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To the Committee on Graduate Study:

I am submitting to you a thesis written by Fred H. Rittgers entitled "A Geographical Survey of Blount County, Tennessee." I recommend that it be accepted for fifteen quarter hours credit in partial fulfillment of the requirements for the degree of Master of Science, with a major in Geography.

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and recommend its acceptance:

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A GEOGRAPHICAL SURVEY OF
BLOUNT COUNTY, TENNESSEE

A THESIS

Submitted to
the Committee on Graduate Study
of
The University of Tennessee
in
Partial Fulfillment of the Requirements
for the degree of
Master of Science

by
Fred H. Rittgers
August 1941

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TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION	1
Culture	3
II. EARLY HISTORICAL DEVELOPMENT OF BLOUNT COUNTY	8
Indians	8
The Forefathers of Tennessee's Pioneers . .	12
Settlements	15
Toponymy	16
III. POPULATION	20
Development of Important Population Centers	20
Problems of Proposed Inundated Area	30
IV. GEOLOGY	41
Structure	41
Stratigraphy	44
V. PHYSIOGRAPHY	49
Physiographic Divisions of Blount County . .	49
Physiographic Characteristics	50
Topographic History	58
VI. CLIMATE	67
Factors Affecting Climate	68
Climatic Conditions	70
VII. SOILS	77
Valley Type Soil	78

	111
CHAPTER	PAGE
Mountain Type Soil	80
Soil Fissures	83
VIII. FLORA	86
Native Flora	87
Variety and Abundance	87
Plant Regions	89
Floral Uses	90
IX. INDUSTRIAL DEVELOPMENT	92
Flour Mills	92
Lumber and Lumber Products	93
Textiles	94
Survey of Alcoa Aluminum Plant	94
X. MINERAL RESOURCES	103
Marble	103
Slate	104
Iron Ore	105
Manganese Ore	106
Road Material	107
Brick Clays	107
XI. LAND UTILIZATION	108
Changes in Type of Farming	109
General Farming	110
Mountain Land Use	117

	iv
CHAPTER	PAGE
Valley Land Use	117
Effects of Industrial Development on Agriculture	121
XII. RESORTS	123
The Great Smoky Mountain National Park . . .	124
Fort Loudoun Recreational Possibilities . .	134
XIII. SUMMARY AND RECOMMENDATIONS	136
BIBLIOGRAPHY	140
APPENDIX	145

LIST OF TABLES

TABLE	PAGE
I. Comparative Population Statistics	23
II. Population of Blount County by Civil Districts .	34
III. Population	36
IV. Population of Blount County	38
V. Population Characteristics of Blount County . .	39
VI. Precipitation	72
VII. Frost Data	75
VIII. Snowfall, Temperatures, and Wind Direction . . .	76
IX. Soil Productivity	84
X. Part-Time Farms of Four Counties	116

APPENDIX

I. Rank of Blount County	145
II. Land Acres in Farms	149
III. Land Use	150
IV. Farms	151
V. Total Acreage of Blount County	152
VI. Value of Farm Products	153
VII. Disposition of All Farm Products	154

LIST OF ILLUSTRATIONS

ILLUSTRATION	PAGE
1. Southern Appalachian Highlands	ix
2. Geographic Profile Survey	4
3. Modern Three-Lane Highway	7-A
4. Maryville-Knoxville Airport	7-A
5. Alcoa	22-A
6. Alcoa Water Supply	22-A
7. Fort Loudoun Reservoir Area	33
8. Population of Civil Districts	35
9. Geologic Structure Section	40
10. Metamorphic Rocks at Newfound Gap	44-A
11. Resistant Chert Bed in Knox Formation	44-A
12. Areal Geology	48
13. Topographic Profile	51
14. Segments of the Unakas in Eastern Tennessee	55
15. Red Knobs	56-A
16. Sink Holes	56-A
17. Rustic House in Tuckaleechee Cove	58-A
18. General Farming in Tuckaleechee Cove	58-A
19. Peneplain Levels	62
20. Late Stages in Erosion	71
21. Inundated Area	78-A
22. First Bottom Land	78-A

	vii
ILLUSTRATION	PAGE
23. Soils on W. H. Wallace Farm	81
24. Soils on W. E. Coker Farm	82
25. Cave Roller Mill	93-A
26. Rockford Manufacturing Company	93-A
27. Active Sawmill in Tuckaleechee Cove	94-A
28. Active Sawmill in Tuckaleechee Cove	94-A
29. Old Sheet Mill	102-A
30. New Addition to the Aluminum Plant	102-A
31. Abandoned Area of Marmor Quarry	104-A
32. Removal of Overburden	104-A
33. Waste Rock Ground to Fertilizer	104-B
34. Surplus of Marble Stock	104-B
35. Air Compressor	104-C
36. Gang at Work	104-C
37. Mill Plant	104-D
38. Abandoned Rock Quarry	104-D
39. Distribution of Type-Farming Area	111
40. Land Use Map of W. E. Coker Farm	112
41. Land Use Map of W. H. Wallace Farm	113
42. Grazing Land Near Louisville	115-A
43. Field of Burley Tobacco	115-A
44. Field of Corn in Tassel	115-B
45. Oats in Shock	115-B

ILLUSTRATION

46.	Typical General Farm at Seedtime	115-C
47.	Corn Crop on Typical General Farm	115-C
48.	Field of Winter Wheat	115-C
49.	Field of Alfalfa	118-A
50.	Alfalfa Aids in Erosion Control	118-A
51.	A Mountain Farm	121-A
52.	Modern Farm House	121-A
53.	A Log Cabin	121-B
54.	Part-Time Farming Area	121-B
55.	Scenic Recreational Area	125
56.	"Laurel Falls"	125-A
57.	Winter Scene on Highway to Clingman's Dome . . .	125-A
58.	"Clingman's Dome"	125-A
59.	"The Great Smoky Mountains"	125-A
60.	Overhanging Rock Ledge	127-A
61.	Approach to a Tunnel	127-A
62.	View from Newfound Gap	127-A
63.	Rugged Scenery in Mountains	131-A
64.	"The Chimneys"	131-A
65.	Conifers on Mountain Tops	131-A
66.	Mountain Peaks are Covered with Vegetation . . .	131-B
67.	Falls in Little River	131-B
68.	Misty Appearance of the Smokies	131-B
69.	Map of Blount County	155

PHYSICAL DIVISIONS

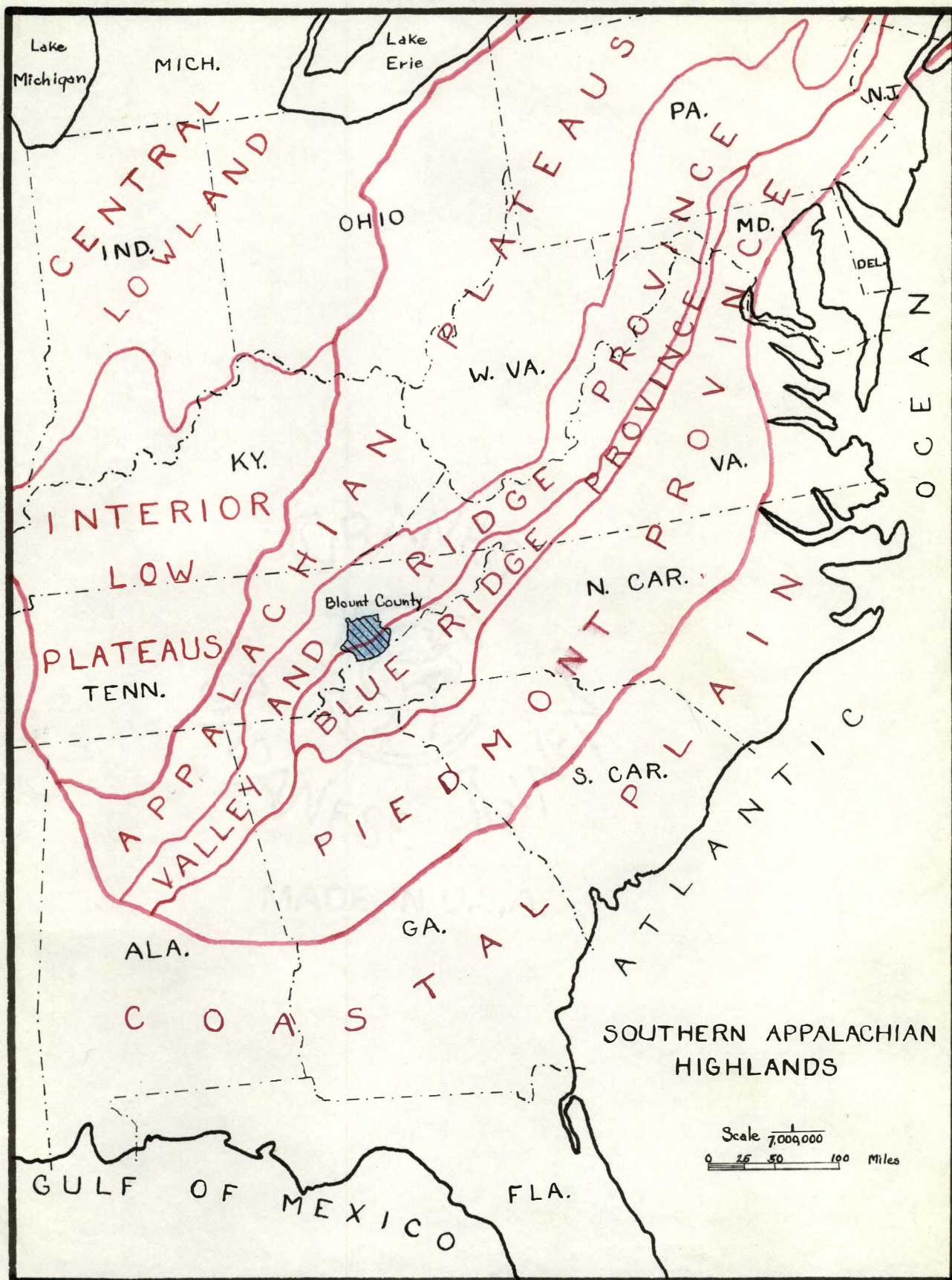


Figure 1

CHAPTER I

INTRODUCTION

Blount County forms one of the eastern tier of counties bordering the East Tennessee State line and is situated slightly south of the middle of the State. It lies between parallels $35^{\circ} 27'$ and $35^{\circ} 53'$ North latitude and meridians $83^{\circ} 40'$ and $84^{\circ} 10'$ West longitude. It is hexagonal in shape and has a total area of 571 square miles. About two-thirds of the northwestern part of the county lies in the valley area and the remainder is within the mountain area. (Fig. 1).

The geologic history of Blount County, as recorded in the rocks and expressed by the topographic forms that have been carved from these rocks is a long and complicated one. In part it has been deciphered, but the final, and hence the correct, interpretations will probably not be determined until far more information is available.

Thousands of years are involved in the geologic story of Blount County. During this long period of time, the region has been in preparation for man. The long geologic record is one of alternating periods of construction, modification and destruction. Seas, plains and mountains in turn have occupied this region; forces so gigantic that man's greatest efforts seem puerile in comparison, have uplifted, depressed

and folded the rocks as though they were thin pieces of paper. Precipitation in the form of rain and snow has fallen from the skies since the last emergence of the land mass from beneath oceanic waters, and the resultant streams have carried from the region such great masses of rock that if all were replaced the region would contain mountains rivaling the higher mountains of the Cordilleras.¹

The human history, in comparison with the geologic history, is extremely brief. The Indians probably occupied the region a few hundred years before the white man came but they seldom interfered with or modified the forces of Nature. The white men from Europe, from their first arrival, have been altering the surface topography and in countless ways have either aided or impeded the natural forces of destruction and construction.

The rocks and the soils of the region have been put to use and in some cases, depleted. Of course, the effects of man's efforts have resulted in only minor modifications of Nature's handiwork, although in our egotism we are inclined to boast of human accomplishments.

The first white settlers came to the region a little over 170 years ago and the increase in population has been

¹ Philip G. Worcester, A Textbook of Geomorphology, (New York: D. Van Nostrand Company, Inc., 1939), p. 532.

a steady one ever since. Although the agricultural interests predominate, manufacturing is now rapidly developing. Transportation facilities and the great industrial demands have been still further enhanced by the nearness to available electrical power.

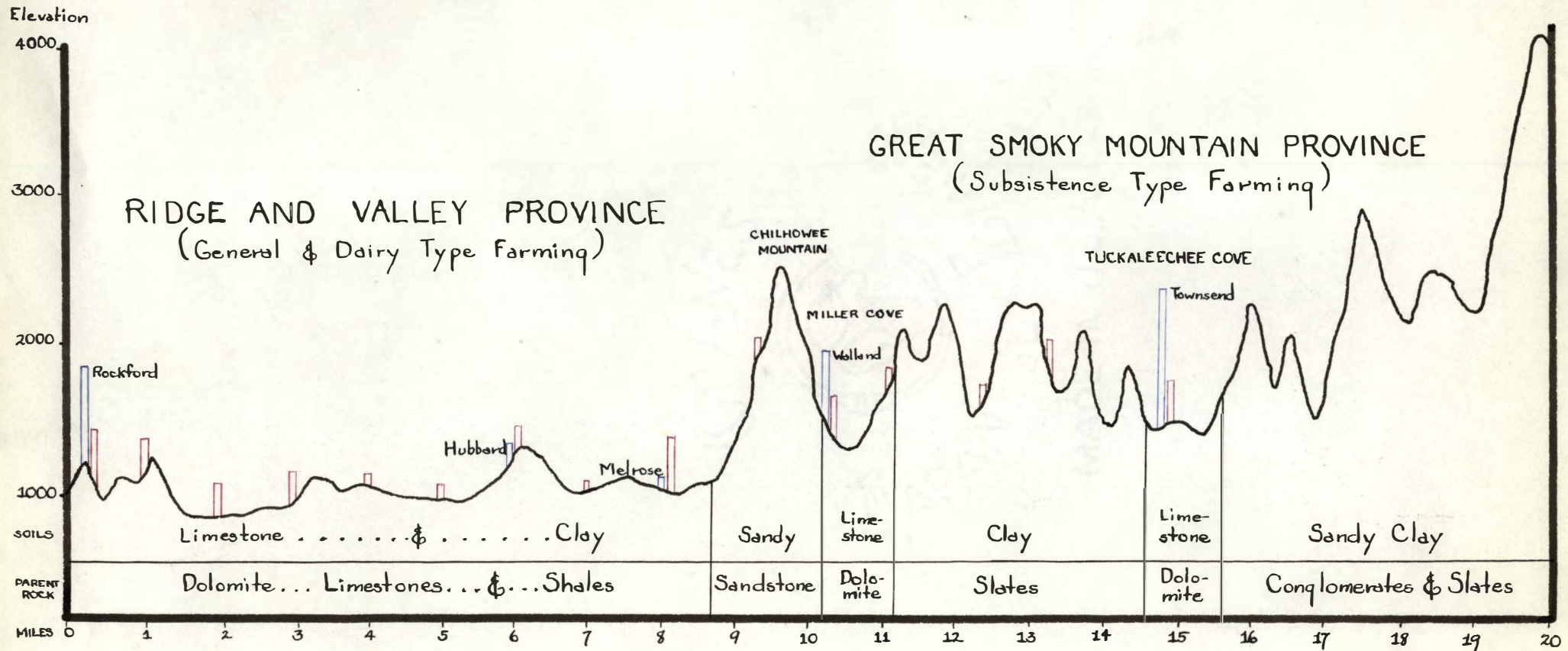
CULTURE

Use

With the exception of the most rugged portions in the Unaka and Chilhowee mountains, all of Blount County is inhabited and the soil or underlying rocks have been utilized for the growing of crops, the mining or quarrying of useful mineral products, or for the sites of structures of various kinds. The cultivated portions of the county are used for growing corn, winter wheat, hay and for grazing. Dairying is an important industry.

The location in proximity to the commercial communities of Knoxville and Chattanooga on one hand and to vast reserves of hydro-electric power on the other, as well as good transportation facilities, have gradually developed the region more and more along industrial lines. Aluminum, textiles, and clay products are produced in the county. The higher and more rugged mountains are too rocky to be cultivated but they have furnished much timber to lumber companies.

GEOGRAPHIC PROFILE SURVEY



Cultural Scale

Rural population - 5 houses = □

Urban population - 5 houses = □

Cultural Data

Data taken every mile for area one mile north and south of topographic profile.

Fig. 2

The more level portions of the county are most thickly populated. The rougher portions are more sparsely populated and there is occasionally some waste land due to improper methods of farming. Here and there are residences on the slopes and tops of the steep hills and mountains. The population is naturally most dense in the limestone valleys where the principal towns are situated and where the major portions of the area is capable of cultivation. Some of the hillsides are too steep and rocky for cultivation but furnish pasturage or are covered with timber. The Unaka and Chilhowee Mountains in the eastern part of the county are least populated. (Fig. 2).

Highways

The valley portion of Blount County is well provided with highways, thus making all parts of it readily accessible. The first commercial mode of transportation was that of the stage coach established as early as 1806. A mail route was inaugurated by the United States Government between Knoxville, Tennessee, and Savannah, Georgia, via Maryville. Since the appearance of the automobile, the improvement of the highways has been very rapid so that there is now a fine network of hard-surfaced roads that penetrate into all portions of the county. The first concrete

highway between Maryville and Knoxville was the Maryville Pike completed in August of 1925. Many of the dirt roads have recently been improved.

In that portion of the county underlain by limestone the roads run in every direction and in most cases bear little relation to the streams and their valleys. In contrast with this situation, in the mountain regions where the irregularities of topography are more accentuated and valleys narrow and steep-sided, the roads are located along the streams and on the stream divides.

Few roads cross the Great Smoky Mountains on the southeastern boundary. The valleys cut by the Little Tennessee River and Little River and their tributaries have been sufficiently widened to permit State Highways Nos. 33 and 73, respectively, to pass through them.

The county's road system is divided into three distinct groups: (1) State, (2) County-State, and (3) County. Approximately thirty-two miles of the first group have been paved and forty-four miles topped with tar. The County-State and County highways are gradually being improved by the addition of gravel or crushed stone and in some instances macadamized.

The recent construction of the Knoxville-Smoky Mountain Park Highway passing through Maryville has been a definite asset to the county in attracting tourists to this area.

Railroads

There are forty-five miles of railroad connecting the principal towns of the county. The Southern and Louisville & Nashville Railroad companies serve the important towns of this area. A branch line which formerly extended a few miles above Townsend has been abandoned after the Little River Lumber Company sold the major portion of its interest to the Great Smoky Mountain National Park. The Louisville & Nashville Railroad recently abandoned the spur line to Calderwood.

Airport

The Maryville-Knoxville airport is located about two miles north of Alcoa on State Highway No. 73. Very up-to-date airport facilities attract transcontinental air lines. Regular stops are made by the American Airlines, Delta Air Service, and Pennsylvania Central Airlines. The proximity of the Aluminum Company to the aeronautical field in this time of national defense makes it possible to ship by air certain vital products to factories engaged in using such materials for national defense.



Figure 3. This modern highway links Maryville with Knoxville.



Figure 4. The Maryville-Knoxville airport serves three important air lines.

CHAPTER II

EARLY WHITE CIVIL DEVELOPMENT OF BLOUNT COUNTY

Indians

The region now embraced in Blount County, when first seen by white men, was sparsely occupied by the Over-Hill Indians of the Cherokee tribe.¹ According to Ramsey "the native land of the Cherokee was the most inviting and beautiful section of the United States, lying upon the sources of the Catawba and the Yadkin- upon Pee-wee, Tugaloo, Flint, Stowah and Coosa, on the east and south, and several of the tributaries of the Tennessee on the west and north."²

The Cherokee claimed as their hunting ground the upper tributaries of the Tennessee River, which includes the central and eastern portion of the present state. This area was dominated by the Cherokee at the time in which Hernando De Soto's Spaniards passed through on their futile search for treasure in 1541.³

¹ John Trotwood Moore and Austin P. Foster, Tennessee, The Volunteer State, 1769-1923, (Nashville: The S. J. Clarke Publishing Company, 1923), Vol. 1, pp. 16-20.

² J. G. M. Ramsey, The Annals of Tennessee to the End of the Eighteenth Century, (Charleston: Walker & James, 1853), p. 83.

³ A. N. Carpenter, The History of Tennessee, (Philadelphia: J. B. Lippincott and Company, 1856), pp. 44-46.

During the colonial period the Cherokee territory was divided into three settlements.⁴ These settlements were known by three geographical divisions: the Lower Towns, the Middle Settlements and Valleys, and the Over-Hill Towns.⁵ The Over-Hill settlement along the Little Tennessee and Tellico Rivers contained Chota (sometimes spelled Echota), the capital of the Cherokee nation.⁶

The Indians seem to have established few permanent villages within the present confines of Mount County. The only one of which we have more than mere superficial information is Chilhowee, which was the last Indian town going up the Little Tennessee toward the mountains.

By 1785, the Cherokees had made progress toward civilization: the women wanted to learn how to raise cotton, flax and wool, as well as how to spin and weave them. They lived in villages whose governing methods were based on socialistic principles. This same principle was inducted into their agricultural system. The crops of vegetables and patches of tobacco were harvested and equally distributed

⁴ Ramsey, op. cit., p. 163.

⁵ John Haywood, The Civil and Political History of the State of Tennessee, (Nashville: Methodist Episcopal Church, South, 1891), pp. 35-36.

⁶ S. G. Heiskell, Andrew Jackson and Early Tennessee History, (Nashville: Ambrose Printing Company, 1920), Vol. 1, p. 192.

among the members of the tribe.

It seems fairly certain that the territory now comprising Blount County was used by the Indians almost exclusively as hunting and fishing grounds. The entire area was covered with trees and shrubs, among which were several varieties of oak, maple, hickory, chestnut and other deciduous trees, with many hemlocks and conifers covering the mountain slopes.

The rapid infiltration of settlers into East Tennessee caused the Indian to resort to hostile invasion of the white man's settlement. The invading spirit of the Cherokee was evidenced in their reply to the white settlers who tried to mediate peace between them and the Tuscaroras. Their reply was: "We cannot live without war. Should we make peace with the Tuscaroras, we must immediately look out for some other, with whom we can be engaged in our beloved occupation."⁷

It was not to be denied that the Cherokee Indians held the most valid claim to the area now known as East Tennessee. However, the movement of the settlers into the Tennessee area did not await the legal termination of the Cherokee claim.

The treaty of Lochaber of 1776 provided for the

⁷ Ramsey, op. cit., p. 83.

settlement of the northeastern corner of the Tennessee country.⁸ Later it was found that many of the settlers had located outside the bounds provided for in the treaty of Lochabar. In 1777, the Indian title to the land occupied by these "squatters" was relinquished by a treaty between North Carolina and the Cherokee nation.⁹

The various treaties between the Cherokee and the settlers were often held with little regard by the latter, resulting in much confusion and misunderstanding. The rapid flow of settlers into Indian territory was resented by the Indians, who contested the encroachment of this foreign element in many sanguinary conflicts, until their power was completely broken by the great "Indian fighter," John Sevier.¹⁰ In 1817, the United States Government, under the terms provided for in the Treaty of New Echota, began plans for the emigration of the Cherokees to their new home west of the Mississippi River. It was not until the Cherokees ceded all

⁸ Stanley John Folmsbee, Sectionalism and Internal Improvements in Tennessee, 1796-1845, (Knoxville: East Tennessee Historical Society, 1939), pp. 6-7.

⁹ William Robertson Garrett and Albert Virgil Goodpasture, History of Tennessee, Its People and Its Institutions, (Nashville: Brandon Printing Company, 1900), p. 54.

¹⁰ James Phelan, History of Tennessee, (New York: Houghton, Mifflin and Company, 1888), pp. 63-66.

their land to the whites and were removed in 1838 to the Indian Territory in Oklahoma, that peace prevailed on the frontier, thus closing the first episode of East Tennessee history.¹¹

The Forefathers of Tennessee's Pioneers

The stock from which the early pioneers of Tennessee was derived had settled the valleys of the Shenandoah, the Yadkin, and the Catawba in Virginia and North Carolina, in which regions were concentrated Scotch-Irish, English and a few French settlers. They had been attracted to these fertile river valleys by the lure of cheap and ever free land.

Another important racial stream of population into this same region was composed of Germans attracted to the States from the Palatinate during the eighteenth century. Many of the immigrants were "indentured servants," who paid for their passage by several years of servitude.¹²

It was the liberty-loving instinct of these people that caused them to plunge into the wilderness seeking a home for their descendants in a limitless, free domain. However, it must not be overlooked that behind Boone, Sevier, Houston,

¹¹ Moore and Foster, op. cit., p. 259.

¹² Archibald Henderson, The Conquest of the Old Southwest (New York: The Century Company, 1920), p. 11.

and pioneers of their caliber were men of conspicuous civil and military genius who devoted their best gifts to actual conquest and colonization.

The circumstances under which they lived compelled the pioneers to become self-sustaining. The difficulty of obtaining food for the settlements forced every man to supply his own needs. Thus the pioneer, through necessity, became an expert marksman, which stood him in good stead in the days of Indian invasions.

The frontier life, with its purifying and tempering influence, instilled in these pioneers intellectual traits which constitute the fundamentals of American character. A successful struggle with nature in the tense solitude of the open forest developed a spirit of individualism. However, the necessity of sharing with others the dangers of conquering the wilderness gave impetus to a strong sense of solidarity and of human sympathy. With the lure of free lands ever confronting them, the pioneers developed a restlessness and a desire for untrammelled freedom. Yet this desire occasioned a defiance of established government which has appeared spasmodically throughout the entire course of our history.

We have no authentic records of the earliest appearance of white men in East Tennessee; however it has been

recorded that traders and hunters visited this region prior to 1700. As they migrated among the Indian tribes in this region, they have not been considered as permanent settlers.

