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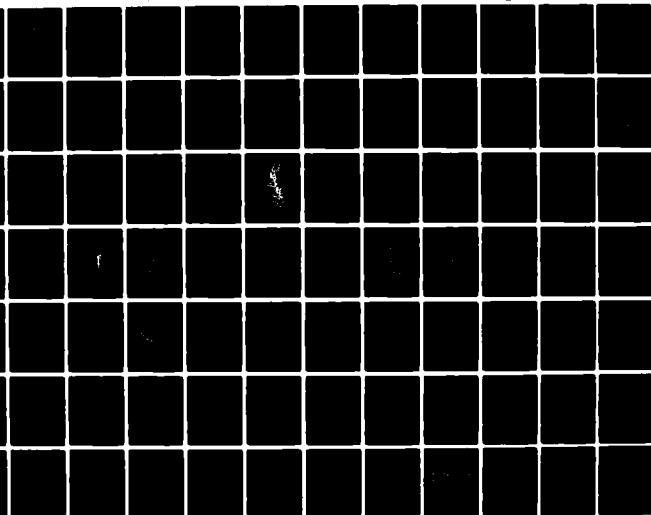
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HISTORICAL GEOGRAPHY OF THE UPPER TOMBIGEE VALLEY. (U)
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HISTORICAL GEOGRAPHY OF THE UPPER TOMBIGBEE VALLEY

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The cultural heritage of the area traversed by the Tennessee- Tombigbee Waterway between Gainesville, Alabama, and Paden, Mississippi, in historic times has been examined in geographical perspective. Settlement patterns are related to four physiographic divisions; Fall Line Hills, Black Belt Prairie, Pontotoc Hills, Ripley Cuesta, and Tombigbee Terraces. Settlement patterns are also defined in terms of three cultural traditions; Euro-American (Upland South and Lowland South), Black, and American Indian. The characteristic locations and structure of specific material culture forms		

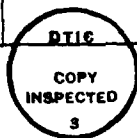
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Agricultural Activities
Central Place Activities
Industrial Activities

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are described. Transportation activities assessed include roads, forts, ferries, bridges, landings and railroads. Agricultural activities discussed include Upland South farmsteads, Lowland South farmsteads, and rural Afro-American settlement patterns. Central place activities analyzed are county seats, port towns, railroad towns and rural hamlets. Industrial activities treated are cotton ginning, cotton compressing, milling, metal working and brick making. The study concludes with a statistical analysis of site types and an evaluation of predictive site models. The narrative is supported by numerous maps and tables, and a extensive bibliography of documentary, published and map sources.

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HISTORICAL GEOGRAPHY OF THE UPPER TOMBIGBEE VALLEY

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THE CENTER FOR THE STUDY OF SOUTHERN HISTORY AND CULTURE

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TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION: THE RESEARCH CONTEXT	1
The Mitigation Plan	1
The Research Design	3
The Literature Search: Research Policy	9
Research Procedure	11
II. THE NATURAL HERITAGE	13
The Fall Line Hills	16
The Black Belt Prairie	19
The Pontotoc Hills/Ripley Cuesta	21
The Tombigbee Terraces	22
III. SETTLEMENT PATTERNS IN THE UPPER TENNESSEE-TOMBIGBEE WATERWAY--A GEOGRAPHICAL PERSPECTIVE	25
Settlement Pattern and Cultural Tradition	25
Euro-American Tradition	26
Black Culture	29
American Indian Contributions	30
Settlement Patterns and Physiographic Regions	30
IV. TRANSPORTATION ACTIVITIES, FACILITIES AND SYSTEMS	33
Roads	33
Fords, Ferries, and Bridge Sites: General Considerations	43
Fords	45
Ferries	49
The River System	51
Landings	52
The Railroads	56
V. AGRICULTURAL ACTIVITIES, FACILITIES, AND SYSTEMS	61
Environmental Preferences	61
Upland South Farmstead Structure	63
Cultural Distinctiveness of the Upland South Farmstead	71
Lowland South Farmstead Structure	74
Rural Afro-American Settlement Patterns	78
Rural Building Types	81

VI. CENTRAL PLACE ACTIVITIES, FACILITIES AND SYSTEMS	91
The Central Place Concept	91
The County Seat	95
Port Towns	103
Railroad Towns	113
General Commercial and Residential Structure of Towns	115
Rural Hamlets	135
VII. INDUSTRIAL ACTIVITIES, FACILITIES AND SYSTEMS	143
General Nature and Location of Industrial Operations	143
Cotton Ginning	145
Cotton Compressing	150
Milling Industries	150
Metalworking and Woodworking	153
Brickmaking	153
Miscellaneous Industries	162
Miscellaneous Settlement Features	162
VIII. THE RELEVANCE OF PREDICTIVE MODELS TO HISTORIC SITE ANALYSIS IN THE TOMBIGBEE RIVER MULTI-RESOURCE DISTRICT	165
Models of Cultural Diffusion	166
Models of Ethnic Settlement Forms	168
Models of Type of Settlement Structures	169
Models of Relative Location	169
Models of Absolute Location	175
IX. EVALUATION OF THE LITERATURE SEARCH	187
Applicability of the Regional Research Design	187
The Effectiveness of Interdisciplinary Research	188
The Use of Documentary Information in Historic Archeological Research	189
The Problem of Determining Site Location	190
The Problem of Determining Site Structure and Variability	191
The Potential for the Development of Sampling Procedures	191
Evaluation of Significant Historic Sites	193
APPENDIX A. CROSSTABULATION TABLES FOR GENERAL SITE TYPE FROM COMPUTER PRINTOUT	195
APPENDIX B. CROSSTABULATION TABLES FOR SETTLEMENT TYPE FROM COMPUTER PRINTOUT	209
BIBLIOGRAPHY	227
References Cited	227
General Bibliography	240
Libraries and Depositories of Record	259
Newspapers	262
Maps	263

LIST OF ILLUSTRATIONS

Figure		Page
1.	TENNESSEE-TOMBIGBEE WATERWAY.	2
2.	PHYSIOGRAPHIC REGIONS OF ALABAMA AND EAST MISSISSIPPI AREA.	14
3.	PHYSIOGRAPHIC DIVISION OF THE UPPER TOMBIGBEE AREA.	15
4.	GEOLOGY OF THE UPPER TOMBIGBEE AREA.	17
5.	ALLUVIAL AND TERRACE DEPOSITS OF THE UPPER TOMBIGBEE AREA.	23
6.	MAIN ROAD ROUTES IN THE UPPER TOMBIGBEE AREA, CA. 1820.	35
7.	MAIN ROAD ROUTES IN THE UPPER TOMBIGBEE AREA, CA. 1840.	36
8.	MAIL COACH ROUTES IN 1860 IN THE UPPER TOMBIGBEE AREA.	40
9.	MAJOR ROADS IN 1880 IN THE UPPER TOMBIGBEE AREA.	41
10.	LOCATION OF GAINES TRACE AND COTTON GIN PORT FROM U.S.G.S. TOPOGRAPHIC SURVEY.	44
11.	FERRY, FORD AND LANDING SITES AROUND PICKENSVILLE.	47
12.	MAIN FORD TYPES (AFTER NEWTON).	48
13.	FERRY AND LANDING SITES AROUND WARSAW.	50
14.	UPLAND SOUTH FARMSTEADS, FROM HABS SURVEY.	65
15.	UPLAND SOUTH FARMSTEADS, FROM HABS SURVEY.	66
16.	UPLAND SOUTH FARMSTEADS, FROM HABS SURVEY.	67
17.	UPLAND SOUTH FARMSTEADS, FROM HABS SURVEY.	68
18.	FARMSTEAD LAYOUTS, FROM 1960 AERIAL PHOTOS.	69
19.	FARMSTEAD LAYOUTS, FROM 1960 AERIAL PHOTOS.	70
20.	POSITION OF HOUSE PIERS.	84
21.	ADDITIONAL COMMON HOUSE TYPES OF THE UPPER TOMBIGBEE AREA.	85
22.	SETTLEMENT PATTERN OF NORTHERN COUNTIES OF THE UPPER TOMBIGBEE AREA, 1865.	93
23.	SETTLEMENT PATTERN OF SOUTHERN COUNTIES OF THE UPPER TOMBIGBEE AREA, 1865.	94
24.	COMMON COUNTY SEAT FORMS (AFTER PILLSBURY, 1978).	98

25. COLUMBUS, FROM SANBORN ATLAS, 1885.	99
26. ABERDEEN, FROM SANBORN ATLAS, 1889.	100
27. EUTAW, 1843 (AFTER SNEDECOR, MAP, 1856).	101
28. FULTON, FROM SANBORN ATLAS, 1929.	102
29. THE RIVERPORT COMMUNITIES OF THE UPPER TOMBIGBEE AREA IN THE NINETEENTH CENTURY.	105
30. PLAT OF WEST-PORT, 1827, FROM LOWNDES COUNTY DEED RECORDS.	106
31. PICKENSVILLE VICINITY, 1960, FROM AERIAL PHOTOGRAPHS.	107
32. SITE OF MEMPHIS, FROM PICKENS COUNTY DEED RECORDS.	108
33. PLAT OF MEMPHIS, FROM PICKENS COUNTY DEED RECORDS.	109
34. FAIRFIELD VICINITY, 1959, FROM AERIAL PHOTOGRAPHS.	110
35. VIENNA VICINITY, 1959, FROM AERIAL PHOTOGRAPHS.	111
36. PLAT OF WARSAW, FROM SUMTER COUNTY DEED RECORDS.	112
37. AMORY FROM THE SANBORN ATLAS, 1918.	114
38. DOWNTOWN COLUMBUS, 1859, FROM LOWNDES COUNTY LIBRARY ARCHIVES.	116
39. SECTION OF DOWNTOWN COLUMBUS FROM SANBORN ATLAS, 1890.	117
40. SECTION OF DOWNTOWN COLUMBUS FROM SANBORN ATLAS, 1890.	118
41. SECTION OF DOWNTOWN COLUMBUS FROM SANBORN ATLAS, 1890.	119
42. SECTION OF DOWNTOWN COLUMBUS FROM SANBORN ATLAS, 1890.	120
43. SECTION OF DOWNTOWN ABERDEEN FROM SANBORN ATLAS, 1890.	121
44. DOWNTOWN AMORY FROM SANBORN ATLAS, 1918.	122
45. DOWNTOWN EUTAW FROM SANBORN ATLAS, 1888.	123
46. DOWNTOWN MACON FROM SANBORN ATLAS, 1890.	124
47. DOWNTOWN FULTON FROM SANBORN ATLAS, 1929.	125
48. TOWN OF GAINESVILLE FROM SANBORN ATLAS, 1884.	126
49. RIVER COTTON YARD, ABERDEEN, FROM SANBORN ATLAS, 1890.	129
50. COTTON WAREHOUSES, COLUMBUS, FROM SANBORN ATLAS, 1890.	130
51. ABERDEEN WAREHOUSE COMPANY, ABERDEEN, FROM SANBORN ATLAS, 1890.	131

52. PATRON'S COTTON YARD, ABERDEEN, FROM SANBORN ATLAS, 1890.	132
53. FARMER'S COTTON YARD, ABERDEEN, FROM SANBORN ATLAS, 1890.	133
54. GENERALIZED STRUCTURE OF URBAN PLACES IN THE UPPER TOMBIGBEE AREA IN THE LATE NINETEENTH CENTURY.	134
55. PLEASANT RIDGE COMMUNITY, 1843 (AFTER SNEDECOR).	136
56. MT. HEBRON COMMUNITY, 1843 (AFTER SNEDECOR).	137
57. DARRACOTT COMMUNITY, 1914 (AFTER MORGAN, 1978).	138
58. BINFORD COMMUNITY, MONROE COUNTY, 1903, FROM SOIL SURVEY.	139
59. WAVERLY COMMUNITY, 1903, FROM SOIL SURVEY.	140
60. SETTLEMENT PATTERN OF NORTHEAST NOXUBEE COUNTY, 1910, SOIL SURVEY	141
61. TWO COTTON GIN AND GRIST MILL PLANTS, ABERDEEN, FROM SANBORN ATLAS, 1890.	147
62. WAVERLY COMMUNITY, 1889 (AFTER ADAMS, MARTIN ET AL., 1979).	148
63. AMORY COMPRESS COMPANY, AMORY, FROM SANBORN ATLAS, 1918.	151
64. MACON COMPRESS COMPANY, MACON, FROM SANBORN ATLAS, 1890.	152
65. COLUMBUS OIL MILLS, COLUMBUS, FROM SANBORN ATLAS, 1890.	154
66. HOPE OIL MILL, COMPRESS AND MANUFACTURING COMPANY, ABERDEEN, FROM SANBORN ATLAS, 1890.	155
67. HALE LUMBER AND MILLING COMPANY, COLUMBUS, FROM SANBORN ATLAS, 1890.	156
68. TOMBIGBEE WOODEN WARE MANUFACTURING COMPANY, COLUMBUS, FROM SANBORN ATLAS, 1890.	157
69. MILLS AND WELLS PLANING MILL, COLUMBUS, FROM SANBORN ATLAS, 1890.	158
70. AMORY LUMBER COMPANY, AMORY, FROM SANBORN ATLAS, 1918.	159
71. GEORGE REYNOLD'S STAVE MILL, ABERDEEN, FROM SANBORN ATLAS, 1890.	160
72. S.H. BERG'S PLANING MILL, SAW MILL, LUMBER YARD AND BRICKYARD, ABERDEEN, FROM SANBORN ATLAS, 1890.	161
73. GENERALIZED DISTRIBUTION OF UPLAND SOUTH AND LOWLAND SOUTH CULTURE TYPES.	170
74. THE IDEAL-TYPICAL TRANSPORTATION SEQUENCE.	172
75. EVOLUTION OF SETTLEMENT SYSTEM ACCORDING TO LACHENE.	174

LIST OF TABLES

Table	Page
1. UPPER TOMBIGBEE LANDINGS WITH DISTANCE IN MILES FROM MOBILE	55
2. CATEGORIES OF VARIABLES USED IN ANALYSIS	176
3. DERIVATION OF UNCERTAINTY COEFFICIENT (U_A)	178
4. STATISTICAL SUMMARY OF CROSSTABULATION BY GENERAL SITE TYPE	179
5. PREDICTOR VARIABLES AND CROSSTABULATION STATISTICS FOR SETTLEMENT TYPES	184

CHAPTER I

INTRODUCTION: THE RESEARCH CONTEXT

The Mitigation Plan

The Tennessee-Tombigbee Waterway, currently under construction, will substantially affect an area approximately 235 miles long in Alabama and Mississippi. Within that area are a variety of cultural resources, contemporary, historic and pre-historic, which may be adversely impacted by the project. The Tombigbee River Multi-Resource District (TRMRD) has been established to satisfy the requirements of the National Historic Preservation Act of 1966 with respect to historic site preservation and conservation. The TRMRD is a five mile wide corridor centered along 135 miles of the waterway from Gainesville, Alabama to Paden, Mississippi. The function of the TRMRD is to provide a manageable mechanism for mitigating the effects of construction activity on significant cultural resources (Fig. 1).

Proposed procedures for the mitigation of adverse impacts on significant cultural resources in the TRMRD were considered at a conference held in Atlanta, Georgia, in October, 1977. The conference was attended by representatives of the Corps of Engineers, National Park Service, Advisory Council on Historic Preservation, the State Historic Preservation Officers of Alabama and Mississippi and a number of professional archeologists. The details of this conference have been provided in published form as the Tennessee-Tombigbee Waterway, Alabama and Mississippi, Tombigbee Multi-Resource Proposed Mitigation Plan.

According to that document, the proposed program to mitigate adverse impacts on cultural resources within the District, recognized that because of prejudices found in most water project developments, historic resources, both archeological and architectural sites, have been neglected in favor of pre-historic archeological sites during initial surveys conducted in the project areas. In the TRMRD, care was taken to maintain a more balanced approach. The deficiencies in initial survey were to be corrected through reanalysis of survey data, and through additional surveys required to correct the sampling bias.

The report which follows is a response to the perceived need to generate more information relating to the location and structure of historic sites in the Tennessee-Tombigbee area. It was substantially conditioned by a research design formulated by Interagency Archeological Services-Atlanta, as the projected means for providing information about the development and importance of river towns, the organization of rural plantations and farms, and the development of commerce and industry during the period 1830-1900. Because all the details of this research design have not been published elsewhere, because it forms the basis for the mitigation plan, and because it relates so closely to the character of this study, the General Research Design, Historic Settle-

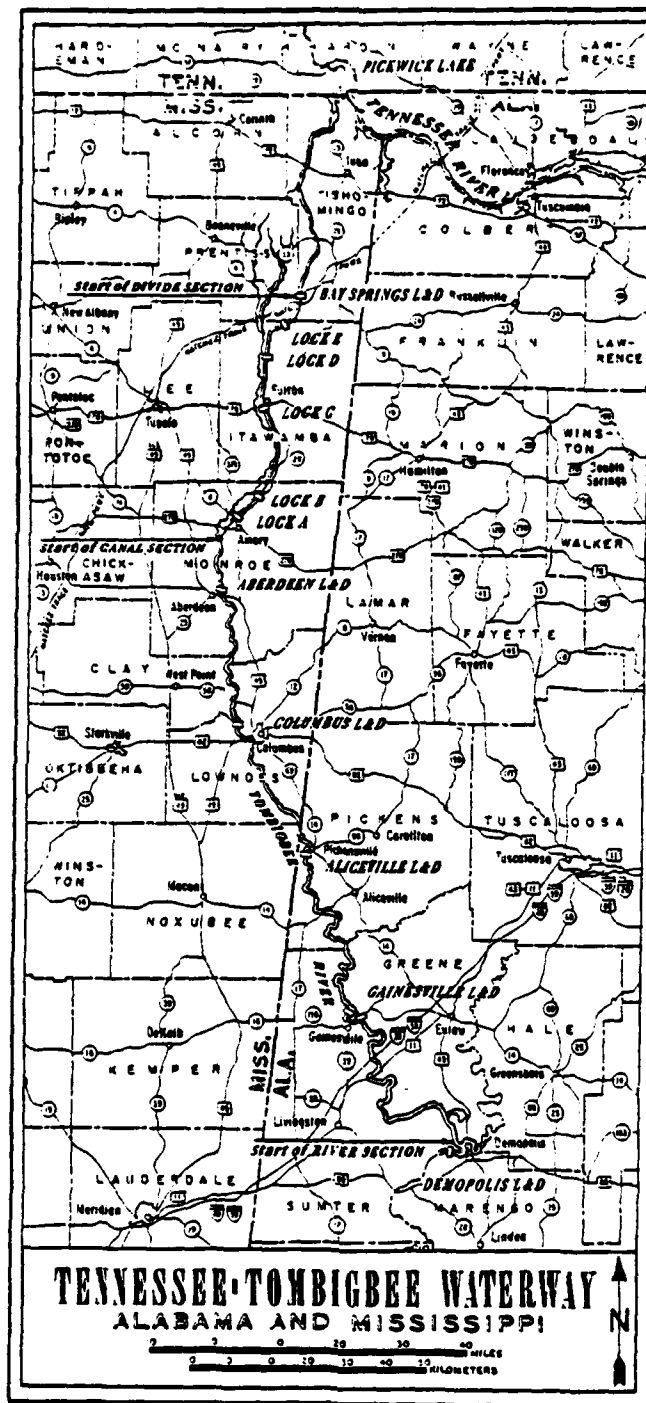


FIG. 1. TENNESSEE-TOMBIGBEE WATERWAY.

ment in the Tombigbee River Multi-Resource District, Tennessee-Tombigbee Waterway Alabama and Mississippi is presented in full here.

The Research Design

The known and yet to be defined historic sites within the multi-resource district have the potential for providing much information on the changing adaptations of the residents through time. The framework for dealing with the historic occupation of the region must have its basis in the nature of the resources which will be impacted by construction.

Since these resources primarily consist of archeological sites and standing structures, the research design should provide an integrated and realistic approach to these primary data. Additionally, the work conducted should form the basis for inferring the operation of less physically recoverable aspects of the Tombigbee Valley occupation.

Consequently, the general research design will focus on defining the operation of the settlement and economic systems within the region and explaining changes which occurred in the systems through time. The systematic approach to the historic period cultural resources has rarely been utilized in a large area like the multi-resource district. Formulating and testing settlement and economic models will require the integration of historical, structural and archeological data. These models should produce a framework for evaluating the significance of the archeological sites and a foundation for systematically selecting sites for extensive excavation. An intensive, well-integrated study of these systems should also provide data for inferences on the operation of the social and political systems within the region.

The settlement system has been selected as one problem for study since little is known about the adaptation of the nineteenth century settlers to the area. The construction of settlement models for this region should have a marked applicability to research at least in adjacent areas. A detailed study of the economic system will provide the method for integrating the diverse adaptations to the river and upland resources and a framework for defining patterns of changing production and distribution within the region.

Settlement Systems

The settlement pattern studies within the Tombigbee River Multi-Resource District will include the articulation of such functionally diverse sites as towns, plantations-farms-tenancies, light industries and transportation related construction. The consideration of the settlement system will minimally address two levels of association: the articulation of these sites in a regional context and the internal organization of each site. The emphasis should be placed on defining relationships and variability to formulate testable models of human behavior. If the settlement system changes through time, these changes must be explained.

The Settlement System in Regional Context

A consideration of the settlement system at the regional level may be structured to test a variety of Euro-American settlement models proposed by cultural geographers. Although the specific problems which should be addressed during the research are not as extensively enumerated as those on an intra-site level, this aspect of the research is equally important in the settlement study. Problems which should be considered include:

1. *What is the nature of white and black settlement in the region before the Chickasaw Cession? How is this pattern systemically altered following the opening of the frontier? Is the frontier model proposed by Lewis (1976) applicable in the Tombigbee?*

2. *How is the Tombigbee River divided into ports and landings? The ports and landings, although functionally similar, may have developed differently in response to physiography, population concentration and other factors. Regularities in the distribution of ports and landings may show patterned changes through time. The relationships of the port or landing and the nature of the hinterland supplying its goods should be integrated.*

3. *What is the pattern of land use by plantations, farms, and tenancies? Although the plantations and farms may be expected to inter-face throughout the region, specific topographic and physiographic features may be adapted more frequently into one agricultural unit than another. Major plantation and farm structures may be expected to have a systematic relationship to each other and to the known road systems. These regularities must be defined.*

4. *Light industrial sites may be specifically tied to particular physiographic or topographic features as required by their function and to plantations, farms, or towns. The patterned distribution of these sites should be investigated.*

5. *The towns as agglomerated settlements should have established hinterlands and be distributed regularly throughout the area as focal points for distributing goods and services. What are the attributes of town locations? How does the hinterland served by a town change significantly through time? How does the settlement pattern change with the birth and extinction of towns?*

These problems comprise only a few of the many questions which could be explored concerning the changing settlement pattern within the Upper Tombigbee. Emphasis on certain aspects of these questions may be developed based on particular models formulated or selected for testing within the region.

The Settlement System in Intra-Site Context

The internal relationships among the elements comprising these diverse sites must also be defined. The following specific questions should form the basis for their consideration:

a. Towns

The towns located within the impact area fall into three functional classifications: the river port towns, the county seat towns, and the manufacturing towns (Adkins, 1972). These represent only three of the six classes defined by Adkins (1972) in his study of extinct towns in Mississippi. Research within these towns should attempt to define the regularities in the relationships between production, distribution, and residential sites and to deal with the essential question of whether river towns are organized differently from the manufacturing and county seat community centers. Since any differences that may be defined may relate to the differences between the functional orientation of the entire community or the orientation of only a small functional segment, these differences must be systematically investigated.

Specific research questions which must be considered generally for all towns include the following:

1. *How is space utilized within each town? River towns were often organized so the business district was located between the river and the residential district and was directly tied into the transshipment point. Do all river towns share this same patterned arrangement? Is this segregation between the business and residential districts maintained in the manufacturing and county seat towns as well?*

2. *A preliminary examination of land records from two of the river towns indicates that residences may also have been located in the business district. Are these residences situated in specific locations within the business district? Do residences continue to be located in the business district through time? Are there any differences in status between individuals occupying residences in the business district and those living elsewhere in the town as reflected in the archeological record of the house, artifacts, and food remains? Do residents in the business district practice trades which may be performed in the home, like a tailor, physician, or laundress? Are there any changes in the status of those individuals who occupy the residences in the business district through time? This question would provide information on whether population replacement in the area of the waterfront occurred during the lifetime of the town as it did in larger centers, at least on the east coast. Are there any changes in the residential part of town which parallel those taking place along the waterfront?*

3. *What is the nature and extent of black settlement within the towns of this region? Are there observable differences in this occupation between river and non-river oriented towns? Are observable artifactual and structural elements of social stratification present in these settlements?*

4. *If business districts are present in the manufacturing and county seat towns, are occasional residences also located there? Do the same questions asked for river towns have any applicability to the structure of these towns?*

5. What commercial enterprises and light industries comprised the business district? Are particular trades segregated into specific parts of the business district? Are the spatial relationships of these enterprises maintained through time? If this segregation exists, what explanations could be offered for it?

6. What is the spatial relationship between the residence and support structures within the town? What kinds of support structures can be expected for specific industrial and commercial enterprises? How do the relationships between the residence and support structures or between the industry and support structures change through time?

7. Within most of the towns, the residences and their associated outbuildings, and the industries and their support structures are restricted to lots of uniform size. How is the space within the lot utilized? Do the sizes of the lots change through time with associated changes in the main building and associated structures?

8. Does the Carolina artifact pattern which defines the uniformity predicted to occur in eighteenth century British Colonial sites (South, 1977) appear in mid-nineteenth century residential sites in the Tennessee-Tombigbee Valley? If this pattern is not represented, can other patterns defining cultural regularities be formulated? Do these patterns change through time?

Three river towns share a specific lineal historical development and certain additional problems should be addressed during research on these locales:

1. Colbert (ca. 1830-1847), Barton (ca. 1848-1870) and Vinton (ca. 1849-1900) were river towns along the Tombigbee which developed in response to shipping locally produced cotton and other products downriver to Mobile and distributing goods imported from other areas. These towns were sequentially occupied by essentially the same group of residents, a situation that provides a virtually unique data base for research. Studied individually, these towns reflect the operation of a river oriented settlement over a very brief period of time; taken collectively, they provide a mechanism for systematically evaluating changes through time. Is the settlement pattern initiated at Colbert maintained in the successive settlements of Barton and Vinton?

2. Colbert and Barton developed following a town plat in which streets, blocks, and lots were established prior to concentrated settlement. Vinton apparently had no town plan. Are there any differences in the town configuration that could be attributed to this absence of a plan?

b. Plantations-Farms-Tenancies

The plantations, farms and tenancies are combined here because of their functional relationship in the primary production of agricultural products. Although they share this same functional basis, the plantations, farms, and

tenancies are not necessarily expected to be equivalent in diversity, self-sufficiency, or size. Research questions to be addressed should include the following:

1. How did the plantation, farm or tenancy allocate space to the residence and supporting structures? Glassie (1975) in his study of folk housing in middle Virginia identified the two centers of activity as the house and the barn with associated supporting structures spatially separated from one another. Was the same pattern of organization used along the Tombigbee? What support structures formed an integral part of the plantation as opposed to the rural farm or the tenancy? What kinds of changes were affected following the Civil War?

2. What is the nature and extent of black settlement on the plantations, farms, and tenancies of the region?

3. What light industries were performed on the plantation, farm, or tenancy? Are minimal light industry capabilities required to maintain the function of the various producing institutions?

4. Are there differences in size and type in the support structures associated with plantations, farms and tenancies? The number, type and size of specific outbuildings may be related to the amount of land, the agricultural productivity, the wealth of the owner, and the decade of occupation. The variability of contemporary plantations should be defined and explanations proposed for changes through time.

5. Can specific artifact patterns defining cultural regularities on the plantation, farm, and tenancy be formulated? Do these patterns change through time?

c. Isolated Light Industries

The distribution, internal arrangement, and essential components of light industries, and landings not associated with towns or plantations, farms or tenancies within the Tombigbee River Multi-Resource District must be identified. If any isolated light industries exist, explanations should be proposed for their location and individual development. Why did small towns not develop around light industry, or landings?

d. Transportation Systems

The primary factor integrating the functionally diverse settlements established in the Tennessee-Tombigbee area was the presence of roads and connecting bridges and ferries. Since this linkage was so vital to the existence of the settlements, the historic road system operating throughout the area and its changes through time must be defined as an integral part of the settlement system.

Economic Systems

The definition of the economic system operational within the impact area will involve stipulating the patterns of producing and distributing goods and services along the waterway and in the interior. Although a consideration of the economic system can only be arbitrarily separated from the settlement system, a study of the products, their origin, and their distribution can provide important information in determining centers of supply and identifying their hinterlands. The products, processes of distribution, and supply centers undoubtedly change through time and explanations for these changes must be proposed and tested. Specific problems which should be addressed include the following:

The Production Process

1. *What products are locally manufactured in the river towns, the plantations, the farms, and the tenancies? Do the technology and products manufactured in the diverse locations differ?*

2. *How do the production techniques and equipment of each known local industry change through time? A systematic study could provide information about the time required for the adoption of innovations developed elsewhere. Additionally, the development of locally designed innovations should be detailed. Is there any evidence for modification and reuse of industrial equipment as occurred in certain industries in New England?*

3. *How do the locally produced items change through time? The adoption of new styles by local craftsmen will provide good methods of comparative dating and a means of identifying local use.*

4. *What kinds of goods, as indicated by the artifacts, were not locally produced? Do the types of amounts of imported goods differ in the towns, on the plantations, farms, and tenancies? How do the proportions or types of these imported goods change through time?*

The Distribution Process

The identification of the trade network operational within the Tombigbee River Multi-Resource District should be definable by tracing the distribution of cargoes loaded and unloaded at the river towns historically and archaeologically. The process of distributing these goods from the port of entry to the merchant and individual consumer should be at least partially determinable from the artifactual remains in the settlements. The following specific questions should be addressed:

1. *How are locally produced items distributed to consumers in the region?*

2. *How are the imported goods distributed to the consumers? Are there any differences between the distribution systems?*

3. *What kinds of products imported through the river trade are transported from particular areas of the country outside the region?*

4. *Are there any direct relationships in the distribution process between specific inland communities and specific river towns or landings?*

The problems identified in this general research design should be expanded and particularized in the proposals submitted for consideration. Specific research questions should be addressed as defined in the project specific scope-of-work.

The Literature Search: Research Policy

In the absence of an adequate base reference file on either the historical evolution or the geographical character of the TRMRD, a "Literature Search" focusing on these elements was judged to be a necessary preliminary stage in the mitigation scheme. The general purposes of the Literature Search were: (1) to define the operation of settlement and economic systems within the Tennessee-Tombigbee region and to explain changes in the system through time, (2) to formulate and test settlement and economic models in order to provide a framework for evaluating the significance of archeological sites for extensive excavation, and (3) to provide reference data on the relationship between the social and political systems in the area and the regions material culture.

According to the project "scope of work" the Literature search was to focus on (a) locating specific historic sites within the area and providing reference points for field identification and (b) determining the configuration of the sites including the number of buildings and their interrelationship, and known activity areas. The contractor was also expected to develop a predictive model for the distribution of historic sites within the project area, as an aid to field location. The scope of work also stated that while the Literature Search must collect data useful in locating archeological sites during the historic period the work must not be limited only to these objectives. The project was to address all problems posed in the general research design for the consideration of these and any additional problems, including the sources to be consulted.

Responsibility for the Literature Search was placed through contract with the Center for the Study of Southern History and Culture at the University of Alabama. The approved plan of approach was to employ a team of historians, archeologists, and geographers working jointly in a fully integrated interdisciplinary effort. The determination of specific areas of investigation was conditioned by the general research design. The designated focal points of research were:

1. *Early patterns of settlement and trade in the Indian days, opening of post routes and roads through the region, locations of Indian settlements, and those of white Indian countrymen, opening up of the country to white settlement, land surveys and sales, social and economic patterns of life.*

2. *Location of steamboat landings and sites of sunken steamboats.*

3. Location of the economic system operational within the area, with emphasis on the changing characteristics of agriculture, trade, and industry over time.

4. Definition of settlement patterns in a regional context as they change through time. Particular reference will be made to settlements as facets of the trade and transport network, to patterns of cultural association, land use and land tenure, to the location, size, spacing, and functions of towns and to the relationship of settlement sites to the physical environment.

5. Definition of settlement patterns in an intra-site context with particular attention to space utilization, and internal functional characteristics of both towns and farm operations, and to the dynamic spatial relationships of buildings and their connection to the physical environment.

6. Formulation of predictive models with respect to the location and functional character of cultural sites.

7. Identification of specific settlement sites or other material remains where feasible.

During the planning stages of the Literature Search the research team attempted to define the most appropriate approach to research which would maximize results in terms of the stated goals and objectives. The research design stipulated that the Literature Search provide (a) a regional assessment of site types and their significance, (b) a predictive model or models of site location and structure, and (c) detailed descriptions of the internal structure and material character of individual sites. When these requirements were considered with respect to constraints of time and budget it was agreed that research activities could feasibly take one of two forms.

The first would be to concentrate data gathering efforts on a limited number of known sites of various types in the TTMRD in the hope that such efforts would realize information of significant depth and detail. Such research would potentially provide substantial insight into the character of a few individual places, and provide a limited sample from which generalizations might be developed concerning particular site types. The main concern with this approach was a question as to adequacy and validity of a limited number of site data sets for both regional generalization and predictive capabilities. A second reservation was that there was no assurance that detailed information existed for a number of eligible known sites which would have caused some wasted effort and a consequent reduction in productivity.

The second approach was to conduct a regionally based survey which would attempt to determine the overall body of information available on the corridor, and the maximum number of occupation sites indicated by the record. The advantages of this policy would be the accrual of knowledge of a larger number of sites thus enhancing regional generalization and predictive formulations. The main drawbacks would be a less in-depth assessment of the information available for any particular designated site, and a reliance for generalizations largely on those locations for which the regional survey would generate information.

While it was realized that the most desirable approach would have involved active pursuit of both of these approaches, it was also recognized that operational constraints would not permit such an effort. Based on the perceived need for sound generalized judgements concerning site characteristics and locations, and based on the knowledge that detailed site studies were already taking place under separate contract at a number of points in TRMRD, the research team elected to pursue an approach emphasizing regional survey, with the choice of sites discussed in detail to be a result of that regional survey. The effectiveness of this policy is evaluated in Chapter IX.

