pounds, and 1,545 pounds are then necessary to make a 475-pound bale of lint, which rates 10 per cent. less than that from fresh land. The troublesome weeds are crab-grass and hog-weed. About one-third of this land lies turned out, and after resting ten years produces nearly as well as at first. The soil of the uplands washes seriously, and the valleys are injured from 10 to 20 per cent. Very little has been done to check the damage, but horizontalizing and hillside ditching are successful. We seldom have cotton injured by frost. The lands on bayou Bartholomew are very rich, producing from 1 to 2 bales of lint per acre.

Cotton is shipped, during December, January, and February, by steamboat, chiefly to New Orleans, at \$2 per bale. Considerable has been hauled this season to the railroad and shipped to Saint Louis.

## UNION.

*Population*: 13,419.—White, 6,985; colored, 6,434.

*Area*: 1,000 square miles.—Woodland, all; yellow-loam region, 895 square miles; alluvial, 105 square miles.

*Tilled lands*: 69,472 acres.—Area planted in cotton, 30,136 acres; in corn, 27,795 acres; in oats, 1,249 acres; in wheat, 103 acres.

*Cotton production*: 11,013 bales; average cotton product per acre, 0.37 bale, 555 pounds seed-cotton, or 185 pounds cotton lint.

The surface of Union county is mostly rolling, with areas of level and flat lands. Ouachita river forms the eastern boundary, and a dividing ridge passes east and west through the county, throwing the waters of the small streams of the north into Smackovert creek, a tributary of the Ouachita, those of the south flowing southward into Louisiana before reaching the Ouachita.

The country is well timbered, and comprises three varieties of soils on the uplands: 1. Yellow siliceous or sandy soil, on which the principal growth is beech, oak, gum, holly, pine, maple, and ironwood, with an undergrowth of hazel. This is the most productive soil in the county, and prevails in the northwestern and southeastern parts. It yields 800 pounds of seed-cotton, 20 bushels of corn, or 10 bushels of wheat per acre under proper cultivation. 2. Light sandy land, which occupies a belt in the center of the county, the line running from northeast to southwest a little south of Lisbon. This soil is based on the orange-colored sand and clay lying just above the gravel, and will produce on an average from 600 to 800 pounds of seed-cotton or 15 to 25 bushels of corn per acre. 3. White crawfish land, flat pine, or glady pine land. This soil is not much cultivated, and is generally considered worthless. There is no genuine red land in this county, but there are some small tracts of chocolate or mulatto-colored soil.

The country is broken around El Dorado, and the orange sand and clay which underlie soil No. 2 has a thickness of 40 or 50 feet. Ferruginous sandstone occurs in considerable amounts in the central part of the county, and lignite is said to underlie the whole country on the southeast.

The average of population in this county is a little more than 13 persons, and that of lands under cultivation 69.5 acres per square mile. Cotton and corn are the chief crops, the former predominating, with an average of 30.1 acres per square mile, the county ranking sixteenth in the state in the latter regard. Though fifth in the state in total acreage in cotton, Union is lowest in the average product per acre.

## ABSTRACT OF THE REPORT OF H. L. CHANDLER, EL DORADO.

The lowlands of the county are the second bottoms and hummocks of Ouachita river and Smackovert creek. The uplands are rolling and level, and are well drained. Crops other than cotton, corn, and sweet and Irish potatoes receive very little attention.

The soils cultivated in cotton are the light hummock or loams along the margins of creeks, the red sandy soil, and the light or gray clay and sandy soil. The *creek hummocks* form the chief cotton land, comprising about one-twentieth of the area, extending throughout the county. The soil is a fine sandy loam, whitish or gray colored, 3 to 10 feet deep, with a heavier yellow clay subsoil, underlaid by rock at 10 to 12 feet. It is easily tilled in either wet or dry seasons, is early when well drained, and is best adapted to cotton, to which one-half of its tilled area is devoted. Three feet is the average and most productive height of the cotton-plant, which inclines to run to weed in excessive wet weather, for which there is no remedy. The seed-cotton product from fresh land is from 1,000 to 2,000 pounds per acre, 1,425 pounds being required to make a 475-pound bale of low-middling lint. After eight years' cultivation (unmanned) the product is 700 pounds; after 12 years 500 pounds; the same amount being necessary for a 475-pound bale of lint, which rates one grade lower than that from fresh land. With the exception of rag-weed, there are but few troublesome weeds. About one-third of this land lies "turned out", which, when again cultivated, produces about two-thirds as well as when first cleared. The slopes wash readily, but are not seriously injured, the creek lands being always improved by washings from the hills.

The *red sandy* soil, comprising a very small proportion of the county area, is 2 to 5 feet deep, with a heavier clay subsoil filled with pebbles and underlaid by sand and gravel at 10 to 30 feet. This soil is easy to till both in wet and in dry seasons, is early, warm, and well drained, and is best adapted to cotton. In other respects it is like the hummock land.

The *light or gray clay and sand* soil of the uplands, comprising about four-fifths of the county, is a fine, sandy, gravelly white clay, somewhat putty like, whitish to gray in color, and from 6 inches to 3 feet deep. The subsoil is heavier, and is inclined to be impervious, and contains pebbles, underlaid by red clay at from 6 inches to 3 feet. This soil is more difficult to till than either of the preceding soils described, as it is late and cold when ill-drained, and is apparently best adapted to cotton. In other respects it is like the hummock soil.

The cotton crop is here much influenced by wet or dry seasons, a wet season subjecting the crop to many risks, such as rust, boll-worm, caterpillar, rain blight, boll-rot, late picking, etc. Dry seasons are conducive to a healthy crop with but few disasters.

Cotton is shipped, from December to March, by river to New Orleans at \$1 25 per bale.

## COLUMBIA.

*Population*: 14,090.—White, 8,587; colored, 5,503.

*Area*: 860 square miles.—Woodland, all; all yellow-loam region.

*Tilled lands*: 80,309 acres.—Area planted in cotton, 32,427 acres; in corn, 28,868 acres; in oats, 3,241 acres; in wheat, 1,019 acres.

*Cotton production*: 13,039 bales; average cotton product per acre, 0.40 bale, 600 pounds seed-cotton, or 200 pounds cotton lint.

The northern part of Columbia county is rolling, with mostly gray, sandy, and gravelly lands, underlaid by reddish sandy subsoils and clays, and chiefly timbered with a growth of pine and oak. The southern part is more level, with sandy and gravelly lands, yielding about 1,000 pounds of seed-cotton per acre. On King's creek the country is generally a level black sandy land; on Big creek flats the soil is a white clay, and the growth holly, beech, and pine. In the western part of the county, on the oak flats of bayou Dorcheat, the soil is a siliceous clay, bordered by sandy lands elevated a few feet above high water; at a still higher level the sand and gravel beds alternate with dark sands and red siliceous clays. The crops of the country are cotton, corn, rye, and potatoes, and fruits.

The average of the population of this county is a little more than 16 persons, and that of lands under cultivation 93.4 acres per square mile. Of the chief crops cotton has the largest acreage, its average of 37.7 acres per square mile placing the county fourth in the state, Phillips, Lee, and Jefferson alone surpassing it. In product per acre it is, on the other hand, among the six lowest in the state.

## ABSTRACT OF THE REPORT OF J. D. ZACHRY, MAGNOLIA.

Columbia county is on the dividing ridge between the Ouachita and Red rivers. The land is rolling and very productive, and nearly all the crops adapted to this latitude can be raised successfully. Sugar-cane does very well, 400 to 500 gallons of sirup per acre having been produced. There is but little difference in the productiveness of the several soils of this county. The quality of the cotton raised on different soils does not vary perceptibly, as the lands seem better adapted to it than to any other crop.

The soils devoted to the cultivation of cotton are the dark sandy land, the red sandy and red clay land, and the light sandy and flat moist land. The dark sandy land, extending throughout the county, has a natural timber growth of white, red, black, and post oaks and pine. The soil is a light sandy clay loam 1 to 2 feet deep, with color varying from gray to blackish, which contains white pebbles in patches, underlaid by sand and gravel at from 10 to 20 feet. This soil is easily tilled, and is well adapted to all of the crops of the region. Three-fifths of this land under cultivation is devoted to cotton, which is usually about 3 feet high. It inclines to run to weed on fresh land or when planted late and the season is wet, which is remedied by allowing the cotton to remain thick in the drill and plowing the dirt from it. The product of seed-cotton is from 1,000 to 1,500 pounds per acre.

When negro laborers are employed not more than 500 pounds of seed-cotton can be raised; 1,425 pounds are necessary to make a 475-pound bale of lint, which rates as good middling. Six hundred pounds of seed-cotton is the yield after seven years' cultivation, the same amount being needed for a 475-pound bale of low middling lint as from fresh land. Crab-grass is the most troublesome weed. About 20 per cent. of this land lies "turned out", and after fifteen or twenty years it produces the same as fresh land. The soil washes to some extent on the slopes, but the valleys are not injured by the washings. Horizontalizing and hillside ditching have proved successful checks when properly done. Cotton does best in a warm and tolerably dry season, and such seasons we generally have.

Shipments are made, from September to April, by railroad and river to Saint Louis at \$3, and to New Orleans at \$1 50 per bale.

## LA FAYETTE.

*Population*: 5,730.—White, 2,116; colored, 3,614.

*Area*: 490 square miles.—Woodland, nearly all; yellow-loam region, 400 square miles; alluvial, 90 square miles.

*Tilled lands*: 27,361 acres.—Area planted in cotton, 10,611 acres; in corn, 8,366 acres; in oats, 140 acres; in wheat, 13 acres.

*Cotton production*: 6,339 bales; average cotton product per acre, 0.60 bale, 900 pounds seed-cotton, or 300 pounds cotton lint.

La Fayette county is bordered on the west by Red river, while bayou Bateau waters the eastern side, both flowing southward, and having broad bottom lands. The surface of the county is rolling, and the ridges and hills between the numerous water-courses attain an elevation of from 100 to 130 feet, and for the most part are composed of white and gray sand, orange-colored sand, ferruginous sand, and conglomerate and sandy iron ore. These, alternating with red clay and gravel, give character to a variety of upland soil which will yield from 800 to 1,000 pounds of seed-cotton per acre. The county is well timbered. There are some prairies in the northern part with black sandy soils.

The river bottoms have mostly soils of this black character, varied with red sandy or clayey lands, and a timber growth of black, pin, willow, and overcup oaks, hickory, ash, gum, pecan, walnut, cottonwood, cypress, and elm. The lands are very productive, yielding from 2,000 to 2,500 pounds of seed-cotton per acre. Ascending from these bottoms to the Lewisville road, both the clay and the sand are very red; and some of it, if washed, might be suitable for a paint.

The average of the population of La Fayette is more than 11 persons per square mile, and of tilled lands 55.8 acres per square mile. While cotton and corn comprise the chief crops of the county, the former has the largest acreage, its average being 21.7 acres per square mile, or 38.8 per cent. of the tilled lands. The rich bottom lands of Red river have, by their high yields, placed the county high in the list as regards product per acre, the uplands belonging to that class having an average of less than half a bale.

Shipments are made, by rail and river, to Saint Louis and New Orleans.

## MILLER.

*Population*: 9,919.—White, 5,324; colored, 4,595.

*Area*: 690 square miles.—Woodland, nearly all; yellow-loam region, 370 square miles; alluvial, 320 square miles.

*Tilled lands*: 46,038 acres.—Area planted in cotton, 19,111 acres; in corn, 16,672 acres; in oats, 691 acres.

*Cotton production*: 11,643 bales; average cotton product per acre, 0.61 bale, 915 pounds seed-cotton, or 305 pounds cotton lint.

Miller is the extreme southwestern county of the state, and Red river forms the eastern and northern boundaries. Texarkana, the county-seat, is located on the state line, which passes along one of the principal streets. The uplands of the county are rolling, and, with the exception of a few small prairies, are well timbered. The soil is sandy and, in a few places, gravelly, the subsoil being a reddish loam, which yields from 500 to 800 pounds of seed-cotton per acre with fair cultivation.

The river bottoms, lying about 100 feet below the uplands, are many miles in width, and for the most part are well timbered. The soils vary from a dark sandy loam to a red or chocolate-colored clay several feet deep, and are the chief cotton lands of the county, producing from 1,800 to 2,500 pounds of seed-cotton per acre in good seasons. It is said that as much as 3,500 pounds have been produced on a single acre. Some open prairie lands occur in these bottoms.

The population of Miller county averages a little more than 14 persons per square mile, and the tilled lands 66.7 acres per square mile. Cotton has a greater acreage than corn, and comprises 41.5 per cent. of the lands under cultivation, with an average of 27.7 acres per square mile. The broad alluvial lands of Red river places the average product per acre a little above La Fayette, or twenty-first in the state, the uplands having the same productiveness as Columbia and Union.

ABSTRACT OF THE REPORT OF E. T. DALE, TEXARKANA.

The lowlands consist of the first and second bottoms of McKinney bayou and the front-land, back-land, and cypress swamp of Red river. The uplands are mostly rolling, only a small part being prairie, and are watered by Nix and Dag's creeks. The lands cultivated in cotton comprise black sandy loam lying along the rivers and bayou, sandy loam lying on the creek bottoms, and light sandy soils of the uplands.

The most important is the *black sandy lands* of the river bottoms, constituting about one-third of the area of the county, extending the entire length of the Red and Sulphur rivers, and having a natural timber growth of hickory, ash, walnut, pecan, gum, cottonwood, dogwood, cypress, elm, red cedar, and pin, black, willow, and overcup oaks. The soil is a light, fine sandy loam, from dark red to black in color, and from 2 to 3 feet in depth. Its subsoil is heavier and leachy, and consists of a mixture of sand and clay reddish in color, especially along the borders of Red river, and is underlaid by sand. This land is cultivated with difficulty in wet seasons, but is very easily tilled in dry ones, and is early, warm, ill-drained, and best-adapted to cotton. Corn and cotton are the chief crops of the region. About three-fourths of the crops planted are in cotton, which grows to a height of from 4 to 6 feet, but is most productive at 4½ feet, and yields on fresh land from 1,800 to 2,500 pounds of seed-cotton per acre, 1,425 of which are required for a 475-pound bale of middling lint. After ten years' cultivation (unmanured) the yield is about 1,700 pounds, and in some instances this year (1880) 3,500 pounds of seed-cotton per acre, from 1,425 to 1,665 pounds being necessary for 475 pounds of lint, rating fully as well and often better than that from fresh land. The plant inclines to run to weed in wet weather, for which thorough cultivation and topping are the remedies resorted to. Rag-weed, crab-grass, and cocklebur are the most troublesome weeds. About one-fourth of the land lies "turned out", producing, when again cultivated, as well as it did originally.

The *creek bottom lands*, covering about one-sixth of the surface, and occurring in small bodies scattered throughout the county, have a natural timber growth of white, post, black, and willow oaks, elm, gum, willow, dogwood, holly, birch, hickory, and soft maple. The soil is a fine sandy loam; gray, brown, or black in color, and 18 inches deep. Its subsoil is heavier and leachy, consisting of reddish clay and sand, and contains hard white gravel and rounded pebbles, underlaid by sand. The land is easily tilled in all seasons, is early, warm, and well-drained, and is best adapted to cotton, to which about one-half the cultivated area is devoted. It grows to a height of from 3 to 4 feet, the former being the most productive, and inclines to run to weed in wet seasons, the remedies applied being drainage and cultivation. Twelve hundred pounds from fresh land and 600 pounds from land after five years' cultivation (unmanured) are the products per acre in seed-cotton. From 1,425 to 1,665 pounds from fresh and 1,665 from old lands are required for 475 pounds of lint, rating in the former case as low middling. In the latter case the staple is poorer and shorter. Crab-grass is the most troublesome weed. About one-eighth of the land lies "turned out", which produces poorly when again cultivated, but when manured yields as well as ever.

The *light sandy soil* of the uplands comprises about one-half of the tillable lands, and is found in all parts of the county except on the borders of the river. The natural timber growth is mostly yellow pine, with some black and post oaks and dogwood. The soil is sandy, in some few places gravelly, and varies greatly in color, being gray, yellow, brown, or sometimes orange red, and is 6 inches deep. Its subsoil is heavier and leachy, and consists of a mixture of sand and reddish clay, underlaid by sand. The land is easily cultivated in all seasons, is early, warm, and well drained, and is best adapted to cotton, which forms about one-half the crop planted. The plant usually attains a height of from 1 to 3 feet, being most productive at the latter, and never runs to weed on this land. The yield per acre in seed-cotton from fresh land is from 800 to 1,200 pounds, and from 400 to 800 pounds after five years' cultivation (unmanured). From fresh land 1,425 and from old lands 1,665 pounds are requisite for a 475-pound bale of lint, rating in the former case as low middling; but in the latter case the staple is poorer and shorter. Crab-grass is the most troublesome weed. One-eighth of the land lies "turned out", producing poorly when again cultivated if not manured, but as well as ever if manured. The soil washes on slopes, doing considerable damage and injuring the valleys sometimes to the extent of one-half their value. Horizontalizing and hillside ditching are practiced to a slight extent, but with good success. The climate of both uplands and lowlands is very favorable for the growth of cotton; occasionally, however, a wet spring delays planting in the bottoms.

Cotton is shipped, as fast as baled, by railroad and river to Saint Louis and New Orleans, at the rate of \$3 50 per bale of 500 pounds.

LITTLE RIVER.

*Population:* 6,404.—White, 3,064; colored, 3,340.

*Area:* 530 square miles.—Woodland, nearly all; yellow-loam region, 425 square miles; Red river alluvial, 105 square miles.

*Tilled lands:* 27,083 acres.—Area planted in cotton, 10,368 acres; in corn, 9,141 acres; in oats, 582 acres; in wheat, 118 acres.

*Cotton production:* 7,116 bales; average cotton product per acre, 0.69 bale, 1,035 pounds seed-cotton, or 345 pounds cotton lint.

Little River county, in the southwestern part of the state, lies in the fork formed by the junction of Little river with Red river. A well-timbered dividing ridge, about 250 feet above the bottom lands, and lying in the middle of the county, separates the tributaries of the two streams. In the western part of the county this ridge is 4 or 5 miles wide and 6 or 8 long, and has chiefly a post-oak growth. Its surface is level and the soil cold and wet. To the eastward or northeast from Rocky Comfort this dividing ridge has a coarse, sandy, and gravelly soil, with chiefly an oak growth on the southern side, and then pine and oak prevails. Six or seven miles from Rocky Comfort, in the same course, there are heavy sand beds with a stunted growth of oak and pine. Along the slopes of these ridges there are red or chocolate-colored clays, with a little fine gravel. The rest of the uplands of the county are interspersed with small prairies of black sandy lands, having a stiff clayey subsoil, underlaid by Cretaceous limestones.

The river lands are broad, and comprise the black sandy soils of the second bottom and the red sandy or clayey soils of the first bottom or terrace. The bottom timber growth is cottonwood, ash, pecan, walnut, etc., with a cane undergrowth. The lands yield from 1 to 2 bales of cotton per acre, and are very durable. Salt-licks are found in the northwestern part of the county.

The county has an average population of about 12 persons per square mile, while that of the lands under cultivation is 51.1 acres per square mile, or 8 per cent. of the county area. As in the other counties of this region thus far described, cotton is the chief crop, its acreage comprising 38.3 per cent. of the tilled lands, and averaging 19.6 acres per square mile. The large proportion of alluvial lands under cultivation add greatly to the average product per acre.

Cotton is shipped, by rail or river, to Saint Louis or New Orleans.

#### SEVIER.

*Population*: 6,192.—White, 5,088; colored, 1,104.

*Area*: 550 square miles.—Woodland, some prairies; red-loam lands, 160 square miles; yellow-loam region, 390 square miles.

*Tilled lands*: 25,448 acres.—Area planted in cotton, 7,283 acres; in corn, 10,557 acres; in oats, 1,045 acres; in wheat, 1,012 acres.

*Cotton production*: 4,075 bales; average cotton product per acre, 0.56 bale, 840 pounds seed-cotton, or 280 pounds cotton lint.

Sevier county is bordered on the south by Little river. That portion north of a line eastward from Ultima Thule is hilly and broken, with narrow valleys between the hills. Outcrops of metamorphic rocks occur, and this part of the county is embraced in the mineral belt that extends from Little Rock into the Indian territory. Its soils are sandy, timbered with oak and hickory. The southern part of the county is more level, and is interspersed with large tracts of black sandy soils, underlaid by the limestones and marls of the Cretaceous formation. Sandy oak and pine ridges occur between the streams, their gray or red gravelly soils being underlaid with red clay subsoils. Some ferruginous conglomerate appears on the pine ridges on the southeast, 250 feet above Little river. The bottom lands of the river are very broad, have a dark sandy loam soil, are well timbered with oak, pine, ash, walnut, and elm, and have an undergrowth of cane. Salt-licks are found on the west and east within this black land region, and salt works were at one time in operation near Ultima Thule. The population of this county has an average of about 11 persons, while the lands under cultivation average only 46.3 acres per square mile, or 7.2 per cent. of the total area. It is one of the few counties of the region in which the acreage of corn is greater than that of cotton, the latter embracing 28.6 per cent. of the tilled lands and averaging 13.2 acres per square mile.

#### ABSTRACT OF THE REPORT OF M. W. LOCKE, LOCKESBURG.

The lowlands comprise the first and second bottom of Cossetot creek and the waters and alluvial plain of Little river. The uplands consist of gently rolling table-land, finely timbered. The lands devoted to the cultivation of cotton are the red, black, and gray sandy.

The *red gravelly land* covers about one-fourth of the surface, and is found more or less throughout the county. Its natural timber growth is black, post, and white oaks, hickory, and pine. The soil is a heavy clay loam, orange-red in color, and from 18 inches to 2 feet in depth, with a heavier subsoil, consisting of a deep red stiff clay or hard-pan, containing pebbles and "black gravel", and overlying gravel at 6 feet. The land is easily tilled in all seasons, is early and warm when well drained, and is best adapted to cotton and sorghum. The chief crops of the region are cotton, corn, wheat, oats, sorghum, and potatoes. About one-half the crops planted are in cotton, which grows to a height of from 3 to 3½ feet, and tends to run to weed in July and August, when there is too much rain, topping being the remedy applied to restrain it. From 1,200 to 1,500 pounds is the seed-cotton product per acre from fresh land, and from 800 to 1,000 pounds after 40 years' cultivation, 1,605 pounds being required for 475 pounds of lint, rating as first class from fresh land but not so high from old lands, the lint being shorter. Cocklebur, hog-weed, purslane, and crab-grass are the most troublesome weeds. About one-twentieth of the land lies "turned out", producing very well when again cultivated. The soil does not wash readily on the slopes.

The *black land*, comprising about one-fifth of the cultivated area, extends in each direction about seven miles, and has a natural timber growth of hackberry, ash, oak, elm, hickory, and walnut. Its soil is black and waxy, 2 feet in depth, overlying a hard-pan, which is impervious when undisturbed, and contains shells. Limestone is found at 10 feet. The land is quite difficult to till in wet, but quite easy in dry seasons. It is early and warm, when well drained, and is best adapted to cotton, which constitutes about one-half the crops. The plant usually attains a height of 4 feet, but inclines to run to weed in the latter part of summer if the weather is very wet, the remedy being applied to restrain it. From fresh land 1,500 pounds of seed-cotton are produced per acre, 1,605 of which are necessary for 475 pounds of lint, rating as first class. Some of this land has been cultivated from thirty to forty years without manure, the amount required for a 475-pound bale of lint being the same as in case of fresh land, but the staple is a little shorter. Burs, purslane, and hog-weeds are the most troublesome weeds. About one-tenth of this land lies "turned out", which, when again cultivated, produces very well. The soil washes on slopes, damaging some old fields, but improving the valleys; but no efforts have been made to check the damage.

The *gray sandy lands* cover about one-fourth of the surface of and extend throughout the county. The natural timber growth is pine, hickory, dogwood, sumac, walnut, and all varieties of oaks. The soil is a fine sandy loam, clayey in places, gray or ash-like in color, and from 1 to 2 feet in depth. Its subsoil is heavier, and consists of a deep red clay, impervious when undisturbed, which contains rounded pebbles, and is underlaid by sand at 20 feet. The land is easily tilled in all seasons, is early and warm when well drained, and is best adapted to small grain and cotton, the latter forming one-half the crops planted. The plant usually attains a height of 4 feet. Fresh land produces from 1,200 to 1,500 pounds of seed-cotton per acre, 1,600 pounds being requisite for 475 pounds of lint, rating first-class. This land will fail after ten years' cultivation unmanured. Crab-grass and purslane are the most troublesome weeds. About one-twentieth of the land lies "turned out", yielding fair crops when again cultivated. There is very little washing of the soil on slopes. Cotton matures either on bottoms or uplands, but the bottoms are more liable to rust.

Shipments of cotton are made, about Christmas time, by railroad and steamboat to New Orleans and Saint Louis. The rates of freight are, by wagon, \$1 50 per bale to the river landing, or \$3 to the railroad; thence to market, \$1.

#### HOWARD.

*Population*: 9,917.—White, 7,409; colored, 2,508.

*Area*: 630 square miles.—Woodland, nearly all; red-loam lands, 305 square miles; yellow-loam region, 325 square miles.

*Tilled lands*: 44,812 acres.—Area planted in cotton, 12,259 acres; in corn, 17,671 acres; in oats, 2,486 acres; in wheat, 3,357 acres.

*Cotton production:* 7,051 bales; average cotton product per acre, 0.58 bale, 870 pounds seed-cotton, or 290 pounds cotton lint.

The surface of Howard county is rolling on the south and hilly and broken on the north. Some of the hills are very high, and belong to the mountainous and mineral or metamorphic region of the interior. From a few miles north of Center Point, the county-seat, southward through the county, the country is included in the belt of black lands that are underlaid by Cretaceous limestones and marls. These lands are bordered by timbered uplands, or gray and red sandy, gravelly soils, which seem to constitute the chief cotton lands of the county, and yield an average of 800 pounds of seed-cotton per acre. The soils of the northern part of the county are mostly rocky and sandy, gray in color, except from the headwaters of Muddy creek westward to Saline river, where red lands prevail. The population of the county averages nearly 16 persons to the square mile, and its tilled lands 71.1 acres per square mile. Corn is the chief crop, and the county has the largest wheat acreage in the region. Cotton has an average of 19.5 acres per square mile, and the county ranks with Ashley and Prairie in product per acre.

#### ABSTRACT OF THE REPORT OF J. A. THOMAS, CENTRE POINT.

The uplands of the county consist of rolling and level table-land, and are watered by the Saline river and smaller creeks. There is but little bottom land in this vicinity. The soils devoted to the cultivation of cotton are the red gravelly, the dark sandy, and the black waxy lands. The chief soil is the red gravelly, which comprises three-fourths or more of the area of the county and extends 60 miles east and west and 6 to 10 miles north and south, and has a timber growth of post, black and white oaks, pine, walnut, and ash. The soil is a coarse sandy and gravelly loam, orange red in color, 12 to 20 inches deep, with a heavy clay subsoil, containing hard white gravel, underlaid by sand, gravel, and rock at from 2 to 3 feet. The chief crops of the region are corn, wheat, oats, and cotton. The soil is difficult to till in dry seasons, is early, warm, and well drained, and is best adapted to cotton, to which one-third of it is devoted. The plant usually grows from 3 to 6 feet high; is most productive at from 3½ to 4 feet, inclining to run to weed in wet seasons if the land is too deeply plowed, which can be remedied by shallow cultivation. The seed-cotton product per acre from fresh land is from 1,000 to 1,200 pounds, from 1,480 to 1,510 pounds being necessary for a 475-pound bale of lint, which brings from one-fourth to one-half a cent more than that from old land. After ten years' cultivation the product per acre is reduced to 700 or 800 pounds, from 1,425 to 1,450 pounds making a 475-pound bale of lint, which is shorter than that from fresh land, but the seed is smaller and lighter. Not more than one-fourth of this land lies "turned out", and when cultivated again it produces cotton best the first year, as it matures better than on other land. The slopes do not wash to any extent, as the soil is a heavy clay; the valleys are but very little injured by the washings. There has been but one instance of hillside ditching to check damages from washing, and that was successful. We would prefer lowland for cotton, although good fresh upland is well adapted to it.

Cotton is shipped, from October 1 to March, by railroad to Saint Louis at \$6 50 per bale, which includes both freight and charges.

#### PIKE.

(See "Red-loam region".)

#### HEMPSTEAD.

*Population:* 19,015.—White, 9,593; colored, 9,422.

*Area:* 730 square miles.—Woodland, the greater part; yellow-loam region, 685 square miles; alluvial, 45 square miles.

*Tilled land:* 76,537 acres.—Area planted in cotton, 27,142 acres; in corn, 30,284 acres; in oats, 3,489 acres; in wheat, 1,289 acres.

*Cotton production:* 13,985 bales; average cotton product per acre, 0.52 bale, 780 pounds seed-cotton, or 260 pounds cotton lint.

Hempstead county is bordered on the southwest by Red and Little rivers, though their bottom lands comprise but a small percentage of the county area. The larger portion of the county is watered by tributaries of the Ouachita river, flowing in a northeast and easterly direction. The surface is generally undulating or rolling, and from Washington northward comprises small open prairies of black sandy calcareous lands, interspersed among sandy and gravelly hills, and underlaid by limestones of Cretaceous age. The prairies are said to cover one-sixth of the county area. Fossil shells and remains have been found in great abundance near Washington and in other places. Bois d'arc, or Osage orange, is the characteristic timber growth of these black lands, which are surrounded by pine, ash, and hickory, and have an undergrowth of spice-bush, papaw, dogwood, and buckeye. Southward from Washington, after leaving the sand, there occur dark and stiff tenacious soils, underlaid by blue marly Tertiary clays, which extend 3 or 4 miles south of Spring Hill, near the county-line, where they are covered by the sandy and gravelly soils and clayey subsoils of the pine ridges. Ferruginous conglomerate and sandstones are found on these hills. The uplands of the county are said to produce about 800 pounds of seed-cotton or 30 bushels of corn per acre, while the dark alluvial lands of the streams yield 1,500 pounds of seed-cotton or 50 bushels of corn. This is the most thickly populated county in the region, and in this regard is surpassed but by three in the state, Pulaski, Sebastian, and Phillips, its average being about 26 persons per square mile. The average of lands under cultivation is 104.8 acres per square mile, the counties of Benton, Phillips, Washington, Sebastian, Nevada, and Lee alone having a greater average. While the acreage of corn is greater than that of cotton, the county ranks as seventh in the state in the total acreage of cotton and fifth in the average number of acres (37.2) of that crop per square mile. Cotton is shipped, by rail and river, to Saint Louis or New Orleans.

#### NEVADA.

*Population:* 12,959.—White, 9,236; colored, 3,723.

*Area:* 670 square miles.—Woodland, all; all yellow-loam region.

*Tilled lands:* 70,858 acres.—Area planted in cotton, 23,925 acres; in corn, 23,173 acres; in oats, 1,329 acres; in wheat, 635 acres.

*Cotton production:* 10,520 bales; average cotton product per acre, 0.44 bale, 660 pounds seed-cotton, or 220 pounds cotton lint.

The surface of Nevada county is rolling and well timbered with pine, oak, and hickory. Little Missouri river borders it on the north, and most of the streams are tributary to it, flowing northward. The river lands have dark alluvial soils and are very productive. The uplands are mostly sandy, with red or yellow subsoils, producing from 800 to 1,000 pounds of seed-cotton per acre. The crops of the county are cotton, corn, and small grain. The acreages of corn and cotton are nearly the same, the latter predominating.

The county has an average population of about 19 persons per square mile, which is greater than any other county of this region except Jefferson and Hempstead. The lands under cultivation embrace 16.5 per cent. of its area, averaging 105.8 acres per square mile, and placing the county fifth in the state in this regard, Benton, Phillips, Washington, and Sebastian alone ranking above it. Of this average of tilled lands 35.7 acres are devoted to the culture of cotton, seven counties alone in the state having a greater number, Phillips, Lee, Jefferson, Columbia, Hempstead, Crittenden, and Pulaski. In product per acre the county stands very low, only eight counties in the state having each a less average yield. Shipments are made by rail mostly to Little Rock or Saint Louis.

#### OUACHITA.

*Population:* 11,758.—White, 5,504; colored, 6,254.

*Area:* 730 square miles.—Woodland, all; yellow-loam region, 675 square miles; alluvial, 55 square miles.

*Tilled lands:* 65,733 acres.—Area planted in cotton, 23,855 acres; in corn, 21,924 acres; in oats, 567 acres; in wheat, 164 acres.

*Cotton production:* 8,849 bales; average cotton product per acre, 0.37 bale, 555 pounds seed-cotton, or 185 pounds cotton lint.

Ouachita county has a rolling surface with areas of level uplands, and is well timbered with short-leaf pine, red and white oaks, hickory, etc. Ouachita river flows through it in a southeasterly course and receives all the drainage of the county on either side. The bottom lands of the river are from 2 to 4 miles wide, with buff-colored sandy soils and a timber growth of white and water oaks, large pines, beech, hickory, dogwood, and ash, and an undergrowth of cane, etc. This land is said to produce a bale of cotton or 40 to 50 bushels of corn per acre under fair cultivation. The light hummock lands along the creeks are also fine cotton lands, yielding from 1,000 to 1,500 pounds of seed-cotton per acre.

The uplands embrace several varieties of soils, gray and red sandy and gravelly lands and pine flats or glady lands. The latter occur only in certain localities, and are not considered worthy of cultivation. They are underlaid by pipe-clay, and, in wet seasons, water remains on them for some time. The gray sandy lands cover the greater part of the county, interspersed with large areas of red sandy soils, and underlaid by red sands and clays to a depth of many feet. Their average yield is said to be from 500 to 800 pounds of seed-cotton per acre. Red lands occur throughout the county, and are associated with ferruginous or iron-stone pebbles and gravel. Toward the northeastern part of the county the gravel is said to increase and the land to become redder. Along the Calhoun county-line, however, the county becomes level, and the sands are not deep. The red lands are not as productive as the gray, except in wet seasons, when they are more productive. Lignite is abundant in the vicinity of the river. Cotton and corn are the chief crops, and, as in the adjoining counties, the former has the largest acreage. The population averages about sixteen persons per square mile, and 14.1 per cent. of the county area is in cultivation, with an average of 90 acres per square mile. Of the latter 32.7 acres are devoted to cotton, placing the county twelfth in the state. Though having so large an acreage, the product per acre is lower than that of any other county except Union, which has the same.

