Issued May 15, 1915.

U. S. DEPARTMENT OF AGRICULTURE,

BUREAU OF SOILS—MILTON WHITNEY, Chief.

IN COOPERATION WITH THE STATE OF ALABAMA, EMMETT O'NEAL, GOVERNOR;
REUBEN F. KOLB, COMMISSIONER OF AGRICULTURE AND INDUSTRIES;
EUGENE A. SMITH, STATE GEOLOGIST.

SOIL SURVEY OF CLEBURNE COUNTY, ALABAMA.

BY

H. G. LEWIS AND C. S. WALDROP, OF THE U. S. DEPARTMENT OF AGRICULTURE, AND F. W. KOLB, OF THE ALABAMA DEPARTMENT OF AGRICULTURE AND INDUSTRIES.

HUGH H. BENNETT AND W. EDWARD HEARN,
INSPECTORS, SOUTHERN DIVISION.

[Advance Sheets—Field Operations of the Bureau of Soils, 1913.]

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1915.

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LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF SOILS,
Washington, D. C., September 25, 1914.

SIR: Soil-survey work in Alabama during the field season of 1913 included a detailed survey of Cleburne County. The selection of this area was made after conference with officials of the State, with whom the bureau is now cooperating.

The accompanying report and map embody the results of this survey, and I have the honor to recommend that they be published as advance sheets of Field Operations of the Bureau of Soils for 1913, as authorized by law.

Respectfully,

MILTON WHITNEY,
Chief of Bureau.

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

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SOIL SURVEY OF CLEBURNE COUNTY, ALABAMA.

By H. G. LEWIS and C. S. WALDROP, of the U. S. Department of Agriculture, and F. W. KOLB of the Alabama Department of Agriculture and Industries.

DESCRIPTION OF THE AREA.

Cleburne County, Ala., borders the Georgia State line and is about one-third the distance from the Tennessee line to the Gulf. It is bounded on the north by Cherokee County, on the east by Carroll, Haralson, and Polk Counties, Ga., on the south by Clay and Randolph Counties, and on the west by Calhoun and Talladega Counties. The extreme north and south dimension is about 32 miles, while the east and west dimension varies from 7½ miles along the northern boundary to about 34 miles on the southern boundary, the average width being about 22 miles. The county comprises an area of 568 square miles, or 363,520 acres.

The Tallapoosa River and its tributaries form the principal drainage system of the county, the Appalachian Mountain belt and the section lying east being drained through its tributaries. The northern part of the county is drained to the west by Terrapin and Little Terrapin Creeks and their tributaries, which empty into the Coosa River. The extreme southeastern corner of the county is drained by the Little Tallapoosa River, which flows along the county boundary for about 4 miles. The country lying on the west of the Horseblock Mountain Range (an extension of the Blue Ridge Mountains) drains to the west through the headwaters of Choccolocco Creek, Shoal Creek and its tributaries, and Hillabee and Little Hillabee Creeks, which empty into Choccolocco Creek in Calhoun County.

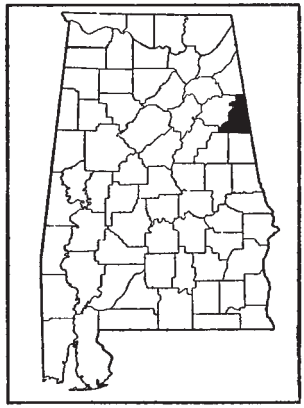

FIG. 1.—Sketch map showing location of the Cleburne County area, Alabama.

Cleburne County lies within three main physiographic belts, the Appalachian Mountain, Piedmont Plateau, and the alluvial bottoms of the Tallapoosa River. The Appalachian Mountain belt strikes across the western part of the county in a southwesterly direction. The Piedmont Plateau belt lies to the east and southeast of the Appalachian, covering the southeastern part of the county. The

Tallapoosa River bottom, entering the State along the Georgia-Alabama line, winds its way to the southwest to a point about 4 miles south of Heflin, and thence almost due south, leaving the county near the northwest corner of Randolph County. The Tallapoosa River flows along the break between the Appalachian and Piedmont belts. A few miles above Bell Mills the Piedmont boundary crosses to the west side of the river, but returns at Bell Mills, whence it follows the river to about 6 miles south of Heflin, where it recrosses to the west side, passing about three-quarters of a mile north of Chulafinnee, thence in a general southwest direction along Chulafinnee Creek to its source.

The Appalachian Mountain belt is a deeply eroded plateau consisting of sharp, narrow ridges with V-shaped valleys. The elevation varies from 1,000 to more than 2,200 feet above sea level in the more mountainous parts along the western ridge and northern portion of the county. The main mountain ridge along the western edge of the county is very broken and rough. Very little of this part of the county is under cultivation, as it is too mountainous and deeply dissected. The stream valleys here are very narrow, often including no bottom lands.

The dividing line between the Appalachian and Piedmont belts is not everywhere sharp, but in general there is a rather abrupt break from the very rolling and hilly country of the Appalachian to the less rolling Piedmont region, with the general upland level or sky line considerably lower than the Appalachian. There are several detached portions of the Appalachian within the general limits of the Piedmont south of the main Appalachian-Piedmont border, such as Ross, Blake, Kemp, Bald, and Turkey Heaven Mountains. These isolated hills and mountains are 500 to 600 feet above the general level of the surrounding Piedmont country. The general elevation of the Piedmont is not over 1,000 feet.

The width of the bottoms of the Tallapoosa River varies from less than one-fourth to three-fourths of a mile. The bottoms along the other water courses are comparatively narrow, as the streams have considerable fall and are still actively deepening their channels. The bottom lands along the streams through the Piedmont are wider and more continuous than those in the Appalachian region.

Cleburne County was organized in 1867, being formed mainly of territory taken from Calhoun and Randolph Counties. There have been some minor changes since then in the boundary in the western and southwestern parts. The first settlements were made at Abernathy, Arbacoochee, and Chulafinnee, in the order named. These were the most important settlements until after the building of the Southern Railway. The first settlers were mainly from Georgia,

Tennessee, and the Carolinas. The county seat was first at Edwardsville, where it remained until 1905, when it was moved to Heflin. The county was settled gradually, settlers continually coming from the older counties to the north. Since the Civil War a few people have been attracted to the region by the cheap lands and healthful climate.

The population of the county is chiefly rural, there being no towns of large size. Heflin, the county seat, has a population of less than 1,000. It serves as a distributing point for a large part of the county and also for parts of Randolph and Clay Counties, to the south. Edwardsville, Fruithurst, Muscadine, Borden Springs, and Palestine are smaller points on the Southern and Seaboard Air Line Railways. Hightower, Ranburne, Bell Mills, Beasons Mill, Lecta, Trickem, Hopewell, Abernathy, Chulafinnee, and Oak Level are small inland settlements and trading points. The county had a population of 13,206 in 1900 and 13,385 in 1910. It is exclusively an agricultural county

The county is well supplied with public roads, but as a whole they are in poor condition, and during the rainy season, in the early spring, hauling is very difficult. Within the last year an effort has been made to have the roads graded and surfaced. Road material of fine gravel and quartz is plentiful throughout the county, and good permanent roads could be built at a comparatively small expenditure.

Schools and churches are conveniently situated throughout the county. Local and long-distance telephone lines have been established. Most of the inland systems are owned by the farmers. The telephone and the rural free delivery of mail have done much to better the conditions and make farm life more enjoyable.

Numerous gristmills and cotton gins are found in the county, many of them being operated by water power obtained by damming the Tallapoosa River and other large streams.

Two railroad lines cross the county east and west. The Seaboard Air Line serves the extreme northern part of the county, where only a small proportion of the farm land occurs. The Southern Railway passes southwesterly through Heflin, Edwardsville, Fruithurst, and Muscadine, and serves a large part of the farming country on each side; but the extreme southern and southeastern part of the county is 15 miles or more from a railroad. Much of the trading of the southwestern corner of the county goes to Anniston and Oxford, in Calhoun County. Bowdon, Ga., on the Bowdon Railway, in the vicinity of Hightower and Ranburne, serves as a market for the southeastern corner of the county, being only about 4 miles from the county line. Tallapoosa, Ga., is the nearest and best market for the region around Hopewell and Abernathy.

Atlanta, Ga., and Birmingham, Ala., are the important markets for the county, the former being 84 miles and the latter 82 miles from Heflin.

The two main crops, corn and cotton, are sold locally, the cotton being later shipped out, as there are no mills in the county. Only a little corn or feedstuff is shipped out, as the local demand is greater than the supply. Both corn and hay are imported. A large proportion of the lands of the county is held by mining and lumbering companies.

CLIMATE.

The climate of Cleburne County is very mild, with a relatively short winter and a long growing season. The summer heat is not excessive, and hot dry spells are of relatively short duration. The nights are cool, owing largely to mountain breezes. Cold waves are common in winter, but last only for a few days. Prolonged, misty rains are common in the winter season and early spring. The mean annual snowfall is 3 inches, and snow rarely stays on the ground for more than three days. The mean annual temperature is about 62.2° F., ranging from 43.5° in the winter to 77.2° in the summer. The lowest recorded temperature of winter is 10° F. and the highest of summer is 103° F. The precipitation is ample for the growth of crops and is well distributed throughout the year. The larger part falls during the growing season. The mean annual precipitation amounts to slightly less than 50 inches.

The average date of the first killing frost in autumn is October 20 and of the last in spring, April 2, while the earliest recorded in fall is October 6 and the latest in spring, April 20. The average growing season is about 200 days, which is ample time for maturing all field crops.

Exceptionally good water is obtained from the numerous streams of the county and from dug wells. In the extreme northern part of the county there are large mineral springs. A large summer resort has been built up at Borden Springs, which attracts many tourists and health seekers on account of the medicinal properties of the water and the healthfulness of the climate.

The data given on the following page were taken from the records of the Weather Bureau station at Anniston, Calhoun County, Ala., the nearest station to Cleburne County, and represents with fair accuracy the climatic conditions in the latter county. With the wide range in elevation—from about 850 feet to over 2,000 feet above sea level—local differences in climate may, however, be expected.

