

Issued December 23, 1913.

U. S. DEPARTMENT OF AGRICULTURE.

BUREAU OF SOILS—MILTON WHITNEY, Chief.

IN COOPERATION WITH THE STATE OF MISSISSIPPI, E. F. NOEL, GOVERNOR;
E. N. LOWE, DIRECTOR STATE GEOLOGICAL SURVEY.

SOIL SURVEY OF LINCOLN COUNTY,
MISSISSIPPI.

BY

A. L. GOODMAN, OF THE U. S. DEPARTMENT OF AGRICULTURE,
AND E. M. JONES, OF THE MISSISSIPPI GEOLOGICAL SURVEY.

HUGH H. BENNETT, INSPECTOR IN CHARGE SOUTHERN DIVISION.

[Advance Sheets—Field Operations of the Bureau of Soils, 1912.]



WASHINGTON:
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1913.

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LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
Washington, D. C., May 29, 1913.

SIR: The accompanying report and soil map cover the survey of Lincoln County, Mississippi, one of the projects undertaken by the Bureau during the field season of 1912. This work was done in cooperation with the State of Mississippi, and the selection of the area was made after conference with State officials.

I have the honor to transmit herewith the manuscript report and map covering this work, and to recommend their publication as advance sheets of Field Operations of the Bureau of Soils for 1912, as provided by law.

Respectfully,

MILTON WHITNEY,
Chief of Bureau.

Hon. D. F. HOUSTON,
Secretary of Agriculture.

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MAP.

Soil map, Lincoln County Sheet, Mississippi

SOIL SURVEY OF LINCOLN COUNTY, MISSISSIPPI.

By A. L. GOODMAN, of the U. S. Department of Agriculture, and E. M. JONES, of the Mississippi Geological Survey.

DESCRIPTION OF THE AREA.

Lincoln County is located in the southwestern part of Mississippi about 28 miles north of the Louisiana boundary. It is bounded on the north by Copiah County, on the east by Lawrence, on the south by Pike and Amite, and on the west by Franklin and Jefferson Counties. In width it varies from 23 to 29 miles from east to west, and is about 24 miles from north to south. It comprises an area of 578 square miles, or 369,920 acres.

The county is traversed from north to south by the Illinois Central Railroad and from east to west by the Mississippi Central. There are also two small branch roads, one running from Brookhaven to Monticello and the other from Norfield to the east county line. Brookhaven, the county seat, is 900 miles south of Chicago, 266 miles from Memphis, and 129 miles north of New Orleans.

The topography of the county ranges from hilly to undulating and in some places comparatively level. The northwestern part is most thoroughly eroded, the region around Brookhaven being least eroded.

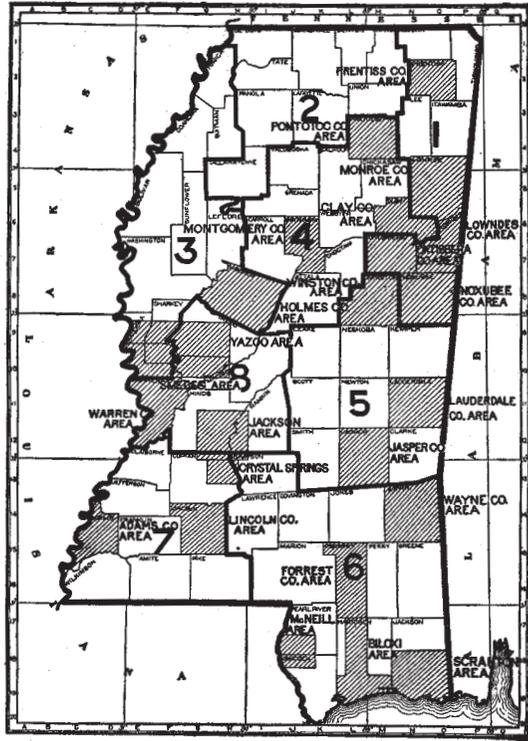


FIG. 1.—Sketch map showing areas surveyed in Mississippi.

Drainage waters leave the county in three different directions. The streams of the northwestern part flow west and southwest into the Homochitto River, and thence into the Mississippi. Those in the extreme southwestern and south-central part flow almost due south and empty into Lake Pontchartrain. The streams of the northeast and southeast portions of the county flow eastward, finally forming some of the main tributaries of the Pearl River. Some of the largest streams in the county are Amite and Fair Rivers, Bogue Chitto, Topisaw, Bayou Pierre, Little Bahala, Jordan, Boone, Shaws, McCalls, and Lazy Creeks.

Lincoln County was formed from parts of Lawrence, Jefferson, Copiah, Pike, and Amite Counties, the largest portion coming from the western part of Lawrence County. The county was established in 1870, and was the first county formed after the Civil War. It was named in honor of Abraham Lincoln. Owing to its late formation it has little pioneer history not connected with the older counties that surround it. The inhabitants are mostly descendants of the older settlers of surrounding counties who came originally from Georgia and South Carolina.

Brookhaven, the county seat, was named by Col. Jayne, who came to this place from Brookhaven, Mass. It has a population of 5,293 people and is the highest point on the Illinois Central Railroad between New Orleans and Holly Springs, having an elevation of 500 feet above sea level. The highest point in the county is three miles north of Brookhaven, with an elevation of 560 feet.

Bogue Chitto, Norfield, Montgomery, Auburn, Heucks, Redstar, Wellman, Bristerville, Ruth, Wilkinson, Soegaard, and Caseyville are small towns in the county. Public instruction is furnished by schools conveniently located throughout the county and by Whitworth College, which is one of the largest of the colleges for women in the State, located at Brookhaven.

The county roads are in good condition, and are worked under the contract system. About 50 miles of new sand and gravel roads are contemplated for the immediate future, which will assure good transportation facilities throughout the year. Most of the large streams throughout the county are crossed by substantial bridges.

CLIMATE.

The climate of Lincoln County is typical of many of the counties of the warm Temperate Zone.

The summers are long and hot and the winters short and mild. The average rainfall is 58.4 inches, distributed with comparative uniformity throughout the year. The wet season is considered to last from December to March and the dry season from August to

November. This gives a good season for both planting and harvesting the crops.

The average temperature for summer is about 81° F., with a maximum of 105°. The average temperature for winter is about 50° with a minimum of -10°.

The elevation of the county is about 500 feet above tidewater at New Orleans, making the region very salubrious.

The long summers and short, mild winters afford a long growing season. Stock can be pastured for 10 months of the year and crops, such as winter oats, are seldom, if ever, injured by frost. Snow rarely occurs and only remains on the ground for a few hours.

The following table, taken from the United States Weather Bureau records, gives the normal monthly, seasonal, and annual temperature and precipitation at Brookhaven:

Normal monthly, seasonal, and annual temperature and precipitation at Brookhaven.