Shipments of cotton are made by wagon to the nearest railroad station.

#### CALHOUN.

*Population:* 5,671.—White, 3,583; colored, 2,088.

*Area:* 610 square miles.—Woodland, all; yellow-loam region, 515 square miles; alluvial, 95 square miles.

*Tilled lands:* 33,391 acres.—Area planted in cotton, 13,377 acres; in corn, 12,910 acres; in oats, 873 acres; in wheat, 128 acres.

*Cotton production:* 5,370 bales; average cotton product per acre, 0.40 bale, 600 pounds seed-cotton, or 200 pounds cotton lint.

Calhoun county is bordered on the east by bayou Moro, and on the south by the Ouachita river, other streams mostly flowing southward into the latter. Ten miles north of Hampton there is a ridge 140 feet high covered with gravel, and in the vicinity are others less prominent; but otherwise the surface of the county is said to be generally level and well timbered. In the southern and western parts of the county the lands are sandy. East of Champagne creek the land is low and flat and the soil sandy, but contains more clay than on the west side of the creek, in some places being inclined to be crawfishy and spouty.

The greater part of the northern area of the county is covered with gray sandy soils and reddish clay subsoils, having a timber growth of white, red, and post oaks, and pine, with an undergrowth of chincapin. This soil is said to produce from 800 to 1,000 pounds of seed-cotton per acre. The principal red lands of the county occur north of Hampton, the county-seat, beginning at 2½ miles and extending to within 10 miles of the foot of the gravel ridge. On Moro river the soil is of a rich chocolate color, with some red sand and loam. Sandstone, ferruginous conglomerate, and sandy iron ore form occasional beds north of Hampton.

The crops of the county are cotton, corn, oats, potatoes, and some wheat, the acreage of the former being somewhat greater than that of corn, and averaging 21.9 acres per square mile. The county is sparsely populated, with an average of about 9 persons per square mile, while the lands under cultivation comprise 8.6 per cent. of the area, or 54.7 acres per square mile. In product per acre the county is but little better than Ouachita and Union, the counties ranking lowest in the state in this regard.

## BRADLEY.

*Population:* 6,285.—White, 4,075; colored, 2,210.

*Area:* 700 square miles.—Woodland, all; yellow-loam region, 580 square miles; alluvial, 120 square miles.

*Tilled lands:* 34,068 acres.—Area planted in cotton, 12,221 acres; in corn, 12,330 acres; in oats, 1,073 acres; in wheat, 336 acres.

*Cotton production:* 4,900 bales; average cotton product per acre, 0.40 bale, 600 pounds seed-cotton, or 200 pounds cotton lint.

The surface of Bradley county is mostly rolling, and is well timbered with short-leaf pine, oak, and hickory. The lands of the uplands of the southern part of this county comprise chiefly gray sandy soils from 6 to 10 inches deep, with yellow clay subsoils, which are inclined to be gravelly. Patches of ferruginous conglomerate occur in some places, and lignite is also found in great abundance. In the northern part the soils of the uplands are largely chocolate in color, from the Tertiary iron ores that are found in the adjoining county of Dorsey, and have red clay subsoils. These uplands, as well as those of the south, are said to produce, when properly cultivated, from 800 to 1,000 pounds of seed-cotton or 25 to 30 bushels of corn per acre. Saline river on the east, Ouachita river on the south, and bayou Moro on the west, give to the county a large area of bottom lands. The low bottom lands of these streams on the south are said to be a white clay, cold, wet, and slushy, with an abundant growth of low palmetto. The high bottom lands of the Saline are of much better quality, yielding 1,500 pounds of seed-cotton per acre. The second bottoms, or hummocks, are sandy in character and very productive, yielding from 1,000 to 1,500 pounds of seed-cotton and about 30 bushels of corn per acre. The crops of this county are cotton, corn, potatoes, and oats, with a small acreage in wheat, and it is one of the few counties of this region that has a larger acreage of corn than of cotton, though the difference is very small. The average population per square mile (9 persons) is smaller than in any other county of the region, while that of lands under cultivation (48.7 acres) is greater than in Grant and Sevier only, and of these 17.5 acres are devoted to the culture of cotton. From the census reports it seems that the greater part of the crop is produced in the northern half of the county. In product per acre the county ranks among the four lowest in the state.

## DREW.

*Population:* 12,231.—White, 6,472; colored, 5,759.

*Area:* 840 square miles.—Woodland, all; yellow-loam region, 735 square miles; alluvial, 105 square miles.

*Tilled lands:* 53,537 acres.—Area planted in cotton, 21,796 acres; in corn, 20,005 acres; in oats, 1,488 acres; in wheat, 280 acres.

*Cotton production:* 9,964 bales; average cotton product per acre, 0.46 bale, 690 pounds seed-cotton, or 230 pounds cotton lint.

The surface of the eastern and western parts of Drew county is generally level, while through the center, from north to south, the country is rolling, and the dividing ridge between the waters of Saline river and bayou Bartholomew is said to be very prominent. Around Monticello the soil is gravelly, with a subsoil of red or yellow clay and a timber growth of red and other oaks and short-leaf pine. The ridges in the vicinity of Lacey, on the south, are about 65 feet above the bottoms, and are composed of red and yellow clay and gravel. In the western part of the county the highest land is about 140 feet above the bed of Saline river, the soil of which is a sandy loam, more or less gravelly, with a yellow siliceous clay subsoil, which is said to produce about 800 pounds of seed-cotton per acre in fair seasons. Its timber growth is mostly pine. There are a number of small prairies in this county, Long prairie, 10 or 12 miles south of Monticello, being partly in cultivation. The bottoms of bayou Bartholomew are from 3 to 6 miles wide, and consist of a front-land along the stream with a fine silty or sandy loam soil, and a back-land of a stiffer character and a heavy impervious subsoil. Cypress brakes occur throughout the bottoms, which have a deep black mucky soil, said to be well adapted to cotton and very durable, producing, both when fresh and after 40 years' cultivation, as much as 2,500 pounds of seed-cotton per acre. The crops comprise cotton, corn, wheat, oats, potatoes, and tobacco, and fruits are said to be abundant. Cotton is the chief crop, with an acreage of 25.9 acres per square mile. The lands under cultivation embrace 10 per cent. of the total area, with an average of 63.7 acres per square mile, an amount much less than that of most of the other counties of the region. In product per acre it ranks quite low in the state, there being but eleven counties each with a less average.

## ABSTRACT OF THE REPORT OF S. A. DUKE, BAXTER.

The lowlands of the county comprise the front-land, the back-land, and the cypress swamps of bayou Bartholomew. The chief crops of the county are cotton and corn. The lands devoted to the culture of cotton are the bayou Bartholomew alluvial lands, comprising one-half of the tilled lands of the county, and having an average width of 8 miles, with a natural timber growth of many varieties of oak, cypress, gum, cottonwood, linden, ash holly, black walnut, dogwood, papaw, and prickly ash.

The soil is a fine sandy clay loam brown, mahogany, or blackish in color, with an average depth of 1 foot. The subsoil on the front-land is heavier than the soil, and is a fine sandy loam (quicksand), with occasional spots (generally a little back) of tenacious waxy yellow clay. It is slightly leachy, and is underlaid by very fine quicksand at 22 feet. The soil is easy to till in all seasons, is easily drained, and is best adapted to cotton, to which about two-thirds of its tilled area is devoted, its usual height being 5 feet. The plant runs to weed in wet weather and in such weather as produces the best corn crops. Light surface culture with hoes or "buzzard-wing Dickson sweeps" restrains the plant. The seed-cotton product per acre from fresh land in two test cases, 1875 and 1879, was 2,102 pounds, 1,490 pounds making a 475-pound bale of lint, which rates No. 1. After forty years' cultivation the estimated product is 1,600 pounds on best land, the amount necessary to make a 475-pound bale of lint, and the staple is the same as that from fresh land. Crab-grass, cocklebur, and careless weeds are the most troublesome. One-tenth of these lands lie "turned out", which produce about the same as at first when again cultivated if broom-sedge grass is thoroughly gotten rid of.

The back-lands or flats, comprising about three-eighths of the county area, occur in spots all along the bayous, and have a timber growth of hickory, elm, and hackberry. The soil is 6 inches deep, with a subsoil of heavier yellow clay hard-pan, impervious, and underlaid by

sand at 22 feet. This soil is late and cold, whether well or ill drained, and is apparently best adapted to cotton, two-thirds of its cultivated portion being devoted to this crop. Four and one-half feet is the usual and most productive height attained by the cotton-plant, which does not run to weed on this soil. The seed-cotton product from fresh land is 1,250 pounds, the amount necessary to make a 475-pound bale, and the rating is the same as in the last described soil. After forty years' cultivation the yield of seed-cotton is 500 pounds per acre.

The *cypress brake* land comprises about one-eighth of the county, and occurs at intervals along the whole course of the bayou. The soil is mucky and black, and its depth is unknown. It is easily tilled in wet weather after it is broken, cotton roots penetrating to a great depth. The soil is late and warm when well drained, and is best adapted to cotton, but raises good corn and rice. Nearly all the tilled area of this land is devoted to cotton, which grows 6 feet high and runs to weed under any circumstances, which is remedied by shallow culture. The seed-cotton product for fresh land is 2,500 pounds, the same amount being necessary for a 475-pound bale of excellent lint as on other lands of the county. After forty years' cultivation the product and the rating are the same as on fresh land. The most troublesome weed is the tie-vine (*morning-glory*). One-tenth of these lands lie "turned out", and when again cultivated produce as well as at first.

Shipments are made, as soon as the cotton is baled, by rail to the Mississippi river, and via Arkapolis to New Orleans, at \$2 75 per bale.

CHICOT.

(See "Mississippi alluvial region".)

DESHA.

(See "Mississippi alluvial region".)

LINCOLN.

*Population*: 9,255.—White, 4,212; colored, 5,043.

*Area*: 540 square miles.—Woodland, nearly all; yellow-loam region, 400 square miles; alluvial, 140 square miles.

*Tilled lands*: 38,421 acres.—Area planted in cotton, 17,519 acres; in corn, 12,547 acres; in oats, 1,400 acres; in wheat, 185 acres.

*Cotton production*: 11,563 bales; average cotton product per acre, 0.66 bale, 990 pounds seed-cotton, or 330 pounds cotton lint.

The surface of Lincoln county is slightly rolling and mostly well timbered, and is interspersed with some open prairies. Bayou Bartholomew flows through the middle of the county, while the Arkansas river forms the northeast boundary. Both of these streams have wide and rich bottom lands. The soils are alluvial loams, varying from dark to reddish sands and clays, yielding from 2,000 to 3,000 pounds of seed-cotton per acre.

Lawyer's prairie, in the southern part of the county, is surrounded by large oak timber, and is very productive. The average of lands under cultivation is 71.1 acres per square mile, and the crops are cotton, corn, oats, potatoes, and some wheat. Cotton is the chief crop, its acreage being the greatest, comprising 45.6 per cent. of the tilled lands, and averaging 32.4 acres per square mile, in which it ranks as thirteenth in the state. The rich bottom lands along the Arkansas river and bayou Bartholomew give to the county a high product per acre, and place it as tenth in rank in the state. The average product of the pine-hills, in the southwestern corner of the county, is 630 pounds of seed-cotton per acre; the average of the rest of the county is 1,035 pounds, or as that of Little River county. In the small township of Kimborough, lying on the Arkansas river on the north, we find the average to be 460 pounds of lint or 1,380 pounds of seed-cotton—an average nearly equal to that of Chicot, the banner county of the state.

ABSTRACT OF THE REPORT OF CHARLES V. DIXON, AUBURN.

The lands devoted to the cultivation of cotton comprise light sandy, buckshot, and black sandy soils. The most important is the light sandy loam, covering about three-fifths of the surface of the county, and extending from Pine Bluff to Napoleon, along the banks of the Arkansas river, a distance of about 90 miles. It is from one-half to a mile wide, and has a natural timber growth of cottonwood, willow, box-elder, honey-locust, elms, oaks of different varieties, and sycamore. The soil is a light fine silty or clay loam, blackish in color, and about 2 feet deep; the subsoil, which is lighter, is generally fine white sand, but occasionally clay of a reddish or blackish color. The land is easily cultivated in dry weather, but is tilled with difficulty in wet seasons. It is late, warm, and well drained, and is best adapted to cotton. The chief crops of the region are cotton, corn, and German millet. About four-fifths of the cultivated area is devoted to cotton, which grows to a height of from 4 to 5 feet, and inclines to run to weed in wet seasons when cultivated with the turning plow, for which plowing lightly and topping are the remedies. When the land is fresh the product in seed-cotton per acre is from 1,500 to 1,800 pounds, and 1,500 pounds after 20 years if the land is well cultivated, 1,425 to 1,545 pounds being the amount required, either from fresh or old lands, for a 475-pound bale of lint, rating in the former case as low middling, and in the latter somewhat better, the fiber being stronger. Cocklebur, morning-glory vines, and especially crab-grass, are the most troublesome weeds. About one-eighth of the land lies "turned out", producing, when again taken into cultivation, better than originally, but being harder to cultivate. The lands wash readily on slopes, but the damage to them, or to the lowlands, is not serious, except in the hill country, 10 or 15 miles back. Any damage is checked by horizontalizing or hillside ditching.

Shipments of cotton are made, in December, by steamer to Memphis and New Orleans; freight to Memphis \$1 50, and to New Orleans at from \$2 to \$3 per bale.

DORSEY.

*Population*: 8,370.—White, 6,041; colored, 2,329.

*Area*: 600 square miles.—Woodland, all; all yellow-loam region.

*Tilled lands*: 42,564 acres.—Area planted in cotton, 15,462 acres; in corn, 14,737 acres; in oats, 1,777 acres; in wheat, 660 acres.

*Cotton production*: 6,146 bales; average cotton product per acre, 0.40 bale, 600 pounds seed-cotton, or 200 pounds cotton lint.

The surface of Dorsey county is undulating, with occasional ridges, and is watered by a number of streams tributary to the Saline river, which flows through its center. Bayou Moro forms the western boundary, the water divide between it and Saline river passing very near it. The bottom lands of these streams, and especially of Saline river, are broad and well timbered. The alluvial soils are very productive, yielding, it is claimed, from 40 to 50 bushels of corn and a bale of cotton per acre under cultivation.

The uplands are mostly gray and sandy, interspersed with red lands, and have a yellow or reddish sandy loam subsoil. Red lands occur chiefly in the southern part of the county, associated with an abundance of Tertiary iron ore. The characteristic timber growth is elm, mulberry, prickly ash, red oaks, and a few white oaks and hickory; the undergrowth is dogwood and muscadine and other grape-vines in great abundance. The average yield is 800 pounds of seed-cotton, 40 bushels of corn, or 15 bushels of wheat per acre. Gypsum, gypseous marl, and Tertiary shell marl are found in the southwestern part of the county. The average of the lands under cultivation is 70.9 acres per square mile, and the chief crops are cotton, corn, oats, potatoes, and some wheat. Cotton is the chief crop, comprising 36.3 per cent. of the tilled lands, and averaging 25.8 acres per square mile. In product per acre the county ranks among the three lowest in the state. Cotton is hauled in wagons to the nearest landing on the Arkansas river, and thence shipped by boat to New Orleans or Memphis.

#### DALLAS.

*Population:* 6,505.—White, 4,299; colored, 2,206.

*Area:* 660 square miles.—Woodland, all; all yellow-loam region.

*Tilled lands:* 35,505 acres.—Area planted in cotton, 14,306 acres; in corn, 13,330 acres; in oats, 894 acres; in wheat, 443 acres.

*Cotton production:* 6,157 bales; average cotton product per acre, 0.43 bale, 645 pounds seed-cotton, or 215 pounds cotton lint.

The surface of Dallas county is rolling and well timbered. The Ouachita river forms the western boundary, and, with its tributaries, drains the greater portion of the county. Bayou Moro flows along the eastern border. The uplands comprise both red and gray sandy lands, chiefly the former. The subsoils are mostly reddish clays. The lands yield at first about 800 pounds of seed-cotton per acre, but only 400 pounds after 30 years' cultivation.

The river bottom lands embrace two terraces, or first and second bottoms. The first or lowest bottoms have mostly red alluvial soils, usually subject to overflows, which produce from 1,000 to 1,500 pounds of seed-cotton and 50 bushels of corn per acre.

The soil of the second or upper bottoms is a dark loam more or less sandy, which produces an average of 20 bushels of corn, 10 bushels of wheat, and 800 pounds of seed-cotton per acre. The timber growth of the Ouachita bottom is red, pin, swamp chestnut, swamp white, willow, and water oaks, beech, pecan, sweet gum, magnolia, and holly, and a dense undergrowth of vines, briars, and cane. The lowest bottoms have a cypress and tupelo growth.

The average of lands under cultivation is 53.8 acres per square mile, or 8.4 per cent. of its area. The chief crops are cotton, corn, and potatoes, with some oats and wheat. The acreage of cotton is the greatest, comprising 40.3 per cent. of tilled lands, and averaging 21.7 acres per square mile. In product per acre it ranks low in the state, there being but seven counties below it, due to the fact that it is almost exclusively an upland county.

#### ABSTRACT OF THE REPORT OF W. H. YOUNG, TULIP.

The lands devoted to cotton culture comprise the dark red gravelly and light rolling sandy soils of the uplands and dark sandy soils of the creek bottoms. The chief soil is the *red gravelly land*, constituting about three-fifths of the surface of the county, which extends about 25 miles north and south, and, omitting several creek bottoms, the same distance east and west. The natural timber growth is white post, black, and red oaks, pine, hickory, gum, dogwood, and many other varieties, with common wild grapes. The soil is 5 inches in depth. The subsoil is a yellowish or reddish leachy clay, containing water-worn pebbles, which is underlaid by a bed of closely packed gravel, very deep in places. The land is difficult to till in dry seasons, but easy in wet ones, is early, warm, and well drained, and is best adapted to corn and fruits. The chief crops of the region are cotton, corn, potatoes, pease, and fine fruits of almost all kinds. Cotton forms one-half the crops planted, and grows to a height of from 3 to 4 feet, the taller the better, and yields on fresh land from 700 to 1,200 pounds of seed-cotton per acre. From 1,300 to 1,545 pounds are required, either from old or from fresh land, for a 475-pound bale of good middling lint. After thirty years' cultivation (unmanured) the yield is reduced to 400 pounds per acre, the fiber being then shorter perhaps, but not weaker than that from fresh land. Too much moisture and plowing has a tendency to incline the plant to run to weed on all lands of this county. Shallow plowing and cutting off the tops about the 5th of August are the remedies applied to restrain it. Rag-weed and hog-weed cause trouble, but the planters dread only crab-grass. About one-third of all the cultivated lands of the county have been "turned out" since the war, not so much from exhaustion as from scarcity of labor. When again cultivated, such land produces a little better than that which has had no rest. Old fields pastured and then burned over every year do not grow rich.

The *dark sandy creek bottoms* cover about one-fifth of the surface of the county, and have a natural timber growth of pine, hickory, gum, ash, hornbeam, ironwood, hazel, all the varieties of oak, walnut, cane, etc. The soil is about 6 inches in depth, with a heavier yellow clay subsoil, underlaid by sand and gravel, is easily tilled in all seasons, is early, warm, and ill-drained, and is best adapted to corn. About one-half the cultivated area is devoted to cotton, which grows to a height of from 3 to 5 feet, the latter being the most productive. The yield per acre in seed-cotton from fresh land is from 1,200 to 1,300 pounds, and 600 pounds after twenty years' cultivation (unmanured). In either case 1,300 pounds are necessary for a 475-pound bale of good middling lint, the fiber from old lands being shorter, but as salable when clean. Crab-grass and cocklebur are the most troublesome weeds.

The *sandy uplands* comprise one-fifth of the cultivated area, and extend 40 miles north and south and 20 east and west. The natural timber growth is the same as that of the red lands, with the addition of chineapin. The soil is 5 inches deep, varying in character from fine to coarse, and in color from gray to blackish. The subsoil, heavier than the soil, is leachy, and consists in some places of yellowish clay, and in others of a mixture of clay and sand. Sand and rock are found at from 5 to 10 feet. The soil is easily tilled in either wet or dry weather, is early, warm, and ill-drained, and is best adapted to corn. Cotton, which constitutes one-half of the crops planned, grows to a height of from 3 to 4 feet, and yields on fresh land from 600 to 800 pounds of seed-cotton per acre and 400 pounds after twenty years' cultivation (unmanured); 1,300 pounds, either from fresh or old lands, makes a 475-pound bale of good middling lint, the staple from old lands being a

little shorter. Crab-grass and burs are the most troublesome weeds, though none cause much trouble. The soil washes considerably on slopes, doing serious damage, but the valleys, as yet, have not been injured. Occasionally a farmer plows around a bill instead of going over it. Hillside ditching is practiced with good results if the furrows do not fill up with grass and cause a break.

Cotton is hauled, as fast as ginned, by wagon to Malvern, and thence by railroad to Saint Louis.

CLARK.

*Population:* 15,771.—White, 10,567; colored, 5,204.

*Area:* 950 square miles.—Woodland, all; yellow-loam region, 670 square miles; red-loam region, 280 square miles.

*Tilled lands:* 67,529 acres.—Area planted in cotton, 25,092 acres; in corn, 27,005 acres; in oats, 2,121 acres; in wheat, 2,515 acres.

*Cotton production:* 13,924 bales; average cotton product per acre, 0.55 bale, 825 pounds seed-cotton, or 275 pounds cotton lint.

The surface of Clark county, which is rolling and mostly well timbered, is well watered by the Ouachita river on the east, the Little Missouri river on the west, and Terre Noir in the center of the county, all flowing southwardly and forming a junction on the southeast. These streams have wide bottom lands, heavily timbered with red, pin, swamp chestnut, white, willow, water, and overcup oaks, pecan, beech, walnut, hickory, sweet gum, magnolia, etc., with a dense undergrowth of vines, cane, and greenbriers. The deepest part of the marshy bottoms have a growth of cypress and tupelo gum. The first or lowest bottom has a reddish alluvial soil, more or less subject to overflow, which, when in cultivation, yields from 1,500 to 2,000 pounds of seed-cotton or 50 to 80 bushels of corn per acre. The second bottom or upper terrace has a dark, sandy, alluvial soil, easily tilled, and yields from 800 to 1,000 pounds of seed-cotton or 20 bushels of corn per acre.

The uplands of the southern and northern parts of the county are mostly sandy, with underlying red sands and clays, and have a timber growth of pine, oak, and hickory. In the central part of the county, from a point 15 miles south of Arkadelphia to that town, the soils vary greatly, comprising black sandy, black and stiff waxy buckshot lands on the lowlands, and gray sandy lands on the hills. Cretaceous limestones and marls are found underlying the surface of the country, and are, so far as known, the most easterly outcrop of that formation which forms so important a feature of the state of Texas. The black sandy and stiff clayey lands peculiar to that formation are, however, found occupying the valleys, and are covered on the higher uplands by the sands, gravel, and clays of later formations. The timber growth of these lands, as given in the abstract below, is characteristic of them.

The chief and most productive cotton lands are the black lands, yielding from 800 to 1,000 pounds of seed-cotton per acre. The sandy hill lands, next in importance and productiveness, have a yield of from 600 to 800 pounds per acre, while the stiff buckshot lands are said to yield but 400 to 500 pounds. The lands of the northern part of the county are rocky, gravelly, and sandy, and belong to the metamorphic and sandstone region, which extends westward from Little Rock to the Indian territory.

The average of lands under cultivation is 71.1 acres per square mile, or 11.1 per cent. of the county area. The crops embrace cotton, corn, oats, potatoes, and quite an acreage in wheat. This is one of the six counties in the region whose acreage of corn is greater than that of cotton, the latter crop averaging 26.4 acres per square mile, and comprising 37.2 per cent. of the tilled lands. Its product per acre is below the average for the state at large, but higher than that of the majority of the counties of this region.

ABSTRACT OF THE REPORT OF THOMAS H. MOREHEAD, ARKADELPHIA.

The uplands of this county vary much in character. The lowlands consist of the first and second bottoms of Caddo creek and the Ouachita river.

The lands devoted to the cultivation of cotton comprise the black sandy, the light sandy on the hills, and the buckshot on the flats. The most important is the *black sandy land*, covering about two-fifths of the surface of the county, and extending about 25 miles west and 15 miles south. Its natural timber growth is hickory, oak, ash, walnut, and sweet gum. The soil is about 32 inches in depth; and the subsoil, somewhat lighter colored, is very sticky when wet, and contains "black gravel" and pebbles, overlaid by gravel at 20 feet. This land is difficult to cultivate in wet, but very easy in dry seasons, is early when well drained, and is best adapted to cotton. The chief crops of the region are cotton, corn, wheat, sweet potatoes, and sorghum, cotton forming about one-third of the crops planted. The plant usually attains a height of 4½ feet, but is most productive at 4 feet, and inclines to run to weed in warm, showery weather, for which topping is the remedy applied. The product per acre of seed-cotton from fresh land is 1,000 pounds; from land eight years under cultivation (unmanured), 800 pounds. From fresh land 1,545, and from old land 1,425 pounds, are necessary for a 475-pound bale of lint. Careless and crab-grass are the most troublesome weeds. About 20 per cent. of this land lies "turned out", producing almost as well as it ever did when again cultivated. The soil washes to some extent, doing no serious damage, and the valleys are very slightly injured. No efforts have been made to check this damage.

The *light sandy* land covers about two-fifths of the surface, and occurs in spots all over the county. The natural timber growth is pine, hickory, and oaks of different kinds. The soil is a yellow, fine sandy gravelly loam, 45 inches in depth. Gravel and rock are found at 24 feet. This land is easily cultivated in all seasons, and is early and warm when well drained. About one-half the tilled area is devoted to cotton, which grows to a height of 3½ feet, being most productive at 3 feet. In warm, showery weather there is a tendency of the plant to run to weed, which is restrained by topping and shallow plowing. The yield per acre in seed-cotton is 800 pounds, 1,435 of which are requisite for 475 pounds of low middling lint. After the land has been under cultivation eight years the product per acre is reduced to 600 pounds, which is increased by the use of manure, and 1,425 pounds are necessary for a 475-pound bale of lint, which rates one grade higher than that from fresh land. Careless-weed and crab-grass are the most troublesome weeds. About 20 per cent. of this land lies "turned out", producing very well when again cultivated. The soil washes on slopes to some extent, but not enough to do any serious damage.

The *buckshot* land occurs in spots, constitutes about one-fifth of the county area, and has a natural timber growth of post and red oaks. The soil is gray, chalky, putty-like, 26 inches deep, with a heavy, sticky, hard-pan subsoil, containing soft, rounded pebbles. Gravel and rock are found at 26 feet. The soil is difficult to till in wet seasons, is late and cold, and is best adapted to grasses. About one-

## COTTON PRODUCTION IN ARKANSAS.

fifth of the crops planted is in cotton, which usually attains a height of 2½ feet, being most productive at 3 feet. Cotton does not run to weed on this soil. The yield from fresh land per acre in seed-cotton is 500 pounds; after eight years cultivation (unmanured) 400 pounds. From fresh land 1,545 and from old land 1,425 pounds are required for 475 pounds of ordinary lint. Crab-grass is the troublesome weed. About four-fifths of this land lies "turned out". The uplands are considered the safest for cotton, as on the lowlands the crop is very apt to be injured by rust.

Shipments of cotton are made, by rail, in December, to Saint Louis at the rate of \$2 50 per bale.

## HOT SPRING.

(See "Red-loam region".)

## SALINE.

(See "Red-loam region".)

## PULASKI.

(See "Red-loam region".)

## GRANT.

Population: 6,185.—White, 5,629; colored, 556.

Area: 650 square miles.—Woodland, all; yellow-loam region, 645 square miles; red-loam region, 5 square miles.

Tilled lands: 29,844 acres.—Area planted in cotton, 9,080 acres; in corn, 12,765 acres; in oats, 1,244 acres; in wheat, 573 acres.

Cotton production: 3,999 bales; average cotton product per acre, 0.41 bale, 615 pounds seed-cotton, or 205 pounds cotton lint.

The surface of Grant county is rolling and well timbered. Saline river passes through the western part, and with its wide bottom lands occupies comparatively a large area, though the land is not much in cultivation. The soil is a dark sandy loam, heavily timbered with cottonwood, ash, walnut, gum, etc. The lands of the uplands belong to the oak, hickory, and pine region, and comprise mostly red sandy soils, interspersed with gray sandy pine areas, both underlaid with red and yellow clays. The timber growth of the red lands is chiefly oak and hickory, with some pine, that of the gray being mostly short-leaf pine. The two varieties of land are said to yield respectively 750 and 700 pounds of seed-cotton when fresh, and 300 and 200 pounds after ten years' cultivation.

The county is sparsely populated, the average being a little more than 9 persons, and that of tilled lands 45.9 acres per square mile. The chief crops are corn, cotton, oats, potatoes, and some wheat, the acreage of corn being greatest, that of cotton comprising 32.4 per cent. of the lands in cultivation, and averaging but 14.9 acres per square mile. In product per acre the county is among the lowest in rank in the state.

## ABSTRACT OF THE REPORTS OF T. W. QUINN, PRATTSVILLE, AND W. N. CLEVELAND, DOGWOOD.

The uplands comprise rolling or level table-lands, and the lowlands consist of the sandy loam second bottoms of the Saline river. The lands cultivated in cotton are the red hickory soils, with a clay subsoil and a sandy loam, mixed with gravel of the uplands, and sandy land of the creek and river bottoms. The *red land*, covering about 70 per cent. of the surface of the county, extends 15 miles north, 20 east, 10 south, and 1 mile west, and has a natural timber growth of oak, hickory, ash, dogwood, and pine. The soil is a heavy, gravelly loam, mixed with clay, orange red—in some places gray—in color, and 6 inches deep. The subsoil is heavier, and consists of clay, frequently mixed with gravel, and contains pebbles, underlaid by gravel and small rocks at from 9 to 10 feet. The land is easily cultivated in either wet or dry seasons, is early, warm, and well drained, produces finely, and is best adapted to cotton, though sweet potatoes do remarkably well.

The chief crops of the region are corn, cotton, wheat, oats, potatoes of both kinds, and sometimes sorghum. Cotton forms from one-third to one-half the crops planted, and grows to a height of from 3 to 4 feet, being most productive at 3½ feet. In wet seasons, followed by warm and sultry weather, the plant inclines to run to weed, for which topping is the remedy. From fresh land the yield per acre in seed-cotton is from 750 to 1,000 pounds, from 500 to 1,200 pounds after two and 300 pounds after ten years' cultivation (unmanured), 1,000 pounds, allowing one-tenth for toll, being required, either from fresh or old lands, for a 475-pound bale of lint, rating in the former case as good, and in the latter as middling. Hog-weed, crab-grass, and sometimes careless weed, are most troublesome. About 15 per cent. of the land lies "turned out", producing, when again cultivated, about three-fourths of its original yield. The soil washes readily on slopes, doing serious damage, which is increasing in extent. Narrow valleys are seriously injured by the washings. Horizontalizing is practiced with considerable success to check the damage.

The *sandy and gravelly land* of the uplands comprises about 15 per cent. of the tillable area, generally occurring in the pine lands, the natural timber growth being almost exclusively pine. The soil is 2½ inches deep, with a heavier leachy subsoil, becoming lighter in color as the depth increases, often mixed with gravel and pebbles. Sand, gravel, and rock are found at 1 foot. The land is easily cultivated in dry seasons, but is late, cold, and ill-drained. About three-fifths of the tilled area is devoted to cotton, which is most productive at a height of 2 feet. The plant inclines to run to weed in wet, warm weather with warm nights, and no remedy has been applied to restrain it. Seven hundred pounds from fresh land, and from 200 to 250 pounds from land which has been under cultivation (unmanured) for ten years, is the product per acre in seed-cotton; in either case, 1,600 pounds are required for 475 pounds of good lint. Crab-grass is the most troublesome weed. About 10 per cent. of the land lies "turned out", yielding, when again cultivated, about one-half as much as it did originally. The soil washes on slopes, doing serious damage to the uplands, but not injuring to any great extent, as yet, the valleys. Horizontalizing has been practiced with moderate success.

The *sandy loam* of the creek bottoms, constituting about 5 per cent. of the cultivated area, occurs in several localities, and has a natural timber growth of oak, hickory, ash, linn, etc. The soil is a sandy loam, blackish to black in color, and from 1 to 2 feet in depth. Its subsoil is heavier, and in some places increases in richness with the depth; in others, it comes in contact with an impervious hard-pan, and contains soft, white gravel and rounded and angular pebbles, underlaid by sand. The land is easily cultivated in dry seasons, and is early when well drained. Cotton comprises about one-half the crops planted, and usually attains a height of 5 feet, but it inclines to run to weed in wet weather, no remedy being applied. From 1,100 to 1,200 pounds is the yield per acre in seed-cotton from fresh lands, and 500 pounds from that which has been under cultivation (unmanured) for ten years. In either case 1,545 pounds are necessary for 475 pounds of lint, rating from fresh land as first-class, but not so high from old land. Burs and hog-weed are the most troublesome weeds. No land lies "turned out".

The *sandy loam* of the river bottom covers about 10 per cent. of the surface of the county, and extends in each direction from 20 to 30 miles. The soil is 10 to 12 inches in depth, underlaid by a very deep red-clay subsoil. It is easily tilled in dry seasons, and is early and warm. Cotton comprises about one-half the crops planted, and grows to a height of from 4 to 5 feet, being most productive at 4 or 4½ feet. The plant inclines to run to weed in wet seasons, which is to some extent restrained by topping. From 1,000 to 1,500 pounds is the product per acre in seed-cotton from fresh land, or that which has been under cultivation (unmanured) for 2 years, at which time it is in its best stage. About 1,485 pounds from fresh land are required for a 475-pound bale of lint; but not quite so much from the old land, the staple rating better. Purslane, crab-grass, and cocklebur are the most troublesome weeds. Very little land lies "turned out". When again cultivated, after a few years rest, it produces almost as well as ever. About once in every five years the cotton crop is liable to be injured by the excessive rainfall in April and May. The very dry and hot weather which frequently happens in August and September also damages the cotton.

Shipments of cotton are made from October to December, by railroad, to Little Rock at \$2 per bale, and by water to New Orleans.