Normal monthly, seasonal, and annual temperature and precipitation at Anniston, Calhoun County.

Month.	Temperature.			Precipitation.			
	Mean.	Absolute maximum.	Absolute minimum.	Mean.	Total amount for the driest year.	Total amount for the wettest year.	Snow, average depth.
	°F.	°F.	°F.	Inches.	Inches.	Inches.	Inches.
December	44.2	75	7	4.56	0.66	6.05	0.6
January	42.6	73	7	4.83	4.13	4.53	0.4
February	43.7	78	−10	5.06	3.76	1.52	1.7
Winter	43.5	.....	.....	14.45	8.55	12.10	2.7
March	54.5	84	12	5.44	3.50	10.98	0.3
April	61.2	88	27	4.27	2.64	1.61	0.0
May	68.8	96	36	4.39	2.72	3.16	0.0
Spring	61.5	.....	.....	14.10	8.86	15.75	0.3
June	75.6	100	44	3.93	4.10	4.82	0.0
July	78.0	102	56	5.59	4.25	13.78	0.0
August	78.0	103	55	4.18	0.98	5.35	0.0
Summer	77.2	.....	.....	13.70	9.33	23.95	0.0
September	73.0	98	36	3.14	2.49	12.20	0.0
October	61.8	93	25	1.74	1.53	3.02	0.0
November	51.7	82	16	2.84	3.80	3.81	0.0
Fall	62.2	.....	.....	7.72	7.82	19.03	0.0
Year	61.1	89	26	49.97	34.56	70.83	3.0

AGRICULTURE.

The pioneers produced mainly products which were needed for home consumption, including corn, cotton, wool, wheat, and potatoes and other vegetable crops. The cotton and wool were used for making homespun clothing. Cotton was also hauled overland and exchanged for other commodities, but comparatively few sheep were raised.

According to the census there were 211,646 acres in farms in 1880, while in 1910 there were only 200,888 acres. This decrease is believed to be due largely to the buying up of large tracts by lumbering and land companies. In 1910 there were 69,429 acres of improved land in farms as against 67,849 acres in 1900, 60,776 acres in 1890, and 53,377 acres in 1880. There is thus seen to have been a gradual increase in the improved land despite the decrease in the total acreage. The average size of the farms was 139 acres in 1880 and 89.8 acres in 1910, a decrease mainly accounted for by the classification of each tenancy as a farm in the tabulation of the last census. The decline

in the number of owner-operated and increase in tenant-operated farms is significant in this connection. The percentage of owner-operated properties decreased from 72.1 in 1880 to 54.2 in 1900.

Corn has always been the leading crop in Cleburne County. In 1879 there were 21,552 acres planted to this crop, producing 362,335 bushels, or an average of 16.7 bushels per acre, and in 1909 there were 21,368 acres, producing 281,425 bushels, or an average of 13.2 bushels per acre. There has thus been little change in the situation as regards this crop. While the average yield per acre is less than 15 bushels for the county as a whole, some fields have yielded many times this average. Within the last few years the farmers have begun to realize the importance of adopting better cultural methods in growing this crop and there is no reason why the county average should not be materially increased.

Most of the cornfields are prepared in the early spring. The upland soils are plowed only about 3 or 4 inches deep. The bottom lands are as a rule put in good condition before planting. Most of the corn is planted in furrows, except on the lower, wetter bottom-land soils, where it is planted on a slight ridge. The rows are placed from 3 to 5 feet apart. The stream-bottom soils are better suited to corn than the upland soils, principally on account of better moisture conditions.

Corn is cultivated throughout the county with one-horse turning plows, scrapes, and sweeps. It is usually hoed once by hand to kill weeds in the row and plowed three, four, or five times. The stalks are usually cut and burned instead of being plowed under to enrich the soil.

Cotton is the second crop in importance in the county. In the early days the same fields were used for cotton continuously until the yields began to decline, when the crop was planted on new land. In some instances the old fields were entirely abandoned, and many of them may be seen at the present time, especially in the Appalachian Mountain belt, where the surface soil has been removed by erosion and deep gullies have been washed in the subsoil. Better care is taken of the upland fields now. The number of acres planted to cotton in 1879 was 9,156, producing 3,600 bales, or slightly more than one-third bale per acre. In 1909 there were 18,921 acres, producing 7,228 bales, a slight increase in the yield per acre. Most of the cotton land is prepared in the early spring by bedding on the water furrow of the previous year. Some fields are cross-plowed, thus turning all of the soil, but this is by no means general. The seed is planted in an open furrow, after the fertilizer has been distributed along the row ahead of the planter, or at the same time by a combination distributor and planter. Soon after the plants appear above the ground they are thinned out, leaving the healthier looking

stalks at regular intervals in the rows. The field is cultivated with scrapes and sweeps, and two or more hoeings are usually required in order to keep out weeds and other vegetation. It is generally recognized that cotton does best on the lighter silty and sandy soils of the uplands, producing a better fiber and maturing earlier than on the other soils.

The production of wheat and oats has decreased considerably within the last few years, and at present they are grown mainly for hay. Both are good for cover crops during the winter months. The acreage in oats in 1879 was 5,672 acres, producing 58,084 bushels. In 1889 the acreage devoted to this crop reached its maximum, being 6,099 acres, which produced only 49,970 bushels. In 1899 the number of acres sowed was but little over half that of the decade before, and in 1909 there were only 2,618 acres, producing 24,336 bushels, or an average of 9.3 bushels per acre. Rust and smut commonly attack the oats at present, and the average low yield has probably caused the decrease in acreage.

In 1879, 7,504 acres were planted to wheat, producing 48,904 bushels, or an average of 6.50 bushels per acre. In 1909 the acreage had fallen to 505 acres, producing 3,003 bushels, or an average of 5.94 bushels per acre.

Oats are sowed broadcast and plowed under to a slight depth. In case of wheat the ground is broken and then as a rule the seed is drilled in with a small grain drill. The purple-stem and bearded varieties of wheat are usually grown. Both wheat and oats are harvested with a cradle, but the oats are fed from the sheaf, while the wheat is thrashed and either fed or ground for flour. With a proper systematic crop rotation both wheat and oats could be made important crops. The acreage of barley and rye has always been small. Very little clover is grown. Irish potatoes, tomatoes, cucumbers, and melons are grown mainly for home consumption. Sweet potatoes have increased in acreage during the last few years, more than 500 acres being planted in 1909. Sorghum and ribbon cane are grown in scattered patches over most of the county to supply sirup for home consumption.

Cowpeas, sorghum, beans, and peanuts are at present minor crops. Cowpeas are planted between the corn or sowed broadcast at the last cultivation and used for forage or turning under for soil improvement. In 1909 there were 387 acres planted to cowpeas and 400 acres to sorghum.

Bermuda grass is common throughout the county, but no extensive areas are found. It does well on all upland types of soil. Lespedeza (Japan clover) is present over the rougher and slaty areas. It affords good pasturage. Millet is also grown for hay and forage. Johnson grass and broom sedge are present.

Commercial fertilizers are in general use throughout the county, the usual mixture consisting of 10 per cent phosphoric acid, 2 per cent nitrogen, and 2 per cent potash. For cotton the application varies from 125 to 350 pounds per acre. This is distributed along the furrows as the cotton is being planted. Fertilizers are not so generally used with corn, but on many farms applications are made year after year, no matter what the crop. In most instances the fertilizer is applied all at the time of planting, though some farmers add a part at time of planting and more later to the growing crops also. In a few instances barnyard manure is used instead of commercial fertilizers, with splendid results, but the quantity produced on most farms is entirely inadequate. When barnyard manure is used, it is usually dropped by hand into the hills, thus making it cover as large an area as possible. The expenditure for commercial fertilizers in the county in 1879 amounted to $24,527 as against $51,702 in 1909.

Although the climate and soils of the county are well adapted to the production of fruits, very little attention is given to this industry at present. Some apples, peaches, pears, grapes, and plums are grown, but as yet no large orchards have been planted, owing largely to the fact that there is no ready market for fruits. On the slaty soils and the lower slopes of the Appalachian hills the trees do exceptionally well, producing good yields of fruit of fine quality. In some places, where the slaty soils have been abandoned for agricultural purposes, they are being planted in orchard. On such areas some of the finest trees and fruits are found. Some strawberries are grown for home consumption.

The raising of live stock has received very little attention. The value of all live stock in the county, according to the 1910 census, was less than $500,000, the amount showing only a slight increase in the last 30 years. This industry could no doubt be profitably extended, especially in the more broken and mountainous regions. As a rule, the farmers have one or two cows to supply milk and butter for family use.

Very few horses and mules are raised. Mules are the principal work stock, but most of these are bought outside the county at rather high prices. Awakening interest in the keeping of good brood mares and the raising of mule colts is apparent.

Less than half the farmers of the county raise enough hogs to supply their home needs. Meats and many other supplies are bought on time and paid for when the crops are gathered. Many of these necessaries could be produced economically on the farms.

A very large proportion of the county is at present in forest. Of the area of the Appalachian Mountain belt 80 to 85 per cent is forested. This is largely due to the fact that much of it is mountainous

and very broken, and therefore of little agricultural value. Of the Piedmont area the larger part is cleared and under cultivation. The surface of this region is much better suited to agriculture than the Appalachian section.

There is no system of crop rotation followed in the county. Corn and cotton are planted on the same land year after year, and it is not unusual to see fields that have been planted to the same crop for 15 years in succession. This practice tends to soil deterioration, and the greatest problem now confronting the farmer in this section is how to build up the productiveness of the soils and thus lessen the cost of production. As yet there has been no trouble from the boll weevil.

One of the greatest difficulties the farmer has to contend with is the scarcity of labor. In 1909 less than $21,000 was spent for farm labor, most of the work being done by the farmers and their families. There are but few negroes in the county, and most of these live in or near the railroad towns and are employed on the railroad and public works, where the wages are higher than those paid for farm labor. The use of more improved farm methods and better farming implements is helping to solve the labor question.

