

SOIL SURVEY OF THE STUTTGART AREA, ARKANSAS.

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LOCATION AND BOUNDARIES OF THE AREA.

Arkansas County is situated in the southeastern part of Arkansas and is the third largest county in the State, containing 1,062 square miles. It is bounded on the north by Prairie County; on the east and southeast White River separates it from Monroe and Desha counties, its southeastern corner approaching within 6 miles of the Mississippi

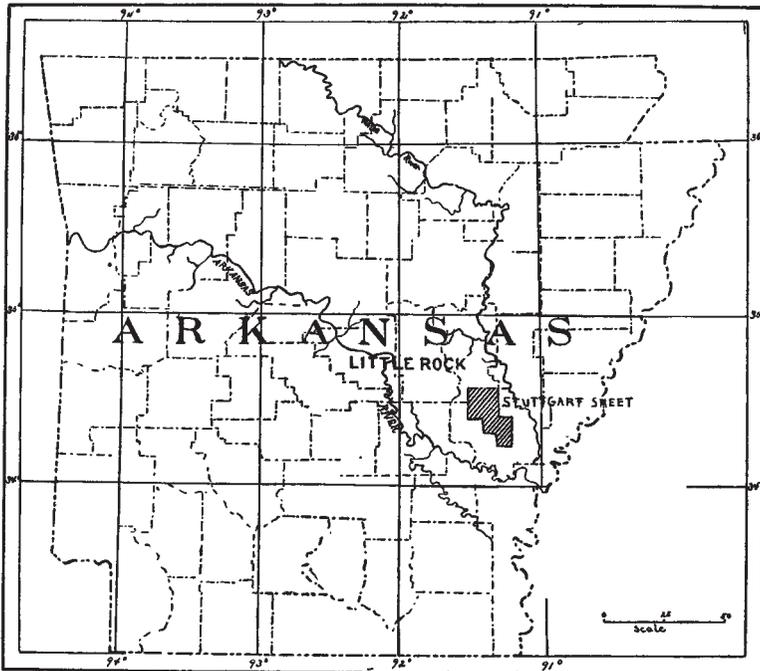


FIG. 17.—Sketch map showing area surveyed in Arkansas.

River near its junction with the Arkansas; the Arkansas River divides it from Desha County on the south, and on the west it is bounded by Jefferson County. It lies approximately between 91° and $91^{\circ} 35'$ west longitude and 34° and $34^{\circ} 35'$ north latitude. The area surveyed lies wholly within the county and comprises 251 square miles, commencing in the northwest part of the county and extending in a southeasterly direction, and including the towns of Stuttgart, Dewitt, and Almyra. Dewitt, with a population of less than 500, is the county seat, and Stuttgart, on the main line of the Cotton Belt Railway, has a population of about 1,200.

It is thought that the area surveyed includes all the different soil types of the county, with the exception of some alluvial types along the Arkansas River.

HISTORY OF SETTLEMENT AND AGRICULTURAL DEVELOPMENT.

Arkansas, in common with many other States of the Mississippi Valley, claims De Soto as her first white visitor. This explorer crossed the Mississippi River into the State somewhere between Memphis and the mouth of the Arkansas River in 1541. It is recorded that he found the Indians living in houses and practicing a rude agriculture. In 1673 Marquette, on his way down the Mississippi, visited an Indian town called Akansa, at the mouth of the Arkansas River. These Indians lived in bark-roofed cabins, harvested corn, and served their meats in dishes. From the fact that some of the cabins were built upon "made hills" their relation to the Mound Builders is argued by some historians.

A few of the companions of La Salle, under the leadership of Chevalier de Tonti, established the first settlement, Arkansas Post, in 1686. Arkansas Post, situated in Arkansas County, on the Arkansas River, was the first settlement made by white men west of the Mississippi River. De Tonti took a great deal of interest in the settlement and early caused French missionaries to be sent there. Regular religious services were held in the wilderness for a number of years, and the Indians were taught improved methods of agriculture. By the treaty of Paris (1763) Louisiana, of which Arkansas was a part, was ceded to Spain, and the new settlement was maintained by the Spanish as a military post until 1800. In 1785 the district of Arkansas contained 196 white inhabitants, and at the time of the Louisiana purchase the population had reached 600. In 1805, two years after the acquisition of the territory by the United States, Louisiana was divided into the Territory of Louisiana and the district of New Madrid, the latter comprising what is now Arkansas and the southern part of Missouri. The district of New Madrid was redivided the following year and the district of Arkansas created. In 1812, when lower Louisiana was admitted to the Union as a State and the Territory of Missouri established, the district of Arkansas, for administrative purposes, remained as formerly, with Arkansas Post as the seat of justice. This district was then nearly as large as the present State of Arkansas. The Territorial organization of Arkansas was effected in 1819, and Arkansas Post, then containing 30 or 40 houses, was continued as the capital. In 1821 the capital of the new Territory was removed to Little Rock. A retrograde movement then set in about the old historic settlement, and Arkansas Post speedily fell into decay. Until after the close of the civil war few attempts were made toward the agricultural development of Arkansas County, though large herds of cattle had for some time