After this group, consisting of Scotch-Irish immigrants from the western parts of Virginia and North Carolina, had blazed a trail across the Appalachians, another group, impelled by a great desire to better their condition in a new and rich land, braved the terrors and privations of the wilderness, crossed the mountains and established homes for themselves in what is now East Tennessee.¹³ They did not come in parties, nor was the movement the concerted action of any recognized leader.¹⁴

Historians generally agree in awarding to William Bean the honor of being the first permanent white settler in Tennessee.¹⁵ He was originally from Pittsylvania County, Virginia, which he left in 1769 and penetrated as far as the Watauga region, erecting a log cabin at the mouth of Soones' Creek, where his son Russell, the first native white Tennessean, was soon afterwards born.¹⁶

¹³ Garrett and Goodpasture, op. cit., pp. 48-49.

¹⁴ Loc. cit.

¹⁵ Samuel Cole Williams, Dawn of Tennessee Valley and Tennessee History (Johnson City: The Watauga Press, 1937), p. 338.

¹⁶ Ramsey, op. cit., p. 94.

Settlements

The settlement of Blount County was begun in 1785. The first fort was established by Robert McTeer. It was located about one and one-half miles south of Eusebia Church. It soon became the nucleus of an excellent neighborhood of intelligent and patriotic citizens who had migrated principally from the Shenandoah valley of Virginia. Numerous forts were established in various parts of the county. Outstanding among them were John Craig's, situated on the present site of Maryville; Houston's, about six miles south of Maryville; and Kelly's near Rockford. During the first years the settlements suffered severely from Indian forays. The propinquity of the mountains, which furnished safe hiding places for the savages, made it necessary to keep a constant vigil of the frontier, and many times compelled the inhabitants to seek refuge in the strongest forts. The earliest settlers were mainly descendants of Scotch Presbyterians, and many of the first churches were established by them. It is believed that the Eusebia Church was organized in 1786 in the McTeer neighborhood by Hezekiah Balch.¹⁷ At this site a large log building was erected and later a camp ground was established near by.

¹⁷ History of Tennessee, (Nashville: Goodspeed Publishing Company, 1887), p. 829.

In 1786, a group of friends established a colony at the present site of Friendville. Pioneer leaders of this group consisted of such men as John Hackney, James Matthews, James Allen, and John Walker. The land around Louisville was obtained by Robert, John, and James Gillespie, in accordance with an act of the Legislature, to promote the erection of iron works. A small furnace and a forge were erected which functioned until the Gillespies had obtained a title to the land, at which time the works were abandoned.

TOPONYMY

The place names of Blount County and their derivation are of a general interest and occasionally possess distinct geographic or historic value. The names given to the natural features and to the settlements and political divisions reveal several different tendencies, some of which are worthy of mention. It is therefore possible to classify the place names of the county into several groups.

The Indians attached names to some of the most important streams and mountains. These were chosen because of some characteristic feature. The early settlers endeavored to retain some of these names but were successful only to a limited degree. When the Indian term was retained by the early settlers there were gradual changes which eventually corrupted the original word.¹⁸

¹⁸ Indian terms: James Rooney, Myths of the Cherokee, (Washington: Government Publishing Company, 1900), pp. 537-548.

The names of families or some outstanding individuals constitute the greatest number of place names of Blount County. Creeks were commonly named for a family that operated a mill on the stream.

Place Names

Alcoa - formerly known as North Maryville. The company officials wishing to identify their products with the name of this town fashioned the name "Alcoa" from the initials of the Aluminum Company of America.¹⁹

Blount County - for William Blount, governor of Southwest Territory. It originally was a part of Knox County.

Cades Cove - a small settlement in the mountainous area of Blount County. The Cherokees called it "Tsiyahi" meaning "otter place."

Canot - Cherokee name for Little River.

Chilhowee - Cherokee Indian name "Tsulunwei."

Clover Hill - named in 1830 after the first farm in the county to raise clover.

Craig's Fort - erected in 1785 and later called Maryville.

Ellejoy Creek - this is the name given to a branch of the Little River near Maryville, Tennessee. At one time a

¹⁹ Maryville Enterprise, Maryville, Tennessee, February 20, 1936.

Cherokee settlement was located on this creek. It was then called "Elatseyi" meaning "green earth."

Friendville - the first settlers were Friends.

Gregory Bald - one of the higher points in Blount County. The Indians named it "Taistuyi" or "rabbit place."

Maryville - the county seat of Blount County. It was established by an Act of the State Legislature in 1796 and named in honor of Governor Blount's wife, Mary.

Montvale Springs - the name Montvale appeals to one's aesthetic sense. There is a tradition in the Wallace family that Jesse Wallace named the springs. While hunting for lost cattle he found the springs, and the environment suggested the name Montvale.

Sunshine - established as Kinzel Springs in 1894 by S. D. Kinzel of Knoxville, Tennessee.

Tennessee - the Indians applied this name to the Little Tennessee River.

Talikwa - also known as "Pisaliko" or "Taliko." It was an Indian settlement in the vicinity of Tellico Plains.

Townsend - originally known as Tuckaleechee Cove, but later changed to the present name in respect to W. B. Townsend who had large timber holdings in this area.

Walland - prior to 1901 it was known as Miller's Cove. It received its present name when the England-Walton Tannery Company erected a tannery at this place.

Unaka - in Cherokee language it is spelled "Unica"
signifying "white."

CHAPTER III

POPULATION

The population of Blount County in 1795 was as follows: free white males sixteen years and over including heads of families, 585; free white males under sixteen years, 817; free white females including heads of families, 1,231; and slaves, 183; making a grand total of 2,816.¹

Many of the present towns originated as forts; outstanding among them were John Craig's Fort situated on the present site of Maryville, and Kelly's Fort near Rockford. The following brief historical resume on the growth of early towns depicts the difficulties under which the pioneers labored to establish a foothold for future generations.

Maryville, the county seat, was established in 1796; "by an act passed by the Governor, Legislative Council and House of Representatives of the territory, Knox County was divided and Blount County established. William Wallace, Joseph Kelly, and Samuel Henry were appointed commissioners to select the place for the county seat and erect county buildings. The act names the seat of justice, Maryville. This was out of respect to Mrs. Mary Blount, the wife of the Governor. The county was thus named for Governor Blount."²

¹ Ramsey, op. cit., pp. 643-653.

² Loc. cit.

MARYVILLE was first given legal status as an agency of government in the year 1907, when the General Assembly of the State of Tennessee granted the city a charter.

The first minutes of the official records of the city of Maryville relate that "pursuant to an Act of the Legislature of the State of Tennessee, passed February 13, 1907, and approved March 13, 1907, incorporating the Town of Maryville" the first election was held in the several wards of the town on March 23, 1901.

The town grew and prospered under its old charter for twenty years. In 1927 the Legislature of the State of Tennessee granted Maryville the charter under which the city functions today.

Maryville, according to the 1940 census, has 5,609 people within its corporate limits. However, Maryville and its environ contain approximately 12,000 people. Maryville is the site of Maryville College, an outstanding Presbyterian institution of learning which was founded in the year 1819.

Maryville is a very busy city today. The city is directly affected by our national defense program, due to the fact that at Alcoa, Maryville's twin city, are located two of the largest plants of the Aluminum Company of America. These plants are operating at full capacity in filling orders for defense. In addition, the Aluminum Company is constructing

a third plant at Alcoa which will give the company tremendous increase in capacity to supply our nation with war material. Naturally there has been great expansion in labor and employment locally, all of which has created more local buying power. This increased purchasing power has certainly had a salutary effect on local business in Maryville. The city today stands at the threshold of opportunity and advancement.

Maryville has what is commonly known as a commission form of government. Every odd year the people elect a mayor and three commissioners. The commissioners, in turn, elect the city recorder and city attorney, who make the official family total six in number.

With an eye for future needs the city has made provision for an adequate water supply. In 1939, the city purchased its own electric system, with the aid of the Tennessee Valley Authority, from the Commonwealth and Southern Power Company.

ALCOA - adjacent to and almost a part of Maryville is Alcoa, the leading industrial town of the county, with a population of 5,250. The largest plant of the Aluminum Company of America is located here.



Figure 5. The industrial city of Alcoa has a picturesque location.



Figure 6. The Alcoa water supply is pumped from this station near the Little River.

TABLE I
COMPARATIVE POPULATION STATISTICS OF TWO
PRINCIPAL CITIES IN BLOUNT COUNTY
1930

	Alcoa	Maryville
Total population	5,255	4,958
Male	2,738	2,397
Female	2,517	2,561
Native white	3,647	4,585
Native parentage	3,616	4,529
Foreign or mixed parentage	31	56
Foreign-born white	13	10
Negro	1,587	363
Other races	8	0

Source: United States Census population 1930.

LOUISVILLE is situated on the south side of the Tennessee River along the northwestern border of Blount County. It is bounded by Lackey Creek on the east, the junction of the Knoxville and Maryville highways to Friendsville on the west, the Tennessee River on the north, and the Louisville & Nashville Railroad on the south. It was an incorporated town as early as 1851, and enjoyed a prosperous era until 1859, during which time many expensive

homes were built. Some of these homes still stand--shadows of their former splendor. According to the "History of Louisville," by Ambrose Lowe, in 1828 Louisville was one of the largest shipping ports for meat and grain on the Tennessee River.³ Regular steamboat lines were established between Knoxville and Decatur, Alabama; and from 1835 to 1845 Louisville was referred to as the most important town on the south bank of the river, and by far the most important place in Blount County. At that time it had a dozen stores, a wagon and harness shop, a blacksmith shop, tan yards, and several distilleries.

The village of Louisville has never fully recovered from the flood of March 1867, which was the most disastrous flood known in Tennessee. At that time its wharf and warehouse were swept away. Later, with the coming of the railroad, the river lost practically all of its importance as a means of transportation.

Louisville has a population of 354, and is built principally on three streets; two of these form a "Y" intersection with the open end toward Hackey Creek, and the third extends from the railroad to the river, crossing the other

³ Knoxville Journal, Knoxville, Tennessee, April 19, 1940, p. 19.

streets almost at right angles near their junction.⁴ The better homes, interspersed with a few poor dwellings, are located on these three streets.

The chief source of income for the people of the village is industrial employment within commuting distance. The principal source of employment is the Aluminum Company of America at Alcoa. The only industry within the village is the Lackey Creek Filling Company. Only eight families in the village derive any part of their income from agriculture. Of these eight, three are owners, two are laborers, and three sell a small amount of produce raised in their gardens. Outside the village 71 per cent of the families earn the greater part of their income from the farm.

Louisville has an elementary school for Negro children. Negro high school students are transported to Maryville and a few attend schools in Knox County. The Louisville Grammar School is the only school for white children located within the community.

The community is well supplied with roads leading to surrounding cities and towns. These are all-weather roads, but for the most part they are much in need of repair. A branch line of the Louisville & Nashville Railroad runs through Louisville.

⁴ United States Census, 1940.

FRIENDSVILLE was founded by a group of Quakers who settled in the northwestern corner of the County. Supposedly they migrated westward from North Carolina, first settling at Greeneville and New Market, Tennessee, and then continuing southwestward to the present locality of Friendsville. The time of the arrival of the first settlers has not been definitely established, but dates of church meetings are recorded as early as 1808. Although Friendsville was never a large place, usually having a population of about 500, it was reported by older residents that at the outbreak of the Civil War about 6,000 Quakers, refusing to fight, gathered here. Later they were scattered, the majority fleeing into Ohio.

The 1940 census showed a population increase of ten people over the census of the previous decade. It is an important trade center for its size, having seven mercantile establishments and two filling stations. In addition to the Friendsville academy, there are elementary and high schools in the village with a small Negro school outside the village limits.

About fifty-three families or 82.8 per cent in this area earn their living from the soil either as owners, tenants, or farm laborers.

Roads are plentiful through this area, but without exception they are badly in need of repair. The community

is situated only short distances from roads leading to Lenoir City, Maryville, Alcoa and Knoxville. In addition to the through highways there are a sufficient number of side roads to give access to the main highways and to markets from isolated farms along the river. A branch of the Louisville & Nashville Railroad runs through the village connecting with the main line between Knoxville and Atlanta.

ROCKFORD is located on the south side of the Little River, six miles north of Maryville. It lies between U. S. Highway No. 129 on the east, and state highway No. 33 on the west. This small village grew up around a cotton factory established there in about 1840. During the early history of the county, cotton was an important crop, necessitating the erection of cotton gins, and consequently a factory was established at Rockford.

A recent estimation of the population totaled 125 families. Until two years ago there had been a stationary population of approximately 115 families. Only a small percentage of the children attend school in Rockford. The village is the home of the Rockford Manufacturing Company where rope, sash cord, twine and mop cord are made. A branch of the Southern Railroad passes through the western edge of Rockford.

CALDERWOOD⁵ is located thirty-one miles south of Maryville, on the Little Tennessee River, and was established in 1913 by the Aluminum Company of America and built up as a headquarters for the dam building projects. The United States Census population lists Calderwood as 894. There are several stores, a school and a church.

TOWNSEND, located on Little River twenty miles from the North Carolina state line, in a little valley known as Tuckaleechee Cove, was settled by pioneers from North Carolina. The population in 1930 was 402. The town includes two stores, three churches, a high school and grammar school, and a moving picture show.

SUNSHINE, located sixteen miles east of Maryville, between the four mountain peaks named Matthew, Mark, Luke and John, was established as Kinzel Springs in 1894 by E. J. Kinzel of Knoxville, but a few years ago was incorporated as Sunshine. It is chiefly a summer resort with a population in the summer of some 600. There are two hotels, two stores, a garage and filling station, seventy-eight privately owned cottages, and churches accessible nearby.

* Note: Information on following towns derived from same source.

⁵ Social Survey of Blount County, published under the direction of Dr. J. H. McMurray, (Maryville, Tennessee: Maryville College, 1930), pp. 5-8.

WALLAND is located twelve miles east of Maryville on the Little River, and has been especially noted for its chief industry, tanning of hides. In 1930, the population was listed as 450. There are three stores, one hotel, and two churches. The grammar and high schools are consolidated.

WINFIELD, on the Louisville & Nashville Railroad eight miles southeast of Maryville, was established in 1902.

BRICK HILL, located eleven miles southwest of Maryville, is noted because it contains the first mill granted a permit by the Blount County Court. The mill was established in 1796.

KENTON, five miles west-northwest of Maryville, is the junction of the through line and the Louisville & Nashville Railroad loop.

ARENA, a Louisville & Nashville Railroad station four miles northwest of Maryville, is chiefly a shipping center for strawberries, peaches and grapes.

CADDER COVE, a section two miles wide and twelve miles long, is located in the Smoky Mountain National Park thirty-three miles southeast of Maryville. Its population numbers about 200 and it includes several stores, churches and a schoolhouse.

CLOVER HILL, six miles west of Maryville, with a population of some 40 people, was established as a post office in 1830. It was named after the first farm in the county to

produce clover. The village includes a grist mill, two stores, a schoolhouse and one church.

MONTVALE STATION, located seven miles south of Maryville, was once a Methodist campmeeting ground, and served as a transfer point to the nearby Montvale Summer Resort, which later was razed by fire. The population numbers about 30.

SHILOH, located twenty-five miles south of Maryville with a population of about 20, was the second northernmost town of the Tennessee Indians.

WELLSVILLE, located twelve miles south of Maryville was named after Wells, who built a grist and saw mill there.

Problems of Proposed Inundated Area

The village of Friendsville will not suffer any physical effects due to the flooding of the Fort Loudoun reservoir, although the merchants may feel some effects from loss of sales resulting from the flooding of crop lands. With almost 70 per cent of the homes and many of the institutions of Louisville below the 813-foot contour, the village will undergo major readjustment problems. Ninety-seven families will be forced to move as they live below the 813-foot contour; eighteen other families may have to relocate due to loss of land. There are other families who will probably remain, but they will find it necessary to purchase more land

or make some adjustments in order to continue on their present scale of living. The remaining one hundred seventeen families, although experiencing some losses, will probably make all necessary adjustments and continue as formerly.

Some of the most productive land in Blount County is along the Tennessee and the Little River, and in creek basins. However, there is relatively a very small amount of Class 1 land in the county.⁶ Of the 2,988 farms in the county only about 75 will be affected by the reservoir. It is estimated that 2,500 acres of cultivated crop land on these 75 farms will be flooded. Approximately 50 per cent of the Class 1 land in Blount County will be flooded, but there is only a relatively small amount of this class of land in the county. Most of the farm land in the proposed reservoir area is Class 2 and Class 3, but this will constitute only a small percentage of these classes of land in the county.^{7,8}

Rockford, too, will suffer some loss in crop land, but otherwise the village will not be affected. The affected farms in the Rockford Community total 1,050 acres, of which

⁶ Class 1: land which has no fertility or erosion problem.

⁷ Class 2: land which will permit only 3-4 year crop rotation. Class 3: land which will permit only 5-6 year crop rotation.

⁸ I. T. Elrod, Blount County Agent, Interview, June 17, 1941.

about 250 acres were plowed in 1939. Almost 200 acres of this plowed land will be inundated. Incomes lost to the farmers will amount to approximately \$17,000.00.

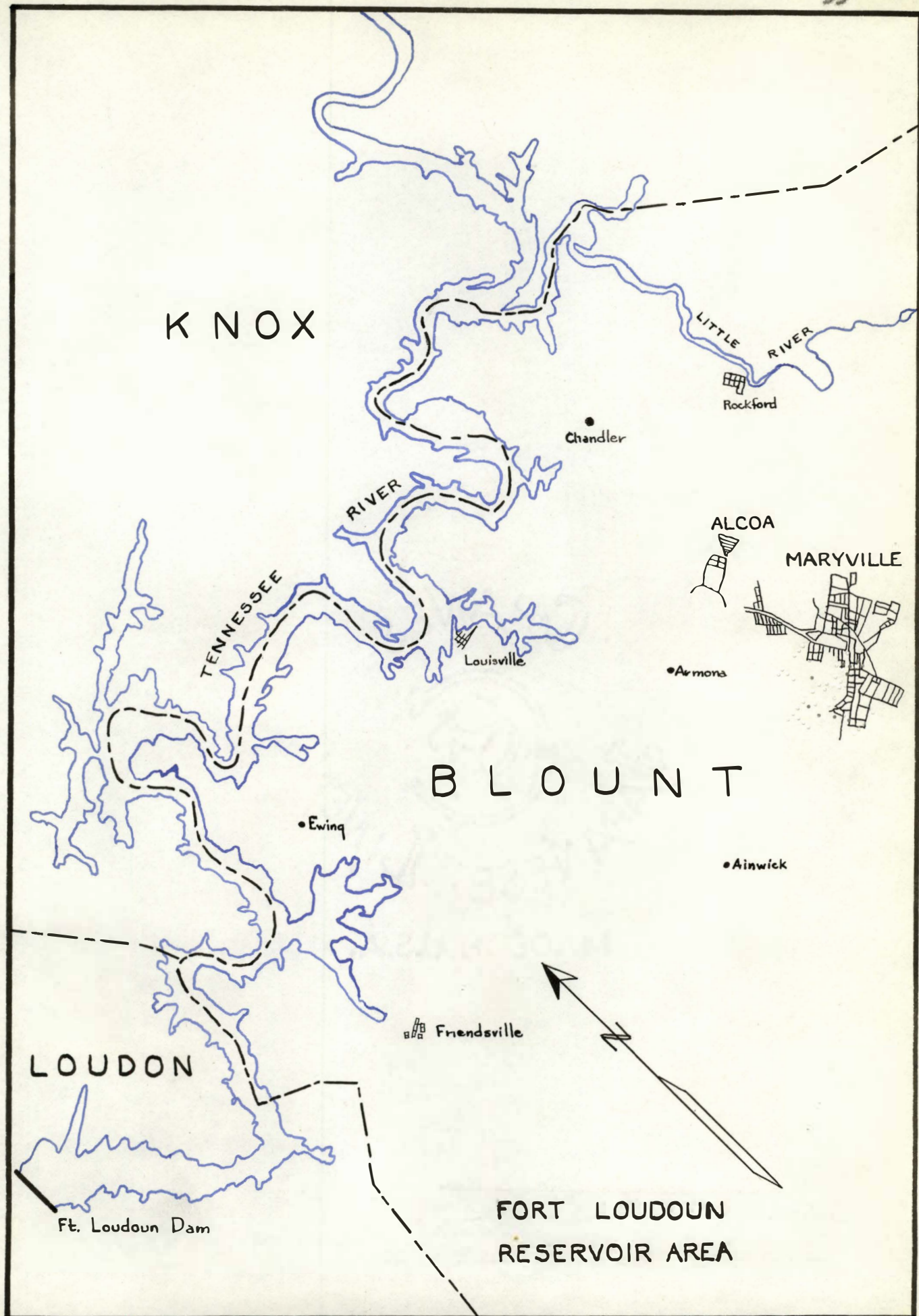


Figure 7

TABLE II
POPULATION OF BLOUNT COUNTY DISTRIBUTED
ACCORDING TO 19 CIVIL DISTRICTS
FOR YEARS 1910, 1920 AND 1930

		Year		
		1930	1920	1910
Total Population of Blount County		33,989	28,800	20,009
	<u>District Number</u>			
	1	1,077	1,217	1,238
	2	580	615	522
	3	269	279	279
	4	909	889	953
	5	1,035	907	970
	6	1,062	947	911
	7	1,147	1,086	971
	8	1,490	1,269	1,148
(Includes Aleca and part of Maryville)	9	11,076	8,790	2,852
	10	1,609	1,239	1,258
	11	1,471	1,192	1,085
	12	956	880	788
	13	1,213	1,126	1,151
	14	1,458	1,242	1,204
	15	2,017	1,763	1,705
	16	424	579	626
	17	1,438	1,118	736
	18	874	824	842
(Includes part of Maryville)	19	3,884	2,838	1,520

Source: United States Bureau of Census, 1910-1930.
Population Bulletin First Series, p. 17.



Figure 8

POPULATIONS OF CIVIL DISTRICTS FOR 1930

TABLE III

POPULATION

Persons 10 years old and over engaged in gainful occupations
by sex, color, and industry groups, 1930

Color and Industry Group	The State		Blount (Whites)		Blount (Negroes)		
	Total	Male	Female	Male	Female	Male	Female
All gainful workers - Negro	222,731	147,073	75,658			972	187
All industries - White	958,209	762,321	195,888	9,588	1,248		
Agriculture	376,623	346,004	30,619	3,247	86	98	1
Farmers (owners and tenants)	234,627	223,514	11,113	1,930	70	36	1
Farm managers and foremen	1,283	969	314	4	2		
Farm laborers	140,568	121,404	19,164	1,312	14	62	
Wage workers	68,784	64,980	3,804	810	4	52	
Unpaid family workers	71,784	56,424	15,360	502	10	10	
Forestry and fishing	4,694	4,556	36	102			
Extraction of minerals	16,039	15,967	72	264	1	36	
Building industry	33,831	33,449	383	360	2	45	
Chemical and allied industries	12,886	10,286	2,600	117	2	4	
Clay, glass and stone industries	6,729	6,403	326	102	3	8	
Clothing industry	6,058	2,257	3,801	7	6	1	
Food and allied industries	11,608	9,742	1,866	73	5	4	
Automobile factory and repair shops	10,282	10,008	274	67	2	7	
Iron and steel industry	20,462	19,799	663	596	7	14	
Saw and planing mills	15,427	15,102	326	347	1	1	
Other woodworking and furniture industries	8,352	7,741	611	28	2	1	
Paper printing and allied industries	7,409	5,808	1,601	10	3		
Cotton mill	7,784	4,682	3,102	114	50		
Knitting mills	13,866	5,066	8,809	49	149	1	
Other textile industries	7,895	4,260	3,635	2	1		
Independent hand trades	5,763	2,634	3,149	21	24	1	4

TABLE III
(Continued)

Color and Industry Group	The State		Blount (Whites)		Blount (Negroes)		
	Total	Male	Female	Male	Female	Male	Female
Other manufacturing industries	28,667	23,377	5,290	2,130	49	591	6
Construction and maintenance of streets	14,689	14,516	173	109	2	6	
Garages, greasing stations	5,616	5,421	197	44	3	2	
Postal service	5,322	4,839	483	46	7	19	
Steam and street railroads	32,108	31,309	799	162	2	1	
Telegraph and telephone	7,157	3,606	3,551	12	17	4	
Other transportation and communication	9,313	8,951	362	95	1	5	
Banking and brokerage	6,268	4,789	1,479	18	5	1	
Insurance and real estate	10,266	7,664	2,602	50	8	1	
Automobile agencies and filling stations	7,920	7,413	507	56	2	16	3
Wholesale and retail trade except automobiles	82,702	65,451	16,221	541	110	4	
Other trade industries	2,869	2,233	636	3	3	13	
Public service (not elsewhere classified)	12,114	10,922	1,192	66	6	16	24
Recreation and amusement	4,833	3,342	1,491	17	12	36	1
Other professional and semi-professional services	44,620	20,560	24,060	211	235	5	
Hotels, restaurants, boarding houses	20,532	9,847	10,685	77	101	16	
Laundries, cleaning and pressing shops	8,517	3,806	4,711	22	21	131	3
Other domestic and personal services	70,454	12,834	57,630	72	239	29	
Industry not specified	16,613	16,668	1,945	349	21		

Source: United States Census 1930.

TABLE IV
POPULATION OF BLOUNT COUNTY
1800-1940

Year	Total Population	Rural Population	Farm Population	% Rural	% Farm
1800	5,587	5,587	*	100	*
1810	8,839	8,839	*	100	*
1820	11,258	11,258	*	100	*
1830	11,028	11,028	*	100	*
1840	11,745	11,745	*	100	*
1850	12,424	12,424	*	100	*
1860	13,270	13,270	*	100	*
1870 ⁹	14,237	14,237	*	100	*
1880	15,985	15,985	*	100	*
1890	17,589	17,589	*	100	*
1900	19,206	19,206	*	100	*
1910	20,809	20,809	*	100	*
1920	28,800	21,703	14,300	75	50
1930	33,989	23,776	14,113	69	42
1940 ¹⁰	40,883	*	*	*	*

* Figures not available

An examination of the above table indicates a slow decrease in farm population. The agricultural population has remained practically stationary or has declined whereas the urban population, principally concerned with the manufacturing industries, has almost invariably increased. The rural population of Blount County in 1930 was 41.6 people

⁹ Joseph B. Killebrew, Resources of Tennessee, (Nashville: Tavel, Eastman and Howell, 1874), p. 406.