Over one-half the farms of the county are operated by the owners. When farms are rented the landlord usually furnishes implements, work animals, and fertilizers, and receives from one-third to one-half the crop. In a few instances cash rents are paid, ranging from $2 to $3 per acre, or from 1 to 2 bales of cotton for a one-horse farm. Clothing, food, and other supplies are usually furnished the tenant by the landlord or a supply house, taking a lien on the crop in lieu of cash.

With its good climate, long growing season, cheap lands, and fine water the outlook for the future development of agriculture in Cleburne County is very promising, especially along the lines of fruit growing, trucking, and stock raising. The development of the mining resources of other sections of the State is assuring a ready market for agricultural products.

SOILS.

Cleburne County comprises a portion of two important soil provinces, the Appalachian Mountain and Plateau Province and the Piedmont Plateau Province, in addition to small areas of the River Flood Plains Province. The prevailing rocks underlying the greater portion of the county are mica schists and hydromica schists, siliceous slates, together with small areas of sandstone, gneiss and hornblende schist, quartzite conglomerates, and limestone. These rocks differ materially in their physical and chemical composition, and the products resulting from their disintegration and decay are varied in character, giving

rise to soils markedly different. Fragments of the upland rocks, particularly of the siliceous slates, quartzite conglomerates, and numerous fragments and gravel of quartz, are present on the surface in many places. Occasionally these rocks protrude through the surface and stand as precipitous walls, and such areas have been indicated on the map by the symbol for rock outcrop. The quartz occurs mainly as veins, and these, in conjunction with the more siliceous slates, have resisted the forces of weathering, while the softer rocks in which they were embedded have succumbed more readily to the agencies of decomposition and decay.

About three-fifths of the county, or all of the northern, central, and extreme southwestern parts, are included in the Appalachian Mountain and Plateau Province, while the southern and southeastern parts are embraced by the Piedmont Plateau Province. The line of demarcation between these series is fairly well defined and runs in a general northeast and southwest direction, following in part the course of the Tallapoosa River. Outliers of the Appalachian Province are noticeable in restricted areas in the southern part of the county in the form of Turkey Heaven, Kemp, and Bald Mountains.

The soils of the county are residual in origin, having been derived from the rocks previously mentioned, and have been grouped together into series according to color, structure, origin, and topography.

In the Appalachian Mountain and Plateau Province the Talladega, Dekalb, Armuchee, and Clarksville series are represented, while in the Piedmont Plateau Province the Louisa and Cecil are encountered. In the River Flood Plains Province the Huntington, Holly, Holston, Toxaway, and Congaree series were mapped.

Weathering of the metamorphic rocks, such as mica schist, hydromica schist, and the imperfectly crystalline slates of a purplish, reddish, grayish, or pearly luster appearance, has given rise to the Talladega and Louisa series. The differentiation between the soils of these series in Cleburne County is based essentially upon the topography, and this directly influences the crop adaptation. These series are characterized by gray and reddish soils and bright-red or yellowish-red, friable subsoils, and considerable quantities of finely divided mica scales are present in these soils. The presence of this mica gives a greasy, soft feel to the soil and subsoil and produces therein a mellow, friable structure. In the Appalachian Province these soils have been classed as the Talladega slate loam, gravelly loam, and clay loam, while in the Piedmont Plateau Province they are represented by the Louisa slate loam, gravelly loam, gravelly sandy loam, and clay loam.

In the extreme southern part of the county occur small areas of soil derived from gneiss and hornblende schist which give rise to the Cecil

series. This series includes the Cecil stony clay, gravelly loam, and clay loam. It is characterized by brown to red surface soils and stiff red clay subsoils.

In the northern end of the county in the valley and near the foothills of the mountains in the vicinity of Borden Springs light-colored sandstone and siliceous shales have given rise to the Dekalb series. This series is represented by the Dekalb stony loam and fine sandy loam. The soils are gray to yellow in the surface portion and have yellow friable clay subsoils. Closely associated with these rocks are variegated colored shales and red sandstone, and probably limestone, which have weathered down to a reddish-brown soil and red clay subsoil. Such soil areas have been classed as Armuchee clay loam.

In the extreme northwest corner of the county was mapped the only body of Clarksville stony loam. This type has a gray soil and yellow to red subsoil. It has been derived from Knox dolomite or cherty limestone. Calcareous material has been dissolved away, leaving the more siliceous material to form the present soil mass.

Occurring along the Tallapoosa River and practically all the small streams of the county are narrow bands of alluvium. This material consists of sediments which have been washed from the adjoining or neighboring upland areas and transported and distributed by the streams at times of overflows or freshets.

In the bottoms along the Tallapoosa River the material has been brought down by the river from the limestone valleys to the northeast of the present survey. The brown to grayish-brown soils and brown subsoils of the first bottoms have been mapped as Huntington fine sandy loam and silt loam. The gray-soil areas with gray and yellow subsoils are classed as Holly silt loam. The second bottoms or low terrace areas, consisting of gray to whitish surface soils and mottled yellow and gray subsoils, were mapped as Holston fine sandy loam.

Bordering the streams in the Appalachian Mountain and Plateau Province, which have their origin in the Talladega and Dekalb soils, are small strips of alluvial material modified by colluvial wash. This material has been mapped Toxaway silt loam.[1]

The gray to reddish-brown alluvial soil occupying the first-bottom areas along the streams in the Piedmont Plateau Province has been classed as Congaree silt loam.

The names given to the various types are those already applied to similar soils previously mapped in this section of the State. The table on the following page gives the actual and relative extent of the several soils, their distribution being shown by means of colors on the accompanying map.

[1] Since the completion of this survey, the Toxaway series has been redefined. The soil mapped as Toxaway silt loam in this county would now be considered the Congaree silt loam.

Areas of different soils.

Soil.	Acres.	Per cent.	Soil.	Acres.	Per cent.
Talladega slate loam	138,176	38.0	Huntington silt loam	2,624	0.7
Louisa gravelly loam	59,584	16.4	Cecil stony clay	2,496	.7
Talladega gravelly loam	59,136	16.3	Talladega clay loam	2,368	.7
Toxaway silt loam	17,536	4.8	Cecil gravelly loam	1,472	.4
Rough stony land	17,088	4.7	Dekalb fine sandy loam	768	.2
Congaree silt loam	15,616	4.3	Holly silt loam	704	.2
Louisa gravelly sandy loam	14,976	4.1	Armuchee clay loam	640	.2
Louisa clay loam	10,304	2.8	Clarksville stony loam	576	.2
Louisa slate loam	9,600	2.6	Holston fine sandy loam	384	.1
Huntington fine sandy loam	3,456	.9	Total	363,520	
Cecil clay loam	3,264	.9			
Dekalb stony loam	2,752	.8			

TALLADEGA SERIES.

The soils of the Talladega series are grayish brown to light brown. The subsoils are red and have a greasy feel. The series is typically developed in the southern Appalachian Mountains, generally occupying strongly rolling to mountainous country. The soils are derived from metamorphic rocks, principally micaceous schists.

TALLADEGA SLATE LOAM.

The soil of the Talladega slate loam consists of a pale-yellow to yellow silt loam to silty clay loam, from 2 to 10 inches deep, with an average depth of 4 inches, and having a soft, greasy feel. In some small bodies, especially near areas of Rough stony land, where the sandstone conglomerates, etc., lie above the level of the Talladega slate, the surface soil is a fine sandy loam. As a rule the slate beds come within a few feet of the surface, outcropping in places, and when the land is cleared the surface covering is soon removed by erosion.

The subsoil consists of a bright-red to dark-red or yellowish-red, brittle silty clay to clay having the characteristic greasy feel and extending to a depth of from 20 to 40 inches, below which a mass of partially decomposed rock is encountered. The parent rock is found at an average depth of 15 to 20 inches. The greasy feel of the material is due to the presence of mica. Fragments of partially weathered slate and schist are abundant on the surface and more or less abundant throughout the soil profile, occurring in sufficient quantities to render the soil nonarable. The rocks from which the soil is derived are of variegated colors.

In some small areas the soil resembles a stony loam, having large platy fragments of slate scattered over the surface. Some small areas of Chandler stony loam (a type resembling the Talladega slate loam but having a pale-yellow to yellow subsoil, and generally occu-

pying lower and less well-drained positions), Talladega clay loam, and Talladega gravelly loam were included in the type as mapped, on account of their small extent and irregular distribution.

The slate formation giving rise to the Talladega slate loam in Cleburne County is a comparatively resistant one, as shown by the large and small fragments of rock present on the surface and the slight depth to the bedrock. Quartz and quartzite fragments derived from the lenses and veins which penetrate the slate formation are present. Except to cause areas of gravelly soil, these rocks have had little influence in the formation of the type, as the quartz is very resistant to weathering.

The Talladega slate loam is the most extensive type of soil in the county. It occurs as a belt running in a northeast-southwest direction across the northern and western parts of the county, having an average width of 4 or 5 miles. A few isolated hills or mountains occupied by this soil are found in the Piedmont section, of which Turkey Heaven, Ross, Kemp, and Bald Mountains are examples.

This soil has a very rolling to hilly or mountainous topography and lies at elevations ranging from 1,200 to 2,000 feet. It represents an ancient plateau, so thoroughly dissected that it now consists of narrow-crested, irregular, winding ridges, knobs, and rounded hills. Some of the broader divides, gentle slopes, and lower rolling country are under cultivation. Generally the fields are abandoned after a few years, as erosion is so active that the soil is washed off, leaving the slate and clay formation exposed. The greater part of the type is too uneven of surface and too steep and rolling for the profitable production of crops.

From 95 to 99 per cent of this type is covered at the present time with forests of longleaf and shortleaf pine, oak, hickory, ash, and mountain laurel. Much of this is second growth.