JEFFERSON.

*Population*: 22,386.—White, 5,331; colored, 17,055.

*Area*: 870 square miles.—Woodland, all; yellow-loam region, 425 square miles; alluvial, 445 square miles.

*Tilled lands*: 72,141 acres.—Area planted in cotton, 45,426 acres; in corn, 16,839 acres; in oats, 398 acres; in wheat, 32 acres.

*Cotton production*: 34,588 bales; average cotton product per acre, 0.76 bale, 1,140 pounds seed-cotton, or 380 pounds cotton lint.

The Arkansas river divides Jefferson county into two parts, and its broad bottom lands, with those of the creeks and bayous, occupy a large proportion of the area. The surface of the uplands is rather level, well timbered chiefly with pine, and is designated as pine-hill lands. Oak and hickory form a part of the timber growth. These uplands, covered with a sandy soil about 6 inches deep, are usually dark gray in color, underlaid by a red clay subsoil. They lie on both sides of the river bottoms, and do not seem to be very productive, yielding 600 pounds of seed-cotton when fresh, and less after several years' cultivation.

The river bottom lands are among the richest in the state, and comprise dark alluvial loams of great depth, stiff reddish or chocolate-colored clays or "buckshot" lands, and what is known as oak and sweet-gum lands, differing from the latter in being lighter colored, more porous, and less tenacious, warmer, inducing a more rapid growth, and when plowed not forming clods. This light-colored soil is underlaid by red ferruginous clay. There are also extensive canebrakes along the river. The bottom lands are said to produce an average of 2,000 pounds of seed-cotton or 50 to 70 bushels of corn per acre. The average of the lands in cultivation is 82.9 acres per square mile. The chief crops are cotton, corn, potatoes, and a small acreage in oats and wheat. The acreage in cotton is greater than in any other county of the state, and comprises 63 per cent. of the tilled lands, with an average of 52.2 acres per square mile, ranking third in the state, or below Phillips and Lee. Phillips county alone produced in 1879 a greater number of bales, but in product per acre Jefferson is below Chicot, Desha, and Mississippi counties, or fourth in the state.

ABSTRACT OF THE REPORTS OF THOMAS DUNNINGTON AND S. H. COCKRELL, PINE BLUFF.

The Arkansas river runs through Jefferson county, alluvial bottom lands lying on both sides of the river. The lands embrace sandy soils, buckshot clays, and a compound of the two. The creeks are called bayous here, and have narrow but very productive bottom lands. They give value to the hill lands. The uplands are hilly and rolling, and are watered by numerous creeks. Corn, cotton, and vegetables are the principal crops of the region.

The chief soils devoted to the cultivation of cotton are: 1. The river bottoms, which are alluvial, 20 feet in depth, and very productive; 2. The bayou bottoms, back from the river, narrow, occurring in small bodies, and 12 feet in depth; 3. The rolling hill lands, with clayey and sandy soil, from 3 to 15 inches deep.

The *alluvial bottoms*, comprising about one-third of the county area, extend east and west the whole length of the county and north and south about one-fourth of the distance. The timber growth is cottonwood, cypress, pine, oak, gum, ash, and hickory. The soil is fine and coarse sandy loam, grayish to blackish in color, with a heavier subsoil. It is easy to till in any season, is both well- and ill-drained, and is best adapted to cotton, which is usually from 2 to 6 feet in height, but is most productive at from 3 to 4 feet. When the season is very wet, the plant inclines to run to weed, for which there is no effective remedy, although cutting the side roots with a plow and topping help to restrain it. The seed-cotton product from fresh land is 2,000 pounds; 1,545 pounds in dry and 1,720 pounds in wet seasons make a 475-pound bale of lint, which rates No. 1, and has no superior. After twenty years' cultivation the seed-cotton product per acre is from 1,200 to 1,500 pounds, 1,600 pounds of which make a 475-pound bale of lint. The buckshot land has no weeds or grass; sandy land is most troubled with crab-grass and tie-vine (morning-glory). About one-fourth of this land lies "turned out", and produces very well when again cultivated.

The *hill land* (or *pine woods*), comprising from one-half to two-thirds of the county's area, is rolling, and occurs on all sides of the alluvial land. This land has a natural timber growth of pine, oak, ash, hickory, and elm. The soil is sandy, with a depth of from 4 to 6 inches; the subsoil is a yellow and red clay. The soil is not difficult to till when wet, but when dry is not easy, is late, cold, and ill-drained, and is well adapted to corn, oats, pease, vegetables, and sweet potatoes. Manuring with lot manure and cotton-seed has an excellent effect. About one-fourth of the crops is cotton, which grows usually from 2½ to 3 feet in height. The plant is not much inclined to run to weed on this soil, although very wet seasons and manuring will cause it to do so. The seed-cotton product from fresh land is from 500 to 600 pounds, and from 1,720 to 1,785 pounds make a 475-pound bale of lint, which rates very well. After six years the product declines, and the amount

necessary for a 475-pound bale of lint increases a little, the staple comparing very well with that from fresh land. Hog-weed, rag-wood, and grass are the most troublesome. About one-sixth of these lands lie "turned out", which produce very well when again cultivated. The lands do not wash readily on the slopes. This county is too far north for the caterpillar, is above the overflow, and away from the Gulf storms. Frost in April and in October allows six months generally, and often seven months, for the cotton-plant to grow and mature. The hill lands and bayou bottoms are well adapted to the white race.

Shipments are made, during October, November, and December, by railroad and river, to New Orleans at \$1.50 and to Memphis at \$1.25 per bale.

*Remarks by Sterling H. Cockrell.*—The Arkansas valley is a fine cotton region, having a railroad from its mouth to the Indian territory. The river and bayou bottoms are very productive, and the rolling hill lands grow grass for stock. These are termed pine hills, to distinguish them from the bottoms. The hills are best for whites because of malaria. Negroes are not affected by such diseases, and consequently live comfortably on the bottoms.

### RED-LOAM REGION.

(Includes part of the counties of Pike, Sevier,\* Howard,\* Clark,\* all of Polk, Montgomery, Garland, part of Hot Springs, Saline, Pulaski, all of Perry, Yell, Scott, Sebastian, Logan, Conway, Faulkner, White, part of Lonoke,\* Prairie,\* Jackson,\* and Independence,\* all of Van Buren, Pope, Johnson, Franklin, Crawford, Washington, nearly all of Benton, and a part of Madison,\* Newton,\* Searcy,\* and Stone.\*)

#### PIKE.

*Population:* 6,345.—White, 5,951; colored, 394.

*Area:* 620 square miles.—Woodland, all; red-loam region, 415 square miles; yellow-loam region, 205 square miles.

*Tilled lands:* 26,628 acres.—Area planted in cotton, 7,341 acres; in corn, 11,604 acres; in oats, 1,232 acres; in wheat, 2,032 acres.

*Cotton production:* 3,787 bales; average cotton product per acre, 0.52 bale, 780 pounds seed-cotton, or 260 pounds cotton lint.

The northern part of Pike county, from a few miles north of Murfreesboro', is hilly and somewhat mountainous, the rocks being mostly sandstones and millstone grit, interspersed with areas of metamorphic rocks. The southern part is more level, and comprises the rolling table-lands of the region of the Cretaceous limestones and marls, with their black sandy and stiff calcareous soils.

The soils of the northern part are rocky and sandy, interspersed with large tracts of red lands at the head of Antoine creek, on the northeast, and north of Bear Creek mountain, extending west to the Little Missouri, Muddy river, and the Saline in Howard county. At Plaster bluff, on the Little Missouri, on sections 29 and 30, township 8 south, range 25 west, are valuable beds of gypsum from 15 inches to 15 feet in thickness, associated with limestone and red clays. South of Murfreesboro' there is another small tract of metamorphic rocks.

The Cretaceous rocks of the southern part of the county are largely covered with clays, gravel, and sand of later formations, the characteristic black calcareous lands appearing only in limited areas. Pine and oak form the prevailing timber growth of this region. The soils are underlaid by red clay subsoils, and yield an average of from 700 to 800 pounds of seed-cotton per acre. The Cretaceous marls that are found here would probably serve as valuable stimulants and aids to increased productiveness on these sandy lands, containing, as they do, over 20 per cent. of carbonate of lime.

Cultivated lands average 42.9 acres per square mile, or 6.7 per cent. of the area. The crops comprise corn, cotton, oats, wheat, and potatoes, the acreage of corn being the greatest. The acreage of cotton is 27.6 per cent. of the lands under cultivation, and averages 11.8 acres per square mile, and much less than in some of the northern counties of the state. Its product per acre is less than that of the state at large.

#### SEVIER.

(See "Yellow-loam region".)

#### HOWARD.

(See "Yellow-loam region".)

#### CLARK.

(See "Yellow-loam region".)

#### POLK.

*Population:* 5,857.—White, 5,792; colored, 65.

*Area:* 945 square miles.—Woodland, nearly all; all red-loam region.

*Tilled lands:* 23,815 acres.—Area planted in cotton, 4,230 acres; in corn, 10,616 acres; in oats, 1,416 acres; in wheat, 2,424 acres.

*Cotton production:* 2,061 bales; average cotton product per acre, 0.49 bale, 735 pounds seed-cotton, or 245 pounds cotton lint.

Polk county, bordered on the west by the Indian territory, is exceedingly mountainous on the north and hilly and broken over the rest of its surface. The northern boundary is marked by a high range of mountains, while south of Dallas, the county-seat, the Cossatot chain traverses the county. These mountains are formed largely of metamorphic strata, very much upturned, and have altitudes reaching to 1,000 feet or more. In the ascent of Hanna mountain immense parallel walls of quartzite and chalcidonic chert and dull, milky, cherty quartz, etc., may be followed running up the flanks of the mountain, with deep ravines of loose, crumbled, incoherent shales between, which are almost inaccessible. These shales, disintegrating rapidly, are finding their way from the higher situations into the valleys. On the south the ridges of sandstone and millstone grit are of less elevation than in the center of the county.

The lands of the county vary from gray and gravelly to red sandy and clayey. The latter are derived from the red shales, and have a timber growth of red, black, white, and post oaks, dogwood, walnut, wild cherry, elm, pine, and hickory. The average population of the county is about six persons, and that of tilled lands 25.2 acres per square mile, the latter being a less number than in any other county of the state, except Montgomery and Poinsett. Corn, cotton, wheat, oats, and potatoes are the chief crops, the acreage of corn being greatest, that of cotton comprising 17.8 per cent. of the lands under cultivation, and averaging only 4.5 acres per square mile.

#### MONTGOMERY.

*Population*: 5,729.—White, 5,471; colored, 258.

*Area*: 840 square miles.—Woodland, nearly all; all red-loam region.

*Tilled lands*: 19,656 acres.—Area planted in cotton, 3,512 acres; in corn, 9,629 acres; in oats, 825 acres; in wheat, 3,023 acres.

*Cotton production*: 1,819 bales; average cotton product per acre, 0.52 bale, 780 pounds seed-cotton, or 260 pounds cotton lint.

The surface of Montgomery county is hilly and mountainous, and is well timbered. The Ouachita river flows through the northern part in an easterly course, while Caddo creek and other tributaries water the southern portion.

The range of Crystal mountains lies east and west, south of Mount Ida, the county-seat, and is formed of sandstones. "Almost every fissure of this vast sandstone formation for a distance of 1 to 2 miles in length and from three-quarters to 1 mile in width is lined with these crystal brilliants (quartz), which, exposed in bursting open the crevices of the rock, glitter and flash in the sun's rays like a diadem" (*Owen*).

There are areas of metamorphic rocks in the county comprising chloritic slates, etc., and some minerals have been found. The upland soils are mostly dark sandy loams, somewhat gravelly, with red-clay subsoils. The timber growth is pine, red oak, hickory, dogwood, sassafras, etc. The soil is durable, and yields an average of 1,000 pounds of seed-cotton per acre. The most fertile portion of the county is said to be in Caddo cove, on the southwest, where much limestone appears.

The surface of the county is sparsely populated, with an average of nearly 7 persons per square mile. Its average of tilled lands is less than in any other county in the state except Poinsett, comprising 3.7 per cent. of the area, and averaging 23.4 acres per square mile. The crops are corn, cotton, wheat, oats, and potatoes, the first named having the largest acreage. Cotton comprises 17.9 per cent. of the lands in cultivation, and averages but 4.2 acres per square mile. The product per acre is less than that of the state at large.

#### ABSTRACT OF THE REPORT OF G. WHITTINGTON, MOUNT IDA.

The lowlands consist of first bottom lands of South Fork creek and the Ouachita river. The uplands are rolling and level table-lands well timbered.

The lands devoted to the cultivation of cotton are the mahogany uplands, mostly level, the black loam of the south fork of the Ouachita river, and the light upland timbered lands. The most important is the *mahogany or hickory upland*, extending in each direction about 25 miles, and having a natural timber growth of pine, hickory, red oak, ash, walnut, dogwood, and sassafras.

The soil is a silty and gravelly loam, clayey in places, varying in color from brown or mahogany to blackish or black, and is 18 inches in depth. The subsoil is heavier than the soil, with which it assimilates when turned up. It is red in color, mixed with gravel, contains hard white gravel and angular and rounded pebbles, and is underlaid by gravel and slate rock at 6 feet. The soil is cultivated with difficulty in all seasons, is early and warm, and is best adapted to corn and wheat. The chief crops of the region are cotton, corn, wheat, and oats. One-tenth of the tillable area is devoted to cotton, which grows to a height of 4 feet and runs to weed on all lands of the county in long-continued wet weather, no remedy being known that will restrain it. The yield from fresh land, or from that which has been under cultivation (unmanured) for twenty years, is 1,000 pounds of seed-cotton per acre. Fourteen hundred and twenty-five pounds are required, either from fresh or old lands, for 475 pounds of good ordinary lint. Crab-grass and cocklebur are the most troublesome weeds on all lands of the county. None of the land lies "turned out". The soil washes slightly on slopes, but the damage done is not of a serious nature; neither are the valleys injured by the washings.

The *Ouachita river bottom lands* extend east and west about 20 miles, and have a natural timber growth of water, overcup, and bur oaks, walnut, elm, ash, and mulberry. The soil is a sandy loam, clayey in places, blackish to black in color, and 4 feet in depth. The subsoil, which is heavier than the surface soil, consists of a yellowish, impervious clay hard-pan, containing rounded and angular pebbles, and overlies gravel and slate rock at 10 feet. The land is easily tilled in all seasons, is early, warm, and well-drained, and is best adapted to corn. Cotton, forming one-fifth of the crops planted, grows to a height of 5 feet, and yields from fresh land 1,200 pounds, and from land after twenty years' cultivation (unmanured) from 1,000 to 1,200 pounds of seed-cotton per acre, 1,435 pounds being required, either from fresh or old lands, for a 475-pound bale of lint rating as good ordinary.

The *light-timbered upland* and *second-bottom lands* have a natural timber growth of white and post oaks, pine, elm, and sweet gum. The soil is a fine sandy, gravelly loam, clayey and putty-like in places, which varies in color from whitish or gray to orange-red, and is from 1 to 2 feet in depth. The subsoil varies very much in character, is heavier than the soil, and consists, in different places, of a stiff, yellow, impervious clay, a white clay, and a gravelly cement which usually makes a kind of hard-pan, or it is rocky. Gravel and rock are found at from 2 to 6 feet. The land is difficult to till in all seasons, is late and cold, and, when fresh, is best adapted to cotton, corn, and wheat, but when old best adapted to cotton only. About one-fourth of the crops planted is in cotton, which grows to a height of 3 feet.

The yield per acre in seed-cotton from fresh land is 800 pounds, and 600 pounds after twenty years' cultivation (unmanured), 1,425 pounds being necessary for 475 pounds of good ordinary lint, either from fresh or old lands. There is considerable washing of the soil on slopes, doing no serious damage, and benefiting the valleys.

The cotton crop is badly injured by early frosts after a wet, late season, especially in the rich bottom lands.

Cotton is shipped to Hot Springs, and thence by rail to market.

#### GARLAND.

*Population:* 9,023.—White, 7,457; colored, 1,566.

*Area:* 580 square miles.—Woodland all; all red-loam region.

*Tilled lands:* 16,748 acres.—Area planted in cotton, 993 acres; in corn, 8,785 acres; in oats, 1,281 acres; in wheat, 1,445 acres.

*Cotton production:* 534 bales; average cotton product per acre, 0.54 bale, 810 pounds seed-cotton, or 270 pounds cotton lint.

Garland county has a rough and broken surface, which is hilly or mountainous in places and well timbered. The celebrated place of resort, the Hot Springs, is situated in this county, in a valley on the south side of Whetstone mountain. These springs come from the sides of the mountain, and have temperatures varying from 106° to 147° F., the greater number being above 120°. The mountain is composed mostly of different varieties of novaculite rock, which is quarried extensively for whetstones. The height of the mountain is about 500 feet above the valley, with a trend very nearly northeast and southwest, and is covered with a timber growth of pine, oak, hickory, and dogwood. On the south side of the Ouachita river there is a complete labyrinth of high ridges, composed of quartz and novaculite. The county is watered by the tributaries of Saline river on the northeast, and by the Ouachita river and its tributaries in the central and southern portions. The lands of the east and south are mostly light and sandy, while those of the north and west are said to be darker and stiff, with more clay in their composition. The yield of seed-cotton per acre averages about 800 pounds. The average of tilled lands is 28.9 acres per square mile, less than in any other county except Perry, Polk, Montgomery, and Poinsett. The chief crops are corn, oats, wheat, and cotton, the acreage of cotton being less than that of any one of the others, and also less than in any of the other counties of the region except Washington and Benton. The average of that crop is only 1.7 acres per square mile, while its product per acre is less than for the state at large.

#### ABSTRACT OF THE REPORT OF JOHN J. SUMPTER, HOT SPRINGS.

The lowlands consist of the first and second bottoms of various small creeks, front-land, back-land, and hummocks, and of the Ouachita and Saline rivers. All varieties of uplands are found in this county, except prairies.

The lands devoted to cotton culture comprise the black sandy loam, the light sandy, the mulatto, and the clay lands. The chief land is the *light sandy*, constituting about two-thirds of the tillable area, extending east and south for many miles; but north and west the soil becomes tough and tight with dark color, and there are indications of rock near the surface. The natural timber growth is hickory, ash, cherry, walnut, black locust, linn, gum, pine, and various kinds of oaks. The soil is a light sandy loam, clayey in places, 10 feet deep in the lowlands and 18 inches in the uplands; and as the land is nearly all new, there is very little subsoiling done, but when reached it presents a dark appearance, and inclines to crumble and become very hard when exposed to the sun. This soil is underlaid by gravel and large rocks at from 2 to 6 feet. The soil is easily cultivated in all seasons, is early when well drained, and is best adapted to corn and cotton. The chief crops of the region are corn, cotton, cereals generally, and grapes.

About one-third of the cultivated area is devoted to cotton, which grows to a height of 4 feet on the uplands, and from 5 to 7 feet on the lowlands. In wet seasons and on new lands the plant inclines to run to weed, for which topping or clipping the top branches in August is the remedy. Fifteen hundred pounds of seed-cotton is the yield per acre from fresh land, 1,545 of which are necessary for a 475-pound bale of lint. After the land has been under cultivation (unmanured) for five years the yield is reduced in the uplands to 800 pounds and in lowlands to 1,200 pounds per acre. The same amount is necessary for a 475-pound bale of lint as in case of fresh land, but the staple rates one grade lower. Crab-grass is the only troublesome weed. About 1 per cent. of the land lies "turned out", being greatly improved by the rest; but it would require many years to restore the soil to its original strength and power of production. The soil washes on slopes, seriously injuring the uplands, but improving the valleys to the extent of the amount washed down. Very little effort has been made to check the damage, though those efforts have been attended with success.

Occasionally heavy rains in the spring prevent early planting and the crop is injured by frost. This applies to all lands of the county, but more particularly to the lowlands and lands having very rich soils, as the richer the soil the larger the weed and the later the crop is maturing.

Cotton is sold as fast as baled to home merchants, and they ship it to Saint Louis, Memphis, New Orleans, and New York.

#### HOT SPRING.

*Population:* 7,775.—White, 7,030; colored, 745.

*Area:* 690 square miles.—Woodland, all; red-loam region, 550 square miles; yellow-loam region, 140 square miles.

*Tilled lands:* 30,537 acres.—Area planted in cotton, 8,068 acres; in corn, 13,602 acres; in oats, 910 acres; in wheat, 1,377 acres.

*Cotton production:* 3,755 bales; average cotton product per acre, 0.47 bale, 705 pounds seed-cotton, or 235 pounds cotton lint.

Hot Spring county is mostly a rolling and hilly county, well timbered, and is watered almost entirely by the Ouachita river and its tributaries. The southeastern part, included in the yellow-loam region of the southern part of the state, has its sandy soils, varying from gray to red, underlaid by red subsoils and the clays and sands of the Tertiary formation, and is well timbered. This region extends a few miles beyond Malvern, the county-seat.

Northward, the rest of the county is included in the sandstone and metamorphic region of the state, and the rocks of the latter formation seem to form a more prominent feature than in some of the counties adjoining. The

lands are sandy and gravelly, with red clays on the slopes, and are said to be underlaid largely by novaculite and other rocks. The uplands are timbered with white, red, post, and black oaks, pine, hickory, gums, etc., and are said to produce about 800 pounds of seed-cotton per acre.

Magnet cove, in the extreme northern part of the county, is a notable place. "This cove, though the area is not very extensive nor yet very elevated, seems to be the center of the igneous action of Hot Spring and Garland counties. The igneous rocks occupy the depressed portions of the cove and the lower subordinate ridges. The higher ridges, by which the cove is bounded on the north, are composed, in great part, of novaculite rock. South of the cove a great wall of true novaculite runs into the Ouachita river" (*Owen*). There is probably no portion of Arkansas that affords a greater variety of minerals. The center and southern part of the cove is said to be a fine agricultural region.

The average of the lands in cultivation is 44.3 acres per square mile, or 6.9 per cent. of the area. Of the crops corn has the largest acreage, cotton being second, with an average of 11.7 acres per square mile, and comprising 26.4 per cent. of the tilled lands. There are but twelve counties in the state having a less product per acre.

#### ABSTRACT OF THE REPORTS OF E. HUGH VANCE, JR., AND W. D. LEIPER, MALVERN.

The lowlands consist of the alluvial plain of Saline river and the back-land, cypress swamps, pine flats, and hummocks of the Ouachita river. The uplands vary greatly in character, and occur in bodies of from 20 to 150 acres.

The soils devoted to the cultivation of cotton comprise the black sandy and the red clay soils lying on slopes and enriched by washes, the deep black bottom of the Ouachita river not always above overflow, and the light sandy and gravelly soil, adapted to fruits, grasses, etc. The chief soil is the black sandy and red clay upland, which extends in each direction about 5 or 6 miles, and has a natural timber growth of yellow pine, white, red, black, and post oaks, hickory, and sweet and black gum. The soil is a fine sandy, gravelly loam, clayey in places, which varies greatly in color and is 18 inches deep. Its subsoil is heavier and leachy, and when first exposed bakes hard, but becomes pliable after cultivation, and contains yellow gravel and pebbles, underlaid by sand, gravel, and rock at 15 feet.

The land is easily tilled in dry seasons, is early, warm, and well drained, and is best adapted to cotton and corn, which, with oats and sweet potatoes, constitute the chief crops of the region. About one-half the cultivated area is devoted to cotton, which grows to a height of 3 feet, being most productive at 2½ feet. When planted late, and in very wet weather, the plant inclines to run to weed, for which topping about 6 inches in August is the remedy. The product per acre in seed-cotton from fresh land is 800 pounds, and 750 pounds after three years' cultivation (unmanured); 1,485 pounds from fresh lands are required for 475 pounds of low middling lint, and 1,425 pounds from old lands, and the lint rates better. Crab-grass and hog-weed are the most troublesome weeds. No land lies "turned out". The soil washes on slopes, but the damage is not of a serious nature, and the valleys are made 50 per cent. richer by the washings. Horizontalizing and hillside ditching are practiced, and are attended with very good success.

The *gravelly and clay lands*, covering about two-thirds of the surface of the county, occur in each direction from 2 to 20 miles, and have a natural timber growth of pine and oak. The soil is gravelly or clay loam, adobe in places, is yellow, brown, or mahogany in color, and 1 foot in depth. The subsoil is heavier than the surface soil, is leachy, and consists of a loose clay mixed with pebbles, and also contains hard white gravel. Sand, gravel, and rock are found at 5 feet. The land is difficult to till at all times, and is early and well drained. Cotton forms about one-half of the crops planted, which grows to a height of from 2 to 3 feet, but is most productive at 2½ feet. The plant inclines to run to weed where the land is fresh and the weather is wet, and is prevented by "bedding" high. The yield per acre from fresh land in seed-cotton is 700 pounds, 1,425 of which are necessary for 475 pounds of low middling lint. After three years' cultivation (unmanured) the product is 600 pounds per acre; from 1,425 to 1,545 pounds are then required for a 475-pound bale of lint, which rates better than that from fresh land. Very little land lies "turned out". After two or three years' rest it is much improved. There is no washing of the soil on slopes, as there is too much gravel on them.

The *low black and bottom lands* comprise about one-eighth of the cultivated area, and extend in each direction from 1 to 15 miles. The natural timber growth is oak and sweet and black gums. The soil is gravelly or clayey in places, from brown to blackish or black in color, and 6 inches deep. The subsoil is heavier, of a deep black color, baking hard until exposed to the air. Sand is found at 12 feet. The land is tilled with difficulty in dry seasons, is early, and in some portions is well drained, in others ill-drained. Only a small part of the cultivated area is devoted to cotton, which attains a height of from 4 to 7 feet, running to weed in wet weather. Planting early is practiced to prevent it. From 1,500 to 1,700 pounds is the product per acre in seed-cotton either from fresh land or from land after three years' cultivation (unmanured), 1,485 pounds from fresh and 1,425 pounds from old lands being required for 475 pounds of lint, rating as middling in the former case and higher in the latter. Rag-, hog-, and horse-weeds and crab-grass are the most troublesome weeds on this soil. No land lies "turned out". The medium uplands are preferred for cotton, though the lowlands produce very well, especially if the season is late, so that the bolls are not injured by the frost. Within the last few years the county has greatly improved in the way of farming, as there seems to be greater interest taken in the manner of cultivating the soil, so as to obtain the best results. Old farms are better cultivated, and new ones are being dotted all over the county.

Cotton is shipped, in October, November, and December, by railroad to Saint Louis at the rate of \$2 50 per bale.

#### SALINE.

*Population*: 8,953.—White, 7,586; colored, 1,367.

*Area*: 690 square miles.—Woodland, all; red-loam region, 540 square miles; yellow-loam region, 150 square miles.

*Tilled lands*: 35,604 acres.—Area planted in cotton, 8,846 acres; in corn, 15,821 acres; in oats, 2,802 acres; in wheat, 1,454 acres.

*Cotton production*: 5,075 bales; average cotton product per acre, 0.57 bale, 855 pounds seed-cotton, or 285 pounds cotton lint.

Saline county includes the greater part of the headwaters of Saline river, which flows in a southeast course. The surface of the country is rolling and hilly, and is well timbered. The southern yellow-loam and pine region, with its red and gray sandy soils, Tertiary clays, conglomerates, sandstones, and underlying lignites, is represented in a small area on the extreme south. Its growth is chiefly pine, oak, and hickory.

Northwestward through the county there are small areas occupied by crystalline or metamorphic rocks among the limestones and rocks of other formations. A granite outcrop appears near the center of the county, bearing

northeast and southwest, with a width of about 1 mile and a length of 4 miles. Sandstone, with veins of white quartz, dikes, or walls of quartz several feet thick, talcose and chloritic slates, alum slates, etc., are found in various parts of the county.

The lowlands, or first and second bottoms of Saline river and tributaries, are broad, and comprise a large part of the area of the county. The soil is chiefly a dark sandy loam, well supplied with potash, lime, and phosphoric acid, and has a timber growth of large white, red, and black oaks, sweet and black gum, elm, hickory, etc. These lands yield about 1,500 pounds of seed-cotton per acre.

The average of lands under cultivation is 51.6 acres per square mile, or 8.1 per cent. of the county area. Corn is the chief crop. Cotton has an acreage embracing 24.8 per cent. of the tilled lands, and averaging 12.8 acres per square mile. In product per acre it has almost the average for the state at large.

Cotton is shipped, by rail or river, to Memphis, Saint Louis, or New Orleans.

#### PULASKI.

*Population:* 32,616.—White, 17,667; colored, 14,949.

*Area:* 810 square miles.—Woodland, all; red-loam region, 580 square miles; yellow-loam region, 110 square miles; alluvial, 120 square miles.

*Tilled lands:* 73,019 acres.—Area planted in cotton, 29,097 acres; in corn, 20,843 acres; in oats, 2,199 acres; in wheat, 1,076 acres.

*Cotton production:* 20,439 bales; average cotton product per acre, 0.70 bale, 1,050 pounds seed-cotton, or 350 pounds cotton lint.

The surface of Pulaski county is hilly and broken, well timbered, and watered by the Arkansas river and its tributaries. One of the highest points of the county is a conical peak known as "the Pinnacle", with a height of 770 feet above the Arkansas river, the summit of which is of hard sandstone of the millstone-grit formation. On the extreme southeast there is a small area covered with the sands, clays, and rocks of the southern yellow-loam region, with its growth of short-leaf pine, oak, and hickory, and with beds of Tertiary marls and limestones. The rest of the county is largely metamorphic in character, areas of granite and other rocks being interspersed among those of the millstone-grit formation. Valuable minerals are found in the county, the most important workings being the Kellogg silver-lead mines, 10 miles north of Little Rock, in which are associated argentiferous galena, copper pyrites, spathic iron, zincblende, etc. The veins of these minerals are said to occupy a belt of country from north to south of more than half a mile, and the whole system of quartz veins and tilted strata of which they form a part must have a width in the same direction exceeding 12 miles. Several assays of the ore proved it to be very rich in silver.

The uplands of the county have mostly dark sandy soils and subsoils and a timber growth of black and post oaks and hickory. The granitic lands south of Little Rock are light gray in color, and have a timber growth of red, black, and white oaks, black and pig-nut hickories, dogwood, and maple. They are said to produce an average of 25 bushels of corn and 30 bushels of wheat per acre.

The chief agricultural lands of the county are the bottoms of the Arkansas river, which comprise a first or front-land bottom of dark sandy loam along the borders of the river and a second bottom or back-land of stiffer and black buckshot loam, lying back from the river. The timber growth of these bottoms is cottonwood, hackberry, elm, sweet gum, ash, hickory, etc. The lands yield from 1,500 to 2,500 pounds of seed-cotton per acre. The tilled lands average 90.1 acres per square mile, the county ranking thirteenth in the state. Cotton is the chief crop, with an acreage larger than corn, averaging 35.9 acres per square mile, and is surpassed by but six counties in the state. Its average product per acre is also greater than in any county except Chicot, Desha, Mississippi, and Jefferson.

#### ABSTRACT OF THE REPORT OF WALTER WITTENBERG, LITTLE ROCK.

The lowlands of the county, comprising the first and second alluvial bottoms and cypress swamps of the Arkansas river, are from 1 to 20 miles wide. The soil of the front-land is sandy loam; that of the back-land a buckshot clay. The uplands, with a peaty and mulatto soil, are hilly and rolling, and vary from one hill to another; the bottoms of small streams are from one-fourth to three-fourths of a mile wide; the valleys vary in area from 20 to 500 acres. The chief crops of the region are cotton, corn, oats, hay, potatoes, and grapes.

The soils cultivated in cotton are the river bottoms, producing from one to two bales of lint per acre, the uplands producing from one-half to three-fourths of a bale, and the creek bottoms about the same yield as the uplands.

The *river bottoms* comprise about one-third of the area of the county, and extend along the Arkansas river, from the Indian territory to its mouth. The timber growth is cottonwood, hackberry, elm, sweet gum, oak, hickory, etc. The soil varies from a fine sandy loam to a coarse sandy and gravelly; the color is gray to black, with an average depth of 3 feet. The alluvial river bottoms are from 10 to 100 feet in depth. The subsoil is clay, containing flint and rocks and "black gravel" and other pebbles, underlaid by rock at from 3 to 100 feet. The soil is easy to till in all seasons, and is best adapted to cotton, corn, and potatoes. About three-fourths of such land is planted in cotton, which usually grows 5 feet in height, and runs to weed in extremely wet weather. The product is from one to two bales per acre, 1,660 pounds of seed-cotton making a 475-pound bale of lint, rating No. 1, or Orleans best. After fifty years the yield is one bale, which rates the same as that from fresh land; 1,780 pounds seed-cotton then make a 475-pound bale of lint. Cocklebur and careless weeds are the most troublesome on this soil. None of this land lies "turned out". Underdraining is beneficial.

Our heavy crops are raised on river lands, and with plenty of rain we have no cause for failure of a cotton crop.

Cotton is shipped, during the whole of the year, by rail and boat, to New York at \$5, and to New Orleans at \$2 per bale.

#### PERRY.

*Population:* 3,872.—White, 3,072; colored, 800.

*Area:* 580 square miles.—Woodland, nearly all; all red-loam region.

*Tilled land:* 15,706 acres.—Area planted in cotton, 5,082 acres; in corn, 6,469 acres; in oats, 842 acres; in wheat, 561 acres.

*Cotton production:* 3,314 bales; average cotton product per acre, 0.65 bale, 975 pounds seed-cotton, or 325 pounds cotton lint.

The surface of Perry county is hilly, somewhat mountainous and broken, and is largely timbered. Open prairies occur occasionally, interspersed with prominent hills and skirts of timber. Arkansas river forms the northeastern boundary of the county, while the Fourche la Pave traverses the middle portion from west to east. The Petit Jean range of mountains, in the northern part of the county, has an elevation of from 500 to 800 feet above the general level of the country, gradually declining westward into Yell county, where it loses itself as a conspicuous landmark. The summits of the mountains and hills are formed of sandstones, underlaid by shales, etc., and have a timber growth of pine. The timbered lands of the county have usually sandy soils, with reddish clay subsoils, and have a growth of red, post, black, and other oaks, hickory, etc. The prairies are small and their soils stiff, and are underlaid by red, impervious clays, derived from the shales. The bottom lands of both the Arkansas and Fourche la Pave are broad, and are heavily timbered with walnut, ash, cottonwood, hickory, hackberry, etc., and very productive, yielding from 1,500 to 2,000 pounds of seed-cotton per acre. An almost unbroken pinery stretches along the latter stream to the hills. The county is sparsely populated, with an average of nearly 7 persons per square mile, the tilled lands averaging 27.1 acres, Polk, Montgomery, and Poinsett alone having a less number. Corn is the chief crop. Cotton has an average of 8.8 acres only per square mile, but its rank in product per acre in the state is twelfth.

