

SOIL SURVEY OF ALAMANCE COUNTY, NORTH CAROLINA.

By GEORGE N. COFFEY and W. EDWARD HEARN.

INTRODUCTION.

Alamance County is situated between north latitude $35^{\circ} 52'$ and $36^{\circ} 17'$ and west longitude $79^{\circ} 16'$ and $79^{\circ} 34'$. It lies in the north-central Piedmont section of the State, about 50 miles northwest of Raleigh. It contains 233,820 acres, or about 365 square miles. Since the base map was constructed the southern boundary of the county has been changed and about 30,000 acres, which, however, were not mapped, have been added to its area. (See fig. 8, p. 273.)

HISTORY OF SETTLEMENT AND AGRICULTURAL DEVELOPMENT.

In the year 1700, Lawson, an English explorer, made a journey through this region. He reports finding it heavily forested—the oaks then, as now, predominating—with the exception of occasional savannas covered with wild pea vines. The Saxapahaw Indians, a scattered, unimportant tribe, were in possession of the territory, but seem to have removed soon after, judging from the absence of accounts of difficulties between them and the whites. The Saxapahaws practiced very little, if any, agriculture.

It is not known just when the first white settlers came to Alamance, but the settlements made here were among the earliest in middle North Carolina. The country was probably taken possession of as early as 1730, and by 1744 a steady stream of Scotch-Irish, Germans, and Quakers was pouring in, chiefly from Pennsylvania. The Scotch-Irish Presbyterians settled around Haw Fields Church, east of Haw River; the Germans, along the Greater Alamance; and the Quakers, north of Cane Creek. Wheat, corn, oats, and tobacco were the principal agricultural products, and these continue to be staple crops.

The history of the tobacco industry forms the most interesting chapter in the agricultural development of the county. The first tobacco raised was a dark, heavy shipping tobacco, which was cured, closely packed in barrels, and hauled to market at Fayetteville, N. C., or Petersburg, Va. This tobacco was cultivated on the red clay lands that extend across the central portion of the county. The large sandy area in the northeastern corner of the county, which is now the chief

tobacco section, was considered practically worthless until after the civil war.

The production of a finer grade of tobacco was first begun in the State in the adjoining county of Caswell. In 1852-53 Eli and Elisha Slade grew, by chance as they supposed, a crop of yellow tobacco. Its peculiarities were attributed to special methods of culture and curing, but it was soon discovered that the character of the soil was the controlling factor, and that the poorer sandy soils were best adapted to growing this type. The cultivation of this tobacco spread rapidly until the outbreak of the civil war, when its production was practically suspended. At the close of the war and the general resumption of agriculture, the cheap and abundant production of export tobacco farther west directed the attention of the tobacco growers of Alamance to the cultivation of a fancy leaf, and as this could be grown only on a light sandy soil, there arose a large demand for the land that in the early days of settlement had been considered almost worthless. Land that in 1860 could scarcely be sold at from \$1 to \$3 an acre brought in 1880 from \$20 to \$100 an acre. As these lands increased in value and the cultivation of this profitable tobacco crop extended, the influence on local agricultural conditions was very marked, and was soon evidenced in the construction of well-built houses and convenient barns. The demand for and the resultant high price of this quality of tobacco caused the extension of its cultivation to other sandy soils in this and other States. The great increase in the production, combined with other conditions, has more recently caused such a decrease in price as to bring about the abandonment of large areas formerly used in growing yellow tobacco, until at present there is probably not more than one-third as much tobacco raised in the county as there was ten or fifteen years ago.

The war necessarily had a depressing effect upon the agricultural development of the county. Until the emancipation of the negro, a large proportion of the work was done by slave labor. The freeing of these necessitated the abandonment of large areas of land, some portions of which have not been reclaimed. Although greatly discouraged, the planters went to work and in a few years agricultural conditions were established on the present basis.

CLIMATE.

The Weather Bureau has no station in Alamance County, but the table following, compiled from its records at two points, Greensboro and Chapelhill, the former 15 miles west and the latter an equal distance southeast of the county boundaries, is believed to represent fairly the conditions in the county. The figures of temperature and rainfall at Chapelhill are normals for periods of forty-one and twenty-one years, and those at Greensboro for fifteen and five years, respectively.

Normal monthly and annual temperature and precipitation for Alamance County.