Research Procedure

The research methods employed in pursuit of the targeted topics were diverse. They included survey and analysis of:

1. *Published books, articles, reports, and other secondary printed materials*
2. *Original documents such as county records, original land surveys, letters and account books*
3. *A wide variety of maps, contemporary and historic*
4. *Aerial photographs, contemporary and historic*
5. *Photographic collections*
6. *Census materials both published and manuscript*
7. *Personal interview*
8. *Field survey*

The emphasis in data collection was placed on the first four categories of activity. Research began with a comprehensive survey of the existing published literature. This involved searches of book and journal materials in the University and other libraries of each state (Alabama and Mississippi). Information derived from the survey of published materials was used to direct enquiries concerning less accessible documentary records. Resulting searches were made in appropriate national, state, university and local archive collections. Particular attention was given to the acquisition of maps, plats, and other graphic assets.

The information derived from these various avenues of enquiry was assembled and filed at the Center for Southern History and Culture. It was rationalized, systematized and synthesized both by individual researchers, and through frequent round table discussions involving representatives of the various academic disciplines, as well as program managers from federal agencies. The information was systematically recorded and catalogued in two ways. The first was a site data form developed for the project which contained five elements: (a) Description, (b) Map Location, (c) History, (d) Citations of sources and references, (e) Probable Impact by Waterway, (f) Evaluation of significance, and (g) Suggested procedure for improving informa-

tion. The second was a site notation on a base file of U.S.G.S. 7 1/2 minute quadrangles assembled for the full length of the TRMRD corridor. The data gathering part of the Literature Search was conducted primarily between July 1978 and July 1979.

While the interdisciplinary approach generally provided an excellent vehicle for generating information, and for assessing its relative significance, two difficulties became evident as the work progressed. The first was a communications problem. The historians, geographers, and archeologists had some difficulty relating to each other's disciplinary perspective (particularly early in the research effort). This language barrier was reduced only with effort and over a period of time. It may have initially resulted in some unintended duplication, or oversight, or overconcentration, or misdirection of enquiry. Such disadvantages must be weighed against the undisputed data output benefits from the broad spectrum research approach fostered by multidiscipline inputs.

A second problem of the interdisciplinary approach related to the reporting of the research. The original intention of the Literature Search, reflecting the stipulations of the Research Design, had been to produce a single integrated treatise incorporating both the temporal and spatial dimensions of regional evolution. At the conclusion of research, however, several factors militated against this method. They were: (1) the massive amount of data accumulated, (2) the diversity of the topics to be treated, (3) the need to incorporate detailed technical analysis, and yet at the same time enhance popular appreciation, and (4) the professional preferences of individual researchers. Together such factors suggested the impracticality of producing a narrative combining the historical, geographical, and archeological viewpoints.

As a result the report of the Literature Search has been separated into two discrete parts. One volume discusses the cultural development of the TRMRD as viewed through the sequence of events. The main objectives of this work are: (1) to facilitate popular comprehension of the regional history of the Upper Tombigbee, (2) to identify and elaborate the main themes of change, social, economic and political, which resulted in cultural modifications over time, and (3) to provide a temporal reference base for assessing the relative significance of historic sites.

The other volume assesses the pattern of material culture produced by the settlement process through the structural arrangements exhibited in the landscape. The main objectives in this volume are: (1) to provide detailed analysis of the specific physical form of cultural features, (2) to discuss settlement and economic models with a view to enhancing predictive capabilities concerning site characteristics, and (3) to provide a spatial framework for evaluating the significance of archeological sites.

The research team believes that through this procedure of separately reporting results, the informational requirements expressed in the Research Design have been optimally addressed, and the potential utility of the accrued data base has been maximized. Hopefully, both lay and professional readers will reap benefits from this approach.

CHAPTER II

THE NATURAL HERITAGE

The water for the operation of the Tennessee-Tombigbee Waterway at its upper end will come from Pickwick Lake on the Tennessee River. Following in a general way the route of Yellow Creek in Tishomingo County, the Tennessee Tombigbee Waterway will cut deeply through the Tennessee-Tombigbee drainage divide to Paden on Mackey's Creek, then follow that creek past Bay Springs and across the southeast corner of Prentiss County to Brown's Creek, below which the stream is called the East Fork of the Tombigbee River. Taking an independent course along that stream, a canal will reach southward past Fulton and Amory to Aberdeen. The volume of water will increase as the West Fork (Old Town Creek) and numerous other streams join its southward course. Although the so called canal section is said to end at the confluence of the East Fork and West Fork, the "river section" down to the Aliceville Lock and Dam follows the valley but is a dredged channel that is highly independent of that of the meandering river. The southernmost dam necessary for the current waterway project is that at Gainesville, for the dam at Demopolis on the Tombigbee-Warrior system backs up the water of the Little Tombigbee to a navigable depth as far as Gainesville.

The country through which the Waterway cuts lies entirely within the East Gulf Coastal Plain and is characterized by broad, flat floodplains, rugged cuestas and hills, and gently rolling prairies. The physiographic subdivisions of this area and the Coastal Plain include: (a) the Fall Line Hills, (b) the Black Belt Prairie, (c) the Pontotoc Hills/Ripley Cuesta, and (d) the Tombigbee terraces (Figs. 2 and 3). The topography is controlled by the characteristics of the underlying rocks, which outcrop in crescent-shaped bands sweeping from northeastern Mississippi southward and eastward across central Alabama into Georgia. All of the rocks of the area are of sedimentary origin. Rocks on the surface are of late Cretaceous, Paleocene, and Eocene origins except for relatively thin deposits of Pleistocene and Holocene alluvium and new terrace deposits.

The Upper Cretaceous rocks which were deposited approximately 70 million years ago outcrop in the northern half of the area and are mainly of deltaic, estuarine, and marine origin. They are sand, sandstone, gravelly sand, clay, marl, or calcareous clay and chalk. In order they belong to the Tuscaloosa group, the Eutaw formation, and the Selma group comprising the Mooreville and Demopolis chalk, the Ripley Formation, and the Prairie Bluff chalk. The Paleocene formations are in part of estuarine and marine origin and consist of sand, sandstone, silt, clay, and thin beds of lignite. The Eocene formations are also in part of estuarine and marine origin and consist mainly of sand, sandstone, clay, and clay stone. The superficial deposits of Pleistocene and Holocene ages consist of clay, sand, and gravel deposited by streams in the last three million years and are classified as terrace and alluvial deposits.

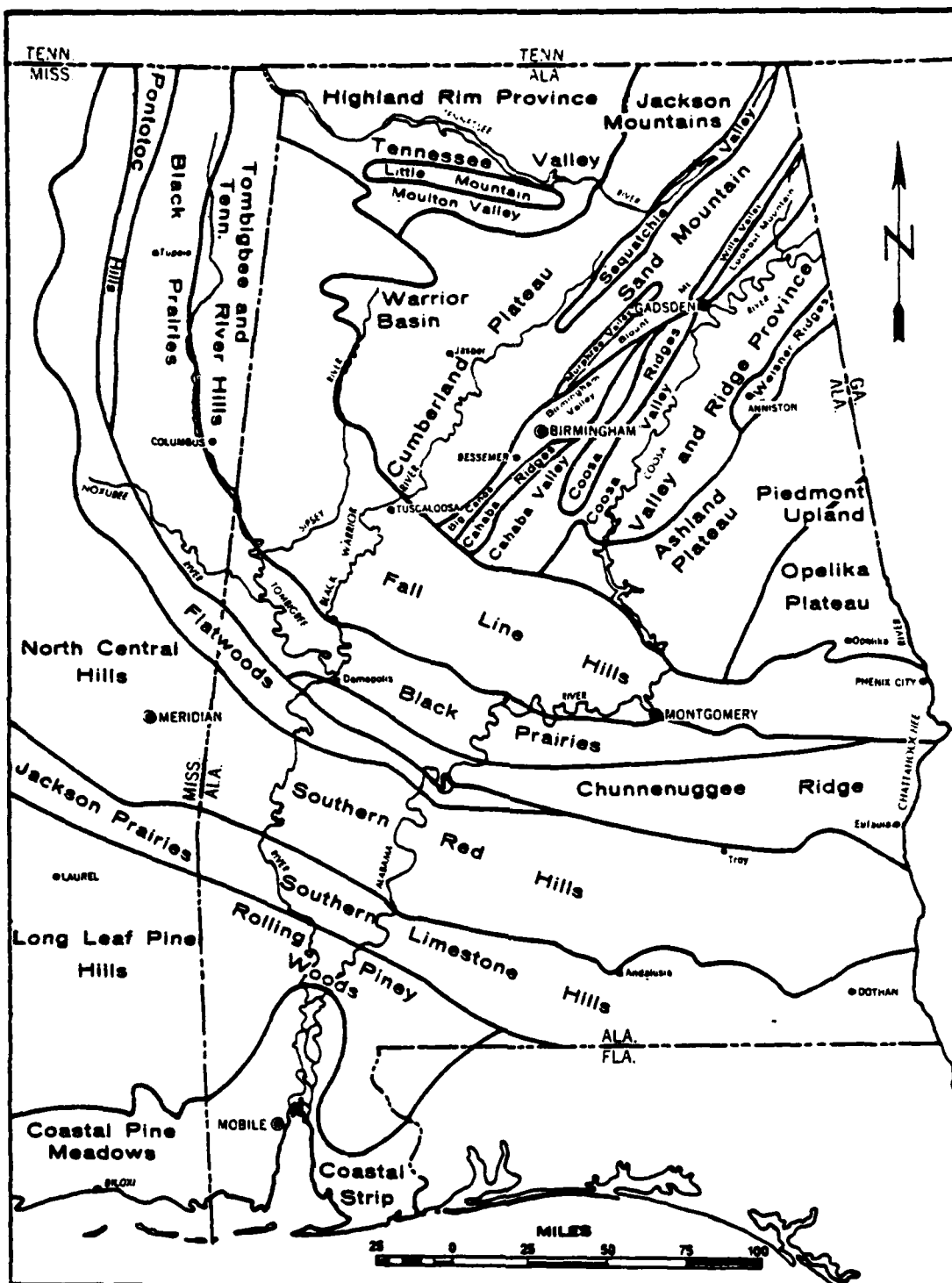


FIG 2. PHYSIOGRAPHIC REGIONS OF ALABAMA AND EAST MISSISSIPPI AREA.

The soils are derived from rock weathering and their characteristics reflect their source. However, soils may be secondarily altered by processes such as leaching or erosion. In East Mississippi and West Alabama, the rocks deposited during the late Cretaceous and Eocene time were later elevated. The rate of weathering of these rocks to form soil is determined by their chemical solubility and their texture. Soluble components such as calcium carbonate or lime quickly wash away, often resulting in erosion and thin soil. Less soluble rocks such as those containing sand deteriorate more slowly and build deeper soils. Alluvial soils which accumulate along watercourses contain components and nutrients that add to their richness for agriculture. These general characteristics may be altered locally by other factors such as slope, erosion, plant cover, and land use (Hajek, et. al., 1975).

Clay soils may be unstable for construction of structures such as roads, houses, and light industrial buildings having foundations that do not extend to bedrock. These soils may become highly unstable when wet and may swell when wet and shrink when dry. Throughout much of the area, the soils are severely limiting and must be compensated for in construction. Loamy soils present fewer problems. The slope of the soils in most areas and particularly along the river courses is relatively slight. This makes them more desirable for use as crop land or pasture. Loamy, alluvial soils are usually well suited to the growing of crops. Because of their general characteristics they are good for corn, cotton, and soybeans. Clays in general are well suited for pasture and where forested may be profitably converted to this use.

The four main classes of environmental factors which affect the structure and pattern of vegetation in any area are: (1) climatic, (2) geomorphic (related to land form), (3) edaphic (related to soil), and (4) biotic (related to living organisms). In the study area climatic and biotic factors do not vary sufficiently to create large-scale differences in the natural vegetation pattern although the Black Belt has slightly less rainfall than the Fall Line Hills. The primary variations which occur in vegetation result from a consideration of geomorphic and edaphic factors, although it must be recognized that human activities have interrupted natural landscape characteristics for most of the area.

According to Kuchler (1964), the four main vegetation divisions of the area are: (a) oak-hickory-pine forest, (b) southern mixed forests, (c) Black Belt, and (d) Southern floodplain forest. In general these vegetation divisions have a spatial arrangement coincident with the physiographic subdivisions mentioned earlier. These specific characteristics will therefore be treated in the more detailed discussion of physiographic subdivisions which follows.

The Fall Line Hills

The Fall Line Hills occur in a belt along the inner margin of the Coastal Plain (Fig. 3). General elevations range from 400 to 500 feet and there is local relief of 50 to 100 feet. The land surfaces are developed upon the Tuscaloosa and Eutaw geologic formations, the materials of which were deposited by streams and nearshore estuaries and lagoons (Fig. 4). These deposits were laid down upon older Paleozoic rocks of the Appalachian Highlands.

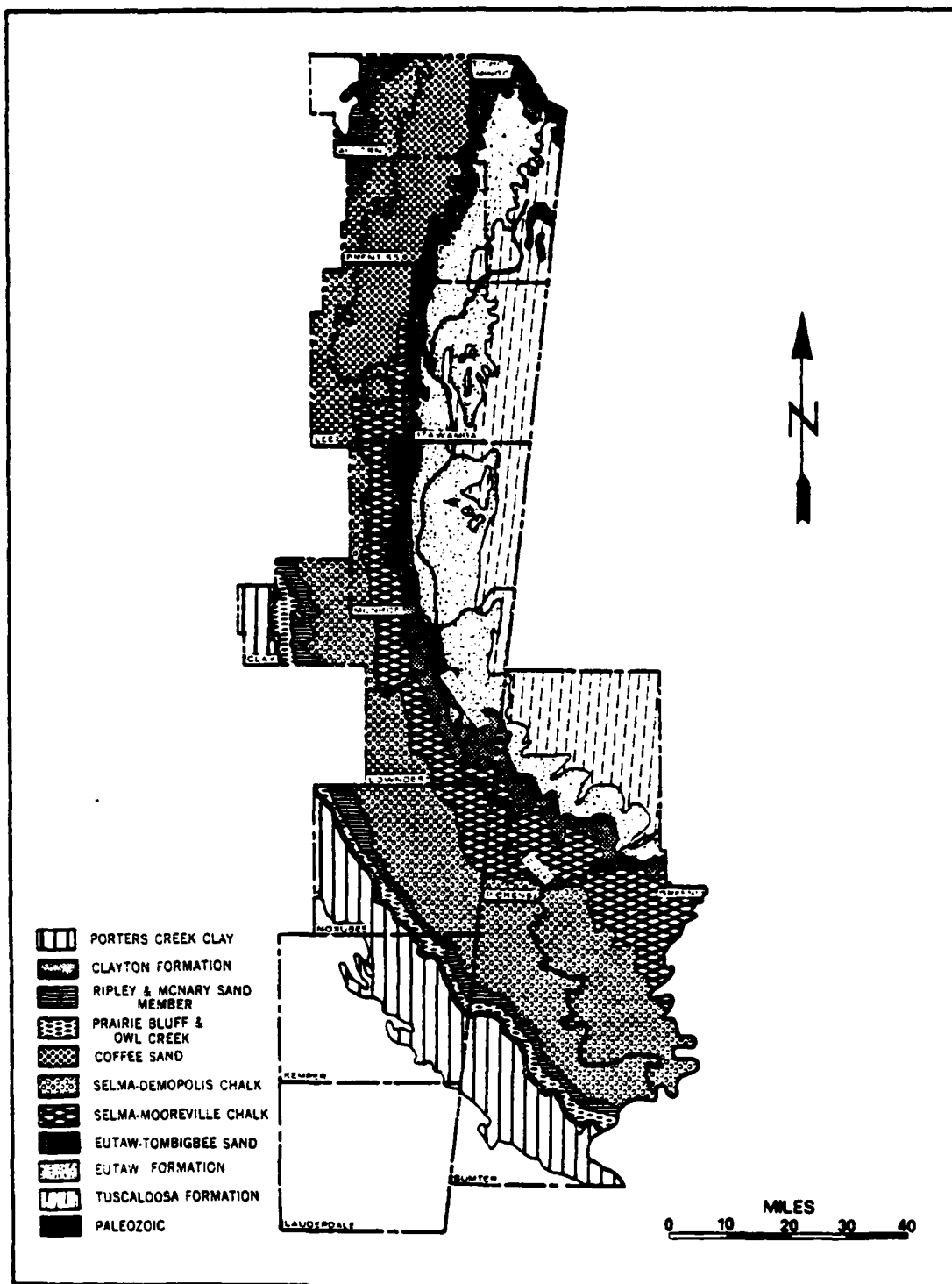


FIG. 4. GEOLOGY OF THE UPPER TOMBIGBEE AREA.

Successive deposits in the Coastal Plain did not reach as far inland. The geologic relationship is thus a series of gently seaward sloping, offlapping, geologic units. The Tuscaloosa formation is the oldest of the Cretaceous formations that outcrop in the ten counties touched by the Tennessee-Tombigbee Waterway above Demopolis. Limited amounts of the formation occurring immediately above Paleozoic rocks are exposed in the northeast corner of Tishomingo County. The Tuscaloosa formation has a thickness of about 300 feet in northeast Mississippi and reaches 1,000 feet in West Alabama counties. It consists of: dark clays; thin seams of lignite; purple, red, orange, and yellow sands; some crossbedded iron-cemented sands; gravels; and in the lower part a white-grey clay. In Mississippi the formation covers a belt of five to fifteen miles in width. Like the formations above it, it has a marked slope and tilt to the west and southwest.

The Eutaw formation overlies the Tuscaloosa with deposits varying from 90 to as much as 390 feet in thickness. The lower portion, which overlies the Tuscaloosa formation, consists largely of blue, dark red, orange and yellow sands, usually crossbedded. The deposits are largely discontinuous and no stratum can be traced for any long distance. The upper portion of the Eutaw, called the Tombigbee Sand, is characterized by fine-grained, micaceous sands, calcareous sands, and greensand. The outcrop of the Tombigbee Sand is a narrow belt extending from northwestern Tishomingo County into Pickens and Greene counties in Alabama (Carr, 1954).

Except in portions adjacent to the Tombigbee River, the hill area is deeply dissected by stream erosion and the valley bottoms are too narrow to provide a basis for extensive agriculture. The soils of the Fall Line Hills are generally gently to steeply sloping deep sandy, clayey, loamy soils with severe limitations for light construction (Hajek, et al., 1975). They are poor to fair in terms of agricultural potential, and while substantial portions of level interfluvial areas were farmed in the past, most of the hill lands have reverted to timber production. Most of the agriculture which remains is restricted to alluvial terraces of varying width. Even in the hilliest county, Tishomingo, which contains the dividing ridge, four percent of the county area is classed as terrace, while twenty-one percent is classed as bottomland.

According to Crider (1906), the white-grey clay of the lower part of the Tuscaloosa was used for the manufacture of pottery in Tishomingo and Itawamba counties. In particular, the Davidson pottery of Itawamba County was mentioned. Some of the Tuscaloosa and Eutaw clays also provided the basis for local brickmaking activities in the Tombigbee Valley, such as those at Columbus. The Tuscaloosa sands and gravels also served as a source of artesian water on the margins of the Black Prairie Belt (see page 23).

The primary vegetation of the Fall Line Hills area is a mixed pine-hardwood forest. In its undisturbed state this forest is thought to have consisted primarily of hardwoods, with single or small clusters of pines intermixed (Harper, 1913a). The fact that pines quickly form essentially pure stands in areas following disturbances such as cultivation or fire has meant that scattered stands of pine are a common feature of this area. In the absence of further disturbances, however, these stands are eventually replaced by a mixed oak-hickory-pine forest. The dominant species of this forest include butternut, mockernut, and pignut hickories, white, post,

northern and southern red oak, loblolly, and short-leaf pine. On drier ridges, especially in the northern portion, Virginia pine and scarlet oak become dominant, whereas on wetter sites yellow poplar, shumard oak, willow oak, live oak, and bay magnolia are of frequent occurrence (Clark, 1972). The rich abundance of tree species provided the basis historically for timber exploitation. Lumbering activities of various kinds have provided the dominant economic activity in many parts of this physiographic region.

The Black Belt Prairie

Chalks of the Mooreville and Demopolis members of the Selma group form the Black Belt Prairie (Wilson, 1981), a region most commonly called the Black Prairie in Mississippi and the Black Belt in Alabama. The area is characterized by undulating, deeply weathered plains of low relief. These gently rolling lands are generally lower than the adjacent areas and have an elevation of about 200 feet. The resistant Arcola limestone member of the Mooreville Chalk forms the Arcola Cuesta, a series of hills that are some 50 to 75 feet higher than the surrounding prairie.

The Mooreville Chalk overlies the Eutaw formation. Its lower layers range up to 360 feet in thickness and consist of compact, calcareous clay or marl and clayey chalk. The color of these layers varies from yellowish grey to olive grey. The contact of the Mooreville Chalk with the Eutaw formation is characterized by a bed of sandy chalk from six to twelve inches thick that contains abundant shark teeth and phosphatized fossils. Frequently the fine sand and greenish grey clay of the Eutaw grade upward into the fine, clayey chalk of the Mooreville (Dinkins, 1960; O'Quinn, 1961). The Arcola limestone member of the top of the Mooreville averages ten feet thick and consists of two or more beds of light grey, impure, dense limestone, six to twelve inches thick. The limestone layers are separated by beds of grey to pale olive chalky clay. The cuesta supported by the resistant Arcola limestone member (Arcola Cuesta) is prominent in Greene County, Alabama, and can be traced northwestward into Mississippi (Parsons, 1950; Johnson, 1976).

The Demopolis Chalk overlies the Mooreville and outcrops in a belt that averages about eight miles in width. The formation ranges in thickness up to 520 feet. The rocks are light grey to medium light grey. Exposures of the chalk vary from light grey to white. The chalk generally has a massive appearance in the outcrops but river bluffs and roadcuts demonstrate the presence of some harder layers. The lower part of the formation consists of thin beds of marly chalk about thirty feet thick that are overlain by a relatively pure chalk layer containing seventy-five to ninety percent pure calcium carbonate (Antony, 1959; Carson, 1961).

The soils of the Black Prairie are produced by the breakdown of the Demopolis and Mooreville chalk and its solution through reaction with water and air (Dixon and Nash, 1968). The calcium from the weathered limestone and marl fixes the organic remains of plants, especially the grasses, making the soil very dark in appearance. Soils formed in the Black Belt are not thick; depth to bedrock is generally less than five feet and in some locations is only a few inches. Bald spots are common where the thin soil has been eroded and the chalk is now exposed. Soils are generally gently sloping clays or

silty clays with high shrink-swell characteristics which impose severe limitations on light construction. The chalk clays also absorb some water in their mineral structure and become extremely sticky when wet, impeding surface movement, especially of vehicles and hoofed animals. Because of their chemical constituency, however, Black Prairie soils are relatively fertile and fairly good for agriculture. These soils proved attractive for some early settlers, but not because of their cotton producing potential. According to Crider (1906:33),

When the country was first settled the black prairie soil was too strong for cotton. It produced a large stalk but little lint. Until recent years all the cotton was planted on the poorer post oak soils and the prairie lands were put in corn. After years of continuous crops of corn the prairie lands became the best cotton lands. . . .

The blue rock of northeastern Noxubee County is the lower subdivision of the Selma. It is very rich in lime carbonate and breaks down into a black, easily cultivated, fertile soil which produces more cotton and corn to the acre than any other land in the state.

The hydrology of the Black Prairie stands in great contrast to its adjacent areas. Streams originating in the prairie region tend to be seasonal, responding only to surface runoff. This is a result of the impermeability of the chalk strata. Streams that cross the prairie and have their origin elsewhere are less subject to seasonal extremes. The scarcity of good ground water makes springs rare in the prairie region, where shallow water supplies are hard to obtain and often dry up in the summer. However, the impervious nature of the chalk and the downward slope of the underlying strata have created an excellent situation for artesian wells fed by ground water from the hills to the north and east. To reach that water, however, it may be necessary to drill through several hundred feet of chalk. If the result is a free-flowing well, the effort is well spent. If the pressure brings the water within a few feet of the surface, it may be possible to hollow out a cistern in the chalk where water will accumulate and can be raised to the surface easily by the use of buckets or pumps. While drilling deep wells may have been impractical for the earliest settlers, long before the Civil War such wells were being put down through the chalk. Cisterns for domestic water and natural gas storage have been particularly cut into the bluerock in the Alabama portion of the Black Belt (Crider, 1906).

The natural vegetation of the Black Prairie reflects the high calcium content of the soil. The dark, heavy, clay soil supports a flora with many elements in common with the prairies of the Midwest (Clark, 1972). In areas in which the soil is relatively deep a rich forest develops similar to that of surrounding regions but including a number of species found primarily on limestone sites. These include red cedar, overcup oak, shumard oak, chinquapin oak, durand oak, laurel oak, and nutmeg hickory (Harper, 1913b). On areas of very thin soil and on other disturbed areas, the forest is replaced by glade-like areas that resemble prairies in many respects. Among the typical prairie species found in these open areas are the following: prairie sunflower, prairie vox, Cherokee sedge, tuberous milkweed, Torrey's rush, cutleaf verbena, and big bluestem grass (Doyle, 1965). As a result of their inherent fertility, Black Prairie soils have been extensively culti-

vated or developed as improved pastures. The result of this farming activity has been the elimination of natural vegetation over most of the Black Prairie region (Wilson, 1981).

The area has historically been referred to as the "cane-brake" region (Cleland, 1920; Dubose, 1947). There was extensive growth of cane in many of the bottoms, especially in the Alabama Black Belt area (Mohr, 1901). Large cane from fifteen to thirty feet high grew on bottoms submerged for the greater part of the year. Small cane or switch cane, under fifteen feet high, grew in the areas which were subject to overflow only in times of the highest water. The young canes made attractive forage for deer, cattle, and horses, and they had the added attractive feature of being available throughout the year. They also particularly attracted bears.

The Pontotoc Hills/Ripley Cuesta

The Pontotoc Hills or Ripley Cuesta comprise a narrow belt of low hills rising above the western and southern edge of the Black Prairie. They represent the outcrop of the Ripley formation and the Prairie Bluff chalk, which lie atop the Selma chalk. These formations are largely absent as a topographic feature between Houston and Shuqualac in Mississippi but extend north of Houston as the Pontotoc Hills and southeast of Shuqualac as the Ripley Cuesta or Chunennuggee Hills into east central Alabama. In Alabama the width of the outcrop averages about two miles.

The Ripley formation consists of alternating strata of coarse, hard sandstone, limestone, clay, unconsolidated sand, phosphatic greensand, and lime-rich clay or marl (Terry, 1957). The lower part of the formation consists mainly of greenish-grey fine sandy, chalky clay, and the middle or upper parts of the Ripley formation consist of light grey fine to medium-grained sand and sandy clay that weather white, yellow, and various shades of orange. The Prairie Bluff Chalk, associated with the Ripley, is composed of massive compact white chalk that contains varying amounts of sand, abundant fossils, and fossil molds and casts (Carmichael, 1960). Fossils in the Prairie Bluff and underlying Ripley are quite similar. In Clay County, Mississippi, the Prairie Bluff chalk runs to 70 to 80 feet in thickness and is relatively sandy, and this is an average condition along the outcrop. In Mississippi the Prairie Bluff outcrop has frequently been considered part of the Black Prairie.

Because those hills and cuestras are formed by either hard indurated beds of sandstone or dense limestone, depth to bedrock is generally very shallow. Soils are moderately sloping, silty clays subject to shrinking and swelling and are problematic for light construction. Their calcareous content enhances their fertility, and their drainage characteristics are better than those of the Black Prairie soils, which resulted in their attracting early settlement and cultivation. Natural vegetation on the Ripley formation maintains many of the qualities of the vegetation of the Black Prairie (Clark, 1972). On the basic high lime soils cedars, oak, and hickories predominate. On the acidic sandstone-based soils pines are more commonly found. While much of this physiographic division was cultivated in the nineteenth and early twentieth centuries, substantial areas are now reverting to second growth timber which is harvested mainly for commercial purposes (Harper, 1928).

The Tombigbee Terraces

While the study area can be separated into three physiographic divisions based on the varying character of the geologic outcrops, a complication is introduced in this systematic classification by the presence throughout the region of extensive areas of alluvial deposits. These deposits have been characterized according to their age and structure as either high terrace deposits or alluvium and low terrace deposits (Parnell, 1962). Both categories evidence subdued relief and in the case of recent deposits are located in the flat floodplains of the Tombigbee and tributary rivers (Fig. 5). Along the Tibbee Creek there are in places two or three terraces extending back as much as six miles from the creek. Furthermore, the floodplains of many streams contain recent alluvial deposits a mile wide or more.

In areas adjacent to the valley of the Tombigbee and its tributaries high terrace deposits of Pleistocene age are commonly found. Among these deposits are the Coffee Sand, the LaFayette or Orange Sand, and the Porter's Creek or Clayton formations. These formations consist of well-rounded gravels and sands of the eroded Appalachian and Interior Highlands carried southward into the inner Coastal Plain margin by ancient streams. Since their deposition modern streams have entrenched the uplifted surface, leaving this old alluvium as a discontinuous deposit that now covers hilltops and ridges, often some distance from the present stream channels. The upper portions consist of fairly homogeneous red to orange sand overlying a bed of gravel. These generally underlie broad, relatively flat benchlike surfaces that occur at elevations above the present floodplain. These benches or terraces are remnants of older floodplains formed by streams that occupied the valley during earlier stages of development.

High Terrace deposits occur mainly along the margins of the Fall Line Hills and to the west of the Black Belt, where thicker, more continuous deposits lie above the chalk strata. Only scattered remnants remain in the Black Belt, lying as low rises above the general elevation of the chalk (Moser and Keener, 1975). In and adjacent to the Black Belt the High Terrace deposits have been significant for conditioning the siting of both towns and farmsteads because of their good drainage, and their ability to supply groundwater. In addition, the iron-cemented sands and gravels of the High Terraces served as a source of iron ore in early nineteenth century Alabama.

Alluvium and low terrace deposits of Holocene and Pleistocene age occur along the major streams and larger tributaries. High terrace, low terrace, and alluvial deposits have similar lithologic characteristics, and therefore are mapped as a single unit. The alluvium and low terrace deposits generally consist of lenticular beds of sand, gravel, clay, and silt less than fifty feet thick (Moser and Keener, 1975). Alluvial deposits on streams draining the Black Prairie Belt consist primarily of silt and clay with only small amounts of sand derived from the Ripley formation. Alluvial deposits along streams not in the Black Prairie Belt contain abundant sand and varying amounts of gravel derived from the high terraces.

The soils of the floodplains and terraces are generally level to gently sloping and are sandy to loamy. Depending on the amount of sand the soils are poor to good for agriculture, but the primary wanting factor in the soils is water. Close to the rivers the water table tends to be at or very close

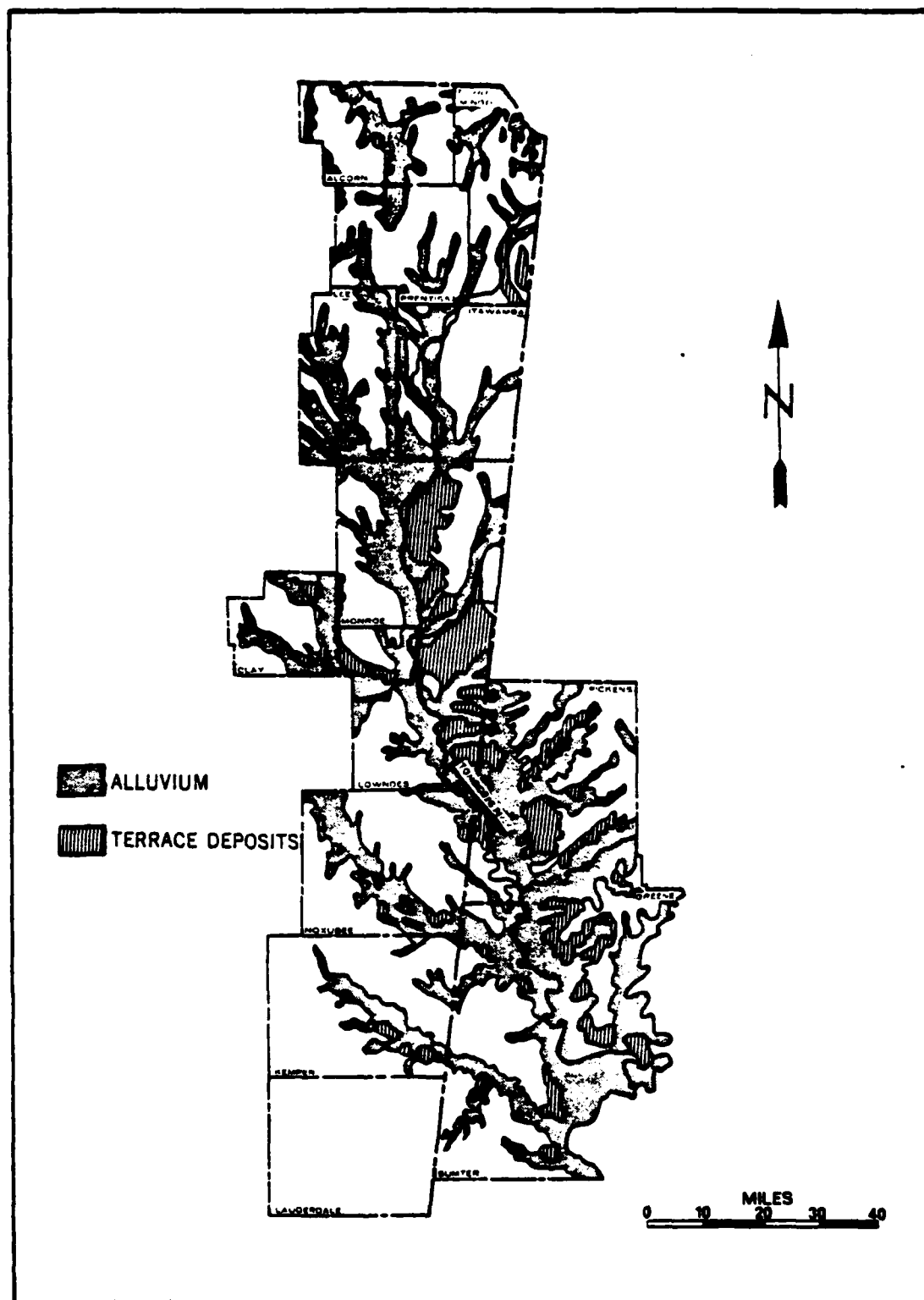


FIG. 5. ALLUVIAL AND TERRACE DEPOSITS OF THE UPPER TOMBIGBEE AREA.

to the surface, creating gley (saturated) conditions, which many plants tolerate with difficulty. The natural vegetation of the upper terraces resembles that of the Fall Line Hills, but the vegetation of the lower terraces and particularly of the floodplains is typical of river floodplains throughout the Gulf Southeast (Clark, 1972). This floodplain forest remains distinct as the Tombigbee passes through the Fall Line Hills and the Black Prairie. The floodplain forest is typically dominated by tupelo gums, bald cypress, pecan, and several species of oak, particularly shumard oak, overcup oak, water oak, willow oak, laurel oak, and swamp chestnut oak. Other species that are common in the forest include swamp privet, red bay, water elm, American elm, cabbage palm, sugarberry, and rattan vine. The combination of dense vegetation, saturated ground, and subjectivity to flooding made the lower alluvial lands and floodplains unattractive to residential settlement (Harper, 1943).