YELL.

*Population*: 13,852.—White, 12,733; colored, 1,119.

*Area*: 900 square miles.—Woodland and prairies; all red-loam region.

*Tilled lands*: 55,220 acres.—Area planted in cotton, 16,598 acres; in corn, 22,791 acres; in oats, 2,654 acres; in wheat, 5,954 acres.

*Cotton production*: 10,428 bales; average cotton product per acre, 0.63 bale, 945 pounds seed-cotton, or 315 pounds cotton lint.

The surface of Yell county is hilly and broken, comprising both timbered and open prairie lands, and is bordered on the northeast by the Arkansas river. There are several mountain ranges traversing the county from west to east, the summits of which are composed of the sandstones of the millstone-grit formation, underlaid by shales, which give character to the greater part of the soils. The general level of the mountains is over 500 feet above that of the surrounding country, and some points are over 800 feet, the highest summits being covered with a pine growth. The lands of the county are generally sandy, with reddish clay subsoils, timbered with red, post, and other oaks, hickory, etc. The better class of these lands are said to yield from 600 to 800 pounds of seed-cotton per acre.

The prairie lands are usually stiff, and are underlaid by red impervious clays, derived from the shales, but are not much in cultivation.

The river lands are broad, and are the most productive in the county. They comprise the usual red and dark loams of the first and second bottoms, respectively, and have a timber growth of walnut, pecan, ash, cottonwood, hackberry, etc., and are said to yield from one to two bales of cotton lint, or 1,500 to 2,500 pounds of seed-cotton per acre.

The average of lands under cultivation is 61.4 acres, or 9.6 per cent. of the county area. Corn, cotton, wheat, oats, etc., are the chief crops, corn having the largest acreage. The area devoted to the culture of cotton is 18.4 acres per square mile, the county ranking eleventh in the region, or in its total acreage fourth in the region. Three counties of the region each produce a greater number of bales. Seventeen counties in the state have each a higher average product per acre than Yell.

SCOTT.

*Population*: 9,174.—White, 9,085; colored, 89.

*Area*: 920 square miles.—Woodland and prairies; all red-loam region.

*Tilled lands*: 30,621 acres.—Area planted in cotton, 8,867 acres; in corn, 15,435 acres; in oats, 2,345 acres; in wheat, 1,956 acres.

*Cotton production*: 4,826 bales; average cotton product per acre, 0.54 bale, 810 pounds seed-cotton, or 270 pounds cotton lint.

The surface of Scott county is rolling and broken, with mountain chains on the north and south. A dividing ridge passes through from northeast to southwest, the streams on the northwest flowing into the Indian territory, those on the southeast being tributaries of the Arkansas river and flowing eastward.

There are open prairies on the northeast, with red-loam lands; but otherwise the county is reported to be well timbered with black, red, and post oaks, hickory, etc. The soils of the uplands are mostly sandy, mulatto, or chocolate in color, underlaid by clays, and are chiefly derived from the shales, etc., of the millstone-grit formation. The lands are very productive, yielding from 1,200 to 1,500 pounds of seed-cotton per acre. The prairie lands above mentioned belong to the western red-loam region.

The average of tilled lands is 33.3 acres per square mile, or but 5.2 per cent of the area. The crops are corn, cotton, oats, wheat, etc., the acreage of corn being the greatest. Cotton averages but 9.6 acres per square mile (as in Baxter county, on the Missouri line), and the average yield per acre is much below that of the state at large.

ABSTRACT OF THE REPORT OF WILLIAM B. TURMAN, WALDRON.

The lowlands of the county comprise the first bottom or front-land of the Arkansas and Poteau rivers and creeks, and are sandy alluvial plains. The uplands are rolling table-lands.

The chief crops of the region are corn, cotton, wheat, and rye. The chief cotton soils are the sandy bottom, the sandy upland, and the clayey bottom land of creeks.

The *upland or mulatto soil* comprises two-thirds of the county, extending 4 miles north, 8 miles east, 3 miles south, and 20 miles west, and has a growth of black, red, and post oaks, hickory, ash, walnut, hackberry, linden, and cherry. The soil is a fine sandy or clayey

loam, yellow, brown, or black in color, 15 inches deep, with a heavier gravelly and clayey yellow and orange-red subsoil, which contains soft "black gravel" and rounded pebbles, underlaid by gravel and rock at 10 feet. The soil is moderately easy to till in wet seasons, easy and pleasant when dry; is early, warm, and well-drained, and best adapted to corn, cotton, and rye. One-half of it is devoted to cotton, which usually is from 3 to 6 feet in height, but is most productive at from 4 to 4½ feet. Late rains and late plowing inclines the plant to run to weed, for which topping early in August is the remedy. The seed-cotton product per acre from fresh land is 1,500 pounds, 1,480 pounds of which are necessary for a 475-pound bale of good middling lint. After three years' cultivation the yield is 1,200 pounds; about the same amount is necessary to make a 475-pound bale of lint, which rates equal to that from fresh land. Careless weed, cocklebur, and crab-grass are the troublesome weeds. A very small amount of this land lies "turned out", and when again cultivated produces good crops. These lands do not wash on the slopes.

The *red clay or mahogany soil* comprises one-fourth of the area of the region, and occurs, intermixed with the mulatto and bottom land, in Poteau valley, a distance from east to west of 24 miles, and from north to south of 6 to 10 miles. The natural timber growth is red and black oaks, black hickory, dogwood, and black ash. The soil is a gravelly loam, brown to red in color, and 10 inches deep. The subsoil is a heavier red leachy clay, which contains soft "black gravel", rounded sandstone pebbles, and is underlaid by clay, gravel, and slate rock at 12 feet. The soil is easy to till in all seasons, is early and warm if well drained, and is best adapted to wheat, corn, and cotton, about one-fourth being devoted to the latter crop. The usual and most productive height is 3 feet. Late cultivation, with late rains, inclines the plant to run to weed, which is remedied by topping and shallow cultivation. The product of seed-cotton per acre from fresh land is 1,200 pounds, 1,545 pounds making a 475-pound bale of middling upland lint. After four years the seed-cotton product is about 1,000 pounds per acre, and 1,480 pounds are then necessary for a 475-pound bale of lint, which is not quite equal to that from fresh land. Cocklebur, careless weed, crab-grass, and hog-weed are the most troublesome weeds. A very small amount of this land lies "turned out", and, when again cultivated, is for two years equal to fresh land. These lands do not wash readily on slopes.

The *post oak land* covers about one-tenth of the region, and appears throughout the county in small tracts near the small natural drains, with a timber growth of post oak, ash, elm, and haw. The soil is a gravelly, heavy clay, putty-like, whitish yellow in color, with a depth of 3½ inches. The subsoil is heavier than the soil, is leachy, contains soft "black gravel" and rounded iron-ore pebbles, underlaid by slate rock at 5½ feet. The soil is difficult to till in wet seasons, easy when dry, is late and cold, and is best adapted to oats and rye. Cotton grows usually from 4 to 5 feet in height on this land, runs to weed in a dry summer with good cultivation, which is restrained by topping early in August. The seed-cotton product from fresh land is 750 pounds; 1,720 pounds make a 475-pound bale of lint. After four years the product is reduced from 300 to 500 pounds, and 1,660 pounds make a 475-pound bale of lint equal to that from fresh land. Rag-weed and grass are the troublesome weeds. About one-half of this land lies "turned out", and when again cultivated is not as good as fresh land. The slopes do not wash. Ditching drains this land and increases its productiveness.

Strong, new land causes the cotton plant to grow a greater length of time, thereby subjecting the crop more to early frosts; consequently old bottom or strong upland is chosen for cotton growing.

Shipments are made, as fast as cotton is ginned, by wagon to Fort Smith, Arkansas, at \$2 50 per bale.

#### SEBASTIAN.

*Population*: 19,560.—White, 17,970; colored, 1,590.

*Area*: 570 square miles.—Woodland and prairies; all red-loam region.

*Tilled lands*: 68,595 acres.—Area planted in cotton, 19,722 acres; in corn, 28,283 acres; in oats, 4,378 acres; in wheat, 6,095 acres.

*Cotton production*: 11,112 bales; average cotton product per acre, 0.56 bale, 840 pounds seed-cotton, or 280 pounds cotton lint.

The surface of Sebastian county is rolling and hilly, and comprises open prairies and tracts of timbered lands, interspersed with high hills destitute of timber growth. A range of mountains borders the county on the south, the Arkansas river forming the northern boundary.

The hills and ridges are mostly formed from the sandstones of the millstone-grit formation, underlaid by the reddish shales, etc., of the Coal Measures. These shales naturally produce reddish, clayey lands, and with the sands from the hills form the brown and red loams of the prairies, underlaid by red clays.

A general feature of the many ridges, as stated in the abstract below, is that, while they are steep on the north side, they have a gradual slope and are well timbered on the south, affording, with their sandy soils and protected position, the chief cotton lands of the county.

The river bottom lands, embracing reddish loam first bottoms and dark loam second bottoms, are broad, and have a timber growth of cottonwood, walnut, pecan, ash, hackberry, oak, hickory, etc., and are said to yield from 1 to 2 bales of lint cotton per acre.

The average of lands under cultivation is 120.3 acres per square mile, a number exceeded only by the counties of Benton, Phillips, and Washington. The acreages of corn, cotton, oats, and wheat are quite large, the first, however, predominating. Cotton has an average of 34.6 acres per square mile, which places the county tenth in the state in this regard, while its product per acre is lower than that of the state at large.

#### ABSTRACT OF THE REPORT OF T. C. MILLER, DAYTON.

The uplands of the county are rolling and level table-land, part prairie with dark loam soil, watered by the small creeks and tributaries of the Arkansas river. The timbered soil is of a light sandy nature, especially on the south side of ridges, while on the north side the soil is darker and richer in surface deposit.

The chief crops are corn, cotton, oats, millet, wheat, sweet and Irish potatoes, and sorghum. The principal part of the cotton crop of the county is planted on sandy upland lying mostly on the south side of ridges; the remainder is planted on prairie land, and does well, but is a little later.

The chief soil is the sandy upland of slopes, comprising one-third of the cultivated farms, occurring on all the ridges of the county; the north side of these ridges is generally steep, and is heavily timbered with a growth of red and post oaks and hickory.

The soil is fine sandy and coarse gravelly loam, 12 inches deep, with a clay subsoil and hard-pan or gravel bed at from 2 to 3 feet. It contains hard, white, rounded pebbles, and is underlaid by rock at 6 feet. The soil is difficult to till in wet weather, but if the land is stirred it remains mellow. All of the crops of the county do well on this soil, but almost half of it is devoted to cotton, which usually grows 3 or 4

feet high. Wet weather inclines the plant to run to weed, which topping and shallow cultivation restrains. From 800 to 1,200 pounds is the seed-cotton product per acre from fresh land, 1,425 pounds of which make a 475-pound bale of good ordinary lint. After five years' cultivation the yield is 800 pounds per acre, and 1,545 pounds make a 475-pound bale of lint, which rates one grade lower than that from fresh land, as the staple is a little shorter. Crab-grass is the only troublesome weed. None of this land lies "turned out", as every foot of worn-out land is kept up by manuring. The soil on the slopes does not wash badly, and the valleys are always improved by the washings. Many places in the low land have been raised 3 feet by the washings, and are of excellent character. Many farmers practice plowing horizontally, thereby preventing the washing of the slopes.

Cotton planted on the upland generally matures before frost, except when planted late and on new land. None of the land is here subject to overflow. The streams are small, with narrow, rich productive bottom lands, well adapted to all crops, and yielding from 1,200 to 1,500 pounds of seed-cotton.

Shipments are made, from November to January, by rail to Saint Louis at \$1 50 per bale.

#### LOGAN.

*Population*: 14,885.—White, 13,901; colored, 984.

*Area*: 670 square miles.—Woodland and prairies; all red-loam region.

*Tilled lands*: 65,784 acres.—Area planted in cotton, 16,377 acres; in corn, 24,136 acres; in oats, 3,543 acres; in wheat, 4,376 acres.

*Cotton production*: 9,752 bales; average cotton product per acre, 0.60 bale, 900 pounds seed-cotton, or 300 pounds cotton lint.

The surface of Logan county is rolling, broken, and somewhat hilly, partly timbered and partly prairie, and is bounded on the north by the Arkansas river. Sandstones cap the hills, and are underlaid by the shales of the millstone grit. The soils of the highlands are sandy, while those of the timbered valleys are reddish loams with red clay subsoils, and have a timber growth of several varieties of oak, hickory, etc. The prairie lands are stiffer in character, with impervious red clay subsoils, and are usually ill-drained. "Haguewood prairie, which skirts the river bottom from the base of the two short mountains southward, is broken, rolling, and fertile, covered with luxuriant grasses and prairie growth, with springs occasionally gushing out, and is underlaid throughout by coal. A large pinery extends from the mouth of Shoal creek to Dardanelle Rock (Yell county), some 18 miles, from 5 to 8 miles wide, and lies immediately along the river all the way" (*Henry*).

The bottom lands of the Arkansas river are the same as given in other counties, viz: Reddish loams along the river and dark sandy loams back from the river, occupying a second terrace or bottom. The timber growth is cottonwood, walnut, ash, pecan, hackberry, oak, etc. The lands are said to yield from one to two bales of cotton lint per acre.

The average of lands in cultivation is 98.2 acres per square mile, the county ranking eighth in the state. Of the crops, corn has the largest acreage, the average of cotton being 24.4 acres per square mile. The product per acre of cotton is much above that of the state at large.

#### CONWAY.

*Population*: 12,755.—White, 9,546; colored, 3,209.

*Area*: 540 square miles.—Woodland, nearly all; all red-loam region.

*Tilled lands*: 51,967 acres.—Area planted in cotton, 15,424 acres; in corn, 15,959 acres; in oats, 1,685 acres; in wheat, 1,778 acres.

*Cotton production*: 9,096 bales; average cotton product per acre, 0.59 bale, 885 pounds seed-cotton, or 295 pounds cotton lint.

Conway county is bordered on the south by the Arkansas river, into which all the other streams that water the county flow. The northern part of the county is hilly and broken, and the summits of the hills, formed from the sandstones of the millstone-grit formation, are underlaid by flagstones and shales. The hills diminish very much in the southern part of the county, seldom exceeding 300 feet, and are composed mostly of thin-bedded sandstones, underlaid by reddish siliceous and dark argillaceous shales. In the northeast veins of quartz, talc, etc., traverse the shales from northeast to southwest for several miles.

The lands of the county are derived mostly from the sandstones and shales, these producing sandy soils and reddish clay lands, respectively, the subsoils being usually red clays. The timber growth is red, white, post, and black oaks, hickory, etc. The most important tracts of arable uplands are said to occur in the southern part of the county.

The river bottom lands are several miles wide, and comprise a first bottom of sandy loam soils and a second bottom of a stiffer buckshot character, both said to be equally productive. The timber growth is cottonwood, ash, pecan, walnut, sweet gum, etc., and the lands are said to yield from 2,000 to 3,000 pounds of seed-cotton per acre.

The average of tilled lands is 96.2 acres per square mile, there being but eight counties in the state having a greater number. The acreage of corn and cotton is nearly the same, the former predominating. As in most of the river counties, the acreage of cotton is quite large, the average being 28.6 acres per square mile, the county ranking eighteenth in the state. The average cotton yield per acre is above that of the state at large.

#### ABSTRACT OF THE REPORT OF W. C. STOUT, HAWKSTONE.

The lowlands of the county comprise the creek bottoms and the front- and back-lands of the Arkansas river, and are entirely alluvial in character.

The river bottom lands consist of soils from sandy to very stiff silts, and, though quite different in composition, their productiveness is nearly equal. Their depth is unknown, but wells have been sunk 50 and 60 feet without reaching the limit. The highest surface is about 35 feet above low-water mark of the river, and most of these lands are subject to overflow at long intervals. There has been no general overflow since 1844. Banks, bars, and shores are subject to change. The average width of these very fertile lands is, from Little Rock to

the western border of the state, 4 to 5 miles; from Little Rock to the mouth of the Arkansas river, 10 to 15 miles. These lands produce cotton, corn, wheat, tobacco, and indeed everything that has been tried, and the percolation of the soils by the waters of the river enables them to maintain their fertility and renders them practically inexhaustible. These bottom lands are the chief cotton soils of the county, comprising, perhaps, one-tenth its area. The natural timber growth is oaks, cottonwood, ash, sweet gum, pecan, walnut, cane, and many other varieties. The soil is a light sandy "buckshot" alluvium from yellowish or chocolate to blackish in color. It is equally fertile when taken from any depth. Some very heavy silts are improved by culture. The soil is underlaid by sand, gravel, or rock, and is easy to cultivate, and if broken early there is no choice between dry and wet seasons. It is early, warm, naturally well drained, and equally well adapted to all the crops of the region, which are corn, cotton, tobacco, wheat, sorghum, and a large number of other products. Perhaps one-half of this land is devoted to cotton, which grows from 4 to 5 feet high. It is most productive at the latter height, and inclines to run to weed under late culture and too much rain in August, and cannot be restrained. Early cotton laid by from 15th to 20th of July hardly ever fails.

The seed-cotton product for fresh land is from 2,000 to 3,000 pounds, 1,545 pounds of which are necessary for a 475-pound bale of first-rate lint. After twenty years' cultivation the yield and also the staple are the same. The troublesome weeds are cocklebur, crab-grass, careless weed, morning-glory, dewberry vines, etc. None of this land has ever been "turned out".

The *creek bottoms* are very fertile, and although very different in character they produce very nearly the same amount throughout. On these lands there are some very beautiful farms. The washings from the hills and an occasional overflow add to their fertility. There is generally a second bottom or bench-land lying between bottoms, strictly speaking, and the hills, which is classed with the creek bottoms, both because it makes up a portion of most creek-bottom farms and because it is derived from the same source, viz., the denudation and washing down of the hills and mountains and decomposition of the shales, clays, and stones of which they are composed. From this source the lowlands are receiving an increase of fertility and an enlargement of the area of arable land. These lands comprise, perhaps, one-tenth of the county area, occurring for 100 miles on all the tributaries and creeks of the Arkansas, White, Saline, Ouachita, and Red rivers, and have a growth of oaks, hickory, walnut, gum, ash, elm, hackberry, and many others, including cane and many shrubs. The soil is mixed with vegetable matter, and is variable in color and consistence. The depth of the soil depends on culture, which blackens and deepens it. The subsoil is lighter in color, and in some places is leachy hard-pan, sometimes an impervious clay, which contains either hard or soft "black gravel", and sometimes pebbles and undecomposed shales, underlaid by loose gravel and small rocks at from 5 to 15 feet.

The soil is easily tilled, but difficult both in wet or dry seasons if not broken well or if permitted to bake, and is variable as regards warmth and drainage. About one-half of this land is devoted to cotton, which is usually from 3 to 4 feet in height, sometimes 5, and inclines to run to weed in wet seasons and with late plowing. This is remedied by early culture and drainage. The seed-cotton product per acre from fresh land is from 800 to 1,500 pounds, 1,545 pounds of seed-cotton making a 475-pound bale of first-rate lint. For five years the product remains the same; after that time it falls off in some degree. The troublesome weeds are cocklebur, careless weed, crab-grass, and numerous others. None of this land lies "turned out".

The *uplands* of this region are extensive and generally wooded, and furnish a good soil for all the cereals, cotton, and tobacco. These lands, generally occupied by farmers who own their homes, and, in the aggregate, producing most of the crops of the county, are not so fertile as the creek and river bottoms, but being cheaper and easier to clear they attract poor men. This is the character of all lands that are not bottom, and comprise the greater part of central Arkansas. The timber growth is white, red, black, and post oaks, hickory, black gum, ash, elm, walnut, etc.

The soils of the uplands are of great variety: light, fine, silty loams, yellow, gray soils, to heavy clay loam and some prairie. The depth is usually 2½ feet, but after being cultivated is much greater. The subsoil, heavier than the soil, blackens on exposure to the air, and is changed by deep culture to soil; in places it is hard-pan, a little leachy, sometimes impervious, but not often, and contains some hard and soft "black gravel", white gravel, and rounded and angular pebbles, more generally undecomposed shales, and is underlaid by some gravel and shale or rock at from 3 to 6 feet. The soil is usually easy to till in both wet and dry seasons, but varies sometimes, and is early, cold, and ill-drained, and suffers from drought. One-third of such land is devoted to cotton. The usual height of the plant is from 2½ to 4 feet, but it is most productive at 4 feet. The seed-cotton product per acre on fresh land is from 600 to 1,000 pounds, 1,545 pounds making a 475-pound bale of lint, which rates favorably with that from other land. After five years the product falls off, and the staple is not so long as that from fresh lands. Crab-grass is the most troublesome weed; there are, however, many other varieties of weeds. Some of this land lies turned out, but produces well when again cultivated and plowed deep. The soil washes on the slopes, in some places seriously, and the valleys are improved by the washings. Nothing has been done to check the injuries.

The seasons are favorable to cotton culture: a sufficiency of rain until after the summer solstice, then a dry month, followed by August rains, and usually a dry autumn. The proximity of the river and shelter of the mountains with the sea breeze from the Gulf of Mexico modify the temperature of both winter and summer and favor the cultivation of cotton.

Cotton culture has increased in this section in the last ten years. There is not so much produced on the large plantations, but generally more on the small farms, especially in the uplands. The reasons are these: First, there is a considerable increase in population and in upland farms; second, cotton is the most certain money-crop that can be produced; third, it is most easily marketed in proportion to value; and fourth, it is a crop in which all the children and women of the family can earn their own support *at home* without undue exposure or hard labor. In this whole region four-fifths of the cotton is produced by white people, chiefly on small farms.

Cotton is shipped, by river or rail, to Memphis, New Orleans, or Saint Louis at about \$3 50 per bale.

#### FAULKNER.

*Population:* 12,786.—White, 11,368; colored, 1,418.

*Area:* 650 square miles.—Woodland, nearly all; all red-loam region.

*Tilled land:* 52,515 acres.—Area planted in cotton, 15,749 acres; in corn, 19,647 acres; in oats, 2,793 acres; in wheat, 3,300 acres.

*Cotton production:* 8,692 bales; average cotton product per acre, 0.55 bale, 825 pounds seed-cotton, or 275 pounds cotton lint.

The surface of Faulkner county is rolling and hilly, and is well watered by numerous streams flowing into Arkansas river, which forms a part of the western boundary. The country is mostly well timbered, open prairies occurring in some portions.

The northern part of the county is skirted by a continuation of the chain of mountains that form a prominent feature in the counties on the west, the summits of the hills being composed of sandstones of the millstone grit, underlaid by reddish siliceous and dark argillaceous shales. The lands are formed from these rocks, the sandstones

producing sandy soils, while from the shales are derived the red clay lands, the subsoils of both being usually reddish clays. Large areas of the latter soil, with a timber growth of oak and hickory, are found on the east extending into White county. They are said to yield from 600 to 800 pounds of seed-cotton per acre.

The river bottom lands, several miles in width, comprise the usual first and second bottoms of dark loams, with a timber growth of cottonwood, cypress, oaks, walnut, gum, hackberry, etc. They are said to produce 1,000 pounds of seed-cotton per acre, and are the chief cotton lands of the county, though that crop matures later than on the uplands.

The average of the lands in cultivation is 80.8 acres per square mile. The acreage of corn is larger than that of cotton, the latter averaging 24.2 acres per square mile. The product per acre is smaller than that of the state at large.

#### ABSTRACT OF THE REPORT OF W. C. WATKINS, CONWAY.

The lowlands comprise the first and second bottoms of the Arkansas river. The uplands are hilly and rolling, with level prairie, and are watered by Cadeau creek and the Arkansas river. The soils devoted to the cultivation of cotton are the bottom lands, the prairie lands, and the uplands.

The chief soil is that of the *river bottoms*, comprising one-half of the county, extending 10 miles, with a width of 2 miles, and has a natural timber growth of cypress, oak, cottonwood, walnut, gum, hackberry, and hickory.

The soil has an average depth of 10 feet, and is underlaid by sand at 10 feet. The soil is difficult to till in either wet or dry seasons. It is both early and late, also warm, cold, and ill-drained, and is best adapted to cotton, which is the chief crop of the county. About three-fourths of this soil is devoted to the crop, which grows usually from 6 to 8 feet high, but is most productive at 6 feet. Inclining to run to weed on new land and in wet weather, topping is the remedy. The seed-cotton product per acre from fresh land is 1,000 pounds, 1,660 pounds making a 475-pound bale of middling lint. After two years' cultivation the product of seed-cotton is from 1,200 to 1,500 pounds, and 1,425 pounds are then necessary to make a 475-pound bale of lint, one grade better than that from fresh land. Rag-weed, burs, and morning-glory vines are the troublesome weeds. None of this land lies "turned out".

The *black upland prairie* soil comprises one-fourth of the area of the region, extending about 4 miles, with a timber growth of oak. The soil is a light fine sandy or heavy clay loam, yellow to black in color, and has a depth of 6 inches. The subsoil is heavier than the surface soil, contains hard "black gravel", rounded and angular pebbles, and is underlaid by rock at 6 to 10 feet. The soil is early, warm, and well drained, and is best adapted to cotton, to which two-thirds of it is devoted. The usual height attained by the plant is 3 to 4 feet. It is most productive at 3 feet, and inclines to run to weed on fresh land and during very wet weather; topping restrains the plant. From 600 to 700 pounds is the seed-cotton product per acre from fresh land, 1,660 pounds making a 475-pound bale of middling lint. After two years' cultivation the product of seed-cotton is from 800 to 1,000 pounds, and 1,425 pounds then make a 475-pound bale of lint, which rates one grade better than that from fresh land. Hog-weed and crab-grass are the troublesome weeds. None of this land lies "turned out". The soil does not wash or gully on slopes.

The *black and red uplands* cover one-fourth of the county, extending four miles, with a growth of oak and hickory. The soil is a fine sandy and gravelly clay loam, gray to black in color, and 6 inches deep. The subsoil is heavier than the soil, contains "black gravel" and pebbles, and is underlaid by slate rock at from 4 to 8 feet. The soil is easy to till, is early, warm, well drained, and best adapted to cotton, to which two-thirds of it is devoted. The usual height of the plant is 3 to 4 feet, is most productive at 3 feet, and runs to weed in wet weather, which is restrained by topping.

The seed-cotton product per acre from fresh land is 500 to 600 pounds; 1,660 are required for a 475-pound bale of middling lint. After two years' cultivation the product is 600 to 800 pounds, and 1,425 pounds make a 475-pound bale of lint, rating one grade higher than that from fresh land. Crab-grass is the most troublesome weed. None of this land lies "turned out".

Cotton in the lowlands is liable to be late and frost-bitten. The crop on the uplands always matures before the frost. Shipments are made, as soon as picked, by rail to Saint Louis and Memphis at \$2.50 per bale.

#### WHITE.

*Population:* 17,794.—White, 15,761; colored, 2,033.

*Area:* 1,100 square miles.—Woodland, all; all red-loam region.

*Tilled land:* 79,827 acres.—Area planted in cotton, 23,304 acres; in corn, 29,148 acres; in oats, 6,957 acres; in wheat, 3,509 acres.

*Cotton production:* 11,821 bales; average cotton product per acre, 0.51 bale, 765 pounds seed-cotton, or 255 pounds cotton lint.

White county is bordered on the east by White river, and is also watered by Little Red river and many other streams and bayous. The surface of the county is hilly and broken on the west, but more level on the east, and is well timbered. The prevailing rocks of the county are sandstones, conglomerates, and shales of the millstone-grit formation, the former on the west forming high and prominent cliffs, especially along the bluffs of Little Red river.

The soils are mostly sandy in localities where the sandstone forms the chief rock, their subsoils being red clays, giving to the soil strength and durability. The shales of the formation produce by disintegration a red clayey soil and subsoil, and in this county covers a large area on the west of Searcy, the county-seat, and smaller spots in other places. The former is said to extend north and south 10 or 12 miles and 30 miles east and west, and to produce an average of 800 to 1,500 pounds of seed-cotton, 20 to 25 bushels of wheat, or 40 to 60 bushels of oats per acre.

The bottom lands, occurring chiefly on the streams in the eastern part of the county, consist of sandy and clayey loams, and have a timber growth of oak, gum, hickory, walnut, etc. The average of lands in cultivation is 72.6 acres per square mile. Of the various crops corn has the highest acreage, an average of 26.5 acres per square mile, that of cotton being 21.2 acres. In this region, Pulaski county alone produces a greater number of bales than White, or has a larger total acreage. The cotton product per acre of White is much below that of the state at large.

## ABSTRACT OF THE REPORT OF L. ORTO, SEARCY.

The lowlands of the county are the first and second bottoms of White and Little Red rivers and Departee creek, comprising front-land, back-land, and cypress swamps. The uplands are hilly and rolling, with gravelly and rocky soil. The chief crops of the county are cotton, corn, wheat, oats, sweet and Irish potatoes. The soils cultivated in cotton are the sandy loam, the sandy, and the clay mixed with some sand.

The chief soil is the *black sandy loam*, which comprises one-fourth of the area of the county, occurring in patches and spots for many miles, interspersed with clay lands. The natural timber growth is gum, oak, hickory, black walnut, and a great variety of others. The soil is fine, somewhat rocky, 10 inches to 2 feet deep, with a tough clay subsoil, which bakes very hard when exposed to the sun, but gradually becomes like the soil. It is quite impervious when undisturbed, contains soft "black gravel" and angular and large pebbles, and is underlaid by sand-rock at from 2 to 5 feet. The soil is not difficult to till, is early and warm when well drained, and is apparently best adapted to cotton, corn, and sweet potatoes. About 50 per cent. of this land is planted in cotton, the usual height of the plant being from 3 to 5 feet, but it is most productive at 4 feet. On fresh land or in wet seasons the plant inclines to run to weed, and topping is preferred by some as a restraint.

The seed-cotton from fresh land is from 500 to 1,500 pounds per acre, 1,545 pounds making a 475-pound bale of lint, rating the same on all lands; 700 to 1,800 pounds is the product after four years' cultivation, 1,425 pounds making a 475-pound bale of lint, which some think is of a better quality than that from fresh land. Crab-grass and burs are the troublesome weeds. About 5 per cent. of these lands lie "turned out", and when again cultivated produce a little better than when turned out. The soil on the slopes washes but little, and the valleys are not injured by the washings.

The *black or dark clay land*, comprising about one-third of the county area, occurs in spots for many miles, and has a growth of gum, cypress, ash, hickory, and oak. About 50 per cent. of this land is planted in cotton, which usually grows from 3 to 5 feet in height. Wet weather inclines the plant to run to weed, which is restrained by topping. From 500 to 1,000 pounds is the seed-cotton product from fresh land, 1,425 to 1,660 pounds making a 475-pound bale of lint, which rates the same for all of the land. After six years' cultivation the product of seed-cotton is from 500 to 1,500 pounds, when 1,425 pounds make a 475-pound bale of lint, rating about the same as that from new land. Crab-grass is the most troublesome weed. About 10 per cent. of these lands lie "turned out", and when again cultivated produce about the same.

On the low or bottom lands cotton is more liable to rot and not to mature than on the uplands; consequently, the uplands are preferred for cotton.

Cotton is shipped, from October 1 to December 1, by river and railroad to Memphis, Saint Louis, and New Orleans, at from \$2 to \$3 per bale.

## LONOKE.

(See "Gray silt prairies".)

## PRAIRIE.

(See "Gray silt prairies".)

## JACKSON.

(See "Crowley's ridge region".)

## INDEPENDENCE.

(See "Northern barrens and hills region".)

## VAN BUREN.

*Population*: 9,565.—White, 9,447; colored, 118.

*Area*: 1,100 square miles.—Woodland, all; red-loam region, 1,065 square miles; siliceous lands, 35 square miles.

*Tilled lands*: 38,905 acres.—Area planted in cotton, 7,084 acres; in corn, 17,548 acres; in oats, 2,627 acres; in wheat, 3,325 acres.

*Cotton production*: 3,377 bales; average cotton product per acre, 0.48 bale, 720 pounds seed-cotton, or 240 pounds cotton lint.

The surface of Van Buren county is hilly and broken, well timbered, and watered by the many streams forming the headwaters of Little Red river, which flows southeastward, and is one of the tributaries of White river.

The lands of the county are derived from the sandstones, shales, etc., of the millstone-grit formation, which form the hills and ridges and vary in character from gray and red sandy to clayey. In localities where sandstone prevails the lands are sandy and support a timber growth chiefly of pine with black-jack and scrubby oaks. In the southern part of the county there is a table-land of this character 400 feet above the general drainage. The valley lands, mostly derived from the red shales underlying the sandstone, are reddish in color, and have red clay subsoils. They are very fertile, stand drought well, and produce 20 or 25 bushels of corn and 15 of wheat, or from 600 to 800 pounds of seed-cotton per acre. The valley of the Little Red river, said to be the richest in the county, has a growth of ash, elm, maple, gum, oak, and hackberry and an undergrowth of papaw, spicewood, and leatherwood. A few miles north of Clinton, the county-seat, a ridge rises to an elevation of 1,200 feet above the town, north of which appear the limestones and other rocks of the formation characterizing the northern part of the state. The county is sparsely populated, with an average of about 9 persons per square mile, its tilled lands averaging 35.4 acres, or 5.5 per cent. of the area. Corn is the chief crop, averaging 15.9 acres, that of cotton being but 6.4 acres per square mile. Its average product per acre is also very low.

## POPE.

*Population:* 14,322.—White, 13,413; colored, 909.

*Area:* 800 square miles.—Woodland, all; all red-loam region.

*Tilled lands:* 63,312 acres.—Area planted in cotton, 15,062 acres; in corn, 24,736 acres; in oats, 2,688 acres; in wheat, 7,772 acres.

*Cotton production:* 8,700 bales; average cotton product per acre, 0.58 bale, 870 pounds seed-cotton, or 290 pounds cotton lint.