Month.	Temperature.		Precipitation.	
	Greensboro.	Chapel-hill.	Greensboro.	Chapel-hill.
	° F.	° F.	Inches.	Inches.
January	40.4	39.8	2.09	4.41
February	43.7	44.3	4.00	3.81
March	50.6	49.0	3.80	4.16
April	59.0	59.2	2.93	3.50
May	68.4	67.8	4.69	4.44
June	75.8	75.9	5.31	3.43
July	78.3	78.4	5.26	4.73
August	76.6	76.5	4.18	4.54
September	71.0	71.3	3.98	3.90
October	61.0	59.6	3.55	3.34
November	48.3	49.9	3.29	2.79
December	41.9	42.6	2.71	3.70
Year	59.6	59.5	45.79	46.75

An examination of this table shows that the distribution of rainfall is fairly uniform throughout the year, the greatest amount of precipitation occurring during the summer months, largely in the form of frequent thundershowers. The annual relative humidity is about 70 per cent, the maximum being reached in July and August. The season is rather short for cotton to mature fully. During the last eight years the latest killing frost in spring at Chapelhill occurred April 21, and the earliest in fall, October 1. At Greensboro the latest killing frost of spring, during a period of five years, was April 21, and the earliest in fall, October 28. The average date of latest and earliest killing frosts, using the records of both stations, was: Spring, April 7; fall, October 31.

PHYSIOGRAPHY AND GEOLOGY.

As before stated, Alamance County forms a part of the broad Piedmont Plateau. In past geologic time the surface of the country, by means of the long-continued, slow processes of erosion, was reduced to a comparatively level plain. The Cane Creek and Stony Creek mountains, on account of the hard, resistant character of the rocks of which they are composed, more successfully resisted these wearing-down agencies, and were left as monadnocks, as elevations that tower a few hundred feet above the general upland level are called. Later there came an uplifting and a tilting of the surface to the east, and the sluggish streams were urged to greater activity and began to erode their channels and carve out valleys. This process has gone on until the larger streams are now from 50 to 150 feet below the general level and have narrow valleys with steep slopes. Back from the larger streams the country retains in some measure its former features. The surface is rolling and hilly, sloping to the southeast. In the southern

part of the area it is broken by slate and quartzite hills, which rise to the elevation of low mountain chains. The average elevation of the county is about 650 feet above sea level.

The area is well watered by the Haw River and its tributaries, Cane Creek, Stinking Quarter, Greater Alamance, Back, and Stony creeks, and numerous smaller streams. The Haw River enters at the northwest corner and flows across the county in a southeasterly direction, dividing it into two almost equal parts. There is considerable difference in the elevation of this stream in the upper and the lower portion of the area, and numerous falls and rapids occur along its course. The available energy of this stream and its tributaries within the county has been estimated at 4,000 horsepower. Much of this has already been developed, which has made Alamance one of the leading manufacturing counties in the State.

The geology of Alamance County, like that of most of the Piedmont Plateau, is complex. The rocks are all of pre-Cambrian age, and are either igneous or metamorphic. The metamorphic rocks occur principally south of an irregular line commencing about 3 miles north of Mebane and extending toward the southwest corner of the county. These rocks are chiefly slates, schists, and quartzites. The slates are everywhere folded, tilted, and broken. They form a part of a great slate belt which extends across the entire State in a general northeast and southwest direction. North of this irregular line lies the area of basic igneous rocks, including gabbros, diorites, and similar formations, while north of a line drawn from Burlington to the point where Back Creek enters the eastern limit of the county is a large area, underlain principally with granite, which occasionally outcrops, and which would in some instances make fine building stone. This granite is cut by numerous dikes of a dark-colored rock. The relation of the different rocks to the several soils will be discussed in the particular descriptions of the soils.

SOILS.

The soils of Alamance County fall naturally into six types, all of which, excepting the Alamance silt loam, have been correlated with soils found and named in other areas where soil surveys have been carried on. The types and the areas which they occupy are given in the following table:

Areas of different soils.

Soil.	Acres.	Per cent.	Soil.	Acres.	Per cent.
Cecil clay	101,370	43.4	Alamance silt loam	7,860	3.4
Durham sandy loam	84,900	36.3	Meadow	4,960	2.1
Iredell clay loam.....	18,760	8.0			
Herndon stony loam	15,970	6.8	Total	233,820	.....