CHAPTER III
SETTLEMENT PATTERNS IN THE
UPPER TENNESSEE-TOMBIGBEE WATERWAY

-A GEOGRAPHICAL PERSPECTIVE

Settlement Pattern and Cultural Tradition

The term settlement pattern in general social science usage means the collective physical and cultural impressions created on the landscape by man's actions in an area over time. It includes clearings, replacement of natural vegetation with crops or ornamentals, construction of buildings and other features such as fences, stock pens, wells, trails, roads, railroads, stream crossings, cemeteries, industries, and towns. Implicit in the concept of settlement pattern are the locational arrangements and functional inter-relationships of such features. Any settlement pattern is a reflection of the non-material beliefs and perceptions of a people, their economic views, and their social attitudes. These beliefs, perceptions, views, and attitudes are basically conditioned by heritage or tradition and modified by men as they make adjustments to new social and physical environments (Newton, 1970a).

In the Tennessee-Tombigbee Waterway corridor, a variety of cultural traditions have been introduced over time; the patterns still exist to varying degrees although modified through several centuries of economic and technological change. In the most general sense three major cultural elements have impacted the Tombigbee Valley since the excursion of DeSoto in 1540 inaugurated the historic period in Mississippi and Alabama (Evans, 1940; Love, 1921). These cultural components are: (1) European or Euro-American, (2) Aboriginal or American Indian, and (3) African or Afro-American. While historic cultural activities can be allocated among these three broad groups, however, there are fundamental and significant character differences evident in each of these categories as a result of the specific ethnic derivation of primary group members. Indian cultures in the area were divergent in nature, while Europeans and Euro-Americans as well as Africans and Afro-Americans exhibited a variety of national and cultural origins.

Each of the primary cultural streams contributed its own impressions on the landscape and each culture stream influenced to a greater or lesser degree the material expressions of the others. While the dominant cultural force has unquestionably been provided by the Euro-American tradition, the legacies of the Indian and African cultures on the current settlement pattern should not be considered inconsequential.

Euro-American Tradition

The Euro-American cultural tradition as expressed in the Upper Tombigbee had three main aspects. Two of these were rural farming elements, and the third was a mercantile or trading and city building propensity. The two agricultural traditions which originated in Europe among the ancestors of nineteenth century settlers have been referred to as Upland South (or Appalachian) and Lowland South (or Tidewater). The names Upland South and Lowland or Tidewater South are identifications that derive from the writing of historians such as Frederick Jackson Turner and of cultural geographers such as Kniffen (Newton, 1974:143). The Upland South tradition had its origins among largely non-Anglo-Saxon Scots, Welsh, and Irish--the Celtic Britons, who were primarily stockman-farmers. The Lowland or Tidewater populations had largely Anglo-Saxon origins with a mixture of others. Its tradition is that of an aristocratic upper class, the prototype of which developed in the colonial Tidewater of the Chesapeake and south Atlantic coast. It was a landed estate or plantation based culture which, having characterized the colonial upper class, became, in the Republic, a socio-economic status to which many farmers aspired.

Both of these traditions, Upland and Tidewater, emerged from the colonial culture hearth which extended from Lancaster, Pennsylvania, to Augusta, Georgia (Gordon, 1968). There, solutions to life on the frontier were resolved by the adaptation of a variety of old European lifestyles to the physical environment of the South Atlantic Seaboard.

Based upon studies of the South by various scholars, certain traits derived from European lifestyles have been designated by Newton as preadaptive, or peculiarly conditioned to deal with the frontier and its problems. Pre-adaptation is according to Newton's (1974:147) definition:

. . . a set of traits possessed by a particular human society or part of that society giving that group competitive advantage in occupying a new environment . . . the settler's heritage makes possible their pioneer occupance even before their arrival on the frontier . . . [the settler] reproduced a set of solutions first developed far to the east. . . .

It was pre-adaptation that made the Scotch-Irish settlers so suited to the Indian frontier in Pennsylvania because of their four generations of experience on the English colonial frontier in Catholic Ireland (Bolton, 1910; Maclean, 1968). Their familiarity with hill farming, animal husbandry, community defense and the martial arts served them well in the Appalachian milieu and helped them to culturally dominate the Upland South (Evans, 1966; 969). Other cultural contributors were important in the Upland South, however, particularly on the Piedmont and in some interior valleys. Anglo-Saxons and other Germanic peoples from West-Central Europe, having an extensive historic experience with the occupation of the Central European woodlands, proved themselves to be best equipped to handle the clearing and agricultural colonization of the American forest. They were particularly skilled in the use of timber as a significant material resource, especially in building construction (Jordan, 1965; 1966).

German-introduced log construction promoted exploitation of the forests. The traditional cultural emphasis on self-sufficient mixed farming systems

combining the production of animals, crops, and timber made central European people valuable assets in colonial eastern North America. Their efforts resulted in the evolution of a "yeoman farmer" settlement type in the Upland South which emphasized crop cultivation and land improvement to a greater degree than that of the Celtic "stockman-farmer" type.

According to Newton (1974) the important general cultural attributes of the Upland South lifestyle dominated by the Celtic Britons were:

1. *dispersed rural settlement with few people spread over a relatively large area,*
2. *loosely structured rural communities with a kinship base and little variation in size and function, generally best characterized by the term hamlet,*
3. *dispersed low-order "central-place" trade functions,*
4. *an open-range stockman-farmer-hunter economy,*
5. *log building construction: especially, dogtrot and transverse crib barn,*
6. *use of modular units in buildings,*
7. *productive-adaptive food production: livestock and vegetables,*
8. *adaptability regarding the cash crops--livestock, corn, tobacco, cotton, etc.,*
9. *evangelical, atomistic Protestantism and autonomous local control,*
10. *open class system with vertical mobility, and*
11. *courthouse town administering civil order and focusing retail and professional services.*

Further, the Upland South was typified by action-seeking and direct, simplistic (right and wrong) methods of problem-solving, to which may be added suspicion of urban (elitist) actions and little regard for formal education.

Lowland South or Tidewater cultural traits are substantially different from those of the Upland South because of divergent settlement history. The Tidewater economy was particularly associated with cash crop cultivation and was therefore essentially capital intensive and more oriented to the world market than the Upland South economy. As a result Tidewater culture came to be characterized by emphasis on material wealth accumulation and other values espoused by the "landed gentry" of north-west Europe, such as respectable socio-economic status, literacy, and avoidance of personal manual labor (Gordon, 1968).

For the most part Tidewater communities were physically and mutually oriented to the eastern coastal ports rather than to the expanding western

frontier, and they attempted to maintain cultural contacts and associations with the European homeland in much more tangible fashion than Upland South communities. It was the people of the Tidewater settlements that encouraged other groups, particularly the Celtic Britons and Germans, to occupy the frontier in order to provide a buffer of protection to the older established places (Graham, 1956). Distinctions emerging from these policies led to political differences, conflict and alienation in Georgia and the Carolinas during the eighteenth century.

The Tidewater planter tradition was differentiated from the Upland South heritage by the following traits (Gordon, 1968):

1. *identification with a literate, aristocratic, and wealthy ancestry (real and imagined),*
2. *slave holding,*
3. *delegated farm management, through the overseer system,*
4. *by the nineteenth century some tendency toward absentee ownership and urban residence,*
5. *Episcopal and Presbyterian churches,*
6. *status-indicative dwellings: often two-story, roomy, weather-boarded and painted, with brick chimneys,*
7. *cash monocrop system with varying degrees of crop flexibility,*
8. *orientation to the professions, particularly law (and politics) and medicine,*

One important trait of Euro-Americans, in spite of somewhat contrary attitudes, was vertical social mobility. An Upland Southerner could move into the planter class with a shift in attitude and some habits, and many did so. Settlers combining the traits of both Upland and Lowland seem to have been more common than either the purely independent stockman-farmer or the literate, aristocratic, wealthy plantation owner. Indeed, descriptions of the early settlement phase give no indication that "planters" typically had a cultured, aristocratic, luxurious lifestyle (Gosse, 1859). Further, although they may have designated themselves as "planters" on census reports, the term "plantation" was not commonly used, at least not in the Upland South. A large farm was simply called a "place", such as the Smith place, or the Anderson place. An indication of upward mobility into the planter class comes from the study of surnames. Preliminary research shows that in one part of the Tenn-Tom Waterway area, about one-third of the surnames are Celtic, about one-third not clearly identifiable as English (Anglo-Saxon) or Celtic, but only eight percent are clearly English. In the enumeration of the nativity of settlers in Pleasant Ridge, in northwest Greene County, the Tidewater is poorly represented with about two percent of the population. Yet nearly half of this sample of family heads declared themselves to be "planters" and another thirteen percent were combination, part-time planters, and professional or commercial people. What seems to be represented in this, and other sample studies, is that aspiring stockman-farmer descendants moved readily into a planter aristocratic status.

One accustomed procedure of frontier colonization by Euro-Americans in the South, by 1815, was to send out a scout in the form of one or more members of a family or congregation to locate and purchase (or occupy) a favorable site for settlement and put in the first crop (Owsley, 1949). Families, groups or congregations would then often move together, sharing and overcoming the difficulties of the migration. In the Mississippi Territory, particularly north-central Alabama and parts of eastern Mississippi, the majority of early settlers appear to have come from the Piedmont of South Carolina, North Carolina, and Tennessee, and from Georgia (Smith, 1856:36-42). Representation from Virginia and other parts of the mid-Atlantic Seaboard was common, as well as areas of Europe.

It has often been pointed out that migrating Southern colonists sought out familiar cultural and physical features. After all, once a solution to keeping alive had been tried and proven, to begin with new forms involved a risk. Stability and psychological comfort were provided by familiar vegetation and the soil types it represented, by the construction of familiar dwelling types with familiar wood, and by the location of a site near good water, with suitable land for cultivation, space for other settlers, range for livestock and so on. While there were some changes and adjustments in both the Upland South and Tidewater lifestyles as they spread into the TRMRD, these adjustments were relatively minor. Stewart has suggested as a general rule of worldwide colonization that "if change is the most obvious process in the pioneering experience, cultural conservatism is the most striking attribute of the resultant settlement forms," and added that "among all groups there is at least a subconscious drive to recreate and maintain accustomed patterns" (Stewart, 1965:26).

The third element of Euro-American culture introduced to the Upper Tombigbee area was the mercantile or city building tradition. Originating from the early "mercantilist" approach to colonization by European nations and the wealth generated by overseas trade networks, city building was a concomitant activity with agricultural pioneering from the earliest years of European expansion. Almost from the beginning city building was viewed as a mode of accumulating wealth, both through the profits to be derived from organized trade and from the increase in land values which characterized expanded towns. The cultural values attached to city building and urban lifestyles were possessed by only a small minority of Euro-American immigrants in the Tombigbee area, however, and were at great variance with the prevailing values and interests of the Upland South and Tidewater agriculturalists. As a result of these and other factors the impact of city builders on the landscape was significantly less than it was in many other areas of the United States. The pattern of trade center development is detailed in Chapter V.

Black Culture

Black immigrants to the Tombigbee Valley in the early years of settlement generally arrived as slaves, with origins either in the older plantation areas of the Atlantic seaboard or in one of the slave exporting localities of west-central Africa. Because of their economic status they were able to exercise little choice over the location or structural style of their residences. They lived largely in the place and after the fashion that their owners determined that they should. While Blacks, particularly in the nine-

teenth century, possessed many cultural traits distinct from those of the white man, their material culture rapidly came to reflect elements of the Euro-American lifestyle with which they were required to harmonize.

Only after emancipation in 1860 did specific patterns of Black land tenure begin to appear, together with a greater freedom to choose residential locations and employment modes both in the rural areas and the city. Even so, social, economic and political constraints on the mobility, employment, and residential options of Blacks continued to be an important factor in their distribution. It is ironic that although Blacks have comprised a majority of the population in most Black Belt counties from Indian Cession to the present, they have played a relatively minor role in settlement pattern decisionmaking (Chapter V).

American Indian Contributions

The Choctaw and Chickasaw Indians were the major tribes inhabiting the Upper Tombigbee Valley before the arrival of white settlers. They had developed a primarily sedentary lifestyle based on corn and vegetable production and cattle raising. They operated a communal tribal land tenure system which lacked vested individual property rights. Their trading network extended over a broad area from the middle Mississippi Valley to the Gulf of Mexico and the Atlantic coast. The base of this trading network was composed of an intricate network of trails built to connect the various Indian settlement concentrations with neighboring tribal territories and markets (Myer, 1928).

After the Choctaws and Chickasaws ceded their lands to the American government, many Indians attempted to adjust to the Euro-American land tenure and economic systems. Such attempts usually ended in failure as most Indians gave up or sold out after a short time and moved to the more congenial socio-economic environment of the Indian territory west of the Mississippi. As a result Indian lands were rapidly occupied by Euro-Americans and their Black slaves; Indian dwellings were burned or left to rot as unwanted reminders of an alien culture (Welsh, 1901:348). Field systems and other elements of the material culture of the Indian were erased from the landscape. Only two topographic legacies of the Indian occupation proved durable after Euro-American occupation. These were the ceremonial earth mounds associated with a number of Indian settlements, and part of the trail system. The latter was particularly significant because of its incorporation by Euro-Americans into their own transport network (Chapter IV).

Settlement Patterns and Physiographic Regions

Immigrants to the Upper Tombigbee Valley superimposed their distinctive cultural traditions on a physical base which in part was very familiar, and which in part was quite alien. The Fall Line Hills section of the valley is an extension of the Appalachian and Piedmont natural provinces.

Settlers to this region were primarily Upland South in nature and exhibited those characteristics of culture and economy common throughout the Appalachian region. In the southern part of the Upper Tombigbee Valley, the

Black Prairie constituted a novel terrain for prospective colonists differing radically in topography, soils, and hydrology from any previous environmental reference set they had acquired. Prairies in Alabama and Mississippi, like those in the Midwest provided a psychological barrier to Upland South settlement because the experience needed to use these lands was lacking (Rankin, 1974; Stroud, 1930).

In general Upland Southerners by-passed and neglected the Black Prairie as a settlement site, while settlers from the "Lowland South" tradition entering the Upper Tombigbee from the east and south proved willing to experiment with the Black Prairie and make it productive. They brought with them their preference for the plantation lifestyle, and introduced slavery and cotton into the Upper Tombigbee Valley on a large scale (Cleland, 1920). The result of this two-pronged settlement process from the northeast and the southeast is a regional split in cultural identity from the northern end of the TRMRD to its southern limit.

In the remaining chapters of this study specific facets of the occupation process in the Upper Tombigbee area will be analyzed from the geographic perspective, in an attempt to assess degrees of similarity or distinctiveness occurring both within the local region and between the Tombigbee Valley and other areas of the U.S. South. The primary focus of the discussion will be on spatial regularities (commonly occurring landscape features of similar form and arrangement) and functional interrelationships of settlement activities through time. The pattern of economic development of the valley will be related to the pattern of economic development in the South and the nation. At the same time an effort will be made to formulate models of settlement structure within the context of the development process which has characterized the multi-resource district.

The discussion of settlement characteristics which follows is organized into five chapters, four of which have a particular topical focus. The concluding chapter provides a synthesis of research findings and a review of research procedures. The overall settlement pattern is subdivided (for convenience of analysis) into four elements or sub-systems: transportation activities, agricultural activities, urban activities, and industry and trade activities. Because in reality these sub-systems are interrelated with respect to their operation, and there are few readily definable lines of demarcation separating one operating system from another, it is frequently necessary, at the risk of some duplication, to cross reference activities (e.g., agriculture vis-a-vis transportation, or vis-a-vis urbanization). The topical separation is not intended to reduce the significance of a holistic view of the evolution of the settlement pattern, but rather to facilitate and make more comprehensible the analysis of the settlement system's component parts.

CHAPTER IV

TRANSPORTATION ACTIVITIES, FACILITIES AND SYSTEMS

Transportation facilities in the Tombigbee Valley, as elsewhere, provide some of the most basic expressions of cultural activity. Newton (1970b:150) has said:

Routes have always been among the most important of man's cultural imprints on the landscape. Even primitive man marked his territory with trails and paths in his search for the necessities and pleasures of life. Other animals also lace their territories with paths, but man's routes are dictated by both natural and cultural factors. With the continued evolution of the economic and technological sectors of culture, man's routes have become increasingly varied and substantial. As settlements became more permanent, routes came to connect population centers as well as to connect settlements with sites of economic activity. Once established a route system tends to become self perpetuating, and its very existence becomes a substantial reminder of the weight of history in the development of the landscape.

During the nineteenth century there was a constant development of the transportation network in the Upper Tombigbee Valley which resulted in both significant changes of emphasis in modes of transportation and substantial adjustments in the spatial arrangement of settlement. On the basis of function three primary transportation elements can be distinguished, each interrelated in their operations, but varying in individual structure. These elements are: (1) roads, (2) rivers, and (3) railroads; each category is treated separately in the following discussion.

Roads

Roads have been an important feature of the cultural landscape of the Upper Tombigbee throughout the historic period. The alignment of roads in the Upper Tombigbee appears to parallel very closely a pattern established by Newton (1970b; Newton and Raphael, 1971) in his study of East Feliciana and St. Helena Parishes in Louisiana. According to Newton, four factors appear to determine the character of the road network: (1) the custom of following crests or ridges, (2) the tendency to build a network radiating from the county seat, (3) the emergence of a few specific sites as suited for stream crossings, and (4) the integration of the local network into the broader regional system. In the Upper Tombigbee a functional classification of road types can be identified which has much of the character of Newton's designations. The sub-categories are: (a) early transectional roads and trails,

(b) local farm-to-market roads, (c) county seat connectors, and (d) stage-coach and post roads and modern interregional highways.

Early Trans-Sectional Highways

As established for other parts of the southern frontier, routes used by early pioneers on the westward moving frontier were largely adaptations of pre-existing foottrails or horsepaths created by the Indian cultures. The first Euro-American users were hunters and traders who served as scouts for the agricultural settler. In some places they were later to settle on lands selected while hunting or trading. While Indian routeways were widely adopted for use by Europeans, the adoption process was selective, and over time the most used routes were those which served some purpose of inter-regional traffic, rather than those with local functions only. Between 1800 and 1840 the roads of greatest consequence were those developed to connect the European settlements of the Lower Mississippi and Lower Tombigbee with the agricultural areas of the Tennessee and Ohio Valleys and the Atlantic Seaboard (Figs. 6 and 7).

The development of the Natchez and Gaines Traces were prime expressions of intersectional route generation which have been well documented (Leftwich, 1916). Other through routes, however, had considerable significance to the development of the Upper Tombigbee. While the Natchez Trace was of consequence to the Tishomingo-Itawamba-Prentiss County area (Cochran, 1969; Phelps, 1949; Hicks, 1963) and Gaines Trace was significant to Monroe and Clay counties (Evans, 1939; Dugan, 1939; Leftwich, 1903; Elliott, 1980), both Lowndes and Noxubee counties were also affected by intersectional road-building (Love, 1903; 1906).

Of particular prominence was Jackson's Military Road built in accordance with an Act of Congress passed April 17, 1816, to connect Madisonville, Louisiana, to a point twenty-one miles north of the Muscle Shoals (Quinn, 1979). The alignment of this road through Lowndes County has been described by Love (1910). Later, the Military Road, or Federal Road as it came to be called, developed branches which also ran southwest to northeast and which also followed Indian trails, namely, the Robinson and Doak's roads (Love, 1910:416-417; Phelps, 1950). The importance of these roads to the settlement pattern of the Upper Tombigbee was that while they were laid out to facilitate intersectional transportation, they also provided penetration routes for agricultural settlers who frequently located along them, and they fostered the development of communities at strategic locations.

The intersectional routes were notable for their straight-line orientation through the Indian territory, with only minor topographic detours. Their relationship to earlier Indian trails is readily explainable by the soundness of topographic selection of Indian routes, which generally kept to high level ground and avoided stream crossings. The lower maintenance and manpower costs of improving an existing routeway vis-a-vis creating a new pathway must have also been an important factor.

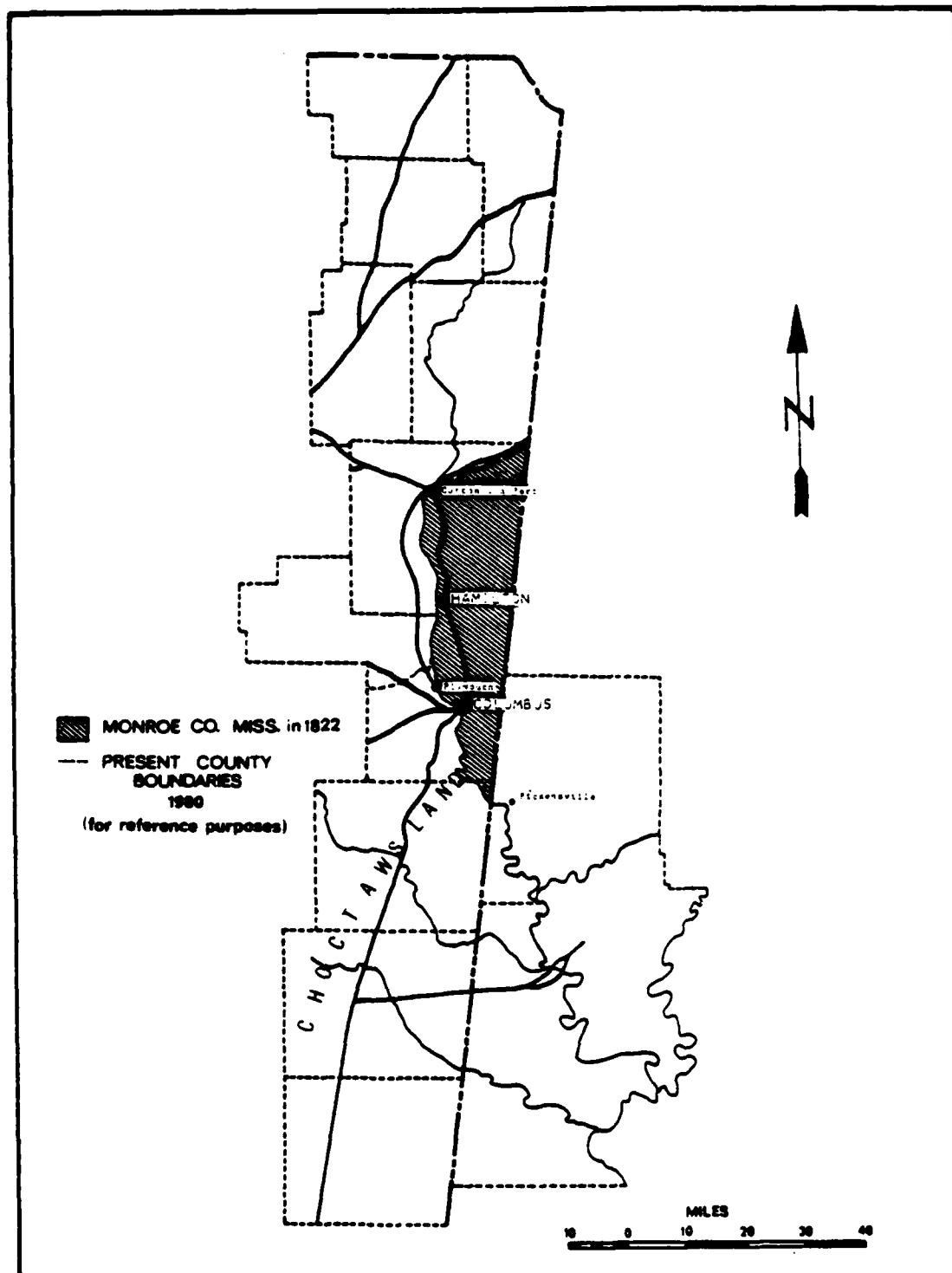


FIG. 6. MAIN ROAD ROUTES IN THE UPPER TOMBIGBEE AREA, CA. 1820.

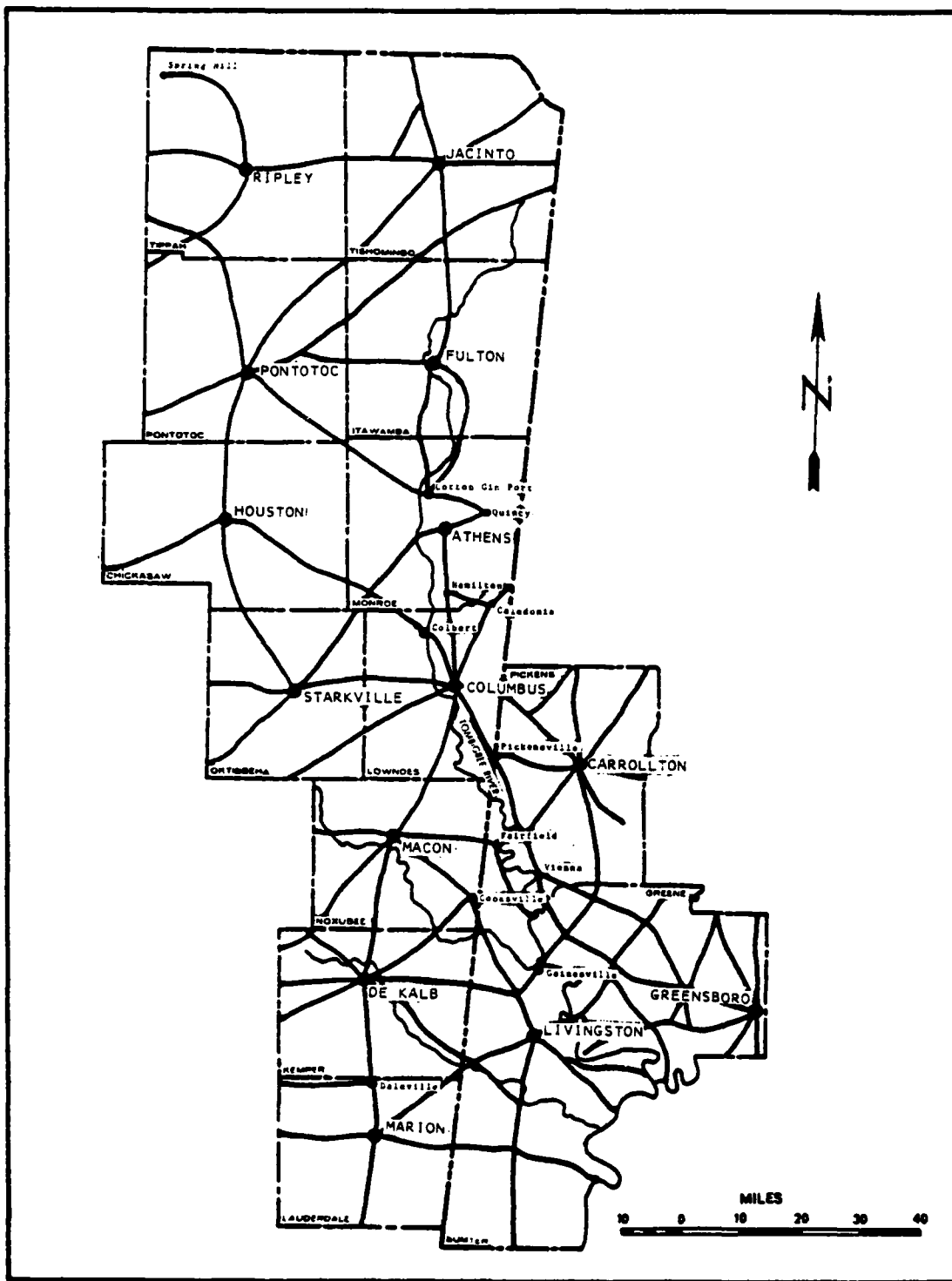


FIG. 7. MAIN ROAD ROUTES IN THE UPPER TOMBIGBEE AREA, GA. 1840.

Farm-to-Market Roads

Quite different in scope and function was the network of local roads constructed to connect agricultural settlers and their farmsteads with the outside world. The earliest settlers tended to locate adjacent to the major ingress channels from other sections (Howell, 1972), but with the rapid colonization after 1830 settlers were forced to take up land farther from established routes. One of their first concerns, therefore, was to establish roads which would tie them in some way into the regional transport network. Such concerns were more pronounced on the part of cash-crop planters than they were for Upland South hill farmers, but all elements of the agricultural population contributed to the pattern of development of local roads.

For the planters on the Black Prairie and Tombigbee terraces, the main objective of local roadbuilding was to provide connections at first with landings on the Tombigbee River, and later to shipping points on the railroad. The result was a series of short roads extending from plantation areas, either individually or via collector roads, by the shortest route to the river. Many of these roads were not publicly built, but were privately constructed by plantation owners (Myers, 1949). Some of these roads led to bluff sites, keeping to the high ground of the tributary stream interfluvies. Perhaps the most outstanding example of such roads was described by Love (1903:362):

Moore's Bluff, on the west side of the river and five miles above, was another large shipping place for cotton, and had two commodious brick warehouses for the accommodation of its patrons. The volume of business in this line amounted to thousands of bales, many of which came from the counties of Oktibbeha and Choctaw. The road leading west is on an air line for eight miles and was known as the "Cotton Road." During the shipping season, this road was thronged with wagons loaded with cotton and plantation supplies. Nelson Goolsby was the principal warehouseman and merchant and was a character well known throughout the district. The coming of the Mobile and Ohio railroad, however, caused the decadence and final death of these two important river towns.

Where bluffs were in short supply roads tended to make their approach to the river by way of the second bottoms. These bottoms, recognized by both the early settlers and contemporary geomorphologists, stand approximately ten feet above the surrounding flood plain. They are often choice farmland, because they are subject to flooding only under extreme conditions. Traversing the second bottoms sometimes required sinuous road alignment to avoid meander scars and other morphological features of the river bottom. On the prairie itself road orientation was more direct; there was a tendency to avoid stream crossings and to keep to the raised sandy ridges where the black mud was less of a problem.

The orientation to commerce and the general lack of topographic obstacles promoted the development of a more efficient road network in the lowland areas. This distinction of rectangular and rectilinear road alignment in the prairies has become more marked with the passage of time.

In areas dominated by subsistence farmsteads, and particularly in the Fall Line Hills area of Prentiss, Tishomingo and Itawamba counties, the goal of establishing river and commercial connections was of less consequence. The

family farm sought to provide for its own needs with the help of the immediately surrounding settlement of kin and friends, through farming, herding, hunting, and gathering, and did so with little recourse to trade. Such an economy generated little demand for highways or routes intended to connect towns and facilitate commerce. The main functions of Upland South roads were to connect local farms and to serve social, religious, and occasional commercial demands.

The result of such interests was the avoidance of river bottoms in road building and a preference for interfluvial ridges. The ridgeways with their good natural drainage were especially suitable for folk roads because they required little upkeep. In addition the preferred site for farmsteads, churches and cemeteries was the highest available ground. The ridgeways, therefore, both attracted and connected the principal facilities of rural settlement. By judicious selection of routes in many areas farmers were able to avoid all but the most minor stream crossings, thus providing maximum accessibility with minimum public expense in maintenance and bridging.

The local road pattern in the upland sections of the study area, as indicated by nineteenth century and early twentieth century maps, strongly resembles that described by Newton (1970b:139) for St. Helena Parish, Louisiana:

In the period of the settled farmer, definite sites of cultural activity were set up. Roads, connecting the various farmsteads, were blazed through the woods. Owing to the existence of the open range so dear to the Upland South, these roads wandered carelessly across property lines. Crops, gardens, and dooryards were legally required to be fenced against free-ranging livestock, and traffic sought the high ground. Supplementary paths led foot traffic from house to house and from house to field; trails led hunters, trappers, and gatherers from house to woods and stream; runs led free-ranging hogs and cattle through the bottoms, canebrakes, and pastures; and an occasional lane led the traveler away from the road to a group of houses at its end, set back in the woods. Most routes were ridgeways, that is, directed along the high ground of the drainage divide which provided a better-drained route with very few fords as well as an easier task of blazing the road. With few commercial interests, the early settlers preferred an easily built road rather than a commercially economical, direct highway.

County Seat Connectors

After the Indian land cessions and the establishment of county government throughout the Upper Tombigbee Valley area by 1837, rural life began to focus on the county seat as an administrative, commercial and social center (Chapter VI). One of the imperative tasks with which early county administrators were charged was the establishment of a network of roads which would enable county citizens to communicate with their government. As a result, most county seats exhibit a centripetal pattern of routes, focusing on and radiating from the courthouse square to various parts of the county and beyond.

Political factors played an important role in the evolution of such routes. In one of the earliest meetings of the police court of Noxubee County in 1835, a bill was passed for the laying out of roads and bridges. Special care was taken to enable county citizens to carry on the ordinary travel and commerce of the day. Most of the early articles of the minutes of the Board of Police dealt with attempts to make the courthouse more accessible. Construction and maintenance sections for each road were assigned to commissioners who were given authority to organize citizens to build and maintain the road. In each case a good and sufficient wagon road was to be opened "over the highest and best grade and in the most direct route," some of which were prescribed.