The surface of Pope county is well timbered, and is watered by numerous streams that flow south into the Arkansas river, the southern boundary. "The northern part is broken and mountainous; the mountains are composed of massive sandstones, belonging to the millstone-grit formation at the summit, and thin bedded and shaly sandstones at the base. On Indian creek the sub-Carboniferous limestone appears beneath these rocks. South of Dover, between Illinois bayou and Galley creek, and south of Carrion Crow mountains, the country is comparatively level" (*Owen*).

The uplands of the county comprise sandy and gravelly soils and red clay lands, derived respectively from the sandstones and reddish shales, the subsoil being usually red clay. The cultivated lands lie chiefly in the south, the yellowish or reddish loams predominating. The timber growth is oak and hickory.

The river bottom lands are several miles wide, and embrace dark loam first bottom soils and stiffer buckshot second bottoms, and yield from 2,000 to 2,500 pounds of seed-cotton per acre. The timber growth is cottonwood, ash, pecan, walnut, hickory, etc. The average population of the county is nearly 18 persons, and the average tilled lands 79.1 acres per square mile. Corn averages 30.9 and cotton 18.8 acres per square mile, while the product per acre is the same as that of the state at large.

## ABSTRACT OF THE REPORT OF T. S. EDWARDS, GUM LOG.

The lowlands comprise the first and second bottoms of Illinois bayou, which rises in Boston mountain. The uplands are rolling, and are partly sandy and partly clayey.

The lands devoted to the cultivation of cotton comprise the black sandy creek bottoms, the sand and clay uplands, frequently with a clay subsoil, and the red clay lands, which are considered the best wheat lands. The most important is the *black sandy soil*. It covers one-half the surface of the county, extends in each direction from 8 to 10 miles, and has a natural timber growth of gum, hickory, ash, walnut, mulberry, and different varieties of oaks. The soil is sandy and gravelly, and in places is a mixture of clay and sand. It is yellow in color, and varies in depth from 6 to 30 inches. The subsoil is heavier than the soil, more compact, less mixed with gravel, to some extent impervious, and contains soft "black gravel" and small rounded pebbles. Very hard sand rock is found at from 8 to 10 feet. The land is not difficult to cultivate in wet seasons, is early, warm, and well drained, and is best adapted to cotton.

The chief crops of the region are cotton, corn, wheat, and oats. One-half the lands planted are in cotton, which grows to a height of from 3 to 5 feet, being most productive at 5 if well balled. The plant runs to weed in very wet summers, for which topping in July is the remedy. The product per acre in seed-cotton from fresh land is from 1,000 to 2,500 pounds, 1,665 pounds being necessary for a 475-pound bale of lint. After ten years' cultivation (unmanured) the yield is from 500 to 700 pounds, provided the season is favorable, and 1,425 pounds are then required for a 475-pound bale of lint, which rates higher than that from fresh land, in being finer and softer.

Crab-grass and poor weed (so called in this country) are the most troublesome weeds. Only a very small portion of the land lies "turned out", which produces, when again cultivated, as well as it did originally. The land washes readily on slopes, doing no serious damage. The valleys are improved by the washings, and after a few years the yield is greater than at first. Very feeble efforts have been made to check this washing, horizontalizing giving good results.

Cotton on the creek bottoms grows higher and heavier than on the second bottom or on the uplands, though the latter are preferred by many for the cultivation of cotton because it matures earlier. Cotton is rarely injured by frost in this climate.

Cotton is shipped, as fast as baled, by railroad to Saint Louis at the rate of \$2 50 per bale.

## JOHNSON.

*Population:* 11,565.—White, 11,073; colored, 492.

*Area:* 660 square miles.—Woodland, nearly all; all red-loam region.

*Tilled lands:* 48,153 acres.—Area planted in cotton, 12,217 acres; in corn, 20,603 acres; in oats, 2,763 acres; in wheat, 3,509 acres.

*Cotton production:* 7,769 bales; average cotton product per acre, 0.64 bale, 960 pounds seed-cotton, or 320 pounds cotton lint.

The surface of Johnson county is hilly and mountainous on the north, but more level on the south, and is well timbered and watered by the tributaries of the Arkansas river, which forms the southern boundary. Sandstone of the millstone-grit formation is the principal rock of the hills, producing a sandy soil, which supports a growth of large pines. The red shales which lie below the sandstone occur chiefly on the south, and from them are derived the uplands of the county that are under cultivation. They furnish a reddish clay soil, more or less sandy from accompanying rocks, and have a timber growth of post, black, and black-jack oaks, persimmon, sumac, some hickory, etc. They are said to produce from 600 to 800 pounds of seed-cotton per acre.

The river bottom lands are broad, and comprise a first bottom of dark loam and a second bottom of a stiffer buckshot soil, and are well timbered with cottonwood, pecan, walnut, ash, elm, oaks, etc. The lands yield from 2,000 to 2,500 pounds of seed-cotton per acre.

The average of tilled lands is 73 acres per square mile. The average of corn is 34.3 and of cotton 18.5 acres per square mile; the product per acre is far above that of the state, the county ranking as seventeenth.

Transportation is by river or by railroad to Little Rock.

## FRANKLIN.

*Population*: 14,951.—White, 14,455; colored, 496.

*Area*: 700 square miles.—Woodland, with some prairies; all red-loam region.

*Tilled lands*: 58,175 acres.—Area planted in cotton, 16,205 acres; in corn, 23,024 acres; in oats, 3,383 acres; in wheat, 6,017 acres.

*Cotton production*: 9,268 bales; average cotton product per acre, 0.57 bale, 855 pounds seed-cotton, or 285 pounds cotton lint.

Franklin county is divided into two parts by the Arkansas river. The northern part is hilly, and on the extreme north mountainous, from a spur of Boston mountain which enters from the west. Sandstone of the millstone-grit formation is the prevailing rock of the hills, underlaid by reddish shales, which produce, by disintegration, the red and yellow clay lands of the valleys, made more or less sandy from the former rock. The country north of the river is well timbered with white, red, post, black, and black-jack oaks, hickory, and sweet and black gums.

A large part of the southern part of the county is occupied by open and rather level prairies, underlaid by clay and shales; a few low hills are seen occasionally in Grand prairie. The soil is yellow or red in color and very similar to that of the timbered red lands, yielding from 800 to 1,000 pounds of seed-cotton per acre.

The river bottom lands have soils varying from dark to orange-red loams, with a timber growth of cottonwood, walnut, oaks, ash, pecan, gum, hickory, etc. They yield an average of 1,600 pounds of seed-cotton per acre.

The average of tilled lands is 83.1 acres per square mile, the county ranking seventeenth in the state. The acreage of corn averages 32.0 acres, and that of cotton 23.2 acres per square mile. The product per acre is a little below that of the state at large.

## ABSTRACT OF THE REPORT OF J. M. PETTIGREW, CHARLESTON.

The lowlands of the county comprise the first and second bottoms of the Arkansas river and Mulberry creek. The bottoms of the creeks are generally quite level, and are free from swamp; the river bottoms are level and very rich, with little swamp. The uplands are hilly and level table-lands, with some open prairies. The chief crops are corn, cotton, wheat, and oats. The lands cultivated in cotton are the uplands, the creek bottoms, and Arkansas river bottom land.

The *yellowish-red* soil of the uplands comprises about nine-tenths of the area of the county, and extends all along the valley of the Arkansas river, and both north and south of it, for 30 miles. The natural timber growth consists of black-jack and other kinds of oak and hickory. The soil is fine, sandy, and gravelly, orange-red to blackish in color, and 18 inches deep. The subsoil is heavier than the soil, and in a large portion of the county is a light-red clay, which is underlaid by shale. In the prairie the subsoil is sometimes a hard-pan, which is impervious.

The soil is easy to till in dry seasons but difficult in wet, is early, warm, and well drained, and best adapted to corn and cotton. About one-fourth of this land is devoted to cotton, which usually reaches 3 feet in height, and runs to weed in wet seasons and with rapid tillage; topping and stopping work prevents and remedies this.

The seed-cotton product from fresh land is 1,000 pounds, 1,600 pounds making a 475-pound bale of low-middling lint. After ten years' cultivation the yield is 800 pounds on average land, and about the same amount of seed-cotton is necessary to make a 475-pound bale of lint, which rates about the same as that from fresh land. Cocklebur and crab-grass are the most troublesome weeds. But little land in this county is "turned out"; but after lying out some ten years it produces nearly as well as at first. The soil does not wash readily on the slopes. Valley land is generally improved by the washings. Horizontalizing is a good check to the washing of the slopes when practiced.

The *lowlands* of river and creek bottoms comprise nearly 7 per cent. of the region, and have a natural timber growth of walnut, hackberry, sweet gum, cottonwood, hickory, box-elder, cherry, pecan, papaw, etc. The soil is a fine sandy loam, orange-red and black colored, 20 feet deep in river bottoms and 18 inches in creek bottoms, with a sand and gravel subsoil, underlaid by sand and gravel at from 4 to 20 feet. The soil is easy to till in dry seasons, is early and warm, and in some parts is well drained, in others ill-drained. Nearly one-half of this land is planted in cotton, which usually is 5 feet high, and is most productive at that height. It inclines to run to weed if there is too much rain in late summer, which is remedied by topping and "laying by" early. The product of seed-cotton from fresh land is 1,600 pounds per acre, or a 475-pound bale of low to strict middling lint. The product of seed-cotton, after twenty years' cultivation, is from 1,000 to 1,400 pounds. Cocklebur are the most troublesome weeds.

Frost is more severe in the lowlands, especially when the soil is of a stiff clayey nature; consequently the planting of such land is deferred somewhat later than that of the more sandy and loamy soils.

Cotton is shipped, during the picking season, by rail and water to New Orleans, Memphis, and Saint Louis.

## CRAWFORD.

*Population*: 14,740.—White, 13,332; colored, 1,408.

*Area*: 620 square miles.—Woodland, nearly all; all red-loam region.

*Tilled lands*: 50,714 acres.—Area planted in cotton, 16,145 acres; in corn, 19,777 acres; in oats, 2,369 acres; in wheat, 5,347 acres.

*Cotton production*: 8,983 bales; average cotton product per acre, 0.56 bale, 840 pounds seed-cotton, or 280 pounds cotton lint.

Crawford county, bounded on the west by the Indian territory and on the south by the Arkansas river, is a mountainous, broken, and well timbered county. The Boston Mountain range lies along the northern edge. The hills are composed of sandstones of the millstone grit, their summits being usually sandy, dry, and sterile, and not cultivated. They have a timber growth of pine, several varieties of oak, chestnut, etc. The valley lands, formed mostly from the underlying red shales, are those chiefly in cultivation. Their soils are reddish loams, more or less sandy, with red-clay subsoils, and a timber growth of red, black, and post oaks, hickory, etc. "In the southern part of the county the land becomes flat and the soil more sandy. It is arable, but of middle quality, and is especially

characterized by the Spanish oak, which there forms by itself whole forests. Between Van Buren and Frog bayou there are extensive, somewhat marshy, sandy, and argillaceous flats, where this oak constitutes nearly the whole vegetation. Small prairies, apparently barren, inclosed in this forest are surrounded by a beautiful hawthorn" (*Lesquerieux*).

The river bottoms are broad, and comprise the usual first bottom of a reddish alluvial loam and a second bottom of a dark and stiff buckshot loam, both very productive and well timbered. The yield is said to be from one to two bales of lint per acre.

The average of lands in cultivation is 81.8 acres per square mile. Corn has an average of 31.9 and cotton 26 acres. There are but twenty-one counties having each a higher cotton average, but the county has a lower product per acre than for the state at large.

#### ABSTRACT OF THE REPORT OF L. C. WHITE, VAN BUREN.

The lowlands of the county comprise the first and second bottoms of the Arkansas river and a number of creeks. The uplands are partly hilly, but mostly level table-lands, with very little prairie. The soils devoted to the cultivation of cotton are the river and creek bottoms, comprising the black sandy, which is regarded as the best, the buckshot land, and the stronger or waxy land, which is the most difficult to work when entirely dry or lumpy, the upland loams, and the flat oak lands with whitish subsoil.

The chief crops are cotton, corn, wheat, and potatoes. The yield of corn is from 20 to 75 bushels per acre, according to the amount of cultivation given and the character of the land. On poorer, old upland 20 bushels to the acre is all that is sometimes obtained, but the same land will yield in a good season half a bale of cotton to the acre. Wheat is an uncertain crop in this county. Sometimes on old bottoms the yield has been 25 bushels, but on common uplands 6 to 15 bushels is the yield per acre. Oats are very little sown, and never pay; sweet potatoes yield 200 bushels per acre. Irish potatoes are only planted here for summer use, because the hot summer and autumn spoils them before digging; however, on top of Boston mountain 200 bushels of good potatoes to the acre are produced.

The chief soil is the river and creek *bottom land*, which comprises about one-fourth of the area of the county, extending east and west on Arkansas river the whole width, and north and south on the creeks the entire length of the county, and has a timber growth of ash, walnut, oaks, gum, hackberry, cottonwood, and sycamore. The soil is a fine sandy or clay loam, varying in color from whitish and gray to black, having a depth of from 2 to 20 feet, with sometimes substrata of sand and clay, and the humus or black color almost always extends as far down as the soil is cultivated. The soil is seldom too dry to plow or work, and is equally well adapted to cotton and to corn; but about three-fourths of its area is devoted to cotton. The plant is usually 5 feet or more in height, and inclines to run to weed on new land; but deep plowing against the roots, thus breaking them, and then throwing the soil back again, restrains the plant. The seed-cotton product per acre on fresh land is from 1,200 to 2,500 pounds. After several years' cultivation the yield is 1,500 pounds, and from 1,425 to 1,545 pounds of seed-cotton make a 475-pound bale of lint. The most troublesome weed is the cocklebur. None of this land lies "turned out", though it is done with advantage to the soil.

The *upland loam* soil comprises about three-fourths of the area of the county, and is timbered principally with oaks. This soil is grayish and sandy, with generally a reddish clay subsoil, which holds manure well; otherwise, it is a whitish clay, and in places a coarse gravel, and is underlaid by rock at from 3 to 20 feet. This soil is better for cotton than for corn, particularly such lands as have been worn out. About three-fourths of this land is planted in cotton, which usually grows from 3 to 5 feet high. After several years' cultivation the product per acre of seed-cotton is 500 pounds. The most troublesome weed on this soil is the horse-nettle. Where this land is sandy it washes on the slopes, but this does not injure either the slopes or the valleys. Horizontalizing has been practiced, and always with success.

Our staple is regarded as superior. The only drawback is that sometimes, but not oftener than one year in ten, the frost comes a little too early.

Cotton is generally sold to merchants as fast as ginned. Sometimes they hold it, but usually it is shipped at once to Saint Louis at \$3, or to New Orleans at \$3 75, a bale.

#### WASHINGTON.

*Population*: 23,844.—White, 22,894; colored, 950.

*Area*: 940 square miles.—Woodland and prairies; red-loam region, 750 square miles; northwestern prairies, 190 square miles.

*Tilled lands*: 116,871 acres.—Area planted in cotton, 302 acres; in corn, 53,083 acres; in oats, 13,103 acres; in wheat, 28,507 acres.

*Cotton production*: 133 bales; average cotton product per acre, 0.44 bale, 660 pounds seed-cotton, or 220 pounds cotton lint.

The surface of Washington county is broken and mountainous on the south and east, the Boston range of mountains lying along the southern boundary. The northern part is rolling and well timbered, and is interspersed with prairies, while around Fayetteville and on the west there are several large prairies. These prairies, usually level, are underlaid by the red shales. The soil is mostly reddish, and has a natural growth of sumacs, hawthorn, bramble, etc.

The hills of the county are high and steep, and their summits, capped with sandstone of the millstone-grit formation, have a timber growth of Spanish, black-jack, post, white, red, and chestnut oaks, yellow pine, chestnut, persimmon, etc. The soil is sandy and deep, and, where level enough to retain water and moisture, is said to be productive, yielding from 25 to 30 bushels of corn or 15 to 20 bushels of wheat per acre. It is, however, soon exhausted.

On the east, between White river and Lee's creek, there is a high sandstone ridge, 600 feet above the river, supporting a luxuriant growth of timber. "The trees grow here at an equal distance from each other, just as though they had been planted by hand, raising their straight, large trunks to a height of 60 or 80 feet, and supporting immense pyramids of branches, forming an arch of plashing boughs" (*Lesquerieux*). The valleys or uplands between these hills, when not so near the hills as to be rendered sandy from the washings, are usually red, from the shales. The growth is red, scarlet, black, and chestnut oaks, sweet and black gum, wild cherry, and hickory. These soils are the most productive of the county, yielding excellent crops of corn, wheat, etc., and fruit of many kinds. The lands in cultivation embrace 19.4 per cent. of the county area, and average 124.3 acres per square

## COTTON PRODUCTION IN ARKANSAS.

mile, a number exceeded in the state only by Benton and Phillips. Corn, wheat, and oats are the principal crops, the average of corn being 56.5 acres, and that of wheat 30.3 acres per square mile. The area in cotton is very small, with only three-tenths of an acre per square mile, this being the lowest in the state. The product per acre is also comparatively very low.

## BENTON.

*Population:* 20,328.—White, 20,167; colored, 161.

*Area:* 880 square miles.—Woodland and prairies; northwestern prairies, 830 square miles; red-loam region, 50 square miles.

*Tilled lands:* 111,279 acres.—Area planted in cotton, 286 acres; in corn, 49,135 acres; in oats, 13,912 acres; in wheat, 21,461 acres.

*Cotton production:* 126 bales; average cotton product per acre, 0.44 bale, 660 pounds seed-cotton, or 220 pounds cotton lint.

Benton, the extreme northwesterly county of the state, is represented as a high and level plateau, with small streams flowing outward from the center in every direction, except on the east, where White river has a northward and very irregular course through the county. The most prominent feature in its surface is the broad and extensive prairies that occur especially on the west of Bentonville, the county-seat, and which are the beginning of the great prairie region that covers the northern part of the Indian territory, and are similar in character to the smaller ones found in the counties eastward and southward from the White river. On the east there is an ascent of 310 feet to the summit of a ridge, and thence to Bentonville the lands are mostly oak barrens, interspersed with prairies. The prairies are represented to be flat and of wide extent, and the lowest parts of the surface marshy and somewhat difficult to drain. In the spring the low grounds are covered by three feet of water. The soil is a sandy loam, overlying limestone and sometimes sandstone, and when well drained is said to produce 40 bushels of corn, 15 to 20 bushels of wheat, or from 1,000 to 1,500 pounds of tobacco per acre.

The gently undulating surface of Beatty's prairie, northeast of Maysville, is fringed with groves of small oak and small hickory, and dotted with low mounds, bearing tufts of rank weeds, and made up of isolated heaps of chert gravel. Red clay underlies these prairies, as also in Missouri, on the north.

The average of lands in cultivation is 126.5 acres per square mile, a number greater than that of any other county of the state. Corn and wheat are the chief crops, the former averaging 55.8 acres and wheat 24.4 acres per square mile. The acreage of oats is also larger than in any other county in the state. Comparatively little cotton is planted, the average being but three-tenths of an acre per square mile, as in Washington county. The product per acre, the same as in Washington, is very low in comparison with the majority of counties.

## MADISON.

(See "Northern barrens and hills region".)

## NEWTON.

(See "Northern barrens and hills region".)

## SEARCY.

(See "Northern barrens and hills region".)

## STONE.

(See "Northern barrens and hills region".)

## NORTHERN BARRENS AND HILLS REGION.

(Includes the greater parts of Madison, Newton, Searcy, Stone, Independence, part of Lawrence,\* and all of Randolph, Sharp, Izard, Fulton, Baxter, Marion, Boone, and Carroll; also a small part of Benton.\*)

## MADISON.

*Population:* 11,455.—White, 11,331; colored, 124.

*Area:* 880 square miles.—Woodland, nearly all; siliceous lands, 280 square miles; red-loam region, 600 square miles.

*Tilled lands:* 61,746 acres.—Area planted in cotton, 255 acres; in corn, 29,514 acres; in oats, 4,368 acres; in wheat, 12,318 acres.

*Cotton production:* 129 bales; average cotton product per acre, 0.51 bale, 765 pounds seed-cotton, or 255 pounds cotton lint.

The surface of Madison county is very hilly and broken, and is watered by tributaries of White river flowing northward. There are some prairies, but the greater part of the county is timbered with oak, hickory, and pine. The hills are composed mostly of cherty limestones, sandstones, and other material, and when high and narrow are dry and barren. Some of the cherty hills have a scanty growth of post and black-jack oaks; others

a growth of chestnut, post, and black-jack oaks, chincapin, and yellow pine. The tillable lands are found chiefly on the prairies and lowlands, and on those hills whose slopes are so gentle that the washing away of the soils can easily be prevented. The soil is a sandy and gravelly loam, often with a reddish clay subsoil, and is very productive.

The average of tilled lands is 70.1 acres per square mile. Corn, wheat, and oats are the chief crops, the first two averaging, respectively, 33.5 and 14 acres per square mile. Very little cotton is planted, the acreage of that crop averaging but three-tenths of an acre per square mile, as in the counties of Benton and Washington. The average product per acre is a little more than half a bale, or less than the average of the state at large.

NEWTON.

*Population:* 6,120.—White, 6,115; colored, 5.

*Area:* 810 square miles.—Woodland, nearly all; siliceous lands, 630 square miles; red-loam region, 180 square miles.

*Tilled lands:* 24,333 acres.—Area planted in cotton, 2,602 acres; in corn, 12,217 acres; in oats, 1,906 acres; in wheat, 2,241 acres.

*Cotton production:* 1,406 bales; average cotton product per acre, 0.54 bale, 810 pounds seed-cotton, or 270 pounds cotton lint.

Newton is said to be one of the most mountainous counties in the state, some of the peaks belonging to the Boston range attaining an elevation of more than 1,000 feet above the general level of the country. The surface is well timbered, and is mostly watered by the Buffalo fork of White river, which flows eastward, while on the extreme south the streams flow into the Arkansas river. The chief timber growth is black, white, red, and post oaks, pine, and hickory. The lands of the county, derived from the sandstones, limestones, and other rocks of the region, are sandy and gravelly, though yielding very good crops of corn, wheat, etc. There are some prairies on the north and northeast having grayish-loam soils and clay subsoils that yield from 30 to 50 bushels of corn per acre.

The county is sparsely populated with an average of only about 8 persons per square mile, and the average of the lands in cultivation is only 30 acres per square mile, the county ranking among the six lowest in the state in this regard. Of the crops corn predominates, cotton being next, with an acreage ten times greater than in Madison, and averaging 3.2 acres per square mile. Wheat and oats are also prominent crops. The cotton product per acre is much less than that for the state at large.

SEARCY.

*Population:* 7,278.—White, 7,262; colored, 16.

*Area:* 700 square miles.—Woodland, nearly all; siliceous lands, 695 square miles; red-loam region, 5 square miles.

*Tilled lands:* 28,581 acres.—Area planted in cotton, 4,320 acres; in corn, 14,399 acres; in oats, 1,901 acres; in wheat, 3,085 acres.

*Cotton production:* 2,464 bales; average cotton product per acre, 0.57 bale, 355 pounds seed-cotton, or 285 pounds cotton lint.

Searcy is a hilly and broken county, mostly timbered with oak, pine, and hickory, and watered by the Buffalo fork of White river and its tributaries. The hills and ridges are usually several hundred feet in height above the waters of the streams, and are formed of sandstones, limestones, etc. The lands are gravelly and sandy, dark in color, and have clayey subsoils. They yield from 30 to 50 bushels of corn or 25 bushels of oats per acre. The seed-cotton yield will average probably 700 pounds per acre.

The average of the lands in cultivation is 40.8 acres per square mile. The chief crops are corn, cotton, wheat, and oats, corn predominating, with an average of 20.6 acres per square mile; that of cotton is 6.2 acres. Its cotton product per acre is nearly equal to that of the state at large.

STONE.

*Population:* 5,089.—White, 4,984; colored, 105.

*Area:* 640 square miles.—Woodland, all; siliceous lands, 540 square miles; red-loam region, 95 square miles; northern barrens, 5 square miles.

*Tilled lands:* 20,906 acres.—Area planted in cotton, 3,656 acres; in corn, 9,156 acres; in oats, 1,429 acres; in wheat, 2,006 acres.

*Cotton production:* 2,049 bales; average cotton product per acre, 0.56 bale, 840 pounds seed-cotton, or 280 pounds cotton lint.

Stone county is bordered on the northeast by White river, to which all the streams that water the county are tributary. The surface is hilly and broken, with high ridges or mountains formed of sandstones, limestones, etc., having an elevation of from 350 to 500 feet above the general level of the country. The southwestern part of the county is watered by Little Red river, a tributary of White river, but flowing southeast through several counties.

The lands of the county are sandy, and more or less gravelly loams, with clayey subsoils and a timber growth of oaks, hickory, and some pine. The latter occurs chiefly on some of the high ridges on the north. The lands yield from 30 to 50 bushels of corn or 600 to 800 pounds of seed-cotton per acre.

The average population of this county is 8 persons, and that of lands in cultivation is only 32.7 acres per square mile, or 5.1 per cent. of the area. The usual crops of the region are produced in the county, the acreage of corn being the greatest, with an average of 14.3 acres per square mile. The acreage of cotton averages but 5.7 acres per square mile, the product per acre being less than for the state at large.

## INDEPENDENCE.

*Population*: 18,086.—White, 16,703; colored, 1,383.

*Area*: 880 square miles.—Woodland, all; red-loam region, 360 square miles; siliceous lands, 275 square miles; northern barrens, 245 square miles.

*Tilled lands*: 81,220 acres.—Area planted in cotton, 19,602 acres; in corn, 31,114 acres; in oats, 5,100 acres; in wheat, 8,055 acres.

*Cotton production*: 11,156 bales; average cotton product per acre, 0.57 bale, 855 pounds seed-cotton, or 285 pounds cotton lint.

The surface of Independence county, hilly and broken, is divided by White river, which receives the waters of many small tributaries both from the north and south. The ridges are high, especially on the west and north, and are composed of sandstone and limestone. There are extensive areas of table-lands on the north of White river underlaid by the cherty limestones that form the fertile barrens of the northern part of the state. Their soils overlie red clays, are retentive and durable, and have a timber growth of black-jack and other oaks, hickory, sassafras, and persimmon. The lands throughout the county vary greatly, being derived from the rocks that predominate in the several portions. On the south are the red clay and gray sandy lands, formed from the rocks and shales of the millstone-grit formation, while on the north from Batesville the cherty limestone and its associated rocks forms the table-lands alluded to, and finally caps the ridges, producing gravelly and sandy soils with red clay subsoils. There are some extensive bottom lands along the rivers with dark loamy soils and a timber growth of oaks, ash, hickory, walnut, elm, etc., which yield from 1,000 to 1,200 pounds of seed-cotton per acre; the uplands not as much.

The Oil-trough bottom is a noted tract of very rich alluvial land lying on the southwest side of White river, in the southeast part of the county. It is about 15 miles long, and is bordered on the north and west by ridges of limestone 150 feet high. The soil is very dark colored even to the depth of 5 or 6 feet, the subsoil being nearly as black as the soil, but more tenacious. The principal timber growth is pin, red, and water oaks, elm, pecan, black walnut, sweet gum, hackberry, and buckeye, with an undergrowth of very large papaw, cane, grape-vines, and a little spicewood.

The average lands under cultivation is 92.3 acres per square mile, or 14.4 per cent. of the area. In this average the county ranks twelfth in the state.

Of the various crops of the county corn has the highest acreage, averaging 35.4 acres per square mile, cotton being next, with an average of 22.3 acres. The product per acre is somewhat less than for the entire state at large. Shipments are made by river from Jacksonport.

## LAWRENCE.

(See "Crowley's Ridge region".)

## RANDOLPH.

*Population*: 11,724.—White, 11,097; colored, 627.

*Area*: 640 square miles.—Woodland, all; northern barrens, 535 square miles; Crowley's ridge, 75 square miles; Mississippi alluvial, 30 square miles.

*Tilled land*: 53,016 acres.—Area planted in cotton, 11,028 acres; in corn, 27,312 acres; in oats, 2,903 acres; in wheat, 4,016 acres.

*Cotton production*: 6,248 bales; average cotton product per acre, 0.57 bale, 855 pounds seed-cotton, or 285 pounds cotton lint.

Randolph county, bordered on the east by Black river and the alluvial region of the Mississippi, has a rolling and hilly surface, well timbered and watered by numerous streams. The ridges are from 250 to 300 feet in height, their summits, formed of the clays, ferruginous sandstones, and gravel of the Quaternary period, overlying cherty magnesian limestones, and having a timber growth of small oaks and hickory. The valley and bottom lands are those chiefly in cultivation, their soils being dark and rich, and yielding from 600 to 800 pounds of seed-cotton per acre. The bottom lands of Black river have a timber growth of black, post, and red oaks, hickory, elm, walnut, ash, etc., and are said to yield a bale of cotton lint or 50 bushels of corn per acre.

Lands under cultivation average 82.8 acres per square mile, or 12.9 per cent. of the area. Of the various crops corn has the greatest acreage, averaging 42.7 acres per square mile, while that of cotton is 17.2 acres, a number greater than in 32 counties, some of them located, too, in the middle of the state. In cotton yield per acre the county ranks comparatively high, though its average is a little less than that of the state at large.

## SHARP.

*Population*: 9,047.—White, 8,871; colored, 176.

*Area*: 590 square miles.—Woodland, all; all northern barrens.

*Tilled lands*: 43,191 acres.—Area planted in cotton, 8,455 acres; in corn, 18,508 acres; in oats, 4,411 acres; in wheat, 3,178 acres.

*Cotton production*: 4,350 bales; average cotton product per acre, 0.51 bale, 765 pounds seed-cotton, or 255 pounds cotton lint.

The surface of Sharp county is hilly and broken, and is watered by Strawberry and other streams flowing into Black river. The ridges, from 200 to 300 feet high, are composed of sandstones or cherty limestones, and are timbered with a growth of scrubby oak and hickory. Where sandstone forms the summit, pine is the prevailing growth. The valley lands derived from these rocks, especially the cherty limestones, are dark loams, very rich and productive.

and are usually drained by small streams. They yield from 600 to 800 pounds of seed-cotton per acre, and comprise the chief lands under cultivation in the county. The timber growth of the creek bottoms is ash, walnut, elm, mulberry, etc.

The average of the lands under cultivation is 73.2 acres per square mile, or 11.4 per cent. of its area. As in the other counties of this part of the state, corn is the chief crop, its acreage averaging 31.4 acres per square mile. As a cotton county Sharp ranks fourth in the region, with an average of 14.3 acres per square mile, or 19.6 per cent. of the tilled lands. In this average it is also ahead of 27 counties in the state, most of them much farther south.

IZARD.

*Population:* 10,857.—White, 10,635; colored, 222.

*Area:* 580 square miles.—Woodland, all; northern barrens, 345 square miles; siliceous lands, 235 square miles.

*Tilled lands:* 54,705 acres.—Area planted in cotton, 9,029 acres; in corn, 21,728 acres; in oats, 4,913 acres; in wheat, 4,830 acres.

*Cotton production:* 4,800 bales; average cotton product per acre, 0.53 bale, 795 pounds seed-cotton, or 265 pounds cotton lint.

Izard county is bordered on the southwest by White river, the streams on the east being mostly tributary to Black river. The surface of the county is varied with high ridges and hills, rolling and broken valleys, and narrow bottom lands, and is well timbered with oaks, hickory, etc. Some of the high ridges are from 350 to 500 feet in elevation, and are covered with a growth of pine. The lands comprise chiefly sandy or gravelly soils with clayey subsoils, are easily tilled, and yield from 30 to 40 bushels of corn or 600 to 800 pounds of seed-cotton per acre.

The average of tilled lands is 94.3 acres per square mile, or 14.7 per cent. of the area. In the state there are but nine counties whose average of tilled lands is each greater. Of the crops corn has an average of 37.5 acres and cotton 15.6 acres per square mile; 29 counties in the state have each a less cotton average and 24 a less cotton product per acre.

FULTON.

*Population:* 6,720.—White, 6,684; colored, 36.

*Area:* 660 square miles.—Woodland, nearly all; all northern barrens.

*Tilled lands:* 24,259 acres.—Area planted in cotton, 3,994 acres; in corn, 11,686 acres; in oats, 1,692 acres; in wheat, 1,602 acres.

*Cotton production:* 2,438 bales; average cotton product per acre, 0.61 bale, 915 pounds seed-cotton, or 305 pounds cotton lint.

Fulton, one of the extreme northern tier of counties, has a rolling and hilly surface, with cherty ridges from 200 to 300 feet above the streams. Pilot Knob, near Salem, the county-seat, has an elevation of 445 feet above the town, and is capped with a reddish sandstone. The hills and ridges are usually timbered with black-jack and black oaks and hickory, and are formed of siliceous or cherty limestones and other rocks of the "barrens". The soils are rocky, covered with fragments of chert. Where these hills are overlaid by sandstones, as in the southern and northwestern parts of the county, the timber growth is pine. In the valleys or coves between the ridges are meadow lands or prairies with dark soils, derived mostly from a white, earthy limestone, and drained by small streams. These are the chief agricultural lands of the county, and produce about 800 pounds of seed-cotton per acre.

The average of lands under cultivation is 36.8 acres per square mile. Of the latter corn has an average of 17.7 acres and cotton 6.1 acres per square mile, there being but 10 counties in the state with a less cotton average. In the cotton yield per acre there are but 19 counties in the state that rank above Fulton, and of these 16 embrace broad river alluvial lands within their borders.

ABSTRACT OF THE REPORT OF S. W. COCHRAN, UNION.

The lowlands of the county comprise the first and second bottoms of Strawberry creek and semi-prairie or branch bottoms, with hazel growths. The upland soils are red and gray in color, with a growth of oak and hickory. All the lands are classed as cotton lands.