Very little of this type is under cultivation. The principal crops are corn and cotton, of which fair yields are obtained. The type is best suited to stock raising and fruit growing. The soil is well suited to the growing of grasses, such as Bermuda grass and lespedeza, which afford excellent pasturage. Very little of it is used for pasture at present. Some small orchards are planted on this soil, and these do exceptionally well.

Most of the Talladega slate loam is held by lumbering and mining companies. The land usually sells for $2 to $5 an acre. In some cases as high as $20 an acre is received for good forest land.

TALLADEGA GRAVELLY LOAM.

The soil of the Talladega gravelly loam varies from a yellow to yellowish-gray silty loam, or in some places fine sandy loam, to a dark-gray to reddish silty clay to clay loam, with an average depth

of about 6 inches. The subsoil to a depth of 36 inches or more is a yellowish-red to red clay loam to clay having a greasy feel. Small fragments of quartz varying in size from less than an inch to 2 inches or more in diameter are scattered over the surface and throughout the soil section. Fragments of schist are also present on the surface. Soft, partially decomposed rock is frequently encountered in the subsoil and in places within the 3-foot section. The gravelly character of the soil is due to the resistance of quartz and schist rocks to weathering and the accumulation of the fragments of these formations through the soil. Small areas are more nearly a stony loam in type, but these were included with the gravelly loam, as they were not of sufficient extent to be mapped separately. The subsoil as a rule is crumbly and friable when dry, but becomes plastic and putty-like when wet.

While the Talladega gravelly loam is for the most part typical in derivation, there are some areas where the influence of sandstone and quartzite has given rise to a sandy loam soil. There are also some areas of Talladega clay and Talladega slate loam mapped with this type. The areas of variation are too small to be shown separately on a map of the scale used in the present survey.

An extensive area is formed of this type of soil. The largest continuous bodies are near and around Heflin and Fruithurst, and to the south and north of the Southern Railway.

The topography of the Talladega gravelly loam is rolling to hilly. It occupies the lower slopes of the Appalachian Mountain belt, the average elevation being from 100 to 200 feet lower than that of the Talladega slate loam. The ridges are broader and the slopes less steep than with the slate loam. The drainage of this type is good and often excessive along the water courses and steeper slopes.

A considerable part of the Talladega gravelly loam is cultivated, the principal crops being corn, cotton, and oats. It is a warm soil and rather retentive of moisture, and fair crops are assured even in unfavorable seasons. Cotton yields from one-third to three-fourths bale and occasionally as much as one bale per acre. Corn yields from 12 to 30 bushels and oats from 20 to 30 bushels per acre.

This is an exceptionally good soil for the production of apples, peaches, pears, and grapes. Very few orchards have been planted as yet. Both Irish and sweet potatoes do well. Strawberries and blackberries are also grown.

The land is usually tilled with small one-horse turning plows, scrapes, and sweeps. The depth of plowing rarely exceeds 4 inches. Corn is cultivated from three to five times. Cotton is chopped out soon after coming up and then hoed two or three times to keep the grass growth down. As a rule the crops are well cultivated. From

150 to 300 pounds of commercial fertilizers to the acre are used with cotton and corn. No system of crop rotation is practiced and the soil is therefore deficient in organic matter. The type is usually terraced to prevent erosion.

The original forest growth consisted of longleaf and shortleaf pine, ash, hickory, and oak. At present there is very little virgin timber on this type, the forested areas being mostly second-growth shortleaf pine, black oak, white oak, scrub oak, post oak, hickory, and ash.

Land of this type ranges in price from $10 to $40 an acre, depending upon location and improvements.

TALLADEGA CLAY LOAM.

The soil of the Talladega clay loam varies from a reddish clay loam to a grayish or buff-colored silt loam to silty clay loam, with an average depth of about 4 inches. In some areas a surface covering of gray to light-brown silt loam, 1 to 2 inches deep, is common, but in more typical areas this layer is entirely lacking. The subsoil consists of a yellowish-red to bright-red or brick-red clay loam or clay, having the characteristic greasy feel of the series. In some areas small fragments of quartz and slates are common on the surface, but these are not numerous enough to interfere with cultivation. In the lower subsoil beds of partially decomposed slates and schists with little admixture of clay are common.

This type is of small extent. The largest continuous bodies occur in the vicinity of Oak Level, and a number of small isolated areas lie south and southeast of these. This type is very closely associated with the gravelly loam, and there are included areas of Talladega gravelly loam which were too small to separate on the map.

The topography of the Talladega clay loam is very similar to that of the gravelly loam type. As a whole it has a more gentle slope, and more generally it occupies flat topped ridges and the gentle slopes at the head of drainage systems.

Corn and cotton are the principal crops grown on this soil. Corn yields from 12 to 25 bushels, and cotton from one-fifth to one-half bale per acre. Some grasses are also grown for hay. The acreage of oats is small, as the yield seldom exceeds 10 bushels per acre. Commercial fertilizers are used with both cotton and corn.

Systematic crop rotation is not practiced, and the soil is deficient in organic matter, as the result of the long-continued production of clean-culture crops. The seed beds are, as a rule, very poorly prepared, plowing rarely exceeding 5 inches. Most of the type is under cultivation, very little of it being timbered. It is subject to erosion, and care must be taken to prevent injury to the fields. This can be done by terracing or sowing grasses on the more rolling parts.

Land of this type is not valued as highly as the gravelly loam type, mainly on account of its distance from railroads. It sells for $8 to $20 an acre.

The following table shows the results of mechanical analyses of samples of the soil and subsoil of the Talladega clay loam:

Mechanical analyses of Talladega clay loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay.
		Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent*	*Per cent.*
414337	Soil	1.4	1.7	0.9	1.5	4.0	57.3	32.9
414338	Subsoil	.5	.6	.4	.7	2.4	56.1	39.2

Clarksville Series.

The surface soils of the types included in the Clarksville series are gray. The subsoils are yellow and usually a silty clay in texture, and they are frequently underlain by a reddish substratum. Cherty material is usually present in varying quantities, considerable areas being gravelly from the surface downward. These soils occur over both level and undulating uplands and rough, hilly country, with steep slopes. In the smoother areas chert and stone are less abundant. These soils in places are derived from cherty limestone. Those areas carrying little chert appear to be derived from limestone which originally carried less chert than that giving rise to the gravelly and stony areas. The soils of this series are typically and extensively developed in northern Alabama, Tennessee, and Kentucky.

Clarksville stony loam.

The Clarksville stony loam consists of a gray or brown to drab-colored silt loam to fine sandy loam, with an average depth of 8 inches, the color gradually changing to yellowish gray as the subsoil is approached. Scattered over the surface and throughout the soil are varying quantities of chert and other siliceous rock fragments ranging in size from small gravel to fragments 12 inches in diameter. The proportion of such coarse material varies from 15 per cent of the soil mass to a condition, usually occurring on the steeper slopes, where there is little fine earth present. When dry the surface has a whitish appearance and an ashy feel, and the land is generally called "white land," "ashy land," or "piney-woods land."

The subsoil consists of a yellowish-brown to reddish-brown silty clay to clay loam, with occasional areas showing a fine sandy clay or clay loam. Below 30 inches there is usually a deepening of the red color. Bands of weathered and brown siliceous limestone are often found within the 3-foot section, but very little fragmentary rock is usually found in the subsoil.

The Clarksville stony loam is of very small exten occurring only in the extreme northwestern corner of the county on the lower slopes and foothills on the west side of the main mountain chain. It lies in a body of less than 1 square mile.

This is a residual type, derived largely from the weathering in place of Knox dolomite, a cherty limestone rock. The calcareous constituents have been dissolved and carried away in the drainage sections, leaving the impurities and the hard, flinty material to form the soil. Although it occupies the lower slopes of the mountains, the topography of the Clarksville stony loam is broken to rough. Drainage is excessive and the surface is badly eroded. A very small proportion of this land is cleared, the more broken parts being in timber. On account of its surface features and open structure it is apt to be droughty.

Where it is practicable to give proper cultivation, corn and cotton do fairly well on this soil. Corn yields from 15 to 25 bushels and cotton from one-fourth to one-half bale per acre. Commercial fertilizers are used to get these results. Very little attention is given to the rotation of crops. This soil is suited to the production of fruits, especially apples and peaches, but the distance and lack of proper facilities for shipping to market are drawbacks to present development along this line. The rough timbered lands are well adapted to the raising of sheep and goats.

The rougher areas of the Clarksville stony loam are more valuable for their timber than as land for agricultural purposes. Much of this land is held by lumbering and mining companies. The price ranges from $3 to $20 an acre.

Dekalb Series.

The surface soils of the types included in the Dekalb series are gray to brown, and the subsoils commonly some shade of yellow. The soils are derived, through weathering, from sandstone and shale, Silurian to Carboniferous in age. The surface features consist of gently rolling table lands, hills, and mountains.

The Dekalb series is extensively developed in the Appalachian region, but only a small area of two types occurs in Cleburne County.

DEKALB STONY LOAM.

The Dekalb stony loam consists of a grayish to brownish fine sandy loam to silty loam, from 4 to 12 inches deep, underlain by a yellowish to reddish heavy sandy loam to sandy clay. In some small areas the subsoil is a bright red to dark red, although the more typical areas are yellowish in color. Fragments of rock, mostly sandstone, sandstone conglomerate, and calcareous shales, are scattered over the surface and throughout the soil and subsoil. The subsoil rests upon

variegated colored slates, usually from 2 to 10 feet below the surface, as shown by cuts along roads.

This type is derived from the weathering of the Weisser sandstone and conglomerates. It occupies the escarpments and lower slopes and foothills of the chain of mountains in the northern part of the county, along a depression or valley running from east to west. It occurs in narrow strips and small, detached areas.

The topography is rough and broken, but less so than that of surrounding uplands. The soil is excessively drained, except on the more undulating talus slopes. The streams are mostly intermittent, but during the rainy season are very rapid, as they rise in the mountains and have an abrupt fall.