Month.	Temperature.			Precipitation.		
	Mean.	Absolute maximum.	Absolute minimum.	Mean.	Total amount for the driest year.	Total amount for the wettest year.
	° F.	° F.	° F.	Inches.	Inches.	Inches.
December.....	50.2	82	6	5.01	4.75	8.40
January.....	48.0	80	11	5.12	10.42	7.45
February.....	50.8	82	-10	5.94	5.37	10.45
Winter.....	49.7			16.07	20.54	26.30
March.....	59.8	91	22	6.43	2.81	8.60
April.....	65.8	96	31	6.04	1.30	7.50
May.....	73.3	102	39	4.12	0.65	1.10
Spring.....	66.3			16.59	4.76	17.20
June.....	79.5	104	50	5.09	4.97	5.20
July.....	81.7	105	59	5.49	7.20	3.30
August.....	81.2	105	58	5.28	3.95	6.70
Summer.....	80.8			15.84	16.12	16.20
September.....	76.4	103	38	3.61	2.00	6.40
October.....	65.6	99	28	2.40	0.27	2.65
November.....	56.5	87	21	3.91	1.95	6.15
Fall.....	66.2			9.92	4.22	15.20
Year.....	65.7	105	-10	58.42	45.64	73.90

Owing to the silty and clayey nature of the soil, water does not run off very rapidly, leaving the public roads in bad condition during the wet season. Sometimes downpours lasting from 3 to 10 hours occur, during which times as much as 4 to 6 inches of rain falls, causing much erosion and gullying.

The average date of the first killing frost in fall is November 4 and of the last killing frost in the spring is March 18. This gives about eight months during which the most tender vegetation may grow without danger of being killed by freezing.

The winter of 1911 and 1912 was the most severe experienced in 15 years. In addition to the abnormally low temperature, there were 40 rainy days between November 1, 1911, and April 1, 1912.

AGRICULTURE.

The agricultural development of Lincoln County since its establishment has been mainly along the lines common over a large portion of the cotton-growing States. The soil and climatic conditions are favorable to a wide range of crops, but there has been an increasing disposition to produce cotton as the chief money crop, of the county, ever since its formation. In the early days cotton was the only crop that commanded a ready market and a good price.

In 1879 there were in the county 8,186 acres of Government land for sale and 1,000 acres of delinquent lands held for sale by the State auditor. The census of 1880 reported 17,272 acres in cotton, which produced 6,286 bales. About this time more attention was given to corn, oats, tobacco, rice, and potatoes, 209,747 bushels of corn, 49,924 bushels of oats, 81,675 pounds of rice, and 70,937 bushels of sweet and Irish potatoes being produced. Also 5,442 pounds of tobacco were prepared for market during this year.

The productiveness of the soil attracted many settlers, and the population began to increase at a rapid rate, the census of 1890 giving the county a population of 17,912, an increase of 7,731 in 10 years. Of this number 4,162 were colored. At this time there were 247,983 acres in farms, of which 76,326 acres were improved. The average size of farms during 1890 was 125 acres.¹ There were 25,897 acres in cotton, which produced 11,224 bales.

The lumber resources of the county began to attract attention about 1900; all of the land not then under cultivation was covered with forests, about 80 per cent of which was yellow or longleaf pine. On the bottom land along the creeks and rivers were found quantities of white oak, red oak, blackjack, and pin oaks, sweet gum, black gum, hickory, poplar, magnolia, and maple.

During this period the population increased to 21,552, of which 12,341 were white and 9,211 colored, an increase over 1890 of 3,640.

¹The census tabulated each tenancy as a "farm."

In 1900 there were 23,010 acres planted in cotton, producing 10,625 bales, and 28,522 in corn, producing 424,560 bushels. Hay and oats were more extensively planted than during the preceding years.

The agriculture of the county to-day as compared with 10 years ago shows a number of changes. In 1905 news of the rapidly approaching boll weevil caused many of the planters to experiment with other crops besides cotton. The majority, however, still continued to plant it, and made very little effort toward diversification. In 1908 the weevil reached the county in large numbers, destroying over half the cotton crop of that year. For the two years following the farming industry of the county was practically demoralized. Conditions have now changed. Farmers are beginning to diversify their crops, and the credit system that had been followed since the war has practically changed to a cash basis.

The soils of Lincoln County are adapted to the production of cotton, corn, and all kinds of truck and fruits, such as peaches, pears, plums, tomatoes, beans, Irish and sweet potatoes, cabbage, strawberries, melons, sugar cane, rice, oats, and peanuts. The first of these crops to be extensively planted was sugar cane. It does well, producing from 200 to 500 gallons to the acre.

Moist, heavy, and rich soils are considered the best for cane culture, and its cultivation for commercial purposes is generally confined to land of this character. Surface drainage is essential, and low-lying areas, with a retentive subsoil, must be thoroughly ditched. As a matter of fact cane will grow well on light sandy soils if the moisture conditions are right, but such soils are soon exhausted and require heavy applications of commercial fertilizers. The apparently poor, sandy, pine-wood lands of Lincoln County will yield excellent crops of sugar cane when "cowpenned" or otherwise heavily enriched. A great many cane mills have sprung up throughout the county, and sirup now has a ready market at 35 to 50 cents a gallon. The industry has not yet reached its highest point of development. Sugar cane grown just south of this county in Louisiana is used in the manufacture of sugar, with molasses, rum, and alcohol as by-products.

A 3-year rotation is the best to follow in growing sugar cane. The land is left two years in cane and one year in corn and cowpeas. After the second crop is harvested the land is plowed and planted to corn very early in the spring. At the last cultivation of the corn, cowpeas are broadcasted at the rate of 1 to 3 bushels to the acre. After the corn is gathered, the immense mass of vegetation, including the cornstalks, is plowed under and allowed to decay. In about four weeks the vines will have rotted and the land can be bedded.

Peanuts are just beginning to assume importance as a crop throughout the county. This crop not only enriches the land but furnishes

a valuable source of forage. Throughout the county where hogs are pastured in the corn fields during the fall it is a common practice to plant a row of peanuts between the corn rows instead of cowpeas. The peanut, being a legume, is valuable as a nitrogen gatherer.

Large fields of peanuts were planted this year throughout the county, especially along the Copiah County line, near Wesson, and in the neighborhood of Bogue Chitto. The vines make excellent pasturage for all kinds of animals, and the nut, which the hog digs for himself, is one of the best known feeds for growing pigs.¹ The Spanish variety is almost uniformly planted. It grows erect and the tops are much more available for forage, as they can be more easily cut and cured. Where the peanuts are thrashed for market they readily bring a price of 65 cents a bushel. They are then shipped to a peanut mill and made into peanut butter and oil. Several carloads were shipped this year from Wesson and Bogue Chitto.