The chief soil is the *dark sandy alluvial* bottom land, embracing one-fifth of the area of the county, which extends the whole distance of the creek or river, and is covered with a growth of oak, hickory, walnut, birch; undergrowth, red-bud, hazel, etc. The soil is a light, fine sandy clay, varying in color from buff to black, and has a depth of from 1 to 2 feet. The subsoil is generally a heavy red clay, in some places whitish, which is impervious, and is underlaid by lime rock. The soil is easily tilled in dry seasons, is early, ill-drained, and best adapted to corn, oats, and cotton; these, with wheat and hay, are the chief crops of the county. About one-eighth of the crops is cotton, which usually grows from 2½ to 5 feet in height, but is most productive at from 3 to 4 feet. Cotton plants incline to run to weed on fresh land or new ground in wet seasons, which may be restrained by shallow cultivation. The seed-cotton product per acre of fresh land is from 800 to 1,200 pounds, 1,545 pounds of which make a 475-pound bale, after paying the toll for ginning. The staple rates as good ordinary. After two years' cultivation the yield is from 900 to 1,300 pounds of seed-cotton, 1,545 pounds making a 475-pound bale of lint, which rates about the same as that from fresh land. The troublesome weeds are hog-weed and a kind of careless weed. None of this land has ever been "turned out".

The *red upland* soil comprises about one-sixth of this region, and extends west probably 150 miles, east 50 miles to the bottoms, with a natural timber growth of black-jack and other oaks, hickory, etc. The soil is loamy, varying in color from gray to black, and is from 1 to 2 feet in depth. The subsoil is generally a red impervious clay, containing soft, white gravel, and in places some rock, and is underlaid by sandstone, gravel, and limy rock at 6 feet. The soil varies as regards warmth, is ill-drained, and is best adapted to corn, wheat, oats, and cotton in the order given. One-eighth of the crops is of cotton, which is usually 2½ to 4 feet in height, but is most productive at from 2½ to 3½ feet. Wet weather inclines the plant to run to weed, which shallow cultivation restrains. The seed-cotton product per acre of fresh land is from 700 to 1,100 pounds, 1,425 pounds making a 475-pound bale of good ordinary lint. After two years' cultivation the product of seed-cotton is from 750 to 1,200 pounds, and the same amount is necessary for a 475-pound bale of lint, which rates the same as that from fresh land. The troublesome weeds are careless weed and crab-grass. None of this land lies "turned out", and but very little washing is done on the slopes; but no injury is done by the washings.

The *gray oak and hickory uplands* comprise one-fourth of the county area. The soil is a sandy loam of a gray or blackish color, and its depth is 6 inches. The subsoil is a yellowish clay, cracking when exposed, leachy, and contains flinty angular pebbles, and is underlaid by sandstone, gravel, and lime-rock at 2 to 6 feet. It is variable as regards warmth, is ill-drained, and is best adapted to corn, oats, cotton, and wheat, in the order mentioned.

About one-eighth of the crops on this land is cotton, which reaches from 2 to 4 feet in height, and is most productive at 3 feet. From 600 to 1,000 pounds of seed-cotton is the yield per acre, 1,425 pounds making a 475-pound bale of lint, rating from ordinary to good ordinary. The second crop is in all respects like the first. Crab-grass is the most troublesome weed. None of this land lies turned out, nor do the slopes wash much, and very little injury is done by the washings.

There is but little difference between the uplands and bottom lands in the maturing of cotton. We have a black land from the cherty hills on which cotton inclines to run too much to weed, and is slow in maturing.

Cotton is shipped by wagon to Batesville and Newport at from \$3 to \$4 per bale.

### BAXTER.

*Population:* 6,004.—White, 5,959; colored, 45.

*Area:* 500 square miles.—Woodland, nearly all; northern barrens, 415 square miles; siliceous lands, 85 square miles.

*Tilled lands:* 27,564 acres.—Area planted in cotton, 4,798 acres; in corn, 10,804 acres; in oats, 2,024 acres; in wheat, 1,776 acres.

*Cotton production:* 2,879 bales; average cotton product per acre, 0.60 bale, 900 pounds seed-cotton, or 300 pounds cotton lint.

Baxter county has a rolling and hilly surface, mostly timbered and watered by the White river and its tributaries. Prairie barrens, with their black, deep, somewhat cold and clayey soils and underlying limestone, are scattered over the country, and are partly in cultivation, yielding from 40 to 50 bushels of corn per acre. Artificial drainage is necessary to some extent. Rocky ridges of cherty limestone occur occasionally, lying higher than the prairies, but are not in cultivation. They are usually timbered with a growth of black-jack and other oaks and hickory. From the top of the limestone cliffs of the north fork of White river the view from the hills on both sides of the river is said to be truly beautiful. The country around looks like an undulating sea of green forests alternating with small prairies, which appear like clearings or patches of cultivated fields.

The average of tilled lands is 55.1 acres per square mile, 21.6 acres of which are devoted to corn, and 9.6 acres to cotton. There are but 25 counties in the state whose cotton yield per acre is greater than that of Baxter.

### ABSTRACT OF THE REPORT OF O. L. DODD, MOUNTAIN HOME.

The lowlands of the county consist of the first and second bottoms of White river and its tributaries. The land on Bennett's bayou has a very rich, black sandy soil. As much as 2,000 pounds of seed-cotton or 60 bushels of corn to the acre are produced on the bottom lands. The uplands are rolling and level, and are watered by White river and Bennett's creek. The chief crops of the county are corn, wheat, oats, and cotton, the latter rapidly increasing in amount.

The soils which are devoted to the cultivation of cotton are the upland, known as barren land, with dark yellow soil, and the black river bottom land.

The *upland barren land* is the chief cotton soil, comprising about nine-tenths of the county area, and extending 100 miles east, 125 west, and 50 miles south, with a timber growth of black, white, and post oaks, hickory, black walnut, and a large amount of pine. The soil is a dark yellow gravelly clay loam, sometimes black and mulatto in color, with a depth of 1 foot. The subsoil is a heavy, light red-colored clay, which, when broken in the fall, produces well, and is underlaid by rock in places at from 3 to 10 feet. The soil is easily tilled unless when very wet, it being then extremely hard to break. It is well drained and best adapted to corn and cotton; but the climate is more favorable to corn, the latitude being 36.5° north. One-third of this land is cultivated in cotton, which usually attains a height of 3 to 4 feet. It inclines to run to weed on fresh land and during wet seasons, and is restrained by topping. The yield of seed-cotton per acre is 1,400 pounds from fresh land, 1,425 pounds being necessary for a 475-pound bale of lint, which rates very well. The yield after five years is reduced to from 600 to 800 pounds of seed-cotton, and 1,545 pounds are required for a 475-pound bale of lint, which does not rate as well as that from fresh land, the staple being rather shorter. Crab-grass does the most injury to cotton when the crop is small. None of this land is "turned out", but a large amount of fresh land is cleared every year. The slopes do not wash very much, and the valleys are but little injured by the washings. Hillside ditching prevents a large flow of water in the bottoms.

The *river and creek bottom land*, which covers about one-tenth of the county, extends for 50 miles north and south on the water-courses, and has a timber growth of all varieties of oak, walnut, hackberry, and white and red hickory. The soil is a black, heavy loam, very productive, 3 feet in depth, and has a heavy black subsoil mixed with sand and some clay. The subsoil contains soft, "black gravel," and is underlaid by sand. The soil is sticky and very difficult to till in wet weather, is early, warm, and ill-drained, and apparently is best adapted to corn and cotton. One-half of this land is devoted to the latter crop. The plant usually is from 5 to 6 feet high, but is most productive at 5 feet. The seed-cotton product from fresh land is 2,000 pounds per acre, 1,300 pounds making a 475-pound bale of lint, rating very well. After ten years' cultivation 1,500 pounds of seed-cotton is the average yield; and 1,425 pounds are required for a 475-pound bale of lint, which does not rate as well as that from fresh land, as the staple is somewhat shorter. The troublesome weeds are cocklebur and Spanish needles.

About one-tenth of the county is *very broken, rocky, and hilly upland* extending north 50 miles, east, west, and south about the same distance, having a timber growth of black-jack and other oaks and hickory, and is but little cultivated. The soil is a gravelly red clay 3 to 4 inches deep, with a heavy, very red subsoil, containing some flinty pebbles and white gravel, underlaid by gravel and rock. The soil is too rocky to be cultivated.

Early frosts in some seasons injure the cotton crop, as we are a little too far north. Boll-worm and other insects never trouble our crops. Before the war there was not one bale of cotton raised in this county.

Cotton is shipped, as soon as baled, by wagon and railroad to Springfield, Missouri, and Saint Louis, at from \$5 to \$7 per bale.

## MARION.

*Population:* 7,907.—White, 7,864; colored, 43.

*Area:* 640 square miles.—Woodland, nearly all; northern barrens, 335 square miles; siliceous lands, 305 square miles.

*Tilled lands:* 28,673 acres.—Area planted in cotton, 7,116 acres; in corn, 13,034 acres; in oats, 1,985 acres; in wheat, 2,494 acres.

*Cotton production:* 3,925 bales; average cotton product per acre, 0.55 bale, 825 pounds seed-cotton, or 275 pounds cotton lint.

The surface of Marion county is broken and hilly, the hills having usually an altitude of several hundred feet above the general level of the country. White river traverses the northern and eastern parts of the county, and to it the other streams are tributary.

The lands north of Crooked creek embrace gravelly hill lands, small prairies, barrens, and what are termed hickory barrens. The latter are ridge lands, having a growth of hickory and oak and a dark loam soil, capable of producing 40 to 50 bushels of corn or 25 bushels of wheat per acre. The prairie barrens have a dark and somewhat clayey soil, which is very productive when well drained.

In the central part of the county magnesian limestone crops out and forms higher, more abrupt, and entirely barren ridges, on which trees are scarce. Only a few stunted specimens of the rock-chestnut oak, the juniper, the persimmon, etc., grow in the cracks of humid, decomposing rocks. These ridges produce nothing. On the way from Yellville to Carrollton (west) the alternation of high, steep, and sterile hills of the magnesian limestone with low, undulating ridges of fertile cherty limestone shows a remarkable contrast in the vegetation, and consequently in the fertility of both formations. The highest ridges of the county are overlaid by sub-Carboniferous sandstone, and are sometimes covered with pines.—*Lesqueroux.*

The lands of the southern part of the county are said to have mostly dark sandy loam soils and a timber growth of white, post, and black-jack oaks, hickory, etc. The soil is easily cultivated, and yields, it is said, an average of about 1,000 pounds of seed-cotton per acre.

The average of lands under cultivation is 44.8 acres per square mile. There are but sixteen counties in the state whose average acreage is each lower. Of the tilled lands 20.4 acres per square mile are devoted to corn and 11.1 acres to cotton. The cotton yield per acre is less than that of the state at large.

## ABSTRACT OF THE REPORT OF W. B. FLIPPIN, YELLVILLE.

The lowlands of the county comprise the dark sandy loam first bottoms of White river and Crooked creek; the uplands the mountain and prairie barrens between the waters of Crooked creek and White river. White river enters the county near the northwest, and runs near the line to the northeastern part of the county, where Crooked creek empties into it. Crooked creek divides the county from west to northeast; south of this creek the soil is generally dark sandy, easily cultivated, and is well adapted to cotton. Northeast of the creek the soil is dark "hickory barrens", with small patches of prairie. The hill land has a gravelly clay soil. In extremely wet, cold seasons cotton does best on the sandy lands, but when the season is moderately dry it does well on the barrens, running to weed on the prairie barrens. Early frosts materially injure the cotton on the barrens, more so than on the sandy land, for on this the plant does not grow so tall, and matures earlier. On an average these sections produce about the same amount. The chief crops are corn, cotton, wheat, oats, rye, potatoes, sorghum, and tobacco.

The soils cultivated in cotton are the black sandy bottom or upland, the prairie barrens and clay upland, the mountain rocky or gravelly land, and, in fact, all the soils of the county.

Nearly one-half of the county is *black sandy loam*, having a timber growth of hickory, ash, walnut, locust, pine, and white, post, and black-jack oaks. All lands are difficult to cultivate in cotton in wet seasons. The soil is best adapted to corn and cotton, and in some localities to tobacco; one-third of it is devoted to cotton. The usual and most productive height is 2½ feet, as at a greater height the boll does not open well. Wet seasons incline the plant to run to weed, which plowing the roots in August helps to restrain. One thousand pounds is the average seed-cotton product per acre from fresh land, 1,660 pounds making a 475-pound bale of good middling lint; about 800 pounds of seed-cotton is the product after five years' cultivation, and 1,720 pounds make a 475-pound bale of good ordinary lint. Crab-grass is the most troublesome weed. None of this land lies "turned out".

The soil does not wash very much on the slopes, and the valleys are improved from 25 to 50 per cent. by the washings. Early frost in the fall is the greatest drawback to the cotton crop.

Cotton is shipped, after January, by wagon to Springfield, Missouri, and thence by railroad to Saint Louis, at \$8, or by steamboat to Newport, and thence on the Iron Mountain railroad to Saint Louis, at \$5 per bale.

## BOONE.

*Population:* 12,146.—White, 12,058; colored, 88.

*Area:* 640 square miles.—Woodland, nearly all; northern barrens, 345 square miles; siliceous lands, 295 square miles.

*Tilled lands:* 56,883 acres.—Area planted in cotton, 5,095 acres; in corn, 26,713 acres; in oats, 5,752 acres; in wheat, 8,499 acres.

*Cotton production:* 2,686 bales; average cotton product per acre, 0.53 bale, 795 pounds seed-cotton, or 265 pounds cotton lint.

Boone county has a hilly and broken surface, with partly timbered and partly prairie lands, and is watered by streams that flow northward into White river. The rocks comprise sandstones, cherty limestones, shales, etc., and give character to the various lands of the county. Hills having an altitude of 1,000 feet or more above the streams are conspicuous on the southeast, bordering Marshall's prairie, and are formed of conglomerates, sandstones, and underlying limestones. The prairies lie several hundred feet above the waters of the streams, and their soils, derived from these formations, are grayish, sandy loams, with clay subsoils, underlaid by limestone. They are said to be very fertile, yielding from 35 to 50 bushels of corn or 15 bushels of wheat per acre.

Other upland soils are sandy or gravelly, and have a timber growth of post and other oaks, hickory, and some pine. The crops of the county are corn, cotton, wheat, and other grain, grasses, and fruits. Corn has an average acreage of 41.7 acres, and cotton 8 acres per square mile. The entire lands under cultivation average 88.9 acres per square mile, there being but 14 counties in the state with a greater number. The cotton product per acre is less than that of the state at large.

#### ABSTRACT OF THE REPORT OF H. A. CRANDELL, HARRISON.

The lowlands comprise the first and second alluvial bottoms of White river and Crooked creek. The uplands are rolling table-lands and occasional prairies. Boone county is bounded on the south by the Boston mountains, on the east by a high range of Gaither mountains, and on the west by the White river range, or Ozark mountains. The chief crops of the county are wheat, corn, cotton, vegetables, and fruit, the last always very fine, and a sure crop.

The soils cultivated in cotton are the blackish gravelly loam, with occasional patches of red clay and sandy clay loam, the clay sandy loam ridge or post-oak land, and the brown clay loam.

The chief soil is the *black gravelly loam*, which comprises 70 per cent. of the lands under cultivation. Not more than one-half of the lands of the county lie uncultivated. This soil extends south 12 miles, west 9 miles, and north 20 miles, with occasional patches of very rocky and red clay land, and has a timber growth of black-jack oak, hickory, elm, walnut, sycamore, and pine. The soil is a coarse sandy, gravelly loam, blackish in color, 4 to 12 inches deep, with a brownish clay subsoil, which changes to dark red clay at from 4 to 6 feet below the surface, and contains rock at unequal depths. The soil tills easily, is partly well drained, and is well adapted to all the crops of the region. Only about from one-eighth to one-tenth of it is planted in cotton, which usually grows 2 to 3 feet high, and produces best at about 2½ feet. The plant inclines to run to weed in damp, cloudy autumn days, and topping is frequently beneficial in favoring bolling. Twelve hundred pounds is the product of seed-cotton from fresh land, 1,425 pounds of which make a 475-pound bale of middling lint. The product is about the same, and also the rating, after four years' cultivation. Cocklebur, careless weed, crab-grass, and Spanish needle are the most troublesome weeds, crab-grass being the most injurious, as its growth is late and rapid. The soil very seldom washes on the slopes, and when it does the washings improve the valleys a little. Nothing has been done to check this. None of the lands of the county lie turned out.

The circumstances favorable to the culture of cotton are the uniform seasons, this region never having been subjected to excessive drought or continuous rains. Late spring or early autumn frosts very seldom seriously injure the crop, and there is no doubt but that the winters in this climate destroy the larva of the boll-worm and caterpillar to a great extent. The unfavorable circumstances are that the seasons are too short for cotton to reach its full growth and maturity.

Cotton is shipped, from October 1 to April 30, by wagon to Springfield, Missouri, at \$3 75 per bale.

#### CARROLL.

*Population*: 13,337.—White, 13,272; colored, 65.

*Area*: 700 square miles.—Woodland, nearly all; siliceous lands, 355 square miles; northern barrens, 200 square miles; northwestern prairies, 145 square miles.

*Tilled lands*: 43,903 acres.—Area planted in cotton, 982 acres; in corn, 22,979 acres; in oats, 4,626 acres; in wheat, 7,343 acres.

*Cotton production*: 502 bales; average cotton product per acre, 0.51 bale, 765 pounds seed-cotton, or 255 pounds cotton lint.

The surface of Carroll county is hilly and broken, partly prairie, but mostly timbered, and is watered by streams which flow northward into White river. The hills are formed of alternating strata of limestone and sandstone, and the highest are covered with fertile prairies having a deep grayish soil and clayey subsoil and underlying limestone. These prairies are said to produce 35 bushels of corn or 20 bushels of wheat per acre. Some of the ridges are rocky, barren, and dry when they are high, steep, and narrow, but where low, with gentle slopes, they are fertile. Pine forms the prominent growth on the high and barren ridges near King's river.

The average of lands under cultivation is 62.7 acres per square mile. Of these, 32.8 acres are given to corn, while but 1.4 acres per square mile are in cotton. Madison, Washington, and Benton alone in the state have each a less cotton average.

#### BENTON.

(See "Red-loam region".)

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PART III.

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CULTURAL AND ECONOMIC DETAILS  
OF  
COTTON PRODUCTION.

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REFERENCE TABLE  
OF  
NAMES AND ADDRESSES OF CORRESPONDENTS.

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MISSISSIPPI ALLUVIAL REGION.

*Chicot*.—DANIEL B. BRAWNER, Luna Landing, April 15, 1881.  
*Desha*.—JAMES MURPHY, Napoleon, January 5, 1880.  
*Crittenden*.—A. C. BREWER, Scanlons, November 17, 1880.  
*Mississippi*.—HARRY S. WILLIAMS, Osceola, April 29, 1881.  
*Lee*.—J. A. GAINES, Askew, May 8, 1881.  
*Woodruff*.—JAMES B. DENT, Augusta, March 21, 1881.  
*Saint Francis*.—THOMAS B. HOY, Millbrook, February 6, 1880.  
*Cross*.—W. C. MALONE, Wittsburg, April 27, —.  
*Craighead*.—J. W. RANSOM, Jonesboro', April 15, 1880.

GRAY SILT PRAIRIE REGION.

*Arkansas*.—JAMES A. GIBSON, De Witt, November 23, 1880.  
*Prairie*.—R. CARL LEE, Devall's Bluff, December 15, 1879.

YELLOW-LOAM REGION.

*Ashley*.—J. P. HARBISON, Hamburg, January 1, 1880.  
*Union*.—H. L. CHANDLER, El Dorado, —.  
*Columbia*.—J. D. ZACHRY, Magnolia, December 25, 1880.  
*Miller*.—E. T. DALE, Texarkana, January 6, 1880.  
*Sevier*.—M. W. LOCKE, Lockesburg, January 20, 1880.  
*Howard*.—J. A. THOMAS, Centre Point, January 17, 1881.  
*Drew*.—S. A. DUKE, Baxter, December 21, 1879.  
*Lincoln*.—CHARLES V. DIXON, Auburn, May 7, 1881.  
*Dallas*.—W. H. YOUNG, Tulip, —.  
*Clark*.—THOMAS H. MOREHEAD, Arkadelphia, December 30, 1880.  
*Grant*.—W. N. CLEVELAND, Dogwood, November 9, 1880; T. W. QUINN, Prattsville, December 23, —.  
*Jefferson*.—THOMAS DUNNINGTON, Pine Bluff, March 10, 1880; S. H. COCKRELL, Pine Bluff, March 10, 1880.

RED-LOAM REGION.

*Montgomery*.—G. WHITTINGTON, Mount Ida, March 23, 1880.  
*Garland*.—JOHN J. SUMPTER, Hot Springs, January 11, 1881.  
*Hot Spring*.—E. HUGH VANCE, jr., Malvern, May 3, 1881; W. D. LEIPER, Malvern, May 3, 1881.  
*Pulaski*.—WALTER WITTENBERG, Little Rock, January 5, 1880.  
*Scott*.—WILLIAM B. TURMAN, Waldron, December 29, 1879.  
*Sebastian*.—T. C. MILLER, Dayton, June 19, —.  
*Conway*.—W. C. STOUT, Hawkstone, November 10, 1880.  
*Faulkner*.—W. C. WATKINS, Conway, December 27, 1879.  
*White*.—L. ORTO, Searcy, May 25, —.  
*Pope*.—T. S. EDWARDS, Gum Log, January 31, 1880.  
*Franklin*.—J. M. PETTIGREW, Charleston, March 22, 1880.  
*Crawford*.—L. C. WHITE, Van Buren, March 24, 1881.  
*Fulton*.—S. W. COCHRAN, Union, January 1, 1880.  
*Baxter*.—O. L. DODD, Mountain Home, January 15, 1880.  
*Marion*.—W. B. FLIPPEN, Yellville, April 15, —.  
*Boone*.—H. A. CRANDELL, Harrison, —, 1880.

## SUMMARY OF ANSWERS TO SCHEDULE QUESTIONS.

The answers from the thirty-eight counties heard from are combined, as far as possible, under the head of each of the natural divisions of the state, the name of each county giving such answer being added or prefixed.

In nearly all cases where a correspondent has expressed himself more fully than others on a subject of interest his answer is given in full. By a glance at the reference table the name of the writer will always be found.

### TILLAGE, IMPROVEMENT, ETC.

#### 1. What is the usual depth of tillage (measured on land side of furrow)?

**UPLANDS.**—Ten counties report from 3 to 7 inches; eight, 4 inches. *Prairie, Pulaski, and Scott* each report 5 inches. *Franklin, Garland, and Montgomery*, each 6 inches. *Drew and Columbia*, 3 inches. *Union and Howard*, from 2 to 4 inches. *Pope and Sebastian*, from 6 to 10 inches.

**MISSISSIPPI RIVER ALLUVIAL REGION.**—*Saint Francis and Cross*, 3 inches. *Craighead*, from 3 to 8 inches. *Desha and Crittenden*, 4 inches. *Woodruff*, 5 inches. *Lee and Chicot*, 6 inches. *Mississippi*, 8 inches.

#### 2. What draft is employed in breaking up?

**UPLANDS.**—Eleven counties report the use of two horses or mules; ten counties, one or two horses or mules; six, one horse or mule. *Arkansas*: one, two, or three horses. *Pope*: two horses, mules, or oxen.

**MISSISSIPPI RIVER ALLUVIAL REGION.**—*Crittenden, Desha, Chicot, and Mississippi*: Two horses or mules. *Craighead, Cross, Lee, and Saint Francis*: One or two horses or mules. *Woodruff*: Usually one mule.

#### 3. Is subsoiling practiced? If so, with what implements, and with what results?

**UPLANDS.**—It is reported as not practiced in 19 counties, and to some extent only in 10 counties, with various subsoil plows, and with good results. *Howard*: Yes, with Brinley and other subsoil plows; results are paying, if done in the fall or early winter. *Miller*: Crops are increased at least one-half and old lands made equal to fresh. *Dallas*: The chief results are that the land is easier of cultivation, resists drought longer, and even when unusually wet produces better crops. *Pope*: Not justifi-

able except in a very dry year. *Baxter*: Results good when practiced in the fall season. *Grant*: Results good after freezing and thawing.

**MISSISSIPPI RIVER ALLUVIAL REGION.**—It is reported as not practiced in *Crittenden, Desha, Saint Francis, Chicot, Mississippi, Woodruff, Craighead, and Cross* counties. *Lee*: Very little, with good results.

#### 4. Is fall plowing practiced? With what results?

**UPLANDS.**—Yes, in seven counties; to some extent in nine; rarely in *Sevier and Grant* (where it is practiced by a few farmers for corn), and not at all in twelve counties. Results in nearly all reported cases are good. *Clark*: Crops are increased 25 per cent. *Pope*: In some years the results are good; in others no benefit is derived from the practice. *Franklin*: It tends to improve the land by giving vegetation time to rot. *Boone*: It invariably

insures an early stand. *Howard*: Besides benefiting the soil, it tends to destroy insects.

**MISSISSIPPI RIVER ALLUVIAL REGION.**—It is not practiced in *Crittenden, Desha, Chicot, Mississippi, Woodruff, Craighead, Cross, and Lee* counties. *Saint Francis*: Very little, but with good results.

#### 5. Is fallowing practiced? Is the land tilled while lying fallow or only "turned out"? With what results in either case?

**UPLANDS.**—Yes, in *Pulaski and Sevier* counties, with good results, the land being tilled while lying fallow; not at all in twenty counties, and to a limited extent, with good results, in the remaining counties. *Conway*: Land sometimes lies out for want of labor. *Columbia and Howard*: The land is only "turned out"; results are good. *Miller*: The land is "turned out" and grows up very quickly with trees, requiring to be again cleared. *Grant*: Sometimes the land is sown in pease; the results are excellent. *Franklin*: Land fallowed, when deeply plowed, in the fall, before vegetation is killed by frost, is greatly increased in fertility.

**MISSISSIPPI RIVER ALLUVIAL REGION.**—It is not practiced in *Lee, Crittenden, Desha, Chicot, Woodruff, and Mississippi* counties. *Cross*: To some extent, with good results; the land is tilled while lying fallow. *Craighead*: Sometimes the land is greatly improved. *Saint Francis*: Yes; and the results are good. *Chicot*: Land when cultivated, after having been turned out for five or six years for pasturing purposes, is equal to fresh land. *Lee*: When the land is "turned out" it grows up in crab-grass and other weeds so thoroughly that it is hard work for a year or two to get rid of them.

## 6. Is rotation of crops practiced? If so, of how many years' course, and in what order of crops?

**UPLANDS.**—It is practiced in seventeen counties; to a limited extent in nine counties, and not at all in *Lincoln, Faulkner, Arkansas, and Prairie*. Cotton, corn, and wheat or oats are alternated in twelve counties; cotton and corn in *Pulaski, Hot Spring, Dallas, Union,* and to some extent in *Sevier and Miller*; but generally the land is planted in cotton for from ten to twenty years, and then "turned out"; on uplands from three to five years. Cotton two years, and corn, wheat, or oats one year, is the order in *Ashley, Drew, and Crawford*. Cotton for five or ten years, then corn or small grain, in *White*.

**MISSISSIPPI RIVER ALLUVIAL REGION.**—It is practiced in *Mississippi, Woodruff, and Lee*, on the uplands of Crowley's ridge; to some extent in *Craighead, Cross, Saint Francis, and Desha*, and not at all in *Chicot and Crittenden*. Cotton and corn alternate in *Desha, Craighead, Woodruff, and Mississippi*. Cotton, wheat, oats, or millet alternate in *Lee and Saint Francis*. Corn, sweet potatoes, and oats in *Cross*. *Crittenden*: Corn grows best after cotton, though cotton does not do so well after corn. It grows better year after year in the same ground.

## 7. What results follow from the rotation of crops?

**UPLANDS.**—*White, Fulton, Hot Spring, Pulaski, Montgomery, Sebastian, Union, Drew, Miller, and Columbia*: The results are good. *Dallas*: The lands grow poorer with every crop. *Ashley*: Cotton does best when planted on corn or oat land, as it is then not so liable to suffer from shedding, but is more difficult to cultivate. *Grant*: Corn yields 10 per cent. more after cotton; so do wheat and oats. Any crop does well after cotton. *Franklin and Pope*: The average yield is kept up without the aid of fertilizers. *Scott*: Ten per cent. gain. *Garland*: Good for all crops, but particularly so for cotton planted after wheat if the stubble is turned

under in the fall. *Howard*: Beneficial, as a continuous planting of corn impoverishes the land more than any other crop. *Crawford*: Results are always marked. *Baxter*: Improves the crops and the land. *Sevier*: Those who have open land enough to rotate make better crops by it. *Conway*: The laborer takes all he can from, and returns nothing to, the soil.

**MISSISSIPPI RIVER ALLUVIAL REGION.**—*Saint Francis*: Cotton will grow better, and not be so liable to disease, if planted after corn, wheat, or oats. *Desha*: Results are excellent for either cotton or corn. *Cross and Lee*: Results are good.

## 8. What fertilizers or other direct means of improving the soil are used by you, or in your region? With what results? Is green manuring practiced? With what results?

**UPLANDS.**—*Crawford, Baxter, Sevier, Pulaski, Sebastian, Dallas, Columbia, Jefferson, and Union* counties report the use of barnyard manure and cotton-seed. *Ashley, Hot Spring, Grant, Fulton, Franklin, and Scott*: Barnyard manure and such other fertilizers as are made on the farm, consisting of compost heaps, leaf manure, ashes, etc.; sometimes cotton-seed for small grain in *Grant*. *Garland*: Stable manure, cotton-seed, and occasionally ashes. *Pope*: Same as in *Garland*, with the addition of rotted straw and logs. *Howard*: This county being comparatively new, nothing is used except barnyard manure, and that only to a limited extent. *Conway*: In a few cases the stalks are plowed under and the surplus cotton-seed returned to the soil. *Miller*: Animal manure, and occasionally cotton-seed on garden patches of uplands only. *Boone*: Nothing except animal manure on meadows, orchards, and vegetable gardens. *Lincoln*: Cotton-seed on light spots. The results are excellent in all cases. *Sevier, Sebastian, and Scott*: From 50 to 100 per cent. gain. *Franklin*: A small amount of any fertilizer pays largely.

*Arkansas*: With cow-pease it increases the crops about 25 per cent. *Sebastian*: It consists of plowing under weeds, grass, and stubble; tends to destroy next year's crop of weeds, and is of benefit to the land. *Sevier, Garland, Howard, Baxter, and Franklin*: The productiveness is increased by turning under stubble, grass, and weeds. *Pope*: Sometimes with oats and rye; but the best results are obtained from the use of cow-pease.

**MISSISSIPPI RIVER ALLUVIAL REGION.**—*Lee and Craighead*: Barnyard manure and cotton-seed to some extent, and with excellent results. *Chicot and Woodruff*: Occasionally cotton-seed, and with the best results. *Cross*: Compost and stable manure. *Chicot*: The yield is increased about 25 per cent. *Cross*: The results are good. *Crittenden*: The lands of this county are new, and fertilizers are not needed. It is found that the oldest fields yield the most cotton, as the plant is inclined to run to weed too much on new land, which also would result from fertilizing the old land, the joints of the plant becoming long and the bolls scattering.

Green manuring is practiced in six counties; to some extent in nine, and not at all in fifteen. Results are good in all cases. *Crawford*: With cow-pease on old uplands it is one of the best fertilizers.

Green manuring with cow-pease is practiced to some extent, and with good results, in *Cross and Saint Francis*, and rarely in *Lee*. In the remaining counties it is hardly thought of.

## 9. How is cotton-seed disposed of? If sold, on what terms, or at what price?

**UPLANDS.**—Ten counties report it as partly sold and partly fed to cattle; thirteen as partly sold, partly used as a manure, and partly fed to cattle. *Lincoln, Pulaski, Sebastian, and Jefferson*: Part sold to oil-mills, and remainder used as a fertilizer. *Prairie and White*: Sold to the oil companies. *Drew*: Partly sold, partly fed to cattle and sheep, and partly wasted. The prices obtained from the sale of it are: in fourteen counties, 10 cents per bushel; in nine, from 5 to 10 cents per bushel. *Pulaski, Prairie, and Clark*: \$3 per ton. *Conway and Miller*: \$5 per ton. *Drew*: \$4 per ton. *Hot Spring*: From 10 to 15 cents per bushel.

**MISSISSIPPI RIVER ALLUVIAL REGION.**—*Cross, Chicot, Crittenden, Desha, Saint Francis, and Mississippi* counties report it as sold at prices ranging from \$4 to \$9 per ton. *Craighead*: It is used as feed, being hardly ever sold. *Lee*: Partly as a fertilizer, but the greater part is sold at \$9, and sometimes more, per ton. It is the opinion that it would pay better to use it all as a manure than to sell it. *Woodruff*: A small portion is sold at \$4 50 per ton; the remainder is used as a feed for cattle.

## 10. Where is the nearest cottonseed-oil factory?

The oil-mills most convenient, both in and out of the state, are located in Little Rock and Pine Bluff, Arkansas, Memphis, Tennessee, Greenville, Mississippi, and New Orleans and

Shreveport, Louisiana. That of Little Rock is most convenient to the greatest number of counties.

## 11. Is cottonseed-cake used with you for feed or manure?

**UPLANDS.**—It is reported as not used at all in twenty-four counties. As a manure alone, in *White*; to some extent, for cotton and corn, in *Crawford*; and very little, for corn, in *Baxter*. As a feed for cows, in *Pulaski*, and, to a limited extent, in *Franklin*. In *Jefferson* it is used to some extent both as a feed and as a manure, but the greater part is shipped to Europe.

**MISSISSIPPI RIVER ALLUVIAL REGION.**—It is reported as not used at all in *Mississippi, Desha, Saint Francis, Crittenden, and Craighead*. As a manure alone for corn, in *Woodruff and Chicot*. To some extent, both as feed for cattle and as a manure, in *Cross and Lee*.

## PLANTING AND CULTIVATION OF COTTON.

## 12. What preparation is usually given to cotton land before bedding up?

UPLANDS.—Nine counties report no preparation given; eight, the clearing off of stalks, and, in most cases, the burning of them. *Baxter, Fulton, Franklin, and Garland*: The land is well broken up before bedding. *Grant*: The stalks, if large, are pulled up and burnt, and the land is sometimes broken up. *Sebastian, Clark, Marion, Scott, and Pulaski*: Fall plowing to some extent,

but usually spring plowing only. *Jefferson and Howard*: Spring plowing only. *Crawford*: The best farmers plow twice in the spring.

MISSISSIPPI RIVER ALLUVIAL REGION.—*Cross, Crittenden, Craighead, Saint Francis, Mississippi, and Woodruff* counties report no preparation. *Chicot, Desha, and Lee*: Removal of old stalks.