CECIL CLAY.

This is one of the most important types of soil found in the county, whether we consider the area occupied or its agricultural value. It is locally known as "red land." Its greatest development is south of Burlington and Mebane, around Alamance and Swepsonville, and east of Saxapahaw. These are parts of one broad area which extends across the entire south central portion of the county. Areas of less extent are found north of Cane Creek and northwest of Ossipee, while small patches are scattered over almost the entire county. On the broad uplands the surface is gently rolling, becoming more hilly as one approaches the streams, along which it is often steep and rough. The surface is more broken in the southeastern portion of the area. The Cecil clay is a residual soil, having been derived from the decomposition of gabbros, schists, and other metamorphosed and crystalline rocks. These have been acted upon by the various disintegrating agencies until they have decayed to a considerable depth below the surface. In railway cuts and wells it was frequently noted that such decomposition had reached a depth of 25 feet or more. Only the harder, more resisting portions of the rocks have been able to withstand decay to this time, being left as boulders or "niggerheads" scattered through the soil and upon the surface.

The soil is a brownish to red heavy clay loam about 6 inches in depth, usually containing but a small percentage of stones, although in some instances these amount to as much as 35 per cent. This stony condition is most frequent upon the hills in the southeastern section of the county. Many of the more stony fields have been picked over and the stones piled or made into fences. The subsoil is a stiff, tenacious red clay. Both soil and subsoil vary somewhat in character, being looser and of a more spongy nature in some places than in others. This lighter phase is locally known as "spongy red land."

Below are given the analyses of samples of Cecil clay.

Mechanical analyses of Cecil clay.

[Fine earth.]

No.	Locality.	Description.	Soluble salts, as determined in mechanical analysis.		Organic matter and combined water.		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.							
5729	1½ miles S. of Alamanace.	Heavy clay loam, 0 to 7 inches.	0.01	4.46	1.88	3.52	3.54	21.72	11.10	36.44	15.89		
5727	2 miles N. of Saxapahaw.	Reddish-brown heavy clay loam, 0 to 7 inches.	.01	7.52	1.26	2.46	1.90	6.60	9.42	41.54	29.31		
5728	Subsoil of 5727....	Stiff, tenacious red clay, 7 to 30 inches.	.01	9.04	.24	.86	.78	2.78	3.16	33.24	49.79		
5730	Subsoil of 5729....	Stiff red clay, 7 to 30 inches.	.01	10.28	Tr.	.24	.48	3.64	3.18	29.08	53.39		

The principal crops grown on this soil type are wheat, corn, oats, clover, grass, and, in the southern part of the area to some extent, cotton. All these crops do well, but the soil is best adapted to wheat and the grasses. The average yield of wheat is about 12 bushels, but there are instances where as much as 40 bushels to the acre have been raised. From 2 to 3 tons of hay have been cut from an acre.

The Cecil clay is recognized as the strongest soil found in the area. It retains manure well, is easily improved, and by proper care and cultivation can be made very productive. It is, however, a little difficult to till. Better results would follow were the depth of the soil increased, giving more room for root growth and permitting the rains to soak in more readily. This would not only increase the capacity of the soil to withstand drought, but would also in a large measure prevent the washing of the fields. These improvements are accomplished in some degree by subsoiling every few years, a method practiced by some of the best farmers and believed by them to give profitable results. The surface drainage is good and underdrainage is usually unnecessary.

DURHAM SANDY LOAM.

The Durham sandy loam, locally known as "gray sandy land," occupies a large area extending from the vicinity of Elon College in a northeasterly direction to the limits of the county. The area gradually widens as it approaches the county line, until it covers almost the



CHARACTERISTIC VIEW OF FARM BUILDINGS ON CECIL CLAY.

entire northeastern section of the county. Smaller areas are found west of Saxapahaw and southwest of Rock Creek. The surface is gently rolling to hilly, being more broken near the streams. Almost the entire area of this type of soil is underlain by granitic rocks. Around Union Ridge a coarse-grained biotite granite is found; north of Burlington the granites become finer grained and more acid, and west of Saxapahaw quartz and feldspar are often the only minerals present. North of Sutphin there is a small area where the feldspar so largely predominates that the decomposed rock gives rise to a clay soil. Feldspar succumbs readily to atmospheric agencies and decomposes, forming clay, and consequently the rock crumbles to pieces, but the quartz, being relatively insoluble, is left as sand. The rocks underlying the Durham sandy loam are usually decayed to a depth of several feet, but in the northeastern section of the county they are sometimes exposed at the surface.