The political utility of such roads in establishing the viability of the county administration was clear, but even so local needs remained an important consideration because even these county roads made detours to some extent, following ridges and connecting local estates and farmsteads. In many instances roads radiating from one courthouse were constructed to intersect with roads leading from neighboring county courthouses at county lines so that a system of interlinking country roads was soon developed. This basic road pattern has tended to survive with relatively minor adjustments to the present day. The main adjustments have resulted from the decline or demise of previously designated county towns or other important early urban centers, from straightening to facilitate automobile traffic, or from change in the territorial structure of the county. The latter factor was particularly important with the separation of Old Tishomingo County into the present Itawamba, Prentiss, and Tishomingo counties. This major territorial and administrative reorganization caused the abandonment of the former county seat of Jacinto, and the establishment of three new road foci at Iuka, Fulton, and Booneville.

Stagecoach, Post Routes, and Automobile Roads

According to Newton (1970b:144): "Other things being equal, the amount of investment in a particular route set or segment will be proportional to the volume and value of goods moved over it." Historically, Upper Tombigbee Valley road traffic has been comprised of high-bulk, low-value goods shipped out of an area of primary production. Most of this traffic was concentrated on the railroads and rivers with roads acting only as short-haul feeders. As a result, during the nineteenth century there was little effective demand for the improvement of roads in most counties beyond a basic level of maintenance. In terms of cultural patterns most roads were more important for the residential and commercial facilities which related to them rather than for the character of the traffic they carried.

If there was an exception to this general rule, it was provided by stagecoach and regional post routes, which had become well established by the 1850's. Both stagecoach and post routes were reflections of the demand for passenger and package carriage between urban centers in the region, and for the provision of a functional communication system with neighboring regions (Rodabaugh, 1971). Based on these needs an extensive stagecoach network evolved (Figs. 8 and 9). For the most part the installation of stagecoach service did not require new road construction. Routes were established in the existing road network, and particularly via the county seat to county seat

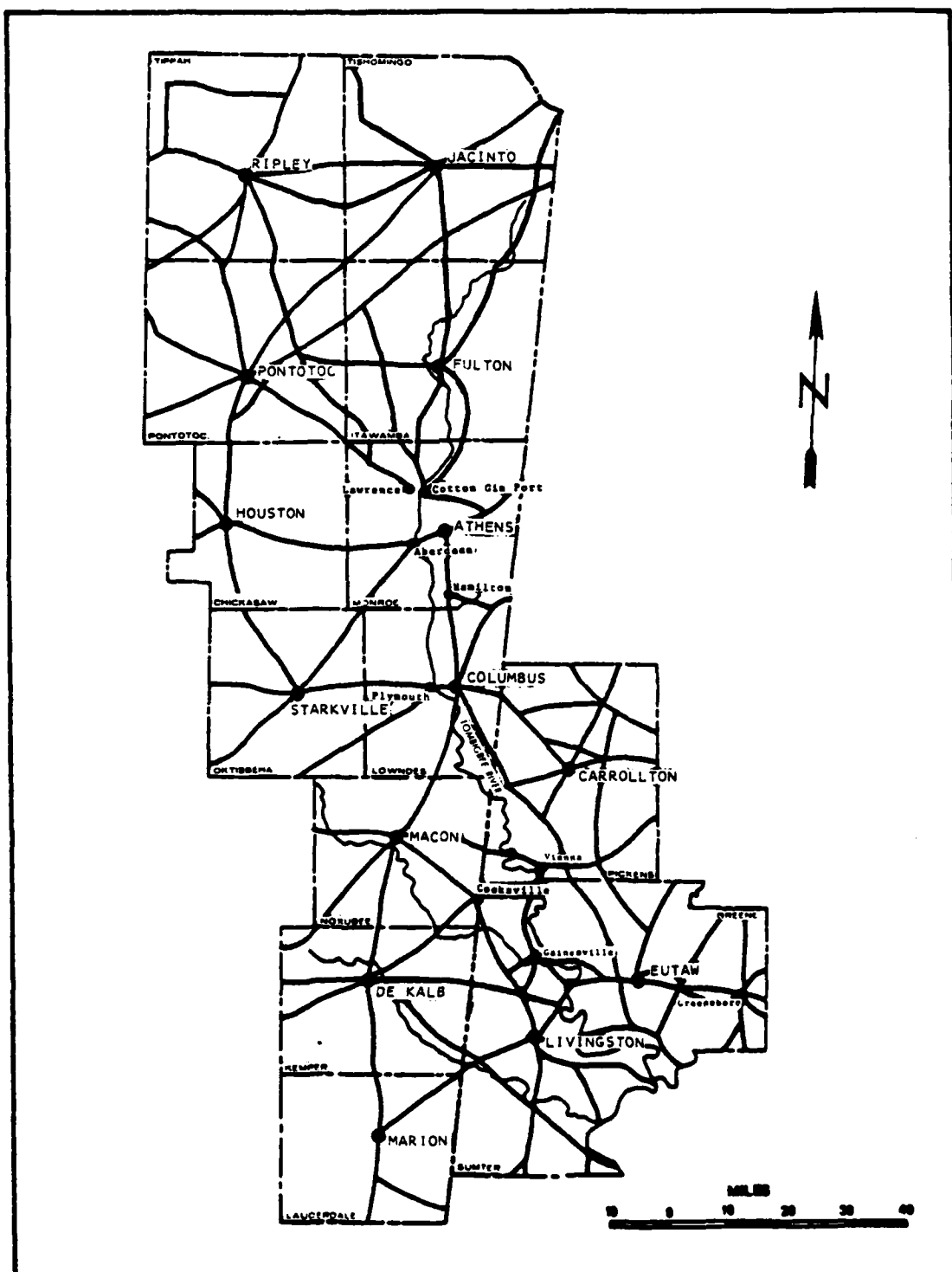


FIG. 8. MAIL COACH ROUTES IN 1860 IN THE UPPER TOMBIGBEE AREA.

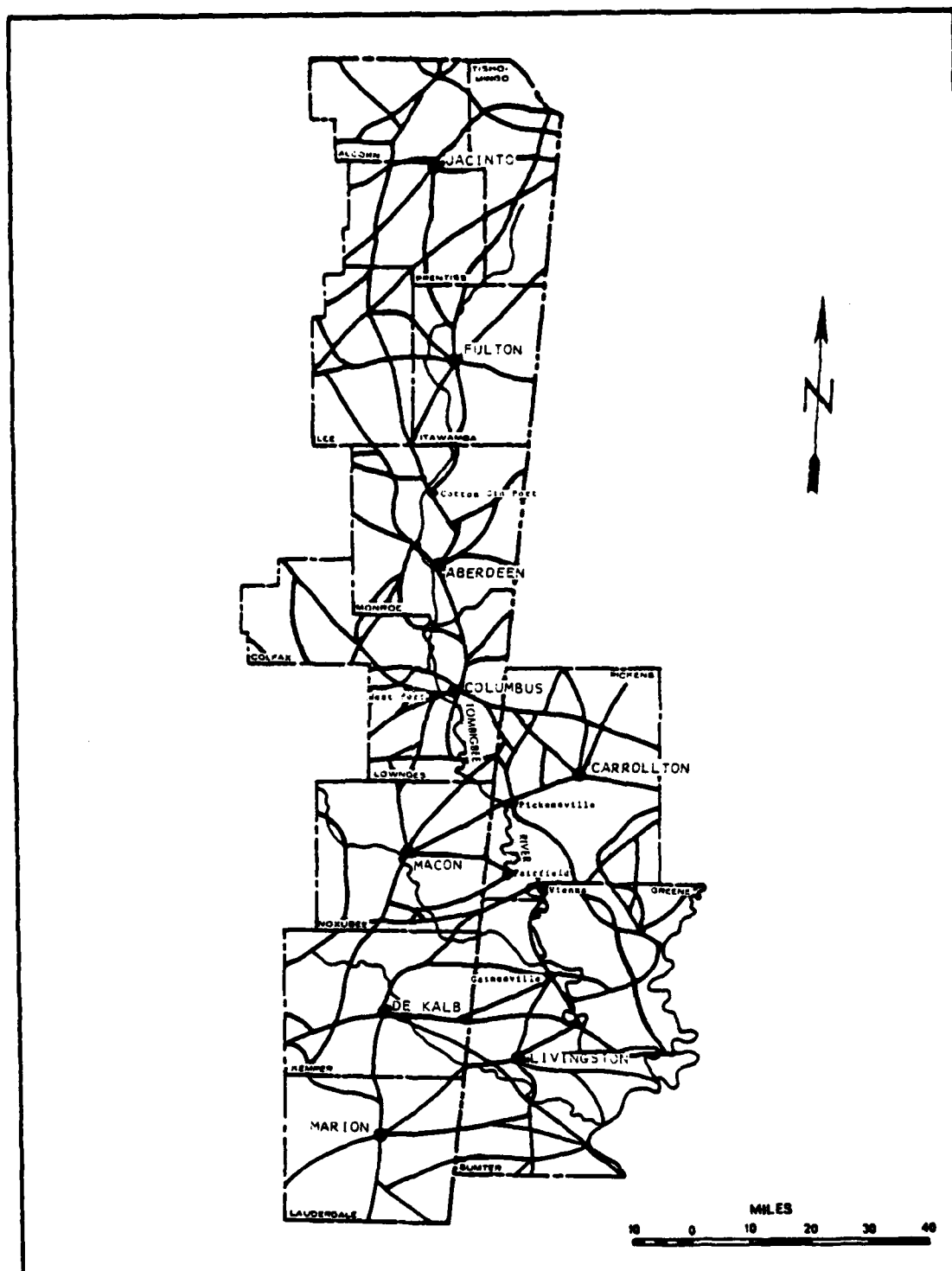


FIG. 9. MAJOR ROADS IN 1880 IN THE UPPER TOMBIGBEE AREA.

roads. The main effect of stage and mail traffic was to ensure better maintenance and improvement of the roads, bridges, ferries, etc. involved.

There was some early interregional road traffic passing through the area, largely that between central Alabama and west Tennessee and that between Louisiana and the middle Tennessee Valley. After 1850, however, most of this traffic was acquired by the railroads. The competition from the railroads and the long agricultural depression after the Civil War produced a poor environment for road improvements. Not until the coming of the automobile were fundamental changes to the earliest pattern of roadbuilding introduced. The automobile with its mechanical parts in need of protection and its greater speed capabilities created a demand for straightened all-weather road surfaces. Some road work, especially straightening and bridging, was carried out by the Civilian Conservation Corps during the economic depression of the 1930's. The first paved rural auto roads, "black tops," were built in the Upper Tombigbee during World War II, and federal and state highway funds have resulted in a massive expansion of the paved road system since 1940.

As a result of federal and state highway department intervention, road construction planning was substantially removed from the parochial interests of the counties. Engineers were encouraged by their political base and technological capabilities to ignore, to a greater degree than previously possible, both topography and local culture. Old highways were widened and straightened, and new roads were built in direct lines, across previously avoided areas. In fact, the objective of much twentieth century roadbuilding has been to avoid rural settlement sites rather than to connect them. In many instances farmsteads found themselves adjusting to new road networks which ran at a greater distance from or on a different side of the house than that on which service had originally been provided. The current linear pattern of roads in the Upper Tombigbee is a combination of irregular early stockman-farmer type routes and the later smooth curve geometry of automobile highways. Particularly in the Black Prairie the recent pattern of road construction (post-1930) has come to reflect the geometry of the rectangular grid survey.

Abandoned Roads

While the current road network preserves many of the pathways created since the Indian trails, abandoned roads litter the landscape. These roads reflect changes made throughout the nineteenth and twentieth centuries in the pattern of commercial and residential location. Because in the nineteenth century simple dirt roads were universal, any shift in emphasis in the settlement arrangement created quick adjustments in the road system. New roads were quickly built and those losing their useful purpose were gradually abandoned, a procedure well described for the TRMRD by Myers (1949). Other evidence for changes in road pattern is provided by the topographic map.

Particularly significant changes in road alignments, for example, are exhibited around Aberdeen where the old main road from Waverly along the west side of the Tombigbee has been supplanted by the construction of U.S. Highway 45 on the east side. To the southwest of Aberdeen, State Highway 25 was constructed on the abandoned bed of the Gulf, Mobile and Ohio Railroad. To the northwest significant straightening of U.S. Highway 45 has taken place and

the former connections between Smithfield and Aberdeen have been changed by the construction of State Highway 25.

Over time this process resulted in numerous relic road features appearing in the landscape. Such features can be diagnosed in a variety of ways. According to Newton, former roads are characterized by such features as entrenchment, gully erosion, compaction and coarsening of surface materials, and distinctive vegetation. He suggests a number of types of evidence indicative of former roads including (Newton, 1970b:138):

1. *location and orientation of ridges on contour maps,*
2. *parallel fences about twenty feet apart,*
3. *an alignment of buildings away from present routes,*
4. *irregularities in contours which might indicate similar roads or built up roadbeds*
5. *isolated churches or cemeteries (they were not usually built in isolated places),*
6. *long rows of trees twenty to thirty feet wide (wooden fence rows are usually narrower),*
7. *linear discoloration in either woods or clearings,*
8. *curvature and junctions of routes, especially sharp angular turns,*
9. *stock ponds which are frequently located adjacent to either old or new roads, and*
10. *edges of clearings or fields when aligned with other of these identification points.*

A sample assessment of relic road features in the Upper Tombigbee indicated that similar diagnostic techniques to those used by Newton could be applied there. Gaines Trace is still evident at Cotton Gin Port by an alignment of buildings away from the present road network, by tree lines and indentation in the ground marking the former road bed. Similarly, two of the main streets of Cotton Gin Port are evident through existing tree lines (Fig. 10). At Fairfield and Cochrane, in Pickens County, tree lines and ground indentation mark the track of abandoned highways, as is the case at Memphis. The alignment of buildings along a track at Bigbee Valley marks the path of the early main road to the Pickensville Ferry. Intensive field investigation would almost certainly produce considerably more evidence of this type.

Fords, Ferries and Bridge Sites: General Considerations

There appears to have been an hierarchical spatial arrangement of bridges, ferries and fords in the Upper Tombigbee Valley with frequency of occurrence being related to degree and reliability of use. Fords provide un-

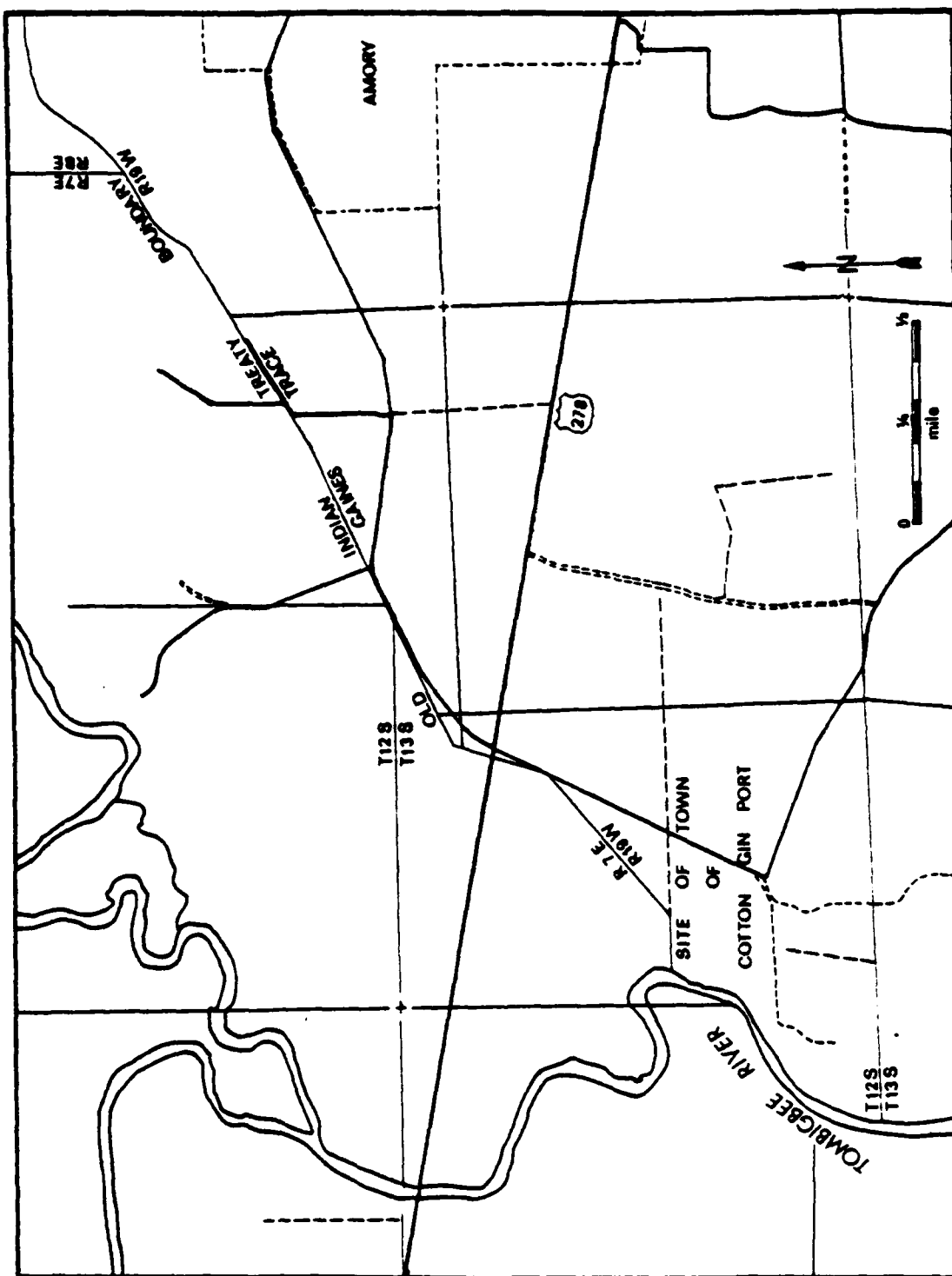


FIG. 10. LOCATION OF GAINES TRACE AND COTTON GIN PORT FROM U.S.G.S. TOPOGRAPHIC SURVEY.

reliable connections, particularly in wet weather; ferries provide more reliable links, but are somewhat cumbersome in operation and incur both time delays and fees in their use; bridges are reliable connectors except in the worst floods and provide the most expeditious stream crossing points. At the same time the increasing advantages to transportation of bridge construction are balanced by an increasing cost in capital investment.

The result was a wide distribution of ford sites particularly in the early years of settlement, a somewhat less numerous arrangement of ferries, and a very limited installation of bridges, particularly over major streams. In the nineteenth century bridges were generally reserved only for the most significant points of traffic demand. Recent improvements in highway and bridge building technology and the demands of the automobile age caused many more bridges to be built over secondary streams, virtually eliminating ferries and fords as a mode of streamcrossing. The cost factor continues to be a major consideration, however, and freedom from topographic constraints has not caused a marked increase in bridging points across the Tombigbee where only twelve road bridges span the river in the 100 miles from Gainesville to Walker's Bridge.

There appear to be no simple distance regularities in the spacing of fords, ferries and bridges. These facilities seem to have been developed to link locations where population concentrations occurred, where topographic features were most advantageous and where streams could not be avoided by ridgeways and looproads. Bridge building particularly was held back to some degree in the early years because of expensive flood hazards. The bridge over the Noxubee at Macon had to be reconstructed at higher elevations four times between 1835 and 1860 due to flood damage (Noxubee County, n.d.). Large bridges were too expensive to risk such recurring losses in all but the most heavily trafficked locations.

Fords

There is no conclusive evidence in either the contemporary or historic record for extensive numbers of fords on the main stream of the Tombigbee, but this may be due less to their absence than to their common occurrence. While bridges and ferries were limited to some degree by cost and river mechanics, many locations on both the Upper Tombigbee and its tributary streams appear suited to ford crossings particularly at low water. Fords were for the most part local in function and informally structured based on shifting patterns of riverbank and water. They were also particularly transient features of the landscape because of the lack of material investment, and the depredations of the frequent river floods. In this context it is not surprising that their existence is so poorly documented.

Although fords were widely used in the earliest days of settlement, and many must have continued after ferries were established, particularly at times of low water, only five Tombigbee ford locations have been determined precisely by site. Several references have been found for fords on tributary streams such as the Noxubee, Tibbee, Luxapalila, and Buttahatchie. This indicates that the fording of minor streams was more commonplace, probably because of its feasibility.

Of the Tombigbee fords the best known was at Pickensville where Bell ford was a crossing from the bluff (20 - 40 feet high) to the opposite point bar, a type of angle ford (Fig. 11). Another was at West Fulton, in Itawamba County, where a ford apparently preceded the West Fulton ferry. Three fords were located on a short stretch of the river in the vicinity of Aberdeen, one lay at the mouth of Mattubby Creek, a second at Martin's Bluff, and a third a short distance to the south. Atkinson and Elliott, (1978a:20-22) mention Pitchlynn's ford being replaced by the Waverly ferry and this appears to have been a common phenomenon having occurred also at Martin's Bluff and West Fulton (Jones, 1939).

Because the Upper Tombigbee had such great seasonal changes of volume it seems very likely that the river was fordable in a great many places. Some shoals were described as having only two feet of water during the summer which would have allowed passage for pedestrians and wagons with little difficulty. However, during high water ford crossings must have been significantly more problematical, and perhaps required considerable detours on the part of the traveler. This would have stimulated the development of ferries as a means of reliable year round transportation.

In the upper reaches of the river above the Buttahatchie where floodwaters were more shortlived and stream depth generally shallow, fords were probably the usual means of stream crossing. Further downriver, however, where the floodwaters of the Tombigbee spread out over a considerable area (one or two miles wide) for a longer period of time, and where river banks were frequently steeper at low water, ford sites were perhaps less attractive. It is this combination of factors which probably explains the greater density of ford sites in the upper reaches of the river, and the greater density of ferry sites below Aberdeen. Based on existing topographic evidence low water ford sites could have taken any of the configurations described by Newton (1970b) (i.e. angle, straight or point bar) or some other form such as that at Pickensville--bluff to point bar.

According to Newton (1970b:148-149) the ideal conditions for a ford are:

. . . a moderately wide river with firm, low banks and shallow water flowing over sand and gravel beds. Such conditions permit what may be called a point-bar ford in which the traveler proceeds from one point-bar across the stream to the next point-bar taking advantage of the shallow transverse stream profile at such a site. Under similar bank and bottom conditions, a towhead ford may be used in which the traveler fords two prongs of the river from bank to towhead island to bank. Fairly wide creeks, on the other hand, may be forded by means of two dugways, or excavated ramps giving easier access from the bank to the level of the stream bed. If the creek is wide enough (a minimum of about twenty feet (6.1 meters), but greater for long vehicles), a straight ford may be used, in which case the dugways are perpendicular to the stream. On narrow streams with steep banks an angle ford must be used, in which access to the stream bed is gained by means of dugways that intersect the stream at less than a right angle. (Fig. 12.)

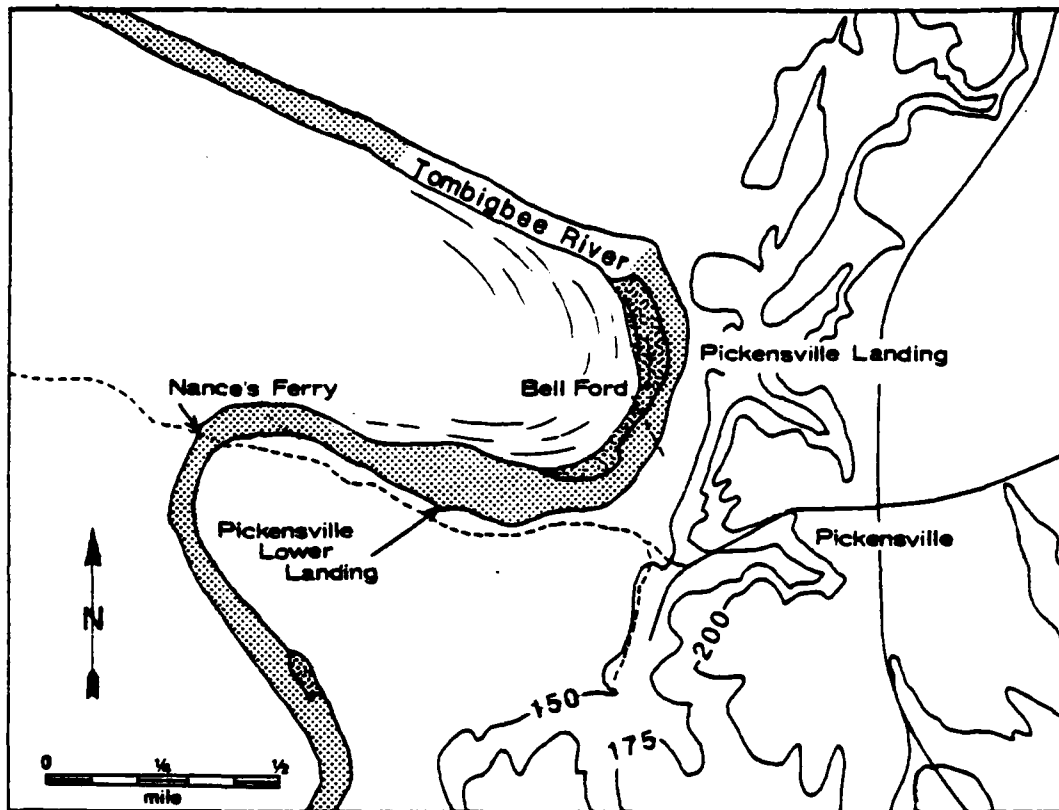


FIG. 11. FERRY, FORD, AND LANDING SITES AROUND PICKENSVILLE.

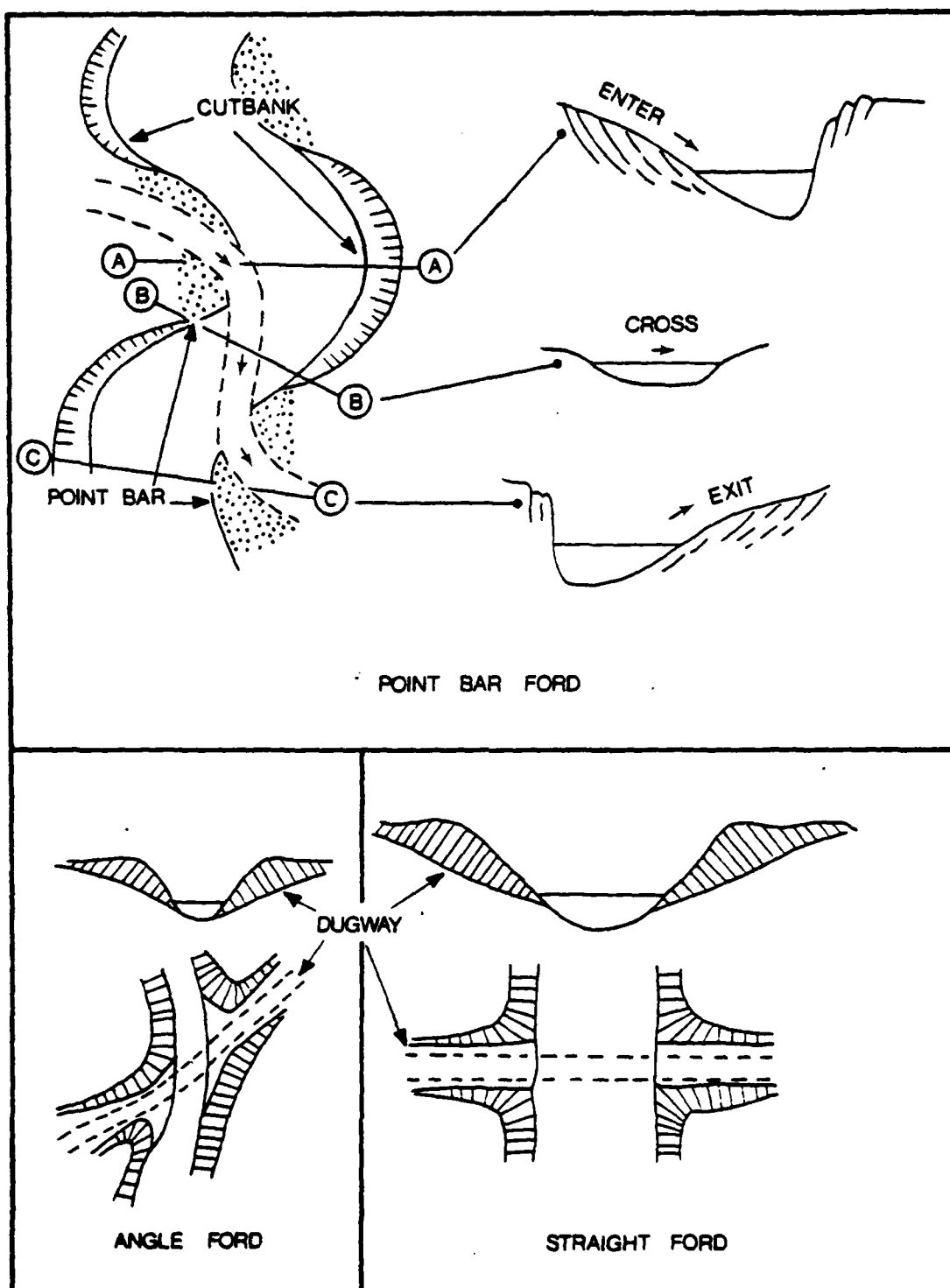


FIG. 12. MAIN FORD TYPES (AFTER NEWTON, 1970h).

Ferries

Twenty-five ferry crossings on the Upper Tombigbee were located in this study, nineteen below the confluence of the Buttahatchee River. Twelve were at fairly straight sections of the river called "reaches" where, generally, there was less elevation between one bank and the other which must have facilitated on and off loading. On the topographic maps used for reference, it was presumably the mean water level that was shown. Since the Tombigbee had much fluctuation between low water and flood, we may assume that the ferry locations were sometimes shifted if one or both of the banks were inundated. Most of the Ferry landings, like the steamboat landings, were located on banks less than 40 feet above the water (the water level shown on the maps). Approximately 30 feet seems to have been typical of bank height for both ferries and landings. The ferry crossing located on river bends had some additional problems. Normally on a bend the concave or cut bank is higher. At this point the water is deeper and on and off loading presents no natural constraints other than dealing with a steep slope. The lower bank which is normally convex has a gentle slope and shallow water. During flooding, a ferry landing might be shifted some distance away from the low water channel as its normal approaches would be inundated.

Ferry crossings on a relatively straight river section include Smith's in two locations (Gainesville, U.S.G.S. 7 1/2'); Miller's and Craig's (Fig. 13) (Warsaw, U.S.G.S. 7 1/2'); Jackson's and Old Dockson Ferry (Pickensville, U.S.G.S. 7 1/2'); Nashville (Columbus, U.S.G.S. 15'); Colbert, Barton and Vinton (West Point, U.S.G.S. 15'); Lackey's (Amory, SW, U.S.G.S. 7 1/2'); and Walton's Ferry above Cotton Gin Port (Wren, U.S.G.S. 7 1/2').

Ferry crossings on meanders, or bends, include Gainesville or Lewis' Ferry; Whitsetts #1 (Gainesville, U.S.G.S. 7 1/2'); Warsaw or Joinson's Ferry (Warsaw, U.S.G.S. 7 1/2'); Mouth of Sipsey #1 and #2, Vienna, Stone's or Cochrane Ferry (Aliceville South, U.S.G.S. 7 1/2'); Bluff Ferry (Columbus, U.S.G.S. 15'); Waverly Ferry (Caledonia, U.S.G.S. 15'); Morgan's Ferry (Aberdeen, U.S.G.S. 7 1/2'); Nance's Ferry (Pickensville, U.S.G.S. 7 1/2') (Fig. 11); and Lusby's Ferry near Cotton Gin Port (Wren, U.S.G.S. 7 1/2'). Some of these cross from a prominent convex bank, cut into the Black Prairie limestone, to a low concave bank (e.g., Gainesville, Warsaw (Fig. 13), and Stone's ferries).

The locations of ferries were obviously compromises between bank conditions and distances people were willing to travel indirectly from one place to another (Irons, 1951). River towns usually had ferries crossing directly to the opposite bank. At Pickensville, the ferry was one mile west of town on banks of nearly the same height. This avoided the lower, and probably often flooded, land in the meander opposite the bluff at Pickensville (Fig. 11). At Vienna, two Tombigbee ferries were close by, one at Vienna and the other a mile and a half downstream below the mouth of the Sipsey River which connected the west bank to Pleasant Ridge. The Sipsey was also crossed by a ferry for traffic between Vienna and Pleasant Ridge.

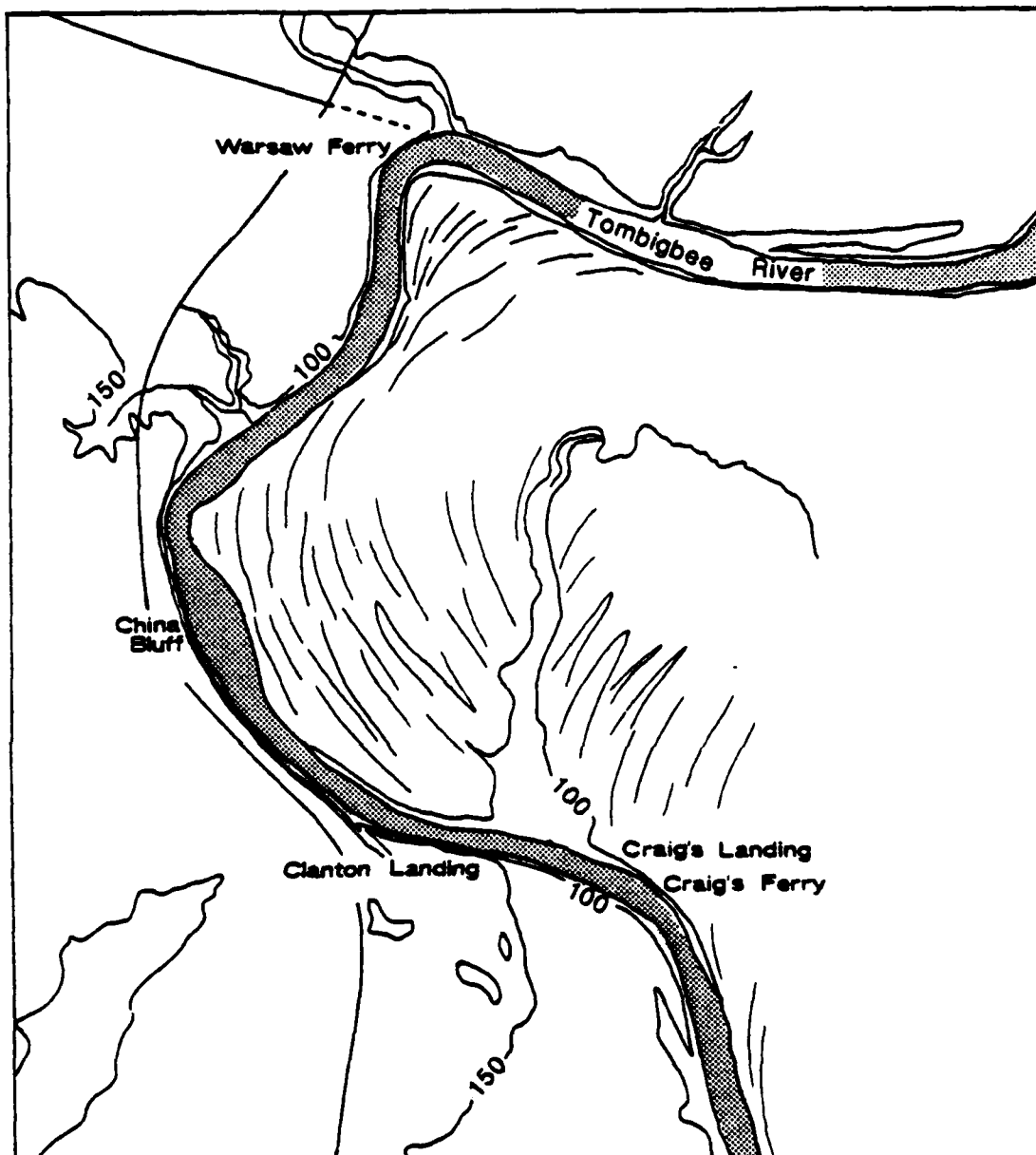


FIG. 13. FERRY AND LANDING SITES AROUND WARSAW.