Another crop well adapted to the loose silty soils of Lincoln County is oats. Owing to the mild winters, oats can be planted in the fall and used as a cover crop throughout the winter. When the ground is not too soft, the fall-planted oats can be pastured during the winter and still make a fair crop of grain. Oats can be recommended as a valuable crop in a well-balanced rotation for the upland cotton farmer. The rotation generally suggested is cotton, followed by corn with cowpeas between the rows. These are plowed under in the fall and the land immediately seeded to oats. The variety known as the Texas Rust-proof is the best adapted to this climate.²

Cotton always has been the leading crop in Lincoln County. Heretofore it has been planted so extensively as to prevent the production of home-grown supplies and to make the necessary crop rotation impossible. Cotton as a rule requires clean cultivation throughout the summer, and the average field is left bare and unprotected from the washing and leaching of the heavy rains during the winter months. The old system of planting cotton year after year can only end by impoverishing the richest and deepest soils, although the process of deterioration would be slow were it not for erosion and the increased oxidation of the organic matter in the soil, as cotton itself is not a very exhaustive crop. Many of the fields have been cultivated continuously to cotton for a few years, until "worn out" or gullied and then abandoned. Since the invasion of the Mexican boll weevil, early maturing, big-boll varieties, such as Russell Big Boll, Cooks Improved, Triumph, and Smith's Doubleheader, are the only ones which can be grown successfully.

¹ See Farmers' Bulletin No. 431. The Peanut.

² For further discussion of the oat crop, see Farmers' Bulletins Nos. 420, 424, and 436, United States Department of Agriculture.

The ground should be well drained, deeply plowed, and thoroughly worked. The seed should be planted as early in April as the weather conditions will permit. A good fertilizer to use is a mixture of one-third cottonseed meal to two-thirds acid phosphate, applied at the rate of 200 to 400 pounds to the acre. As soon as the crop is gathered all stalks should be cut and burned. This destroys thousands of weevil eggs that would otherwise hatch the following spring. All trash and weeds around the field should be burned, as this leaves the weevils very few places in which to hibernate and many are killed by the cold during the winter.¹

Two important legumes that are just beginning to gain prominence throughout the county are velvet beans and soy beans.

The soy bean² is a rank-growing annual leguminous vine that is exceedingly useful as a soil-improving cover crop. It will flourish on any well-drained soil, even growing on the lightest sands if they contain a sufficient amount of phosphoric acid and potash. The velvet bean seems admirably adapted to the region. It is a valuable plant, accumulating nitrogen from the air, and when plowed under adds not only this but large quantities of organic matter to the soil. The growth of this plant is remarkable, individual vines sometimes reaching a length of 40 feet. When planted between corn rows the vines run upon the stalks, in many cases bending them to the ground. Like the cowpea, velvet beans may be planted in drills or sown broadcast. In nearly all cases the former is preferred, since one or two cultivations give them a chance to get ahead of weeds and grass. When they once begin to run no further attention is needed.

When green, velvet beans are not particularly relished by stock, but a taste is soon acquired for them. The vines, if cut and cured for hay, are eaten readily and are very nutritious. They are so long and tangled that they are difficult to cut and handle.

The soy bean, like the velvet bean, is a legume, but does not grow as a vine. It stands erect and grows from 2 to 4 feet tall, invariably being covered with rusty hairs, both on the stem and leaves. This plant seems to adapt itself not only to various soils but to a wide range of climatic conditions. It thrives in a droughty season when other plants suffer for want of moisture. The beans have an exceptionally high feeding value and are readily eaten by stock.

More corn is being planted this year than ever before in the history of the county. The soil where well fertilized will produce from 20 to 40 bushels to the acre. The maximum production of corn for the State and county was reported by a member of the boys' corn club, who produced 227 bushels on 1 acre. This corn was grown on a patch of Ruston silt loam in the neighborhood of Pleasant Grove School.³

¹ See Farmers' Bulletins Nos. 500, 501, and 502, United States Department of Agriculture.

² Farmers' Bulletin No. 372. Soy Beans.

³ For information regarding the cultivation of corn see Farmers' Bulletins Nos. 414 and 415.

The county affords excellent opportunities for stock raising, having good pasture lands and a steady market the year round at the Natchez Packing Plant, only 65 miles west of Brookhaven.

With the great number of forage crops that succeed here hog raising should prove especially profitable. Among the valuable plants for grazing suited to the section are the peanut, cowpea,¹ sorghum,² Bermuda grass,³ Japan clover,⁴ soy bean, velvet bean, vetch,⁵ and oats.⁶

Highland rice has so far been planted only in small quantities, but is found to produce good yields on several of the different soil types. Lowland rice is likewise found to be a profitable crop and is being planted throughout the county on poorly drained areas of the Vicksburg silt loam.

The soils of the county are well adapted to many truck crops, such as tomatoes, beans,⁷ peas, potatoes,⁸ onions,⁹ squash, okra,¹⁰ cabbage,¹¹ and strawberries. Hammond, La., only 76 miles south of Brookhaven, is one of the largest strawberry markets in the South, shipping over a million dollars' worth of berries annually. Crystal Springs, only 30 miles north of Brookhaven, leads in the production of tomatoes.

SOILS.

The uplands of Lincoln County are very largely covered by a mantle of loess varying in depth from about 10 feet to a few inches. This is a representative portion of the belt of loessial material which occupies the western part of the State of Mississippi and which extends southward into Louisiana and northward across the State of Tennessee into Kentucky. The deposit thins out toward the east and extends only a short distance to the east of Lincoln County. The entire survey is underlain by Coastal Plain deposits, consisting largely of sandy clay and gravelly sandy material. In many places this underlying formation has been exposed through processes of erosion, and typical Coastal Plain soils derived from these exposures are found.

The loessial deposit gives rise mainly to one soil type, the Memphis silt loam. This type is characterized by the light-brown color of the surface soil and by the buff color of the subsoil. The material

¹ See Farmers' Bulletin No. 318. Cowpeas.

² See Farmers' Bulletin No. 558. The Best Two Sweet Sorghums for Forage.

³ See Farmers' Bulletin No. 509. Forage Crops for the Cotton Region.

⁴ See Farmers' Bulletin No. 441. Lespedeza or Japan Clover.

⁵ See Farmers' Bulletin No. 515. Vetches.

⁶ See Farmers' Bulletins No. 379, Hog Cholera, and No. 411, Feeding Hogs in the South.

⁷ Farmers' Bulletin No. 289. Beans.

⁸ Farmers' Bulletin No. 407. The Potato as a Truck Crop.

⁹ Farmers' Bulletin No. 354. Onion Culture.

¹⁰ Farmers' Bulletin No. 232. Okra; Its Culture and Uses.

¹¹ Farmers' Bulletins No. 433, Cabbage, and No. 489, The Diseases of Cabbage and Related Crops and Their Control.

of the surface portion is quite silty, while that of the subsoil is a silty clay loam. The topography of the main portion of this type is typically gently rolling, but much less so than the soils derived from the loess nearer the bluffs along the Mississippi River to the west.

A few small spots of a light-colored, poorly drained silt loam, Lufkin silt loam, were mapped. This soil is underlain by an impervious clay substratum, which impedes drainage in such a way as to change the color of the original material to light gray or nearly white.

Six types are derived from Coastal Plain deposits: The Ruston fine sandy loam, silt loam, and gravelly sandy loam; Orangeburg fine sandy loam and silt loam; and the Susquehanna silt loam.