¹⁰ United States Census, 1880-1940.

per square mile while that for the entire state of Tennessee was 63.4 people per square mile. Some of the decided increases in cities such as Maryville and Alcoa are explained by the development of a particular industrial plant.

TABLE V
CHARACTERISTICS OF THE POPULATION OF
BLOUNT COUNTY, TENNESSEE
1920 AND 1930

Character of population	1920		1930	
	Number	Per cent of total	Number	Per cent of total
Native white	25,943	90.1	31,096	91.5
Foreign-born white	175	0.6	43	0.1
Negro	2,675	9.3	2,842	8.4
Total	28,793	100	33,981	100

Source: United States Census of population, 1920 and 1930.

CHAPTER IV

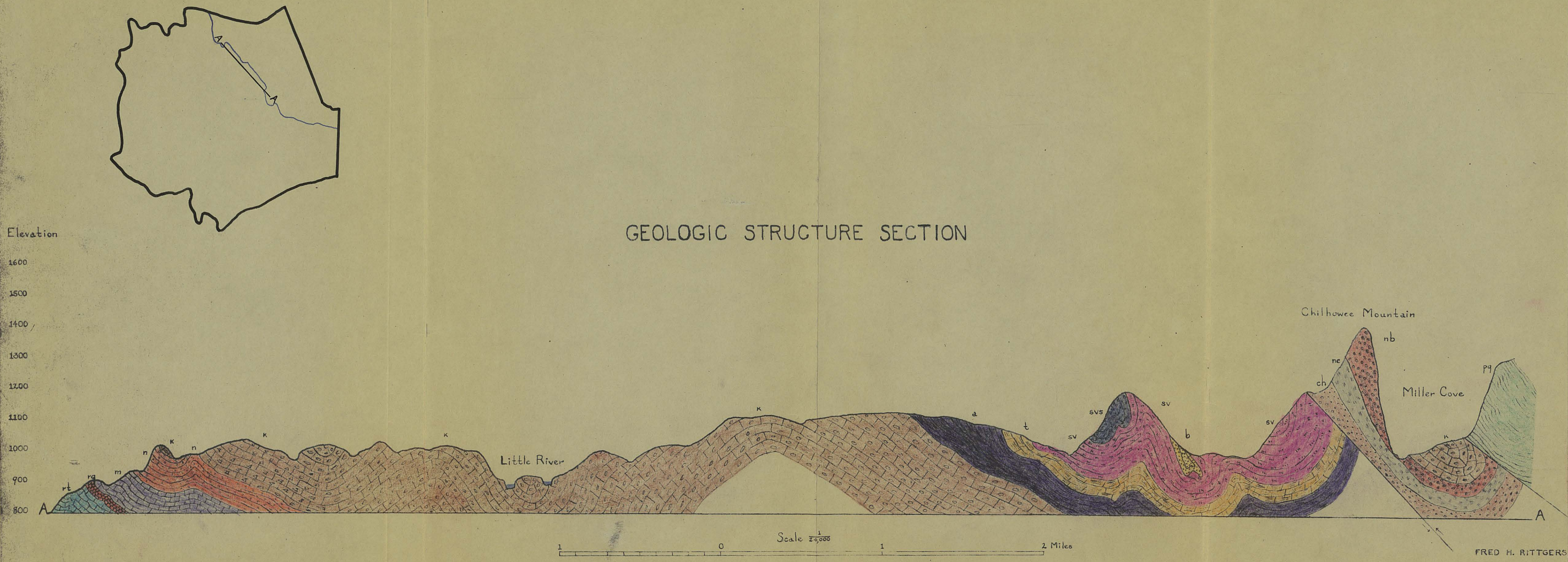
GEOLOGY

The structural features of the rocks of Blount County are extremely varied and complex. Practically every type of geological structure is present. In places the structures have been deciphered, but in other areas they can only be depicted in a generalized manner. The surficial cover of residual soils, talus and vegetation conceals such a large portion of the strata that in places it is impossible to obtain a true picture of the structure.

The present topographic features are the result of a combination of structural deformations and differential erosion. The hills are composed of rocks more resistant to erosion than the strata underlying the valleys, regardless of the original structures. The highest elevations in the county are produced by the resistant Clingman's conglomerate.¹

Appalachian structure such as prevails throughout the entire Appalachian region is well exhibited in Blount County. Following the deposition of thousands of feet of sediments in the great Appalachian Paleozoic geosyncline, compressive forces became active and the strata were thrown into more or

¹ Arthur Keith, Geological Atlas, U. S. Geological Survey, Folio No. 16, 1895.



LEGEND	
SEDIMENTARY	
b	Bays sandstone
sv	Sevier shale
svs	Lentil in Sevier shale
t	Tellico sandstone
a	Athens shale
k	Knox dolomite
n	Nolichucky shale
m	Maryville limestone
rq	Rogersville shale
rt	Rutledge limestone
nb	Nebo sandstone
nc	Nichols shale
ch	Cochran conglomerate
pq	Pigeon slate
c	Citico conglomerate
wi	Wilhite slate

Figure 9

less parallel longitudinal folds.² The dominant force came from the southeast and the resulting folds have a northeast-southwest trend.³ Both the basement pre-Cambrian crystalline rocks and the overlying sedimentary strata participated in the folding.

Open symmetrical anticlines and synclines exist in some portions of the Appalachians, but in this region the compression was so intense that the folds are generally closed and show marked asymmetry. The affected beds of the northern limb of the anticlines, or the southern limb of the synclines, are usually considerably steeper than the corresponding beds of the other side. So great was the compression in certain sections that the folds have been overturned.

Few unmodified anticlines and synclines of any size are present in the county, especially in the southeastern section where the folds involve older and more massive rock. In numerous places the folds are broken by faults. These range in magnitude from a few inches to displacements of over 26,000 feet. The maximum fault displacement that has

² Philip H. King, An Outline of the Structural Geology of the United States, (Washington: U. S. Geological Survey, 1933), pp. 13-14.

³ James M. Safford, Geology of Tennessee, (Nashville: C. C. Mercer, 1869), pp. 145-146.

been determined is just southeast of Montvale Springs, at which point the displacement is believed to be approximately five miles.⁴

Five major faults mapped by Keith in Blount County are low-angle overthrusts, but the fault contacts are more or less obscure. The major faults tend to follow the general northeast-southwest trend of the strata. The actual faults, although usually concealed, are generally determined by the stratigraphic sequence in which they occur.

The general structural pattern of the region is partially depicted in the structure section between Rockford and Miller Cove (Fig. 9). Keith states that: "Massive rocks with few bedding planes, such as Knox dolomite and the sandstones of Chilhowee Mountain, bend in great curves. Thin bedded shales, like Athens shale and Tellico sandstone, were puckered and contorted, because their thin beds bent and slipped easily on their bedding planes."⁵

The heterogeneous character of the rocks of the region and their consequent varying strengths have resulted in numerous modifications of the structural pattern. A hypothetical picture depicting uniform compressive forces

⁴ Keith, op. cit., p. 1.

⁵ Keith, op. cit., p. 1.

from the southeast exerting pressure upon rocks of unequal resistance, would cause buckling and breaking of the strata along other directions than the major ones. In places close folding, crumpling and faulting are so complex that it is difficult to decipher the sequence of events even in good exposures.

A unique structural feature in the locality of Tuckaleechee and Cades Cove is the Great Smoky Thrust Fault. These coves have been described as fensters or windows formed by the overthrust of Unicoi rocks of Lower Cambrian age over Knox dolomite of Canadian age at such a low angle that the hanging wall has been worn through, exposing the footwall.⁶ The movement of the overlying Paleozoic strata some five miles was probably facilitated by the lubricating effect of the Wilhite slate.⁷

Stratigraphy

The exposed hard rock formations are all of sedimentary origin and range from Cambrian to Carboniferous in age, the oldest formation exposed being the Wilhite slate of

⁶ Charles W. Wilson, Jr., The Great Smoky Thrust in the Vicinity of Tuckaleechee, Bear, and Cades Coves, Blount and Sevier Counties, Tennessee, (Nashville: The Tennessee Academy of Science, January 1935), Vol. X, No. 1, pp. 58-59.

⁷ loc. cit.



Figure 10. This exposed outcrop of metamorphic rocks occur at Newfound Gap.



Figure 11. Resistant chert beds in the Knox formation often appear above the surface level.

lower Cambrian age. All of the Cambrian formations that have been recognized in Blount County comprise approximately 16,000 feet of limestones, shales, and sandstones.

The sandstones are coarse to fine-grained quartz sandstone, yellow to brown in color, but locally showing considerable variations in color and texture. They range from thin layers a few inches thick to massive beds 100 or more feet in thickness. The limestone members are also variable, some beds being hard, dense and compact; others are more crystalline, and some are oolitic in texture. They vary in color from white through different shades of gray, buff, and yellow to red or blue. Individual beds range from a few inches to many feet in thickness. Many of the limestone beds are highly fossiliferous, others less so. The stratigraphy of the region can be interpreted chiefly through the limestone formations, whose identity is established on paleontological grounds. The shales are as variable in character as are the limestones. They vary from light gray to almost black in color; some are finely laminated and others are more massive; they range in all gradations from purely argillaceous material to highly calcareous.

The Cambrian section of the county begins with a slate at the base and includes eighteen distinct formational units, alternating limestone-shale and sandstone formations. A

complete list of all the formations found in Blount County according to systems are listed as follows:^{8,9}

Carboniferous System
Newman limestone

Mississippian System
Grainger shale
Chattanooga shale

Silurian System
Days sandstone
Clinch sandstone

Ordovician System
Sevier shale
Tellico sandstone
Athens shale
Holston marble
Chickamauga limestone
Upper Knox dolomite

Cambrian System
Lower Knox dolomite
Wollichucky shale
Maryville limestone
Rogersville shale
Rutledge limestone
Rome formation
Hesse sandstone
Murray shale
Nebo sandstone
Nichols shale
Cochran conglomerate
Clingman conglomerate
Hazel slate
Thunderhead conglomerate
Cades conglomerate
Pigeon slate
Citico conglomerate
Wilhite slate

⁸ Kendall E. Born, Summary of the Mineral Resources of Tennessee, (Nashville: Department of Education, Division of Geology, 1936), pp. 19-40.

⁹ Keith, op. cit., p. 8.

The weathering of the rocks of the upper Cambrian and Ordovician systems forms the rich limestone soils of Blount County. The Knox dolomite is an especially important parent rock because it readily decays, forming wide belts of fertile limestone soils throughout the valley, and it occasionally appears in the mountains as the floor covering of isolated coves.

AREAL GEOLOGY



Figure 12

CHAPTER V
PHYSIOGRAPHY

Physiographic Divisions of Blount County

The most casual observer crossing Blount County from northwest to southeast notes differences in the topographic features, whereas a person traversing the county in a northeast to southwest direction notes few changes. Numerous investigators have studied these type features in various parts of the Appalachians. Because of the wide extent of each physiographic type represented in Blount County, studies made in somewhat distant sections are pertinent to this discussion.

There is general agreement regarding the main features, but not in the minor divisions and in the nomenclature. The classification of Fenneman, adopted by the United States Geological Survey, is mainly followed in deciphering the features of this county.

According to this usage, Blount County constitutes a small portion of the Southern Appalachian Highlands which extends from Pennsylvania to central Alabama and from the Coastal Plain on the east to the Interior Plains on the west.¹

¹ Nevin F. Fenneman, *Physiography of Eastern United States*, (New York: McGraw-Hill Book Company, 1938), p. 121.

This is divided into provinces and these subdivided into sections. A casual examination of a topographic map reveals that Blount County contains portions of the Ridge and Valley and Blue Ridge provinces which are two sharply distinct physiographic provinces. (Fig. 13).

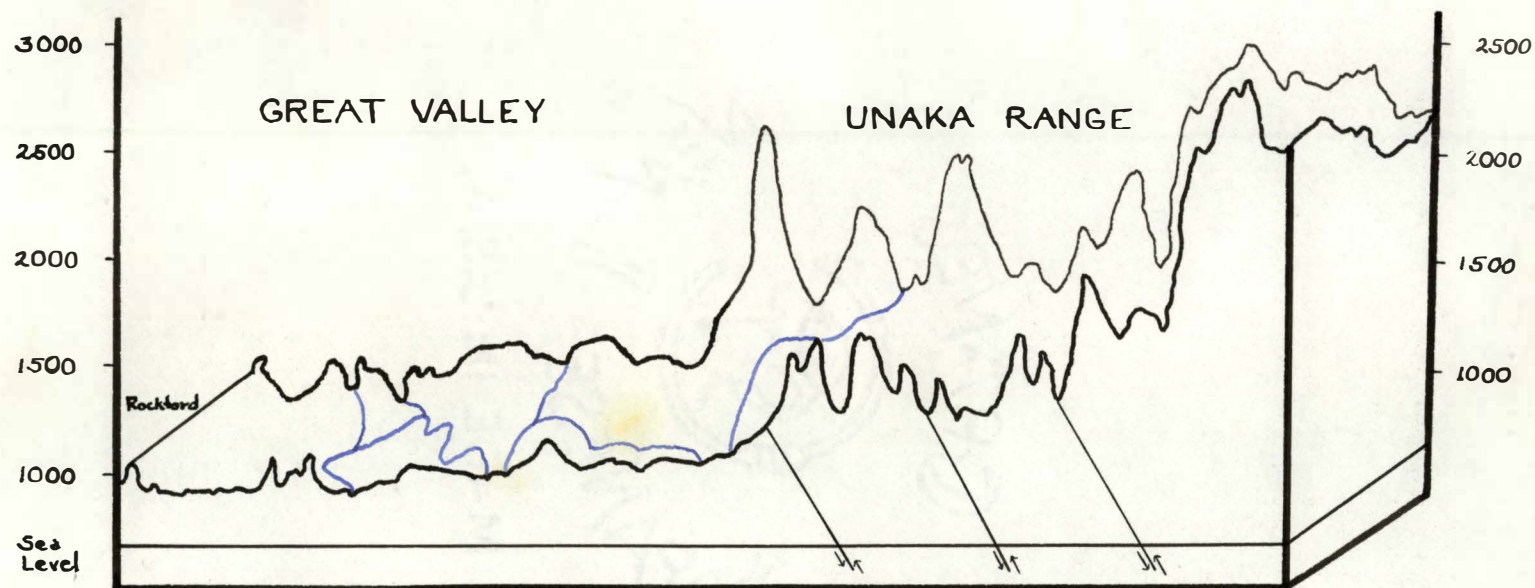
Throughout Tennessee the Ridge and Valley province is known as the Great Valley of East Tennessee. Bordering the Ridge and Valley province on the east is the Blue Ridge province which is known in Tennessee as the Unakas. Thus, about one-third of the eastern portion of Blount County lies in the mountainous area and the remainder is in the great fertile valley area.

Physiographic Characteristics

Blount County is divided into two geographic divisions.² The area northwest of Chilhowee Mountain represents the valley area; the area southeast of Chilhowee Mountain is the southern portion of the western front of the Unaka Mountains.³ Blount County is drained by the Tennessee River and its tributaries-- Little Tennessee and the Little Rivers. The only large

² Keith, op. cit., p. 1.

³ Fenneman, op. cit., p. 173. Reference is made to C. V. Hays who applies the term "Unaka" to the ranges on the northwest side which converge to unite with the Blue Ridge at Grandfather Mountain.



Scale
1 inch = 1,000 feet vertical

TOPOGRAPHIC PROFILE

Figure 13

stream confined to this area is the Little River which is fed by streams rising in the Great Smoky Mountains--a subdivision of the Unakas. The headwaters of the Little River descend from an elevation of approximately 4,000 feet near the North Carolina-Tennessee state line to an elevation of 1,000 feet where the river passes through the water gap in Chilhowee Mountain.

The topography of this region is the result of differential erosion. Formations containing rock-forming minerals such as carbonates of lime and magnesia, and occasionally some feldspar are easily eroded by water. Rocks with impurities are not eroded at the same rate. The soluble portions are removed, leaving the insoluble matter. If the rocks have a high percentage of impurities there will be a tendency for them to occupy the higher regions and the soluble rocks will underlie the valley and lower areas.

Keith states:

"Such are all the formations between the Rome sandstone and the Tellico sandstone. All of these, except the Knox dolomite yield a fine clay after solution; the dolomite leaves besides the clay a large quantity of silica in the form of chert, which strews the surface with lumps and protects it from removal. In many regions where the amount of chert in the dolomite is less, it is reduced to low ground, as the other limestones are. The least soluble rocks are the sandstones, and since most of their mass is left untouched by solution they are the last to be reduced in height. Apparently the slates and conglomerates of the mountain district

form an exception to this, for they contain considerable soluble matter in feldspar and yet form the highest points of the region. For this result the great thickness of the formation is largely responsible. The coarseness and hardness of the insoluble fragments also retard their removal.

"Erosion of the valley formations has produced a series of long ridges, separated by long valleys, which closely follow the belts of rock. Where the formations spread out at a low dip the valleys or ridges are broad, and where the strata dip steeply the valleys are narrower. Each turn in the course of a formation can be seen by the turn of the ridge or valley which it causes. Each rock produces a uniform type of surface so long as its composition remains the same; with each change in composition the surface changes form. The Knox dolomite illustrates this feature well. Near Maryville it has little chert and lies at nearly the same altitude as the Holichucky shale and Maryville limestone. The amount of chert in the dolomite steadily increases northeastward and the cherty ridges become more and more prominent, until southeast of Dumpling Creek they stand from 300 to 400 feet above the valley of Holichucky shale and Maryville limestone. Ridges of the Citico conglomerate show similar but more rapid changes, and, from an elevation of 2,000 feet where the formation is thickest, drop to 1,500 feet in a few miles as the formation thins out."⁴

This great valley which is underlain by limestone represents the agricultural area of this province. The fertile soil derived from the parent rock, highly calcareous in composition, is well suited to intensive cultivation. However, scientific management is necessary if erosional forces are to be combatted successfully. Many resistant

⁴ Keith, op. cit., p. 1.

ridges of sandstone are to be found paralleling the general trend of the valley. The soil derived from such parent material is poor. During periods of high water great quantities of siliceous material are carried from the hillsides down into the valleys where it is deposited on top of fertile river-bottom lands.

"The topography of the mountain district is as unlike that of the valley as its rocks are unlike those of the latter. None of the regularity of the valley ridges appears, and only the Knox dolomite, the Citico conglomerate, and the Chilhowee formations produce the same surface forms in all places. This is due partly to the more irregular folding of the rocks and partly to the less definite separation of the soluble and insoluble rocks into thin beds. The northwestern part of the district consists of the long, straight ridge of Chilhowee and four open valleys or 'coves' hemmed in by irregular ridges and mountains. The coves were produced by erosion of the Wilhite slate and Knox dolomite, while the harder rocks around them were not reduced. The effect of solubility is well shown in Cades Cove. The floor of this consists largely of limestone, yet scarcely an outcrop appears, while in the less soluble rocks around it the streams flow over innumerable ledges."⁵

The segment of the Unakas, forming the natural boundary of eastern Blount County is designated as the Great Smoky Mountains (Fig. 14). Flanking the western front of the Great Smoky Mountains is an isolated outlier known as Chilhowee Mountain, which originates in Sevier County and extends through the southeastern part of Blount County to Little

⁵ Keith, op. cit., p. 1.

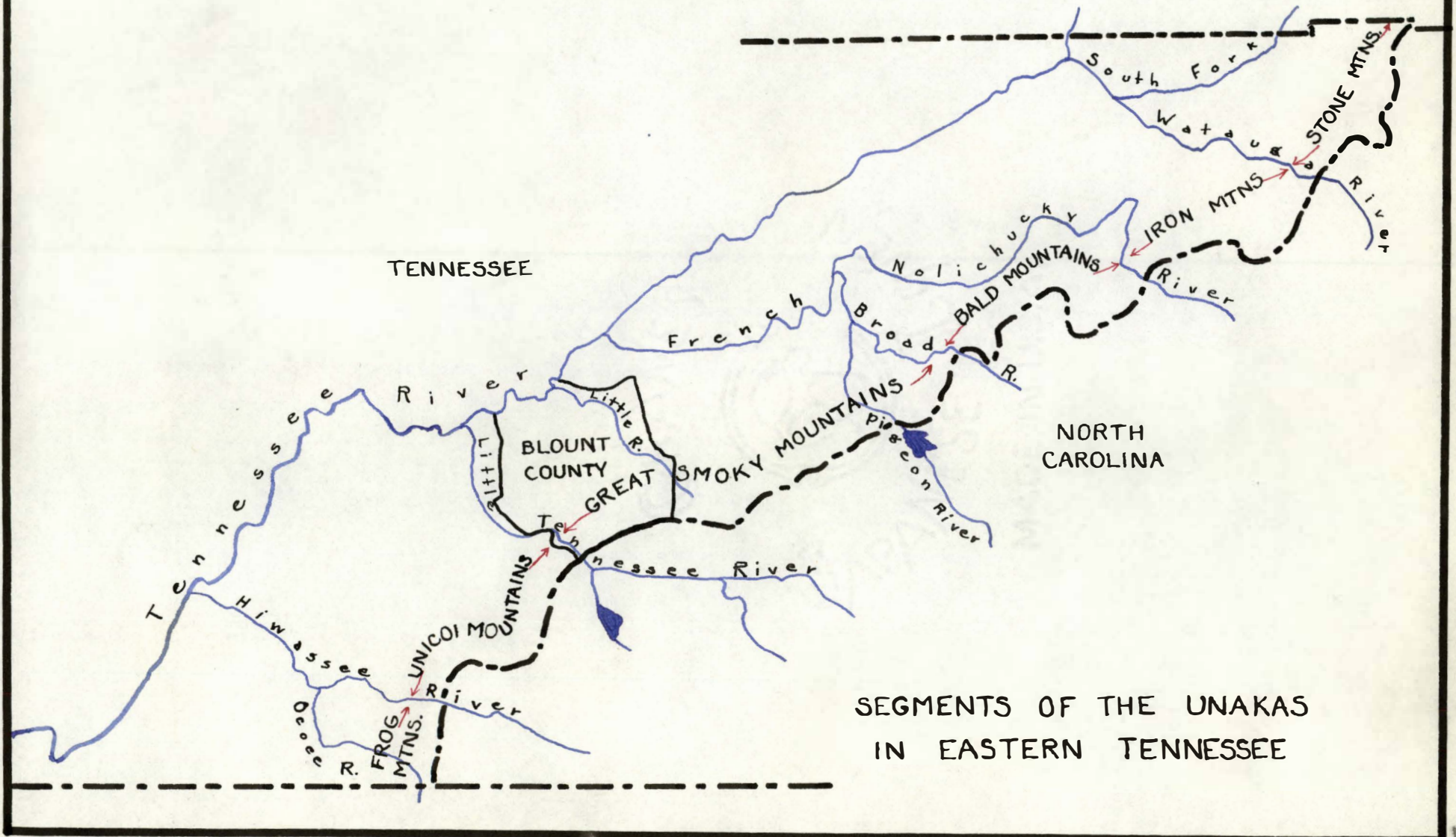


Figure 14

Tennessee River. A series of low segregated knobs parallel the western front of Chilhowee Mountain.⁶ They have been described as giving the appearance of "marmouth potato patches" (Fig. 15).

Drainage

An interesting feature of the drainage of this area is that the courses of the major streams are not controlled by the mountains. The rivers traverse ridges and hills alike. The stream with the greatest cutting power has become entrenched and along its headward extension it captures the headwaters of other streams. In Blount County, the Little Tennessee and Little Rivers flow from the Great Smoky Mountains in a northwesterly direction. As they unite with the master stream, the Tennessee River, the channel swerves to the west and then to the southwest until the Tennessee River leaves the valley.

Terraces

An outstanding terrace has been preserved along the western front of Chilhowee Mountain a short distance north of the point where Little River leaves the gorge cut in Chilhowee Mountain and enters the valley region. The surface

⁶ Safford, op. cit., p. 247.

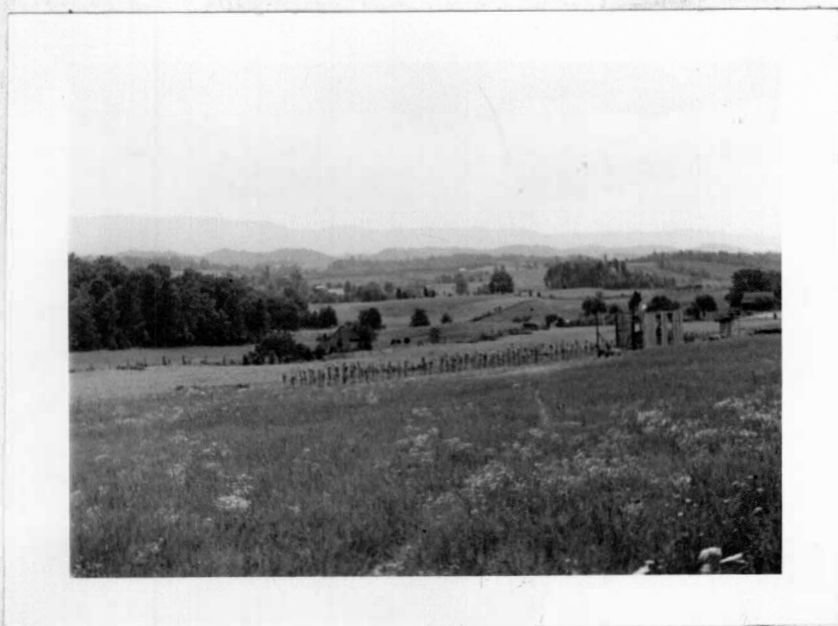


Figure 15. A series of "Red Knobs" occur along the western front of Chilhowee Mountain.



Figure 16. Sinkholes are a common sight in the limestone belts of Blount County.

of this grass-covered terrace is strewn with a wide assortment of boulders and river gravels. Elsewhere throughout the valley it is not unusual to find river gravels at an altitude of approximately 1,000 feet.