## 13. Do you plant in ridges? How far apart?

UPLANDS.—Planting in ridges is universal in all counties reported, sixteen of which report the ridges from 2½ to 4 feet apart. *Faulkner, Miller, Drew, Pulaski, Sevier, and Jefferson*: From 3 to 6 feet apart. *Baxter, Columbia, Marion, and Union*: 3 feet. *Ashley*: From 4½ to 6 feet on bottoms; from 3 to 3½ feet on uplands. *Garland*: On poor soil, 3 feet; rich soil, from 4 to 6 feet. *Arkansas*: 4 feet on bottoms, 3 feet on uplands.

MISSISSIPPI RIVER ALLUVIAL REGION.—In *Cross, Mississippi, and Woodruff* counties the ridges are from 3 to 4 feet apart. *Desha, Saint Francis, and Crittenden*: 4 feet. *Craighead*: From 3 to 5 feet. *Lee*: From 4 to 4½ feet on bottoms; on uplands, from 3 to 3½ feet.

## 14. What is your usual planting time?

In the southern counties the earliest time is that reported from *Ashley*, being from the 1st to the 20th of April; the latest, from April 20 to May 20, from *Miller*.

In the middle counties (east to west) the earliest time is the first week in April, reported from *Sevier*; the latest, May 20, from *Scott*.

In the northern counties the time varies from April 10 to the last of May. The earlier time is reported from *Boone and Cross*, and the later from *Crittenden*.

## 15. What variety of cotton do you prefer?

UPLANDS.—The prolific varieties are preferred in seven counties, *Boyd's* being mentioned twice. *Dixon's* alone in *Arkansas* and *Drew*, with other varieties of cluster cotton in *Union*, and with *Petit Gulf* in *Faulkner*. Short-limbed cotton alone in *Miller*, with *Java Prolific* in *Grant* and *Dallas*, where the short-limbed is thought to be best for poor uplands. Early *Johnston* (a mixture of *Green-seed* and *Prolific*), *Bagley*, *Green-seed*, *Multi-boll* and *Multi-lock*, and *Peeler* varieties, each are mentioned once. *Taylor's-silk* cotton and *Bagley* are reported as preferred in *Prairie* county, *Peeler* or *Prolific* in

*White*. *Bagley Improved* or *Petit Gulf* in *Sevier*. In *Ashley*, the African variety, because it yields the best, and the price of lint is from 1 to 2 cents more per pound than other varieties.

MISSISSIPPI RIVER ALLUVIAL REGION.—The *Peeler* variety is reported as preferred in *Desha*, with *Boyd's Prolific* in *Chicot*. *Petit Gulf* alone in *Craighead*, in connection with *Green-seed* in *Mississippi*, *Taylor's silk* or *Java Prolific* in *Saint Francis*, *Matagorda silk* in *Cross*, *Boyd's Prolific*, *Dixon's* and *Taylor's* in *Lee*, *Green-seed* in *Crittenden*, and any short-limbed in *Woodruff* county.

## 16. How much seed is used per acre?

UPLANDS.—Seven counties report from 1 to 2 bushels, seven counties 2 bushels. *Miller*: From one-half to 1 bushel. *Crawford* and *Scott*: Each 1 bushel. *Sevier*: From 1 to 3 bushels. *Jefferson* and *Dallas*: From 1 to 4 bushels. *Prairie* and *Pope*: From 2 to 5 bushels. *Pulaski*: 3 bushels. *Drew*: From 3 to 5 bushels.

MISSISSIPPI RIVER ALLUVIAL REGION.—*Desha*: 1 bushel. *Craighead*: 1½ bushels. *Mississippi*: By hand, 2 bushels; by machine, 1 bushel. *Lee*: With planters, from 1 to 2 bushels; by hand, 3 bushels. *Woodruff*: From 2 to 4 bushels. *Cross*: From 2 to 5 bushels. *Saint Francis*: 4 bushels with planters. *Chicot*: 5 bushels. *Crittenden*: 150 pounds.

## 17. What implements do you use in planting?

UPLANDS.—Twelve counties report the use of a small plow to open with, and a harrow, board, or block to cover with. Nine counties report the use of the cotton-planter only. *Hot Spring, Drew, Grant, and Scott*: Plow to open with, and harrow, board, or block to cover with, and also cotton-planters. *Franklin* and *Boone*: The revolving planter. *Howard*: Various implements of home construction.

MISSISSIPPI RIVER ALLUVIAL REGION.—*Lee* and *Mississippi*: Ordinary farming implements. *Woodruff*: An opener and block or planter. *Cross*: Wooden planters. *Crittenden, Saint Francis, and Craighead*: Cotton-planters. *Chicot*: Drill the seed by hand.

## 18. Are cotton-seed planters used in your region?

UPLANDS.—Seventeen counties report their extensive use; eight counties to some extent, and five report them as not being used. The general opinion is very favorable, they being valued as great savers of time and labor. *Jefferson*: Not satisfactory; they are only used 6 or 8 days in a year. *Pope* and *Union*: Not much appreciated. *Sebastian*: If the spring is dry, planting by hand is the best.

## What opinion is held of their efficacy or convenience?

MISSISSIPPI RIVER ALLUVIAL REGION.—They are reported as used, more or less, in all the counties of the region, and in most cases are liked very much. *Crittenden* and *Desha*: Opinion is divided; some like them, others do not. *Cross*: In wet seasons they do well, but fail in dry ones.

## 19. How long usually before your seed comes up?

The time depends upon the condition of the weather and soil. The minimum time is that reported from *Desha* county, being twenty-four hours after a rain. The maximum, from 10 to 20 days, is reported from *Pulaski* and *Sevier*. Eight counties report the time as being from 5 to 10 days. *Dallas*: 8 to 20 days.

*Drew, Prairie, and Mississippi*: From 3 to 10 days. *Faulkner, Craighead, and Grant*: From 8 to 10 days. *Lincoln, Saint Francis, and Woodruff*: About 10 days. Eleven counties: From 4 to 6 days. Seven counties: From 6 to 16 days.

## 20. At what stage of growth do you thin out your stand, and how far apart?

*Prairie* and *Scott* counties report the thinning of the crop to a stand when the second leaf appears. Seven counties: When the third leaf appears. Six counties report thinning out as soon as four leaves are formed. *Lee*: Delay in thinning out, after the third leaf appears, injures the crop. *Faulkner*: When the plant has from three to four leaves. *Columbia*: When the fourth or fifth leaf appears. *Cross*: When the bud leaf puts forth, and the top root sends out fibers. *Pope*: When one week old. *Ashley* and *Chicot*: From 10 to 15 days after coming up. *Marion* and *Grant*: When the plant is from three to four weeks old. *Mississippi*, *Lincoln*, *Baxter*, and *Desha*: When the plant is 3 or

## 21. Is your cotton liable to suffer from sore-shin?

UPLANDS.—In *Arkansas*, *Garland*, and *Prairie* counties the disease occurs quite extensively; occasionally or to some extent in ten counties. In nine counties the cotton suffers from it when the weather in spring is wet and cold, or if the nights are cold. *Union*: On old lands and in wet seasons. *Conway*: When planted too thick. *Drew* and *Dallas*: If the young plants are

## 22. What after-cultivation do you give, and with what implements?

UPLANDS.—*Garland*: First use the harrow as the cotton cracks the ground, then the scraper; thin out the plants and throw dirt from the row with a small plow; then hoe and throw dirt to the plants with larger plow, after which give two good, thorough plowings with large cotton sweeps. *Dallas*: First bar off with turning plow, then hoe out grass, thinning out at the same time; next throw up dirt with shovel-plow, and repeat every ten days with sweep till August 1; then break the middles with sweep. *Union*: Plowing with scoter and the heel-sweep attached on same stock (about the same as a Dixon sweep). *Drew*: Bar off and scrape (of late improved scrapers do the work without barring); use small shovel-plow to throw soil up to cotton; then cultivate about three times with bar or shovel-plows or sweeps. *Howard*: Use wide shovels or sweeps three or four times, according to seasons, and hoe once or twice. *Fulton*: Use scraper, cultivator, and bull-tongue plow, etc. No two farms are alike or have tools alike. *Jefferson*: Scrape or harrow first; then follow, on the same day, with the sweep. If the ground is hard, repeat this two or three times, then clean the middles with sweeps. *Boone*: Four plowings and three hoeings. *Pope*: Four plowings after scraping and hoeing, first with a small shovel, and the other three with different-sized sweeps. After-cultivation is given by first barring off with turning-plow, or using scraper; then throwing dirt to cotton with sweep; in *Miller* and *Montgomery*, where the sweep is not

## 23. What is the height usually attained by your cotton before blooming?

UPLANDS.—Six counties report the height as being from 10 to 18 inches. *Jefferson*: From 8 to 15 inches. Eight counties: From 15 to 20 inches. *Pope* and *Prairie*: From 12 to 24 inches. *Conway* and *Hot Spring*: From 18 to 24 inches. *Ashley*: From 18 to 30 inches. *Marion* and *Pulaski*: 2 feet. *Arkansas*: 1 foot on uplands; 2 feet on bottoms. *Montgomery*, *Baxter*, *Howard*, and *Crawford*: From 2 to 3 feet. *Sebastian*, *Drew*, and *Lincoln*: 3 feet.

## 24. When do you usually see the first blooms?

In the southern counties the earliest time, from the 1st to the 10th of June, is reported from *Union*; the latest, July 1, from *Miller*. *Drew*: The average time from planting, according to a record of six years, is 63½ days, the earlier plantings being longer before blooming. In 1874 cotton planted April 6 bloomed the 25th of June; cotton planted May 6 bloomed the 28th of June. In 1875 cotton planted April 30 bloomed the 24th of June; in 1876 cotton planted May 10 bloomed the 5th of July; in 1877 cotton planted April 25 bloomed the 28th of June; in 1878 cot-

## 25. When do the bolls first open?

In the southern counties the earliest time at which the bolls first open is the 1st of August, reported from *Columbia*; the latest, from the 10th to the 20th of August, from *Miller*. Four counties give the middle of August.

In the middle counties July 30, the earliest time, is reported from *Pulaski*; the latest, September 1, from *Sebastian*. Most of the counties report from the middle to the latter part of August.

4 inches above ground. *Jefferson* and *Sebastian*: From 3 to 6 inches. *White*, *Fulton*, and *Dallas*: As soon as it comes up. *Clark*: As soon as possible after the stalk appears. *Howard*: At first working, from May 15 to June 1.

The distances apart are, in *Jefferson* and *Ashley*, from 6 to 12 inches. Five counties: From 8 to 12 inches. *Franklin*, *Baxter*, *Montgomery*, and *Marion*: 1 foot. Seven counties: From 10 to 15 inches. *Eleven*: From 10 to 20 inches. *Prairie* and *Garland*: From 10 to 24 inches. *Miller*: From 18 to 25 inches. *Hot Spring* and *Arkansas*: 12 inches on upland and 18 on bottoms. In the bottom lands the distances are from 15 to 24 inches.

injured by the hoe. *Jefferson*: Not if hilled up. *Pulaski*, *Boone*, and *Fulton*: Does not occur at all.

MISSISSIPPI RIVER ALLUVIAL REGION.—*Desha* and *Cross* counties report it as occurring in cold, wet seasons. *Lee*, *Saint Francis*, *Mississippi*, and *Woodruff*: To a limited extent only. *Crittenden*: Not if uninjured in hoeing. *Chicot* and *Craighead*: Not at all.

used for a week or ten days after scraping, then repeating the process; and in *Ashley*, where the sweep is in constant use until the crop is laid by, although some finish with turning-plow. The grass and weeds are kept out by hoes, and the ground is well stirred with sweeps, in *Marion*, *Scott*, *Clark*, and *Columbia*. The shovel-plow, either double or single, is used after scraping or hoeing, then the sweep until crop is laid by, in *White*, *Prairie*, and *Sebastian*; plowing with sweeps from one to four times is done in *Faulkner*, *Lincoln*, *Pulaski* (scraper also in use), and *Sevier*, where broad shovels are also used. The various implements mentioned are in use also in all of the other upland counties, and the methods are very various.

MISSISSIPPI RIVER ALLUVIAL REGION.—*Saint Francis*: Sweeps of various sizes and sometimes turning-plows; the land is generally plowed four times and hoed twice after it has been brought to a stand. *Mississippi*: Bar off with a common scraper, then throw up with single shovel, and cultivate with a sweep and turning-plow; some use a side-harrow. *Lee*: The shovel and side-harrow are used in any season, but if there is much wet weather the grass will take such hold as to render plowing necessary. *Craighead*: Scrapers, plows, and harrows are used. *Desha*: Scrapers, hoes, sweeps, and turning-plow. In other counties the implements are the same as given above, and the methods as various, except in *Chicot*, where the correspondent says that no after-cultivation is given.

MISSISSIPPI RIVER ALLUVIAL REGION.—*Saint Francis*: 12 inches. *Woodruff*: Generally 15 inches. *Cross*: From 15 to 18 inches. *Chicot* and *Crittenden*: 18 inches. *Desha*: From 18 to 20 inches. *Mississippi* and *Lee*: 2 feet. *Craighead*: 2½ feet.

ton planted May 10 bloomed the 1st of July; in 1879 cotton planted April 1 bloomed the 19th of June; cotton planted April 15 bloomed the 22d of June; cotton planted April 21 bloomed the 24th of June.

In the middle counties the two extremes are from the 15th to the 25th of June in *Howard* and the 10th of July in *Arkansas*.

In the northern counties the earliest time, from the 16th to the 20th of June, is reported from *Franklin*; the latest, from *Craighead* and *Marion*, being about the 4th of July.

In the northern counties the extremes are from August 10 to 15, reported from *Baxter*, and from September 15 to 20 in *Boone*. Five counties report about the middle, and six the latter part of August.

26. When do you begin your first picking, and how many pickings do you usually make?

**SOUTHERN COUNTIES.**—*Ashley*: From the 20th to the 25th of August in dry and 1st of September in seasonable years. *Columbia*, *Lincoln*, and *Chicot*: September 1. *Drew*, *Union*, and *Desha*: The early part of September. *Miller*: Usually in September. Three pickings are made in all counties except *Miller* and *Drew*, where two are usually made.

**MIDDLE COUNTIES.**—*Pulaski*: August 20. *Howard*, *Saint Francis*, and *Jefferson*: The latter part of August. *Clark*, *Prairie*, *Cross*, and *Garland*: September 1. *Pope*, *Arkansas*, *Hot Spring*, and *Sebastian*: The early part of September. *Montgomery*: From the 1st to the 15th of September. In the remaining counties usually

27. Do you ordinarily pick all your cotton?

**UPLANDS.**—*Lincoln*: Hardly ever. *Miller* and *Faulkner*: No. *Conway*: Scarcely more than half. *Ashley*: All is picked except that which is wasted by storms. *Arkansas* and *Prairie*: There is some loss on bottom lands. *Grant*: Yes, except when an over-crop is made.

In the remaining counties all the crop is said to be picked.

28. At what date does picking usually close?

**SOUTHERN COUNTIES.**—Picking closes in November in *Columbia*; about the 25th of December in *Union* and *Desha* (though often prolonged to late in January) and on uplands in *Ashley*, the date for bottoms being from the 1st to the 10th of February, January 1, but sometimes continues to March 10, in *Drew*, February 1 in *Lincoln*, and February 28 in *Miller*.

**MIDDLE COUNTIES.**—October 25 in *Pulaski*. From the 1st to the 10th of December in *Grant*; December 15 in *Howard*. The last of

29. What is the rate paid for picking?

The rate reported from different parts of the state is 75 cents per 100

30. At what time do you expect the first "black frost"?

**SOUTHERN COUNTIES.**—The earliest time, from the 10th to the 20th of October, is reported from *Union*; the latest, from December 1 to 15, from *Ashley*. *Columbia*, November 15. In the remaining counties from October 17 to 25.

**MIDDLE COUNTIES.**—*Cross* and *Garland* report October 10. Five counties: the middle of October. Eight: From the middle to the last of October. *Lee*: From October 20 to November 15. *Scott*: In November. *Pope*: From November 24 to December 4.

31. Do you pen your seed-cotton in the field, or gin as the picking progresses?

**UPLANDS.**—Fourteen counties report the seed-cotton as penned in the field. *Boone*: Usually pen in the field, covering to keep dry. *Pope* and *Fulton*: Usually pen, unless more convenient to gin. *Jefferson* and *Lincoln*: Generally pen; in some cases ginning and picking are carried on together. *Franklin*: Pen it, and, when a few bales are out, have it ginned. *Baxter*, *Conway*, and *Crawford*: It is usually penned in the field a short time before ginning. *Pulaski*: Gin as fast as picking progresses. *Ashley*: As much ginned as possible, the remainder penned to await ginning. *Grant*: Sometimes it is penned, so as to allow it to shrink before ginning; but frequently ginned as fast as picked. *Arka-*

in September. One or two pickings are made in *White*. Two pickings are made in eleven counties, two or three in *Grant*, *Lee*, and *Jefferson*, two to four in *Pulaski*, and three in *Garland* and *Montgomery*.

**NORTHERN COUNTIES.**—*Mississippi*: The latter part of August. *Crawford*, *Marion*, *Baxter*, and *Crittenden*: September 1. *Faulkner*, *Conway*, and *Woodruff*: From first to middle of September. *Franklin* and *Fulton*: The middle of September. *Boone*: October 12. From one to two pickings are made in *Craighead*, two in nine counties, from two to three in *Crawford*, and three in *Crittenden*.

**MISSISSIPPI RIVER ALLUVIAL REGION.**—*Craighead*, *Crittenden*, and *Cross*: No. *Lee*: A great deal is lost in some seasons. *Mississippi*: Considerable is left on the ground. *Chicot*, *Desha*, *Woodruff*, and *Saint Francis*: Yes.

December in eight counties. January 1 in *Montgomery* and *Garland*. About the 1st of February in *Sevier*.

**NORTHERN COUNTIES.**—Picking closes November 30 in *Boone*. From first to middle of December in *Fulton*. From December 1 to last of January in *Baxter*. December 15 in *Franklin*. About the 25th of December in *Crawford*. January 25 in *Marion*. Usually in December, but sometimes continues till March in *Conway*. February 1 in *Crittenden*. At planting time in *Craighead*.

pounds of seed-cotton. In *Boone* county the rate is 50 cents.

**NORTHERN COUNTIES.**—*Marion*: October 12. *Crawford*: October 15. Five counties report from the 20th to the 27th of October. *Faulkner*: November 1. *Crittenden*: November 5. *Fulton* and *Woodruff*: From the 10th to the 15th of November. *Craighead*: November 20, which is the latest date. November is reported from a greater number of counties in this, than in either of the middle or northern counties.

*ansas* and *Prairie*: Both plans are adopted. *Dallas*: Gathered and placed in good house, and ginned in wet weather.

**MISSISSIPPI RIVER ALLUVIAL REGION.**—*Cross*, *Desha*, *Chicot*, *Mississippi*, and *Craighead* counties report both methods as practiced, some first pen and then haul to gin, others gin as picking progresses. *Woodruff*: Pen in the field. *Crittenden*: Gin as picking progresses. *Lee*: Sometimes share-hands prefer to pen their cotton under lock in the field, but usually it is hauled to the gin. *Saint Francis*: It is first penned; ginning commencing after several bales have been picked.

## GINNING AND BALING.

32. What gin do you use? How many saws? What motive power, steam, horses, or mules?

Pratt's gin, with from 35 to 80 saws, is reported in thirteen counties; Hall's, with from 50 to 80, in seven; Brown's, with from 50 to 80, in six; the Eagle and Emery gins, with from 50 to 80 saws, each in three; the Carver, with from 35 to 80 saws, in four; the Winship, with from 50 to 80, and the Champion, with from 50 to 70,

33. How much clean lint do you make in a day's run of ten hours?

Pratt's gin of 80 saws, with steam-power, will make 5,000 pounds (*Mississippi*); with steam- and horse-power, 4,000 pounds (*Franklin*); with horse-power, 1,500 pounds (*Arkansas*); 60 saws, steam-power, 5,000 pounds (*Scott*); 4,000 pounds (*Lincoln*); 60 saws, steam- and horse-power, from 3,000 to 3,500 pounds (*Pulaski*); from 50 to 80 saws, with steam- or horse-power, 1,875 pounds (*Hot Spring*); horse-power, 1,800 to 2,000 pounds (*Saint*

each in two. The Gullet of 80 saws, the Pine Bluff with 60, the Clemmens with from 50 to 60, Chaffin, 35 to 80, the Dubois of 60, and Phoenix of 40 saws, each in one county. The use of steam power is reported in fifteen counties, steam- and horse-power in thirteen, and horse- or mule-power in ten.

*Francis*); from 50 to 60 saws, with steam- and horse power, from 1,500 to 2,000 pounds (*Lee*); from 45 to 60 saws, steam-power, 2,000 pounds, and horse-power, 1,000 pounds (*Union*); from 40 to 66 saws, with steam, 4,000 pounds, and horse-power, 2,000 pounds (*Baxter*); from 35 to 80 saws, horse-power, 1,600 pounds (*Jefferson*).

Hall's gin of 80 saws, steam-power, 5,000 pounds (*Faulkner*); 4,500 pounds (*Woodruff*); 60 saws, steam, 4,000 pounds (*Pope*); steam- and horse-power, 3,000 to 3,500 pounds (*Pulaski*); horse power, 1,500 pounds (*Grant*); from 50 to 60 saws, with steam-power, 2,000 pounds (*Drew*); one bale of 500 pounds for each 10 saws (*Crawford*).

Brown's gin of 70 saws, with steam- and water-power, will make 4,500 pounds (*Marion*); 60 saws, with steam-power, 5,000 pounds (*Scott*); with steam- and horse-power, 3,000 to 3,500 pounds (*Pulaski*); 50 saws, steam-power, 2,000 pounds (*Columbia*).

Gullett's gin of 80 saws, with steam-power, will make 4,000 pounds (*Conway*).

The Eagle gin of 80 saws, with steam-power, 4,000 pounds (*Chicot*); 50 saws mule-power, 900 pounds (*Desha*).

#### 34. How much seed-cotton, on an average, is required for a 475-pound bale of lint?

UPLANDS.—1,425 pounds is reported in ten counties; 1,485 in *Scott*, *Crawford*, *Prairie*, and *Howard*; 1,485 to 1,605 in *Grant*; 1,545 in *Conway*, *Garland*, *Lincoln*, *Pope*, and *Franklin*; 1,580 in *Drew*; 1,605 in *Clark*, *Pulaski*, and *Sevier*; 1,605 to 1,665 in *Jefferson*; 1,665 in *Miller*; 1,425 to 1,785 in *White*; 1,785 in *Marion*.

MISSISSIPPI RIVER ALLUVIAL REGION.—1,485 pounds is reported in *Woodruff*; 1,545 late, and 2,375 early in the season, in *Lee*; 1,665 in *Chicot*; 1,685 to 1,785 in *Desha*; 1,665 to 1,900 in *Saint Francis*; 1,725 in *Crittenden*; 1,785 in *Cross*; 1,840 to 1,900 in *Mississippi*.

35. What press do you use for baling? What press is generally used in your region? What is its capacity per day?

No preference for any particular press is reported in ten counties.

The wooden screw press is reported in seven; the iron screw in six; the Arrow in five; Brooks' in four; Deering's and home-made, each in three; the Compass, Albertson, and Planters', each in two; the Eclipse, Lewis, Lever, Check, Grasshopper, revolving wooden, McDermott, Utley's, Reynolds' Centennial, Newell's, and Provost, each in one county.

The Albertson press, with four men and two mules, will pack 25 bales (*Drew*); with three men and three mules, 12 bales (*Pulaski*); the Arrow press, with five men and two horses, will pack from 10 to 20 bales (*Jefferson*); 10 to 450 pound bales in ten hours (*Desha*); with three men and one mule, 10 bales (*Crittenden*); with two men and one horse, 8 bales (*Arkansas*). The Grass-

36. Do you use rope or iron ties for bailing? If the latter, what fastening do you prefer?

The use of iron ties is universal throughout the state, the old method of baling with rope having disappeared. The preference for the arrow or buckle fastening is reported in 27 counties. Some

37. What kind of bagging is issued in your region?

The use of jute bagging is reported in eleven counties; hemp and jute in seven; hemp in six; jute, hemp, and flax in *Conway*; hemp and flax in *Lee*; India or jute in *Franklin*; India or hemp

38. What weight do you aim to give your bales? Have transportation companies imposed any conditions in this respect?

Twenty-five counties report 500 pounds. *Arkansas*, *Chicot*, *Desha*, *Jefferson*, and *Union*: 450 pounds. *Hot Spring*, *Dallas*, and *Grant*: From 450 to 500 pounds. *Crawford* and *Lee*: From 400 to 525 pounds. *Prairie*: From 500 to 550 pounds. *Baxter*: From 500 to 600 pounds. Nineteen counties report that transportation companies impose no conditions whatever. *Hot Spring*, *Faulkner*, *Lincoln*, *Jefferson*, and *Pope*: Freight charges are per bale, regardless of weight. *Franklin*: Large bales of 500 pounds and upward are preferred. *Lee*: Railroad charges are by the pound; steamer, by the bale. *Pulaski*: Railroad charges are per 100 pounds; no

The Carver gin, 80 saws, with steam-power, 5,000 pounds (*Mississippi*); 60 saws, steam-power, 6,000 pounds (*Crittenden*).

Emery's gin of 50 saws, horse- or mule-power, will make 1,500 pounds (*Clark*); 1,200 pounds (*Garland*).

The Champion gin of 60 saws, steam-power, 6,000 pounds (*Crittenden*).

The Dubois gin of 60 saws, steam-power, 5,000 pounds (*Scott*).

The Pine Bluff gin of 60 saws, steam-power, 3,000 to 4,000 pounds (*Dallas*).

The Phenix gin of 40 saws, with steam-power, will make 1,000 pounds (*Boone*).

In answering the above, some of the correspondents have doubtless added the toll of one tenth or twelfth for ginning; if ginning is done immediately after picking, and while the seed is green, more is required for a bale of lint than when the seed is dry. On rich bottom lands, the seed is heavier than on the uplands, and therefore more seed-cotton is required to make the same amount of lint. The common rule is that "cotton will third itself", or yield one-third of its weight of lint.

hopper press will pack 20 bales (*Faulkner*); the Deering press will pack ten 450-pound bales (*Desha*); with two men and two horses, 16 bales (*Pope*); Brooks' press will pack 8 bales (*Mississippi*); with two men and one mule, 8 bales (*Saint Francis*); with two men and four horses, 6 bales (*Scott*); the Eclipse and Planters' presses, with three men and three mules, each 12 bales (*Pulaski*); Reynolds' and Utley's presses, with four men and one horse, 15 bales (*Lee*); the Compass press will pack 6 bales (*Howard*); with two men and one horse, from 4 to 6 bales (*Union*); the wooden screw press will pack 4 bales (*Hot Spring*); the iron screw press with one man and one mule, 10 bales (*Grant*); with three men and one horse or mule, 7 bales (*Marion*); the home-made press will pack from 6 to 10 bales (*Baxter*).

in *Cross* prefer the buckle, others the loop. Iron loop or ring in *Union*. English buckle and tie in *Marion*. No preference or choice is reported in *White* and *Conway*.

in *Union*; Greenleaf or jute in *Prairie*; Greenleaf in *Marion*, and gunny, in *Miller*. The merchants furnish the cheapest in *Craighead*.

conditions by steamer, the freight being per bale. *Scott*: Bales are averaged at 450 pounds. *Saint Francis*: If a bale weighs more than 600 pounds it is charged extra. *Miller*: A bale weighing less than 500 pounds is discounted; if less than 450 pounds, it is not merchantable. Bales weighing less than 400 pounds are discounted, by merchants, \$3 in *Howard*, \$1 in *Dallas*, and are not considered merchantable in *Sevier*. Bales weighing less than 300 pounds are discounted \$2 in *Dallas*, \$1 in *Cross*, and are not merchantable in *Conway*, where, also, some regulations have been attempted in regard to wrapping.

#### DISEASES, INSECT ENEMIES, ETC.

39. By what accidents of weather, diseases, or insect pests is your cotton crop most liable to be injured? Caterpillar, boll-worm, shedding, rot of bolls, rust, blight? At what dates do these several pests or diseases usually make their appearance, and to what cause is the trouble attributed by your farmers?

UPLANDS.—The caterpillar and boll-worm are both of common occurrence in *Columbia*, *Union*, *Pope*, *Garland*, *Drew*, *Grant*, and *Hot Spring*; sometimes found in *Crawford*, *Dallas*, and *Scott*, and

not at all in *Fulton*, *Miller*, *Faulkner*, *Pulaski*, *Baxter*, *Prairie*, *Sebastian*, *Clark*, and *White*. The time of their appearance varies from early in the summer until late in the autumn. The cater-

pillar alone is found extensively in *Lincoln* and *Arkansas*; to some extent in *Boone*; in some seasons in *Howard*; and not at all in *Conway*, *Franklin*, *Montgomery*, *Marion*, and *Sevier*. In *Jefferson* it comes too late to do any harm to the cotton. The boll-worm alone is common in *Franklin*, *Boone*, *Howard*, and *Sevier*; occurs to some extent in *Lincoln*, *Conway*, *Marion*, *Jefferson*, and *Montgomery*, and not at all in *Arkansas*. It injures the crops more than anything else in *Pope*.

Aphides occur generally in *Lincoln*, *Prairie*, *Sebastian*, *Montgomery*, and *Pulaski*, and sometimes in *Conway*. They are attributable to cold, wet springs.

The army-worm is found in *Hot Spring* and *Jefferson*, where, with the ant, it is more dreaded than the caterpillar.

Shedding is of common occurrence in all the counties of this region excepting *Boone*, *Jefferson*, *Baxter*, and *Conway*, where it only occurs to a limited extent. It is generally attributed to extreme states of the weather, either wet or dry, and appears about the middle of summer or early part of autumn. It is also caused in *Jefferson* by bad cultivation.

Rot of bolls and rust are common in *Lincoln*, *Faulkner*, *Pope*, *Columbia* (rust on old lands), *Arkansas*, *Union* (rust is black), *Garland*, *Drew*, *White*, *Pulaski*, *Miller*, *Grant*, *Clark*, and *Howard*; are found somewhat in *Jefferson*, *Boone*, *Fulton*, and *Conway*, rarely in *Crawford*, and not at all in *Franklin*, *Dallas*, and *Sebastian*. Rot of bolls occurs generally in wet weather.

Rust is the worst trouble in *Boone*; it also occurs quite extensively in *Woodruff*, *Sevier*, and *Montgomery*, owing to sudden changes of weather; in *Hot Spring*, due to cool weather; to some extent in *Prairie*, *Baxter*, and *Marion*. The time of occurrence is from July to September.

Blight is quite general in fourteen counties, and to some extent occurs in *Conway* and *Jefferson*.

Excessive wet weather and drought are great causes of trouble in many of the counties. Warm winters and southwesterly winds in spring damage the crop in *Lee*. The bottoms in dry seasons always yield large crops, averaging a bale or more to the acre

40. What efforts have been made to obviate these pests and diseases, and with what success? Is Paris green used as a remedy against the caterpillar?

UPLANDS.—Twenty-two counties report that no efforts have been made. *Conway*: None worthy of notice. *Hot Spring*: Judicious cultivation is in some degree beneficial, and is attended with fair success. *Howard*: Very little, if any. *Grant*: None in this county as yet, though farmers are trying, with limited success, devices which may be suggested by experience and observation. *Pope*: Several patent remedies have been applied, but very little benefit has been derived from the use of them. *Garland*: But little, except to create moisture by thorough plowing during shedding; the success is good. If it is not done, the first rain will cause the "squares" to fall off. *Pulaski*:

41. 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 which soil described by you are they most common?

They are prevalent on ill-drained soils in cool weather, either wet or dry, on low lands in *Cross*, in wet and dry weather in *Miller*, and on black, sticky land in *Faulkner*; on light sandy land, when very hot weather follows rain, in *Garland* and *Drew*; in wet and cool weather on gray and black soils in *Fulton*; on lowlands in *Hot Spring*, *Baxter*, and *Howard*; and on sandy lands in *Lincoln*. On heavy soils in wet and cool weather, most common on clay sandy loam or post-oak land in *Boone*; on black land in *Marion*; and on sandy land in *Sebastian*.

On heavy and ill-drained soils, in wet and cool seasons, in *Franklin*; most common on sandy creek bottoms in *Dallas*; on sandy and crawfishy land in *Mississippi*; in wet seasons on sandy land in *Lee*; on clay land in *White*; on low and old lands in *Grant*; in cold seasons, on bottoms in *Clark*; and on old lands that are not fertilized in *Columbia*. They appear on all soils, and in all

in *Jefferson*. Cold summers, rains, and cool, damp nights cause trouble in *Boone*.

In *Conway* there are very few pests, none ever destroying a crop. A minute insect, common to the poke-weed, is thought to produce red rust. Black rust or blight appears in spots, and either kills or causes shedding.

Early frosts injure the crop in *Baxter* and *Clark*. Drought only is feared in *Dallas*.

MISSISSIPPI RIVER ALLUVIAL REGION.—The caterpillar, in the latter part of summer, is the only source of injury in *Chicot*; it is also found in *Lee* and *Crittenden*.

The boll-worm appears in *Mississippi*, and to a slight extent in *Lee*. Shedding occurs quite extensively in *Crittenden*, *Lee*, *Mississippi*, and *Woodruff*, due to extreme states of the weather. In *Craighead* and *Desha* it is the only thing to be feared.

Rot of bolls and rust are common in *Crittenden*, *Mississippi*, and *Lee*. Rust also occurs in *Woodruff* and *Cross*.

Blight appears in *Crittenden*, *Cross*, *Lee*, *Mississippi*, *Saint Francis* (in July), and *Woodruff*.

The cut-worm in spring injures the crop in *Crittenden*; it is also a source of trouble in *Woodruff*; aphides in *Mississippi*. Drought occurs in August in *Saint Francis*.