The Ruston soils are characterized by the grayish color of the surface portion and by the yellowish-red to reddish-yellow color and moderately friable to slightly plastic structure of the subsoil. The Orangeburg types have grayish surface soils and red friable subsoils, while the Susquehanna is characterized by the grayish color of the surface soil, and the red to mottled red and gray color and plastic structure of the heavy clay subsoil.

The recent alluvial deposits are represented by Waverly silt loam and Bibb sandy loam, with the classification Meadow, representing the poorly drained variable material along the smaller streams.

The Waverly silt loam is light-colored first-bottom soil, the material of which has been derived largely from the loessial uplands. The Bibb sandy loam is a gray poorly drained overflowed first-bottom soil, the material of which has been largely derived from Coastal Plain soils of the uplands.

One terrace soil was mapped, the Lintonia silt loam. This occupies a stream terrace formerly an overflowed first bottom, but now standing above overflow. The material is derived largely from loessial uplands and was deposited at a time when the stream was flowing at higher levels.

The following table gives the names and extent of the several types found in Lincoln County:

Areas of different soils.

Soil.	Acres.	Per cent.	Soil.	Acres.	Per cent.
Memphis silt loam	175,040	47.3	Susquehanna silt loam	1,088	0.3
Ruston fine sandy loam	65,664	17.8	Lintonia silt loam	1,152	.3
Vicksburg silt loam	57,472	15.5	Orangeburg silt loam	768	.2
Richland silt loam	44,416	12.0	Lufkin silt loam	384	.1
Ruston gravelly sandy loam	8,192	2.2	Waverly silt loam	384	.1
Ruston silt loam	7,360	2.0	Bibb sandy loam	192	.1
Meadow	6,144	1.7			
Orangeburg fine sandy loam	1,664	.4	Total	369,920

MEMPHIS SILT LOAM.

The surface soil of the Memphis silt loam consists of a grayish-brown silt loam, from about 5 to 10 inches deep, grading into a yellowish-brown color with depth. The subsoil is a dull-red, buff, or yellowish-red, slightly friable, silty clay loam to silty clay, grading at 24 to 30 inches into a lighter colored material, usually yellowish-red or yellowish-brown heavy silt loam to silty clay loam. This lower subsoil is generally very compact, although having a somewhat more friable structure than the upper subsoil, which is slightly plastic when very wet.

On slopes of streams and in the vicinity of the deep gulches which are frequently found on the Memphis silt loam, drainage is exceptionally well established, and in such situations the color of the subsoil is generally reddish or chocolate brown. The more nearly red color here is undoubtedly due to the good drainage, which has effected a more complete oxidation than has been reached in the average of the type.

An important phase was recognized, but not mapped, inasmuch as the soil was not considered sufficiently different from the typical development to warrant its recognition as a definite type. This phase includes areas with drainage slightly inferior to that of the main type. The soil to a depth of 3 or 4 inches is a grayish-brown to yellowish-brown silt loam, underlain by yellowish-brown silty clay loam, which quickly grades into a yellowish-brown silty clay or heavy silty clay loam, often thickly mottled with gray.

A compact stratum of impervious material is encountered at 20 inches or more, which consists of a yellow, plastic silty clay, mottled with shades of yellow and brown, and often with gray. This compact layer is very impervious to water and air movement, as is indicated by the comparatively dry condition of the material just beneath it. Large quantities of iron concretions, or "buckshot," are found in both the soil and subsoil of this poorly drained phase.

The topography of the main portion of the Memphis silt loam is gently rolling, though less pronounced in this respect than some of the rougher developments of the type near the Mississippi bottoms to the west. There are some hilly or badly eroded areas in the northwestern part of the county and to the west of Wesson. In many cases the slopes that border streams are so steep that safe cultivation can be carried on only by the use of hillside ditches or terraces to prevent erosion. The main portion of the type is very much smoother and better suited to tillage operations than the badly eroded, rough areas of the Memphis silt loam in the Cane Hill region near the Mississippi bottoms, such as that mapped in Adams and Warren Counties of the State.

The loose, silty texture of the soil makes it readily susceptible to erosion, which is further accentuated by the fact that the most important crops grown in the area are intertilled. Where grown on the slopes and not protected by terracing, deep gulches soon form where the soil is washed away by heavy rains. Winter cover crops should be grown to protect the soil during the period of heavy rains, and wherever possible trees should be left standing.

The type holds moisture well, and when properly managed can be made to conserve enough of the winter and spring rains to tide a crop over the occasional droughts that occur during July and August. It is found in large bodies and small patches throughout the whole of Lincoln County, some of the largest areas being in the vicinity of Brookhaven and along the Franklin County line.

For the best results a consistent maintenance of the organic-matter content is necessary. There are few areas that would not be benefited by plowing under vegetable matter, particularly the stubble and even the entire roughage of such crops as cowpeas, lespedeza, bur clover, vetch, and soy beans. Where the humus supply is low the soil tends to bake in dry weather.

Many patches of sandy soil, mostly Ruston fine sandy loam, were included with the type, but owing to their limited size it was impossible to separate them on a map of the scale used.

The Memphis silt loam is derived from a silty deposit commonly known as loess. This deposit varies in Mississippi from something like 50 feet thick along the Mississippi River bluffs, as in Adams County, which is just 50 miles west of Brookhaven, to a thin mantle in Lawrence County to the east. The formation thins rapidly toward the east, giving way to Coastal Plain material about 20 to 25 miles east of Lincoln County.

The average depth of the Memphis silt loam in Lincoln County is probably close to 4 feet. In places the Coastal Plain material, which underlies the entire county, is found 10 feet or more below the surface. Elsewhere the loessial material has been partially or completely washed off, exposing the Coastal Plain material, such areas being mapped as Coastal Plain soils where of sufficient size, or bringing the Coastal Plain deposits sometimes within the 3-foot section of the Memphis silt loam. Such areas would have been mapped as Lexington silt loam had they been of sufficient importance.

Most of the farmers still use the shallow mode of cultivation, yet it is strongly recommended that the plowing should be first done "broadcast" and then "bedded up" instead of the usual method of simply plowing and bedding up the water furrows. This will increase the depth of the soil throughout the field and give the plants more room for extension of their roots. Under this system of cultivation yields should increase from 10 to 15 per cent.

The principal crops heretofore planted on the Memphis silt loam were cotton and corn, but with the invasion of the boll weevil, cotton to a great extent was abandoned and other crops substituted. This type throughout the county is well suited to the production of certain classes of market-garden and truck crops, such as tomatoes, cabbage, lettuce, radishes, asparagus, English peas, snap beans, okra, and strawberries. Along the slopes where the soil has a tendency to wash orchard fruits, such as peaches, plums, and pears,¹ could be grown advantageously, provided care is taken to arrange the rows according to the contours of the land. The greater part of the tomatoes shipped from Crystal Springs are grown on this soil, and the strawberries from Hammond, La., are grown on a silt loam somewhat similar to it.

With moderate applications of complete fertilizer mixtures, averaging from 300 to 400 pounds per acre, yields of 30 to 50 bushels of corn per acre are readily obtained. Cottonseed meal is sometimes used to supplement the ordinary 8-2-2 mixture, as well as homemade mixtures with good results.