The soil is a gray sandy loam with a mean depth of 12 inches, containing on an average 10 per cent of rock fragments, although in some instances from 30 to 40 per cent of such material is found. The type is not uniform over large areas, being generally more sandy on the uplands than on the slopes—a condition due largely to washing, which is very pronounced in some sections. Around Union Ridge the sand is coarser and the underlying granite nearer the surface. The granite is often cut by dikes of the rock from which the Iredell clay loam is derived, and this gives a heavier character to the soil. The dikes are of most frequent occurrence in the area north of Burlington and west of Stony Creek, where there is sometimes a gradual change from the Durham sandy loam to the Iredell clay loam. The subsoil is a rather light, porous yellow clay, intermixed with some quartz sand. North of Altamahaw it occasionally grades into a reddish clay.

The Durham sandy loam in Alamance County forms a part of what is known as the "golden tobacco belt." It produces a leaf from which the finest grade of cigarette and smoking tobacco is manufactured and which is also used extensively as a plug wrapper. The heavier leaf and the tips are rated high as plug-filler tobacco. Generally, the lighter and more yellow the subsoil, the finer the quality of the tobacco. The average yield is about 750 pounds per acre. From 300 to 600 pounds of fertilizer per acre is applied. This tobacco brings from 4 to 50 cents a pound, according to the quality of the leaf, but the average price is between 8 and 10 cents a pound. Truck also does well on this soil type, but there is little demand for it. Wheat, corn, and oats are also grown, and in southern areas largely take the place of tobacco, being thought more profitable. The soil, however, is not well adapted to the growing of these crops, as the yield is only moderate. The soil contains little organic matter. It leaches easily, and consequently does not retain fertilizers long and is difficult to maintain in a

high state of fertility. The timber growth is principally scrub oak. The surface drainage is in most instances good, and underdrainage is seldom necessary.

The following table shows the texture of the Durham sandy loam:

Mechanical analyses of Durham sandy loam.

No.	Locality.	Description.	Soluble salts, as determined in mechanical analysis.	Organic matter and combined water.	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>	<i>P. ct.</i>
5741	3 miles W. of Burlington.	Gray sandy loam, 0 to 12 inches.	0.01	3.28	7.38	17.42	13.34	24.30	11.74	16.94	6.03
5749	2½ miles NE. of Union Ridge.	Coarse sandy loam, 0 to 12 inches.	.....	1.38	19.62	14.70	7.96	15.52	12.18	19.26	8.92
5750	Subsoil of 5749....	Yellow clay, 12 to 28 inches.	.....	4.00	10.22	8.20	4.46	9.32	7.10	19.04	37.68
5742	Subsoil of 5741....	Yellow clay, 12 to 30 inches.	.....	8.36	3.42	7.98	4.50	7.70	3.42	14.72	48.48

IREDELL CLAY LOAM.

This type of soil is the third in importance in the area. It is known as "black jack," "black gravel," and "pipe clay" land. It usually occurs in small areas, which are scattered over the greater part of the county. It is most often found upon the rolling uplands, and seldom reaches down to the lower levels of the larger streams. It is a residual soil, formed from the gradual decomposition of diorite and highly metamorphosed ultra-basic rocks. Certain more sandy phases of the type occur. These are due to the decomposition of the occasional dikes of aplite granite, which are intruded here and there over the areas.

The soil is a heavy, dark-gray sandy loam, grading into a yellow loam. It varies in depth from 8 to 24 inches, with an average depth of 15 inches, and contains from 10 to 70 per cent of iron concretions and rock fragments. The iron concretions are usually from one-eighth to one-half inch in diameter and are not found in the subsoil. They make the soil porous and keep it from packing. In some instances, however, the iron has cemented the grains of sand together and formed a hardpan. The subsoil is a stiff, very impervious, sticky yellow clay. The impermeable and waxy nature of the subsoil is the distinguishing feature of the Iredell clay loam. Upon exposure the subsoil turns to a dirty, yellowish-brown color, and upon drying it cracks open, shrinking as much as 10 per cent. It grades into soft, rotten rock at a depth of from 30 to 36 inches.