Sinks

In traveling over the limestone belts of the county it is not uncommon to find a series of depressions or sinkholes. These cavities constitute a characteristic feature of limestone areas in which circulating ground waters are active agents of erosion. Approximately one-half mile west of the Little River on the south side of State Highway No. 71 is a series of five sinkholes having a distance across the top of from one hundred feet to several hundred yards. Occasionally these depressions are cultivated, but generally speaking they are either forested or used as grazing land (fig. 16).

Coves

Three well-defined coves, forming a distinct topographical feature of Blount County, are found between Chilhowee Mountain and the western front of the Great Smoky Mountains.⁷ These coves are the result of the low angle

⁷ Keith, op. cit., p. 1.

Great Smoky overthrust fault in which "the altered sediments of Lower Cambrian age and the pre-Cambrian crystalline rocks of the Blue Ridge province have been extensively thrust over the folded and faulted Paleozoic strata of the Valley and Ridge province. Estimates of the heave of this overthrust include one of 15 miles by Butts (1926) in Alabama and another of 20 miles by Keith (1927) in Tennessee.⁸ The thrust plane is so nearly horizontal that the overthrust block or slab is worn through in spots, known geologically as 'windows,' in which the limestone forms the surface."⁹

A natural entrance to Miller and Tuckaleechee Coves is formed by the basin of the Little River. Cades Cove is somewhat more isolated, being almost entirely surrounded by mountains with the exception of the western side where Cove Creek finds an outlet on its way to join Abram's Creek, a tributary of the Little Tennessee River.

The undulating topography and fertile limestone soils make these coves very desirable places in which to live.

Profile Study of Knox and Blount Counties

Topographic History

When the topographic history of this region is examined in connection with that of neighboring regions, the remnants

⁸ Wilson, op. cit., p. 58.

⁹ Pennehan, op. cit., p. 175.



Figure 17. A few rustic log houses are still found in Tuckaleechee Cove.

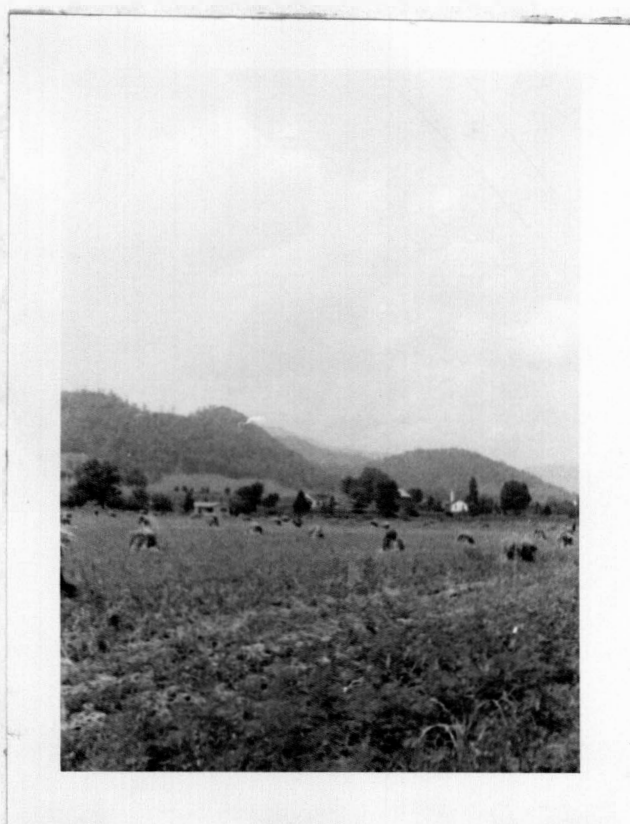


Figure 18. Small scale general-farming is carried on in Tuckaleechee Cove.

of three well-defined peneplains are found, separated by vertical intervals of a few hundred feet. These peneplains have been named from the regions in which they are best developed. The highest, and therefore the oldest, is known as the Cumberland peneplain in Tennessee. It is well displayed on Walden Ridge, the east escarpment of the Cumberland Plateau. If it were restored over this part of the valley, it would probably have an elevation of from 1,600 feet to 1,800 feet. The even crests of the valley ridges, whose altitudes are slightly less, suggest their positions, but it has not been definitely ascertained that their summits are preserved portions of that plain.

The intermediate Highland Rim peneplain is thought to coincide with the undulating surface of the dolomite ridges, having a general level of less than 1,200 feet.

The lowest peneplain, the last one developed, is found in the Coosa Valley, in Alabama, from which it receives its name. Its altitude in Blount County is about 900 feet.

The relief features of Knox and Blount Counties, with one exception, are carved from the valley floor. This low order relief includes low ridges, knobs, and all stream valleys. The smoother strips of lowland below 900 feet are

also included, according to Hayes, in the low order group and are classed as the new Coosa peneplain. It has been concluded by some writers that the high points, or even crests of the valley, mark another base-level plain.

In well-exposed road cuts in Blount County, it is not uncommon to find gravels at an elevation of from 1,000 to 1,100 feet. The position of these gravels in relation to the present drainage pattern indicate the present streams have deeply entrenched themselves in a channel which they have long followed.

All of the major streams flowing through this area have a peculiar pattern. In all cases, they flow in a northwest direction, then pivot to the west and finally enter the master stream which flows southwest through the valley. Such a stream pattern, which in many instances flows at right angles to the structure, is unusual and is another suggestion that drainage was well established by the time the initial diastrophic forces were active (Fig. 14). However, the lowland areas seem to have responded more to structural weakness and thus the drainage has been diverted.

The four topographic profiles represented on the graph by four different colors are taken at right angles to the structure of the Valley (Fig. 19). They represent four equally spaced lines crossing through Knox and Blount Counties.

A study of the graph shows a number of ridges with accordant elevations. If one were to gaze across the valley at certain elevations they would see a series of ridges rising to an accordant elevation. In order to depict the veracity of such a statement, a chart has been prepared with the number and elevation of the ridges and hills present in the area studied.

<u>Elevation</u>	<u>Number of crests of hills or ridges</u>
1,200	13
1,100	24
1,000	27
900	18
800	5

A number of factors enter into a satisfactory interpretation of the above data. Several will be considered in this report. First to be mentioned is the variability in resistance of rock structures. Ridges capped with sandstone or chert yield very slowly to erosive agencies. It is to be expected that differential erosion should occur in such an area. Thus, the elevations noted in the above chart are variable due to the resistance of certain rock formations. On the other hand, the dissected areas are the result of erosion which has readily removed the soluble limestone beds, the lower of which probably represent the Coosa level.

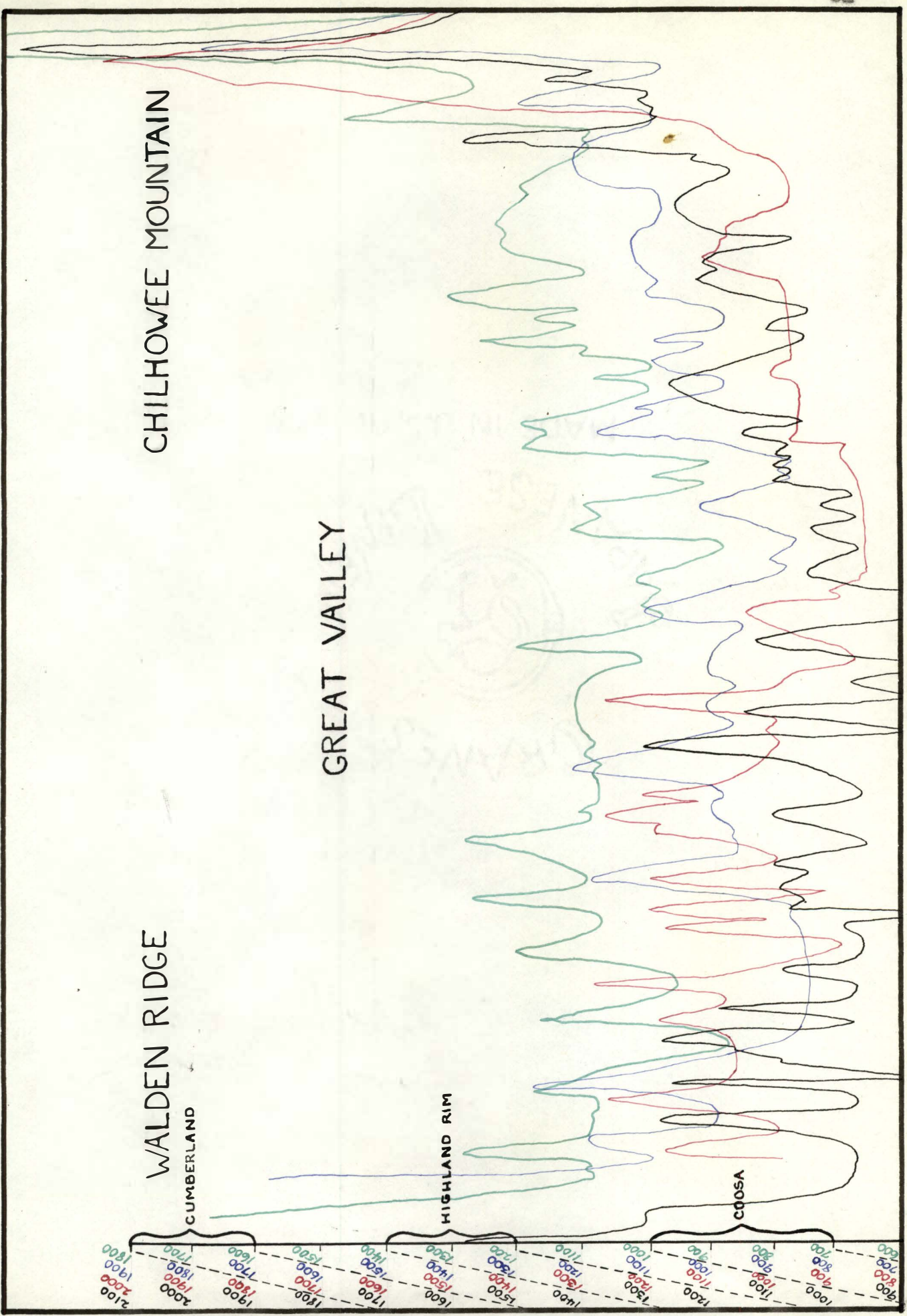


Figure 19
PENEPLAIN LEVELS

Correlation of peneplains* 10

The correlation of peneplains becomes more difficult when dealing with very old or very young plains. In the case of the very old peneplains, degradation has reduced a greater portion of the plain leaving only a few isolated remnants. In regard to the very young peneplain, gradation has reduced only limited areas to base-level; thus in both the important factor of continuity is lacking.

Four factors must be taken into consideration in correlating peneplains:

1. Continuity.
2. Degree of dissection.
3. Coincidence of projected plains.
4. Determination of recent drainage changes.

The general opinion in regard to the Cumberland plateau is that its level surface is due to the presence of horizontal beds of resistant sandstone. A structure section through the Cumberland plateau will show the beds not to be horizontal and not identical in composition. Thus it is evident that the present surface represents an imperfectly preserved base-level plain.

* Summary from Hayes.

10 G. H. Hayes, Physiography of the Chattahoochee District, U. S. Geological Survey, 19th Annual Report, 1897-1898) Washington, Govt. print. off., Part II, pp. 1-58.

The agencies of degradation doubtless were at work for a long period in reducing the sandstone plateau to near base-level. In the Valley area the less resistant rocks were reduced almost to base-level. All evidence of the Cumberland plain has been removed from this belt by subsequent erosion.

A reconstruction of the remaining remnants indicates the region to have almost been eroded to base-level, in which case it at one time was approximately horizontal. The present variations in altitude are attributed to recent warping.

A reconstructed plain in the southern part of the plateau district would stand at an elevation of 1,200 feet above sea level. At a line crossing the plateau from Lawrence N. 60° E. the maximum altitude of 2,000 feet is attained. This marks the apex or dome from which the surrounding region decreases in altitude.

Monadnocks are found in the Snakas and on the plateau surface indicating that they were able to withstand the forces of degradation.

The Highland Rim Peneplain

The Highland Rim bordering on the west of the Cumberland Plateau is the next best preserved peneplain. The peneplain has been named from this type locality. As in the case of

the Cumberland plateau, the preservation of base-leveled surface is due to the presence of resistant beds along its outer margins. The dip of these beds is to the east, indicating they did not control gradation.

The Valley area underwent peneplanation although its surface did not develop into a perfect base-level due to the variety of rocks comprising long narrow belts. The rate of degradation differed according to the variation of the rocks. Conditions were not favorable for the preservation of a plain so that only remnants are found in the Valley at an altitude above 1,000 feet. A majority of the hills and ridges reach a common altitude.

The altitude of the plain on the Highland Rim is approximately 1,000 feet above sea level, while in the north-eastern portion of the Valley belt it is 1,150 feet.

In the Valley a type of monadnock exists which consists of low hills and ridges rising from 100 to 200 feet above the general level of the peneplain. Because of their location or rock character they have lagged in the process of reduction.

The second class of ridges rise almost to the level of the preceding peneplain. They represent belts of resistant rock which, due to their unfavorable structure, have been unable to retain the level of the older peneplain.

The Coosa Peneplain

The third peneplain consists of a series of lowlands which rise only a short distance above the present channels and flood plains of the streams. The Coosa peneplain is limited to rock areas subject to mild erosive agencies. The Coosa peneplain, beyond the Coosa-Tennessee divide, is somewhat difficult to recognize. The altitude of the Coosa peneplain is 700 feet at the southern border and has been identified by some physiographers to be approximately 500 feet in the vicinity of Blount County.

CHAPTER VI

CLIMATE

The climate and weather of East Tennessee, in which Blount County is located, are of extreme and increasing interest and value both to the residents and to outsiders. Part of this interest is merely curiosity but often it represents much more. So many of man's activities are governed by meteorological conditions, it is only natural that the weather should be an almost universal topic of daily conversation.

It may be well to distinguish between weather and climate, as they are frequently confused. Briefly, weather is the combination of all of the meteorological elements--atmospheric pressure, temperature, precipitation, wind, humidity, etc.--at some particular time; whereas climate is the average condition based on observations over considerable time.¹

The most valuable studies of weather and climate must be based on accurate statistics. Meteorological conditions that have occurred at one time may recur, and when years are involved the logical assumption is that all types of weather

¹ Willis Ishister Gilman, Meteorology, (New York: The Macmillan Company, 1931), p. 426.

that may ever be expected will be represented. For such studies, the longer the records the more dependable are the results. Each year is different and yet the variations from the average are seldom noticeable.

Reliable meteorological records have been kept in East Tennessee for a number of years. In this report only those of East Tennessee are mentioned, although observations taken in adjoining regions are available.

There are no available climatological data from first-class weather bureau stations in Mount County. However, there is a great deal of similarity between the climatological features of this county and neighboring counties in the Great Valley in which accurate records have been kept for a period of about seventy years. Statistics obtained from the Knoxville weather bureau will be used to supplement the partial record kept at Maryville until 1911.

Factors Affecting Climate

The following data on climatic factors are quoted from J. I. Widmyer's report on the bearing of geography to climatic conditions in the Knoxville vicinity:²

² J. I. Widmyer, Annual Meteorological Summary with Comparative Data, (Washington: U. S. Government Printing Office, 1927).

"The valley is bounded on the southeast by the Great Smoky Mountains, with elevations from 5,000 to 6,500 feet, and on the northwest by the Cumberland Plateau, with an elevation of about 3,000 feet. The upper end of the valley is closed by the highlands which form the watershed of the Holston River in Virginia, while the lower end becomes so narrow as to be practically closed, so far as any effect on the climate in the valley is concerned.

"The effect of the shut-in condition is to modify somewhat the temperature conditions of the valley. The high mountains of the southeast act as a barrier to divert the hot southerly winds that occur when the pressure is high off the Atlantic Coast, with the result that the maximum temperature experienced in this valley is lower than that beyond the mountains in any direction.

"On the other hand, the Cumberland Plateau on the northwest retards and weakens the force of cold waves. This weakening is not great, however, and is hardly noticeable during severe cold waves. But in the late spring and early fall cold waves with only moderate energy often fail to bring freezing temperatures into the valley, though there may be killing frosts at the same elevation on the western slope of the mountain.

"The effect of topography upon the climate of Knoxville is further shown by the direction of the winds, which blow principally up and down the valley, or from the southwest and northwest. . . . Sudden great changes in the temperature are comparatively rare. The mean daily range in temperature, or the difference between the day and night temperature, is large, almost twenty degrees in the summer months. As a result, the nights are always comfortable. Sunstrokes and prostrations are practically unknown here.

"The winds are light and tornadoes are almost unknown in this valley. When tornadoes have occurred, they have developed little force and have been of short duration, apparently being broken up in the hills.

"The rainfall is ample for agricultural purposes and is very favorably distributed for the growth of crops. There are two so-called wet seasons--winter and summer, and two dry seasons--late spring and early autumn. This distribution of rainfall, together with the relatively mild winters, makes it possible to grow two crops each year on the same ground."

Climatic Conditions

Blount County has a mild climate, ample rainfall and a sufficient number of growing days for normal agricultural development. An analysis of weather data kept at the Knoxville weather bureau from 1871 to 1939, indicates an annual mean rainfall of 48.36 inches, and an annual average of 209 growing days free from frost.

The seasonal distribution of the precipitation is fairly even, although the autumns, in general, are dryer than the springs. About 50 per cent of the precipitation falls during the growing season, but protracted dry periods and torrential downpours are, however, not uncommon.

In Blount County, as a whole, the average amount of precipitation is abundant for the production of all crops; it is also ample to sustain a dense forest growth, the natural vegetation of the mountainous area.

In the mountains and hilly parts of Blount County the surface run-off of water is very rapid, and erosion is active on exposed slopes. The effect of 48 inches annual

rainfall on exposed areas, the maximum of which is reached during the late winter months when the land is seldom frozen, actually means that approximately 5,300 tons of water fall upon every acre of land each year.



Fig. 20. This hillside view is taken a few miles northeast of Louisville and shows late stages in sheet erosion.

Because of these climatic factors Congress established the Tennessee Valley Authority to combat the destructive force of water and, if possible, to divert it into a controlled channel of economic blessings for the general public.¹

¹ Tennessee Valley Authority, Its Work and Accomplishments, (Washington: U. S. Government Printing Office, 1940), p. 1.

TABLE VI
PRECIPITATION

Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual
1898	8.10	0.82	5.31	4.41	1.87	3.10	4.53	4.74	6.39	3.30	2.97	1.87	47.41
1899	4.83	7.55	13.78	2.96	5.08	3.01	2.72	2.89	1.61	2.46	2.31	3.44	52.64
1900	3.60	5.18	4.57	2.86	1.38	6.89	4.10	2.62	2.57	2.53	5.91	3.26	45.47
1901	5.64	1.42	5.42	6.08	4.43	4.19	2.63	9.63	3.23	2.60	1.50	12.23	59.00
1902	3.77	4.03	6.05	2.48	2.27	4.36	2.99	1.99	4.57	1.25	4.57	4.12	42.45
1903	2.40	9.93	8.14	7.15	2.94	5.02	5.45	3.42	0.15	2.78	3.57	2.41	53.36
1904	2.95	4.26	6.80	2.77	2.55	3.85	5.86	2.90	2.73	0.41	3.73	4.96	43.77
1905	3.80	7.53	3.48	5.47	6.02	2.55	4.15	7.85	1.49	4.05	1.28	6.06	53.73
1906	4.49	1.26	4.35	2.20	5.44	4.87	11.54	4.73	4.63	2.98	5.21	3.80	55.50
1907	1.45	3.99	5.04	3.35	3.70	4.67	3.12	3.19	8.09	1.45	5.62	4.21	47.88
1908	3.90	3.59	4.09	2.98	3.30	4.41	7.35	4.58	1.44	1.95	2.30	7.35	47.24
1909	2.77	6.03	6.38	5.19	4.60	8.12	9.08	4.22	3.38	2.41	0.88	2.84	55.90
1910	3.32	4.56	0.69	2.99	6.68	5.46	5.76	4.33	2.50	--	1.38	5.19	--
1911*	4.65	4.24	4.33	8.42	0.91	5.10	5.28	3.84	1.85	4.09	4.85	3.83	51.39
1912	3.00	2.96	7.04	7.98	5.94	2.44	4.32	2.66	5.08	1.30	1.47	6.42	50.61
1913	8.93	4.51	6.43	2.00	4.86	1.56	3.77	1.44	3.34	2.45	1.11	3.59	43.99
1914	1.64	3.47	3.97	4.50	1.25	3.91	7.11	5.69	1.04	3.57	1.29	7.86	45.30
1915	4.18	3.37	2.57	1.45	3.59	6.24	3.72	3.95	4.04	2.68	5.48	7.77	49.04
1916	5.23	3.33	2.25	2.03	4.71	5.29	6.48	4.24	2.84	1.97	2.55	3.63	44.55
1917	6.82	3.53	13.35	2.13	2.52	5.49	13.16	4.20	3.13	3.54	0.47	1.38	59.72

* From 1898 to 1911, inclusive, record was made at Maryville. The station was abandoned at the end of 1911.

TABLE VI

(Continued)

Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual
1918	6.62	2.37	1.43	5.41	4.51	5.10	1.85	2.41	1.59	5.19	1.99	5.32	43.79
1919	4.67	2.78	4.85	3.68	4.11	5.54	3.09	4.67	0.96	5.51	2.19	4.25	46.30
1920	2.94	4.94	4.89	7.22	2.31	7.18	2.19	11.33	2.51	0.78	3.89	5.03	55.21
1921	3.40	4.65	3.61	3.16	1.85	3.07	7.82	2.86	1.63	1.40	4.74	2.26	40.45
1922	4.64	4.09	7.60	4.61	3.82	3.64	4.02	3.47	1.86	1.39	1.80	7.27	48.21
1923	5.73	4.80	7.82	5.65	4.53	4.26	5.32	2.97	1.50	0.74	1.96	3.72	49.00
1924	4.24	4.66	3.98	5.46	4.06	3.75	2.45	1.77	6.80	0.99	0.79	8.46	47.41
1925	3.78	2.56	1.10	2.30	2.40	1.78	1.46	1.63	2.48	9.51	4.34	1.83	35.17
1926	4.06	3.05	2.82	3.14	3.03	5.07	2.44	5.20	1.84	2.88	4.61	9.73	47.87
1927	2.35	7.53	3.95	3.05	2.92	3.18	3.41	4.56	0.78	1.30	2.52	5.14	40.68
1928	2.27	2.40	4.79	5.54	6.17	11.83	2.56	4.58	3.02	3.81	3.43	1.15	51.55
1929	4.34	5.75	6.29	3.46	7.66	6.29	5.39	2.12	4.39	1.33	8.55	2.73	58.70
1930	2.19	3.78	4.41	1.39	4.21	2.60	1.86	2.03	4.56	1.44	2.90	2.30	33.67
1931	1.79	2.93	2.73	4.81	3.71	1.50	7.94	3.40	1.95	1.42	1.93	7.92	42.03
1932	5.37	5.76	4.88	5.47	1.59	4.49	3.58	5.77	3.67	5.34	3.22	8.41	57.55
1933	2.82	7.11	3.30	2.56	4.45	3.29	3.08	8.72	3.50	0.39	1.17	3.33	43.72
1934	3.96	3.05	7.79	2.38	4.41	5.08	4.35	7.47	2.92	4.36	1.92	2.72	50.41
1935	3.48	4.72	7.85	5.95	4.46	4.14	4.91	2.60	0.27	3.92	7.29	1.70	51.29
1936	7.84	4.36	7.96	4.76	0.76	1.39	7.94	1.97	2.13	2.06	1.20	6.21	48.58
1937	11.63	4.51	1.61	3.04	4.38	2.52	6.33	5.70	2.11	4.08	1.06	3.29	50.25

TABLE VI

(Continued)

Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual
1938	4.30	2.55	5.78	6.52	8.81	4.99	4.83	2.19	3.13	0.50	4.68	2.71	50.99
1939	3.82	10.69	5.04	5.00	1.03	4.83	8.37	2.12	0.94	0.38	2.21	3.18	47.61
Ave.	4.64	4.68	5.21	4.41	3.80	4.24	4.44	3.99	2.80	2.57	3.23	4.35	48.36
Ave.	4.46	4.78	5.65	4.27	3.78	5.01	5.04	4.09	3.08	2.47	3.23	4.91	50.77

Period from 1912 to 1939, taken from Knoxville station.

Average for Knoxville station from 1871 to 1939.

Average for Maryville station from 1898 to 1911.

TABLE VII
FROST DATA
AVERAGE DATES AND LENGTH OF SEASON
KNOXVILLE STATION

Length of record (years)	Average date of last killing frost in spring	Average date of first killing frost in autumn	Average length of growing season-- last kill- ing frost to first killing frost (days)	Latest date of killing frost in spring	Earliest date of killing frost in autumn
60	Apr. 2	Oct. 29	209	Apr. 26	Oct. 1

The first killing frosts of autumn come on an average about October 29 and the average date of the last killing frost in spring is about April 2. Killing frosts have been known to occur as early as October 1 and as late as April 26.

The humidity for a 52-year period, averaged 82 per cent at 6:30 a.m., and 64 per cent at 6:30 p.m. The average at noon, recorded for 22 years, was 57 per cent.

There was an annual average of 124 clear days, 122 partly cloudy days, and 119 cloudy days, according to the records kept for the 69-year period. The average hourly wind velocity for 69 years was 6.2 miles per hour, and the prevailing direction, for the first eight months of the year southwest, and for the remaining four months northeast. The hourly wind velocity for Blount County would be higher than the figure given above for the Knoxville area.

TABLE VIII

	Length of record years	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Snowfall	56	4	4	3	1		0	0	0	0		1	4	17
No. days with 0.01 inches rainfall	69	13	11	13	12	12	12	12	12	8	7	9	12	133
Average temperature	46	38.8	41.9	48.7	58.0	67.2	74.0	77.1	76.2	70.6	59.9	47.9	40.3	58.4
Average maximum temperature	69	47.7	50.7	59.3	68.9	77.9	84.8	87.4	86.2	81.8	70.6	57.8	48.6	68.6
Average minimum temperature	69	31.2	33.1	39.4	47.8	56.5	64.6	67.9	66.8	61.1	48.6	38.4	32.3	49.0
Highest temperature	69	78	79	88	93	96	101	104	101	102	94	82	75	104
Lowest temperature	69	-16	-10	5	23	34	42	52	50	35	24	8	-5	-16
Prevailing wind direction	69	SW	SW	SW	SW	SW	SW	SW	SW	NE	NE	NE	NE	SW

Source: Weather Bureau, Annual Meteorological Summary with Comparative Data for Knoxville, Tennessee, Nashville, 1939.