This type is well adapted to oats, which produce from 30 to 50 bushels to the acre. This crop protects the soil from washing and leaching in winter and should be seeded in the fall. Lespedeza, bur clover, vetch, soy beans, peanuts, and Bermuda grass do well.

Large tracts of this type are now for sale throughout the area at prices ranging from \$7 to \$25 an acre. The price varies according to location and improvements. This low price is due to the depression in cotton growing as a result of boll-weevil conditions. The type is inherently worth a higher price even under the existing conditions than that at which it is held in many instances. For stock raising, especially for hogs, this soil offers attractive opportunities, in that it is easily capable of supplying the animals with green forage the year round. A combination of crops, including oats, vetch, sorghum, cowpeas, Bermuda grass, peanuts, and velvet beans is well adapted to the requirements of this industry.

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

Mechanical analyses of Memphis silt loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt	Clay.
		<i>Per cent.</i>						
422521.....	Soil.....	0.0	1.4	2.3	2.7	2.4	79.0	12.2
422522.....	Subsoil.....	.0	.4	.6	2.3	2.8	70.8	22.6

¹ See Farmers' Bulletin No. 482. The Pear and How to Grow It.

RICHLAND SILT LOAM.¹

The surface soil of the Richland silt loam consists of a brown or light-brown silt loam, from 3 to 8 inches deep, grading with depth into a slightly reddish-brown silty clay loam. The subsoil, beginning at an average depth of 10 inches, consists of a yellowish-brown to buff silty clay loam to silty clay. This is underlain at a depth of 20 inches or more by a mottled yellowish-brown and gray silty clay loam to silty clay somewhat more compact than the overlying material. Below 30 inches the color is gray, mottled with yellow and brown.

Small patches are occasionally found of gray to dark-gray or nearly black silt loam, grading at 4 to 7 inches into a pale-yellow silty clay loam which continues to about 18 inches, where it suddenly passes into a very compact stratum of tenacious silty clay. This compact layer is mottled with light gray and yellow or yellowish brown. There is some silt loam material in this lower stratum, the plastic clay apparently consisting of lenses surrounded by silt loam.

Frequently rusty brown mottling is noticeable in the soil and subsoil, which may also carry a few iron concretions. These are due to the poor drainage conditions resulting from the impervious lower subsoil and the frequent flat topography. Such areas are much poorer than the typical soil.

The Richland silt loam is an upland type, closely related to the Memphis silt loam, the only distinction between the two types being in their topographic position. In derivation, texture, and structure they are the same.

The topography ranges from nearly level to undulating. The natural drainage is not so good as that of the Memphis silt loam, some of the small depressions requiring the use of tile or ditching in order to secure the best results. Owing to the level topography, the type is less susceptible to erosion than the more rolling typical Memphis silt loam. This makes cultivation easy and more efficient than on the other types.

The agricultural value of this type is slightly superior to that of the Memphis silt loam, and for that reason the separation is justifiable. Before the arrival of the Mexican boll weevil nearly all of this type was planted to cotton, yields varying from one-half to 1 bale to the acre. Since the appearance of the weevil, the land has been used almost exclusively for corn, oats, and truck crops.

The Richland silt loam is deficient in humus and vegetable matter requiring applications of 200 to 400 pounds of commercial fertilizers to secure best results with crops. Corn produces from 20 to 35 bushels to the acre and oats from 15 to 30 bushels.

¹ The Richland silt loam is now recognized to be a smooth phase of the Memphis silt loam, and will be so mapped in the future.

Where the surface drainage is well established this type is considered one of the best truck soils in the county. All vegetables, such as beans, peas, cabbage, tomatoes, potatoes, and lettuce, together with strawberries, do exceptionally well.

Where truck is grown on this type an equal mixture of acid phosphate and cottonseed meal, applied at the rate of 600 to 1,000 pounds to the acre, will give the best results. Special attention must be given to crop rotation. Some of the largest areas of the type found in the county are just north of Brookhaven in the vicinity of Carlos and Love School, at Arlington School, Mallalieu Church, Prospect Church, and west of Union Hall. Smaller areas are found scattered throughout the county. A greater part of Brookhaven is located on this type.

Care should be taken to keep slopes from washing, and where general farming is carried on, deep plowing is strongly recommended.

Applications of lime in the shape of 2 to 3 tons of ground limestone per acre could profitably be used on this soil.

It is believed that alfalfa could probably be grown on this type as well as on the Memphis silt loam, but not profitably. The soil should be well limed, receiving a ton of burnt lime or 1 to 2 tons of ground limestone to the acre. Surface and underdrainage should be well established and the land cleared of grass and weeds by first using it for some clean cultivated crop, such as corn or vegetables, and then inoculating it with soil from an alfalfa field.

Land values vary widely, depending upon location. Areas of Richland silt loam in the vicinity of Brookhaven sell at \$20 to \$50 an acre, while others more remote from the railroad can be bought at \$10 to \$15 an acre.

The following table gives the results of mechanical analyses of samples of the soil and subsoil:

Mechanical analyses of Richland silt loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay.
		<i>Per cent.</i>						
422523.....	Soil.....	0.9	2.9	3.2	2.9	1.6	74.0	14.5
422524.....	Subsoil.....	.2	1.3	.9	1.4	1.9	71.9	22.6

VICKSBURG SILT LOAM.

The surface soil of the Vicksburg silt loam to a depth of 8 to 10 inches is a brown to dark-brown friable silt loam, which grades below into a light-brown or sometimes yellowish silt loam. Occasionally below 20 inches a stratum of very fine sand is encountered, but as a

general rule the subsoil consists of silt loam to a depth of 36 inches or more. The soil is well supplied with organic matter.

The silt loam is an alluvial soil occupying the overflow bottoms of streams. The component material consists largely of wash from the loessial upland soils. There is some sandy overwash material in places, and also alluvial material from the adjacent slopes along the outer margin of the bottoms.

The topography of this type is nearly level, or it has only a gentle slope toward the stream channels. Drainage can be easily effected by ditches, but overflow can not be prevented.

The type is the most important bottom-land soil in the county, being typically developed along the first bottoms of all the large streams throughout the county.

To secure the best results with the Vicksburg silt loam tile drains or open ditches must be used. Owing to its high moisture content and low position, it is a late or cold soil unless properly drained.

Before the appearance of the boll weevil this type was considered one of the best cotton soils in the county, producing from three-fourths to 1 bale to the acre. On account of the lateness of the crop it suffers severely from ravages by the weevil, and consequently cotton production under boll-weevil conditions has not proved profitable. The type is considered an excellent soil for corn, oats, and vegetables. Soy beans and velvet beans also do well on it. Where truck is grown, commercial fertilizers high in phosphoric acid and potash are recommended. Corn, where properly cultivated and highly fertilized, will produce from 25 to 50 bushels to the acre, while oats give better yields on this type than on any other in the county.