FIELD OF BRIGHT TOBACCO ON THE DURHAM SANDY LOAM.

The Durham sandy loam is the soil upon which the bright tobacco industry was started, and the introduction of this industry increased the value of these sandy lands several fold.

The Iredell clay loam is esteemed a poor farming land. When first cleared it produces fairly well, but it soon begins to "wear out." It does not hold fertilizers well and is difficult to maintain in a state of high fertility. The character of the subsoil makes it easily affected by drought and wet weather. Ponds occur upon some of the more level areas. Underdrainage is difficult and expensive, owing to the underlying stratum of impervious yellow clay. The soil produces best where the topography is such as to give good surface drainage. The principal forest growth is composed of black-jack and post oak. These are found wherever this soil occurs. Crops of wheat, corn, oats, and cotton are grown. Wheat yields about 8 bushels, corn 10 to 15 bushels, and cotton one-third of a bale to the acre. The land is best adapted to the growing of small grain.

The mechanical analyses of the Iredell clay loam are given in the following table:

Mechanical analyses of Iredell clay loam.

[Fine earth.]

No.	Locality.	Description	Soluble salts, as determined in mechanical analysis.		Organic matter and combined water.		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.	P. ct.	P. ct.	P. ct.
5765	2 miles N. of Glencoe.	Heavy sandy loam, 0 to 12 inches.	0.01	2.20	6.34	9.14	7.24	28.34	11.10	28.78	6.19		
5761	2 miles S. of Graham.	Gray loam, 0 to 10 inches.	.01	1.84	4.60	5.12	4.12	17.20	12.34	45.40	8.85		
5763	1 mile NE. of Alamance.	Dark-gray loam, 0 to 9 inches.	.01	4.06	14.66	7.94	3.48	11.12	10.70	38.80	9.09		
5764	Subsoil of 5763....	Stiff, tenacious yellow clay, 9 to 24 inches.	.....	7.40	1.98	1.94	1.50	8.42	8.04	29.76	40.28	
5767	Subsoil of 5765....	Stiff, tenacious yellow clay, 16 to 30 inches.	.01	8.06	1.50	1.76	2.02	13.16	4.68	19.34	47.67		
5762	Subsoil of 5761....	Stiff, tenacious, waxy yellow clay, 10 to 30 inches.	.01	7.80	1.28	1.50	1.60	8.06	7.84	16.20	54.41		

HERNDON STONY LOAM.

The name Herndon stony loam has been applied to a soil occurring upon the rough hills in the southern and, to a less extent, in the northern portion of the county. The hills, which usually rise a few hundred feet above the level of the plain, are formed of quartzites, slates,

schists, and other highly metamorphosed rocks, and have quite rough and broken surfaces. Their summits afford some fields suitable for cultivation, but their slopes are too steep, rough, and rocky to be of much value as farming land.

The soil is a grayish or brownish loam about 6 inches in depth, and contains from 20 to 80 per cent of rock fragments. The subsoil is a reddish or yellowish clay, and also contains many stones. Small patches of corn, wheat, and oats are grown on this type. Fine fruits, especially peaches, can also be produced, and by reason of their elevation the orchards on these hills seldom suffer damage by frost. The area is, however, still largely covered with timber, some of which will make fine lumber.

The following table gives the analyses of the fine earth of samples of Herndon stony loam:

Mechanical analyses of Herndon stony loam.

[Fine earth.]

No.	Locality.	Description.	Soluble salts, as determined in mechanical analysis.		Organic matter and combined water.	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>								
5759	Stony Creek Mountains.	Stony loam, 0 to 6 inches.	0.01	4.46	12.86	4.46	1.64	8.46	14.40	39.46	13.05	
5957	Bill Holt Mountain.	Yellow loam, 0 to 6 inches.	.01	3.28	9.84	8.48	3.48	6.10	7.92	47.20	13.17	
5758	Subsoil of 5757....	Yellow clay, 6 to 24 inches.	.....	3.94	8.76	4.42	1.76	4.38	5.86	47.40	22.60
5760	Subsoil of 5759....	Stiff reddish-brown clay, 6 to 24 inches.	.01	8.14	.48	1.14	.96	11.22	6.04	26.66	43.75	

ALAMANCE SILT LOAM.