CHAPTER VII

SOILS

The soils of Blount County constitute its most valuable asset. As soil is closely linked with the character of the underlying rock, a geologic map may indicate fairly well the distribution of the various soil types. Occasionally there are exceptions in that soils of the same kind may develop from several geologic formations. A person acquainted with the rock formations can generally predict the character of the surface soil if he makes allowance for the topographic features and agents of transportation at work in the area.

This chapter deals with the derivation of soils, and the relationship between soil type and soil productivity.

Parent materials have a strong modifying effect in many places on the type of soil developed and particularly on the rate at which development takes place. Quartz sand is much more subject to the dissolving effect of water than material high in clays. The explanation is that water passes easily through sandy soils and there is a smaller proportion of basic elements to be dissolved away.¹

¹ G. S. Myers, Charles S. Kellogg, R. L. Anderson, James Thorp, Soils and Men, Yearbook of Agriculture, (Washington: U. S. Government Printing Office, 1938), p. 959.

In such rocks as slates and shales it is not uncommon to find that they are effectual in checking internal drainage. Heavy clays are very resistant to soil-forming agencies and may retain their essential parent-material nature for some time. In contrast, sandy soils develop from very sandy parent materials regardless of the other conditions.

Valley Type Soil

The Valley portion of Blount County consists of ridges running northeast and southwest with narrow to wide valleys between. These alternating ridges and valleys owe their inception to the folding and faulting of geologic formations of an extremely complex nature and a diversity of soils exists, taking somewhat the same pattern as the parent rock. Some parts are characterized by low knobs. Soils in this region range from very fertile residual and alluvial limestone loams in the valleys to infertile, cherty and often shaly ridges and knobs. Most of the soils are derived from impure limestones, principally cherty magnesium limestone (Fnox dolomite) and shale. Less extensive areas are derived from high grade limestone (Maryville, Rutledge and Holston) and sandstone. First and second bottoms and bench land along the Tennessee, Little Tennessee and Little River, although limited in extent, are of considerable agricultural importance to the valley area of Blount County.² (Figs. 21, 22).

² Much of this bottom land will be covered by the reservoir to be formed by the Fort Loudoun dam, now under construction.



Figure 21. The stake in foreground indicates area to be inundated by impounded waters of the Little River.



Figure 22. Much of the first bottom land near the mouth of Little River will be covered by back water from the Fort Loudoun dam.

The State Division of Geology classifies the geology in the Valley area as Ordovician, bluish-gray limestones, sandstones, and calcareous shales; the Knox dolomite limestones and loams; and the Chilhowee quartzites, sandstones, shales and slates.³

The decomposition of marble and other high-grade limestones have given rise to the most fertile and most durable lands in Blount County. These soils are largely loams, with a heavy clay-loam subsoil, and are naturally adapted to the growth of all common farm crops, such as corn, wheat, clover and grass, and forage crops in general. Under livestock farming, supplemented with good methods of soil management and cropping, fertilizers may not be necessary. These soils are subject to severe erosion when in cultivated crops. They are found both on hillsides and in valleys in narrow belts, but cover only a relatively small total area.⁴

The underlying rock over approximately one-third to one-half of Blount County is dolomite or magnesian limestone. The chert ridges of Blount County derived from this parent material are among the poorest soils in the state, being

³ W. F. Bond, Geological Map of Tennessee (Nashville: Tennessee Division of Geology, 1933).

⁴ W. A. Mooers, The Soils of Tennessee, Circular of Information, Tennessee Agricultural Experiment Station, 1932, No. 5, p. 2.

naturally deficient in phosphoric acid and lime, and having little potash or nitrogen. The high elevations of the ridges, together with the nature of the soil, make them well adapted to orchard crops. These ridge lands are little used for general farm crops, and as a rule are well forested.⁵

Wide expanses of alluvial soils are of rare occurrence in Blount County, but along the rivers and their tributaries are found narrow belts of such soils which are of considerable importance. First bottoms are quite often used for corn. Corn is also the leading crop on second bottom or bench lands. However, these soils are well suited to clover and grain as well as to other forage crops. Much of the bench land is too rich for wheat.⁶

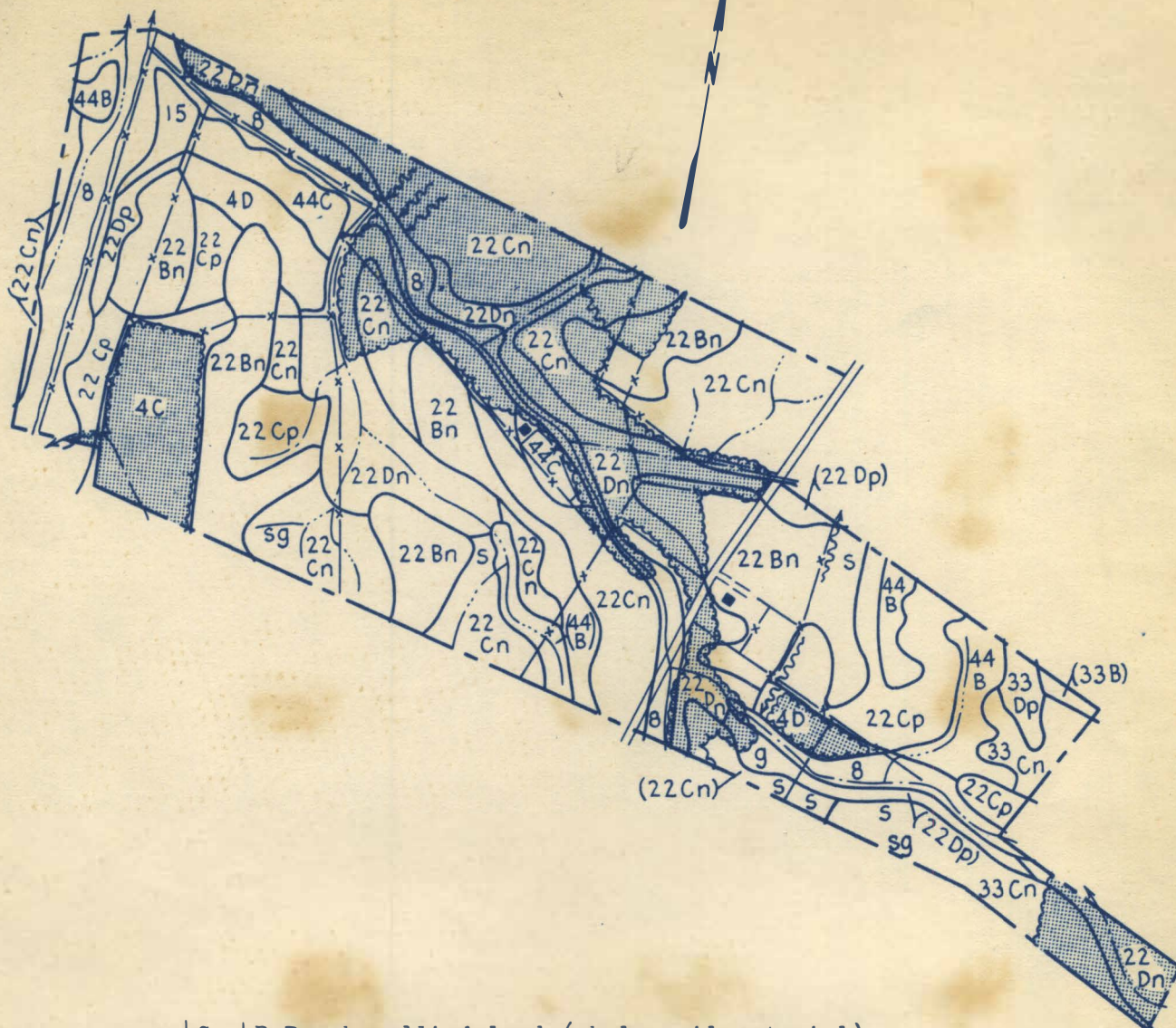
The Tennessee Valley Authority in cooperation with the University of Tennessee has established a number of demonstration farms throughout the county. Plotted soils maps of the Wallace and Coker farms indicate the wide distribution of soils throughout the Valley area (Figs. 23, 24).

Mountain Type Soil

The soils in this part of the county have been derived largely from shale, conglomerates and slates, sandstones and quartzites.

⁵ Ibid. pp. 2-3.

⁶ Ibid. p. 4.



- 4C, 4D Rough gullied land (shale soil material)
 8 Philo silt loam
 15 Atkins silt loam
 22Bn Montevallo silt loam, eroded undulating phase
 22Cn Montevallo silt loam, eroded phase
 22Cp Montevallo silt loam, severely eroded phase
 22Dn Montevallo silt loam, eroded hilly phase
 22Dp Montevallo silt loam, severely eroded hilly phase
 33B Dewey silt loam
 33Cn Dewey silty clay loam, eroded phase
 33Dp Dewey silty clay loam, severely eroded hilly phase
 44B Leadvale silt loam
 44C Leadvale silt loam, slope phase

SOILS

PRIMARY ROAD
 SECONDARY ROAD
 TRAIL
 RAILROAD
 POWER LINE
 TELEPHONE LINE
 PROPERTY LINE
 FIELD LINE
 FENCE
 STREAM
 DRAIN
 DRAIN
 DRAIN
 POND
 INTERMITTENT POND

SWAMP OR MARSH
 ARABLE SINK
 NON ARABLE SINK
 INTERMIT FLOODED SINK
 SOIL BOUNDARY
 MAJOR GULLY
 PRECIPICE
 BEDROCK ESCARP.
 SPRING
 WELL
 WOODS
 BUILDING (OCCUPIED)
 BUILDING (VACANT)
 SCHOOL
 MINE OR QUARRY

CHURCH
 CEMETERY

SURFACE INDICATIONS
 MODERATE SHEET EROS. S
 SEVERE SHEET EROS. Ss
 MODERATE GULLY EROS. g
 SEVERE GULLY EROS. Sg
 SHEET & GULLY EROS. Sg
 TOO STONY TO CULTIV. x x x
 GRAVEL ON SURFACE o o o
 CHERT ON SURFACE o o o
 STONE ON SURFACE o o o
 ROCK OUTCROP v v v

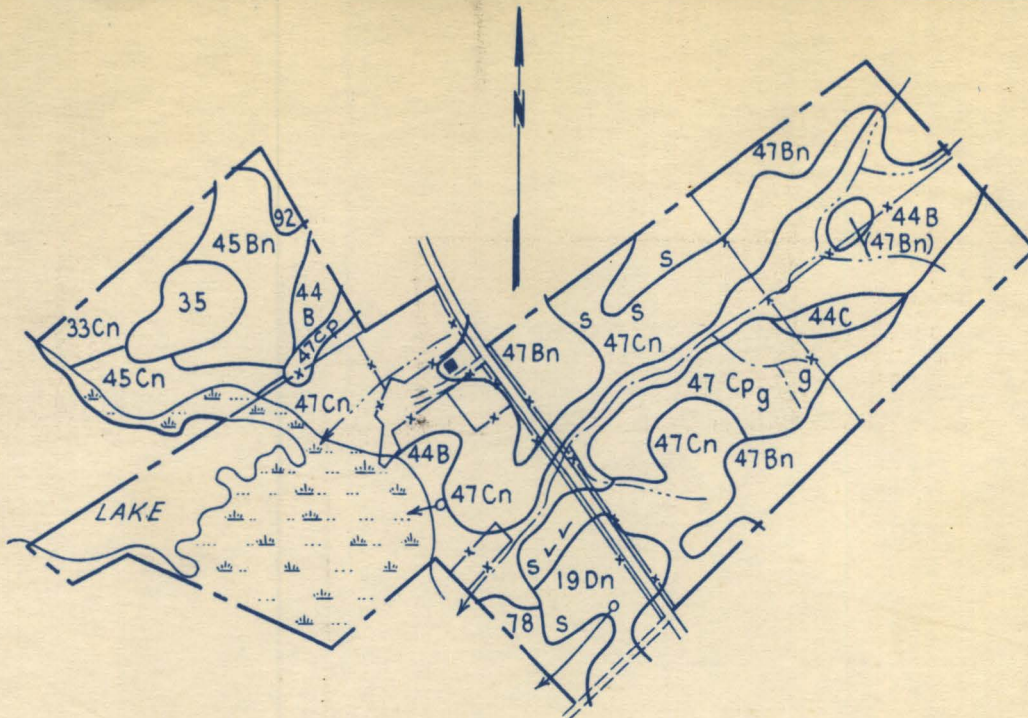
SLOPE CLASSIFICATION
 A - 0% TO 2%
 B - 2% TO 5%
 C - 5% TO 12%
 D - 12% TO 30%
 E - 30% TO 60%
 F - 60% UPWARDS
 SOIL TYPE BY NG 43
 PCT SLOPE BY LETTER 43D

OWNER **W. H. WALLACE**
 SEC. TWP. OR CIVIL DIST **District 19**
 NEAREST COMMUNITY **Maryville**
 P.O. **Maryville** R.F.D. **1**
 COUNTY **Blount** STATE **Tenn.**
 ACREAGE **135** DATE **10-29-40**
 MAPPED BY **J. N. Odom**

SCALE
 FEET
 0 660

INDEX NUMBER

Figure 23



- 19Dn Armuchee silty clay loam, eroded phase
- 32Cn Decatur silty clay loam, eroded undulating phase
- 35 Abernathy silt loam
- 44B Leadvale silt loam
- 44C Leadvale silt loam, slope phase
- 45Bn Etowah silty clay loam, eroded phase
- 45Cn Etowah silty clay loam, eroded slope phase
- 47Bn Sequoia silty clay loam, eroded undulating phase
- 47Cn Sequoia silty clay loam, eroded phase
- 47Cp Sequoia silty clay loam, severely eroded phase
- 78 Atkins silt loam
- 92 Ooltewah silt loam

SOILS

PRIMARY ROAD
SECONDARY ROAD
TRAIL
RAILROAD
POWER LINE
TELEPHONE LINE
PROPERTY LINE
FIELD LINE
FENCE
STREAM
DRAIN
DRAIN
POND
INTERMITTENT POND

SWAMP OR MARSH
ARABLE SINK
NON ARABLE SINK
INTERMIT. FLOODED SINK
SOIL BOUNDARY
MAJOR GULLY
PRECIPICE
BEDROCK ESCARP.
SPRING
WELL
WOODS
BUILDING (OCCUPIED)
BUILDING (VACANT)
SCHOOL
MINE OR QUARRY

CHURCH
CEMETERY

SURFACE INDICATIONS
MODERATE SHEET EROS.
SEVERE SHEET EROS.
MODERATE GULLY EROS.
SEVERE GULLY EROS.
SHEET & GULLY EROS.
TOO STONY TO CULTIV.
GRAVEL ON SURFACE
CHERT ON SURFACE
STONE ON SURFACE
ROCK OUTCROP

SLOPE CLASSIFICATION
A - 0% TO 2%
B - 2% TO 5%
C - 5% TO 12%
D - 12% TO 30%
E - 30% TO 60%
F - 60% UPWARDS
SOIL TYPE BY NO. 43
PCT SLOPE BY LETTER 43D

OWNER **W. E. COKER**
SEC. TWP. OR CIVIL DIST **District 10**
NEAREST COMMUNITY **Louisville**
P.O. **Louisville** R.F.D. **2**
COUNTY **Blount** STATE **Tenn.**
ACREAGE **63** DATE **10-28-40**
MAPPED BY **J. N. Odom**
SCALE **FEET 660**
INDEX NUMBER

Figure 24

This is the roughest and most mountainous part of the county, and for the most part is not suitable to cultivation. The soils are apt to be shallow and rocky, even on the tops of the mountains, which have been used for many years for summer grazing grounds for cattle, and to a lesser extent for other stock. The mountain-sides are steep and the valleys narrow, but occasionally a wide valley or "cove" is found where the soils and the farming conditions are similar to those in the Valley. Also along the foothills are some farms and orchard sites.⁷

Soil Misuse

The worst problem from the standpoint of present human misery is probably in cut-over forest regions of the rugged portions of Blount County. In the cut-over forest region there is much land unfit for farming, and human effort and public funds are both wasted when attempts are made to cultivate it. Frequently settlement is sparse, sometimes consisting of stranded populations left where lumbering operations stopped. The cessation of lumbering operations has caused some individuals to attempt farming poor land for lack of means or ability to acquire better land. In such

⁷ Ibid., p. 2.

regions, roads and schools cost more than they are worth for so few people, and much more than the people can pay; thus, throwing an added burden upon the taxpayers of the state. Such lands would be more profitable if they were devoted to their best use--forest production.

Farming on the hillsides and mountain slopes in Blount County tends to be of a type commonly referred to as "subsistence" or "self-sufficing" farming.

The table below shows the total yield and yield per acre of corn, wheat and oats since 1900. Also a report for the entire state in 1940 is given for comparative purposes.

TABLE IX
SOIL PRODUCTIVITY

Census Year	State	Blount County				
	1940	1900	1910	1920	1934	1939
Acres in corn	2,583,607	38,549	32,372	34,808	26,966	24,209
Total yield in bushels	54,904,608	608,900	627,072	671,736	575,847	565,513
Yield per acre in bushels	21.2	15.8	19.3	19.3	21.3	23.3
Acres in wheat	338,722	24,269	15,089	16,755	8,952	6,891
Total yield in bushels	3,886,315	157,500	130,617	139,118	88,135	86,697
Yield per acre in bushels	11.4	6.4	8.6	8.3	9.8	12.5
Acres in oats	55,196	5,108	5,101	2,314	1,905	12,513
Total yield in bushels	1,046,786	49,520	58,879	32,156	34,742	61,250
Yield per acre in bushels	18.9	9.7	11.5	13.9	18.2	24.0

Source: United States Census Reports 1900-1940.

The productive agricultural lands of Blount County are being seriously impaired and even destroyed on a vast scale, the plant food and even the soil body itself are being removed from fields and over-grazed ranges at an increasing rate under the existing methods of unwise land usage with the effect of not only damaging the upland but covering the lowlands with a layer of unproductive material.⁸

Killebrew spoke of the erosion problem in 1874 as follows:

"The ruinous method of farming practiced in this county has given to most farms the appearance of unthrift, while on others, especially those on which clover is cultivated, a more hopeful appearance is presented. The greatest drawback to successful farming is working too much land and too imperfectly. Very many farms have been divided since the war (Civil war), but the majority are too large yet, ranging from 200 to 800 acres."⁹

The friable structure of the mountain soils permits a large amount of the rainfall to be absorbed. This, together with the fact that most of this area is covered with forest, accounts for less erosion on these steep slopes than is often found in the valley area. If the forest should be removed, the steep surface would soon become gullied.

⁸ Leonidas C. Glenn, Denudation and Erosion in the Southern Appalachian Region and the Monongahela Basin, (Washington: Government Printing Office, 1911), U. S. Geological Survey, Prof. Paper 72, pp. 11-12.

⁹ Killebrew, op. cit., p. 453.

CHAPTER VIII

FLORA

Perhaps the most authoritative description of the East Tennessee region is depicted from selected excerpts of William Bartram, Philadelphia botanist, who came South in the spring of 1773 at the request of Dr. Fothergill of London, England, to search for rare and useful plants. When it is noted that William Bartram's advent was at about the time John Sevier settled on the Watauga, some idea of the value of a description of the native flora by a trained botanist is apparent.

The path taken by Bartram across the Appalachian Mountains led him to a point somewhere on the Little Tennessee between Bryce, North Carolina, and Maryville, Tennessee.

Bartram set out alone from Cowe, an Indian village thought to be near Highlands, North Carolina. His objective was to visit the Over-Hill towns of the Cherokees.

Quoting Bartram:

"After waiting two days at Cowe expecting a guide and protector to the overhill towns and at last being disappointed, I resolved to pursue the journey alone, though against the advice of the traders; the overhill Indians being in an ill humor with the whites in consequence of some late skirmishes between them and the frontier Virginians, most of the overhill traders having left the nation. . . passed the Jore (perhaps Ayore) village . . . observed a little grove of the Cassia Yupon . . . the only place I had seen

it grow in the Cherokee country; the Indians call it the beloved tree, and are very careful to keep it pruned and cultivated; they drink a strong infusion of the leaves, buds and tender branches of this plant. . . ."¹

Native Flora

"Of vegetable productions observed in this region were the following, viz., *Acer striatum* (Maple); *Acer rubrum* (Red Maple); *Juglans nigra* (Black Walnut); *Juglans alba* (Butternut); *Juglans hiccory* (Hickory); *Magnolia acuminata* (Cucumber tree); *Quercus alba* (White Oak); *Q. tinctoria* (Black Oak); *Q. Rubra* (Red Oak); *Q. prinis* and other varieties common in Virginia; *Panax ginseng* (Ginseng); *Angelica lucida* (carrot); *Convallaria majolis* (Lily of the Valley); *Halesia* (Silverbell); *Stewartia* (Tea); *Styrax* (Spice bush); *Staphylea* (Bladdernut); *Evonimus* (Arrow tree); *Viburnum* (Haw); *Cornus Florida* (Dogwood); *Betula nigra* (Black Birch); *Morus* (Mulberry); *Lilium* (Linden); *Ulmus* (Elm); *Fraxinus* (White Ash); *Anona* (Custard Apple); *Ligonia sempervirens* (Yellow Jassimine); *Aristolochia frutescens* (Cooseflower); etc."²

Variety and Abundance

The great variety of flora found in Blount County is mainly due to diversity of soil and climatic conditions, ranging from the cool moist mountain tops of the Unakas to the Valley province. In going from the base of one of the higher mountains of the Unakas to the top, one passes in

¹ William Bartram, The Travels of William Bartram, (New York: Macy-Nesius, 1928), p. 293.

² Ibid., p. 294.

succession through the same floral zones that are to be found in a trip from southern Tennessee to southern Canada.³

Flora of East Tennessee form the transition between the northern and southern botanical regions, for it is within the boundaries of the Unakas that many northern plants have their southern limits, and some of those which form a peculiar feature of southern vegetation begin. Red and black spruce, balsam fir, sphagnum moss, climbing fusitery, and cleftoma, all are characteristic of the vegetation of northern United States and southeastern Canada, and are found in the mountain peaks of East Tennessee. In contrast, such plants as sweet gum, magnolia, and cotton, typically southern plants, are found growing in the lowland areas.

In a trip through the Smoky Mountains, one may see more native trees and shrubs than in a cross-continent trip from Boston to the Pacific coast, or in a European trip from England to Turkey. It is not uncommon to read the statement that the Great Smoky Mountains of Eastern Tennessee exhibit possibly the greatest variety of plant life in the world. However, it is believed that certain areas in the tropics contain as great or greater a variety of plant life.

³ A. J. Sharp, "The Great Smoky Mountain National Park, An Important Botanical Area," Chronica Botanica, Vol. 1, No. 13, March 1941, pp. 296-297.

Plant Regions

Differences in soil and climate in Blount County are sufficiently pronounced to divide the county into three distinct floral regions: subalpine, mountain, and valley.⁴

Subalpine

This region comprises the high crests of the Great Smoky Mountains with an approximate range in elevation from 4,000 to 6,600 feet. None of these crests are devoid of vegetation, nor is there a timber line. There are generally groups of red oak, striped or mountain maple, and mountain ash. These trees have a dwarfed and gnarled appearance, their sprawling limbs often close to the ground. A few species peculiar to this region are found here. Many are members of the common flora of northern latitudes. Some other plants common to this region include the fir, rhododendron, birch, mountain alder, blueberry, cranberry and goldenrod.

Mountain

This area comprises the western slopes of the Great Smoky Mountains and their outlying spurs. The slopes and

⁴ Augustin Sattinger, The Tennessee Flora and A Philosophy of Botany, (Nashville: Gospel Advocate Publishing Company, 1901), p. 12.

spurs of the Smokies include the finest pine region of the state. Some of the larger trees include the white pine and hemlock. Pitch pine, intermingled with Table Mountain pine, dominate parts of the Great Smokies, while yellow and scrub pine occupy the lower spurs. Huckleberry, rhododendron and wintergreen appear in the undergrowth. The moist and shady ravines covered with hush support the magnolia, azalea, hydrangea, holly, big laurel and a host of climbers and herbaceous plants inhabit this region.

Valley

The valley portion of Blount County ranges in elevation from 800 to 1,200 feet and includes sandy, clayey and limestone soils. On these soils are found species of red cedar, locust, hackberry, hickories, oak, elm, persimmon, plum and buckthorn. Sumac, privet, hawthorn, and coralberry comprise the major portion of the smaller growth.

Floral Uses

Economic Value of Plants

Tennessee has a large number of medicinal plants, many of which are found in the mountainous area. In 1901, Gettinger listed 326 species.⁵ In 1930, there were 107 medicinal plants

⁵ Ibid., p. 177.

listed as of commercial importance. A large percentage of the medicinal plants used in the United States is secured from the mountains of East Tennessee. Synthetic substitutes have decreased the demand for many such plants.

CHAPTER IX

INDUSTRIAL DEVELOPMENT

Blount County at the present time is rated as an agricultural region; however, within the past two decades industry has become an important asset to the county. By far the outstanding industry is the reduction and fabrication of aluminum at the Aluminum Company of America, located in Alcoa. In addition, a number of privately owned industrial enterprises are scattered throughout the county.

Flour Mills

From the time of the earliest settlements grist mills have been one of the important industries of the area. The corn and wheat grown in the county were ground into flour by water-driven mills located at points suitable for mill sites. These small mills were valuable assets to the first settlers, but since that time their importance has dwindled. Some of these old mills are still in operation although many are in ruin or are preserved as relics of the past. Larger and more efficient electrical units have taken their place.