The production of lowland rice has met with good success on low, poorly drained areas of this type.¹

The largest areas of this soil found in the county are along Bogue Chitto Creek, Amite River, Fair River, Bayou Pierre Creek, Little Bahala Creek, Boone Creek, and McCalls Creek.

The Vicksburg silt loam is naturally a rich and very productive soil, but owing to the frequent poor methods of cultivation the land rarely produces anything like the yields it is capable of under proper management. Good drainage is the first step, followed by deep plowing and thorough harrowing. Owing to its silty nature, it is easy to cultivate and works up readily into a fine seed bed.

Areas that have been cleared and put under cultivation bring readily from \$15 to \$30 an acre. Those still in forest and underbrush can be bought at \$10 to \$20 an acre.

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

¹ Farmers' Bulletin No. 417. Rice Culture.

Mechanical analyses of Vicksburg silt loam.

Number	Description.	Fine gravel.	Coarse sand.	Medium sand	Fine sand.	Very fine sand.	Silt.	Clay.
		<i>Per cent.</i>						
422509.....	Soil.....	0.1	0.4	0.7	3.6	5.7	78.0	11.4
422510.....	Subsoi.....	.1	.1	.3	1.4	3.1	76.8	18.2

LINTONIA SILT LOAM.

The Lintonia silt loam consists of a light-brown to brown mellow silt loam underlain by slightly lighter colored or yellowish-brown silty clay loam to silt loam.

The type occupies stream terraces, the material representing deposits laid down when the streams flowed at higher levels.

The surface is flat and well suited to cultivation. Drainage is well established. This soil is typically developed along the Homochitto River and on the east shore of Bayou Pierre Creek.

Most of the type is under cultivation producing good crops of cotton, corn, sugar cane, cowpeas, velvet beans, and soy beans. Irish potatoes, cabbage, peanuts, and a number of vegetables will do well.

This soil is slightly higher in price than the Vicksburg silt loam, owing to the fact that there is no danger of loss from overflow.

RUSTON FINE SANDY LOAM.

The surface soil of the Ruston fine sandy loam consists of a grayish to pale-yellow fine sandy loam about 8 inches deep. The subsoil is a dull-red fine sandy clay or slightly plastic, stiff, silty clay.

A small quantity of gravel is found intermingled with the soil of some small areas, being more or less abundant on the surface and throughout the surface soil. The subsoil varies from a decided reddish-brown or buff silty clay to a pronounced yellowish-red or dull-red, friable fine sandy clay. Some included areas too small to map represent Memphis silt loam or Lexington silt loam.

The topography is characterized by low hills and winding ridges. In a great many instances hillside farming is successfully carried on by the use of terraces which prevent or check the destructive work of erosion. In a great many cases this type has been sadly neglected, and large tracts have been badly washed. On various areas throughout the county all of the soil has been eroded away, leaving the bare subsoil exposed.

One of the largest areas of Ruston fine sandy loam found in the county lies along the Copiah County line just south of Wesson. Other areas are located in the neighborhood of Goodwater School, Holly

Springs Church, Harmony, Springfield Church, northeast of Brister-ville and south of Ruth.

The Ruston fine sandy loam is derived from the weathering of the Coastal Plain material which underlies the region. A former covering of loess has been washed off.

This soil, having a loose, friable sandy structure, is capable of a wide range of crop diversification, perhaps more so than any other type found in the county.

Drainage in most cases is well established, owing to the sloping topography. This fact enables crops to be produced earlier than would be the case in a more poorly drained soil.

This type reaches its highest degree of efficiency when heavily fertilized, but the main trouble in maintaining the fertility of this light sandy soil is in keeping it well supplied with vegetable matter and humus. A good acreage application for the general farm crops grown on this soil is a mixture of 200 pounds of cottonseed meal and 100 pounds of phosphoric acid, especially for cotton grown under prevailing boll-weevil conditions. The phosphoric acid in this case assists in producing the bolls, and brings them to early maturity, while 200 pounds of cottonseed meal will not cause a growth of stalk and foliage sufficient to check early maturity.

Crops should by all means be rotated on the Ruston fine sandy loam. The rotation should include the legumes, such as cowpeas, velvet beans, and bur clover. Where the same crop is planted year after year, especially clean cultivated crops such as cotton and corn, the organic-matter supply is diminished and yields decline to a point which makes farming unprofitable, except with heavy fertilization.

At present most of the peanuts grown in the county are grown on Ruston fine sandy loam. Although this is practically a new crop for the county, it appears to be gaining a strong foothold. Yields of one-half ton to 2 tons of peanut hay to the acre are produced, while 50 bushels of peanuts to the acre is considered a good crop.

Much of the sugar cane grown throughout the county is produced on this type. From 350 to 500 gallons of sirup to the acre is considered a fair yield.

This type is also a valuable early truck soil, maturing crops early enough for shipments to northern markets. Snap beans, cucumbers, garden peas, melons, okra, strawberries, cabbage, and tomatoes do exceptionally well. Peaches also yield well on this type.

Owing to the loose, friable nature of the Ruston fine sandy loam, it can be cultivated at almost any time of the year. Oats may be planted in winter as a cover crop. This is not only a profitable crop, but it leaves the soil in excellent condition for spring planting.

Quite a large proportion of this type is lying idle throughout the county, being covered with a dense growth of sedge and other grasses

of various descriptions. When not in cultivation it makes excellent pasture land and can be used for all kinds of stock.

Areas of Ruston fine sandy loam can now be bought at prices ranging from \$4 to \$15 an acre. Large tracts in the shape of recent "cut-over" lands are being developed and settled by northern farmers.

RUSTON SILT LOAM.

The soil of the Ruston silt loam is a silt loam to very fine sandy loam, dark gray in the surface portion and changing at 2 to 3 inches to a grayish color, which continues to a depth of 8 to 10 inches. The subsoil is a reddish-yellow to yellowish-red silty clay, containing sufficient very fine sand to impart a moderately friable structure. The sand content increases with the depth, and at 28 inches a compact stratum is reached, consisting of yellowish, plastic clay, carrying a layer of grayish fine sandy loam, rather tenacious, which would probably constitute an impervious stratum but for the presence of the sandy material.

The topography ranges from undulating to rolling. Natural drainage is generally well established. This type occupies a position intermediate between the Memphis silt loam and the Ruston fine sandy loam. It occurs where the Coastal Plain deposits are exposed. Silty material from the Memphis silt loam has unquestionably influenced at least a portion of the type.

Some of the largest areas of this type are found around Heucks, near Corinth Church, south of Boone Creek, east of Goodman School, and in the vicinity of Harmony.

About 50 per cent of the Ruston silt loam found in the county is under cultivation to cotton, corn, sugar cane, and peanuts. Where well fertilized, cotton yields from one-half to 1 bale to the acre, and corn from 15 to 35 bushels. Sugar cane does exceedingly well, owing to the capacity of the soil to hold moisture during dry seasons, yields averaging 200 to 400 gallons of sirup to the acre.