been pastured upon the rich and abundant grasses of the prairies. A few settlers lived in the edge of the timbered lands, where cotton and corn were the principal products. It was not until about 1880 that interest was awakened in the agricultural possibilities and resources of the country and a tide of immigration began to flow in. The settlers came mainly from the Middle West—from Illinois, Wisconsin, Iowa, Indiana, and Ohio. With the advance in price of farm property in these States many who felt the need of larger acreage were attracted to the open and undeveloped prairies of Arkansas County, where range for stock was abundant and where lands could be purchased for from \$5 to \$10 an acre.

CLIMATE.

The following table gives data of temperature and precipitation at two stations of the Weather Bureau. The records for New Gascony, which lies in the adjoining county, are fragmentary, and it is therefore impossible to compute the mean annuals for this station.

The rainfall is ample in amount and of comparatively uniform distribution among the seasons.

Monthly and annual temperature and precipitation.

Month.	Stuttgart.		New Gascony.	
	Temper- ature.	Precipi- tation.	Temper- ature.	Precipi- tation.
	° F.	Inches.	° F.	Inches.
January	42.3	3.32	41.4	6.15
February	43.1	3.82	43.4	3.69
March	52.3	6.79	53.7	5.80
April	63.5	4.69	59.0	3.60
May	70.3	4.38	72.5	4.10
June.....	77.7	4.38	79.3
July	80.7	2.73	3.06
August	79.1	3.41	80.5	3.60
September.....	73.3	2.90	74.8	3.74
October.....	61.5	2.92	63.8	4.04
November.....	50.4	4.65	51.1	3.32
December	44.6	4.12	34.3	4.56
Year	60.5	48.11

From records covering eight years the latest killing frost in spring at New Gascony occurred on April 22, and during nine years the latest at Stuttgart on April 12. At the former station the earliest killing frost in the fall was on October 15, and at the latter October 18. The average date of occurrence is as follows: New Gascony, spring, March 29; fall, October 29; Stuttgart, spring, March 25; fall, November 2. The average length of the growing season for tender vegetation is therefore 214 days and 222 days for the two stations, respectively.

PHYSIOGRAPHY AND GEOLOGY.

Arkansas County consists of nearly equal areas of prairie and of forest land. The area selected for the soil survey embraces the best developed and most productive of the former, with enough of the latter to give a clear exposition of the soil characteristics and its agricultural importance.

The surface of the area, especially of the prairie sections, is very flat, with a slight fall, scarcely noticeable to the eye, to the south and east. Drainage is sluggish and is accomplished principally by Mill, Little La Grue, and Big La Grue bayous. These streams are dry during a greater part of the year. The lower portion of Big La Grue Bayou (outside the area surveyed) is spring fed and contains some water nearly the year through. There are no springs within the area. The surplus surface water from the prairie sections reaches these bayous through long, narrow, slightly depressed streaks, locally termed "slashes," which in nearly all cases are covered with a low, sparse, scrubby growth of persimmon, sassafras, wild crab, and black-jack and post oak. For two or three months in midsummer they support a luxuriant growth of large and handsome wild hollyhocks. These slashes often extend in a nearly straight (but sometimes curved or sinuous) line for a distance of 1 to 2 miles, while only a few rods in width, and serve to relieve the monotony of an otherwise entirely treeless prairie.

Nearly isolated in the prairie, and connected with the main forest areas only by low, narrow drainage ways, fringed with timber, are so-called islands of timber, as Big Island Timber, Angelico Island, etc. The forests covering these areas are composed of fairly dense growths of post, willow, and black-jack oak and hickory. The surface is generally 2 or 3 feet lower than the surrounding prairie, and is flat and poorly drained.