The Dekalb stony loam originally supported a growth of longleaf and shortleaf pine, most of which has been cut for timber. The present growth consists of shortleaf pine, white oak, blackjack, chestnut, hickory, black gum, and red oak, with some sweet gum. Very little of the type is timbered at present, as most of it has been cleared and put in cultivation.

As a whole the Dekalb stony loam is not well suited to agriculture. The more broken and steeper slopes may be used for pasture with fair success. The lower slopes and talus slopes are better suited for farming. The soil produces fair yields of cotton and corn, and is well suited to truck crops, especially melons, beans, peas, and potatoes. It is rather porous and warms up early in the spring. Fruits do exceptionally well, although little care is given to orchards.

The type as a whole is very deficient in humus. Very little attention is given to the growing of legumes in rotation with other crops, commercial fertilizers being depended upon for the upkeep of the soil. As a rule the seed bed is not properly prepared, plowing being too shallow. The rougher and steeper slopes should remain in forest. Lands of this type are valued at $5 to $18 an acre.

DEKALB FINE SANDY LOAM.

The soil of the Dekalb fine sandy loam is a gray, dark-gray, or yellowish-gray to reddish-brown fine sandy loam having an average depth of about 8 inches. The color becomes lighter and yellower below 3 inches as the amount of humus becomes less. Very few stones or gravel are present on the surface or in the soil. The subsoil is a yellowish to yellowish-red heavy sandy loam or friable clay loam to sandy clay. In some small areas the subsoil is a bright-red heavy sandy clay.

As mapped in Cleburne County the soil occupies the lower parts of slopes or depressions. In the depressions the soil is slightly heavier and retains moisture better than on the slopes. The subsoil also is slightly darker colored and generally a sticky sandy loam.

The Dekalb fine sandy loam is of very inextensive area and confined entirely to the northern part of the county. The topography is gently rolling, with sufficient drainage on the slopes. Some of the small areas are poorly drained in the lower depressions, as to the north of the Seaboard Air Line Railroad, near the State line.

The Dekalb fine sandy loam is a warm, early soil, well suited to the growing of fruits and truck crops such as apples, peaches, melons, cucumbers, and potatoes. Corn yields from 15 to 25 bushels and cotton from one-half to three-fourths bale per acre. Cowpeas make a rank growth and heavy yield. Grasses do well. But little attention is given to the growing of legumes.

The value of land of this type varies from $10 to $30 an acre, according to location and improvements.

Armuchee Series.

The Armuchee series includes types with brown to reddish-brown soils and red subsoils with prevailing silty clay to silty clay loam texture. These soils occur as flat to gently rolling valley lands. They are derived from interbedded fine-grained sandstone and shales, with included beds of calcareous shales or limestone.

Armuchee clay loam.

The soil of the Armuchee clay loam consists of a reddish-brown to brown clay loam carrying a high percentage of silt, and from 5 to 12 inches deep, with an average depth of about 8 inches. The subsoil is a reddish clay or clay loam, usually friable and crumbly when dry, but more plastic when wet. Fragments of shale and sandstone are present on the surface and throughout the soil profile, but not in sufficient quantities to interfere with cultivation. In a few places the greater part of the surface soil has been removed by erosion, leaving the red clay material exposed. Such areas are very small in extent and usually occur on the steeper slopes. At the foot of the slopes and along the small drainage ways the soil becomes deeper and heavier as a result of the washing of the surface materials from the higher levels. Such areas are included in the clay loam type, as they are too small to be separated on a map of the scale used.

This type occurs in a few small areas along Terrapin Creek, in the extreme northern part of the county. It is derived mainly from shales of variegated color. It is also slightly modified locally by material from a red sandstone lying from 3 to 5 feet below the surface, which in places causes the subsoil to be a sandy clay in texture.

The topography of the Armuchee clay loam is gently rolling and the type as a whole is well drained. Practically all of this soil is

in a good state of cultivation. The main crops are corn, cotton, and oats. Corn produces from 25 to 50 bushels, cotton from one-half to three-fourths of a bale, and oats from 15 to 30 bushels per acre. Grasses and cowpeas are grown for hay and forage. The soil is well adapted to fruits, such as apples, peaches, pears, plums, and grapes. Very little attention is paid to the growing of legumes in rotation with other crops to improve the soil. Corn and cotton are grown year after year on the same field without a change. This soil responds readily to the application of commercial fertilizers, but much better results are obtained with the use of barnyard manure. The soil is usually plowed to a depth of only 4 or 5 inches.

The original forest growth on the type consisted of pine, oak, and hickory.

The Armuchee clay loam is recognized as one of the best soils of the Appalachian Mountain belt. It sells at from $15 to $35 an acre, depending on location and improvements.

The results of mechanical analyses of samples of the soil and subsoil of this type are given in the following table:

Mechanical analyses of Armuchee clay loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay.
		Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
414339	Soil	1.6	11.6	7.4	20.7	9.3	26.9	22.6
414340	Subsoil	1.6	11.1	6.0	13.9	6.4	26 9	33.9

LOUISA SERIES.

The soils of the Louisa series are predominantly gray to light gray and the subsoils red. The material is derived from talcose and micaceous schists and imperfectly crystalline slates. The structure is unfavorable to the maintenance of good tilth, the soils having a tendency to bake and check on drying.

LOUISA CLAY LOAM.

The Louisa clay loam is the Piedmont equivalent of the Talladega clay loam. The surface soil consists of a grayish-red to reddish-brown silty clay loam to clay loam from 5 to 8 inches in depth. The subsoil consists of a dull-red to brick-red, compact clay having the characteristic greasy feel of the Louisa series, which is due to the presence of mica or incompletely decomposed material from the parent gneiss and schist rocks. Mica is not so conspicuous in the surface soil as in the subsoil. Upon the surface and scattered throughout the soil profile in places are fragments of quartz and schistose rock, but such coarse material is not present in sufficient quantities to in-

terfere with cultivation. The Louisa clay loam is typically developed in and around Ranburne and Hightower in the southeast corner of the county. Smaller, detached areas are found around Beasons Mill, Leaventon and Concord Churches, and west of the Tallapoosa River close to the southern boundary of the county.

The topography is rolling to gently rolling, the type occupying ridges, hills, and the more gentle slopes of the Piedmont country in the southeastern part of the county.

Corn, cotton, wheat, oats, and grasses, in the order named, are the important crops. Corn yields from 12 to 20 bushels, cotton from one-third to three-fourths bale, wheat from 6 to 12 bushels, and oats from 18 to 35 bushels per acre. Cowpeas are grown for forage, yielding from three-fourths of a ton to one and one-half tons per acre. Commercial fertilizer containing 10 per cent phosphoric acid, 2 per cent nitrogen, and 2 per cent potash is used with good results on both cotton and corn. What little stable manure can be obtained is used, giving better results, as a rule, than the commercial fertilizer. With proper care this soil produces a good quality of fruits. Apples, peaches, pears, grapes, and plums do especially well. At present there are several small orchards upon the type, and many of the farmers are growing enough apples and plums for home use.

No system of crop rotation is practiced on the Louisa clay loam, the same fields being planted to corn or cotton year after year. As a result the soil is deficient in organic matter, notwithstanding which the crops are not greatly affected by either dry or wet seasons, though of course the yields are much below what they might be. In the preparation of the seedbed the soil is plowed too shallow, especially in view of the tendency of the fields to wash when not properly terraced. Small areas present a spotted appearance and a brighter red color as the result of erosion.

Most of this type is cleared and under cultivation. A part of it is covered with a second growth of pine, oak, and hickory. The general conditions on the type are good. Land values vary from $10 to $30 an acre.

LOUISA SLATE LOAM.

The soil of the Louisa slate loam consists of a grayish to light-brown or medium-brown silt loam to silty clay loam, grading into a yellow silty clay at a depth of about 2 to 4 inches. The subsoil, beginning at about 4 to 10 inches, consists of a dull-red to bright-red or yellowish-red silty clay or clay having the characteristic greasy feel of the Louisa soils. The underlying rock formations usually come within 2 or 4 feet of the surface and often outcrop over large areas. The surface is usually strewn with platy fragments of schist and sharp, angular fragments of quartz. This schist is found more generally on

the steeper slopes, where erosion has been most active in removing the soil particles, but on some ridges very few fragments are found.

The largest and most typically developed area lies between Bell Mills and Hightower. Other typical tracts lie to the east and west of Turkey Heaven Mountain, extending west almost as far as Abel. To the east of Bald Mountain, in the vicinity of Harmony Grove School, the soil is a phase of the main type. Here it consists of a gray to brown sandy loam, underlain at about 8 inches by a red sandy clay, silty clay, or clay. Areas of the Louisa clay and the Louisa gravelly loam, too small to be separated on a map of the scale used, are also included with it.

The topography of the Louisa slate loam is prevailingly strongly rolling to hilly, with steep slopes and rather sharp ridges and hills. Some of the less steep slopes are cultivated, while the steeper are more subject to erosion and can not be farmed with safety. As a whole this type does not wash as much as would be expected from its hilly topography, probably because of the protection afforded by rock fragments on the surface, although areas where the surface covering has been removed are seen in many places.

Very little of this type is under cultivation at present, the greater part of it being forested with a scrubby second growth of pine, oak, hickory, and other trees.

Cotton and corn are the principal crops. Some oats are also grown. Cotton produces from one-third to one-half bale per acre, with an application of 150 to 250 pounds of fertilizer, and corn from 15 to 25 bushels per acre. Oats yield from 10 to 15 bushels per acre. Bermuda grass and lespedeza afford good pasturage.

Very little of this type is considered good farming land. It ranges in price from $3 to $15 an acre.

LOUISA GRAVELLY LOAM.

The soil of the Louisa gravelly loam consists of a gray to reddish-brown silty clay loam to clay, with an average depth of about 6 inches. The subsoil typically consists of a dull to brick-red clay loam to clay having the characteristic greasy feel of the Louisa soils. Along the lower levels of the drainage systems the soil has a depth of 12 to 15 inches, the result of wash from the adjacent uplands. At the heads of drainage the subsoil is often pale yellow to reddish yellow, but these phases are small in extent. This type is very similar to the clay loam, differing only in the quantity of stone and gravel scattered over the surface and throughout the soil.