The Alamance silt loam occurs principally in two areas—one around Cane Creek Mountain, and another west of Mount Willing. It is sometimes called "white land." The surface is hilly and rolling, and the soil, which is formed by the weathering of slates and quartzites, is a yellow or light-gray silt loam about 6 inches deep. It contains from 5 to 40 per cent of stones. There is no distinct division between soil and subsoil, the former grading into a yellow clay which becomes heavier with depth. All the products common to the area, except tobacco, are grown upon the Alamance silt loam. Around the mountains it is still largely in forest, while west of Mount Willing it was

once cultivated, but is now generally abandoned. It is not a very strong soil, but can be improved and made to yield fair crops.

Analyses of samples of Alamance silt loam are given below:

Mechanical analyses of Alamance silt loam.

[Fine earth.]

No.	Locality.	Description.	Soluble salts, as deter-	Organic matter and com-	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.
			mined in mechanical analysis.	combined water.						P. ct.	P. ct.
5721	One-half mile W. of Mount Willing.	Silt loam, 0 to 7 inches.	P. ct. 0.01	P. ct. 3.32	P. ct. 7.02	P. ct. 2.82	P. ct. 1.28	P. ct. 4.98	P. ct. 5.94	P. ct. 65.54	P. ct. 8.43
5719	One-half mile N. of Clover.	Yellowish silt loam, 0 to 6 inches.	.....	2.70	2.52	1.70	.70	3.28	5.86	71.28	11.42
5722	Subsoil of 5721....	Yellow clay, 7 to 30 inches.	.01	3.34	3.86	1.30	.52	1.92	3.50	59.44	24.99
5720	Subsoil of 5719....	Yellow clay, 6 to 24 inches.	.01	6.70	1.10	.30	.24	1.52	1.68	40.22	47.39

MEADOW.

Under this title are included the low-lying lands along all the streams. The meadow land occurs in narrow strips, from a few rods to one-half mile in breadth, usually raised only a few feet above the streams, and with its surface level or gently rolling. Many of the best meadows are along the small streams. Those along the larger streams are usually very narrow.

The soil is alluvial, varies much in texture, and depends in many cases upon the character of the soil surrounding it. The soil, however, is generally a sandy or silty loam 2 feet or more in depth, grading into a grayish-colored clay. The meadows are subject to overflow, but, despite this fact, considerable areas are planted to corn. When not destroyed by floods large crops are produced on such areas. The meadow land is especially adapted to the growing of grass and pasturage. The thick mat of grass roots binds the soil particles together and serves as a protection against washing in times of heavy rains and periods of overflow.

AGRICULTURAL CONDITIONS.

The farms of Alamance County vary in size from a few to more than a thousand acres, the average being 125 acres; but since many

farmers own more than one farm, the average number of acres to the landowner considerably exceeds this average. There is little doubt that smaller farms with a more intensive system of cultivation would prove more profitable than the present system, but as long as land is worth only from \$3 to \$40 an acre, according to location and improvements, with an average price of from \$8 to \$10, the temptation to own a great deal of it, and to spread his energies over many acres, is too great for the average agriculturist to resist.

The principal crops grown in the area surveyed are wheat, corn, tobacco, and oats, with cotton, clover, grass, and cowpeas of secondary importance. On the Durham sandy loam, which occupies the north-eastern part of the county, tobacco, although formerly more extensively grown, is still the principal product and the money crop. A greater diversity is now being practiced, and the farmers are producing year by year more of the commodities needed for home use. Wheat, corn, and oats are grown over the entire area, but are best suited to, and more profitably raised on, the Cecil clay. The best farmers practice crop rotation. A two-year rotation is used in the tobacco belt, corn or wheat being alternated with the tobacco. Some think a longer rotation better, and a three and five year rotation is more generally practiced on the Cecil clay. In the three-year rotation wheat is followed by clover and that by corn. The five-year scheme provides for grass and pasture two years, then wheat, followed by corn and oats. Some of the best farmers consider the latter the most satisfactory rotation. Trucking is unimportant here, as there is little demand for truck products in the home markets. Fruits are grown and nearly every farmer has an orchard, but very little fruit is marketed. A majority of the farms are owned and tilled by the farmers themselves, who use improved machinery to some extent and employ some day labor. Both white and black labor is employed, at a cost of from \$8 to \$10 a month and board. In order to obtain the most profitable results from negro labor, it is necessary to have an experienced man to direct the work.