In the southwestern part of the area, in T. 4 S., R. 3 W., especially near the bayous, the forested surface becomes quite rolling, though never rugged. With the exception of a few flat hilltops the drainage here is very efficient. Along the bayous in this township occur fairly well-defined bottoms, averaging a quarter of a mile in width. These bottoms are usually flat and level, though occasionally an islandlike mound is seen rising a few feet above the general surface and covered by trees preferring a drier soil.

From the great uniformity exhibited throughout the area, both in the nature of the materials and their physiographic characteristics, it is believed that the soils all belong to one formation, and that the deposits embraced in this formation were laid down on the ocean's floor at the time of the submergence of the eastern half of the State under the Eocene-Tertiary sea. Had the materials been deposited in

streams and subjected to the action of shifting and intermittent currents a greater variety might have been looked for.

No rocks or minerals of any kind are exposed within the area. No soil sections deeper than 3 or 4 feet were seen upon the prairie, these showing a surface covering of rather loose, porous silt, underlain by silt of a more compact nature, interstratified with bands of clay, as described under the head of soils. Almost without exception the wells upon the prairie are driven, no obstruction in the shape of stones or difficultly penetrable material being offered to the passage of the pipe until water is reached in a bed of gravel at a depth of from 90 to 110 feet. An open-well section at Almyra gave much reddish and brown clay, locally called "joint clay," but showed an absence of sand. A 12-foot boring 2 miles southeast of Stuttgart yielded fine reddish sand at 10 feet. Gullies along Little and Big La Grue bayous gave two sections which showed, underlying the reddish clay, interstratified layers of brown clay and sharp reddish sand. The position of these strata was in all cases horizontal.

SOILS.

So far as the texture is concerned great uniformity exists between the different soils of the area, and in physiographic position the types are not greatly dissimilar.

Three types have been recognized, viz, Miami clay loam, Almyra silt loam, and Guthrie clay.

Areas of different soils.

Soil.	Acres.	Per cent.
Miami clay loam	69,696	43.3
Almyra silt loam	63,104	39.3
Guthrie clay	27,904	17.4
Total	160,704

MIAMI CLAY LOAM.

The Miami clay loam is a reddish-yellow loam containing considerable silt and clay and having a depth of about 10 inches. It is mellow, friable, and of fine tilth. The subsoil is a reddish-yellow to grayish-yellow silty clay, more or less mottled and somewhat waxy and plastic. When wet this clay is very sticky, but it dries readily and gives little trouble in cultivation. The texture of both soil and subsoil is very much more uniform than in the case of the other types of the area. The subsoil was examined to a depth of 36 inches.

This soil is found scattered about throughout the prairie section of the area wherever the drainage is most efficient. It is best developed, and to the greatest extent, in the northern and northwestern part of the area, becoming less connected and more irregular in outline to the

southward. In sec. 20, T. 2 S., R. 5 W., and on the road between section 31 of the same township and section 6 of the adjoining township, south, are small areas of fine sandy loam which together amount to only half a square mile. As it was not thought desirable to establish a separate type for these small areas they were included with the Miami clay loam. They occur in small ridges only slightly higher than the surrounding type. There is a woodland phase of the type most typically developed in T. 4 S., R. 3 W. In T. 3 S., R. 4 W., a strip is found extending parallel with and on each side of Mill Bayou.

The Miami clay loam occupies the highest portions of the prairie. Small detached areas of it sometimes occur along the slopes leading from the flat, poorly drained uplands to the "slashes" or natural drainage ways.

While much of the unwooded area covered by this soil appears to the eye to be quite level and flat, there is just enough fall to carry off surplus surface water. The forested area is as a rule more rolling. The soil is naturally rather porous, and except in times of excessive rainfall the drainage is adequate.

The principal crops grown are oats, averaging from 30 to 50 or more bushels to the acre; corn, which gives a yield of from 25 to 40 bushels, and cotton, averaging about one-half bale to the acre. Broom corn in some instances does fairly well, though very often badly choked by crab grass. Very little wheat is grown, though a yield of about 25 bushels is secured where the crop has been tried. Vegetables are grown for home use, and nearly all varieties do well. The usual orchard fruits are successfully grown, especially apples, peaches, plums, and apricots.

This type of soil is quite well adapted to the production of the cereals. Among them oats seem to be a prime favorite and give prolific yields. The native grasses, from long pasturage and cutting, are beginning to fail, and it is believed that some of the tame grasses could be successfully substituted. Tobacco has been grown only in a small way for home consumption, but it is thought that this industry might be profitably introduced. Small areas of different types of leaf should be tried experimentally to learn the one best adapted to the soil and climatic conditions.