Small bands and lenses of quartz are common throughout the rock formation giving this type, which accounts for its very gravelly condition. Fragments of schist as well as quartz are also common on the surface. The underlying schist formation often comes within a few

inches of the surface and the partially weathered rock lay within the 3-foot section in most of the borings made.

This type has an extensive development in the Piedmont Plateau in the southern and southeastern part of the county. An area of a phase having a sandy surface soil occurs to the north of Arbacoochee, between Bell Mills and Evans Bridge. There are no other large or continuous areas of this phase, but small, isolated areas are common. Some small areas where the subsoil has been exposed by excessive erosion present a spotted appearance of gray, red, and yellow colors. These were not continuous enough to be separated as an eroded phase.

The Louisa gravelly loam has a gently rolling to rolling or hilly topography. It occupies hills, slopes, and ridges in the southern part of the county. Terracing is usually necessary to prevent erosion. The slopes, as a rule, are not very steep, except as streams are approached, where the topography becomes more broken and rough.

A large part of this type is under cultivation, being farmed to corn, cotton, wheat, oats, hay, cowpeas, sorghum, and fruits. Corn yields from 12 to 18 bushels, cotton from one-third to one-half bale, and wheat about 6 bushels per acre. Cowpeas and sorghum are grown to a small extent for forage. Apples and peaches do well, though few large orchards are planted as yet. Not enough cattle and hogs are raised to supply the home needs.

There is no system of crop rotation generally practiced on this type, and it is not unusual for cotton or corn to be grown continuously on the same field for several years. This soil, like other upland types, lacks organic matter. It has a low water-holding capacity and crops often suffer from drought. Plowing is generally shallow.

Most of the forested areas support a second growth, consisting mainly of pine, white oak, black oak, and hickory. Land of this type sells at from $5 to $30 an acre.

LOUISA GRAVELLY SANDY LOAM.

The soil of the Louisa gravelly sandy loam consists of a gray to brown gravelly fine sandy loam having an average depth of about 8 inches. The subsoil is a bright-red to yellowish-red clay loam to clay, often friable and crumbly, and having a decidedly greasy feel, caused by the presence of mica. In some places the subsoil becomes a pale-yellow clay loam to sandy clay, and in depressions and around the heads of streams the soil is slightly heavier, becoming a heavy fine sandy loam.

The surface of this type is covered with fragments of quartz and quartzite, principally the latter, varying from less than an inch to about 3 inches in diameter. Numerous bands or lenses of quartz a few inches in thickness running through the schist rock are the cause of this very gravelly condition.

The type is extensive, occurring in large though isolated bodies throughout the Piedmont belt. The most typically developed area lies along the Georgia-Alabama line in the southeastern part of the county.

The topography is rolling to hilly, the type usually occupying the crests of ridges or hills. Drainage is generally excessive, and terracing is necessary to prevent erosion.

The greater part of the Louisa gravelly sandy loam is under cultivation, corn, cotton, oats, cowpeas, sorghum, truck crops, and fruits being grown. Commercial fertilizers are applied to the growing crops. Cotton yields from one-fourth to one-half bale per acre.

Corn yields from 10 to 18 bushels per acre with ordinary applications of fertilizer, while as high as 20 to 35 bushels per acre are obtained with the use of 150 to 200 pounds of fertilizer. Better results are secured with barnyard manure than with fertilizer. Very few oats are grown, as the production seldom exceeds 15 to 18 bushels per acre. Sorghum is grown mainly for sirup. Vegetables and garden products do well, this soil being well suited to truck farming. No system of crop rotation is practiced on this type, cotton and corn being planted on the same fields year after year. This explains the lack of organic matter in the cultivated soil.

Forested areas support a growth of pines, white, black, and scrub oak, and hickory.

There are several thriving orchards on this soil. Apples, apricots, and peaches do well, the appearance and quality of the apples being especially good.

The Louisa gravelly sandy loam sells at $5 to $35 an acre, depending upon location and improvements.

Cecil Series.

The Cecil series includes the most important and widely distributed soils of the Piedmont Plateau. The surface soils are gray, brown, or red; the subsoils consist of red clay. Quartz fragments and mica flakes are usually present. Rock outcrops are rare, but fragments and bowlders of the parent rock are found in places on the surface. The topography is rolling to hilly, with level to undulating areas in situations where stream erosion has not been particularly active. The Cecil soils are of residual origin and are derived principally from granite and gneiss, which have weathered to relatively great depths. The drainage as a rule is excellent.

CECIL CLAY LOAM.

The soil of the Cecil clay loam consists of a reddish-brown to dark-red clay loam to clay or occasionally a sandy clay loam, from 4 to 12 inches deep, with an average depth of about 8 inches. The subsoil

consists of a stiff red clay, usually tough and compact, though a portion of it is rather brittle and crumbly. Small fragments of quartz and of the parent hornblende gneiss are scattered over the surface and throughout the soil, but not in sufficient quantities to interfere with tillage. Some areas of gravelly and stony loams are also included, the areas being too small to be shown on a map of the scale used in the present survey. Another variation not mapped for the same reason consists of a heavier phase found in low areas and around the heads of streams. The soil here is deeper as well as heavier, having been built up by wash from higher-lying areas.

Locally this soil is called "red lands," and it is considered a stronger soil for general farming than the soils of the Louisa or Talladega series.

This type is distributed in rather small areas over the extreme southern part of the county, in the Piedmont belt. The largest areas are found along the county line. Only a few small areas occur on the west side of the Tallapoosa River.

The Cecil clay loam occupies rolling country in which there are many gentle slopes and some rather high hills. It is well drained. Erosion has not affected this soil to the extent that it has affected most of the other clay loam soils, as it is quite absorptive of moisture. On the more sloping tracts good systems of hillside terraces are kept up. As a rule crops suffer from drought in dry seasons.

This is the strongest soil of the county and well adapted to the growing of corn, cotton, wheat, and oats. Corn yields from 30 to 60 bushels, cotton from one-half to 1 bale, wheat from 10 to 20 bushels, and oats from 20 to 40 bushels per acre. Commercial fertilizers are used with corn and cotton, though not so much as on the other upland soils. As a rule preparation of the seed bed is good, except that the plowing might well be deeper. The soil is deficient in organic matter. There is no systematic rotation of crops practiced.

The Cecil clay loam brings from $10 to $40 an acre. The distance to markets and railroads keeps down the price of land, the nearest railroad being in some instances 12 miles away.

CECIL GRAVELLY LOAM.

The soil of the Cecil gravelly loam to a depth of 6 to 10 inches consists of a pale-yellow to dark-red or reddish-brown clay loam, containing in places a relatively large proportion of fine sand. This is underlain by reddish-yellow to brick-red silty clay to clay, which becomes tough to brittle in the lower portion. The soil carries enough small, angular quartz fragments to interfere somewhat with cultivation. These fragments vary in size, though most of them

are less than 1 inch in diameter. A few fragments of gneiss and schist are also present.

The topography is rolling to gently rolling, with some moderately steep slopes, and erosion takes place where the soil is not properly terraced. As a rule the fields on this type are now protected in this way. The greater part of the type is under cultivation, the principal crops being cotton, corn, oats, and wheat. The soil is more deficient in organic matter than the other soils of the Cecil series. Although it is considered a productive soil, the yields are rarely as large as on the Cecil clay loam. The general system of farming is about the same as on the other Cecil soils.

CECIL STONY CLAY.

The Cecil stony clay consists of a reddish-brown to dark-red clay loam to clay, carrying stones and having an average depth of about 6 inches, underlain by a bright-red to brick-red clay of a more compact and tougher structure than the soil. Fragments of quartz and gneiss from 1 to 6 inches in diameter are abundant on the surface. While these stones often interfere with cultivation, they have the compensating advantage of helping to hold the soil in place against erosion. Included with the Cecil stony clay are some areas of Louisa gravelly loam and Cecil clay which were too small to map.

The Cecil stony clay occupies steep slopes, gentle slopes, knolls, and gently rolling and undulating valley lands. As a whole it is more rolling and more subject to wash than the Cecil clay loam.

This type occurs as isolated areas to the west and south of Turkey Heaven Mountain, in the southern Piedmont Plateau belt. A small area is found about 2 miles southwest of Trickem.

This type is mostly in cultivation, the larger part of it being planted in cotton and corn. The methods of farming are very similar to those on the Cecil clay loam. Some of the smaller and more stony areas are timbered with white oak, black oak, hickory, and pine. Land of the Cecil stony clay sells for $10 to $20 an acre.

Huntington Series.

The Huntington soils are light brown to brown, and the subsoils yellow to light brown. Frequently there is little change in the color or the character of the material from the surface downward. The soils are developed in the limestone and Appalachian Mountain regions in the first bottoms of streams. They consist of material derived from limestone, sandstone, and shale soils.

HUNTINGTON SILT LOAM.

The Huntington silt loam consists of a yellowish-brown to dark-brown silt loam with an average depth of 12 inches, underlain by a

lighter brown to gray or yellowish-brown silt loam, or with alternating layers of fine sandy loam or sandy loam and silt loam or silty clay loam. In the narrower bottoms, where it is often influenced by wash from the adjacent uplands, the surface soil is even more variable in color and texture than in the wide bottoms. In places it has a reddish tinge.

This type occurs as first-bottom lands along the Tallapoosa River. Except for overflow it is a well-drained soil and easily tilled, though when plowed in a wet condition it clods and bakes very easily.