Much of the land is cultivated under the tenant system—practiced to some extent throughout the county. The tenant usually pays a certain percentage of the crop grown for the use of the land, and the landowner may furnish the stock and subsistence to his tenant, in which case a larger part of the crop is reserved by the owner. In arrangements of this sort the rent is customarily about one-half. This system does not tend toward the best husbandry of the land, but rather to the cultivation of only the better parts of the farms, leaving the poorer fields abandoned and unimproved. There are a few large and fertile farms in the county which are managed or tenanted by skilled farmers. These farms are being improved continually, besides returning profits to the owners.



CONSTRUCTION OF SIDEHILL TERRACES TO PREVENT WASHING OF LAND.

The soils of the area, even with most gentle slopes, are liable to wash badly, necessitating terraces or sidehill ditches and contour cultivation.

A vast amount of commercial fertilizer is used in Alamance County. In most cases a complete fertilizer is bought, but some of the best farmers are experimenting and buying only those constituents which they find the soil needs, and which they can not supply by plowing under leguminous crops.

The farms in Alamance County are not generally incumbered. Many of them have neatly built and painted frame buildings and good barns and outhouses. As a rule, however, the barns are small and inexpensive, and the farm implements comparatively few and of old patterns. Fairly good grades of farm animals are kept, and here and there considerable interest is taken in growing pedigreed stock. A few small dairies were noticed.

While there are some fertile and well-improved farms in the area, the greater part of the land is not now in a high state of cultivation, though it is evident that conditions are improving. There are striking examples of the results of better husbandry in the Cecil clay area. Farms that a few years ago were poorly cultivated and comparatively unproductive, with many washed and abandoned fields, are to-day in a high state of cultivation, with all abandoned places reclaimed and capable of producing the highest yields of the crops suited to that soil type.

The North Carolina Railway, running through the center of the county in an eastward and westward direction, has been an important stimulus in the development of its industries and the promotion of its prosperity. Alamance County contains 500 miles of public roads. These are almost entirely of dirt, yet they are in fairly good condition the greater portion of the year. Modern road machinery has been introduced, and some of the more important roads are being graded, straightened, and macadamized. Much money is also being expended in the construction of iron bridges across the larger streams.

Throughout Alamance County one finds abandoned fields. The extent of such land is greatest in the northern and southeastern portions of the county, and in all parts probably amounts to 15 per cent of the area of cleared land. In the northern section the abandonment has taken place in quite recent years, the land having been cleared since the close of the war and cultivated in tobacco until the fall in price made its production of uncertain profit, under existing cultural and social conditions. The establishment of many cotton mills in the region, with the consequent sharp demand for operatives, has also taken many laborers from the fields, especially of the tenant class. In the southeastern part of the county the abandonment of the fields took place soon after the war, and is directly traceable to the scarcity of labor consequent upon the loss of life in the war, the liberation of the slaves, and the attraction of farmers to those parts of the county better suited to the production of bright tobacco. In some parts of the

county this abandoned land is a strong soil and can be improved easily. Social conditions, not lack of fertility, have frequently been the cause of the cessation of cultivation.

Considerable lumbering has been done in the county, especially along the railroads, but there yet remains some heavily timbered land in the northwestern section and on Cane Creek Mountains. The forests are almost entirely of hard woods, oaks predominating, with some hickory and dogwood.

Alamance County possesses good agricultural resources, which are at present largely undeveloped. Those of her farmers who are progressive, who use modern machinery, and who keep in touch with the latest agricultural methods, have their farms in a high state of cultivation and make money. With equal investment and the exercise of the same skill and energy many other farms in this area could be brought to the same high plane of productiveness.

NRCS Accessibility Statement

This document is not accessible by screen-reader software. The Natural Resources Conservation Service (NRCS) is committed to making its information accessible to all of its customers and employees. If you are experiencing accessibility issues and need assistance, please contact our Helpdesk by phone at 1-800-457-3642 or by e-mail at ServiceDesk-FTC@ftc.usda.gov. For assistance with publications that include maps, graphs, or similar forms of information, you may also wish to contact our State or local office. You can locate the correct office and phone number at <http://offices.sc.egov.usda.gov/locator/app>.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotope, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.