The table on the following page shows the mechanical analyses of typical samples of the soil and subsoil of this type.

Mechanical analyses of Miami clay loam.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>
7487	SW $\frac{1}{4}$ sec. 8, T. 2 S., R. 5 W.	Loose silt, 0 to 14 inches.	1.28	1.04	1.54	0.44	1.44	11.58	73.36	9.92
7483	1 $\frac{1}{2}$ miles SW. of Stuttgart.	Yellowish-brown silt, 0 to 12 inches.	2.19	.74	1.04	.44	4.84	17.54	63.24	11.66
7477	NE. $\frac{1}{4}$ sec. 17, T. 3 S., R. 4 W.	Reddish-brown loam, 0 to 12 inches.	2.20	.10	.78	.58	1.26	4.16	80.00	12.76
7488	Subsoil of 7487.....	Friable silt, 14 to 30 inches.	.67	.44	2.28	1.38	2.48	10.28	72.94	9.52
7484	Subsoil of 7483.....	Yellow silt, 12 to 32 Inches.	.58	.14	.76	.54	4.14	14.40	60.58	18.46
7478	Subsoil of 7477.....	Silty clay loam, 12 to 36 inches.	.69	.02	1.10	.54	.66	1.04	68.76	26.52

ALMYRA SILT LOAM.

The Almyra silt loam is a rather loose, silty loam of the same general texture as the Miami clay loam. In color it is a mottled grayish brown to a depth of 10 or 12 inches. From 12 to 18 inches the subsoil is lighter in color, a mottled gray and yellow, usually stained with iron, and contains a few iron concretions from one-eighth to three-eighths inch in diameter. From 18 to 24 inches a whitish stratum of silt appears, grading at the lower depth into reddish-brown clay. This clay contains a considerable amount of silt and, while not appearing very compact or tenacious in sections seen in road cuts, is still quite impervious to water. The general relations of the soil and subsoil are similar to those of the Miami clay loam, except that the successive changes in texture are found nearer the surface.

The type is found best developed over an area commencing to the south of Stuttgart and extending southeast to the boundary of the area surveyed.

The surface of this soil is nearly level. Usually the areas occupy depressions in the prairie upland, although they also occur along the borders of the lower, timbered lands, where the prairie is generally low and flat and where drainage is sluggish. The type sometimes continues for a little way into the edge of the timber, or it may be that the scrubby growth of black-jack and post oak has encroached upon the prairie from the woodland. Otherwise it is covered with a rather coarse growth of prairie grasses and has no natural forest growth.

Deficiency in drainage seems to have been the principal factor in separating this type from the contiguous one, the Miami clay loam,

and it is believed that thorough surface and under drainage, together with aeration of the soil by deep subsoiling, would soon modify the wet, crawfishy conditions of the Almyra silt loam and produce a soil similar to the type first described. During heavy rains the inability of the flat, poorly established natural drainage channels to quickly dispose of the surplus water leaves great quantities standing upon the surface, a relatively large proportion of which remains until removed by the process of evaporation. The establishment of an adequate system of surface county drains and the tiling of the fields is a work which can not be too strongly urged and one which will repay a considerable money outlay.

Only a small percentage of the area covered by this type is in cultivation, but when the season is not too wet to allow proper tillage good yields of oats, corn, cowpeas, sorghum, and Kafir corn are secured. Cowpeas seem to do particularly well under favorable conditions. Much of the area is covered with a growth of native grasses, which yield about 3 tons of hay to the acre. These grasses are of rather coarser quality than those grown upon the Miami clay loam.

Under an effective system of drainage this soil no doubt would be adapted to almost any of the usual farm crops. The character of the soil would doubtless be materially benefited by the intelligent application of lime. The soil is in many instances slightly acid, and this condition would be ameliorated by the lime. At present its principal value is for hay and pasturage, as, except in dry seasons, tillage is difficult and crops requiring a well-drained soil are uncertain.