Most of the type is deficient in organic matter, and a strict rotation of crops should be practiced. Peanuts are of material aid in the rotation, owing to their capacity to restore nitrogen and humus to the soil. On one small area of Ruston silt loam in the neighborhood of Pleasant Grove School, 227 bushels of corn to the acre was produced by a member of the boys' corn club.

Land of this type can be purchased at \$8 to \$15 an acre, depending upon location and improvements.

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

Mechanical analyses of Ruston silt loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay.
		<i>Per cent.</i>						
422503.....	Soil.....	0.3	1.9	10.1	18.5	2.8	58.4	8.0
422504.....	Subsoil.....	.0	1.6	9.1	19.6	3.8	47.3	18.5

RUSTON GRAVELLY SANDY LOAM.

The Ruston gravelly sandy loam consists of a grayish sand to loamy sand from 15 to 24 inches deep containing sufficient gravel to give the material a decidedly gravelly character. The subsoil is a yellowish-red gravelly sandy loam. The gravel consists mainly of rounded, oolitic gravel, pinkish and red flint gravel, brown chert, and also some quartz gravel.

The Ruston gravelly sandy loam is not considered a very valuable agricultural soil, and only a small proportion of its area is under cultivation. Liberal fertilization is necessary for good yields. The soil is much in need of organic matter. Early vegetables can be easily grown.

The gravel beds found throughout the county contain excellent road material and railroad ballast. Large quantities of this gravel are now being used in construction work. A gravel pit south of Heucks supplies most of the ballast used between Brookhaven and New Orleans on one of the trunk lines traversing the county.

Areas of Ruston gravelly sandy loam not situated near a railroad can be bought at \$3 to \$7 an acre.

ORANGEBURG FINE SANDY LOAM.

The Orangeburg fine sandy loam, to a depth of 3 to 7 inches, consists of a gray to brownish-gray, fine sandy loam, underlain by a dark-red, friable sandy clay. Only a small area of this type is found in the county, with some small areas in the neighborhood of Boone Creek, northeast of Topisaw Church, north of Ruth, and west and northeast of Montgomery Church.

The topography ranges from hilly to rolling and in most cases drainage is well established.

The material of the Orangeburg fine sandy loam is derived from the Coastal Plain deposits underlying the region.

This soil is considered one of the best types found throughout the county for the production of Elberta peaches, and for all orchard crops, such as pears, apples, plums, and figs. The general farm crops also do well. To secure best results vegetable matter should be

plowed under occasionally and moderate applications of complete commercial fertilizer made.

Small patches of this type can now be bought at \$6 to \$15 an acre, although owing to its limited occurrence it is not considered a very important soil and the price is generally influenced by that of surrounding types.

ORANGEBURG SILT LOAM.

The Orangeburg silt loam consists of a gray to grayish-brown silt loam about 6 inches deep, underlain by a dark-red silty clay loam, grading at a depth of 20 inches into a silty clay. In places the subsoil becomes lighter in texture with depth.

Some of the largest areas are found in the neighborhood of Soegaard and southeast of Harmony. This soil is well adapted to fruits, such as peaches, pears, and strawberries.

Only a very limited area of Orangeburg silt loam was mapped in the county, and for that reason the type can not be considered important. It is adapted to the general farm crops and lespedeza.

The following table gives the results of mechanical analyses of samples of the soil and subsoil of this type:

Mechanical analyses of Orangeburg silt loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay.
		<i>Per cent.</i>						
422505.....	Soil.....	0.3	5.7	9.1	8.2	3.7	60.1	12.8
422506.....	Subsoil.....	.2	4.1	6.4	5.5	1.3	50.7	31.6

LUFKIN SILT LOAM.

The Lufkin silt loam, to an average depth of 6 to 8 inches, consists of a gray to nearly white silt loam faintly mottled with yellowish brown.

The subsoil is a gray to almost white, heavy, plastic clay mottled with shades of brown and yellow and underlain at 30 inches or more by a compact stratum known as "hardpan." This stratum is usually from 3 to 6 inches in thickness and consists of a plastic gray clay, compact and impervious, and mottled with shades of yellow and brown. It tends to obstruct the movement of soil moisture. Dark-colored iron concretions are common to the type.

Drainage is poorly established, and owing to the flat surface and compact, impervious nature of the lower subsoil, the type is in a wet condition most of the time. Slight traces of acidity are noticeable.

This type is locally called "glade land." None of it was found to be under cultivation owing to the prevailing idea that the soil is too sour to yield profitable crops. This condition can be corrected

and the soil made to produce fair crops of cotton, corn, and rice by liberal applications of lime and proper drainage. The breaking up of the subsoil by the use of dynamite might prove an effective plan of improving the soil. Drainage must be effected before any crops except lespedeza and native grass can be grown.

Only a small total area of Lufkin silt loam is found in the county and for that reason it can not be considered of very much importance. The largest areas found are 2 miles south of R. E. Lee School and along the headwaters of Tangipahoa Creek. This soil is locally known as "glade land," "pin-oak flats," and "gum flats."

The type in its present condition supports a growth of water-loving grasses and scattering pine, pin oak, black gum, and black-jack oak. It is considered of little agricultural value and can be bought for \$3 to \$6 an acre.

The following table gives the results of mechanical analyses of samples of the soil and subsoil of this type:

Mechanical analyses of Lufkin silt loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay
		<i>Per cent.</i>						
422507.....	Soil.....	0.9	1.2	0.7	1.4	4.0	80.7	11.1
422508.....	Subsoil.....	.6	1.0	.6	1.3	2.9	75.5	18.0

WAVERLY SILT LOAM.

The soil of the Waverly silt loam consists of a gray to nearly white silt loam, about 8 inches deep, faintly mottled with shades of yellow. The subsoil is a heavy silty clay loam nearly similar in color to the soil and containing an abundant supply of dark-colored iron concretions. This type is found in small patches along the first bottoms of Bayou Pierre Creek, near Old Redstar, and on Bogue Chitto Creek at Derby, all areas being subject to overflow.

The soil material consists largely of wash from the loessial upland soils. The type is poorly drained and subject to overflow.

The Waverly silt loam supports a growth of carpet grass and lespedeza, but owing to its limited area is not considered an important type.

BIBB SANDY LOAM.

The Bibb sandy loam, to a depth of 6 inches, consists of a gray sandy loam, underlain by a grayish-white sandy clay, which in turn, at a depth of 18 inches, grades into a gray, heavy, plastic, waxy clay loam. Mottlings of rusty brown and yellow are common throughout the soil section.

Bibb sandy loam occupies overflow first bottoms along Fair River just east of Fair River Hall School. The material, to a considerable

extent at least, is washed from the sandy uplands that border this stream. Although modified to some extent by wash from the local uplands, the sandy material probably consists largely of Coastal Plain deposits.

Owing to poor drainage conditions, none of the type is cultivated at present. It is quite probable that rice would produce fair yields under proper cultivation. The land could also be used for hay, as the native wild grasses, such as carpet grass and water grass, as well as lespedeza, do well.

Only a very small area of the Bibb sandy loam is found throughout the county, and for that reason it can not be considered an important type.

SUSQUEHANNA SILT LOAM.