The River System

As in other sections of the Gulf-Atlantic seaboard, rivers and streams made an important contribution to the transportation network of northeast Mississippi and west central Alabama throughout the nineteenth century. In Georgia and the Carolinas the rivers flowing from the Piedmont to the sea provided the major avenues of interior ingress for settlers and traders arriving at ports like Savannah and Charleston, and were highways of commerce for agricultural commodities being exported from the Piedmont and Coastal Plain (Weaver, 1972). In the eighteenth century trade was conducted primarily by flatboats poled down the river, but after 1820 the steamboat with its ability to move against the current, and to carry heavy loads, dominated river traffic (Phillips, 1908).

By the time agricultural colonization occurred on any scale in the Upper Tombigbee Valley the steamboat era was in full bloom; from virtually the beginning the steamboat played an integral role in the area's economy (Evans, 1942b; Rodabaugh, 1973a). Planters immigrating from the east were familiar with the advantages of river trade; one of the factors attracting them to the Black Belt was the accessibility to a major navigable river. The river provided their main artery of trade with the outside world until the coming of the railroads after 1850 (Smith, 1856).

The river's cultural importance derived from the need to ship bulky, low-value agricultural products cheaply to the sea. Before the railroad appeared there was no alternative means to water transportation for satisfying this need. Not only was the river capable of moving bulky products effectively, but it was cheap to maintain and operate compared to roads and railroads and it led relatively directly to world markets via Mobile. Because of these factors and its provision of drinking water, the Tombigbee River was the focus for early settlement and routeways.

The character of the river's relationships to its adjacent lands varied considerably according to local conditions of topography and soils. Between Demopolis and Columbus the river is broad, with a relatively deep channel, and in many places high terrace bluffs reach the river. Away from the river on the Black Prairie and Tombigbee terraces stretch miles of productive agricultural land. In this section there were numerous landing and port sites while ford and bridge sites were somewhat limited.

Between Columbus and Walker's Bridge navigational difficulties increased; as the stream narrowed, meanders tightened and water shallowed. Bluffs impinge on the river less frequently in this section and the volume of river flow is more variable. As a result, while productive agricultural land still flanks the river, the number and utility of port sites diminishes, and because of the vagaries of the river in its broad flood plain, cross-river communications remain problematical. Above Walker's Bridge the grade of Mackey's Creek makes navigation impossible and the river loses its identity as a commodity transportation mode. To a large extent this proved immaterial as above Walker's Bridge physiographic changes reduced the agricultural potential of land surrounding the river. Mackey's Creek provided a minor obstacle to cross-river communications at most seasons, and was forded and bridged in a number of locations by the end of the nineteenth century.

The Tombigbee, as the main stream of the drainage system, carried virtually all of the traffic between Mobile and the upper parts of the drainage basin. Some of its tributary streams, however, experienced sporadic attempts at traffic generation. At one time or another the Noxubee, Sipsey, Tibbee, Buttahatchee, and Old Town Creek feeders carried poleboats or steamboats or both (Rodabaugh, 1973a) and there were even towns with port pretensions on both the Noxubee (Macon) (Rodabaugh, 1973b) and Old Town Creek (Camargo) (Rodabaugh, 1975a). Traffic functions on the subsidiary streams were limited, though, due to irregular flow, constricted meanders, encroaching vegetation, and shallow grade (Rodabaugh, 1974). For the most part planters removed from the Tombigbee preferred to carry and fetch products to and from that river by road.

In its heyday the Tombigbee River was the undisputed traffic and settlement focus of the region, but as a reliable medium of transportation it suffered from considerable deficiencies. Perhaps the greatest of them was instability of discharge. The river channel was subject to repeated floods and droughts. Peak flows tended to promote navigability at the expense of losses to economic and settlement activity along the river. Low flows facilitated cross-river communications but dropped water levels to the point where navigation became impossible. As a result the river-carrying system was inadequate for the varied demands placed on it for substantial periods each year. It was inevitable that should a more reliable and efficient transportation mode be discovered, the river's pivotal economic role would suffer. The advent of the railroad provided the inevitable challenge to the early order. Also, the railroad was capable of shipping goods to and from the Midwest, as well as to the Gulf (Rodabaugh, 1972).

The construction of the Mobile and Ohio and subsequent railroads created drastic competition for the Tombigbee. Unlike the Mobile and Ohio Railroad the river was off-center with respect to the Black Prairie. With its hinterland considerably diminished the river's trade stagnated. While periodic attempts were made to maintain, increase, and even territorially extend the navigational potential of both it and its tributaries, these were primarily ploys to influence railroad rates rather than genuine attempts to promote long-range traffic. Trade on the river system diminished progressively after 1850, although some steamboats continued to ply the main stream into the early years of the twentieth century (Rodabaugh, 1966). After 1860 the river routinely provided transfer service only to those agricultural sections without ready access to the railroads and lying close to the banks of the river. The number and quality of ports and landings declined concomitantly with the reduction in river trade (Chapter VI).

Landings

As a transportation mode the river system had three main components. These were the river network itself, the boats which carried materials, and the landings which functioned as staging points for the assembly and distribution of riverborne goods. The landings channeled trade making them a primary locus of economic and cultural activity in the Upper Tombigbee Valley from 1820 to 1860. After that date the role of the landings declined but a few of them remained in operation down to the end of the century (Rodabaugh, 1975b; 1975d).

The prominence of individual landings during the antebellum period varied according to their particular trading functions, which in turn were largely determined by the nature of the landing's service territory or hinterland. Service areas varied considerably in size as a reflection of neighboring population and topographic arrangements.

Analysis of the various landings along the Upper Tombigbee during the nineteenth century shows that they generally belonged to one of three categories. They were either developed as an integral part of the economic base of towns and cities platted as speculative ports, established as public landings situated close to rural population concentrations, or were private landings built to service individual plantations along the river bank. In terms of physical construction they varied from substantial wharves at towns like Columbus, Aberdeen and Memphis, to basically unmodified river banks at some of the plantation landing sites. The more important city landings had associated storage and handling facilities located in the town, which were both reasons for and reflections of the town's economic attraction (e.g. Aberdeen). The rural public landings sometimes possessed one or more cotton storage warehouses, but were otherwise undistinguished (e.g. Vienna). The plantation landings were structurally simple and generally intended only to enable limited traffic to get from boat to land or vice versa without encountering the river (e.g. Hibler's).

The functional purposes of the landings sometimes overlapped but their separation is useful for analytical purposes. To some extent the three categories formed a trading hierarchy. Those landings located in the largest and more successful towns tended to generate the largest volume of traffic and as a result became the main and most regular ports of call for all steamboats. Those public landings at focal points of roads servicing the most productive agricultural regions became second rank shipping points and were scheduled ports of call for fewer steamboats. The private landings functioned in much the same way as railroad flagstops. Steamboats generally tied up there only on a demand basis, i.e. if there were passengers or goods to load or unload at that particular point.

Although the landings had strong relative differences with respect to the volume of trade and frequency of traffic, it is difficult to determine any particular regularities in their spatial arrangement. This may result from a number of factors, among which are:

1. *the large number of topographically suitable landing sites,*
2. *the ease with which steamboats could adjust their schedule of calling places,*
3. *the empirical nature of speculative town development which caused substantially more ports to be founded than was justified by the volume of agricultural trade,*
4. *the low costs of construction and maintenance for landings, which fostered multiplicity of landings, and facilitated locational adjustments stimulated by changing economic and social conditions, and*

5. the choice of individual plantation owners as to whether to establish their own private landing.

While landings may have been irregular in spatial disposition, their locations were far from random based on topographic perspective. Landings were generally located where a high bluff reached the river enabling dry access to the point of transshipment. They also generally avoided both shallow water areas of the river channel where volume fluctuations would adversely impact them, and those places where shifting sediments would cause problems. Some landings, such as that at Kearney's Bluff, lost their usefulness as a result of channel changes. Finally, river landings tended to develop close to the mouth of tributary streams, possibly as break-of-bulk and assembly points, because access roads tended to be topographically focussed at such points.

A total of 138 landings were recorded on the Upper Tombigbee between Gainesville and Fulton, although the precise locations of some of these could not be determined (Table 1). The application and use of different names for the same facilities may partly explain this problem. Landings were named not only for communities along the river at which they were located, but for plantations and settlements not immediately adjacent to the river. As plantations became the property of other persons, the designations of the landings associated with them also changed, being generally named for the current landowner. Landing designations and river miles varied somewhat according to the judgements of particular pilots or captains so there was no consensus as to exact locations or distance.

As in the case of ferries, there was no apparent preference for landings on a reach or bend. Of thirty-six landings definitely located on straight segments of the river, fifteen were on the east bank and twenty-one on the west bank. The difference in number does not seem to be significant. Landings on bends, however, clearly reflected a preference with thirty-one identified on the high, or cut bank, and one landing on the low bank side. While landings were most important before the Civil War and declined after 1860, some were used into the twentieth century. This was particularly true below Columbus where rail access was a lesser factor. In 1912 plantations lined both banks of the river through nearly the entire distance from Demopolis to Columbus, and there was regular packet boat traffic in this section (Doster and Weaver, 1981).

Of all the landings, only one, Clanton Landing near Warsaw, was located at the junction of two alluvial terrace levels and the river. This provided low water landing and a dry, level, high water landing at the same location (Fig. 13). Ten other landings were located at points where the higher bluff surface could serve as landings during flood.

Landings also reflect bank elevations and a preference for the probable highest local elevations above the mean water level, as shown on the topographic maps. Forty-one landings were at elevations from ten to forty feet above the water, probably most were twenty to thirty feet but greater precision is not possible using the ten foot contour interval of the quadrangles. Twenty-one landings were at points ten to thirty feet above the mean water level and twenty were at points twenty to forty feet above mean water level. Five landings were twenty feet or less above mean water and the remaining twenty-two landings were located from thirty to eighty feet above mean water level (the contour interval was not constant on all the maps).

TABLE 1

UPPER TOMBIGBEE LANDINGS

WITH DISTANCE IN MILES FROM MOBILE

SOURCE: MOBILE REGISTER 1869

Fulton	535	Hairston's	400	Newport	360
Camargo	530	Moore's Bluff	399	Summerville's	359
Terrapin Bluff	492	Harvey's Bluff	397	Thomas' or Trantham's	357
Cotton Gin Port	480	Blue Rock	397	Cat Fish Bend	349
Mullen's	479	McCarty's Bluff	394	Windham's	347
John Thompson's	478	Union Bluff	393	Drische's	347
Reynolds' Bluff	476	Nashville	392	Halsey's	346
Parrsville	475	Blewett's Shed	390	Dean's Upper	346
Joe May's	473	Petty's Bluff	389	Cuba	344
Aberdeen	470	Lee's Gin	388.5	Vienna	343
Martin's Bluff	469	Albert Cox's Shed	388	Mouth of Sipsey	340
Strawhorn's	469	[Pumpkin] Creek	384.5	Conway's	337
N. Whitfield's	469	Mouth of Coal Fire	384	Pleasant Ridge	336
Lackay's	468	McLaran's	383	Hill's Upper	335
Jenkins' Woodyard	467	Pullam's	381.5	Kirkland's	335
Saunders' or Taylor's	467	Pickensville	381	Burk's	334.5
Dan Willis	464	Peterson's	380.5	Childers'	334
Vera Cruz	462	Nance's Ferry	380	Barnes' Gin	333
Gore's	461	Stringfellow's	379	Drake's	332.5
Ogburne's	459	Holt's	379	Hibler's	332.5
Allen's or Tatum's	454	Cockrell's	378	Jo. Little's Gin	332.5
Hamilton's Old	453	Goor's	378	Hutton's Old Ferry	330.5
Vinton's Ferry	445	Bush's	378	Gresham's Wood Yard	330
Vinton	445	Jackson's Ferry	378	Carpenter's	330
Barton's	444	Big Creek	376	Warsaw	328
Parker's Bluff	444	Corbin's	375.5	Warsaw Ferry	328
Barton's Ferry	443.5	Ringgold's Bluff	373	Hellow	327.5
Colbert's	443	McFadden's	372	Clanton's Bluff	326.5
Collins' Woodyard	440	Carroway's	370	China Bluff	326
Cox's Woodyard	438	Turnipseed's	370	Taylor's Upper	325.5
Malone's Woodyard	434	Memphis	369	Craig's Ferry	325
Waverly	434	Isaac Taylor's Shed	366	Carpenter's Upper	325
Burt's Gin	433	May's Mill	366	Taylor's Lower	324.5
Barry's	430	S.G. Coleman's	365	Mrs. Walker's	324
Plymouth	426	Crim's	365	Bracket's	323
Malone's Cotton Shed	423	Jones' Landing	363	Carpenter's Lower	323.5
West Port	421	Perkins'	363	Hicks'	322.5
Columbus	420	James Clinton's	363	Mobley's	322
Law's	419	Hines'	362.5	Dr. May's	320
Neal's	418	Gregory's	362.5	Smith's Ferry	320
Butler's	415	Pope's	362	May's	319.5
Erwin's	413	Hugh Windham	362	M.P. Goodson	319
Mrs. Cox's Woodyard	412	Cook's Upper	362	Whitsitt's Gin	318
Pinhook	409	Fairfield	361	Mouth of Noxubee	317
Lowndesville	408	Stone's Ferry	360	Hill's	316
Lindsay's Ferry	408	Jim Clanton's	360	Gainesville	315

The Railroads

Railroads emerged in the Upper Tombigbee Valley some years later than in other parts of the Gulf-Atlantic South, but when they did their effects on transportation patterns were just as pronounced. Railroad building in the South began in 1828 with the construction by Charleston, South Carolina, of a rail line to the Savannah River at Hamburg, near Augusta, Georgia. Charleston's intention was to siphon business from Savannah's established trade hinterland (Phillips, 1908). After 1828 there was an explosion of railroad building activity in neighboring states, triggered by and modeled on Charleston's actions. The fallout spread steadily throughout the South but had barely reached the Upper Tombigbee vicinity by 1860.

Review of historical studies of railroad expansion in Georgia and the Carolinas shows that there were two distinct functional periods in the railroad building process in the nineteenth century (Weaver, 1972). Characterized by different development motives these two periods can be designated as: (1) the port feeder era, and (2) the era of interregional formations. The period of port feeder construction lasted from 1830 to the Civil War, while the period of interregional systems assembly stretched from 1870 into the twentieth century.

Before the Civil War the guiding forces in railroad development were the financial and commercial powers in the territory served by the lines especially those in the key terminal cities. The economic horizons of these decision-makers rarely extended beyond their city or port, resulting in a provincial attitude toward railroad function. They conceived it primarily as their most potent weapon in the growing commercial rivalry between leading ports and interior distributing centers. In formulating policy they sought to achieve three basic goals: (1) long-term investment profits, (2) localization of traffic at the principal terminus, and (3) development of the economic resources of the area tributary to the road.

From this localized perspective emerged an operating strategy that guided railway policy in the Gulf-South Atlantic states before and immediately after the Civil War. According to this idea the railroad existed to service its key terminus and the area tributary to it. The welfare of city, territory, and company alike required that all three realize their mutually dependent relationship and the need to foster it. Basic to this idea was the principle of one railroad for one region or territory.

The description by Julius Grodinsky (1962: 104-105) of this territorial concept as it operated west of the Mississippi is equally applicable to the Gulf-South Atlantic situation:

To serve a territory with no railroad was the ambition of every railroad operator. . . . An exclusively controlled local territory was a valuable asset, as long as it lasted. A monopoly of this kind was perhaps the most important strategic advantage of a railroad, provided of course, the monopolized area either originated valuable traffic or served as a market for goods produced in other areas. Territory thus controlled, was looked upon as 'natural territory'. It belonged to the road that first reached the area. The construction of a line by a competitor was an 'invasion'. Such construction even by a business

friend of the possessing road was considered an unfriendly act. The former business friend became an enemy.

In the antebellum period spatial and economic conditions in the Southeast favored the territorial concept. Competition was scarce because through traffic for the most part was lacking. The predominance of local traffic, and freight rates sheltered from competition, allowed many roads to achieve financial stability. The policy of stressing long-term goals by protecting the territory and constructing short feeder lines into untapped areas paid good dividends. Some of the construction of the 1850's posed a threat to the territorial strategy but none was serious enough to really challenge its validity.

The impact of the defeat of the Confederacy, however, caused a sudden displacement of the antebellum economic environment. The cost of rehabilitation disrupted traditional antebellum railroad policies by burdening the companies with debt. At the same time commercial activity entered a period of deflation which severely impacted railroad revenues. To solve their financial woes the railroads needed more traffic at higher rates but both were difficult to obtain in the impoverished states. For most companies the only feasible alternative lay in securing more through traffic on their roads to supplement local income (Klein and Yamamura, 1967). The search for this traffic constituted the most significant factor in railroad development from the Civil War to the end of the nineteenth century.

After 1865 three main tactics were adopted to increase traffic: cooperation, construction, and consolidation (Klein, 1968). Their use depended on individual circumstances, but most companies became involved at some time with all three. The employment of any of them involved a number of problems. Cooperation demanded for its success a high level of coordination between associated lines, coordination which was often difficult to obtain among companies which had traditionally been fiercely independent. Increased construction to expand trade territories resulted in heavy debts and brought distant and once-neutral roads into severe competition for traffic of unpredictable volume at cut-throat rates.

A direct result of competition was the financial failure of many companies, which were then purchased cheaply by their competitors or by Northern capital, which was more readily available. Most particularly, there was a rapid expansion and consolidation of corporations in the 1880's and 1890's which produced a few large integrated railroad systems controlling massive trade territories (Stover, 1955). These systems evolved not from coherent economic and geographic planning, but through a process of piece-meal expansion based upon monetary needs and the potential profits of monopoly. The traditional interests of the regional ports and cities which began this movement were submerged by the interests of corporations based outside the area. The prewar traffic flow patterns were transformed to better serve the profit purposes of these corporations.

The spatial pattern of railroad development as outlined by Doster and Weaver (1980) correlates strongly with that in surrounding states. Before 1845 Mobile felt relatively secure in its control of the trade of central Alabama and east Mississippi through the Tombigbee-Warrior and Alabama-Coosa river systems. Around that time, however, other railroads began to plan and

to construct routes which would penetrate Mobile's traditional hinterland (Moore, 1979). Vicksburg, New Orleans, Memphis, Savannah and Charleston's interests were building or projecting feeder extensions into Mobile's commercial domain (Phillips, 1908). Mobile's response was predictable based on the actions of the other ports.

An immediate start was made on a line from Mobile to the Ohio River which would run through the heart of the Black Prairie and west Tennessee, thus assuring Mobile of continued control of its "natural trade territory," through pre-emption of competing lines (Lemley, 1953). Short tributary spurs were planned from the main north-south trunk to off-line urban centers in order to consolidate Mobile's trading position and to satisfy the demands of existing commercial centers for rail service. Columbus received an early spur connection, but Aberdeen, which had cast its lot with an ill-fated New Orleans line, was initially neglected by the M & O Railroad and suffered accordingly (Rodabaugh, 1972).

Unfortunately for Mobile and the Upper Tombigbee, the M & O Railroad mainline was not completed until the eve of the Civil War and that conflagration completely changed regional attitudes to railroad building. After 1870 a number of railroad extensions were built across the Upper Tombigbee area as extra-regional railroad corporations attempted to gain greater control of the origins and destinations of their traffic and enhance their competitive position. The intersectional lines between Memphis--Birmingham--Pensacola, and Birmingham--Columbus--Greenville, and the feeders between Aberdeen and the Illinois Central, Mobile and Ohio, and Frisco main lines were generated during this period. The competition from these lines may have hurt Mobile's trade but it increased the economic advantages of a number of urban places in the Upper Tombigbee Valley. In general, these later lines were more interested in passing through rather than gaining entry to the Tombigbee Valley.

All railroad development had an effect on the existing and consequent settlement pattern. With the installation of the railroads there were radical adjustments in traffic patterns with major shifts from the river to the railroads. Rail lines rather than roads and streams became prime locations for urban and rural settlement activities. Urban centers were fostered by the railroads because of the commodity trade, while rural settlers gravitated towards the railroad as a means of all-weather transportation. The flagstop became an important element of rural life after the advent of the railroad, providing daily opportunity for communication by rural communities with the outside world.

By 1900 the prevailing pattern of transportation activity was heavily oriented to railroad activities. The quality of road construction had in most areas improved little since the 1840's, and dirt roads were universal with the exception of a few city streets. River traffic languished, steamboats had all but disappeared, and the appurtenances of the river trade were in decline and decay. Only the railroads continued to stimulate settlement expansion and to expand their facilities.

The primary contribution of the railroad systems was the provision of regularly scheduled, generally reliable, and well distributed, all-weather passenger and freight shipment opportunities. While formal depot construction was common only at urban centers, large numbers of flagstops were designated

along the rail lines in rural areas, at which both passengers and freight could be boarded or unloaded on request. Access to reliable rail transportation was therefore made available to large areas in the same way that the proliferation of river landings had made local access available to the less reliable steamboat. In general the regular spacing of flagstops was less constrained by topographic factors than that of landings. This tended to provide more uniform access distance to the railroads for rural settlements than had previously been the case for river transportation.

In terms of topographic considerations some parts of the Upper Tombigbee area were ideal for railroad construction and others less so, and this influenced to some degree the pattern of construction. Railroad building is facilitated most where grades are low and where the costs of passing through existing physical or cultural obstacles is minimal. Such conditions apply through most of the Black Prairie and the Tombigbee terraces. Terrain in the river bottomlands and the Fall Line Hills is not so favorable. The distribution of substantial wetlands, the width of the Tombigbee, and in the north the undulating relief of the Fall Line Hills can all be considered negative factors. Railroads were generally laid out like roads to avoid points of topographic friction. On the prairie and Tombigbee terraces the rails are laid in straight lines. The main line of the M & O Railroad, for example, maintains an almost straight north-south course and lies far enough to the west to avoid substantial involvement with streams like the Noxubee, Tibbee and Old Town Creek. The only rail crossings of the Upper Tombigbee bottomlands occurred at Epes, Cochran, Columbus, Waverley, Aberdeen and Amory. In the Fall Line Hills the rails take advantage of minor valleys and the plateau interfluvies. Apart from the Tombigbee crossings, the only significant railroad bridges over streams occurred at Macon and Geiger on the Noxubee, near Pleasant Ridge on the Sipsey and near Kolola Springs on the Buttahatchie. To the limited degree that topography conditioned the alignment of railroads, it can also be said to have helped to condition the settlement pattern stimulated by them.

CHAPTER V
AGRICULTURAL ACTIVITIES, FACILITIES
AND SYSTEMS

Environmental Preferences

As indicated previously the rural agricultural settlement pattern of the upper Tombigbee area resulted from the in-migration of varying cultural traditions, but was dominated particularly by the hunter-pastoralist tradition of the Upland South and by the plantation tradition of the Coastal Plain and the alluvial valleys. Large scale occupation of the Tombigbee Valley area did not begin until the opening years of the nineteenth century, and those areas in the northern watershed and to the west of the Tombigbee were only made available to agricultural colonization by Euro-Americans after the Choctaw cession of 1830, and the Chickasaw cession of 1832.

The Indian land cessions permitted simultaneous penetrations of the western parts of the valley by representatives of both the Tidewater and Upland South traditions. Upland South pioneers entered the region mainly by way of the Tennessee Valley and the hills and valleys of north Alabama. Planters generally reached the Tombigbee by way of the Fall Line route from western Georgia along the Black Belt and its margins, although small numbers arrived via the Tennessee Valley and Cumberland Plateau (Puckett, 1910:104-105; Howell, 1972).

The Upland South pioneers, being hunters and stock raisers as much as cultivators, were thoroughly familiar through generations of experience with the conditions and problems of forest life, but at their coming knew nothing of conditions on the prairie. They generally limited their initial advances to the forested area, spreading along the wooded ridges adjacent to the prairie (Rankin, 1974). Small clearings in the timber were tilled in a relatively unscientific manner as the hunter-pastoralist was slowly transformed into the crop farmer. Farming continued to be primarily a subsistence activity practiced in conjunction with other exploitative support systems related to the natural environment (e.g., hunting, grazing, fishing and lumbering).

Quite as much as any other factor the distribution of woodland and prairie affected the settlement and early life of the region just as it did in the prairies of the Midwest (Birch, 1971). While the Fall Line Hills provided an attractive refuge for early immigrants, the Black Prairie was considered no such haven. Not only did the Prairie constitute a novel environment untested by incoming cultural tradition, but the characteristics of the environment were such as to cause concern with respect to their nature and productive potential (Stroud, 1930).

Avoidance of such areas for settlement was typical in the Scotch-Irish tradition (Bolton, 1910). Leyburn (1962:200) noted that in Pennsylvania:

The Scotch-Irish did not always choose the best agricultural lands available to them. Limestone regions, which Germans made into the most productive farms of colonial times were not held in high esteem by Ulstermen. They seemed to prefer slate hills where there was an abundance of pure springs and where the air of the rolling countryside may have reminded them of their native scene in north Ireland.

Barrows (1910:67-92) showed a strong aversion by Upland Southerners for the Illinois prairies during the early years of settlement, along the western Appalachian fringe.

The Black Prairie of Alabama and Mississippi was shunned by the Upland South newcomers for a variety of reasons. Among them were: (1) absence of trees over large areas was thought by some to mean that prairie soils were infertile, (2) timber was considered imperatively needed for buildings and fuel, (3) the prairie did not afford running water in many places for stock or mills, (4) to the farmer the prairie with its tougher sod, matted roots and heavy clays constituted a new and altogether unknown cultivational problem, and (5) the grassland was attributed by some to droughty conditions which would make agriculture problematical. Certainly, occasional protracted droughts and fires served to kill any growing trees that had succeeded in establishing themselves. Summer droughts were particularly effective in killing seedlings on the chalky areas where they were probably a chief cause of the general absence of trees. The lack of water was identified by Welsh (1901:348) as a primary concern of early settlers:

The scarcity of water was the most serious difficulty the pioneers had to encounter. The only water courses within available distance were Noxubee and Wahalak creeks. Many wells were sunk, but only a few outlasted the wet season. Stock was driven to one of the creeks every few days in summer. Every week to two the family washing was carried there. Rainwater was caught and treasured. Not a drop of clean water was ever thrown on the ground. Water was never plentiful, not even sufficient until the settlers began to dig cisterns in the late 30's. I often wonder now how we managed to get along with so little water.

Only after experimentation with drilled wells, cisterns, improved ploughs, and crop plantings was the true potential of the Black Belt realized. At this point the prairie lands rapidly filled up with planters anxious to grow the cotton cash crop on the level topography and highly fertile soils. Prairie land sold at a premium and was thus generally affordable only by men of capital. As a result, by 1850 the Fall Line Hills area was occupied by subsistence small holdings, the Pontotoc Ridge and Tombigbee Terraces were characterized by a mixture of large and small land-holdings, while the Black Prairie was dominated by plantation type operations, with a limited number of small units intermixed (Myers, 1949:266).

One of the greatest problems facing pioneer agriculturalists was the movement of produce to market. For years there were few roads and these were unimproved. They were, characteristically "grassy, stumpy, muddy and sloshy" (Welsh, 1901:348). This was invariably the case in the

early spring when travelers might confidently expect to wade through mud and water in many places (Tuomey, 1850). As a result roads tended to follow ridge lines and farmsteads tended to locate close to roads. In the Prairie, farmsteads generally were located on the highest and best-drained elevations and often on sandy rather than chalk soils. In the hill areas farm residences were generally placed on hillslopes above the highly prized alluvial bottoms of the minor streams.

For the commercial operations of the large farms the Tombigbee River was the only useful connection with the outside world until the appearance of the railroad. The alternative was a laborious journey by wagon to either Eastport on the Tennessee or Memphis on the Mississippi (Myers, 1949: 235). For the most part, therefore, early settlers in the middle and lower sections of the sandy area chose to locate near the Tombigbee or one of its navigable tributaries. A number of tributaries now totally unfit for navigation were used by flatboats during the early period of colonization.

While it was considered highly desirable to be within easy hauling distance of the Tombigbee River, settlers commonly avoided its heavily wooded and unhealthy floodplain. Fever and ague were especially dreaded on the lower portions of the floodplain, and settlers who chose the bottomlands were advised to build their homes on the highest part of the natural levee at the edge of the stream, or better still on the adjacent bluffs (Evans, 1943). Woodcutters occasionally established themselves on the floodplain, but rarely if ever escaped the floodplain diseases. Periodic floods of major proportions were probably a greater deterrent to residential occupation of the floodplain, particularly around the main channel (Rodabaugh, 1974).

The bottoms of tributary valleys less subject to massive inundation and somewhat better drained were often more desirable. These provided loci for a considerable amount of settlement in the hill areas. After emancipation some black sharecropper or tenant houses were built in cultivated areas of the floodplain but these were probably never very numerous.

Upland South Farmstead Structure

In the early years of settlement farmsteads of the Upland South were generally oriented towards subsistence production, based on cattle raising, corn and vegetable cropping. In terms of their internal functional arrangement, the Upland South farmsteads appear to have been loosely structured. A tradition of separated structures for various functions occurs in farming areas of northern Europe and the British Isles and this may help to explain the prevalence of this form in the Upland South. The pattern of farmstead development in the South was one of individual buildings--dwelling, storehouse, barn for livestock, pens for fowl, and shed for food storage or smokehouse; sometimes these were combined to serve more than one function (Glassie, 1965; 1968a; 1968b; 1975). In the upper Tombigbee Valley there appears to be a close association of the dwelling, well, privy, storage shed, and chicken house. These are usually closer than the barn and larger animal and equipment shelters.

Examples of farmstead structure from the Fall Line Hills section of the study area were obtained from property tract files from the Bay Springs area

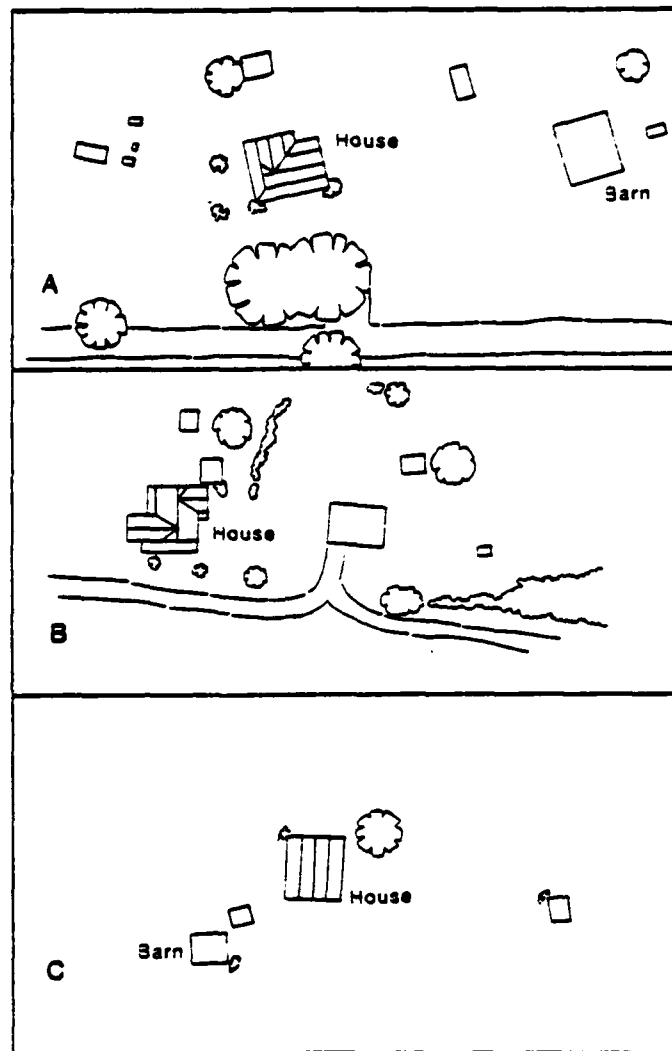
from 1960 aerial photos of Pickens, Greene, Lamar, Lowndes, and Tishomingo counties; from field observation; and from 1979 Historic American Buildings Survey (Office of Archaeology and Historic Preservation) studies (Figs. 14-19).

The present arrangement of buildings of farms in the Upper Tombigbee Valley may not be just like that of the nineteenth century. However, there being only general reference to early farmstead layouts in the documentary record, it may be assumed that in large measure the present arrangements are inherited like the cropping systems, folk houses, and outbuilding types. The exceptions are two. First, the prevailing barn type in the area is a frame gambrel roof structure introduced sometime between 1920 and 1940. Second, barns, especially large ones, may not have been needed as often prior to the post-Civil War loose stock laws which prohibited the free roaming of animals.