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

Mechanical analyses of Almyra silt loam.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.	P. ct.
7471	E. $\frac{1}{4}$ sec. 22, T. 8 S., $\frac{1}{4}$ R. 4 W.	Brown silty loam, 0 to 12 inches.	2.04	0.50	0.50	0.12	0.18	3.72	80.14	14.78
7467	3 miles S. of Dewitt.	Silty loam, 0 to 10 inches.	1.98	1.62	2.34	.54	.46	1.12	77.42	16.26
7469	$\frac{1}{2}$ mile E. of Stutt- gart.	Brown silt, 0 to 12 inches.	2.36	.02	.24	.18	.90	6.60	74.92	16.84
7470	Subsoil of 7469.....	Gray silt, 12 to 30 inches.	.91	.18	.66	.30	.52	5.54	78.52	14.14
7472	Subsoil of 7471.....	Silty clay, 12 to 36 inches.	.50	.20	.62	.26	.48	2.82	74.46	20.78
7468	Subsoil of 7467.....	Gray to yellowish- gray silt, 10 to 24 inches.	.98	1.68	2.54	.56	.48	1.18	72.10	21.42

GUTHRIE CLAY.

To a depth of about 14 inches the Guthrie clay is a grayish-white silt occasionally mottled with yellow and containing some clay. It is acid to the taste, chalky to the touch, and frequently contains small iron concretions. The subsoil is about the same in color, mottled with yellow and brown iron stains. Below 24 inches, and extending to 36 inches, there is a mottled-gray and yellowish-brown clayey silt, which, however, is not very tenacious, and is fairly readily crumbled. While loose in structure, this material is impervious to water and remains wet nearly the whole year through.

This soil is found in the low, poorly drained woodlands in the northern part of the area and along the courses of the various streams and bayous. The largest areas of it occur in T. 2 S., R. 4 W., while areas several square miles in extent are found in what is known as Big Island Timber, to the northeast of Stuttgart. It is well developed also in the "slashes" or drainage depressions connecting the prairies with the woodlands.

The Guthrie clay occupies only the lowest positions, where the drainage is exceedingly sluggish or where there is no drainage at all. Much of the bayou bottoms, which remain forested, is included in this type, and it is occasionally found occupying flat hilltops in the timbered upland areas. Along the "slashes" leading from the prairies to the woodlands it is covered with a scrubby growth of persimmon, sassafras, wild crab, black-jack oak, and post oak. In the areas of larger extent the forest growth comprises more species and the trees grow to a considerable size. They embrace post, red, Spanish, pin, overcup, back-jack, willow, and water oak. The last two species, together with three or four varieties of hickory, are the most characteristic trees growing upon this type of soil. Elm and sweet and black gum are commonly seen, and along the course of Big La Grue Bayou are some fine specimens of the "cow" oak.

Because of lack of drainage the Guthrie clay has no agricultural value. A part of it is susceptible of drainage, notably the bottoms along Little and Big La Grue bayous, the most promising areas of the type.

The soil is derived from old sedimentary deposits, and those areas of it which lie along streams are sometimes modified to a slight extent by more recent depositions of silt.

The Guthrie clay in the Stuttgart area is not cultivated, nor is it likely soon to be, except possibly in the areas along the bayous, which are so situated as to be readily drained. These have not as yet been cleared of the original forests.

The table on the following page shows the mechanical analyses of typical samples of the soil and subsoil of this type.

Mechanical analyses of Guthrie clay.

No.	Locality.	Description.	Organic matter.	Gravel, 2 to 1 mm.	Coarse sand, 1 to 0.5 mm.	Medium sand, 0.5 to 0.25 mm.	Fine sand, 0.25 to 0.1 mm.	Very fine sand, 0.1 to 0.05 mm.	Silt, 0.05 to 0.005 mm.	Clay, 0.005 to 0.0001 mm.
			<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>	<i>P. ct.</i>
7481	S.E. $\frac{1}{4}$ sec. 17, T. 3 S., R. 4 W.	Dark silt, 0 to 14 inches.	1.24	0.06	0.34	0.14	0.70	10.22	69.94	17.76
7479	$\frac{1}{4}$ mile E. of Stuttgart.	Light gray silt, 0 to 12 inches.	1.19	.08	.14	.18	.48	6.34	73.68	18.76
7482	Subsoil of 7481.....	Gray clayey silt, 14 to 36 inches.	1.00	.16	.44	.42	1.56	13.48	63.66	19.56
7480	Subsoil of 7479.....	Light gray silt, 12 to 32 inches.	.68	.14	.14	.16	.26	5.82	66.76	25.90

AGRICULTURAL CONDITIONS.