The Huntington silt loam is the best corn soil in the county and is largely used for this crop. Yields of 20 to 60 bushels have been produced. Wheat and oats do well, wheat producing from 15 to 25 bushels and oats from 30 to 50 bushels per acre. Some cotton is grown, but it does not do very well, as the plants produce too much stalk and many of the bolls do not ripen before frost. The soil is well suited to grasses, although they are not extensively grown at present. Johnson grass yields from 1 to 2 tons of hay per acre. Millet also does well. Orchards on the higher and better drained areas are apparently in good condition. Very little attention is given to the systematic rotation of crops. Much of the land is planted to corn exclusively year after year. The soil is deficient in organic matter as the result of long-continued clean cultivation. Commercial fertilizers are used for the upkeep of the soil. A systematic crop rotation, artificial drainage, and good preparation of the seed bed are essential for best results from this soil.

Almost the entire area of this type is under cultivation, except immediately along the stream courses, where there is a growth of sycamore, cottonwood, ash, sweet gum, and a smaller undergrowth.

The Huntington silt loam was one of the first types to be used for agricultural purposes in the county and is still in a fair condition. Very little of the land is for sale. It is held at $20 to $60 an acre.

HUNTINGTON FINE SANDY LOAM.

The soil of the Huntington fine sandy loam is a light-brown to yellowish-brown loamy fine sand or fine sandy loam, 8 to 12 inches deep, underlain by a subsoil of lighter brown to brown loam, fine sandy loam, silt loam, or interstratified beds of material of variable texture and color. This type has a slightly larger extent than the Huntington silt loam and like it is mapped only along the Tallapoosa River, where it occupies small natural levees and slightly higher ridges in the river flood plain.

The surface of the Huntington fine sandy loam consists of slight swells and small ridges with a higher elevation than the surrounding soils. The porosity of the soil and subsoil also contributes to the

drainage of the type. The type is subject to overflow and crops are damaged during high stages of the river.

Practically all of this type is cleared and under cultivation. It gives good yields of corn, cotton, wheat, oats, potatoes, sorghum, cowpeas, grasses, and truck crops. Corn is the chief product of this soil, producing 25 to 50 bushels per acre. Cotton seems to do better than on the Huntington silt loam. Much of this type is sown to wheat and oats, which produce fair yields.

The Huntington fine sandy loam is a highly prized soil. It is rarely sold alone. The larger areas are held at $20 to $50 an acre.

Holly Series.

The Holly series is characterized by the gray color of the surface soils and the mottled gray and yellow or brown color of the subsoil. These soils are developed in first bottoms and are subject to frequent overflow. The drainage is poor, and in their present condition they are best suited to grasses. The component material is wholly alluvial and is derived from the soils of the sandstone and shale formation of the Appalachian Mountains and from the limestone soils of the Limestone Valleys and Uplands.

HOLLY SILT LOAM.

The soil of the Holly silt loam to a depth of 6 to 8 inches consists of a gray to light-gray or grayish-brown and often ashy white silt loam or silty clay loam. The subsoil is a compact yellow or yellowish-gray silt loam or silty clay or clay, mottled with shades of brown and yellow, and becoming heavier and more mottled with bluish and drab colors in the lower portion.

The Holly silt loam is inextensive, the largest continuous area lying along the Tallapoosa River at its junction with the Chulafinnee Creek. The type occupies poorly drained, overflowed first bottoms. The material forming the soil has the same source of origin as that of the associated Huntington silt loam, lack of drainage being the essential difference. The topography is almost flat, and in some cases the type occupies sags or depressions adjacent to the uplands. The soil as a whole is very cold and clammy, remaining in a soggy condition throughout most of the year. The poor drainage has prevented aeration, with the result that the soil has not assumed the brown shades of the better-drained alluvial soils. Oxide of iron concretions are present in the lighter parts of the soil. These lands are locally known as "gray," "white," or "ashy" lands.

Very little of the Holly silt loam is under cultivation. In its present condition it is better adapted to moisture-loving grasses than to other valuable crop plants, and most of it is sown to grass. Corn and oats do fairly well on the better-drained areas in seasons of light rain-

fall. Very little attention has been given to draining this soil, though some farmers employ open ditches and a few have installed tile drains. Land of this type is held at $10 to $15 an acre.

Holston Series.

The types included in the Holston series have yellowish-brown to brown surface soils and yellow subsoils. The series is developed on old alluvial terraces, in places standing 200 feet or more above the first bottoms of the streams. The soils consist principally of material washed from sandstone and shale soils, and on this account are somewhat less productive than the Elk soils, which they closely resemble, but which contain more limestone material. The Holston soils are generally underlain by sandstone or shale, and in places the lower subsoil seems to be partly residual from these rocks.

HOLSTON FINE SANDY LOAM.

The Holston fine sandy loam consists of a gray to yellowish-brown silt loam to fine sandy loam, with an average depth of about 7 inches, underlain by lighter brown to reddish-yellow silt loam or fine sandy clay or clay loam. In the lower depths, as shown in road cuts and deep gullies, the subsoil becomes a red to bright-red sandy clay to clay. On some of the knolls where erosion has been more active the surface soil is seldom over 3 to 4 inches deep, while in other places it is entirely lacking, the reddish-yellow subsoil being exposed.

The Holston fine sandy loam occupies gently rolling to sloping terraces or second bottoms along the Tallapoosa River. It is of small extent, the largest areas lying about 6 miles south of Heflin.

The soil as developed in Cleburne County is typical. The surface soil seems to be alluvial, apparently having been deposited by the river when it was at a higher level, while the subsoil is residual, being derived from the underlying sandstones and shales.

This is a warm, loose, well-drained soil, and most of it is under cultivation, though some parts support a growth of pine, hickory, oak, and persimmon. All of it could be farmed with fair success. The principal crops are corn and cotton. Corn produces from 10 to 20 bushels and cotton from one-third to one-half bale per acre. Some oats are grown, producing from 8 to 16 bushels per acre. Melons and other truck crops do well. Bermuda and crab grass afford good pasturage on this soil. Land of this type of soil is held at $10 to $15 an acre.

Toxaway Series.[1]

The Toxaway soils are light brown to dark brown. The subsoils are yellowish brown to dark brown. This series occupies the first

[1] Since the completion of this survey the Toxaway series has been redefined. The soil mapped as the Toxaway silt loam in this county would now be considered the Congaree silt loam.

bottoms of streams of the southern Appalachian Mountains, and consists of material derived from the soils of this region, principally from granitic, gneissic, and schistose rocks. It is largely subject to overflow. Along the outer margins there is more or less influence from colluvial material from adjoining slopes.

TOXAWAY SILT LOAM.

The Toxaway silt loam consists of a dark-brown to gray silt loam to loam from 8 to 15 inches deep, underlain by a yellowish-brown or gray silt loam to silty clay loam. In some places the surface soil is a fine sandy loam, with the subsoil a grayish or white fine sandy loam or silty clay. A few narrow strips of second-bottom brown silt loam occurring along Little Terrapin, Cane, and Cahulga Creeks are included in this type.

The Toxaway silt loam is typically developed along the streams rising in or flowing through the Appalachian Mountain belt in the western and northern parts of the county, including Cahulga, Cane, Muscadine, and Terrapin Creeks, and their larger tributaries.

This is a first-bottom soil, subject to overflow. The surface as a whole slopes toward the streams, allowing the land to drain after the floods subside. There are, however, small areas lying in depressions that have poor drainage.

This is considered a good soil, being well adapted to corn, cotton, oats, and grasses. Corn produces from 20 to 60 bushels, oats from 25 to 50 bushels, and cotton from one-third to one-half bale per acre. Many areas give good results with truck crops.

Land of this type when sold alone brings from $15 to $25 an acre.

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

Mechanical analyses of Toxaway silt loam.

Number.	Description.	Fine gravel.	Coarse sand.	Medium sand.	Fine sand.	Very fine sand.	Silt.	Clay.
		Per cent.	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*	*Per cent.*
414335	Soil	0.1	0.5	0.9	8.4	18.1	56.9	15.1
414336	Subsoil	.2	1.8	3.6	14.2	13.5	49.5	17.1

CONGAREE SERIES.

The Congaree soils are brown to reddish brown. There is comparatively little change in color, structure, and texture from the surface downward, though occasionally grayish and yellowish mottling is encountered in the subsoil of poorly drained areas. These soils are developed in the overflowed first bottoms of the streams of the Piedmont region and those in the Coastal Plain issuing from the Piedmont. The material is derived from the soils of the Piedmont

region, with some admixture of wash from Appalachian soils, and in the Coastal Plains a slight admixture of wash from Coastal Plain soils.

CONGAREE SILT LOAM.

The soil of the Congaree silt loam varies from a gray or brown to red or reddish-brown silt loam to fine sandy loam, with an average depth of about 10 inches. The subsoil is a yellowish-brown, reddish-brown, or grayish-brown clay loam or silty clay loam. The lower subsoil is often mottled with yellow and brown. Mica is plentiful in the soil and subsoil, especially along streams flowing through the Louisa soils. As mapped along Lost Creek and the Little Tallapoosa River, in the southeastern corner of the county, some small areas of the Congaree fine sandy loam are included with this type. The sand represents wash from adjacent uplands of Louisa gravelly sandy soils.

The Congaree silt loam covers about 24 square miles, occupying first bottoms of streams rising in or flowing through the Piedmont Plateau belt. It consists of materials washed from the various upland soils of the Louisa and Cecil series and deposited along the stream beds. The type is subject to overflow, though some areas are well drained and inundated only during periods of extremely high water.

The Congaree silt loam is an easy soil to till, and the greater part of it is under cultivation. It has a comparatively high content of organic matter and is productive. Corn, cotton, and oats are the leading crops, in the order named. Corn yields from 25 to 45 bushels per acre. Cotton, which is usually planted only on the higher bottom areas, yields from one-third to one-half bale per acre. Oats do fairly well, but are subject to rust and smut. Fertilizer is used for the growing of cotton, but little or none with corn.

When sold alone the Congaree silt loam brings from $25 to $40 an acre.

Miscellaneous Material.

ROUGH STONY LAND.