The house faces the probable path of human approach, as a symbol of welcome alertness (Jackson, 1972). The facade suggests status and condition of the occupants; this is so well-known one can immediately make an opinion about them. The dwelling was typically shaded and enhanced by trees, the most popular being oak, magnolia, walnut, cedar, chinaberry, and mimosa. Wild shrubs, Cherokee rose, wisteria, and honeysuckle were common ornamentals. In the South a clean, swept yard, free of grass, was typical of country houses. The clean yard and its various plants defined the space dominated by household activities of women. This space normally included one or two storage sheds and sometimes chicken coops.

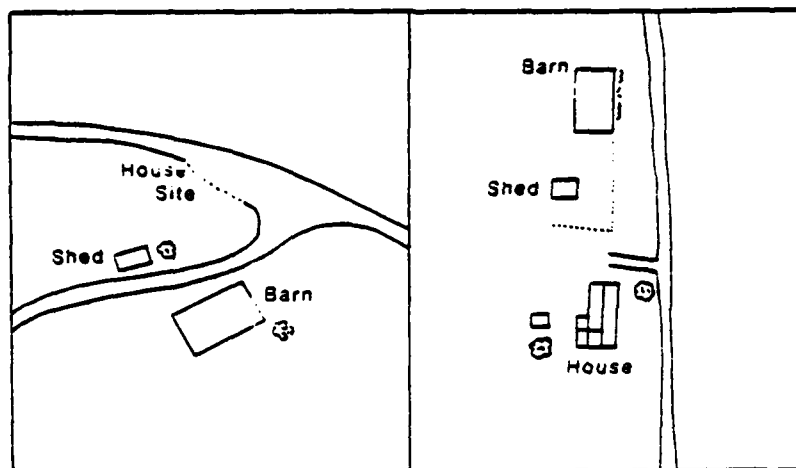
Outbuildings are oriented so as to face the dwelling from the rear, sides and sometimes from the front. Usually the smaller structures, including storage sheds, well, smokehouse, and small animal pens, were closer to the house than farm equipment storage, corn crib, or barn. Occasionally the barn or crib may be opposite, across the road, but most often the larger structures are to the rear or at one side of the dwelling at a greater distance than most of the small structures. These locations suggest that the most necessary domestic functions are represented by structures near the dwelling. Some of these were also those usually performed by women--obtaining water, storing canned vegetables, feeding chickens and the like. Farm equipment maintenance, vehicles, plows, livery, as well as feed, fodder and animal storage, are normally non-domestic household activities performed by men. These structures are more distant and access to them is commonly around rather than through the immediate house yard. In addition to hedges, wooden rail fences and later wire fences were used to enclose fields and large animals. Picket fences were once used everywhere but these have gone out of fashion.

Evidence from the Bay Springs tracts shows that on five farms the barn was placed to one side of the dwelling, one had a shed or crib facing the dwelling from across a road and six had all the outbuildings to the right or left rear of the dwelling. A sample of sixteen farmsteads, sketched from vertical aerial photos covering portions of four counties in the valley, contained eight with outbuildings to the rear of the dwelling and five with outbuildings at the side of the dwelling. Three examples from Black Belt farms in the vicinity of Dancy, Alabama, show a scattered arrangement that includes several dwellings, probably for housing farm workers.



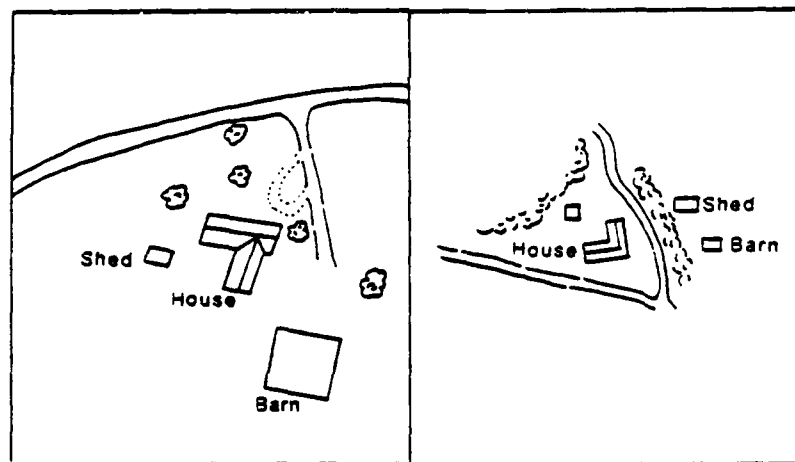
- A - R.G. Adams place, 1913, Tishomingo County.
 B - Jeffries-Gardner farm, 1938, Lowndes County.
 C - Eaton House, c. 1894, Tishomingo County.

FIG. 14. UPLAND SOUTH FARMSTEADS FROM HABS SURVEY.



A. Tract 517, Bay Springs

B. Tract 700, Bay Springs



C. Tract 801, Bay Springs

D. Tract 811, Bay Springs

FIG. 15. UPLAND SOUTH FARMSTEADS, FROM HABS SURVEY,

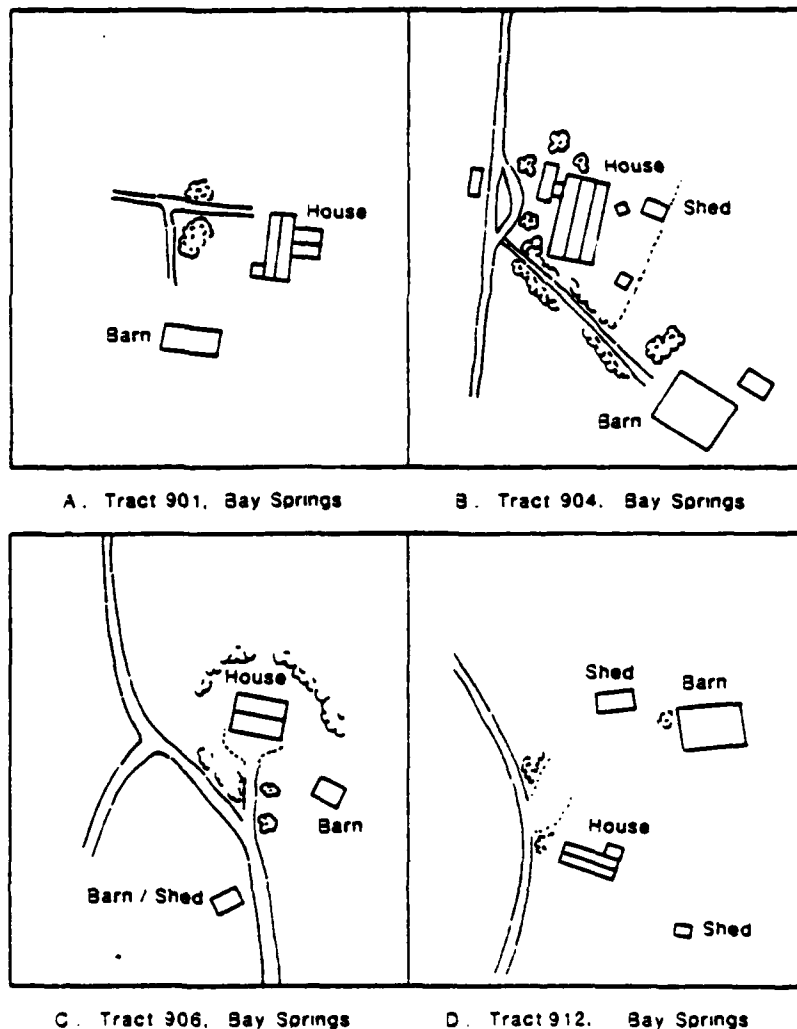
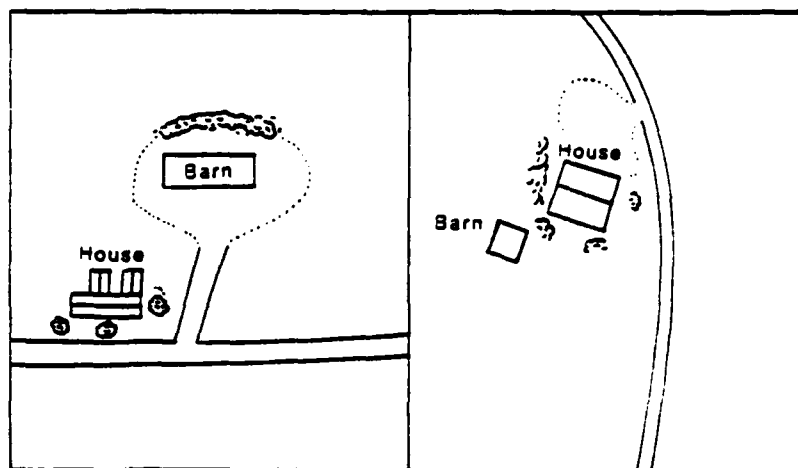
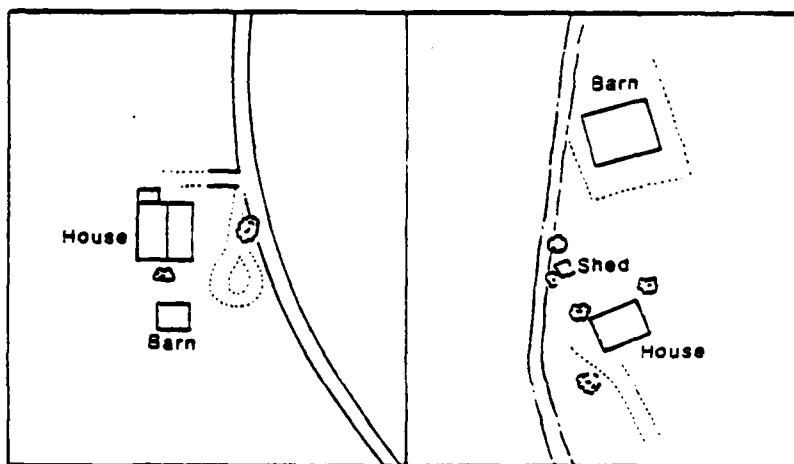


FIG. 16. UPLAND SOUTH FARMSTEADS, FROM HABS SURVEY.



A. Tract 200. Bay Springs

B. Tract 303. Bay Springs



C. Tract 402. Bay Springs

D. Tract 500. Bay Springs

FIG. 17. UPLAND SOUTH FARMSTEADS, FROM HABS SURVEY.

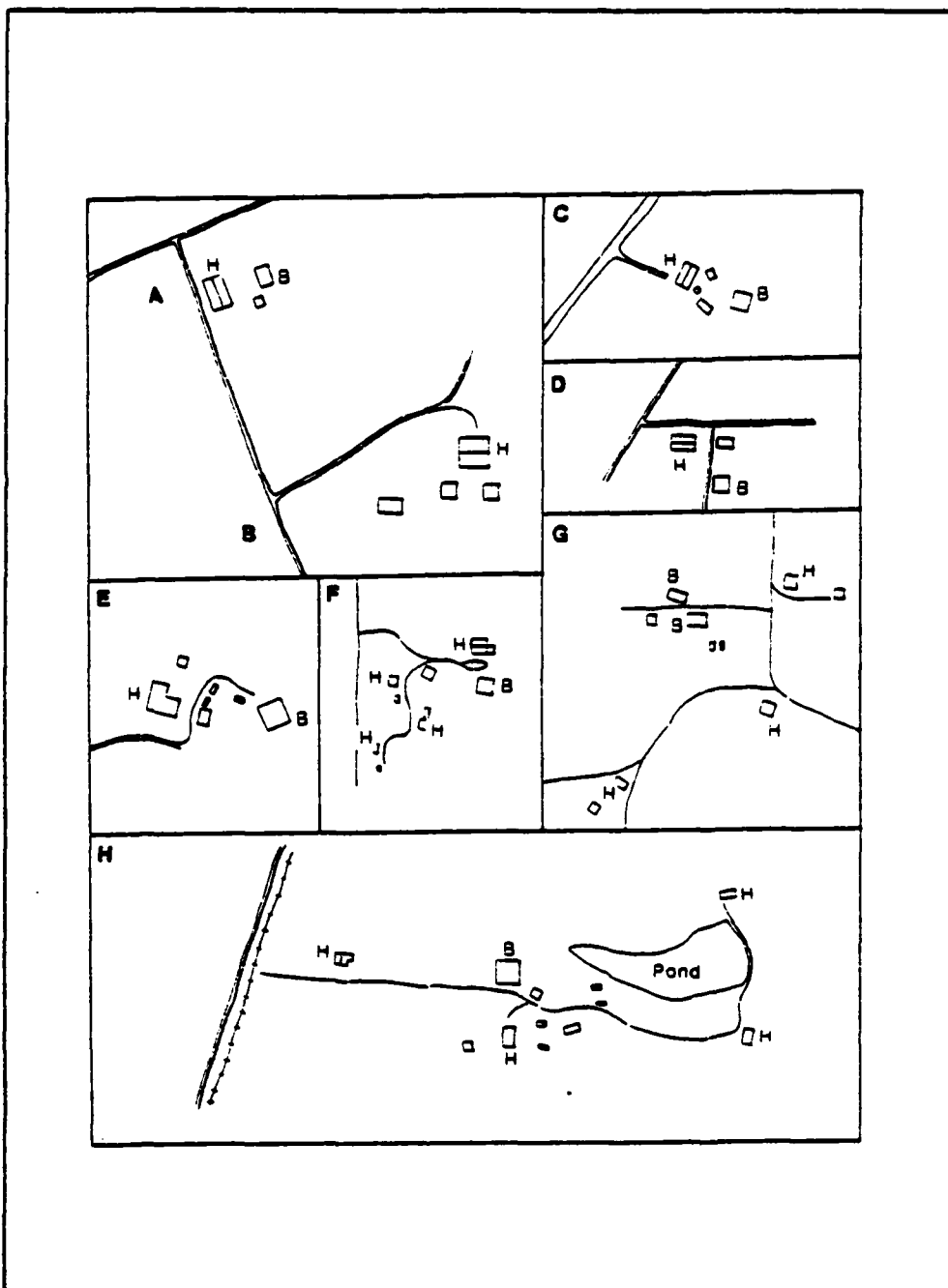


FIG. 18. FARMSTEAD LAYOUTS, FROM 1960 AERIAL PHOTOS.

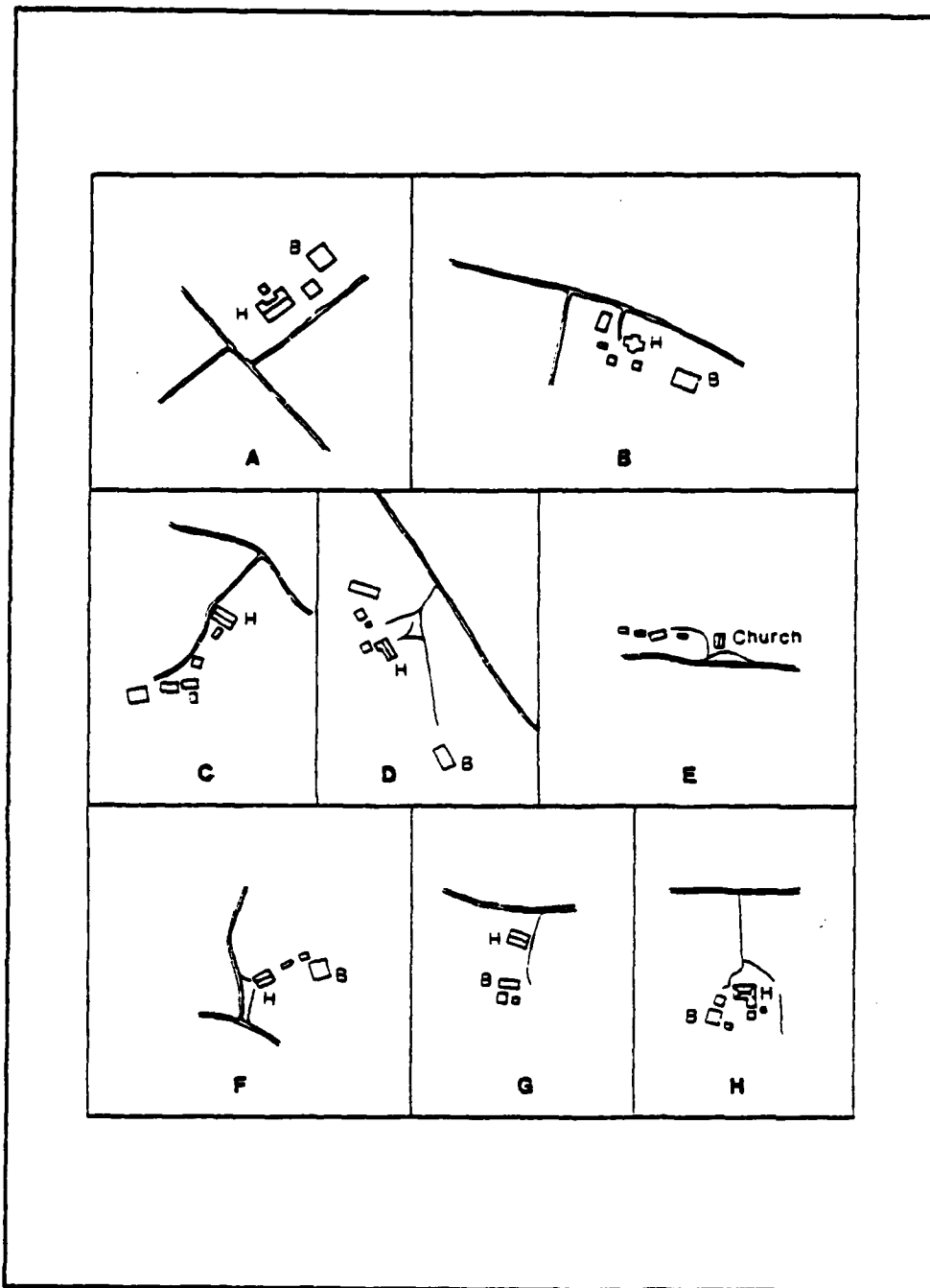


FIG. 19. FARMSTEAD LAYOUTS, FROM 1960 AERIAL PHOTOS.

Thus, in the total sample of twenty-eight farmstead sites studied from aerial photos, the barn as the largest outbuilding is the most distant structure from the dwelling in twenty-three cases (Figs. 14-19). This conforms to ground observations of farmsteads between Columbus and Aberdeen, Mississippi, and to Glassie's (1975:143-4) observations in Middle Virginia that the barn was the most distant building from the dwelling in that area.

The separation of barn from the main dwelling area represents a significant departure from both Celtic and Germanic farming traditions, where animals and fodder were frequently housed adjacent to, if not as part of, the human living quarters. The main reasons for proximity of animals and humans in Europe were the advantages of heating and ease of access during inclement weather (Leyburn, 1962). In the much warmer climate of the South proximity of barns to the domicile may have been less attractive to farmers because of increased odors, proliferation of flies and other barnyard pests, and most particularly the danger of fire from spontaneous combustion.

Exactly how long these relations have been in use is hard to determine. The economy prior to about 1870 was based not only upon crop cultivation but also upon open range livestock grazing. On these farmsteads relying less on crops, open range and the absence of fencing would have led to different arrangements in the settlement pattern. For instance, there was fencing in of fields instead of animals and a general absence of barns and equipment sheds. Post-Civil War enclosures in the form of fencing laws ended the open range and stock drives in those areas where the drastic livestock losses of the War had not already finished the industry. The end of open range probably led to the building of livestock enclosures, barns, and storage sheds in response to the economic stimulus of cotton farming. It is possible that different enclosures were gradually erected for horses and mules, cattle, pigs, and chickens, although fenced yards and loose stock remained common in some parts of the South into the mid-twentieth century (Crow, 1978:165).

Isolation subjected the earliest pioneers of the valley to many privations and reduced their household and personal effects to the absolute necessities of life (Welsh, 1901). The homes were rough log houses with puncheon floors and clapboard doors; often, there was not a nail or particle of iron about them. Indeed, many built their first cabins of saplings with roofs of bark, and clay chimneys. These homes usually contained no furniture save that which was hewn out with an axe. Homespun garments were the rule. Wild game supplied meat and many families went weeks at a time without wheat bread. Corn was the staple crop of the subsistence farmer on the frontier. It was easily stored, easily prepared for food and possessed extremely nourishing properties for animals and man.

Cultural Distinctiveness of the Upland South Farmstead

Like building arrangements, land use arrangements in the Fall Line Hills and Tombigbee terraces had somewhat random distributions, conforming loosely to topographic features but with irregular field patterns. They exhibit no readily predictable formations related to specific site factors. The characteristic looseness of form and apparent disorganization, best exhibited in Tishomingo and Itawamba counties, is in reality a cultural pattern widely dis-

seminated throughout the upland South. The pattern has perhaps been best explained by Hart (1977:150) who wrote:

As you travel through the core of Appalachia . . . Field, forest, and pasture are scattered across flat land and hillside alike, with no apparent logic. Steep slopes are cultivated but level land is wooded. On the far side of the woods, as like as not and on the selfsame slope, a herd of scrawny cattle mopes through a gulley-scored "pasture". . .

The use of the level lands is just as chaotic as the use of the hill-sides. Why is one piece of ground cultivated, another pastured, and a third wooded, when all three appear to be so much alike? You simply cannot understand the detailed pattern of land use by invoking any of the traditional litany of organizing themes--slope, drainage, erosion, stoniness, soil depth, and fertility--on which geographers habitually rely to explain local variations in land use.

Hart goes on to explain that the land use of Appalachia has a kind of order founded on rotation, but it is a rotation of land use (upland, pasture and woodland) rather than of individual crops. This is not nearly so regular a rotation as crop rotation but involves the same basic principle of resting land for a time. Evans (1969) has shown that the tradition of land rotation was part of the culture transferred by early Scotch-Irish settlers to the New World. According to Hart (1977:151) the Scotch-Irish heritage has resulted in a cycle of land rotation in Appalachia which:

. . . extends over a generation, or even longer and rare indeed is the person who knows the entire cycle from personal observation. Few men have had the experience of clearing the same piece of ground more than once in a working lifetime; even fewer realize that they are reclearing land that had been cleared by their fathers and grandfathers before them (or if they do, they take it for granted instead of talking about it). An outsider must visit a given area repeatedly to become aware that familiar forests have been replaced by cornfields and that trees now stand where corn once grew. At any one particular time the outside observer (and mapmaker) is far more conscious of land abandonment than of land rotation.

This Upland South farming system described by Hart developed as a response to the meagerness of the Appalachian environment, but many of its integral aspects appear to be closely related to the settlement patterns of upland Britain in the eighteenth century. Leyburn (1962: 3-46) in discussing the "infield-outfield" system employed in the English dominated Celtic areas of Britain, makes the following points with regard to influences on living patterns:

1. The land-holding system commonly involved joint tenancy with some form of crop payment to the landowner.
2. The best land was leased by strip lots with one man's strips intermixed with another so that no person might have two contiguous strips or gain too much of the preferred land. The allotments were changed every few years.

3. Houses tended to be built close to the infield or croft which was the best land to which all care was devoted.

4. Because of the constant shifting of leases and the transference of allotment, farmers did not build good houses although stone abounded. The house was little more than a shanty constructed of stones, banked with turf, without mortar, and with straw heather or moss stuffed in the holes to keep out the wind. Since the land was almost wholly treeless wood was valuable. It was common practice for an outgoing tenant to remove from a farmhouse all the beams and timbers which he himself put in. The incoming tenant had to virtually rebuild the house--which he in turn dismantled when it was his turn to leave. The constant abandonment and construction of simple houses was an essential part of the infield-outfield farming system.

5. Allotments ran vertically down the slopes rather than across them; since the bottomland was quite likely to be marshy and the people ignorant of drainage techniques, most of the cultivation was done on the drier hillsides.

6. The vertical strips contributed to the erosion of already thin soil lowering production and thus hastening abandonment.

7. On the infield there was constant cultivation of only two staple crops, oats and barley. A crop once planted received little or no attention. Because of the constant shifting of leases and transfer of allotment, farmers did not make improvements such as building fences, planting trees or hedges, or manuring the land. There were no enclosures, dykes, or hedges between fields or even between farms.

8. Constant changes in allotments and the sharing of the infield caused many disputes and were conducive to lawlessness, violence, and a support system based on blood relationships.

It is perhaps elements of this upland British cultural tradition transposed to the Upland South which provide the basis for the patterns of land use and material culture evident currently and historically in the hillier areas of the TRMRD. This is particularly evident in the emphasis on: (1) occupation and use of hill slopes, and avoidance of poorly drained areas; (2) extreme variety in the arrangements of land use (crops, pasture, and forest) and farm buildings; (3) transience of home sites; (4) simple, functional, unimposing building structures; (5) subsistence agriculture; (6) reliance on limited crop types (e.g. corn, cotton); (7) land rotation; (8) general distaste by farmers for a tenancy system; and (9) a desire for economic dependence, but at the same time a preadaptation to the tenant farming system.

The fragmented pattern of farming in the TRMRD is illustrated by figures which show both land being brought into production and other land reverting to pasture or forest. Hill land is being cultivated and recycled in much the same way as lowland, and pasturage is an important element in the system. Because of this periodic shifting of land use and therefore of work patterns, the location of the housesite and outbuildings with respect to farm layout has less significance than in lowland farms where the farmstead was devoted very largely to crops and where individual areas were cropped unrelentingly. The

result was a less standardized farmstead structure adjusted to the particular idiosyncracies of specific upland landscapes. Generally, Upland South farmhouses appear to have been originally located near the arable land of the farmholding, but as the landholdings changed and land use was rotated, so also did the relative location of the houses. Upland South farmhouses were generally located on lower hill slopes close to either streamwater, or a spring, or where dug wells were feasible. Such houses are commonly found, however, on river terraces and other relatively level terrain (e.g., plateau surfaces).

Lowland South Farmstead Structure

Ante-Bellum Plantations

While the small peasant farm was the characteristic settlement form in the hillier areas, and was numerically significant throughout the region, the plantation which dominated the landscape of the Black Prairie was a quite different agricultural operation and made a geographic impact out of all proportion to its numbers. The plantation in America began as a lineal descendant of the feudal organization of agriculture in Europe (Gordon, 1968). It was exported by royal charter, conformed by proprietary land grants, and accepted by the English gentry as a matter of right and privilege. It was standardized and perfected through tobacco culture. The size of land holdings encouraged excessive efforts to secure labor and the plantation organized this labor as efficiently as possible to produce a staple crop. Almost by chance the introduction of human slavery and the invention of the cotton gin made possible the large scale production of cotton through the plantation system. Cotton culture diffused the plantation throughout the South.

The plantations of the Upper Tombigbee were a material expression of the geographic expansion of the cotton production system. The system, while widely diffused through the Southern states, was heavily concentrated in a few areas particularly favorable to production, and the Black Prairie was one of these. Successful plantation operation required, according to Vance (1929: 39);

. . . a land supply of large acreage of fertile soil, cheap, level, or rolling, and to some extent homogeneous in texture and topography. Prairie lands and river bottoms are suitable for the plantation: there are no records of it being applied to mountainous regions.

The Alabama-Mississippi Black Prairie was, according to Lyman (1868:78), "the best cotton land in America and probably the world," and therefore particularly attractive to planters. The definition of the plantation in popular usage in the South has been primarily based on the size of the agricultural unit rather than its method of organization. Plantations varied considerably in size and number of slaves, however, while having a generally standardized form of organizational structure. The most extensive studies of plantation geography are those of Rehder (1973;1978) and Prunty (1955). Prunty (1955: 460) defined the plantation as comprised of six elements:

. . . a landholding large enough to be distinguishable from the larger 'family' farm; a distinct division of labor and management, with management customarily in the hands of the owner; specialized agricultural production; location in some area of the South with a plantation tradition; distinctive settlement forms and spatial organization reflecting to a high degree centralized control of cultivating power; and a relatively large input of cultivating power per unit area.

Based on these criteria there were numerous plantation farmsteads in the Upper Tombigbee in the nineteenth century. They were concentrated in the Black Belt but were also found in areas of the Tombigbee terraces and Pontotoc Hills. From a variety of sources (Myers, 1949:270; Beckett, 1910:92-94), it is apparent that the general structural model of the antebellum plantation described by Prunty (1955:465) applied to the Upper Tombigbee:

The ante bellum plantation settlement pattern was distinctive. The owner's, or manager's, house customarily was situated near a cluster of service buildings and slave quarters. Slave houses were grouped compactly in rows along short roads, forming a square or, more frequently, a rectangle of buildings. Service buildings included sheds for tools and simple implements, storage sheds for the plantation food supplies, an office, barns for the work stock, a cotton gin or rice mill or sugar-cane mill (or occasionally two such "processing" centers), and a blacksmith shop. On some of the larger plantations a separate central kitchen was used for feeding the slave labor force. Together, these buildings formed a nucleated plantation village, a settlement type noteworthy because of the huge area within which it was distributed.

Characteristically, pastures were fenced but fields were not. Fences were of stake-and-rider construction, or wooden worm fences, or occasionally of willow wattle. Once a pasture had been fenced, the tendency was to leave it so almost indefinitely. Some planters rotated stock pens from one field to another in order to capitalize on animal manures, but the practice was not common; obviously, rotation of grazing animals could not be widespread if fields were not fenced.

On many ante bellum plantations small plots were cultivated independently by the Negroes; the produce, principally corn, usually was sold to the owner. Independent cultivation on small plots was encouraged to secure production that the owner could not otherwise elicit readily, and to supply the slaves with cash for the purchase of minor luxuries, such as tobacco, which otherwise the owner might have to provide.

The location of barns and sheds deserved special notice. These shelters for the work stock and for the tools they powered were situated not only adjacent to the residence of the management but approximately centrally in relation to pasture, cropland, and labor quarters. Cultivating power was centrally located within the area to which it was applied and among the human elements whose effective employment depended upon it.

The antebellum plantation has often been idealized to represent a Mt. Vernon complex--a formal, carefully arranged group that included the dwelling, with kitchen, shops, storehouses, carriage house, horse stalls and slave

quarters placed unobtrusively to the rear. According to Rehder (1978), agglomeration of plantation buildings, including planter homes, was characteristic in the South. Unquestionably, some plantations in the Upper Tombigbee area were formally structured after the standard pattern (e.g., Waverley). Two examples lying beyond the Tennessee-Tombigbee Waterway corridor are Thornhill or Watsonia in southern Greene County, and the Brand Plantation at Brandtown, Clay County, Mississippi. Both have in their own variations, definite order to building arrangements, and a relationship of outbuildings to the situation of the planter's home. Beckett (1910) and Love (1903) have described similar structures in Monroe County and in Lowndes County respectively.

The plantation house was usually placed on high ground, both to facilitate drainage and avoid flooding and to create an impressive physical appearance. The house and grounds looked all the finer and more handsome because they stood out in strong contrast to the small unpainted huts of the slave quarters which were usually small, one-room log cabins or shacks constructed of plain upright boards. There was contrast too between the slave rows with nothing to differentiate one house from another, and the whole suite of buildings associated with the big house such as church, school, parsonage, doctor's office or overseer's house. Not far off would probably be the mill and the miller's house, the gin and the houses and workshops of the carpenters and smiths.

No narrative explanation has been found for the site location of plantation communities on the Upper Tombigbee, but they were probably developed from the perspective of W.J. Barbee of Desoto County, Mississippi, who wrote in 1868 that (Lyman, 1868:86):

. . . the best bottom plantations are those immediately on rivers above overflow. Such location is decidedly healthier than any in interior of the bottoms. Such a plantation must have a good soil that will not wash away, good timber and plenty of it, good water in abundance, and be close to a good steamboat landing or depot.

As a result the most prominent plantations were commonly arranged in linear fashion at the junction of bluff and floodplain along the main stream channels.

Early plantations were primarily self-sufficient units, but towards the middle of the century many came to resemble the West Indies and Tidewater prototypes, being committed primarily to cash cropping and being far from self-sufficient. In general, the plantation system, as it was established in the West Indies during the seventeenth and eighteenth centuries (first on St. Kitts, Barbados and Santo Domingo), was almost entirely an importation, using only native soil and climate. The technology, labor force, cash crop, food supply, management, and equipment, were derived from outside the islands. The ownership was largely absentee, and the market was overseas. Plantation organization and operation, and the archaeology and history of slavery, in the West Indies has recently been well-documented in two detailed studies by Handler and Lange (1978) and Craton (1978).

Details of plantation operations in the TTMRD corridor have not been uncovered, but further investigation of the Waverly site may turn up more information. Available records show that at least some plantations were fairly self-sufficient, combining cash cropping (cotton) and garden crops. The

relationship between the yeoman farmer and the plantation operation is not evident. It may be presumed that excess food produced by small landholders and sold at a market would have been purchased by anyone needing it. Although produce marketing may have been a common feature of urban life, no descriptions of produce marketing, with the exception of one or two store records, have been discovered. Thus, aside from local products that may have been grown or fabricated, such as food products, lumber, or metals from a local smithy (which may be presumed but not documented), the relationship between the plantation and non-slaveholder is not clear.

Post-Bellum Plantations

The period of Reconstruction had tremendous effects on the pattern of agriculture, and particularly on the plantation system. Changes occurred in the size of farms, tenure of farmers, and in emphasis placed on other crops and livestock besides cotton, corn, and cattle (Beckett, 1904;1910).

Plantations had generally been returned to the planters after the War and the high prices for cotton generally encouraged them to reestablish its culture. There was a gradual return of laborers to the plantation under the wage control system. The system met with varying success in different localities, but in general it was abandoned. There were no solvent banks after the War, the planters were land poor, and it was almost impossible for them to pay a weekly or a monthly wage. Attempts to bind Blacks by contract failed because they did not understand contracts and refused to work for yearly wages. The superior profitability of cotton production and the scarcity of labor created higher wages, notably in the Western states. This caused some Black migration with consequent breaking of contracts. The loss thrown on the planter by crop failures, and the mobility of the workers, resulted in a reduction of yearly wages which ranged from \$100.00 to \$150.00 for men in 1867 to a scale of from \$90.00 to \$110.00 in 1868 (Vance, 1929:36).