The time of appearance of the various pests and diseases varies from late in the spring till fall. The cause is generally attributed to the weather, it being either too wet or too dry. *Lee*: In the same field there will be spots of diseased plants, the balance perfectly healthy. Insects cause very little uneasiness. *Crittenden*: We have suffered more with blight during the last four years than with all the other diseases together. In June, when the crop looks the best, it is attacked by blight, the most vigorous plants being attacked, causing them to wither, and nothing but the stalk remains, which slowly buds again, and finally regains its lost foliage, but never in time to make fruit before frost. The cause is unknown. *Desha*: The caterpillar does not attack the crop until too late to do harm; in fact, it is rather beneficial in stripping off the leaves.

Very little success has attended the use of everything that money could buy or brains could think of.

MISSISSIPPI RIVER ALLUVIAL REGION.—*Crittenden*, *Craighead*, *Desha*, *Mississippi*, *Saint Francis*, and *Woodruff* report that no efforts have been made. *Chicot*: Paris green and London purple have been tried with good success, provided there is no rain to wash them off after their application. *Cross*: But very little. Some advocate deep plowing, and others shallow culture. *Lee*: The worm may be killed, but there is no way to treat the rust and blight.

seasons in *Arkansas* and *Prairie*, more especially on old lands long planted in cotton; in wet and cool seasons in *Union*, and in wet seasons in *Sevier*; in hot and wet seasons they have been known to spread over an entire field during one night, in *Pope*. They prevail chiefly in hot and dry seasons, and are most common on river bottoms in *Pulaski* and on loamy bottoms in *Scott*; in cool weather and on every sandy soil in *Chicot*. In very dry seasons the light sandy soil suffers most; in wet, the other kinds, in *Woodruff*. In hot seasons on the highest, and also on walnut land in *Saint Francis*. Red rust in dry, and blight in wet seasons, appear to some extent on all soils in *Conway*. In *Crawford* the soils are so uniformly good that the matter has not received much attention. When they appear, which is very seldom, they are found on heavy and ill-drained soils, in wet and cool seasons.

## LABOR AND SYSTEM OF FARMING.

## 42. What is the average size of farms or plantations in your region?

*Pope* and *Cross* counties: From 10 to 500 acres. *Sebastian*: From 20 to 60 acres. *Union*: From 20 to 200 acres. *Crawford*: From 30 to 100 acres; some few farms of 350 acres. *Grant*: From 40 to 100 acres. *Baxter* and *Conway*: From 50 to 100 acres. *Marion*: 40 acres. *Faulkner*, *Boone*, *Franklin*, *Garland*, *Montgomery*, and *Scott*: 50 acres. *Fulton*: From 50 to 150 acres. *Arkansas*: From 50 to 500 acres. *Pulaski*: From 50 to 1,200 acres. *Columbia* and *Prairie*:

60 acres. *White*: 80 acres. *Clark*: 100 acres. *Hot Spring*: From 100 to 250 acres. *Craighead*: From 100 to 300 acres. *Lee*: From 120 to 600 acres. *Desha*: 150 acres. *Saint Francis* and *Dallas*: 160 acres. *Drew*: 200 acres. *Mississippi*: 250 acres. *Lincoln* and *Miller*: 300 acres. *Howard*: 320 acres. *Jefferson*: 450 acres. *Crittenden* and *Chicot*: 500 acres. *Sevier*: The majority of the farms are small.

## 43. Is the prevalent practice "mixed farming" or "planting"?

Mixed farming is reported as practiced on large farms in *Sevier*; to some extent in *White*; and as being the prevalent practice in twenty-eight counties. Mixed farming, cotton predominating,

is practiced in *Crawford*. "Planting" is the prevalent practice in *Clark*, *Crittenden*, *Jefferson*, *Lincoln*, and *Miller*.

## 44. Are supplies raised at home or imported, and, if the latter, where from?

UPLANDS.—Supplies are raised at home in *Marion*, *Scott*, *Montgomery*, *Hot Spring*, and *Boone*. The bulk is raised at home in *Franklin*. In *Columbia* abundant supplies can be raised, but a large amount is imported from Saint Louis. In *Dallas* hogs and cattle are raised, and many raise all their supplies; negroes obtain a great deal from the woods; importations are from St. Louis. In *White* about one-half are raised at home, the balance being imported from Saint Louis and Memphis. In *Drew* the importations are made from Saint Louis; pork and corn are raised, but not in sufficient quantities. In *Union* about one-half the meat and nearly all the corn are raised at home, the balance of supplies being imported from Saint Louis and New Orleans. Six counties report the greater part of the supplies raised at home, the importations being as follows: From Saint Louis, in *Pope*, *Clark*, and *Miller*; from Saint Louis and Memphis in *Conway*, *Faulkner*, and *Prairie*, where some supplies are also obtained from New Orleans; flour and bacon from Missouri in *Fulton*; flour and pork in *Sebastian* and *Baxter*, from Springfield, Missouri. Partly raised at

home and partly imported from Saint Louis in *Howard*, *Pulaski*, *Crawford*, *Garland*, and *Grant*, where importations are also made from Cincinnati. Supplies are imported from Louisville, Memphis, Saint Louis, and Cincinnati in *Arkansas*; from Saint Louis and New Orleans in *Sevier*; from Saint Louis, Memphis, and New Orleans in *Lincoln* and *Jefferson*.

MISSISSIPPI RIVER ALLUVIAL REGION.—In *Craighead* enough can be raised at home, but it is cheaper to obtain some from Saint Louis. In *Lee*, sometimes, corn has to be bought from Memphis, owing to there having been too much cotton planted. In *Woodruff* pork and flour are, to some extent, imported from the north. In *Desha* about two-thirds of the supplies are raised at home, the remainder being imported from Memphis and Saint Louis. In *Saint Francis*, partly raised at home and partly imported from Memphis. In *Cross*, some raise their supplies, others import from northwestern markets. Supplies are imported from Saint Louis and New Orleans in *Chicot*, and from Saint Louis and Memphis in *Mississippi* and *Crittenden*.

## 45. Is the tendency toward the raising of home supplies increasing or decreasing?

The tendency is reported as decreasing in *Chicot*, and this year (1880) in *White*; as neither increasing nor decreasing in *Mont-*

*gomery*, *Boone*, and *Mississippi*; as increasing to some extent in *Jefferson*; and as increasing in thirty-one counties.

## 46. Who are your laborers chiefly?

UPLANDS.—Whites chiefly in *Boone*, *Baxter*, *Fulton*, *Conway*, *Montgomery*, *Hot Spring*, *Scott*, *Franklin*, *Sevier* (negroes mostly on large farms), and *Marion*. Partly whites and partly negroes in *Grant*, *White*, *Pope*, *Dallas*, *Columbia*, *Garland*, *Crawford*, *Pulaski*, *Howard*, *Clark*, *Faulkner*, and *Prairie*. The laborers are chiefly negroes in *Lincoln*, *Arkansas*, *Miller*, *Union*, *Drew*, and *Jefferson*. A few Chinamen are also reported in the last county. In *Sebastian* negroes generally own their farms.

MISSISSIPPI RIVER ALLUVIAL REGION.—The laborers are chiefly Americans in *Craighead*, Americans and negroes in *Woodruff*. Whites of various nationalities and negroes in *Lee* and *Cross*. Negroes and a few Chinese in *Chicot*, and chiefly negroes in *Desha*, *Mississippi*, *Saint Francis*, and *Crittenden*.

## 47. How are wages paid—by the year, month, or day? At what rates, and where payable?

Wages are paid daily, weekly, or monthly in *Desha*, *Lee*, *Mississippi*, *Crawford*, and *Drew*; in the latter county yearly hands generally contract to leave part of their wages unpaid until the end of the year. Weekly in *Crittenden* and *Pulaski*. Monthly in *Baxter*, *Clark*, *Saint Francis*, *Marion*, and *Miller*. Monthly or yearly in *Columbia* and *Grant*. Yearly in *Hot Spring* and *Sevier*. On demand in *Montgomery*, *Prairie*, and *Scott*. At the gathering or laying by of the crop in *Cross*, *Pope*, *Franklin*, and *Dallas*. In the latter county laborers can, if they wish, obtain their wages as needed. When the work is done, or at the end of the time contracted for, in *Boone*, *Fulton*, *Garland*, *Howard*, *Union*, *White*, and *Woodruff*. In *Lincoln* one-half is paid monthly, balance on the 1st of August. A share of the crop constitutes the wages, payable when it is gathered, in *Faulkner*, *Chicot*, *Arkansas*, and *Conway*. In the latter county very little hiring is done. In *Jefferson* one-half is cash, payable weekly or monthly; the remainder, a share in the crop, is paid in December.

The rates are: 50 cents per day in *Scott*; 50 to 75 cents in *Dallas* and *Grant*; 60 cents to \$1 in *Lee*; 75 cents in *Desha*, *Crittenden*, *Jefferson*, *Mississippi*, and *Prairie*; 75 cents to \$1 in *Crawford* and *Howard*; 75 cents to \$1 50 in *Union*; 90 cents in *Drew*. From \$8 to \$12 per month, board included, in *Marion* and *Pope*; \$10 in *Columbia*, *Miller*, and *Jefferson*; \$10 to \$13 in *Dallas* and *Grant*; \$10 to \$15 in *Hot Spring* and *Montgomery*; \$10 to \$18 in *Crawford*, and, including board, in *Prairie*; \$11 in *Franklin*; \$12 in *Saint Francis*, *Fulton* (or \$15 without board), and *Clark* (\$16 without board); \$12 50 in *Scott* and *Howard*; \$12 to \$15 in *Desha*, and, including board during crop season, in *Baxter*; \$12 to \$20 in *Lincoln*; \$14 in *Woodruff*; \$15 in *Mississippi* and *Cross*; \$15 to \$20 in *Union*; \$16 66 in *Drew*; \$120 per year in *Scott*, and \$150 in *Drew*, *Howard*, and *Union*.

## 48. Are cotton farms worked on shares? Are any supplies furnished by owners?

In *Montgomery* there are no exclusive cotton farms. In *Hot Spring* cotton farms are worked on shares to some extent only; in all other reported counties they are worked or rented on shares. The owner furnishes supplies and working implements (2 plows, 1 basket, and 1 horse or mule to every 15 or 20 acres), and receives, as his share, one-half the crop; in *Arkansas*, *Craighead*, *Cross*, *Crittenden*, *Desha*, *Garland*, *Pulaski*, *Lee*, *Mississippi*, *Union*, and *Miller* counties, in the latter 2 plows, 1 cotton-basket, and 1 horse or mule are furnished for each 15 or 20 acres. Likewise in *Sevier*, *Pope*, and *Columbia*, excepting that the laborer furnishes his own supplies or pays for them out of his share of the crop. The tenant boards himself and provides the gin and press; the owner furnishes all other implements, and receives one-half the crop in *Saint Francis*, *Clark*, *Conway*, and *Franklin*.

## 49. Does your system give satisfaction? How does it affect the quality of the staple? Does the soil deteriorate or improve under it?

Nineteen counties report the share system as giving entire satisfaction. In *Hot Spring* and *Miller* they give general satisfaction. In *Columbia*, *Franklin*, *Arkansas*, and *Conway* they are not altogether satisfactory. In *Cross*, *Scott*, and *Marion* they are not always satisfactory to the planter. In *Drew* they give satisfaction when the crops are good. In *Grant*, *White*, and *Crittenden*, when the work is well performed. In *Dallas*, *Desha*, and *Saint Francis* they do not give satisfaction.

Eighteen counties report the system as having no effect on the quality of the staple. *Prairie*: The quality is not so good as when the owner picks his own crop. *Dallas*: The effect is very bad; cotton rarely classes as low middling under the share system. *Conway*: Unfavorably; the staple does not rate as high by two degrees as it did in "olden times". *Columbia*: The quality is lowered by the laborers not taking proper care. *Franklin*, *Desha*, *Grant*, and *Clark*: It deteriorates under the tenant sys-

## 50. Which system (wages or share) is the better for the laborer? Why?

UPLANDS.—The *wage system* is thought to be better in *Dallas*; also in *Scott*, *Drew*, *Prairie*, *Howard*, *Garland*, and *White*, because the laborer is sure of his money and takes no risk of crop failures; in *Lincoln*, because, under the share system, they are inclined to be extravagant, and if they fail to come out ahead they are apt to blame the employer; in *Pope*, because until this year the price of cotton has been so low; in *Columbia* and *Clark*, because the laborer puts in more time.

The *share system* is reported to be better for the laborer in *Baxter*, *Sebastian*, *Fulton*, *Arkansas*, *Franklin*, and *Marion*, because, if he is industrious, he can realize more than under the wage system; in *Union*, because the share system prevents him from spending the value of his crop before it is made; in *Miller*, because he can make two or three times as much as under the wage system; in *Faulkner*, because as a general thing good crops are raised; in *Ashley*, because he only works five months to make a crop, and four or five to gather it in; in *Boone*, because it is a greater incentive to industry; in *Crawford*, because he can save enough in a few years to buy a farm of his own; in *Jefferson*, because the teams, tools, and supplies are certain and good. *Hot Spring*: Both systems are good. *Conway*: Doubtful; a share in the crop makes the laborer improvident. *Sevier*: If he is economical he can do well under either system. In *Grant* and *Pulaski* both systems are practiced.

MISSISSIPPI RIVER ALLUVIAL REGION.—The *share system* is the bet-

## 51. What is the condition of the laborers?

UPLANDS.—The condition of the laborer is good in *Fulton*, *Franklin*, *Miller*, *Faulkner*, *Boone*, *Hot Spring*, *Pope*, and *Drew* counties; generally good in *Grant* and *Crawford*; mostly comfortable in *Sevier*; negroes very comfortable in *Jefferson*; good and comfortable when wages are paid in *Prairie*; good when they are steady and industrious in *White*, *Garland*, and *Conway*; very good, being better clothed than formerly, and all have a little cash in *Ashley*; cheerful and easy in *Howard*; the majority of whites are prosperous in *Columbia*; laborers are independent, because

the tenant provides himself with all supplies and implements he retains three-fourths, or, if the owner furnishes everything, one-half of the crop, in *Dallas*, *White*, *Woodruff*, and *Hot Spring*; also in *Chicot*, *Prairie*, and *Scott*, excepting that the owner does not furnish provisions. In *Hot Spring* and *Prairie* one-third of the corn is also included in the rent of the land. The owner receives one-third or one-fourth of the crop as rent for the land, or, if he furnishes everything except gin and press, one-half of the crop, in *Grant*, *Marion*, *Faulkner*, *Howard*, and *Crawford*. The tenant delivers to the owner, as rent, one-third of the crop in the field or one-fourth at the gin, in *Sebastian*, *Boone*, *Fulton*, and *Baxter*. In *Jefferson* the owner furnishes everything but board and receives one-half the crop; gardens are given to the negroes rent free.

*Cross*: The quality is not affected to any extent. *Pope*: The staple is good if gathered at the right time and care taken with it. *Howard* and *Pulaski*: The quality of the staple is improved. *Jefferson*: The one-half share system makes the best crops in quantity and quality. *Lee* and *Chicot*: The share hands are more careful in gathering the cotton than hired pickers, and hence a higher quality of staple is obtained, commanding a better price.

In twenty-five counties the soil is reported as deteriorating under the share system. *Desha*: It deteriorates because the injurious grasses and weeds are not destroyed. *Howard*: From lack of skill in cultivating it. *Garland*: Deteriorates unless manured. *Faulkner* and *Mississippi*: The soil deteriorates to some extent. *Crawford*, *Boone*, *Lincoln*, *Pope*, *Chicot*, and *Scott*: The soil maintains its fertility. *Craighead*: It improves.

ter in *Lee*, *Desha*, and *Woodruff*, because the laborer is not as likely to run about and spend all he makes as under the wage system, for he cannot obtain money, except for clothes, rations, etc., until the crop is gathered; in *Craighead*, because everything is supplied, and the laborer gets half the crop; in *Chicot*, because they take more interest in the production and gathering of the crop; in *Saint Francis*, because they are more contented; in *Crittenden* it is better for both owner and laborer when the contract is faithfully carried out. The negro has his home, garden "patch", and fuel free of charge; has the loan of a cow, if he does not own one. He generally raises pigs (all his own), and his house is situated "away" from the "quarter". These conditions engender feelings of respectability and pride at home, a laudable ambition to excel in farming, and to a great extent obviates the necessity of overseeing on the part of the owner. The best class of colored citizens work this way, and prefer it. Only a portion of the land is able to be worked in this manner. When hired labor is employed, the hands are irresponsible, lazy, and vicious, and require wages every Saturday; when paid they leave for the city; when "broke" they return and work another week; are inveterate gamblers, and are called "roustabouts". The wage system is thought to be better in *Mississippi*, because the employer gets more work done and the laborer more money; in *Cross*, because each knows what to do.

they are scarce in *Dallas* and *Scott*. The condition of the laborers is improving in *Pulaski*; contented, but usually very poor in *Union*; bad generally in *Arkansas*; poor in *Baxter*, *Lincoln*, and *Marion*; and very poor in *Clark*.

MISSISSIPPI RIVER ALLUVIAL REGION.—The condition of the laborer is good in *Lee* and *Craighead*; generally good in *Chicot*, *Woodruff*, and *Mississippi*; very good in *Saint Francis*; and not very good in *Cross*. The condition of the laborers has been improving during the last few years in *Desha*.

52. What proportion of negro laborers own land or the houses in which they live?

In *Arkansas*, *Clark*, *White*, and *Saint Francis*, 1 per cent.; in *Prairie*, 4 per cent.; in *Jefferson*, *Lincoln*, and *Pulaski*, 5 per cent.; in *Sevier*, *Ashley*, *Columbia*, *Drew*, and *Woodruff*, 10 per cent.; in *Grant*, 12½ per cent.; in *Cross*, *Crawford*, and *Union*, 20 per cent.; in *Garland*, 25 per cent.; in *Dallas*, 50 per cent.; in *Sebastian*, 66½ per cent.; in *Boone*, *Scott*, and *Montgomery*, 75 per cent. In

*Craighead* nearly all negroes own their houses. In *Hot Spring* some of them own land and houses; in *Desha*, *Miller*, *Mississippi*, *Chicot*, *Pope*, *Conway*, and *Howard* only a very few; in *Faulkner* and *Crittenden* none; in *Lee* they are buying land and setting up for themselves; in *Baxter* and *Marion* there are very few negroes, and in *Fulton* there are none.

53. What is the market value of the land described in your region?

UPLANDS.—In *Union* the value is from 50 cents to \$5 per acre; in *Dallas* from \$1 to \$5; in *Prairie* from \$1 to \$50; in *Fulton* and *Grant* from \$2 to \$10; in *Columbia*, \$2 50; in *Hot Spring* from \$2 50 to \$20; in *Marion* from \$3 to \$10; in *Pope* from \$3 to \$20; in *Howard*, \$5; in *Clark* from \$5 to \$3; in *Baxter*, *Scott*, *White*, and *Sevier* from \$5 to \$10; in *Garland* from \$5 to \$20; in *Crawford* from \$5 to \$25; in *Conway*, \$5 to \$30 (cleared); in *Sebastian*, \$7 to \$10; in *Miller*, \$10 to \$12; in *Arkansas* and *Lincoln*, \$10 to \$20; in *Pulaski*, \$10 to \$50; in *Boone*, \$15; in *Faulkner*, \$25 to

\$50; in *Ashley*, \$2 to \$6 for uplands, and \$10 to \$20 for bottoms, three-fourths of which is woodland; in *Jefferson* before the war the bottoms were from \$25 to \$50, and the uplands \$5 to \$10 per acre; in *Drew* the market value is nominal.

MISSISSIPPI RIVER ALLUVIAL REGION.—In *Desha* the value varies, as the land is subject to overflows; in *Cross* it is from \$1 to \$10; in *Craighead*, \$5 to \$10 for improved land; *Lee*, \$10 to \$25 for improved land; in *Saint Francis*, \$12; in *Crittenden*, \$20; *Mississippi*, \$40 to \$50; *Chicot*, \$50.

54. What rent is paid for such land?

UPLANDS.—One to two dollars per acre, or one-fourth the cotton and one-third the grain, in *Grant*; from \$1 50 to \$2 per acre in *Dallas*; \$2 to \$5 in *Pope* and *Garland*; \$2 to \$6 in *Conway*; \$2 to \$2 in *Prairie*; \$2 to \$10 in *Hot Spring*; \$2 50 to \$3 in *Boone* and *Howard*; \$2 50 to \$4 in *White* and *Sevier*; \$3 to \$4 in *Miller*; \$3 to \$5 in *Drew*; \$5 in *Scott*; \$5 to 10 in *Pulaski*; \$6 to \$10 in *Lincoln* and *Faulkner*; \$3 to \$3 50 for uplands and from \$5 to \$6 for bottom land in *Ashley* and *Crawford*. Land is scarcely ever rented for cash in *Marion* and *Sebastian*. The rent paid in *Jefferson* is from 50 to 100 pounds lint per acre; one-fourth of the

crop in *Union* and *Clark*; one-fourth of the cotton and one-third of the corn in *Columbia* and *Arkansas*; one-fourth of the cotton and one-third of all cereals in *Franklin*, *Fulton*, and *Baxter*.

MISSISSIPPI RIVER ALLUVIAL REGION.—The rent is from \$2 to \$5 per acre in *Cross*; \$3 to \$6 in *Lee*; \$4 in *Woodruff*; \$5 in *Saint Francis* and *Crittenden*; \$5 to \$8 in *Mississippi* and *Desha*, or in the latter county from 60 to 100 pounds of lint per acre; sometimes \$10 per acre, but generally one-fourth of the crop when the tenant furnishes everything, in *Chicot*; one-fourth of the cotton and one-third of the grain in *Craighead*.

55. How many acres or bales per "hand" is your customary estimate?

UPLANDS.—*Howard*: 3 bales is a good average. *Clark*: 3 bales of cotton, or 6 acres in cotton and 6 in corn. *Fulton* and *Franklin*: 3 bales with other crops. *Grant*: 3 to 4 bales, including other crops. *Union*: 15 acres, or 3 to 6 bales, depending upon disasters. *Miller* and *White*: 4 to 8 bales. *Lincoln*, *Arkansas*, and *Prairie*: 5 bales. *Jefferson*: 8 acres in cotton, or 6, to 7 bales. *Scott* and *Sevier*: 8 bales, or in the latter county 15 acres. *Faulkner*: 10 bales. *Crawford*: 10 to 15 acres or 10 bales. *Hot Spring* and *Pope*: 10 acres in cotton and from 5 to 7 in corn. *Pulaski*, *Sebastian*, *Boone*, and *Garland*: 10 acres. *Columbia*: 15 acres in cotton, or 12 in cotton and 6 in corn. *Baxter*: 16 acres in cot-

ton, or 5 in cotton and 15 in corn. *Ashley*: From 5 to 6 bales on uplands, and 8 to 10 on bottoms. *Conway*: 4 bales is an average, but it ought to be 10 to a good hand. *Dallas*: If white labor is employed, 4 bales; if negro labor, 3 bales.

MISSISSIPPI RIVER ALLUVIAL REGION.—*Cross*: From 4 to 6 bales. *Desha*: 5 to 6 bales, or 10 acres. *Woodruff*: 7 bales. *Saint Francis*: 6 bales, or 8 acres. *Chicot*: In good seasons 8 bales; otherwise 3 or 4. *Mississippi*: 10 bales. *Crittenden*: 12 acres, or 12 bales. *Lee*: From 6 to 15-bales, according to location, or 10 acres. *Craighead*: 16 acres of either corn or cotton.

56. To what extent does the system of credits or advances on the growing cotton crop prevail in your region?

UPLANDS.—*Fulton*: It prevails to a small extent; none of the farmers are rich, and they pay cash for what they buy. *Miller* and *Boone*: The system is quite general. *Arkansas*, *Jefferson*, and *Grant*: It prevails to a very large extent. *Columbia*: To a ruinous extent. Nearly all the hired laborers are negroes, who obtain their supplies from the merchants, the farmers having no control over their labor. *Marion*: Farmers frequently have to mortgage to merchants at very high rates of interest. *Conway*: It prevails to a large and ruinous extent, and induces laborers to spend their year's wages in advance, and leads to lawsuits. *White*, *Pope*, and *Franklin*: To a very serious extent, so much so that in many cases the credit given is equal to the full value of the crop. *Dallas* and *Garland*: To an alarming extent; in the latter county the condition of things is improving. *Baxter* and *Drew*: Largely, and to its fullest extent; generally a planter is credited to the full amount of the crop, and in some instances to a greater amount. *Faulkner*, *Sevier*, *Lincoln*, and *Union*: The system is almost universal. *Sebastian*: The poorer class of farmers secure the advances they need by mortgaging a few acres of the growing crop; the better class obtain credit without mortgage. *Hot Spring*: Farmers obtain credit to the

extent of about two-thirds the value of the prospective crop. *Ashley*: Three-fourths of those renting and one-half of those owning land obtain advances from merchants. *Pulaski*: About 20 per cent. of the farmers obtain advances. *Scott*: About 35 per cent. *Crawford*: Probably 60 per cent. *Clark*: 66½ per cent. *Prairie*: 90 per cent. *Howard*: Credit is given to the amount of at least one-half of the bacon consumed; bread-stuffs are raised at home.

MISSISSIPPI RIVER ALLUVIAL REGION.—*Cross* and *Mississippi*: The system prevails to a great extent. There are but very few who run their farms upon a credit system. *Chicot*: The crop is made entirely on a credit system, as the negroes give a mortgage before the crop is planted for all supplies, to enable them to make and gather it. *Lee*: Nine-tenths of the white and all the colored planters give mortgages to merchants for their supplies. *Crittenden*: Nine-tenths of the crops are made by money advanced by merchants of Memphis and New Orleans. *Desha*, *Woodruff*, and *Saint Francis*: The credit system is almost universal. *Craighead*: Farmers buy more than they can pay for, but that don't hurt their feelings one particle.

57. At what stage of its production is the cotton crop usually covered by insurance?

In a large number of counties the crop is not insured at any stage before shipment. The crop is generally insured when in the gin-house in *Crittenden*, *Pulaski*, *Jefferson*, and *Lincoln*, or in the last county when on the boat; sometimes when in the gin-

house in *Clark*. It is insured after baling in *Miller*; as soon as bolling commences in *Grant*; generally as soon as planted in *Woodruff*; when picking commences, and also when in the gin-house, in *Lee*.

58. 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 bale?

The usual rates of commissions are  $2\frac{1}{2}$  per cent. on sales; in *Scott*,  $1\frac{1}{2}$  per cent.; in *Howard*, 1 per cent. Drayage, usually 25 cents; storage, 50 cents per bale per month; insurance, 25 to 50 cents, and shipping in *Mississippi* county, 75 cents per bale. The total amount of these charges are \$3 per bale in *Mississippi* county; \$3 25 in *Lee*; \$3 50 in *Grant*, *Desha*, and *Miller*; \$3 75 in *Pope*, *Boone*, and *Faulkner*; \$3 85 in *Arkansas*; \$4 in *Drew*, *Lincoln*, *Saint Francis*, and *Howard*; \$4 50 in *Franklin*; \$5 in *Chicot*, *White*, *Crittenden*, *Cross*, *Columbia*, *Conway* (most of the cotton is sold in local markets), and *Union*; \$6 50 in *Clark*; \$8 75 in *Prairie*; \$10 in *Sevier* and *Scott*; \$10 to \$15 in *Fulton*: \$1 50 to \$2, exclusive of freight, in *Hot Spring*. *Dallas*: The charges

amount to about \$4 per bale, but usually cotton is sold from the wagons, as the farmers who are under mortgage are not allowed to ship, and the others have no confidence in the merchants. *Jefferson*: The charges are from 1 to  $1\frac{1}{2}$  cents per pound; when the spindles are working in Little Rock, two yards of cloth are obtained for one pound of cotton. *Craighead*: Merchants buy cotton at the gin, paying about \$13 a bale. *Pulaski*, *Baxter*, and *Garland*: The usual practice is to sell to local merchants. *Crawford* and *Woodruff*: At home no charge is made for handling and shipping; the expense begins at the depot, and depends on the market to which it is shipped; in the former county it varies from 1 to  $1\frac{1}{2}$  cents per pound.

59. What is your estimate per pound of the cost of production in your region, exclusive of such charges, and with fair soil and management?

UPLANDS.—*Clark*: 4 cents. *Lincoln*: 4 to 5 cents. *White*, *Conway*, and *Drew*: 5 cents. In *Drew* it is at 2 cents less this year (1879) than it was last. *Prairie*: On bottom lands,  $5\frac{1}{2}$  cents; on uplands, 7 cents. *Scott*, *Sevier*, and *Hot Spring*: 6 cents. *Union*: 6 to 7 cents. *Miller*, *Faulkner*, *Garland*, and *Boone*: 7 cents. *Arkansas*:  $7\frac{1}{2}$  cents. *Baxter*, *Crawford*, and *Pulaski*: 8 cents. *Pope* and *Howard*:  $8\frac{1}{2}$  cents. *Dallas*: 9 cents. The cost is about  $33\frac{1}{2}$  per cent. of the value of the crop in *Columbia*, 55 per cent. in *Franklin*, and 85 per cent. in *Grant*. *Jefferson*: \$5 per acre is about the cost. *Sebastian*: \$10 per acre. *Conway*: The

cost is about 5 cents per pound, or \$25 per bale. In this estimate regard is had to its production in an ordinary family, owning the land and doing their own work. When produced on rented land by hired labor the cost is uncertain and very variable. If a family produces cotton, that production ought always to be more profitable than any other, more being realized from a year's labor.

MISSISSIPPI RIVER ALLOUVIAL REGION.—*Chicot*: 4 cents. *Lee*:  $4\frac{1}{2}$  to  $5\frac{1}{2}$  cents. *Mississippi*: 5 cents. *Crittenden* and *Woodruff*: 7 cents. *Saint Francis*: 9 cents. *Desha*: 10 cents.

Cost of each item of labor and material expended in the cultivation of an acre of cotton.

| Items.                                  | Conway. | Crittenden. | Boone. | Garland. | Grant.           |
|---|---------|-------------|--------|----------|------------------|
| Rent.....                               | \$4 00  | \$5 00      | \$3 00 | \$3 00   | .....            |
| Fencing, repairs, and interest on ..... | 50      | 2 00        | 20     | 1 00     | .....            |
| Knocking stalks .....                   | 50      | 25          | .....  | 50       | .....            |
| Pulling and burning stalks.....         | 1 00    | .....       | 40     | 50       | .....            |
| Listing .....                           | .....   | 25          | 75     | .....    | .....            |
| Breaking up .....                       | 2 00    | .....       | 1 00   | .....    | .....            |
| Harrowing .....                         | 25      | 20          | 20     | .....    | .....            |
| Barring old beds.....                   | 25      | .....       | 25     | .....    | .....            |
| Splitting middles.....                  | 25      | .....       | 20     | .....    | .....            |
| Reversing .....                         | 1 00    | .....       | .....  | .....    | .....            |
| Laying off .....                        | 10      | .....       | 15     | .....    | .....            |
| Bedding up .....                        | 1 00    | 50          | .....  | 1 50     | .....            |
| Splitting middles .....                 | 25      | .....       | .....  | 50       | .....            |
| Knocking off beds .....                 | 10      | .....       | .....  | .....    | .....            |
| Planting:                               |         |             |        |          |                  |
| Opening .....                           | 10      | } 50        | 15     | } 50     | } .....          |
| Dropping .....                          | 10      |             | 15     |          |                  |
| Covering .....                          | 10      |             | 20     |          |                  |
| Replanting .....                        | .....   | .....       | 15     | .....    | .....            |
| Seed .....                              | 30      | 50          | 20     | 25       | .....            |
| Thinning .....                          | 50      | 75          | 75     | 1 50     | .....            |
| Number of plowings.....                 | 2 00    | 2 50        | 5 00   | 5 00     | .....            |
| Number of hoeings .....                 | 2 00    | 3 00        | 2 10   | 3 00     | .....            |
| Wear and tear of implements.....        | 50      | .....       | 75     | .....    | .....            |
| Management .....                        | .....   | .....       | .....  | .....    | \$11 50          |
| Team, per acre.....                     | 2 50    | .....       | .....  | .....    | 1 25             |
| Forage, per acre .....                  | 1 25    | .....       | 50     | .....    | .....            |
| Making rail pen .....                   | .....   | .....       | .....  | .....    | .....            |
| Cabins and fuel .....                   | 1 00    | .....       | .....  | .....    | 1 50             |
| Board for hands .....                   | .....   | .....       | 50     | .....    | .....            |
| For hoes.....                           | 1 00    | .....       | .....  | .....    | .....            |
| Waste and damage.....                   | .....   | .....       | .....  | .....    | .....            |
| Total .....                             | 22 55   | 15 45       | 16 85  | 17 25    | 14 25            |
| Picking, per hundred-weight .....       | 75      | 75          | 50     | 75       | 23 $\frac{1}{2}$ |
| Hauling to gin .....                    | 2 00    | 25          | 1 00   | 2 00     | .....            |
| Ginning, per hundred-weight .....       | 20      | 75          | .....  | 25       | .....            |
| Bagging and ties.....                   | .....   | .....       | 2 00   | .....    | .....            |

*NOTES ON THE PRECEDING TABLE.*

CONWAY COUNTY.—The rent for bottom lands is from \$5 to \$6; for uplands, from \$2 to \$3 per acre. It is quite hard to fix the cost of fencing repairs, etc. Other cleaning up, besides pulling and burning of stalks, depends upon the condition of the field. Cotton land in good culture is usually only bedded up, opened, and planted; reversing is seldom done. If a cotton-planter is used, the whole cost of planting is about 10 cents per acre. Thirty cents allows for 3 bushels of seed; 1 bushel may do. The ginning is done for one-twelfth toll. The cost of management depends upon the size of the farm. The number of plowings is four; of hoesings, three. All the items above enumerated are not always chargeable to a crop, and others may be. The whole cost of producing a bale of 400 pounds of lint may be placed at \$25 when labor and forage are cheap, but often the cost will be \$40, and sometimes much more than the cotton is worth.

CRITTENDEN COUNTY.—Knocking down is done by one man, with two mules hitched to a log. This is also done instead of harrowing. Pulling and burning stalks has not been done for ten years past.

BOONE COUNTY.—The cost of ginning is from one-twelfth to one-fifteenth of the cotton as toll.

GARLAND COUNTY.—With the above-mentioned cost, the usual yield of one acre of the best bottom land is 1,600 pounds of seed-cotton, which will pay for ginning (one-tenth toll) and make a 500-pound bale of lint for the producer.

GRANT COUNTY.—One-tenth is the toll for ginning, including wrapping and ties.

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