Rough stony land comprises steep escarpments or bluff lines, precipices, and deeply eroded ravines. In the northern part of the county the type includes for the greater part the mountain crests and steep slopes. The surface is covered with large rock fragments and bowlders. The underlying sandstones, quartzite, and conglomerates also outcrop over the surface.

The type is excessively drained, and erosion is very active. The soil particles present consist chiefly of sandy materials. The color is usually a dark gray to brown on the surface, with a yellowish to reddish clay to sandy clay subsoil.

Rough stony land is found principally in the northwestern section of the county in the extension of the Blue Ridge Mountain belt; also on Oakey and Rattlesnake Mountains. Small, isolated areas are found along the western border of the county. In the extreme southwestern corner of the county Blue Mountain is mapped as Rough stony land.

The occurrence of this type is due mostly to the resistant rock formations, sandstone, quartzite, and conglomerates, which have given rise to the more prominent topographic features of the county.

As a rule the soil is hardly deep enough to explore with a soil auger, but in some small areas, such as coves, and at the heads of drainage systems, it is often 8 to 10 inches deep. A few areas may be farmed, but they are too small to have influence on the agriculture of the county. The type should afford some pasturage, although very little of it is used for that purpose at present. At the present time from 97 to 99 per cent of it is in forest. The original vegetation consisted of a thick growth of longleaf and shortleaf pine, chestnut, oak, etc., but in recent years most of the marketable timber has been removed. The present growth consists of shortleaf and longleaf pine, hickory, white oak, some mountain laurel, and chestnut. Forest fires have done much damage to the growing trees.

Land of this type is valued only for its timber and minerals and most of it is held by companies. On account of its inaccessibility and remoteness from railroads it generally sells at a low price, from $1 to $5 an acre. Some of the areas supporting a better forest growth bring $10 an acre. There are some veins of iron on the type, but these are not worked to any extent at the present time.

SUMMARY.

Cleburne County, Ala., is situated along the Georgia State line in the northern third of the State.

It includes parts of the Appalachian and Piedmont physiographic provinces, separated in general by the bottoms of the Tallapoosa River. Its area is 568 square miles, or 363,520 acres.

The topography varies from rough, hilly, and mountainous in the Appalachian Mountain belt to gently rolling in the Piedmont belt. The elevation varies from a minimum of 850 feet in the Tallapoosa River valley to more than 2,000 feet in the Appalachian region. The drainage waters of the county find an outlet through the Tallapoosa and Little Tallapoosa Rivers and tributaries of the Coosa River.

The first settlements were made around Abernathy, Arbacoochee, and Chulafinnee, the settlers coming from Georgia, Tennessee, and North and South Carolina and being of English descent.

The population of the county in 1910 was 13,385. Heflin, Edwardsville, Fruithurst, Muscadine, Hightower, Ranburne, and Borden Springs are the principal towns in the county.

The climate is mild and healthful. There are no long periods of either heat or cold. The mean annual precipitation is 49.97 inches, the larger part falling during the growing season.

The average length of the frost-free period is over 200 days, giving ample time for the maturing of crops.

Only fair transportation facilities are available. The Seaboard Air Line serves the northern part of the county, where there is only a small area of tillable land, and the Southern Railway the central part, but the southern and southeastern parts are 12 to 20 miles distant from railroads.

Corn, cotton, oats, wheat, sugar-cane, cowpeas, and sweet and Irish potatoes are the principal crops, named in the order of their acreages.

Twenty-one soil types are mapped in the county. The upland soils of the Appalachian Mountain belt are grouped into the Talladega, Clarksville, Armuchee, and Dekalb series, and Rough stony land. The upland soils of the Piedmont belt fall into the Louisa and Cecil series. All the foregoing are residual. The alluvial soils consist of the Huntington, Holston, Congaree, Toxaway, and Holly series. The Talladega soils cover 55 per cent. of the entire county.

Of the Piedmont soils the Louisa gravelly loam is the most extensive type. The larger part of it is under cultivation. It is considered a good soil for corn and cotton. The Louisa clay loam occupies a large area in the southeastern corner of the county. It is considered the best soil of the Louisa series. The Louisa slate loam is rather limited in extent. Very little of it is under cultivation, the larger part of it being forested. The Louisa gravelly sandy loam occurs in isolated areas in the southern and southeastern part of the county. It is planted to corn and cotton principally and produces fair yields of each. This soil washes more than the others of the series.

The Cecil series is represented by the clay loam, gravelly loam, and stony clay types, which are locally known as the "Red Lands." These soils occur principally in the vicinity of Turkey Heaven Mountain. They are considered the most productive upland soils of the county and good yields of corn, cotton, oats, and wheat are obtained on them. Land of the Cecil types sells at $15 to $40 an acre.

The Appalachian soils are less important agriculturally than the Piedmont soils. The Talladega slate loam is one of the most extensive types in the county. The larger part of this type is too rough and stony for cultivation. From 95 to 98 per cent of it is forested. The Talladega gravelly loam is rather an extensive type, the larger part of which is under cultivation, being planted principally to corn

and cotton. The Talladega clay loam, which occurs mainly in the vicinity of Oak Level, in the north-central part of the county, is of small extent. Nearly all of it is under cultivation, producing good yields of corn and cotton.

Of the Dekalb series the stony loam is the most extensive type. It occupies the foothills of the mountain ranges. The larger part of it is forested, being too stony for successful farming. The cultivated areas are almost exclusively planted to corn and cotton, which produce only fair yields. The Dekalb fine sandy loam is largely under cultivation. It is a better farming soil. Good yields of corn, cotton, and grasses are obtained.

The Clarksville stony loam occupies a small area in the extreme northwest corner of the county. Very little of it is under cultivation, as it is too rough and stony. At present it is forested.

The Armuchee clay loam is very limited in extent, occupying the more gentle slopes or inner mountain country of the northern part of the county. It is a productive soil for corn and cotton, and the larger part of it is planted to these crops. Farm conditions on this type are good. It is considered more productive than the surrounding Talladega and Dekalb soils.

Of the alluvial soils the Huntington silt loam and fine sandy loam are the most highly prized. Good yields of corn, sorghum, oats, wheat, and hay are produced. Cotton does not do so well.

The Holston fine sandy loam as mapped here is a terrace or second-bottom soil. It is well drained. Corn and cotton are the chief crops. It also gives good results with certain grasses and truck crops.

The Holly silt loam occupies first bottoms of the Tallapoosa River flood-plain belt. Poor drainage differentiates it from the Huntington. In its present condition it makes poor farming land. If properly drained, it could be made a productive soil.

The Congaree silt loam occupies the stream bottoms of the Piedmont Plateau country. It is a fertile soil, producing good yields of corn, cotton, oats, and grasses. Most of this type is in a high state of cultivation.

The Toxaway silt loam lies along the streams of the Appalachian Mountain belt. It is a very fertile soil and produces good yields of corn and cotton, with some hay and oats.

Rough stony land comprises the higher mountain ridges in the northern and southwestern part of the county. It is forested and has little or no agricultural value.

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[PUBLIC RESOLUTION—NO. 9.]

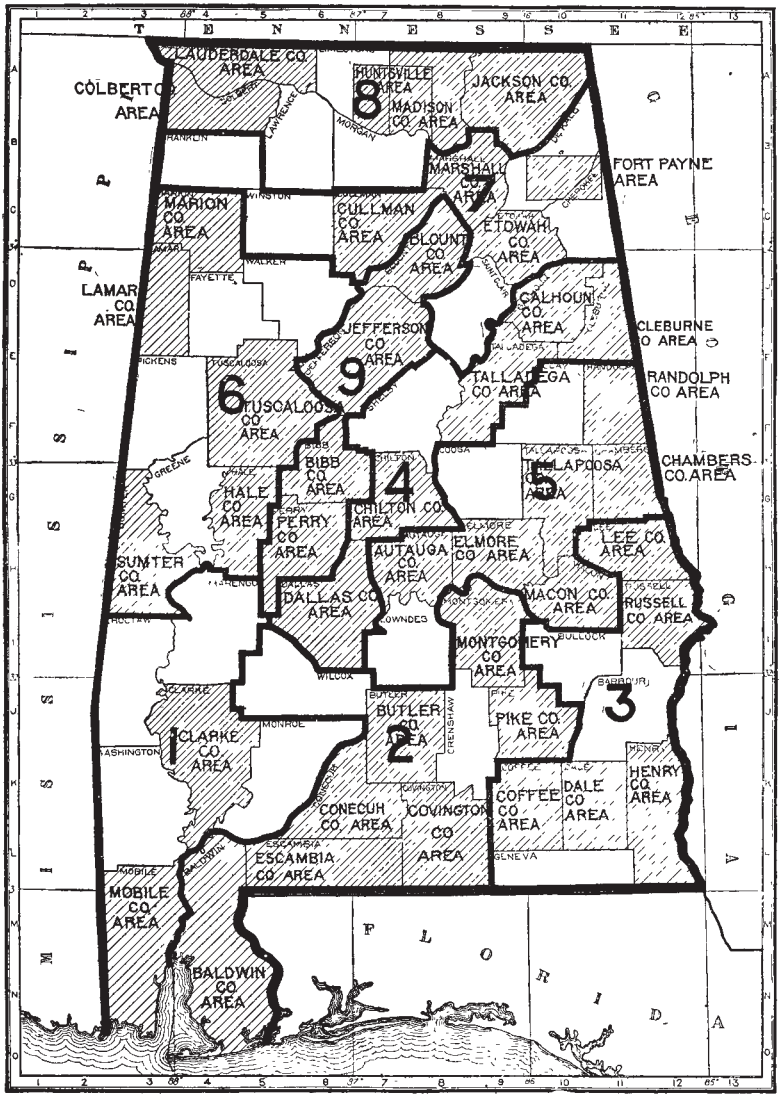
JOINT RESOLUTION Amending public resolution numbered eight, Fifty-sixth Congress, second session, approved February twenty-third, nineteen hundred and one, "providing for the printing annually of the report on field operations of the Division of Soils, Department of Agriculture."

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.]



Areas surveyed in Alabama.

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