The result was the share system, designed to govern the division of the produce between landlord and tenant. In 1916 the Census Bureau defined a tenant plantation as follows (United States Department of Commerce, 1916;13):

A tenant plantation is a continuous tract of land of considerable area under the general supervision or control of a single individual or firm, all or part of such tract being divided into at least two smaller tracts, which are leased to tenants. This definition in the first place dominates from consideration as plantations groups of tenant farms which are not contiguous. In the South as in the North a single individual may own several separate farms, each of which is leased to a tenant, but it is obvious that these holdings taken as a whole, in no sense constitute a plantation. In the second place the tenant plantation as defined by the Census Bureau must be a tract of land of considerable size and containing at least five tenant holdings. It not infrequently happens in the South as elsewhere that a single individual owns a tract of land of moderate size which he leases to two or three different tenants: but to treat such a holding as a plantation would be distinctly contrary to the popular usage of the term and would serve no particular purpose.

The share given the landlord ranged from a half to a "fourth." If the worker owned no stock or implements, he lived in a house provided by the landlord, worked his farm, paid half of the crop expenses as fertilizer and ginning and received half the crop for the labor of himself and family. The term usually applied to such a farmer was a cropper rather than a tenant and his status was that of "a servant whose wages depend upon the amount of profit." The share tenant owned his mules and implements. He paid a third of the corn and a fourth of the cotton as rent for the land. Another system of payment which grew up was called cash or "standing rent." The rental was standing in that a fixed amount was to be paid no matter how much was produced. This usually meant the delivery of cotton amounting to a specified cash value at harvest time. Laborers who had worked up to the dignity of standing renters owned their animals and work tools.

Introduction of the cash rent and share-renting system brought changes in farm tenure in the Upper Tombigbee; by about 1880 about one-third of the farms in the Black Prairie counties were being sharecropped, with about one-fourth of the farms being sharecropped in adjoining regions. However, cash renting of farms was quite important at the time, and probably one-fourth of the farms of the northeast regions were operated on this basis, though the percentage varied widely from county to county. According to census figures, cash renting was more important in the Black Prairie counties than in the Fall Line Hills and the Pontotoc Ridge regions. Roughly half the farms were still cultivated by owners, though in the Black Prairie counties the percentage was below half, and in adjoining regions above half. While no detailed evidence has been produced from the Tombigbee Valley relating the physical structure of cash-rent or share-cropping systems, soil survey maps of the early 1900's indicate that the general models of these systems outlined by Prunty (1955: 466-475) are probably applicable to the area.

Rural Afro-American Settlement Patterns

Antebellum Black Settlement

Most rural Blacks before the Civil War were confined to plantation residence where their lifestyle reflected the ordered arrangements essential to successful plantation operation. These physical arrangements have been discussed by Prunty (1955: 466-475) and Myers (1949: 270-276). A somewhat exuberant picture of the quality of Black life at this time has been provided by Rowland (1900:89), writing of activities in the Mississippi Delta:

The direct management of every large Mississippi plantation before the war was intrusted to an overseer. His house was built in the center of the "quarters" or homes of the plantation slaves, and it was large, comfortable and well built. . . . The homes of the slaves were arranged on streets leading from the overseer's house as a common center. Every house had a large front room and a small shed room. The slave family always had a garden spot given for their own use and cultivation. They were taught the pride of ownership, and many families beautified their little homes with running vines and flowers. Their food was issued to them weekly from the big "smoke house" that was always to be found on every Mississippi plantation.

Black Settlement After 1865

Emancipation abolished the plantation slave quarters, which had formed a veritable village adjacent to the plantation nucleus. The chief desire of the free Black was to get away from his past and have a place of his own. Plantations were divided into tenant farms and Blacks became dispersed throughout the landscape in small cabins on small farm lots. A tremendous change in the settlement geography occurred out of this one social force that spurred Blacks away from the plantation quarters to be on their own. Thus from a highly nucleated pattern, settlement changed to a highly dispersed one; there can be few better examples of the importance of social geography in shaping the landscape. Watson (1979: 57) has said that:

. . . this dispersal was followed by stores, halls, schools, and churches, which now pepper the rural South. The negro general store at the local road meeting, and the negro church oriented to its own small group of followers, still characterize negro geography. Where store and church coincided in their choice of location a small negro hamlet would grow up that now boasts a garage and service station, a meeting hall for dances and other social occasions, and perhaps a country doctor and his clinic. Yet this return to a partially nucleated form is negro-centered, and not as before centered on the white man's mill, store, clinic, fireside, what have you.

The changed political and economic conditions after 1865 significantly affected rural Black settlement patterns in the Upper Tombigbee. Many Blacks left the plantations after manumission to take up land of their own outside the Black Prairie where land in farm-size tracts was generally unavailable to them. Others migrated to the cities and yet others, as Prunty (1955) has described, became sharecroppers or tenant renters. The sharecropper and tenant renter systems had profound effects on both the physical structure of the plantation, and on the geographic arrangements of rural Black residences, which tended to become isolated rather than clustered. For a time attempts were made to remedy Black labor shortages by importing foreign labor (7,000 Swedes and Norwegians to Monroe County alone [Puckett, 1910: 140-141]), but these proved short-lived as the foreigners moved quickly away. The general hostility of Whites to Blacks outside the Black Prairie (Puckett, 1910: 114-126) discouraged settlement east of the river and in the Fall Line Hills. As a result, while the local structural detail of Black settlement changed after 1865, the regional pattern of Black habitation in the TRMRD did not. Blacks remained concentrated in the Black Prairie sections with their houses more scattered than before the war.

Black Hamlets

One feature of the post-bellum Black Prairie plantation settlement pattern which is not explained by Prunty's models is the common occurrence of nucleated Black residential hamlets, such as those described by Watson (1979: 57). These small clusters of houses, generally of from six to twenty-five residences, have a wide distribution in Clay, Lowndes, Noxubee and Sumter counties, but are much less evident outside the Black Prairie. They are shown on early twentieth century maps which suggests a nineteenth century origin. Black hamlets are distinguished from rural white hamlets by a general lack of a

commercial nucleus like the general store, and an apparent lack of a relationship to road junction sites. They exhibit a variety of structural forms from linear (extending along a road), to tightly concentrated clusters, with combinations of these forms common.

There are three probable explanations for the evolution of these hamlets which in some instances may have been mutually reinforcing. The suggested stimuli are: (1) responses to labor requirements of post-bellum plantations, (2) the legacy of antebellum plantation structure, and (3) topographic considerations. The primary basis for the establishment of the Black hamlets appears to have been the need for labor on the large estates after manumission. Such an explanation has been proposed by Smith and Raitz (1974) for the Kentucky Bluegrass where a strikingly similar arrangement of Black hamlets occurs. According to Smith and Raitz (1974: 225-227):

Slaves had been housed on the estates in small groups of rude cabins that served as the center of all slave life and social activity. Providing quarters and garden plots for freed workers would have meant that estate owners were still responsible for maintenance and taxes. From the viewpoint of the estate owners, it was both easier and more desirable to have laborers housed in their own cabins on their own land, yet close to the estate so they would be readily available.

Negroes were restricted with regard to where they might live. Impoverished, they could not purchase Bluegrass property easily, nor were they welcome in white communities. Many estate owners responded to the opportunity to secure a reliable labor pool by setting aside a small tract of land at the back of their property for resettlement of freed Negroes. Tracts of ten to twenty acres were divided into lots of a quarter acre to five acres, and the land was given or sold at a modest price to the Negroes.

While the need for labor communities among the large estates may help explain the distribution of Black hamlets in the Black Prairie, topographic conditions and existing building stock may have locally reinforced this settlement type. From the beginning in the Black Prairie settlers had chosen to build homes on the higher, elevated sandy deposits where drainage was significantly improved. These sandy deposits occur as isolated hillocks and ridges in the prairie and therefore settlement concentrations were promoted in these locations. In several instances twentieth century Black hamlets occupy the sites of nineteenth century plantation slave quarters, indicating that some of the plantation owners may have rented or transferred ownership of their "quarters" to Blacks after emancipation. This probably resulted from both the labor needs and the economy of utilizing existing housing where it still proved acceptable to Blacks.

The filtering of housing stock down the socio-economic ladder is a common phenomenon in both urban and rural areas in the United States (Guy and Mourse, 1971). As housing ages it is usually abandoned by the affluent due to environmental, design, or maintenance factors, and taken over by successively poorer owners or tenants who will accept the lower quality of shelter which it provides. The result is a constant shifting of tenants in search of better housing and the gradual abandonment and loss of the very weakest elements of housing stock. Such filtering has been responsible since the earliest days of

settlement for successive house type occupation by Blacks on the Upper Tombigbee. To date the sequence has consisted of slave cabins, one-room tenant houses, pioneer white "folk houses" of varying sizes, and in the twentieth century of "mobile" homes and red brick structures. Virtually all phases of this occupation succession are evident in the Black Prairie today, helping to explain the absence of visible signs of early Afro-American forms.

Rural Building Types

The houses of the Upland South and of the Lowland South have received the greatest scholarly attention of any folk or vernacular buildings. Two cultural forces played a part in the development of Southern house styles. One was the influence of ancient folk traditions from Western Europe. The second important cultural force was the Georgian architectural style. Architecture is an art form, creative, purposeful and planned, usually with detailed drawings, but folk buildings are basically non-creative, non-commercial, non-individualistic, and non-pretentious; the plan is traditional and in the mind of the builders.

From the folk traditions of Europe, particularly Britain, the Upland South inherited modular building, based upon the one-bay house of medieval England. As part of the farming system established by about the tenth century, the one-bay house was fairly standardized in plan and in dimensions and in the manner of its enlargement. A single story, gable roofed, oblong building, the front/rear entrances were (usually) centered in the longer walls and its enlargement to two or three rooms was done by adding another bay (module) to a gable side. Similar houses were used by the peasants of Wales, Scotland, and Ireland. The one-bay house was introduced into the Chesapeake-Delaware Bay tidewater region by the first settlers essentially as it was built in Britain (Forman, 1934; 1948; 1957). Later, German settlers in southeastern Pennsylvania, mainly in the period 1700-1735, introduced the method of building with horizontal timbers fitted together at the corners. Termed "logs" by the Britons, the method was adopted by the Scotch-Irish settlers coming into the region at the same time. The result was the one-bay house built of logs now known as the "log cabin." Cabin referred to any temporary or crudely built habitation in Britain and is a term derived from the dwellings of herdsmen of the Italian Campagna (Peate, 1940: 55-56). In fact, the loose application of the term "log cabin" is a poor choice and is incorrect for the very well-built permanent log houses that are found throughout the eastern United States. The first cabins have long vanished from sites where they were the first temporary structures of the frontier (Ely, 1820-21). Although other methods of construction were used in the early European settlements, including timber-framing or "half-timber," rock, brick, and variations of horizontal timber construction, the German-introduced log building forms were those that came to dominance. It is true that the Swedes probably built the first log houses but it is not adequately documented that their style was that adopted for American log building, in spite of suggestions to the contrary (Bealer and Ellis, 1978).

Not long after the arrival of English settlers to the Tidewater came the introduction of Georgian style architecture that has so deeply impressed Southern builders and is perhaps best represented in its American variations at Williamsburg. Georgian was a classic revival style that was important in the eighteenth century. It persisted longer in America than in Britain and

continued in a popular form until the end of the nineteenth century. Somewhere between folk building and formal architecture lies vernacular building--the production of houses by more or less full-time carpenters using commercial materials and building with balloon framing and weatherboarding. Most of the houses since about 1870 reflect new techniques (the light, balloon frame) and the increasing use of standardized hardware and doors and windows.

The best description of the character of early farm-buildings in the Upper Tombigbee Valley is that of Welsh who wrote of her childhood home in Wahalak on the Black Prairie margin in northern Kemper County, Mississippi. She recalled that (Welsh, 1901:344-346):

The cabins were roughly built of logs, with stick and mud chimneys and clapboard roof. The cracks of dwelling houses were lined with boards and daubed with mud, or merely chinked and daubed, according to circumstances. The door shutter was a huge batton frame, covered with clapboards. The windows, if there were any, were openings about two feet square, closed by a curtain, or at best by a shutter, like the door. Often a crack by the fireplace was enlarged to give the mother a little more light on her sewing. The floor, if by good fortune it was of plank, was more costly than all the rest of the building. The only mill within reach was on Running Water creek about twenty miles away, more or less, according to the season and the state of the roads. Sawed lumber was costly and could be used only in building the family room. It was put down loosely and when well shrunken was driven up tight and nailed. The only planing it received was the frequent application of the scrub broom. A few people, at a cost of much labor hewed out "puncheons" for floors; others built their cabins flat on the ground and there lived comfortably and contentedly with their families, waiting for better times. A few of these dwellings had two cabins with what we called a "passage" between them; others had a shed room, the frame of which was made of skinned poles, weatherboarded with clapboards. Most of the farmers were content however with one room for the first year. Fireplaces were large and wood plentiful, and it was heaped on without stint. Notwithstanding the stick and mud chimneys and "logheap" fires there were then no "houseburnings" in that section, and insurance was unknown. As nails and hinges were too costly for general use the roofs of kitchens, negro cabins, &c., &c., were held down by "weight-poles", and the "door shutters" and gates were hung on wooden hinges. Yards as well as lots and fields were enclosed by rail fences, but they were substantial ones, ten rails high, "staked and a ridger", stock proof. There was then no disagreement between neighbors on account of defective fences. These descriptions apply particularly to the very early settlers, from about 1833 to '36. As years passed and facilities increased, many improvements were introduced. Large frame houses, elegantly furnished, dotted the country here and there, but down to the War between the States many of the people were content to dwell in log houses with modern improvements and furnishings.

Folk House Types

Several distinctive types of southern folk houses have been recognized and their designations are well established. It seems a more useful procedure to ignore the abundant variations and try to identify these as one of the

generic types. Kniffen and several of his students (Kniffen, 1965; Wright, 1956; Wilson, 1969; Newton and Pulliam di Napoli, 1977) have identified the single pen, double pen, saddlebag, dogtrot, I house, pyramidal roof house, shotgun, and bungalow as the most common types in the rural Upland South. All but the bungalow are nineteenth century types. The single pen is a one-bay English peasant house built of logs and is the primary folk house of the South (Wilson, 1970). It has an oblong floor plan, is one story with a loft, has a gable side, a front entrance centered in a longer wall and a rear door directly opposite, and chimney-side windows (Fig. 20). Double log houses were derived from enlargements by the addition of a second bay, or pen. While it is possible to enlarge a single pen by adding on more wall logs and making it taller, it was the common practice in the Upland South to add a complete second pen to one side (but not to the rear). If the new unit (bay or pen) was put against the gable end wall opposite the chimney, a double pen was created (Fig. 20). If the new pen was placed at the chimney side, a central chimney house was the result, one of its traditional names being the saddlebag. A third common double house came about by the separation of the two log rooms by ten to twelve feet, creating a central hallway with the entire house under a common roof (Fig. 20). This house may be called locally by several names of which the dogtrot has been adopted. All these double houses had analogs in the Tidewater houses. The dogtrot has possible Continental European ancestral forms and the double pen is recognizable as a two-bay English peasant cottage (Field, 1965). The close resemblance of the dogtrot house to central hall Georgian houses makes a clear understanding of the origin almost impossible. The dogtrot was widely distributed in the eastern states and it was the most common double house in the nineteenth century in northern Alabama and northeastern Mississippi. Other common house types in the area are shown in Fig. 21.

There was clearly marked evolution of these house types from log to frame construction (Wilson, 1969; 1974). The single pen was oblong in plan and the early double houses also had oblong rooms. By the end of the nineteenth century weatherboarded, balloon-frame construction and commercially produced doors, windows, lumber, and hardware had come into wide use. With this change from folk to vernacular, the two (formerly log) rooms of the double houses changed to square, usually about 16 x 16 feet inside. In general, the frame houses were all smaller than the log ancestral forms.

At an early time, slaves were trained in the crafts and many excellent Black carpenters are known, if not by name, at least through their work. Plantation homes and housing for Blacks alike were produced by Black carpenters. When the White settlers in the Tidewater built Georgian houses for themselves, the one- and two-bay houses were continued in use for kitchens and "quarter" houses for slaves or tenants. In nearly every Southern town, older Black neighborhoods are still commonly made up of folk-derived houses built of frame and weatherboarded. Besides the single and double houses, the shotgun, pyramidal roof house, and the bungalow were widely used as quarter houses.

A number of house measurements from Alabama (Wilson, 1975) have established a basis for comparison with those from other areas (Newton and Pulliam di Napoli, 1977). The folk and vernacular houses measured during this study by Wilson and by HABS field workers, again illustrate the tenacity of traditional house types and their proportions, both with Black and with White builders. Nineteenth century log single pen houses were oblong with a sample of about forty averaging just over 20 x 17 feet (outside) with one as small as 15 x 14 feet and one

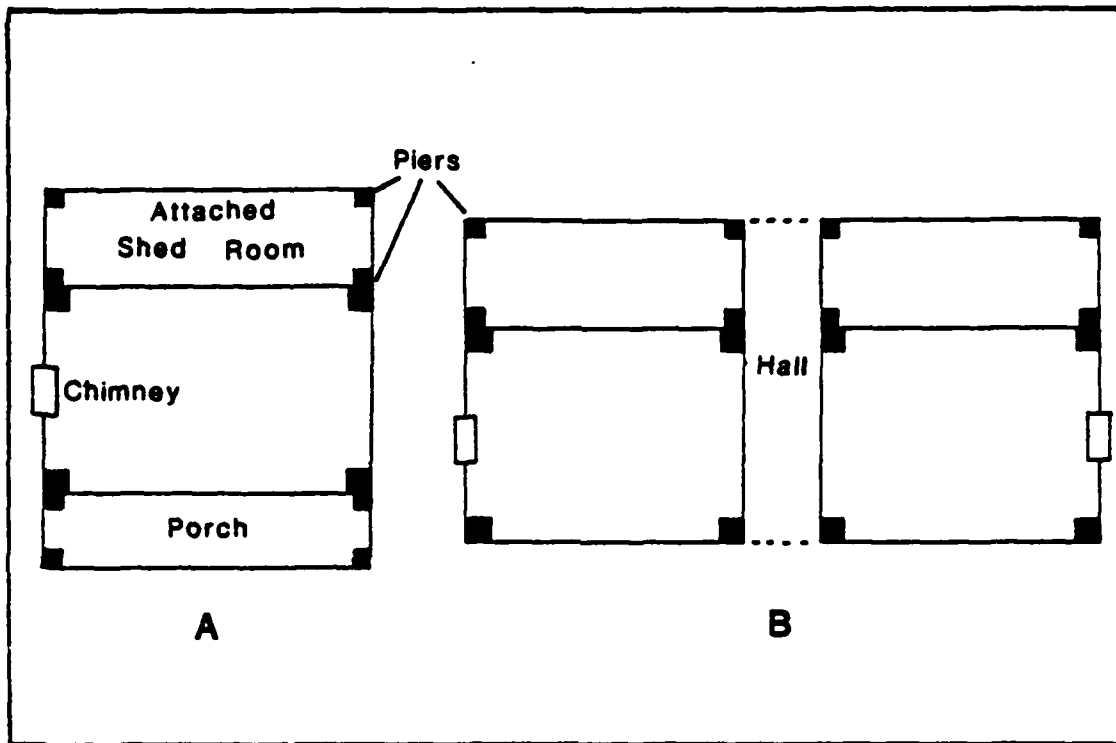
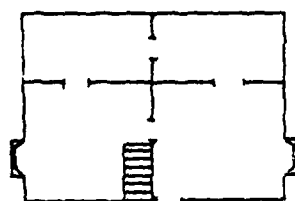
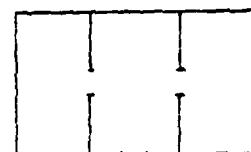


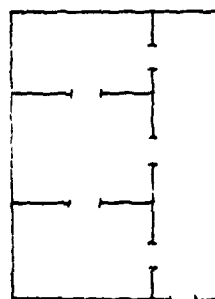
FIG. 20. POSITION OF HOUSE PIERS. A - single pen type, B - central hall or "dogtrot" type.



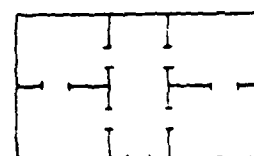
Plain Type



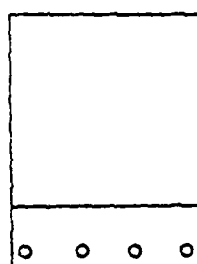
Two Room,
Central Hall



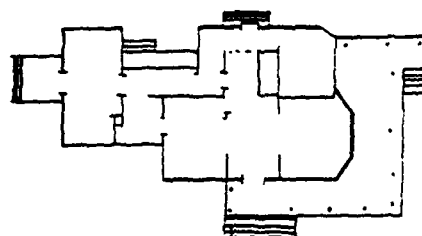
Side Hall



Four Room,
Central Hall



Temple Form
(May have colonnade
on one or more sides
of block form)



Asymmetrical Victorian Type

FIG. 21. ADDITIONAL COMMON HOUSE TYPES OF THE UPPER TOMBIGBEE AREA.

25 x 16 feet. Dogtrot houses were sometimes nearly sixty feet on the front. One example from Alabama, ca. 1830, measured 57 feet 5 inches x 21 feet for the log portion alone (Wilson, 1975). The oldest log houses, prior to 1840, had large, distinctly oblong log rooms. They usually had a loft of about a half story. The wall logs were large--12 to 20 inches in diameter and hewn flat to a plank shape on the inside and the outside, and the corners were typically half-dovetailed. From about the mid-nineteenth century to about 1940, when traditional log construction ended, the log houses were usually built smaller with square rooms, less complex corners such as the V and square corner, and with smaller diameter logs. The loft was no longer used for living space and the height of the late examples was less than the early houses. In general, the decline in log building technology was due to increased use of milled lumber and mostly full-time carpenters.

In the TRMRD study area, two dozen houses studied reflect the traditional styles but also show that many variations were possible with frame building. The more recent bungalow came to be an important new style, gradually replacing many of the folk-derived houses in the 1930's and 1940's, just as the "Jim Walters," "mobile homes," and brick veneer "ranch" style houses are replacing older dwellings now.

When a house is removed and the site is no longer used, for a time at least, the site will be marked by ornamental plants, among the most common being oaks, cedar, mimosa, chinaberry, and various shrubs. Most of these will be replaced by normal plant succession as most ornamentals do not survive without human attention. Other remnants, however, remain for a time. Pieces of timber, piers, chimney brick, and an assortment of debris commonly mark sites. The piers and chimney positions can be used to determine the house type. Normally, one pier at least is used to support the corner of a room; thus, a single pen would have at least four piers but probably eight would be more likely, including those for the porch and the rear shed room (Fig. 20). Double houses would have sixteen piers and one or two chimney mounts and their placement would indicate the type of house.

The furnishings of early houses were usually simple, reflecting the quality of life on the frontier. According to Welsh (1901:346-347):

The furniture of these early cabins was scant. The long journeys in wagons from the older states prevented the bringing of anything but the bare necessities. These provident housewives all brought their feather beds and bed clothing, a bedstead or two, a few chairs, a little table furniture, a few things for the kitchen, and the indispensable wheel and cards. The few empty barrels and goods boxes they possessed were utilized as furniture. Holes were bored into the logs, strong pegs driven into them and boards laid across to make shelves both within and without dwelling houses and kitchens. A series of shelves with a curtain hung before them made a convenient cupboard or wardrobe, as occasion demanded.

Classic Revival Architecture and Plantation Houses

One of the major developments in the Lowland South was the introduction and evolution of the American classic styles, Georgian and Greek Revival.

Georgian style (1700-1780) was characterized by decorative facades, a central pavilion or portico of one or two stories with a gable treated as a classic pediment, pilasters or columns, and gable or hipped roof. Although the gable roof continued in use, the hipped roof was the most popular and was usually flat on top and often enclosed with balustrades to form a "captain's walk," or "widow's walk." Dormer windows were frequently used, chimneys were simple and rectangular with a small cornice at the top, and windows had larger panes than in the colonial period (Morrison, 1952: 306-317). In most of the South bilateral symmetry was emphasized. On either side of a central hallway were equal numbers of windows, pilasters, dormers, and chimneys, and on more imposing structures an equal number of attached rooms or outbuildings. The Greek Revival style that followed (1820-1860) was an elaboration on the Georgian emphasizing columns, larger porches, usually two-story, entablatures, windows and window framing, and interior moulding in plaster (Hamlin, 1944).

The Georgian style with its longer period of development, through the eighteenth century in America, was more influential and its elements filtered down to vernacular and folk building. For example, the dogtrot folk house type has the symmetry that was characteristic of small Tidewater Georgian houses (Forman, 1934;1948), a central hallway with rooms on either side, a chimney on each side, and a door or window on either side of the front entrance. If one were to build such a house with brick, as in the Virginia Tidewater counties, it would create nomenclature problems to say the least, and it is not clear if log dogtrot builders were inventing or copying a style. In the Upland South, the two-story house was always associated with elevated economic and social status. Thus, aspiring rural families living in log houses sometimes added on to the loft, making it higher and by putting in front windows, or lowering the front porch and adding front windows above it produced a story-and-a-half or two-story-looking house. Two, and two-and-a-half story log houses were also built prior to 1830. Several of these were weather-boarded on the outside, plastered or boarded over on the inside. The log house would then disappear resulting in a house symbolic of respectability and high status. Two such houses were built in Alabama by prominent Indian leaders, one a Cherokee and the other a Creek. Other examples can be found as far northeastward as Pennsylvania, and all are copies of Tidewater Georgian houses regardless of the material used for construction (Glassie, 1968b).

Besides the two-story, one-room-deep Georgian house, another form with a square plan was popular. This is seen as both a one- and two-story house with a pyramidal or low pitch hipped roof and built of frame as well as brick. The Gorgas house in Tuscaloosa, Alabama, and the Old Appomattox Court House in Virginia are examples of this style. Georgian had an important influence on small popular houses after the Civil War, and it dominated entire sections of the South from 1870 to 1900; for example, the Piedmont of Alabama and Georgia. Many log and frame houses were changed to this style by repositioning chimneys and modifying the roof. It was in this variation that Georgian persisted until the end of the nineteenth century.

Behind many of the "antebellum homes" of the South there lies a basic Georgian design embellished with elements of "Greek Revival," although most rural plantation houses were what has been termed "plantation plain" (Zelinsky, 1954), rather unpretentious two-story houses, and not models of Mount Vernon or Tara. In the Black Belt, however, most of the "planters" lived in towns and a description of these houses is beyond the scope of this discussion (Cleland,

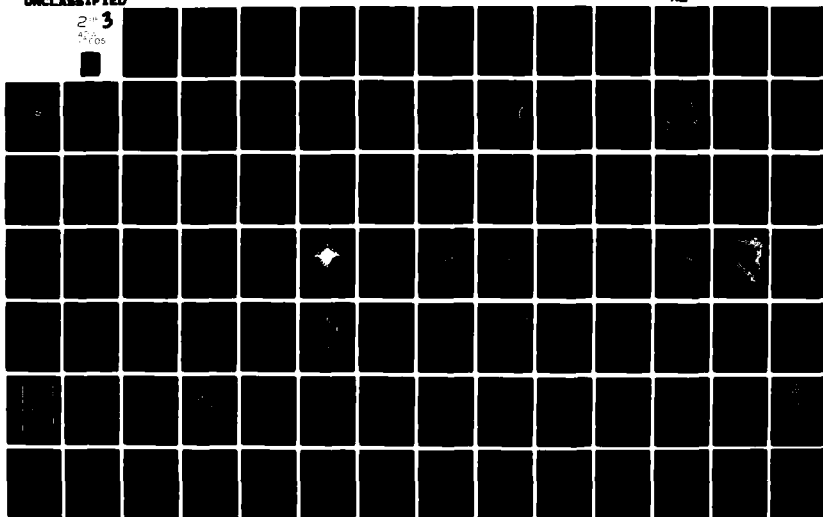
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ALABAMA UNIV IN BIRMINGHAM CENTER FOR THE STUDY OF SO—ETC F/6 S/4
HISTORICAL GEOGRAPHY OF THE UPPER TOMBIGEE VALLEY.(U)
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1920). In general, town houses were more elaborate and more individualistic than rural houses.

The description of Boligee Hill, the second home of Eliza C. Picton, in Greene County, Alabama (the first home was a log dogtrot house), notes more refinements than in the typical rural place: it had a basement (not a common feature), was two-story, had four large rooms on each floor, a wide first floor hall running the length of the house, double doors front and rear, a front portico with four fluted columns and wide front stair, and a wide gallery in back (Picton, 1886:5). Kitchen, stables, carriage house, barns, cattle and hog pens were included in this complex. Boligee Hill, then, with its four-room and probably nearly square plan, is what would be called "Greek Revival," actually a Georgian plan, probably with a low pitched hipped or pyramidal roof. Most readers will be familiar with these types, which are still very common in the Black Belt towns. Myers (1949) illustrated some of these houses in his impressive dissertation study.

Another form of planter house is represented by Cedar Oaks, the last structure standing at the Barton town site. Probably dating from the 1840's, it has the measurements of a large frame dogtrot. Its distinctive quality is its mortise and tenon timber framing, plastered walls and ceilings, wainscoting and (formerly) its chimneys, most likely two at either side. Unfortunately, the original brick piers and chimneys have been replaced as has much of the weatherboarding and roofing. It is an early house type of which few remain in the area.

Outbuilding Types

Both Upland South farmstead and Lowland plantation outbuildings were probably quite similar in form, materials, and, to some degree, size (Kniffen and Glassie, 1966). Outbuildings include all man-built structures except dwellings. One important consideration is that primitive-appearing barns, cribs, sheds, and coops have continued to be built and are often associated with fairly modern houses. Log outbuildings were still being put up in Alabama in the 1960's and probably elsewhere in the South as well; the materials do not always indicate antiquity. The oldest of such structures are built of large, hewn, flat-sided logs with half-dovetail corners. These few surviving early nineteenth century buildings (not recorded in TRMRD) are commonly rectangular (oblong) and include gable-roofed storage sheds and barns, ranging in size from approximately 6 x 10 feet or 8 x 12 feet to 16 x 24 feet or larger.

Late nineteenth century and twentieth century log outbuildings were commonly of partly-hewn, small diameter logs or poles with the V-corner. Saddle notching, combination log and board, and completely weatherboarded structures are even more recent. Very rarely, small buildings such as spring houses were built of rock, but wood was always the favored material. In wood construction, the outbuilding was erected like dwellings, usually with rock or wood piers supporting two sills, the principal timbers. In outbuildings the entrance was in the gable end, which was usually smaller than the sides. These simple gable buildings varied in size and served functions ranging from privy to horse stalls. Those used for horse or mule stalls and wagon and equipment storage usually had two shed attachments on either side, either closed in or open, producing a three-part structure. Barns of the Upland South have been

extensively studied by Glassie (1965; 1968b; 1969) and examples from this part of the Upland South are illustrated by Wilson (1975; 1978). The typical Upland South crib/barn (storage/barn) is also illustrated by Harper (1943). The log transverse barn in various sizes has been one of the most definitive material culture traits of the Upland South during the past 100 years.

A new frame barn type was introduced into the upper Tombigbee-Mackeys Creek area sometime during the past fifty years. This is a large transverse, gambrel roof barn with an overhang at the hay loft to facilitate outside loading. The same type of barn is very common in parts of east Alabama where it was built in the 1930's, a result of federal agricultural programs that encouraged dairying. Possibly it was introduced into northeast Mississippi for the same reasons.

CHAPTER VI

CENTRAL PLACE ACTIVITIES, FACILITIES AND SYSTEMS

The Central Place Concept

Geographic models of settlement structure all assume a measurable degree of order in man's spatial behavior. Such assumptions usually include the following:

1. *The spatial distribution of human activity reflects an ordered adjustment to the factor of distance. Man views distance in non-linear ways and therefore, movement and locational models will include such modifications of distance as travel time, transport costs, density distance and land value distance.*

2. *Locational decisions are made in general so as to minimize the frictional effects of distance. The development of this concept is reflected in the importance accorded the circle as a theoretical trade area and as a city shape.*

3. *All locations are endowed with a degree of accessibility but some locations are more accessible than others.*

4. *There is a tendency for human activities to agglomerate so as to take advantage of scale economies or savings in cost of operation through concentration of activities. Urban agglomerations or nodes within an urban area illustrate attempts to utilize scale economies as reflected, for example, in a market town serving a rural area or a shopping center serving an urban residential area.*

5. *The organization of human activity is essentially hierarchical in character since the size of agglomeration appears to be related to degree of accessibility.*

6. *Human occupance is focal in character. The urban agglomerations of different sizes are supported by a comparable hierarchy of nodal or focal regions whose activities are organized and integrated by the respective nodes.*

These assumptions have perhaps been best expressed in what has come to be called "central place theory," a concept originally generated to explain the evolution of urban centers in a predominantly agricultural spatial economy (Berry and Garrison, 1958). Conceptual development begins with a uniform isotropic plane made up of a series of farms, each of which is totally self-sufficient for all its needs. Here, the state of minimum economic specialization is approached. On each farm different tasks may be performed by different people and in that sense specialization exists. However, with a universe of

self-sufficient farms it is fairly easy to see that there is no need for a market place, for a point of exchange. Over time this simple economy evolves. Its members discover that by each farm specializing or producing particular goods, by selling its surplus and by buying basic requirements from other farms the whole community can become richer. In such circumstances economic specialization increases and is likely to be followed by the emergence of a single point of exchange, a village or town. Thus, a situation emerges in which there are not only specialized agricultural areas but specialized marketing points or central places. Naturally, as economic specialization increases the changing urban centers are likely to become not only points of exchange, but also places where goods and services are produced for the surrounding areas' inhabitants. An economic landscape then develops which is dominated by farming but with a system of towns which act as service centers for the surrounding area (Barton, 1978).

Such a description of the emergence of villages and towns as service centers and as centers of economic specialization is simplified. Nonetheless, it illustrates the fact that before most urban centers were anything else, they were service centers. The size of the service center is influenced by the size of the area it develops to serve, the number of people in the area, and the level of disposable wealth they possess. Any increase in market area, tributary population, or spending power is likely to generate an increased demand for goods from the city and hence stimulate urban growth. It could be argued that this has always been so and that there is nothing specifically western, industrial or modern about such a process. Whether the process is universal or not, there is ample empirical evidence to suggest that this has been one of the major forces making for urban growth in America since 1750 (Webber, 1971).