About nine miles northeast of Maryville on the Little River is a typical grist mill known as the Cave Roller Mill which has been in operation since 1840.¹ The turbine of this

¹ W. A. Walker, mill owner, Interview, June 2, 1941.

mill is driven by the water of an underground channel. Part of the water from the Little River enters a natural underground channel about one-fourth mile above the mill. At the mill site the water again flows into the main stream at about five feet above the river level. Operating with a ten-foot head the mill has a twenty-four hour capacity of fifteen barrels (Fig. 25). The trade area is approximately one-fourth of Blount County.²

Lumber and Lumber Products

The lumber industry was among the first activities started in the region. Hewn logs were first used but it was not long until saw mills were built along the streams.

Prior to the establishment of the Great Smoky Mountain National Park a thriving lumber industry was carried on at Townsend and its immediate vicinity. A branch railroad line carried the lumber to Maryville, where it was then distributed to cities and towns throughout East Tennessee. The by-products, such as slabs and edgings, were shipped away to be used as wood pulp.

Thriving industries such as the manufacture of charcoal, tanbark, dyewood, and wood pulp from the soft and hardwood trees of this area, were at one time important.

² Ibid.



Figure 25. The Cave Roller Mill is operated by the waters of an underground stream.

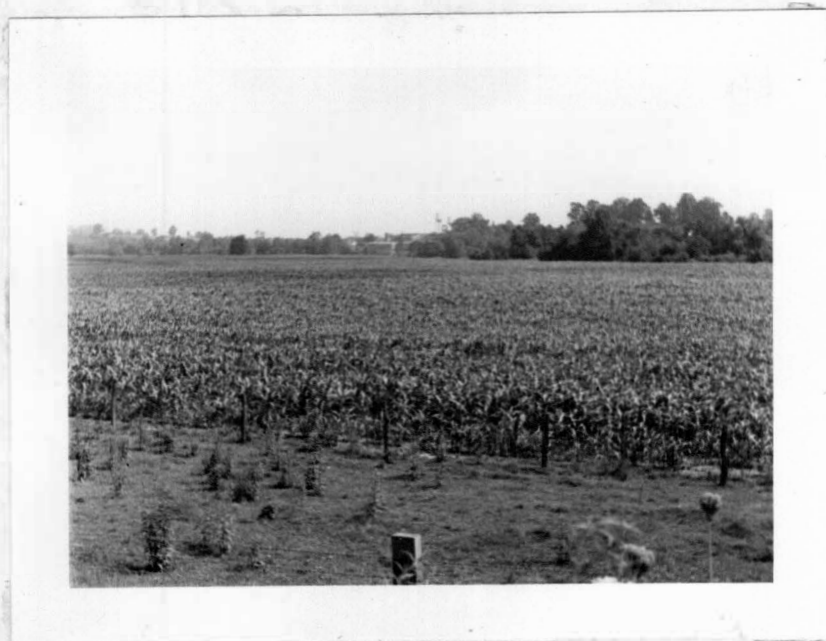


Figure 26. In the background is the Rockford Manufacturing Company.

At the present time a few local saw mills can be found scattered throughout the county doing a small business for private individuals (Figs. 27, 28).³

Textiles

The Rockford Manufacturing Company, located at Rockford, is the most important textile mill in the county (Fig. 26). Twine and cord are the most important items manufactured at this plant.

Survey of Alcoa Aluminum Plant⁴

Introduction

Thirty-one years ago Blount County was chosen as the site for one of the plants of the Aluminum Company of America because of the favorable factors it offered for development--proximity to the power dams and to the Southern and the Louisville & Nashville Railroads.

After the purchase of the first tract of land near Maryville in June, 1913, rapid progress was made and the first units--the pot rooms--were ready to begin operation that fall. At this time power was purchased from the

³ R. H. Johnson, "Land Utilization in Tennessee," Tennessee Academy of Science, Vol. XIII, No. 3, July 1936, p. 214.

⁴ The Maryville Enterprise, Maryville, Tennessee, February 20, 1936.

94-A



Figure 27. A few small saw mills are still active in Tuckaleechee Cove.

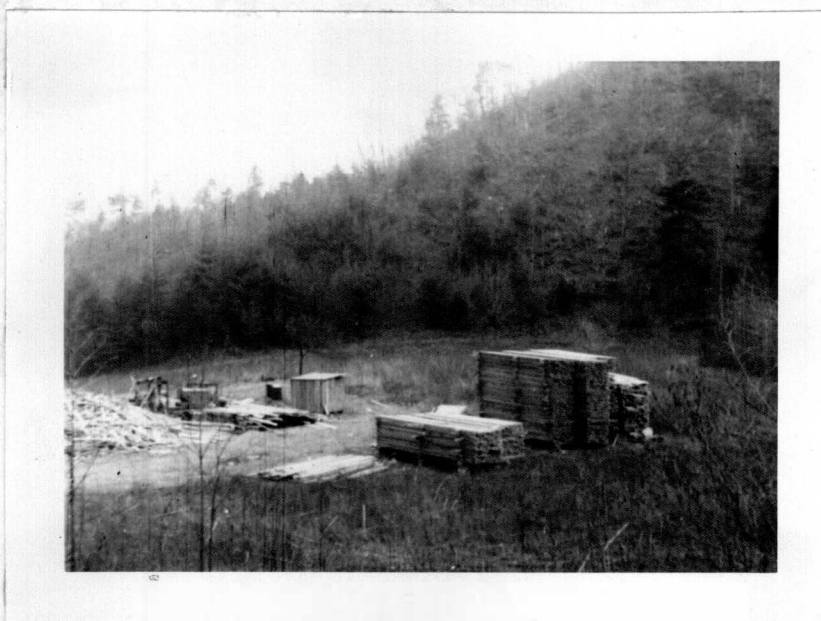


Figure 28. Most of the lumber is used in the immediate community.

Tennessee Electric Power Company, the dam at Parksville being the source of energy.

In 1916, work on the Cheoah Dam, located at the North Carolina line where the Little Tennessee River and the Cheoah River joined, was begun, and, when completed in 1919, the dam was 220 feet high, one of the highest in the United States at that time. The turbine generators were capable of developing 98,000 horsepower.

Several years later, the need arose for more power. Consequently a second dam was begun in 1925 across Cheoah River several miles above its confluence with the Little Tennessee River. The height of this dam, the Santeetlah, was practically the same as the first and the horsepower developed was 66,000. To carry this water to the power house it was necessary to bore a tunnel several miles through solid rock, from the dam to the Little Tennessee River.

Soon after power came from the Santeetlah power house, the third dam, situated above Calderwood, Tennessee, on the Little Tennessee River, was started in 1928 and was completed in 1930. This dam is 220 feet high and capable of developing 112,000 horsepower.

Through this system of dams a part of the water is used three times before it is released to flow down to the Tennessee River. It is routed from Lake Santeetlah to the

power house on the Little Tennessee, then to Shocah Dam, and finally to the Calderwood Dam.

Growth of Blount County

In 1910 Blount County ranked tenth from the bottom of Tennessee's ninety-five counties from the standpoint of wealth. In 1936, a survey ranked it seventh from the top. Most of this advance is attributed to the presence of the Aluminum Company.

In 1913 the company employed 125 men. At the present time there are approximately 5,000 men on the pay roll at Alcoa and at the power houses. In 1936, one out of every ten people in the county was an Aluminum Company employee.

At first, Alcoa, or the Aluminum Works, was known as North Maryville. The Aluminum Company officers, desiring to incorporate the city, annexed the town of Vose which had been conducted by the Babcock Lumber Company. A post office station was established by the United States government, and paved streets, schools, fire and police protection were provided by the Alcoa department.

The sheet mill in Alcoa is known as Springbrook, so called because of the spring that supplies the brook running through that part of the city. The portion of the city adjacent to the reduction plant was named Bassel for G. H. Bassel, an engineer who was responsible for much of the

laying out of the city. The negro portion of the town is called Hall District, named for the originator of the process used in reducing the oxide to metallic aluminum. The schools carry out the name of the district in which they are situated.

Parks for the city's beautification have been provided by the company. This includes one of the most attractive swimming pools in the state, which draws visitors from surrounding communities.

The city has a water supply sufficient for a population of 25,000, providing for future growth.

Growth of Aluminum Industry

From its beginning in 1888 the industry expanded so rapidly that, in 1910, its need for electrical energy could no longer be supplied by power from Niagara Falls and Massena, New York, upon which it first depended. The need arose for hydro-electric resources located within reach of aluminum markets. Two sites for the industry's development were selected in the Southeast--Fadin, North Carolina on the Yadkin River, and Maryville, Tennessee near the western slope of the Great Smoky Mountains, accessible to the Little Tennessee River and its tributaries.

These locations were chosen in the South, not only because of the superior natural resources, but also because

of the permanence, quantity and cheapness of water power, the abundance of cheap labor, the unsurpassed climate, and wise cooperation by state governments. Markets for aluminum products are located farther north, yet the advantages of a southern location far surpassed the cost of transporting the crude and semi-fabricated metal from the south to points where it is prepared for the markets.

Commercial Development

The discovery by Charles Martin Hall, a twenty-two year old lad, at Oberlin, Ohio, made possible the modern commercial development of the aluminum industry. Interested in chemistry from boyhood, after his graduation from Oberlin College in 1883, Hall persisted in his efforts to solve the metallurgical riddle of aluminum which had intrigued scientists since early in the nineteenth century. He worked in an improvised laboratory in his woodshed. Believing that the electrolytic process was the method by which aluminum could be produced successfully on a commercial scale, Hall patiently experimented until he achieved success on February 23, 1886. Using molten cryolite as a bath in which to dissolve his ore of aluminum oxide, and substituting a carbon for a clay crucible, Hall sent electric current from his homemade battery through the "charge" in his crucible, and there, in the bottom of the crucible were the bright globules of aluminum.

Prior to this discovery aluminum was produced by expensive chemical processes. Although it is the most common of the metallic elements and comprises one-twelfth of the earth's crust, the separation of aluminum from the compounds in which it exists was so difficult that prior to 1886 it was a semi-precious metal, never having sold at less than \$8 per pound.

Some years before Hall's discovery, an ore rich in aluminum content had been found in France upon property owned by a family whose name, Beaux, had been given to the village near which the ore was discovered. The name "bauxite" was adopted for the newly found mineral and later it was Anglicized by omitting the "e" in the first syllable. Through an elaborate chemical process the ore is purified and oxide of aluminum is obtained. This oxide, known as alumina, is used for many other purposes, such as abrasives, alus and polishing compounds.

Bauxite Resources

Bauxite originally was found in the United States in 1863 at Hermitage, near Rome, Georgia, and ore was first shipped from Georgia for industrial use in 1889. Bauxite was also found in Arkansas in the town of Benton, twenty-two miles west of Little Rock by John C. Ranner, Arkansas State Geologist, in 1887. The mineralogical discoveries of bauxite

in the South coincided closely with the metallurgical discovery of the aluminum process in the North.

Bauxite deposits in the Southeastern states are located in northwestern and central Georgia, northeastern Alabama and southeastern Tennessee. Substantial deposits are also found in Arkansas.

The discovery of the aluminum process and the location of bauxite in the United States came at a time when electricity was becoming recognized as the chief source of power for performing man's work, and the reduction of aluminum employs greater quantities of electrical energy than is used in the production of any other metal. The great hydro-electric resources in the South and the existence of bauxite deposits within its boundaries were the controlling factors in bringing the aluminum industry to the South.

Major Southern Operations

First activities began at Bauxite, Arkansas, at the site of present principal mining operations. Excellent living conditions, high standards, cleanliness and health exemplify this town.

Aluminum is produced in a large plant at Badin, North Carolina, where three dams on the Yadkin River generate hydro-electric power. Living conditions are very good here also.

At Alcoa, Tennessee is located another huge plant in which carbons are manufactured, aluminum produced, and aluminum sheet and plate rolled. Splendid conditions are provided for the employees. They enjoy the advantages of hospitals, swimming pools, good schools and fine homes. The electrical energy comes from three dams in the Great Smoky Mountains of eastern Tennessee and western North Carolina.

At East St. Louis, Illinois, another great plant purifies bauxite from Arkansas and Dutch Guiana into alumina, which is the oxide of aluminum.

Future of the South

With regard to the future of the South, George R. Gibbons, senior vice president of the Aluminum Company of America, paints the following bright picture:

"That the Aluminum industry, born as an invention of a college boy in Ohio and made a commercially successful enterprise by a group of young men in Pennsylvania, should have turned to the South to establish some of its principal activities, is happy evidence of the fact that the resources of the Southern States may confidently look forward to the time when capital or initiative, wherever it may originate, will seek them out as offering high opportunity for any industrial development for which these states are fitted. It is hardly in the realm of prophesy to say that due to the all but fantastic growth of the aluminum industry, Southern sections may be assured of great benefits in the future as the expansion of the industry goes forward. This is a foregone conclusion if the Southern States

continue to encourage the growth of industry by intelligent legislative policies and a cooperative spirit on the part of the citizenship."⁵

⁵ The Maryville Enterprise, Maryville, Tennessee, February 23, 1936.

102-A



Figure 29. The smoke in the background is from the stacks of the sheet mill plant at Alcoa.



Figure 30. A new mill is being erected at Alcoa to meet the increased demand for aluminum.

CHAPTER X

MINERAL RESOURCES

The rocks of Blount County have yielded few mineral products of major importance. The most important uses of rocks in the natural state are as marble, slate, and road material. Some minor uses of the materials developed from them includes marginal iron and manganese ore deposits and a few workable clay deposits.

Marble

The important marble belt of Blount County extends southwest from Louisville to the Little Tennessee River (Fig.12). This belt forms a single rugged ridge which generally has been retained for pasture or forest land.¹ Of the approximate twenty-four quarries operating at one time, only three are now actively engaged in quarrying marble.

The John J. Craig Quarry at Harnor is the most active of the three quarries. The owner, Mr. John Craig, represents the third generation of the Craigs engaged in quarrying marble. Three miles northeast of Friendsville on the Louisville & Nashville Railroad is the Harnor Quarry which was opened in

¹ C. H. Gordon, and others, "Marble Deposits of East Tennessee," Bulletin 28, (Nashville: Division of Geology, 1924), p. 63.

1923 producing a dark grade of marble in great demand at that time.² The outcrop occurs near the summit of a hill and is covered by a moderate amount of overburden. In general, the color of the marble varies from a dark color at the surface to a lighter shade near the base of the quarry. The following trade names are given to the Harmor marble:

Dark Cedar	Hamil
Craig Pink	Rosemont
Harmor	Drake Fleur
Edward Pink	Leconte

About 90% of the marble is marketed for use in public buildings such as schools, post offices and state and national buildings.

Some waste rock is now utilized by grinding it suitable for application on soils deficient in lime.

Sight gangs, housed in the mill, are capable of cutting from 2,000 to 3,000 cubic feet per month.³ Owing to a present decrease in demand, the plant is operating at half capacity.

Slate

The dominate slate-bearing beds in Blount County are the Silhite and Tigoon slates. The Silhite slate is usually

² A. A. Drake, Foreman of Harmor Quarry, Interview, June 20, 1941.

³ Oscar Johnston, Mill Foreman, Interview, June 20, 1941.



Figure 31. This part of the Marmor quarry is now abandoned. Marble is now being quarried from a higher level.

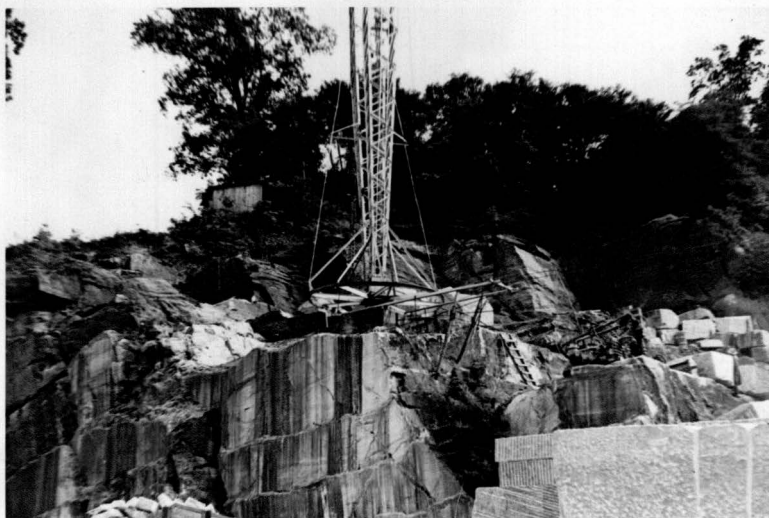


Figure 32. The small amount of overburden makes for easy quarrying.



Figure 33. Waste rock is now ground suitable for use as a fertilizer. The Marmor quarry has a local market for ground marble.

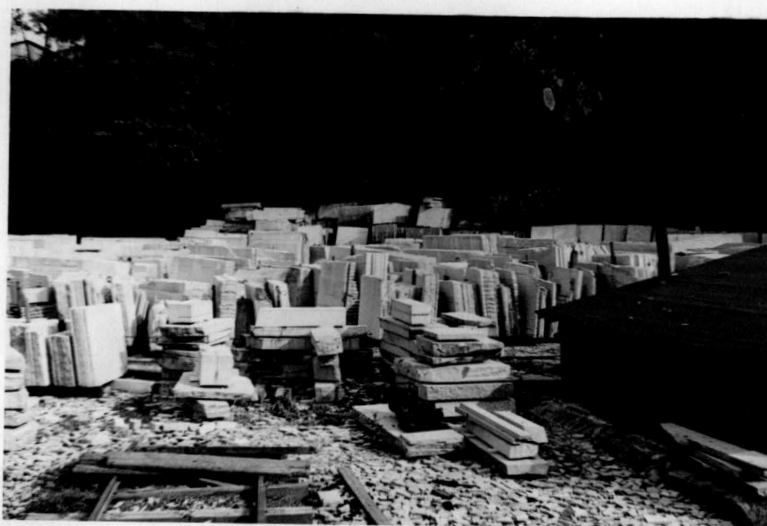


Figure 34. The Marmor quarry carries a large stock of marble slabs.

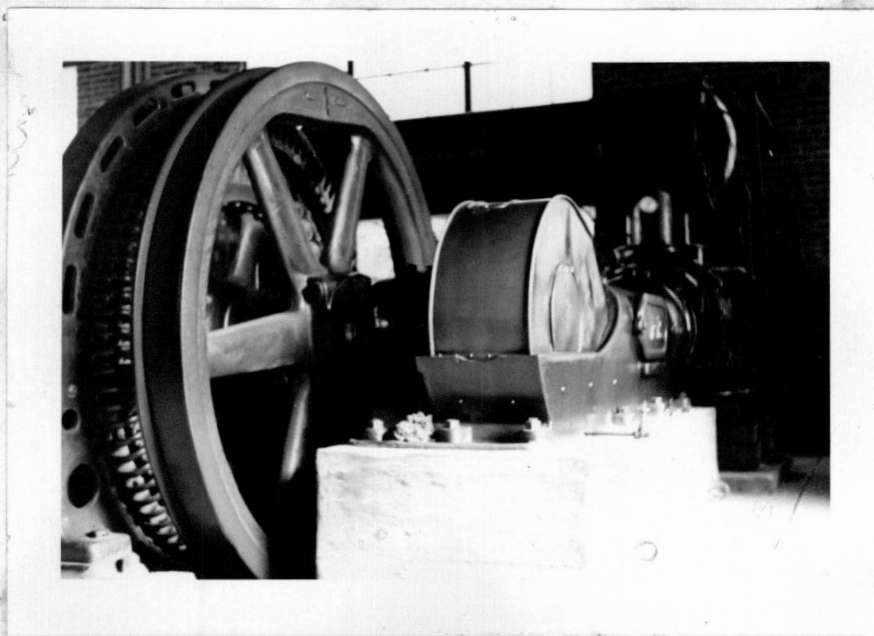


Figure 35. One of the large air compressors in the mill. Compressed air is transmitted to the marble quarry through rubber tubes.

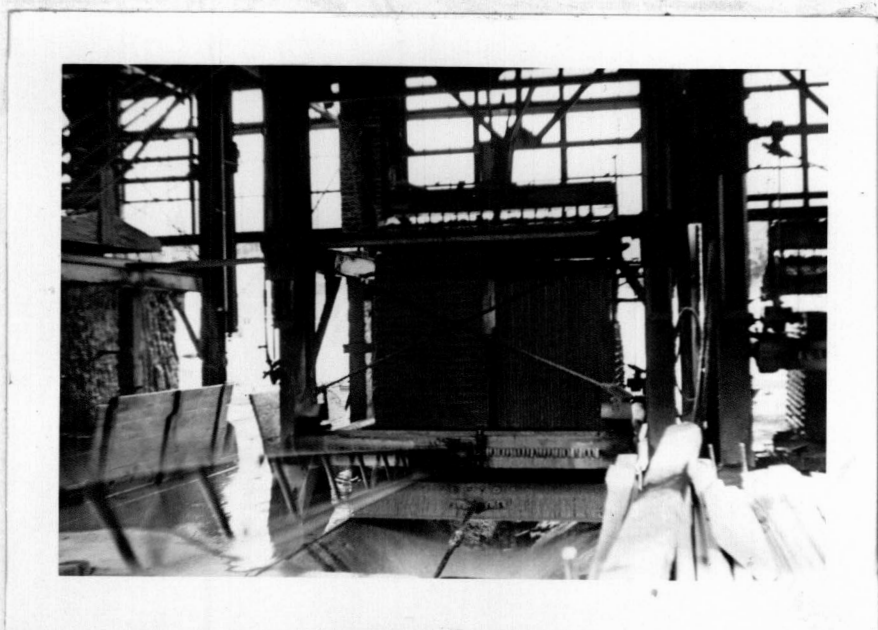


Figure 36. This gang is nearing the bottom of two large blocks of marble.



Figure 37. The mill plant in which eight gangs are housed.



Figure 38. Crushed rock was formerly obtained from this abandoned rock quarry. The Lenoir limestone is not desirable for permanent road beds.

exposed at the base of mountains, especially those enclosing coves.⁴ Because of the calcareous nature of this slate and its high content of marcasite, it is subject to rapid weathering.

Commercial quantities of slate are obtained from the widespread belts of Pigeon slate. Quarries in the vicinity of Panther Creek, along the southern boundary of Blount County, have been exploited as a source of roofing and structural slates. In commenting on the uses of structural slates, H. C. Amick states that:

"The structural slate shows graining exceptionally well and can be used successfully in its natural shapes for flagstones, walks, terraces, stepping stones, coping, benches, markers, and bulkheads. It may also be manufactured or processed and used for bases, flooring, wainscoting, partitions, table tops, mantles, mausoleums, sills, treads, platforms, furniture and hearth stones."⁵

With such a wide array of uses it is probable that a future market will develop in the industrial area of Maryville-Alcoa and its environs.

Iron Ore

The deposits of iron ore in the county occur in a number of isolated veins, which seldom warrant exploitation.

⁴ H. C. Amick, "Slates of East Tennessee," Economic Geology, Vol. XXXIV, No. 4, June-July 1939, p. 454.

⁵ Ibid., p. 457.

⁶ Weith, op. cit., p. 6.

Early settlers occasionally mined some of this low-grade hematite for use in forging horseshoes and in improvising crude farm implements.

Near Montvale Springs, in the Newman limestone, occurs a small vein of red and brown hematite which has never been developed. Along the fault contact, southeast of Chilhowee Mountain is a series of lean, siliceous brown hematite beds. Scattered throughout the weathered Knox dolomite formation is a brown hematite ore. At one time deposits of this ore were mined about six miles southeast of Maryville.

Manganese Ore⁷

Several deposits of manganese have been noted in the county: the Townsend prospect in the Buckaleechee Cove district, the Louisville mine three and one-half miles southwest of Louisville, and the Chilhowee district near the southern boundary of the county.

The ore in the Townsend area is a good grade of psilomelane concentrated by weathering in cherty Knox dolomite. The ore has not been mined to date. In the Louisville district some twenty-five tons of manganese ore was mined in 1918. The deposit is generally believed to be derived from

⁷ G. J. Stose and W. B. Schrader, Manganese Deposits of East Tennessee, (Nashville: Division of Geology, 1917), Vol. VII, No. 1, pp. 294-298.

the residual clay of the Holston marble. The ore occurs in rough surface nodules often ranging to a foot in diameter. The mine in the Chilhowee Mountain district has caved in and therefore is abandoned. Some pyrolusite and manganiferous limonite were found on the dump.

Road Material

The Maryville and Rutledge limestones, which are nearly identical in character, are used extensively in this county for road-making material. These limestone belts extend through the center of the county making them readily accessible as a source of road material. The rock quarries and crushes easily, and is therefore cheap to extract. Many of the secondary roads are surfaced with crushed limestone rock.

Brick Clays⁸

Keith states that a number of clay beds suitable for making bricks are found in this region. The workable deposits are generally concentrated in hollows in which place they were carried by surface waters. The only large-scale brick-making activity is sponsored by the Aluminum Company of America in Alcoa. At the present time the company has cancelled all outside orders because of their own expansion program which consumes the total output of the kilns.

⁸ Keith, op. cit. p. 6.

CHAPTER XI
LAND UTILIZATION

"With one foot on the land and one in
industry America is safe."--Henry Ford

Land is the most extensive and valuable natural resource of Blount County. The wealth of the county is dependent largely upon its value, and in turn, the value of the land is dependent upon the use made of it. If all land were exactly alike in topography, soil, climate and favorable location, the agricultural value of the land would be uniform throughout the county. In 1874, farms were sold at from three to twenty-five dollars per acre, although a few river bottom farms brought higher prices.¹ At the present time the land actually varies in value from several hundred dollars per front foot in Maryville to only a few dollars per acre in remote mountain districts. The wide variation in the value of farm land is due to certain factors upon which the use of the land depends. These factors are, principally, accessibility to markets, soils, topography and climate. The manner in which each of these factors affect land use in various areas will be more fully described as the problem is confronted.

¹ Willchrow, op. cit., p. 463.

Changes in Type of Farming

Any radical change in the type of farming is a slow and gradual process due to the nature of the various factors which influence it. Some of these factors are: climate, soil, topography, relation of the existing type to the competing types, and land values.