The surface soil of the Susquehanna silt loam consists of a pale-yellow compact silt loam, 8 inches deep. Below this is found a stratum of reddish, silty clay loam, grading at a depth of 14 inches into a plastic and waxy, heavy clay of a dull-red color and mottled with gray at a depth of 20 inches.

Occasional small patches of the type are found on hill slopes, having a grayish soil about 3 inches deep, underlain by a gray or drab, plastic, heavy clay of rather sticky and waxy structure.

The depth of this phase varies considerably, depending on the amount of erosion that has taken place.

A comparatively small area of the Susquehanna silt loam was found, and in most cases the areas were so small as to make separation impossible on the map. Some of the largest areas are located near Fair River, while others occur along the Covich County line north of Bahala Church and southeast of Woolworth.

The type is fairly well drained, but owing to the tenacious properties of the subsoil it is hard to cultivate. Only a very little of the land was found to be in cultivation, and most people throughout the county do not consider it a profitable agricultural soil.

A large proportion of this type is forested with red oak, post oak, and shortleaf and longleaf pine, most of it being of a "scrubby" nature and not of much commercial value.

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

Mechanical analyses of Susquehanna silt loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay.
		<i>Per cent.</i>						
422517.....	Soil.....	0.4	1.3	1.1	1.2	3.1	64.6	28.4
422518.....	Subsoil.....	.6	2.1	1.4	1.2	5.2	39.2	50.3

MEADOW.

The areas mapped as Meadow in Lincoln County include poorly drained variable soils occurring in the bottoms of small creeks. As a general rule, the type represents narrow strips of low lying land subject to overflow and very poorly drained. The soil has a wide range in texture, small patches of sand, silt, and clay often occurring in close proximity to each other. There is also a considerable difference in the soil texture from the surface downward, the soil section often including a stratum of sand underlain by silt, which in turn rests upon another stratum of sand and gravel. The color of the soil and subsoil is varied, but in most cases it is brownish or dark gray in the surface portion and gray mottled with yellow and sometimes white in the subsoil.

This type in its present condition is of very little agricultural value. Most of it could be reclaimed by straightening the stream channels and digging lateral ditches. It is covered with a dense growth of grass, making fine pasture land. The forest growth consists of bay, willow, black gum, and white oak. Blackberry bushes and switch cane also thrive on this type.

SUMMARY.

Lincoln County is situated in the southwestern part of Mississippi. It has an area of 578 square miles, or 369,920 acres. The topography ranges from comparatively level to rolling, with a few badly eroded and broken areas.

The county was established in 1870, most of the early settlers coming from Georgia and South Carolina. It is crossed from north to south by the Illinois Central Railroad and from east to west by the Mississippi Central Railroad. Two smaller railroads—one a branch of the Illinois Central and the other an improved log railroad known as the Natchez, Columbia, & Mobile Railroad—also traverse the county. These roads afford excellent transportation facilities, offering direct routes to Chicago, Memphis, Jackson, New Orleans, Natchez, and Hattiesburg.

Agriculture throughout the county is in a somewhat unsettled condition at present owing to the invasion of the boll weevil. Cotton and corn have always been the chief money crops, although since the advent of the weevil in 1909 cotton has lost its former prominence, and the farmers are turning to more diversified agriculture to meet the new conditions imposed by this pest. More corn, oats, peanuts, potatoes, and other crops were grown last year than ever before in the history of the county. No definite system of rotation is followed, but the old system of one or two crop farming is gradually giving way to more scientific practice.

The county offers excellent opportunities for stock raising, which should receive the attention of all farmers.

Although the invasion of the boll weevil caused a decline in land values, this condition is gradually being overcome, and the land is now increasing in value. Good farm land can be bought for \$10 to \$35 an acre.

The mean annual temperature for the county is 66° F., and the mean annual rainfall is 58.4 inches. This is well distributed throughout the year. The winters are short and mild and the summers long and hot.

The county has a population of 28,597, of which 16,538 are white and 12,054 colored. The census of 1900 reported 21,552 inhabitants, a gain in 10 years of 7,045. Brookhaven during the last decade has almost doubled in population, now having 5,293 souls, as against 2,678 in 1900.

Fourteen soil types, including Meadow, were mapped in the county. Of these the most important and extensive is the Memphis silt loam. The topography is gently rolling, with some hilly and badly eroded areas. Cultivation is easy, but erosion constitutes a serious problem. Drainage is good.

Cotton and corn are the principal crops grown on this type. It is well suited to truck, vegetables, fruits, and strawberries. Peaches, plums, and pears could be grown on favorable locations on the slopes.

Corn yields from 30 to 50 bushels per acre with moderate applications of complete fertilizer (8:2:2), and oats about the same. The organic content should be maintained by including winter cover crops and legumes in the rotation. This type is held at prices ranging from \$7 to \$25 an acre.

The Richland silt loam is closely associated with the Memphis, the only appreciable difference being in topography, which in this type is nearly level to undulating. Drainage is slightly inferior, ditching and the use of tile being necessary in some of the depressions. Prior to the advent of the boll weevil this type was used for cotton, yields of one-half bale to a bale to the acre being secured. Since that time it has been used for corn, oats, and truck crops. Corn averages from 20 to 35 bushels to the acre and oats from 15 to 30 bushels. All kinds of truck and vegetables give good yields on well-drained land. Areas of this type near Brookhaven sell readily for \$20 to \$50 an acre, while those more remotely located bring \$10 to \$15.

The Vicksburg silt loam is strictly a bottom-land soil and subject to overflow. The topography is level, sloping gently toward the

streams. It is adapted to corn, oats, and vegetables. Many areas should be drained.

Most of the Lintonia silt loam is under cultivation, producing good crops of cotton, corn, sugar cane, cowpeas, velvet beans, and soy beans. Irish potatoes, cabbage, peanuts, and a number of vegetables will do well.

The Ruston fine sandy loam is widely distributed throughout the county. It is considered a valuable soil for cotton, corn, peanuts, and early truck. The silt loam member of the series has about the same crop adaptation but contains a larger proportion of silt and clay.

The Ruston gravelly sandy loam is found bordering stream bottoms and capping high ridges. It is useful as a road-building material, but is not considered a very good agricultural soil.

The Orangeburg fine sandy loam and Orangeburg silt loam are characterized by their bright red color. Both types are excellent fruit soils, but have only a very limited occurrence in the county.

The Susquehanna silt loam is noticeable on account of its sticky, plastic qualities. Its characteristic color is red mottled with yellow and white. It is an unimportant type occupying hill slopes. Much of it is in forest.

The Waverly silt loam and Bibb sandy loam are both bottom-land soils, subject to overflow. On account of their poor drainage and limited occurrence they are not considered valuable.

The Lufkin silt loam is a grayish silt loam having very poor drainage. It is locally called "crawfish" land and is not considered a valuable agricultural soil.



[PUBLIC RESOLUTION--No. 9.]

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

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

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

Approved, March 14, 1904.

[On July 1, 1901, the Division of Soils was reorganized as the Bureau of Soils.]

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