There are no large towns in Arkansas County, the largest, Stuttgart, containing only about 1,200 inhabitants, so that the population of the county is mainly agricultural. A large proportion of the farming class, especially of those settled upon the prairies, came from the Northern States, where economic and agricultural conditions differ widely from the local conditions. It is not surprising that after but a few years' residence in a country to the climatic, agricultural, and economic conditions of which they are unaccustomed a few should become dissatisfied and wish to return. A considerable number have done so, but the majority of those who have become acclimated, and have lived in the country long enough to learn by experiment the methods of agriculture best adapted to the new conditions, have prospered and have come to like the country of their adoption. The failure of some who move to the county is due to the fact that too much of their savings is invested in land and too little is left available to properly equip a farm with stock, tools, etc., and to insure a living until a few crops shall have been harvested.

Most of the farms are owned by the farmers, though a few are rented from owners living in the Northern and Eastern States. The money rental asked for well-improved farms is on an average from \$2 to \$3 an acre; the crop rental received from a tenant is usually about one-third.

The majority of the farms were originally Government or State lands, and were either sold or disposed of as homestead grants and "donations" in quarter sections of 160 acres. Though quite a number of larger holdings exist, especially in the case of prairie cattle ranges, 160 acres is about the average size of the farms throughout the area surveyed.

The majority of the laborers, except in the timbered areas where cotton is raised, are white, almost no colored laborers being employed upon the prairie farms. White laborers are fairly abundant and command a wage of about \$15 a month with board. Few farmers require hired help, except through the busier seasons of the year.

Not much diversity exists in the agricultural products of the county. One of the principal industries is the raising and fattening of cattle for market. The abundance and luxuriance of the native grasses and the ease with which stock can be carried through the mild winters have made this one of the most profitable investments. The improvement of stock has received comparatively little attention, and, with the exception of a few thoroughbred and grade Herefords, the cattle are mostly "scrubs." One fairly well patronized creamery exists in the area, but as a rule there is very little dairying carried on. A few sheep and goats are seen, but they are not raised to any considerable extent. There is a good demand in the area for hogs for home consumption, and the supply is greatly deficient. Few except of mongrel breed are seen. The facility with which corn and cowpeas can be grown and the abundance of acorns and other mast in the timbered areas should make pork production a remunerative industry.

Besides the extensive areas of prairie grasses used for pasturage a large amount of wild hay is cut, baled, and shipped to different parts of the country. The cutting continues throughout the summer and into the autumn, two or three crops being harvested. The first cutting averages about 3 tons to the acre, the later cuttings being inferior in yield and quality. The grass consists principally of blue stem, much of which is coarse and unattractive, yet it seems to be relished by stock, and is consumed with very little waste. The price paid for hay delivered on cars at the time of cutting is from \$3 to \$4 a ton; in the winter it often brings from \$7 to \$9.

Among the cultivated crops a very large acreage is devoted to winter oats. Oats of fine quality, well-filled grains, and prolific yield are secured. Wheat is grown to only a very limited extent, while corn yields well and finds favor as a farm crop. Kafir corn, sorghum, Irish and sweet potatoes, general orchard fruits (except cherries), melons, many of the berries, and most of the vegetables are the principal other products.

There is such similarity between the soils of the area that, provided the moisture conditions are the same (brought about through drainage, or as affected by varying seasons), crops show little preference for one over either of the other two arable types. The culture of cotton is confined almost exclusively to the timbered lands, though in the one or two instances where it was seen growing upon the prairie the growth was noticed to be luxuriant. Perhaps one reason for the absence of cotton upon the prairie is the fact that the farmers there

are nearly all Northern men, who have no knowledge of and no desire to cultivate the crop.

Railroad transportation is furnished by the St. Louis Southwestern Railway, the main line of which passes through the northern part of the area in a southwesterly direction. Its length within the area is about 10 miles. The Stuttgart branch passes through about 30 miles of the area, from Stuttgart in a southeasterly direction. In the area surveyed the farthest point from a railroad station is about 8 miles. Transportation in the extreme southern part of the county can be had by the Arkansas River, which is navigable at all seasons of the year. White River, at the eastern boundary of the county, is also a navigable stream.

The wagon roads are very good during most of the year. They follow section lines, except in some cases in the timbered areas, and are maintained by a special tax levied for the purpose. During heavy rains and sometimes for a day or two thereafter there is considerable standing water upon the roads across the more level portions of the prairies, but they dry quickly and soon become firm and compact. There are no toll roads in the area surveyed.

The principal local market is Stuttgart, whence such produce as is not consumed there is sent to various northern and eastern points. The distance to Memphis is about 120 miles, and by rail to Little Rock it is somewhat less. These two cities, together with Pine Bluff, are the most easily reached of the near-by markets.

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