A discussion of present-day land utilization may well be complemented by a brief review of early Indian economy relative to agriculture. Bartran said:

"I shall begin with the produce of their agricultural labors. An Indian town is generally so situated as to be convenient for procuring game, secure from sudden invasion, having a large district of arable land adjoining or in its vicinity, if possible on an isthmus betwixt two waters or where the doubling of a river forms a peninsular.

"Such a situation generally comprises a sufficient body of excellent land for planting corn, potatoes, beans, squash, pumpkins, citruls, melons, etc., and is taken in with a small expense and trouble of fencing, to secure the crops from the invasion of predatory animals. At other times, however, they choose such a convenient fertile spot at some distance from their town when circumstances will not admit of having both together.

"This is their common plantation and the whole town plants in one vast field together; but yet the part or share of every individual family or habitation is separated from the next adjoining by a narrow strip of verge of grass, or any other natural or artificial boundary.

"In the spring the ground being already prepared, on one and the same day early in the morning, the whole town is summoned by the sound of a conch shell from the mouth of the overseer, to meet at the

public square whither the people repair with their hoes and axes; and from thence proceed to their plantation where they begin to plant, not everyone in his own little district assigned and laid out, but the whole community united begins on one certain part of the field where they plant on until finished; and when their rising crops are ready for dressing and cleaning, they proceed in the same manner, and so on until the crop is laid by for ripening."²

General Farming

General farming has long been the prevailing type in Blount County. By general farming is meant that the income from no single crop comprised as much as 40 per cent of the total farm income. There have been some changes in the type of farming and these changes have been more pronounced near the industrial centers. The aluminum industry at Alcoa has greatly stimulated trucking and dairying.

The proximity of industrial plants not only enhances land values but establishes markets for farm products such as vegetables, fruits, poultry, dairy products, and other farm products from which the farmer receives higher prices.

The owners of poor lands outside the reach of industrial areas are up against adverse economic factors with which they are unable to cope. However, the establishment of an industry in the vicinity of these poor areas usually benefits the land owners.

² Bertram, op. cit., pp. 400-401.

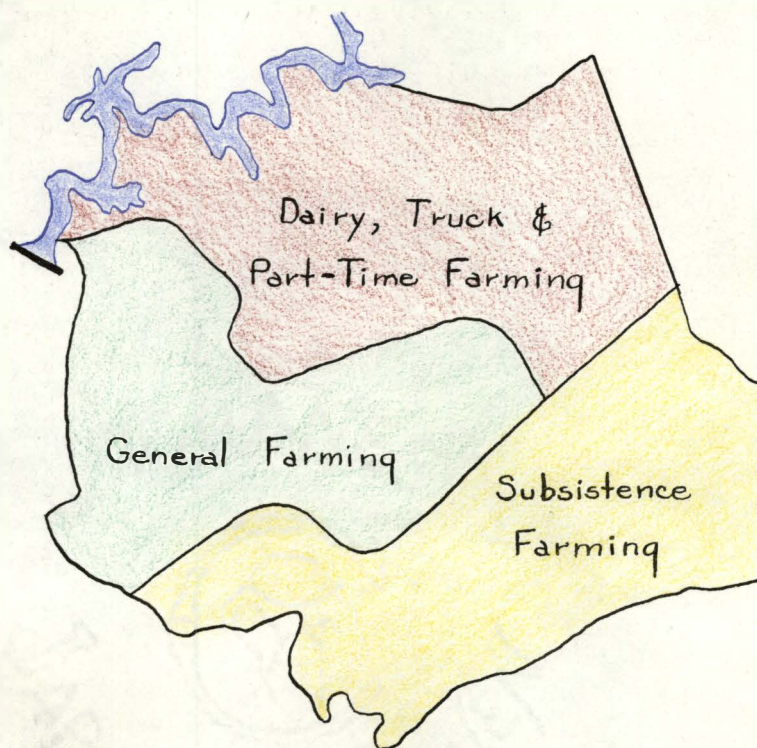
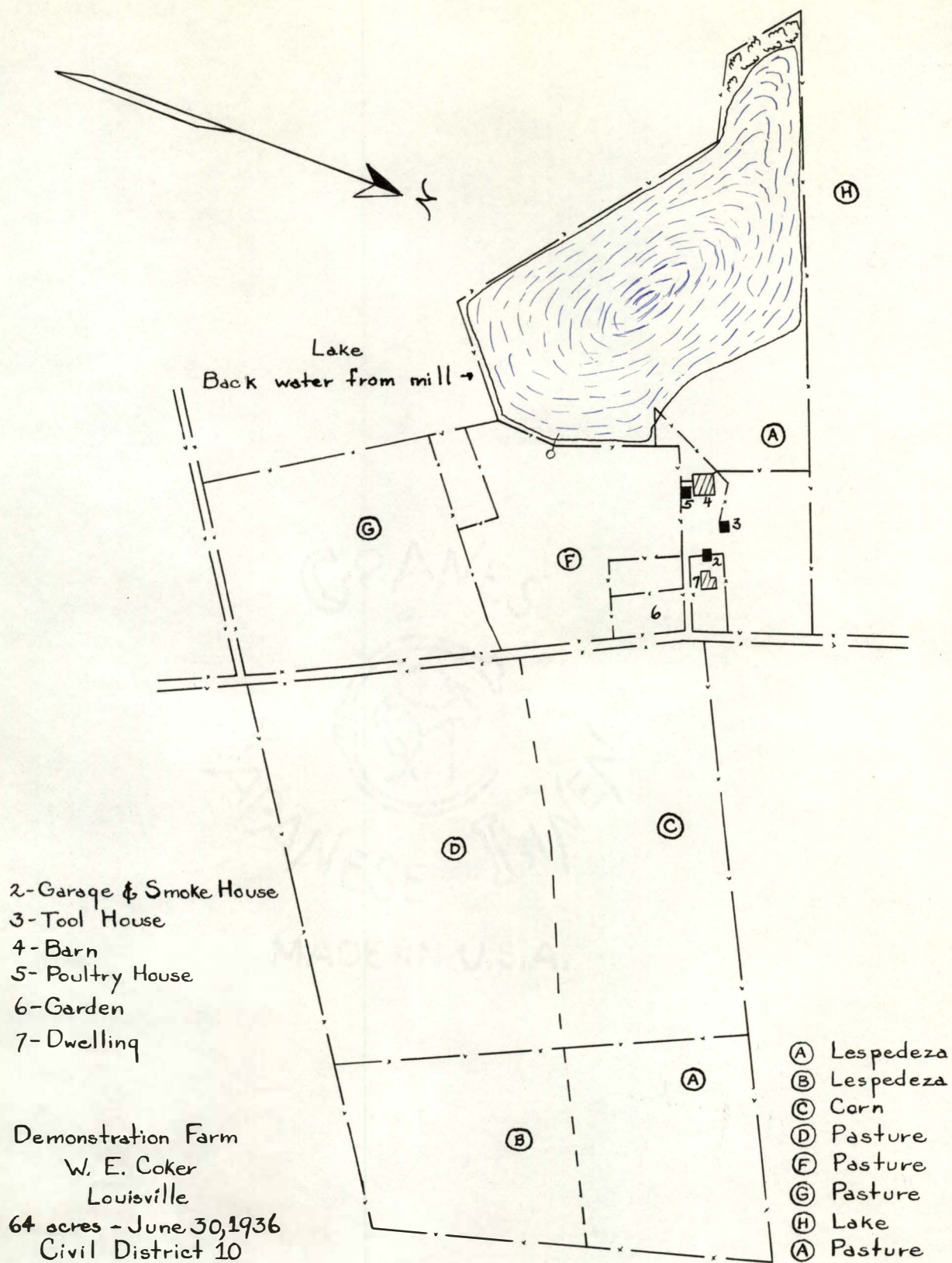


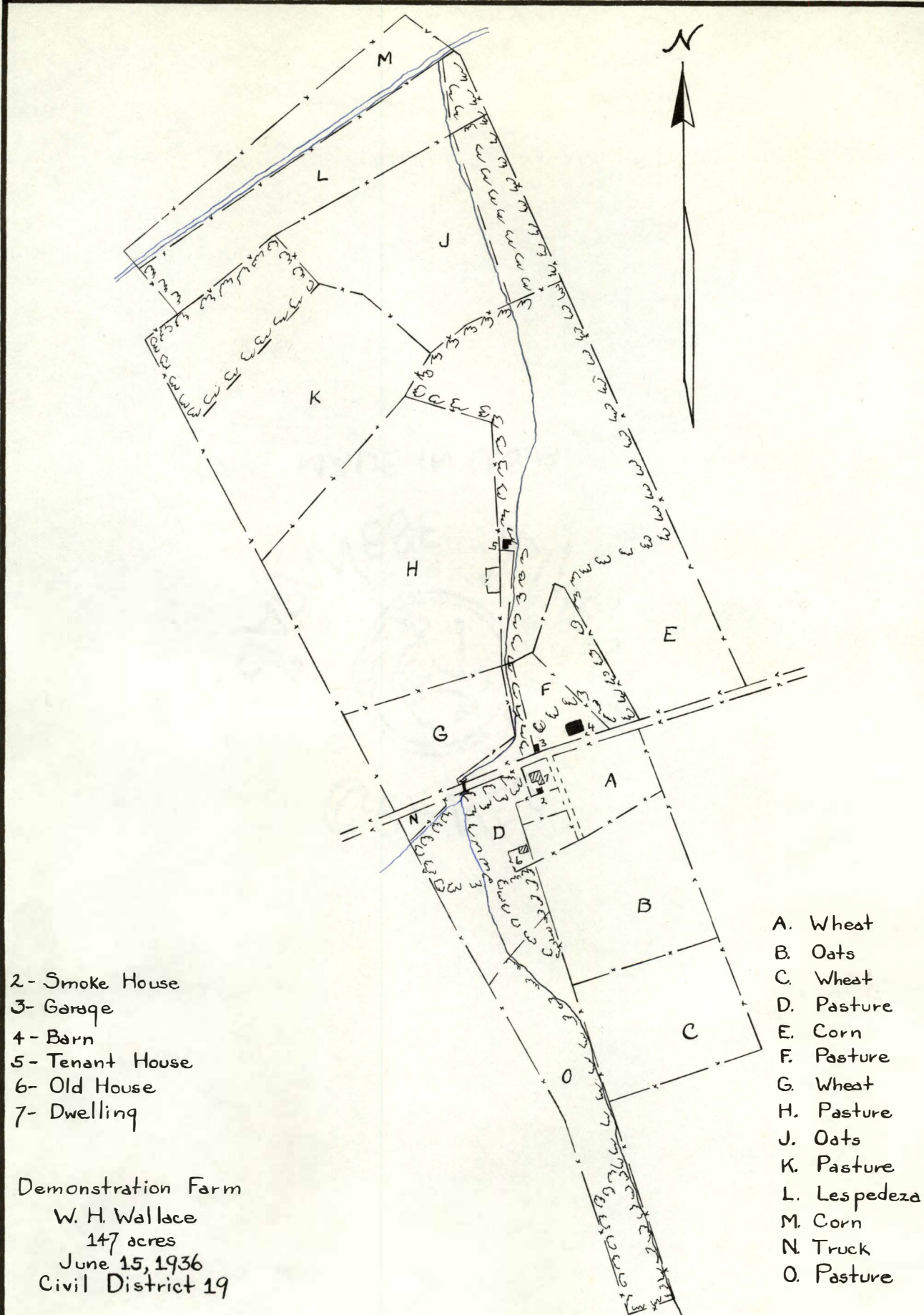
Figure 39

DISTRIBUTION OF TYPE-FARMING AREAS



LAND USE MAP

Figure 40



LAND USE MAP

Figure 41

Lynn Robertson, of Purdue University, made a study of changes in type of farming as a result of nearness to industrial centers.³ He found that proximity to industry has affected the farming situation in five ways. First, it has resulted in comparatively advantageous markets for many farm products, particularly milk, eggs, poultry, fruit, vegetables, and other perishable products which do not go through the manufacturing process before being consumed. Second, it has brought increased labor problems and costs, especially in times of industrial prosperity. Third, it has increased farm land prices beyond the value of land for agricultural purposes, thereby raising the cost of production by increasing interest and tax charges. Fourth, it has impeded farm improvements such as fencing, building, drainage, and lining in areas where land owners believed that the land would soon be used for other than agricultural purposes. Fifth, it has detracted from community life by bringing into the rural section people who are of different nationalities or who are not farmers, but are living in the country while they work in the city or at the numerous resorts, recreational places, or service stations that have grown up near the main lines of travel.

³ Lynn Robertson, "Changes in Farming in Lake and Porter Counties, Indiana, as a Result of Nearness to Industrial Centers," Bulletin No. 365, Purdue University, October, 1932.

Thus a different combination of conditions has arisen to influence the choice of crops and livestock enterprises, of farm machinery, and of production and marketing practices in this area near the large industrial cities than in the areas farther away.

The type of farms in the Maryville-Alcoa area is still general, although there are a few specialized farms and some intensified farming is practiced. The main source of cash income has changed to dairying and truck crops. Changes in the type of farming are most evident in the vicinity of the aluminum plant and these changes have been influenced by better roads and better markets which made profitable the dairying and truck crops.

The Federal Administration has been interested in establishing a closer relationship between agriculture and industry. Such a set-up should be ideally suited to the small subsistence type farming now prevalent in the marginal farm areas of Blount County.

The Bureau of Agricultural Economics in discussing part-time farming states that:

"Rural industries, especially those that permit employees or members of their families to carry on small-scale farming operations of a subsistence character have been attracting considerable attention in recent years, largely as a result of two series of problems emanating from, or intensified by, the depression. The first is the widespread unemployment among wage earners, especially those in the

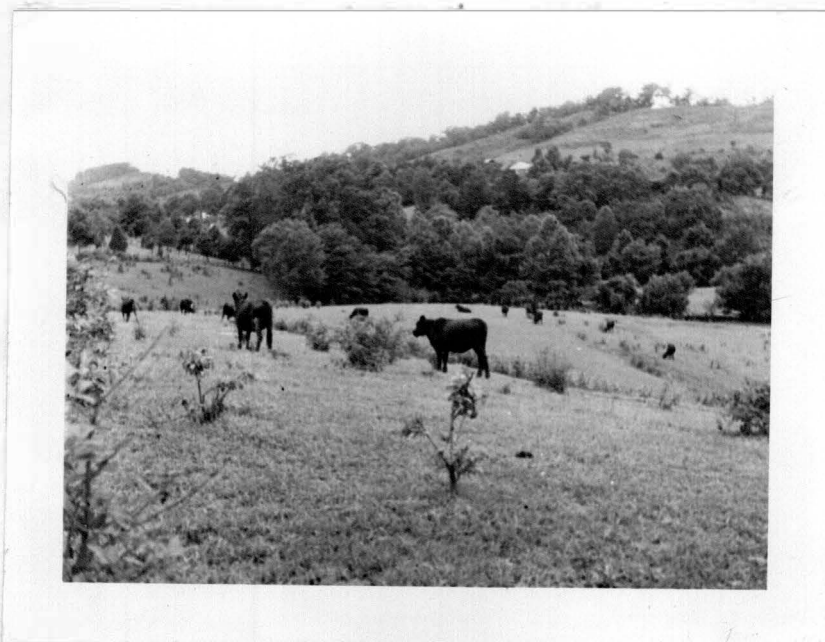


Figure 42. Ideal grazing land near Louisville.



Figure 43. A few acres of Burley tobacco are grown on many Blount County farms.



Figure 44. A field of corn in tassel on June 30.



Figure 45. Small fields and rugged terrain as represented by this oats field make the use of combines unwise.



Figure 46. A typical general farm ready for spring planting.



Figure 47. A scene of the same field in late June.



Figure 48. Winter wheat makes a good cash crop.

cities whose livelihood is almost wholly dependent upon the regular receipts of pay envelopes from their usual employment. The second is a plight of a large group of people who have been trying to eke out a bare existence by farming lands that possess very limited agricultural possibilities, especially from a commercial point of view. . . . The severe price deflation of the depression has made it next to impossible for many such handicapped small-scale farmers to get even enough cash income to meet their taxes and any fixed charges they may have to pay. . . .

"In the belief of many people one partial solution of industrial instability lies in the relocation of factories so that the employees may reduce in part their dependence upon wages by producing some of their needed foods and by effecting other economies in living costs that are possible in a rural environment. Likewise, it is held that a partial solution to the predicament of many farm families living in agricultural handicapped areas is to offer part-time employment in factories, small workshops or other types of non-agricultural enterprises near their homes. A combination of subsistence farming and industrial employment is thus suggested for both groups."⁴

TABLE A
PART-TIME FARMS OF
FOUR COUNTIES, 1930

Rank	County	Per Cent	Number of Part-Time Farms
5	Knox	19.8	802
7	Blount	10.7	454
14	Davidson	15.1	456
16	Hamilton	14.4	347

Source: United States Census

⁴ T. A. Barry and Wayne C. Mason, "Rural Factory Industries," Circular Number 312, U. S. D. A., April 1934.

Mountain Land Use

The high mountain regions are uninhabited but in the foothills or lower mountains, forested with second growth timber, live an interesting mountain folk. Within the confines of the narrow valleys log cabins or perhaps frame houses are situated between steep hills with narrow strips of grain or garden nearby. Patches of corn are cultivated on the lower mountain slopes with gradients of 25 or 35 degrees. Small farms are found along the streams and in the larger coves, mostly in the western part of the region, but the greater part of the land is too steep for cultivation.

Most of these mountaineers trace their ancestry back several generations in the immediate district, and often the grouping is by families. The ancestors of the present inhabitants of the mountains were all farmers and all hunters, ranging the mountain slopes, rifle in hand.⁵

The higher mountains were not an inducement to permanent settlements because of the scarcity of economic resources to be had in these uplands.

Valley Land Use

The agricultural landscape of Blount County presents striking contrasts, both from places within a community and

⁵ Horace Mephert, Our Southern Highlands (New York: The Macmillan Company, 1926), pp. 442-446.

between communities. In many places neighboring sections or even adjacent farms show marked differences in prosperity, as is indicated by the appearance of houses, barns, fences and roads; and even the crops, though of the same kind, differ greatly in yield.

Such marked variation in the agricultural landscape results from many conditions. But it is closely related to the diversity of agricultural conditions resulting from the complex natural environment, the most dominate factors of which are drainage, topography, and soil. These, in turn, are largely the result of the nature of the underlying rock formations which outcrop in belts throughout the Valley.⁶

These agricultural conditions have a northeast-southwest pattern, in apparent conformity with the physiographic conditions. In a part of Blount County, this longitudinal trend is not apparent, due to the fact that in some places as in soils of the weathered Knox dolomite, outcrops cover an extensive area; and, because of the intimate relation that exists between agricultural conditions and rock formations, the characteristic agricultural landscape of the formations broadens accordingly.

⁶ Reith, op. cit. p. 1.



Figure 49. Forage crops such as alfalfa return high yields in the limestone area.



Figure 50. Alfalfa grown on hillsides is effective in preventing erosion.

Even though agricultural conditions differ greatly from place to place, yet farms on the same formation and with similar topography, though widely separated, have agricultural conditions that are very similar.

The utilization of the land along a given cross-section within the valley is strikingly similar to dozens of others in various parts of the area. A typical northwest-southeast cross-section, taken at right angles to the longitudinal axis of the valley shows: (1) diversified agriculture in the valleys, on the lower slopes, and on the rolling uplands with corn, hay and forage, and wheat as the chief crops, and with several other crops occupying smaller areas interspersed here and there; (2) forest, waste land (due to improper farming methods), pasture, and small patches of corn dominate the steeper slopes and more rugged uplands. In both cases the fields are small and irregular in shape, with fence lines following contours rather than the rectangular arrangement common in many areas.

Approximately 1,600 farms of the county have 90 acres or less with 800 farms of 20 acres or less.⁷ Many of the smaller farms are owned by people who work for the Aluminum Company and give secondary consideration to the farm.

⁷ I. T. Elrod, County Agent, interview, July 2, 1941.

Farm Land Use

Of the total land area, 52.4 per cent is in farms compared with the state average of 63.9 per cent. Sixteen and seven-tenths per cent of the farm land is in harvest crops; 46.0 per cent is non-farm land. Fifty-two per cent of the area is commercial forest land. This county is below the state average in percentage of total land area in farms, and higher in commercial forest land.

Part-Time Farming in Louisville and Friendsville Area

There are many families in the Louisville-Friendsville area with urban characteristics, especially those having members employed by the Aluminum Company of America, but the people as a whole are predominantly rural. A tendency to the older type of hospitality is still noticeable here which is found in other parts of the rural South. There is a wide variety of living standards due to the differences in education and income. Upon a rural background of twenty-five years ago has been superimposed the economic structure resulting from industrial development and expansion. This has changed and is continuing to change the characteristics of the people. The white population is of Scotch, Scotch-Irish and English strains which predominate throughout the southern highlands.

Effects of Industrial Development on Agriculture

Industrial development aids farmers by permitting them, or members of their families, to carry on small-scale farming operations or part-time farming while other members of the families work in factories, either part-time or regularly, for a cash income. This plan seems to be a feasible one, and is exemplified throughout Blount County (Figs. 53, 54).

Such a system is of great benefit to a large number of rural people living on marginal or submarginal land who have tried to eke out a bare existence from a land that possesses very limited agricultural possibilities. During depressions it is next to impossible for marginal and small-scale farmers to secure enough cash income to pay their taxes and buy the most needed necessities of life.

Of prime importance in the industrial development of Blount County is the existence of a balanced relationship between industry and agriculture. In fact, there exists an interdependence of industry and agriculture to such an extent that the over or under-development of either absolutely precludes the development of the other. Not only is this relation so rigidly fixed that the growth of one depends upon the other, but in turn the progress or decline of progress of the county and its people is conditioned on the balance



Figure 51. The members of this mountain farm house must use a row boat to reach the highway.



Figure 52. Modern farm homes, such as this one near Rockford, are found near urban centers.



Figure. 53. This log house, near Mt. Nebo, is the home of a part-time factory worker.



Figure 54. The owners of this group of homes carry on part-time farming in conjunction with their regular work at the Aluminum Company at Alcoa.

between its industries. Over-development of industry leads to high prices of food products, poor conditions of labor, and finally ends with a breakdown or shifting of industry.

The decentralization of industry as carried on in Blount County makes it possible for the farmer to combine farming with factory employment. During the winter months and slack season supplementary work is often needed by the farmer and decentralized industries seem to be a solution of the problem (Figs. 53 54).

It seems logical that decentralization of industry should cause a decrease in the size of farms near the industrial area, due to the more intensive type of farming made necessary by the higher price of land; the agriculture being more profitable because of better markets; and to the greater demand for the land for trucking and building purposes.

Of course not all of the decrease in size of farms is due to industrial development. Part is due to changes in type of farming, part to division of farms for the owner's children, and part to the increase in population.

CHAPTER XII

BLOUNT

Blount County is divided into two main geographic provinces, each of them having its own special significance in relation to scenic recreation. These provinces are: (1) the Great Smoky Mountain province; and (2) the Valley province.

(1) The Great Smoky Mountain province is the most spectacular of the two, with elevations six or seven times as high as the average of the Valley province. Most of this land is in, or proposed for inclusion in, the Great Smoky Mountain National Park or national forests. It is adapted to both outing and conservative forms of recreation. Its scenic value is sufficient to draw people from all over the North American continent, if not the world.

(2) Scenic recreational potentialities in Blount County lie chiefly in the Fort Loudoun reservoir on the Tennessee River. Water areas are essential for any great recreational province, and, in varying degrees the impounded waters of the Tennessee River behind the Fort Loudoun dam will largely fulfill that need.

The Great Smoky Mountain National Park¹

The Great Smoky Mountains, the highest east of the Mississippi River and among the oldest in the world, were practically unknown until 1926 when they were selected as the site for a new National Park in the East.

This range is the climax of the entire Appalachian system which reaches from Esape, Canada to northern Georgia, and for 2,000 miles they parallel the Atlantic Coast. The Great Smoky Mountain National Park lies equally in eastern Tennessee and western North Carolina. The great peaks extend throughout the Park on a mile-high altitude for seventy-one miles. Several of them are higher than Mt. Washington in New Hampshire, which was once thought to be the highest peak in the Appalachian Chain.

The highest peak in the Park, Clingman's Dome, at an elevation of 6,642 feet is just 42 feet lower than Mt. Mitchell, which is known as the highest peak east of the Mississippi River. Mt. Guyot, at the northeastern end of the Park, has an elevation of 6,621 feet, and triple-peaked Mt. Le Conte in Tennessee rises to 6,593 feet.

The highway to Clingman's Dome, appropriately called the Skyway, follows the state line separating North Carolina

¹ Laura Thornborough, The Great Smoky Mountains, (New York: Thomas Y. Crowell Company, 1937), pp. 1-46.



Scenic Recreational Area

Cities

⊙ 4,000 - 15,000

■ Under 1,000

🏞 Ft. Loudoun Dam

National Park Area

+ Scenic Spots

● Potential Resorts

--- Appalachian Trail

Figure 55



Figure 56. "Laurel Falls"



Figure 57. Winter scene on highway to Clingman's Dome.

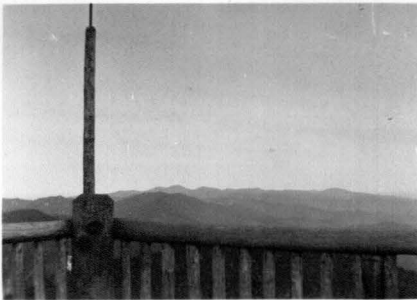


Figure 58. "Clingman's Dome." Elevation 6,642 ft.

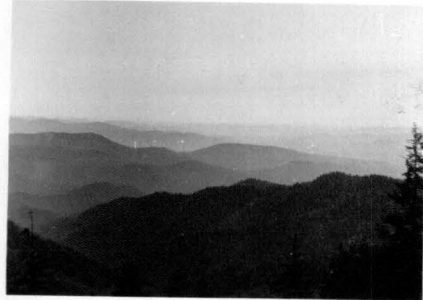


Figure 59. "The Great Smoky Mountains." A view from the highway to Clingman's Dome.

and Tennessee. The eastern part of the Park will remain in its natural state except for a few trails and truck roads for fire protection. A mountain path along the state line serves as part of the great 2,000-mile Appalachian trail from Maine to Georgia. An interesting trail leads to Mt. Le Conte, the "Grandstand of the Smokies," from where one can see the rounded tree-covered Clingman's Dome in the distance, then, breaking through the clouds, Mt. Guyot, Mt. Neophart and Mt. Chapman.²

This territory became a National Park on February 6, 1936, when the government was given deeds to the first 150,000 acres of mountain land. The Park, when completed, will have from 427,000 to 440,000 acres, or about 667 square miles. The greatest length east and west is 54 miles and the greatest width 19 miles. It is ranked sixth among the National Parks in size. More than 200,000 acres are primitive in nature and include the largest virgin forests of red spruce and the finest virgin forests of hardwoods left in the United States. The statement has been made by Robert Sterling Ward that there is more virgin timber here than in the rest of the East combined.

² Leonard C. Roy, "Rambling Around the Roof of Eastern Tennessee," National Geographic Magazine, Vol. LXX, No. 2, August, 1936, pp. 251-252.

The best approaches to the Park are by way of Knoxville, Tennessee, on the west; and Asheville, North Carolina, on the east. Hotels, cottages and various tourist accommodations are located in these and other cities within 80 miles of the Park.

In 1936, 11,974 people visited the Park on a single day, and 125,672 tourists visited there during the month of August. The official estimate for the year was 602,000. This attendance exceeded that of any other Park.

Today scenic highways are built through this natural wonderland into the very heart of the mountains. The "Over-the-Smokies" Highway reaches an elevation of 5,045 feet at Newfound Gap on a line between Tennessee and North Carolina. The Skyway, the highest scenic road in the East, travels 7.6 miles to Sorney Ridge overlook which is 6,311 feet above sea level.

The distance from Knoxville to the parking overlook just under Clingman's Dome is 62 miles; from Asheville, 92 miles. The scenery on both of these trips varies greatly, ranging from fertile limestone valleys dotted with farmhouses and log cabins concealed in the dense undergrowth on steep hillsides to a sea of clouds pierced by numerous mountain peaks. This wilderness of mountains almost proved to be an impregnable obstacle to members of a geological survey who spent four years in making a detailed map of this area.



Figure 60. Overhanging
rock ledge.



Figure 61. The approach
to a tunnel.



Figure 62. A view from
Newfound Gap.

It is believed that Desoto visited this region in 1540. A French botanist, Michaux, was the first to write about the beauty of the azaleas and rhododendrons growing there.³ John Muir also wrote about its grandeur in 1867. In 1928, Dr. H. A. Pepton, a botanist from Chicago, in searching for plant life in this region, found 513 specimens in five days. The late Dr. A. E. Jennison, of the Botany Department of the University of Tennessee, listed 1,500.

Professor Arnold Guyot, geologist of Princeton University, for whom the second highest peak is named, was probably the first man to have studied systematically the Appalachian Chain from Maine to Georgia, recording the elevations of the high peaks he climbed. It was his purpose to establish a general systematic outline of the mountain systems of the eastern United States.

A reading of the record of the rocks shows the Great Smokies to be much older than the Alps, the Appenines or the Rockies. The origin of the name, the Great Smokies, is not known. The name was given because of the clouds and smoke-like haze.⁴ There is the greatest rainfall of any part of the Appalachian system; the annual amount in some places reaches 83 inches.

³ Kephart, op. cit., p. 56.

⁴ Ibid., p. 52.

History of the Park and the Mountain People

Most parks are given by the Government to the people-- this Park has been given as a ten-million-dollar gift from the people to the Government. The land on which the Park is located was privately owned; it had to be purchased, the titles cleared, and the land deeded to the Government.

Nearly five million dollars were raised by state and city appropriations and by private donations to buy this land from the mountain farmers and lumber companies. The Laura Spelman Rockefeller Memorial Foundation provided another \$5,000,000. The total cost will be about \$12,250,000 and the Government will pay the balance.

First proposals by business organizations for a National Park met with no success. In 1923, however, the Great Smoky Mountains Conservation Association was organized to establish a National Park in the Smokies. Two years later, \$1,000,000 had been raised through public subscription.

In 1925, the Tennessee Legislature authorized purchase of the first tract of 76,500 acres from the Little River Lumber Company, provided the city of Knoxville would pay one-third the cost. This was done, and in the following year, Congress passed the bill creating the Great Smoky National Park.

Finally, in 1931, Major J. Ross Wakin became Superintendent, with his headquarters at Gatlinburg, Tennessee. Trails were built, fire towers and telephone lines erected, truck roads graded, primary and secondary roads built, all before the park was formally dedicated.

One name especially should be mentioned--that of the chairman of the Park Commission, Colonel David C. Chapman, of Knoxville, recognized as father of the Great Smoky Mountains National Park. The fourth highest peak in the park, 6,430 feet, has been named Mt. Chapman in his honor.⁵

The mountain people are proud and independent, observant and keen in judging character. The English and Scotch ancestries predominate; there is also a mixture of German, Welsh, French Huguenot and Swiss. They are in every sense pioneers. They have many talents, among which are furniture making and rug and drapery weaving, etc., and they are industrious and self-reliant. With the coming of the park, however, many of these people are moving to the valleys and adopting the customs and modes found there.

One of the land owned by small mountain farmers was difficult to obtain for many of these people did not wish to part with the land that had been in their family since Revolutionary days.

⁵ Roy, op. cit., p. 251.

The Nature-Lover's Paradise

Each month of the year holds interest and intrigue for the visitor to the Park. Outstanding among the plant life are the hardwoods, trailing arbutus, violets, redbud trees, dogwood, honey locust, magnolia, azaleas, laurel, rhododendrons, trumpet creeper and tiger lilies. In the autumn a riot of color of great variety may be seen. In the winter months the frost and snow enhance the beauty of the evergreens, making a wonderland of Christmas trees.

There is a seasonal succession of flowers noted at different altitudes. Many kinds of edible berries are also found on the hillsides--wild strawberries, raspberries, blackberries, huckleberries and gooseberries.

Some of the highest peaks are covered with forests of spruce and balsam, and the lower peaks are covered with hardwood in which beech, oak and wild cherry predominate. The ridges are usually covered with rhododendron, myrtle, laurel, rosebay and leucothoe.

In all of Europe there are only 35 different kinds of trees; in the Park are found approximately 140 different species.

Some trees, including tulip poplars, chestnuts, buckeyes, hemlocks, maples, black gums and others, make their very finest growth in the Park to become giants of their kind.



Figure 63. Rugged scenery dominates the Park area.



Figure 64. "The Chimneys" on the highway to Newfound Gap.



Figure 65. These excellent stands of conifer are now protected by the Park Commission.



Figure 66. The tops of the Smokies are heavily forested with hemlock and spruce.

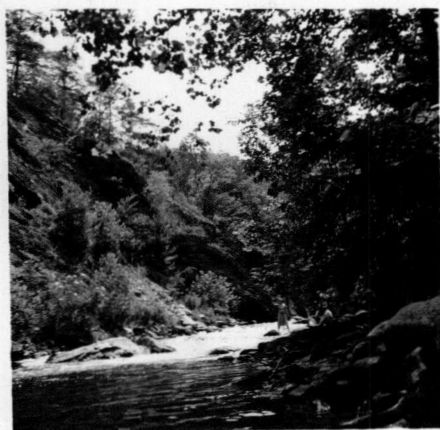


Figure 67. Falls in Little River near Gatlinburg.



Figure 68. Low-hanging clouds are often pierced by the higher mountain peaks.

The largest trees are the tulip trees, the chestnuts and the hemlocks. Some have been found to measure 190 feet high and from eight to nine feet in diameter.

Birds, Animals and Fish

In the region between Knoxville and the crest of the Smokies, 264 species of birds have been listed, and there are at least 150 species within the Park boundaries.

In the summer these more common varieties are found: the field and chipping sparrows, cardinal, bob white, partridge, American goldfinch, warbler, vireo, catbird, mockingbird, wren, chickadee, phoebe, bluebird, Maryland yellow-throat, woodthrush, blue jay, southern robin, indigo bunting, summer tanager, yellow-breasted chat, the barred owl and the great horned owl, the mourning dove and the whippoorwill.

Ornithologists have classed the birds in three groups: the Carolina or upper Austral below 2,500 feet; the transition or Alleghenian from 2,500 to 4,000; and the Canadian from 4,000 feet up.

Many more birds may be seen in the valleys than high on the mountains, for the mountain birds seem extremely shy. Certain species of ravens, hawks, owls, and eagles which have been reduced to a very small number, are again finding homes here.

Other animal life--the eastern mountain lion, the eastern timber wolf, the Carolina beaver and the eastern woods buffalo--have completely disappeared. Other wild life has been saved from this same disaster because of Government protection.

From 1900 to 1920 wild life was greatly reduced by extensive lumbering operations, by forest fires and by hunting and trapping.

According to a survey, 52 different species of mammals have been found, 29 species of reptiles and 28 species of amphibians.

Grouse and bear have increased under protection and may be seen many places in the Park. There are approximately one hundred bear in the Park, all eastern black bear.

Cobcats are not rare but are not often seen, due to their nocturnal activities. Both red and gray fox are numerous. Other common animals are: the raccoon, opossum, skunk, woodchuck, muskrat, mink, weasel, red, gray and flying squirrel, chipmunk, various rats, mice, shrews, bats and moles. Rabbits are few in number.

There are many species in the lesser animal groups, including eighteen species of salamander.

Trout fishing is fast becoming one of the major attractions of this new Park; there are 600 miles of ideal trout

streams in the Park area.⁶ They have been fished out of most of the easily accessible waters but these are being restocked.

There is a fish hatchery located in the Park at Hephart Prong and several rearing pools have been established.

Persons fishing in the Park are required to secure a license in accordance with the laws of Tennessee and North Carolina. The Park Service charges no fishing fees but makes its own rules and regulations and enforces them.

Port Loudoun Recreational Possibilities

The embayment at Lackey Creek will be one of the largest expanses of water in the entire reservoir and will be by far the most attractive and accessible point. Here arms of the lake will extend up narrow hollows like fingers of an outstretched hand. Around the lower end of the embayment and on the peninsulas between the narrow arms will be what remains of the village of Louisville. Public interest seems to indicate that many Knoxville, Maryville, and Alcoa families see future possibilities in this section of the lake shore. Few places along the whole system of lakes appear to be more ideally located for summer or weekend cottages. A definite development is assured, either planned or unplanned. In

⁶ Soy, op. cit., p. 258.

addition to being a pleasant place to live, this area will present possibilities to future recreational and commercial development because of its location and the availability of water and railway facilities. This would seem to be a logical site for the development of additional recreation to take care of the rapid expansion at Alcoa resulting from the national defense program.

CHAPTER XIII

SUMMARY AND RECOMMENDATIONS

The future of the region involves pure speculation. Man and Nature, in cooperation and in opposition, are continually changing the topographic features of the region. If we were safe in concluding that the agents and forces now at work will continue to operate as they do, we might compute the time that will be required to wear down the existing hills and reduce the entire region to a monotonous plain across which lazy streams might take their winding course to the sea. The history of the region does not warrant the assumption of such a premise. We may be certain that the region will continue to change, but in what manner and at what rate, we do not know, and what its appearance will be when future years have left their marks, no one can say.

Although the present transportation facilities leave much to be desired, they are reasonably adequate for the industries of this county. Products can be transported quickly and efficiently throughout the Valley area. Rapid improvements are being made and no doubt will continue.

The location of a major industry in Blount County favors the building of plants in allied or dependent lines. Another favorable factor in attracting future industries to this region is an abundant supply of efficient labor, which in general is

free from labor entanglements. Possible future industrial expansion has been further enhanced by the construction of a number of power sites from which can be obtained an adequate and reliable supply of electric power.

The basic problems of the county grow out of maladjustments in land uses and in the relation of population to land. The Federal Government in an emergency program, has introduced measures designed to curtail the production of certain basic crops, by limiting the acreage in those crops and by regulating the type of agriculture use to which the lands might be devoted.

Many of the leading farmers of the county engage in livestock production which is a leading source of cash income. The smaller farmers do little livestock farming. There is a place for the type of livestock farming which will return profits to the small farmer.

Beginning in January 1941, the Aluminum Company of America started an expansion program to use 4,000 additional workers. This is now taking a large percentage of the best farm labor from the farms. Adjustments to use less farm labor are necessary.

Recommendations:

1. Livestock and a cash crop on every farm.
2. Production of stocker and feeder cattle as the leading enterprise on most farms.

3. Tobacco and truck crops as leading cash crops.

4. Sheep as a supplementary enterprise on some of the larger farms; fat cattle and hogs where abundant supplies of grain can be grown cheaply on high-yielding land; and apples on farms whose conditions are most favorable.

5. Conservation and wise use of forest resources is highly important to the welfare of the entire area.

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APPENDIX

APPENDIX TABLE I
RANK OF BLOUNT COUNTY

County Rank	Item	
Blount County rank in value of farm land and buildings per acre, 1930:		
	<u>Value</u>	
19	\$55.19	
Blount County rank in value of farm buildings per acre in 1930 to nearest dollar:		
	<u>Value</u>	
21	\$15.00	
	State	12.64
Blount County rank in value of farm land alone per acre in 1930 to nearest dollar:		
	<u>Value</u>	
19	\$38.00	
Blount County population per square mile:		
22	59.2%	
	State	59.2%
Per cent of total land area in farms, 1930:		
74	54.0%	
	State	67.5%
Decrease in acres of all farm land in Blount County, 1900-1930:		
86	-29.2%	-80,806
	State average	-11.6% -24,619

APPENDIX TABLE I

(Continued)

County	Rank	Item
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Per cent of total land area and of farm area in crop land,
1930:

	<u>% of Total Area</u>	<u>% of Farm Area</u>
74	19.3	38.0
State	28.7	42.6

Extent of idle and fallow crop land, 1924-1929:

	<u>% of Crop Harvested</u> <u>1929</u>	<u>% of Crop Harvested</u> <u>1924</u>	<u>No. of Acres Idle</u> <u>or Fallow, 1929</u>
33	20.8	24.7	12,780
State	23.1	20.4	1,414,006

Per cent to total land area in crop acres harvested, 1929:

	<u>Per cent</u>
64	16.7
State	22.8

Maximum land area available for crop land, 1929:*

	<u>% of Total Land Area</u>	<u>Acres</u>
64	32.6	119,452
State	39.0	10,416,976

*All crop land and plowable pasture

Land in farm pasture, acres and per cent of total land:
Area in Blount County, 1929:

	<u>% of All Land in Pasture</u>	<u>Twenty Acres in Pasture</u>
46	17.7	64,967
State	19.3	6,167,597

APPENDIX TABLE I

(Continued)

County Rank	Item		
Forest land in Blount County, 1929:			
	<u>Total, 1000 Acres</u>	<u>Woodland Pasture 1000 Acres</u>	<u>Woodland Not Pasture 1000 Acres</u>
41	68	15	44
State total	5,415	1,528	3,886
Non-farm land, number of acres, and percentage of total land, 1929:			
	<u>Area Per Cent</u>	<u>Number of Farms</u>	
22	44.0	168,264	
State		State	
average	55.6	total	8,676,439
Average number of acres per farm, 1930:			
39	81.6		
State average	73.8		
Average value, per farm acres, of all livestock, 1930:			
37	\$5.83		
State average	5.82		
Total value of all farm property, including land, buildings, implements and machinery and livestock, 1930:			
25	\$ 12,279,692		
State total	593,642,483		
Value of all farm property per farm acres, 1930:			
21	\$62		
State average	50		

APPENDIX TABLE I

(Continued)

County Rank	Item
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Agricultural output per farm acre, 1929:

51	\$10
State average	13

Average Number of acres per farm:

	<u>1950</u>	<u>1920</u>	<u>1900</u>	<u>1935</u>
40	81.6	106.4	128.6	69.5
State average	73.3	77.2	90.6	69.7

Source: Census of Agriculture Reports, 1900, 1920, 1930 and 1935.

1935 Source: U. S. Department of Commerce, Bureau of the Census,
Sixteenth Census of the United States, 1935, Table I, pp. 6-8.

Area of commercial forest land, 1930 (thousands of acres):

	<u>% of County Area</u>	<u>Total Forest Area</u>
45	52	193
State	52	14,112

Source: State Forestry Department, Nashville, Tennessee.

Number of farm acres per farm inhabitant, 1930:

34	13.6
State average	14.8

Source: Tennessee Census of Population, Composition and Characteristics,
1930.

APPENDIX
TABLE II

LAND ACRES, LAND IN FARMS,
NUMBER AND AVERAGE SIZE OF FARMS
1880-1935

	1880	1890	1900	1910	1920	1925	1930	1935
Approximate land area, acres				365,440	365,440	365,440	365,440	365,440
Land in farms, acres	224,893	252,968	277,982	289,169	276,697	216,415	197,176	207,760
Per cent in farms				63	76	59	54	57
Number of farms	1,716	1,775	2,161	2,460	2,601	2,909	2,417	2,968
Average size of farms	143	142	129	93	106	94	82	70

Source: United States Census of Agriculture, 1880-1935.

APPENDIX
TABLE III

LAND USE, 1924-1934

	1924	1929	1934	Per cent change 1929-1934
Crop land, total	87,126	74,917	83,525	11.5
Crop land harvested	68,898	61,207	69,773	14.0
Crop failure	1,222	960	670	-30.2
Idle or fallow	17,006	12,750	13,082	2.6
Pasture land, total	66,168	64,967	63,174	-2.8
Plowable pasture	44,464	44,535	39,061	-12.3
Woodland	17,999	14,543	11,953	-17.8
Other pasture	3,705	5,889	12,160	106.6
Woodland not pastured	50,477	44,280	44,780	1.1
All other land in farms	12,604	13,032	16,301	25.1
All land in farms	216,416	197,176	207,760	5.4

Source: United States Census of Agriculture, 1924-1934.

APPENDIX
TABLE IV

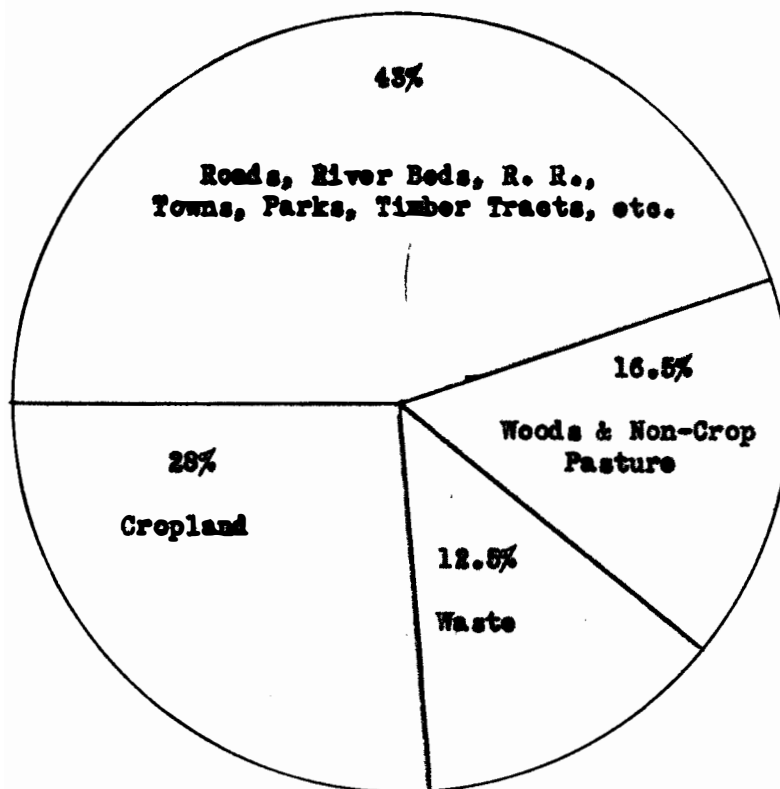
FARMS

	Year	State	Blount County
Number of farms	1940	247,617	3,010
	1935	273,783	2,986
	1930	245,657	2,417
Approximate land area (acres)	1940	28,855,040	373,760
Proportion in farms (per cent)	1940	68.9	52.4
All land in farms (acres)	1940	18,492,898	196,730
	1935	19,085,837	207,760
	1930	18,003,241	197,176
Average size of farm (acres)	1940	74.7	65.0
	1935	69.7	69.5
	1930	73.3	81.6

Source: United States Census of Agriculture, 1930-1940.

**APPENDIX
TABLE V**

Total Acreage of Blount County

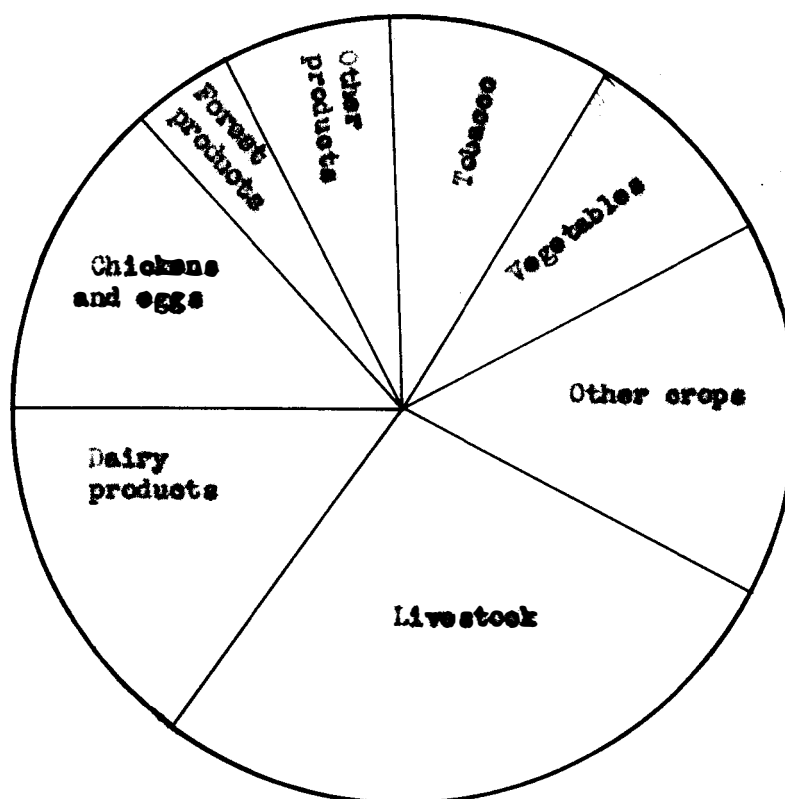


Source: United States Census of Agriculture, 1930.

APPENDIX
TABLE VI

BLOUNT COUNTY

VALUE OF FARM PRODUCTS SOLD OR TRADED,
BY CLASSES, 1929



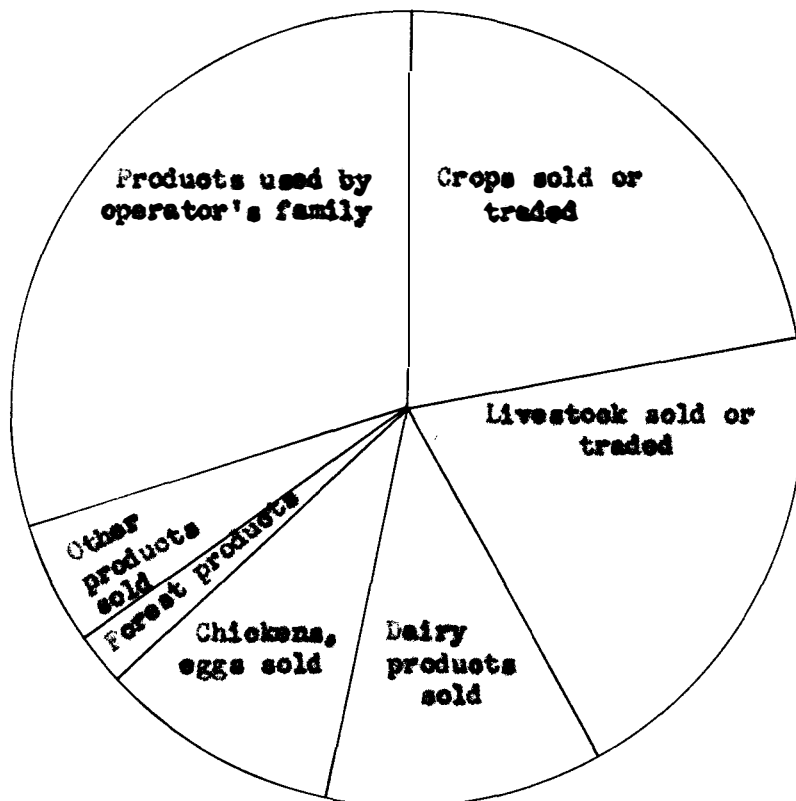
<u>Farm Products</u>	<u>Total Value</u>	<u>Per Cent of Total</u>
All products sold and traded	\$1,546,406	100.0
Crops sold or traded	451,164	32.0
Tobacco	114,710	8.5
Vegetables	109,966	8.2
Other crops	206,478	15.3
Livestock sold or traded	375,549	27.9
Dairy products sold	213,953	15.9
Chickens and eggs sold	178,302	13.3
Forest products sold or traded	52,714	3.9
Other products sold or traded	94,734	7.0

Source: U. S. Census of Agriculture, 1930.

APPENDIX
TABLE VII

BLOUNT COUNTY

DISPOSITION OF ALL FARM PRODUCTS,
PER CENT OF ALL PRODUCTS SOLD, TRADED OR
USED BY OPERATOR'S FAMILY, BY CLASSES, 1929



<u>Farm Products</u>	<u>Total Value</u>	<u>Per Cent of Total</u>
All products sold, traded or used by operator's family	\$1,937,072	100.0
Products used by operator's family	592,866	30.6
Products sold or traded	1,345,406	69.4
Crops sold or traded	481,154	22.2
Livestock sold or traded	375,549	19.4
Dairy products sold	213,953	11.0
Chickens and eggs sold	178,302	9.2
Forest products sold or traded	52,714	2.7
Other products sold or traded	94,734	4.9

Source: U. S. Census of Agriculture, 1930.

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