Certainly, central places of various functions and dimensions have been an important element of the settlement pattern of the Upper Tombigbee from the first days of colonization, when only the most rudimentary system of services prevailed. Before 1830 the central place structure was characterized by a few isolated frontier outposts such as Cotton Gin Port and Possum Town (Columbus), and a few stands on the trail thoroughfares. After 1830, as the Tombigbee country began to fill with settlers, other central place forms appeared (Figs. 22, 23). Central places in the Upper Tombigbee in the nineteenth century can generally be placed into five categories differentiated by function and spatial form. These groups are: (1) county seats, (2) platted river towns, (3) railroad towns, (4) rural hamlets, and (5) compound forms.

In terms of the central place concepts of Christaller (1966), and subsequent geographers, these categories roughly coincide with varying levels of three different spatial orders. The county seats are related to an administrative order, the river ports and railroad towns are units of a transportation order, while most rural hamlets belong to an agricultural service center order. Functionally, they are all part of a service hierarchy which had limited members at its upper levels and numerous members at its lower levels. At the highest level is a single regional center, Columbus, and below it eleven sub-regional centers: Iuka, Booneville, Tupelo, Okalona, Fulton, Amory, West Point, Aberdeen, Macon, Aliceville and Eutaw. At the lowest levels are numerous local centers (e.g. Brooksville, Smithville, Artesia, Nettleton, Belmont, Tishomingo, Paden, and Gainesville) and neighborhood centers (e.g. Memphis, Bigbee Valley, Darracott, Pickensville, and other isolated general store locations).

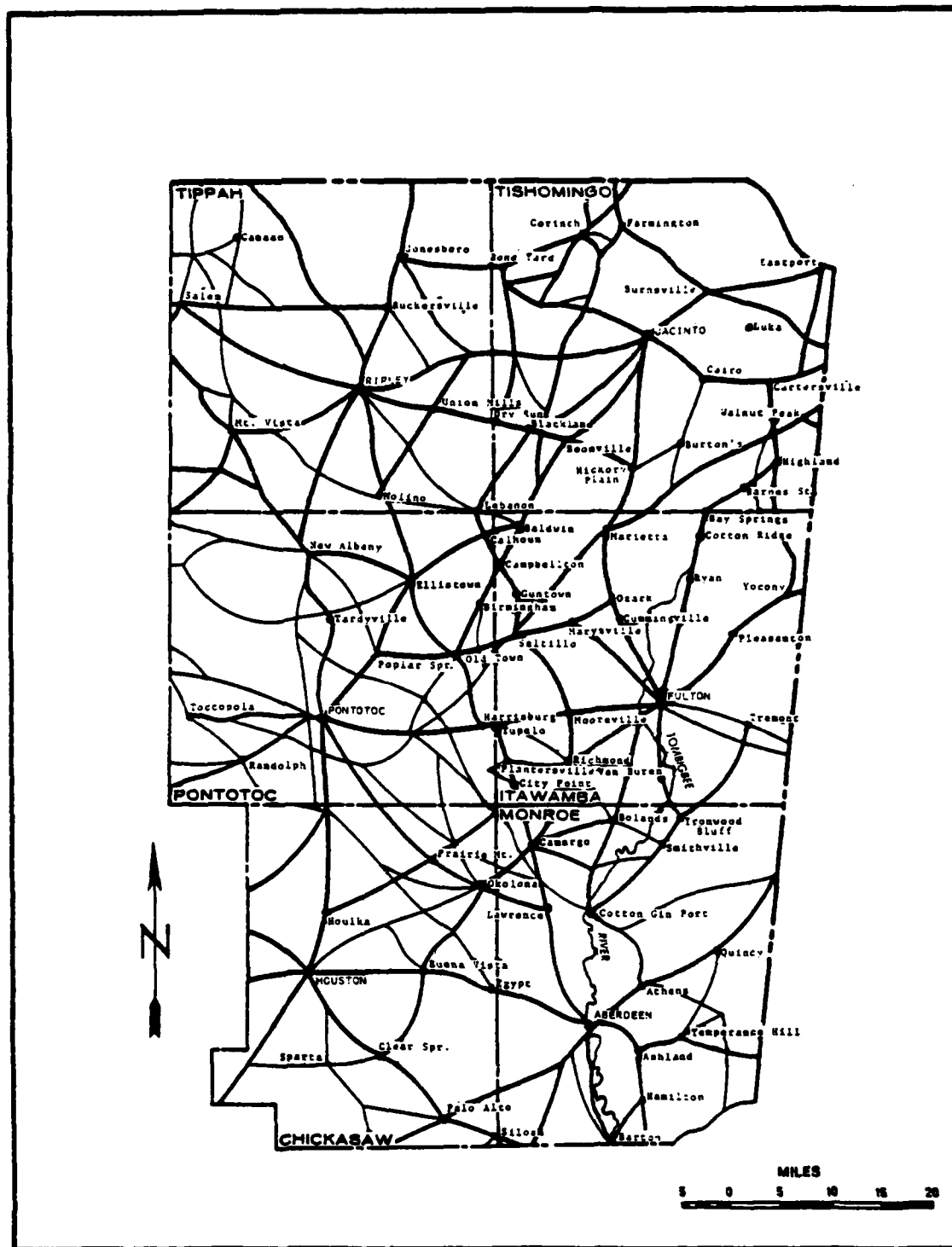


FIG. 22. SETTLEMENT PATTERN OF NORTHERN COUNTIES OF THE UPPER TOMBIGBEE AREA, 1865.

Conclusive determinations of the geometry of central place arrangements in the study area have been made difficult by the fact that three different spatial orders (administrative, transport, and agricultural) interlock with one another over a relatively small space. Also, incomplete evidence is available on the precise pattern of population distribution, the volume of services provided at particular places, and the extent of trade hinterlands earlier in the historic period. As a result, further research is required in a larger regional context than that of the TRMRD corridor to determine the detailed evolution of the central place system.

The County Seat

The county seat was the most important type of urban center in west Alabama and east Mississippi during the nineteenth century. County seats were typically founded in conjunction with the establishment of new counties by the state legislature. The naming, siting and surveying of the new towns was normally left to the discretion of the Board of Police which was constituted of local citizens. Taverns, inns, stores or private houses were commonly used as the sites for the courts and for other governmental functions until permanent seats were selected and appropriate buildings erected. The primary factor behind the selection of county seat sites was centrality or accessibility to the population being served. Secondary factors included the structure of the existing communications network, particular topographic advantages such as a site on a hill or close to a stream, and the availability and ownership of particular parcels of land.

One result of such a procedure was continuity of tenure for those county seats which were established at the approximate geographic centers of counties consequently experiencing stable county boundaries (e.g. Macon, West Point, and Fulton). Such continuity did not occur where either the geographic center of the population or the existing county boundaries changed through time. Some county seats witnessed only a brief period of prosperity before their primary functions were moved elsewhere (e.g. Pickensville, Jacinto, Hamilton, and Athens).

The continued operation of a county seat, particularly in the early days, was to some degree a measure of public satisfaction with the accessibility of the site. Large counties originally established in areas of sparse population often came to be judged too large, and their place of government too remote, as the settlement of the county progressed. Such was the case with Old Tishomingo and Monroe counties. Jacinto, close to the center of Old Tishomingo County was completely off center to its offspring counties of Prentiss and Alcorn, and had to be replaced by Booneville and Corinth. Old Hamilton was selected as the original seat of Old Monroe County in 1821 because of its location midway between Cotton Gin Port and Columbus, but lost its position in 1830 when Lowndes County was formed from Old Monroe (Lancaster, 1975). At that time Athens was chosen as the Monroe county seat because of its situation at a major junction on Doak's Road, and its position at the heart of the then settled area of the county (Amory Advertiser, 1976). Before long, however, with the population balance of the county tilting toward the west, Aberdeen at the main county crossing point of the Tombigbee was appointed county seat.

When Old Monroe County lost substantial territory to Lowndes County, Columbus was fortunate in being well advanced in its economic development and the hub of the local transport network, or it might have been passed over as county seat in favor of a point located to the south and west. Pickensville began its life as an off-center county seat as a result of its location with respect to early settlement around the Tombigbee. Its position would seem to have been enhanced by the extension of the county boundary to the current state line in 1821, but the accessibility factor proved too great and as the northern part of Pickens County became settled Carrollton was selected to replace Pickensville as county seat (Smith, 1856). In almost all instances, the removal of county seat status proved to be the death knell for affected incipient communities. Only Pickensville has survived as a cultural remnant due to its continued function as a port site into the late nineteenth century.

Those county seats which proved durable flourished in accordance with the degree of other urban forming advantages which accrued to them. As suggested by Myers the earliest developed communities, with the possible exception of Columbus, had little advantage in location one over another (Myers, 1949: 288). Being designated as a county seat provided one competitive foothold, but a sound position with respect to the avenues of trade, and to particular topographical advantages, helped to distinguish one county seat from another in terms of size and complexity as time went on.

All county seats eventually managed to gain railroad facilities but some were reached later than others. Fulton's only line materialized in the twentieth century. Those towns on single branch lines, like Fulton and Carrollton, were not so well favored as those with main-line status such as Macon, West Point, Booneville and Eutaw. Of particular consequence in the early years was location on the Tombigbee. It was this factor later combined with railroad functions which provided Columbus and Aberdeen with a pre-eminent position in the county seat central place hierarchy. Their supremacy was challenged for a time by the railroad towns but it was never lost.

The actual physical layout of county seats varied according to certain cultural preferences, to the topographic characteristics of the site and to the arrangement of transportation lines. No two towns in the region have identical form but there are some common elements. Perhaps the most distinguishing characteristic of county seats throughout the South is the courthouse square. Pillsbury (1978: 119-120) has identified four major types related to cultural origins, all of which are present in Mississippi and west Alabama:

The common type was the central square which occupied a full block of the city without disturbing the pattern of streets or the flow of traffic. Fifty-seven percent of the courthouse squares on the Piedmont were of this type. A variant of this form was the Decatur sub-type which may be a mutation of the central and secanted Philadelphia squares. In this format a standard grid plat was used except that in the central area the two blocks normally straddling the through-street were replaced by three narrower blocks. This plan maintained the advantage of the central square format which set the courthouse in a well-defined space clearly separate from the street while retaining the visual impact of a mid-street location characteristic of the Philadelphia plan.

The third basic format was the true "Philadelphia" square. This modified market square was formed by secanting or cutting the corners of the blocks adjacent to the principal intersection of the planned town and placing the courthouse in the center of the newly created space in the street.

The final major type of square found in the region was the enlarged or double lot form which was formed from an enlarged lot generally called the public square. The double lot form was a continuation of a county seat plan which evolved in seventeenth century Tidewater, Virginia. It was also sometimes used when a pre-existing settlement was selected as a county seat.

Based on Pillsbury's designations, Macon, Iuka, Fulton and Eutaw have central styles, Carrollton has a Philadelphia-type layout and the remainder have diverse forms (Fig. 24).

The earliest county seats and those which were designated after a period of prior development, (e.g., Aberdeen and Columbus), have the least organized street plans and the greatest diversity of form. Columbus, for example, has a rectangular grid interrupted by the angular path of the Military Road (Fig. 25). The most common plan for deliberately created county seats was a grid format oriented to township and range, with a basic plan of 25 or 30 town blocks and an unnumbered central space for the public square or courthouse. Lots varied in size with the smallest (commercial) lots facing the public square and the largest (probably residential) lots located on the edge of town. Several building lots other than the central square were set aside for public purposes, but there appears to be no particular preferred spatial arrangement. Typically, building lots were reserved for a county jail, churches and other semi-public buildings. The remaining building lots were sold at auction and the proceeds used to finance the town survey and construction of the courthouse and associated buildings.

Exceptions to this pattern occurred at Aberdeen where attempts to create a courthouse square on the northside of the river-oriented commercial section proved abortive, at West Point where the central focus of commerce became not the courthouse square, but the M & O Railroad, and at Columbus where commercial activities remained anchored at the west end of town close to the river, rather than around the courthouse on the hill. Aberdeen exhibits an early orientation for the Tombigbee River and a later adjustment to the rectangular grid survey (Fig. 26).

Commercial and Residential Structure of County Seats

The precise arrangement of commercial activities in county seat towns tended to be influenced both by the location and physical design of the courthouse square. Where the courthouse square was the focus of main routes of similar traffic strength (e.g., Carrollton and Eutaw) commercial and service activities tended to be distributed in balanced fashion around the courthouse square (Fig. 27). Where one of the routes focusing on the courthouse square was the dominant path of traffic flow, the commercial activities sought frontage on that route and extended in linear fashion from the courthouse. Such was the case at Fulton and Macon (Figs. 28 and 46). Where courthouse

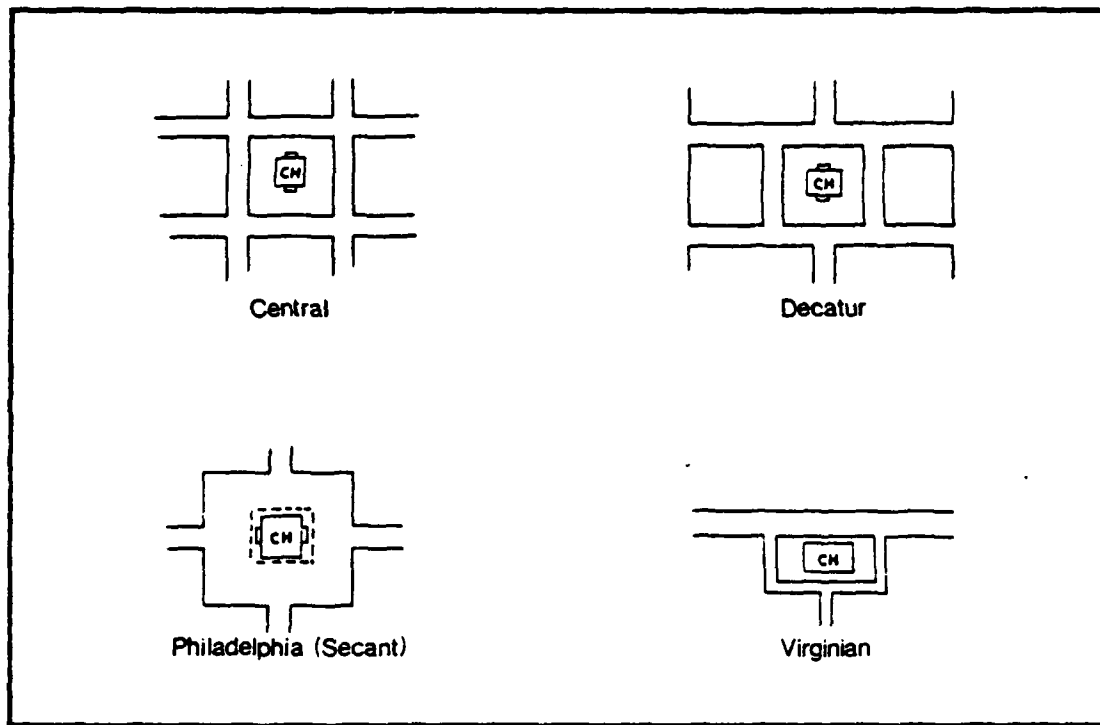


FIG. 24. COMMON COUNTY SEAT FORMS (AFTER PILLSBURY, 1978).

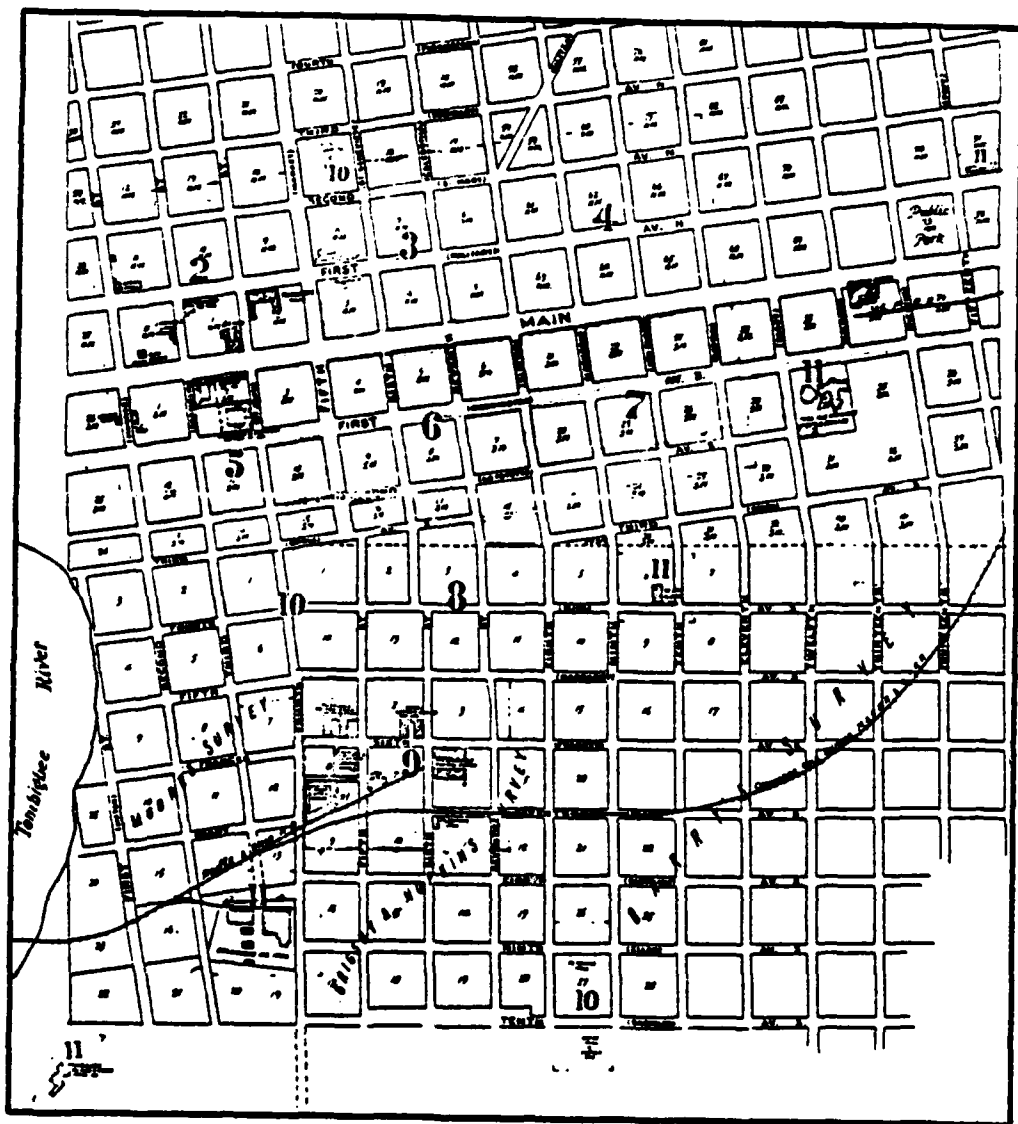


FIG. 25. COLUMBUS, FROM SANBORN ATLAS, 1885.

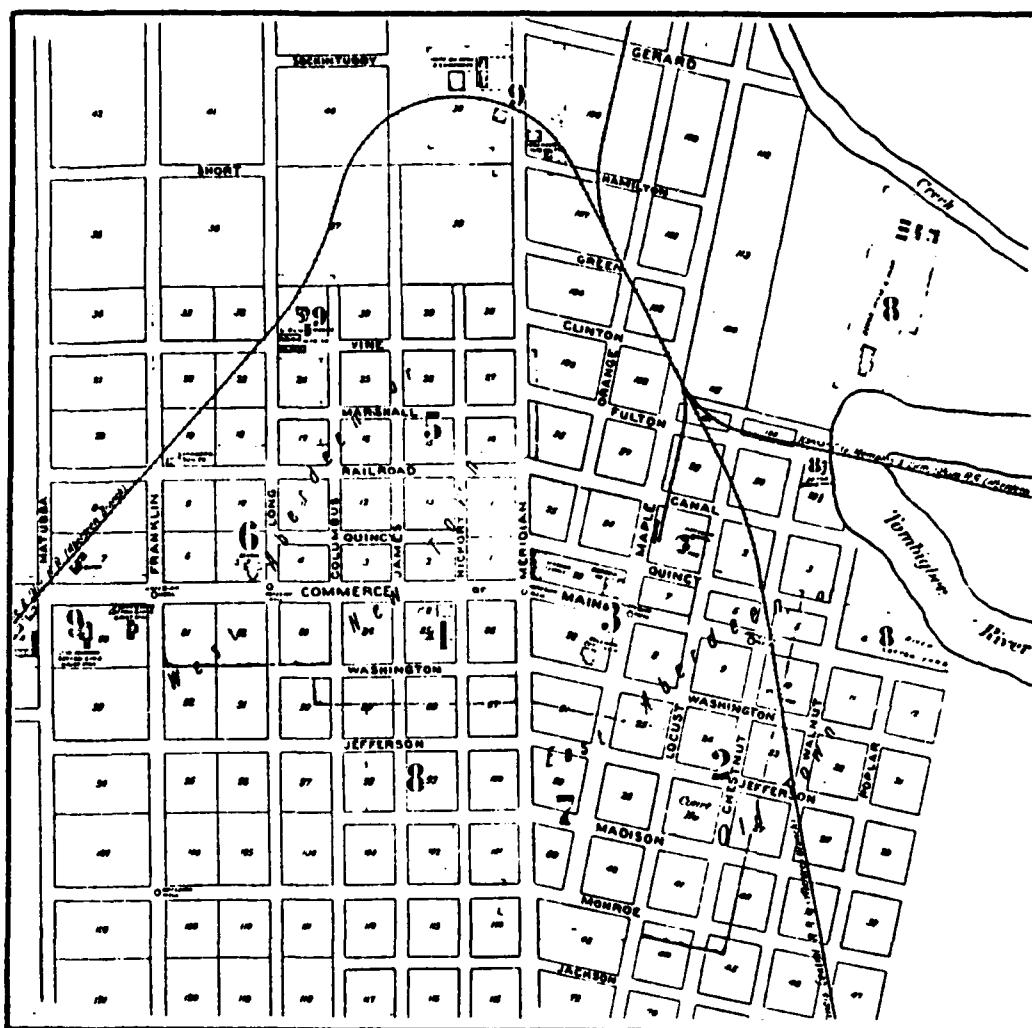


FIG. 26. ABERDEEN, FROM SANBORN ATLAS, 1889.

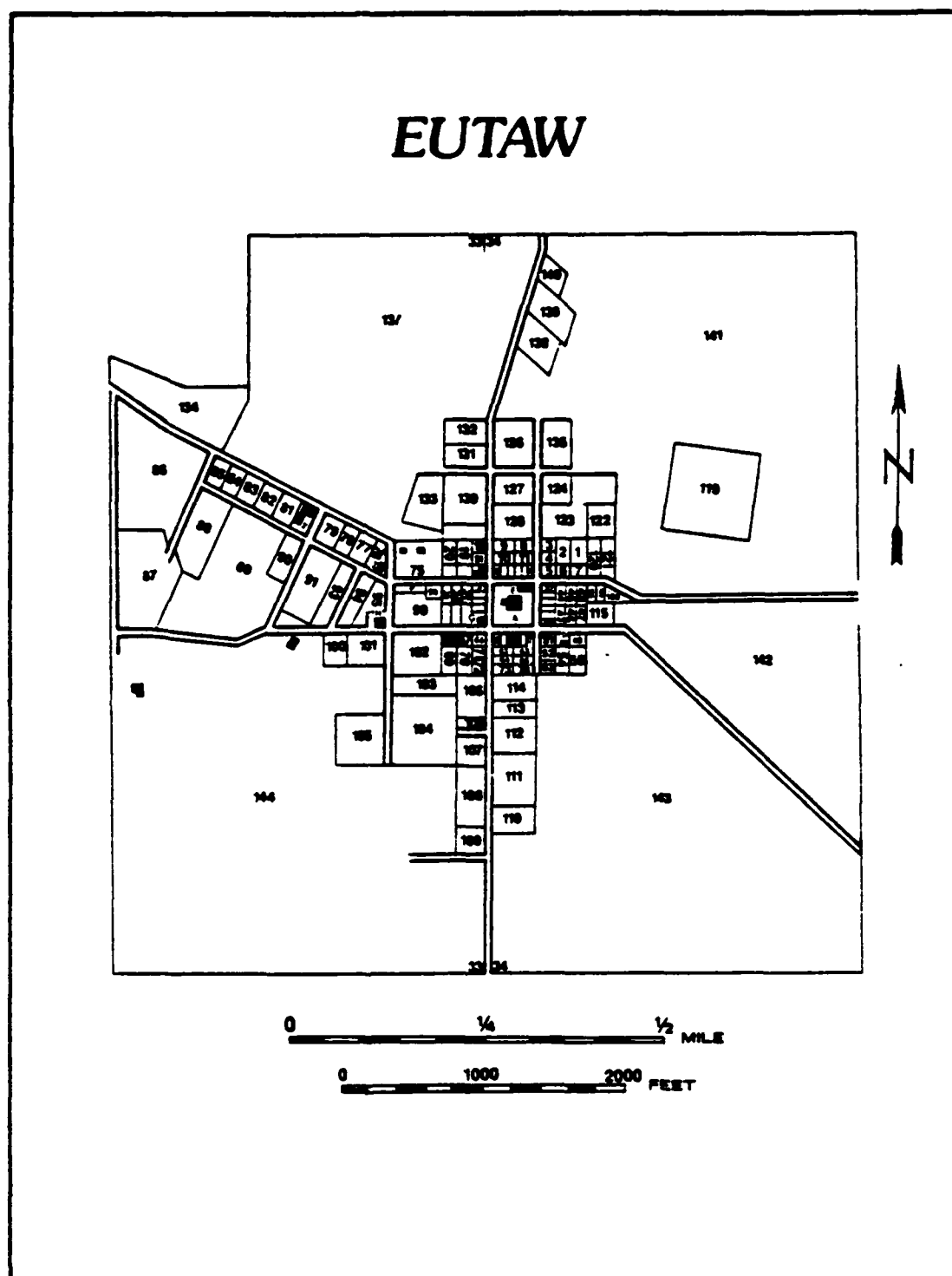


FIG. 27. EUTAW, 1843 AFTER SNEDECOR, MAP, 1856.

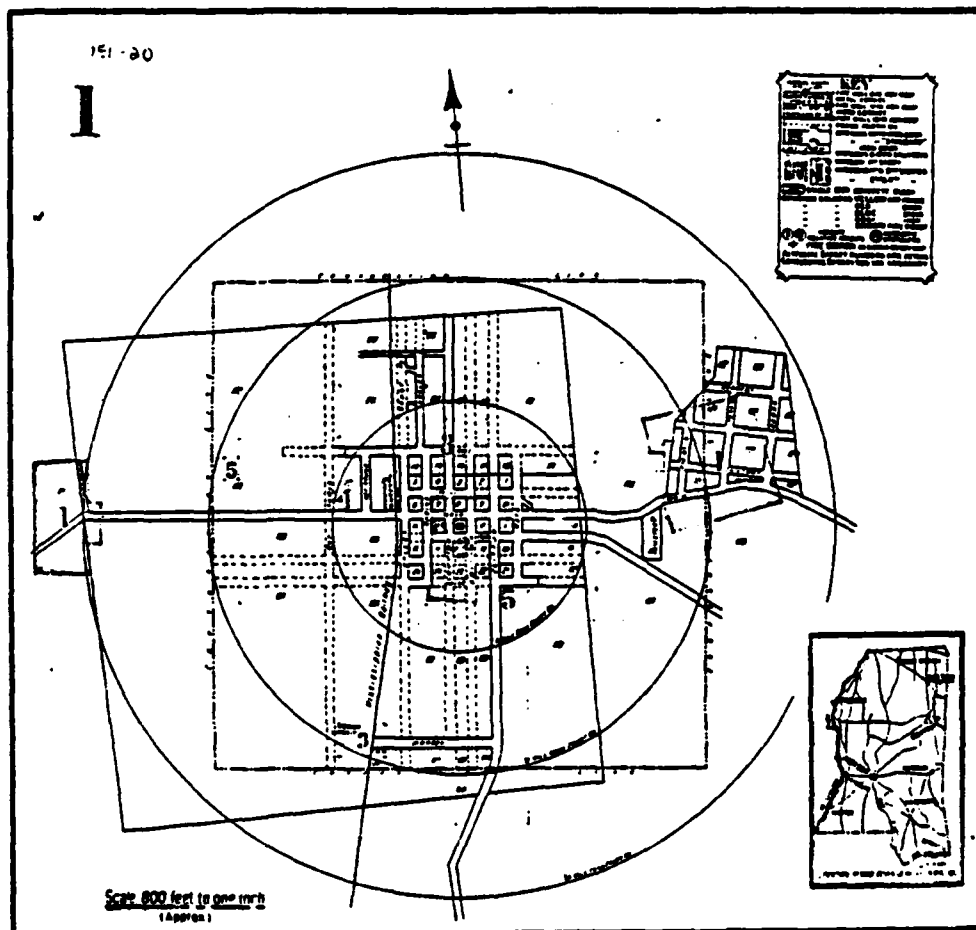


FIG. 28. FULTON, FROM SANBORN ATLAS, 1929.

sites were not the foci of the main traffic arteries they were largely ignored by commercial activities although they still attracted some professional functions such as lawyers offices as in Columbus and Aberdeen (Figs. 25 and 26).

One other factor helping to explain the differing structural character of the county seats was their varying attraction as a place of residence. To a large extent the county seats of the Black Prairie had a different cultural flavor to those of the Fall Line Hills. As indicated elsewhere the cultural traditions of both the Upland South and Tidewater showed little inclination towards urban living, and along the Atlantic seaboard and in Appalachia, county seats were generally viewed by both of these traditions as necessary instruments of government rather than as residential and commercial foci.

Outside the Black Belt residential development in the county seats tended to reflect the needs of people working either in the government or in the town's commercial and service activities. As a result these towns were small and somewhat limited in their physical development (e.g., Fulton and Carrollton). On and adjacent to the Black Prairie after 1840 it became common for wealthy planters to choose to live in the county seats rather than on their farms (Cleland, 1920). The reasons for this shift in traditional planter attitudes remains uncertain and deserves further research. It seems likely that a variety of factors were contributive, including the difficulties of communication encountered in the muddy prairie, the attraction of better social and educational opportunities in the towns, the social security of the white community in the difficult reconstruction period, the reduced need for a farmstead domicile after the plantation was well developed, and the attraction of railroad services which began to appear after 1850. For whatever reason, county seats administering Black Prairie territory (e.g., Macon, Columbus, Aberdeen, and Eutaw) did have more extensive and architecturally imposing residential areas than their counterparts in other topographic sections (e.g., Carrollton, Fulton, Iuka) of the TRMRD.

Port Towns

While county seat towns came to be the dominant urban centers of the region, this pattern developed slowly and throughout the nineteenth century numerous town sites were created as commercial competitors to the county seat towns. For the most part non-county seat towns were founded as speculative ventures and their historical geography is largely one of unfulfilled expectations. Many of them were expressions of a common speculative philosophy which encouraged the promotion of large numbers of such towns across America during the nineteenth century. The expressions of this philosophy as applied to the Midwest have been well treated by Reps (1965; 358-360).

While town speculation was on a somewhat lesser scale in the Upper Tombigbee than in some other parts of the nation, it was common enough, and unlike the situation in the Midwest where speculative towns frequently survived in spite of early trials, speculative towns in the Upper Tombigbee were generally failures. There were a variety of factors militating against the success of town builders, the most important of which were the economic and cultural environment into which the proposed towns were placed. Neither Upland South nor Tidewater farmers practiced types of agriculture which lent

support to the traditional types of urban/industrial-commercial centers. As a result viable economic bases for most speculative towns failed to materialize. Aberdeen was the only speculative town in the Upper Tombigbee to achieve any prominence, and its growth was assisted by its designation as a county seat.

The pattern of speculative town development was fairly consistent in the Upper Tombigbee. It took place before the Civil War and was based upon lessons from other parts of the United States, where experience showed that towns with the best prospect of success in terms of lot sales were those on the west bank of a river through which would flow settlers moving to new lands toward the west, and commodities seeking an outlet from those newly settled lands to the outside world. Such a settlement model, outlined by Burghardt (1959) for the Central Lowlands of the United States, seems to fit the pattern of town development in the Upper Tombigbee.

Initially, Indian cession towns were founded on the east bank, (e.g., Pickensville, Columbus, Cotton Gin Port), but after cession preferred locations were on the west side of the river or one of its navigable tributaries. Riverport function was considered essential. The towns platted on the river bank included Wheeling, Van Buren, Ironwood Bluff (Riley, 1902), Bristol (Elliott, 1980), Camargo (Rodabaugh, 1975a), Aberdeen, Barton, Upper Colbert, Lower Colbert, Plymouth (Rodabaugh, 1975d), Westport, Nashville (Rodabaugh, 1975b), Pickensville, Grantsville, Plantersville, Memphis, Fairfield, Vienna (Clements, n.d.), Jamestown, Warsaw (Foscue, 1978), and Brooklyn (Fig. 29) (Rodabaugh, 1973b). In some of these platted towns nothing or next to nothing was ever erected except for the house, store or associated buildings of the property developer. This was the case at Bristol, Ironwood Bluff, Grantsville and Plantersville. In others after a promising start floods proved the town's situation to be untenable over the long term. Such was the case at Barton, Colbert, West-Port (Fig. 30) and Nashville. For the remainder the relatively low level of trade and railroad competition proved to be the greatest enemies. Wheeling, Van Buren, Camargo, Plymouth, Pickensville (Fig. 31), Memphis (Figs. 32 and 33), Fairfield (Fig. 34), Vienna (Fig. 35), and Warsaw (Fig. 36) enjoyed limited prosperity for a time after their establishment, but never could be considered more than villages. With the shift in trade flows to the railroads after 1850 the speculative river towns withered with the vine. By the turn of the century most of them had lost their identity in all but name. Today, only Memphis and Pickensville remain as skeletal communities largely because of the continued use of old housing stock by Black families.

The spatial form of the speculative ports was as stylized as that of the county seats. It routinely consisted of a gridiron street pattern oriented at right angles to the river bank, a pattern clearly shown at Memphis, Warsaw, and West-Port. One main street was designated leading away from the river towards the interior, and commercial lots were arranged around the junction of this street with a street running along the river front. The geometric shape of the city varied but there appears to have been a tendency to design towns with a shorter axis along the river and a longer axis toward the interior, perhaps because this tended towards the attainment of higher, drier ground for the residential blocks. In later years if the town proved a success the river-oriented plat was adjusted as the city expanded to conform with the Township and Range grid. Such was the case both at Columbus and Aberdeen.

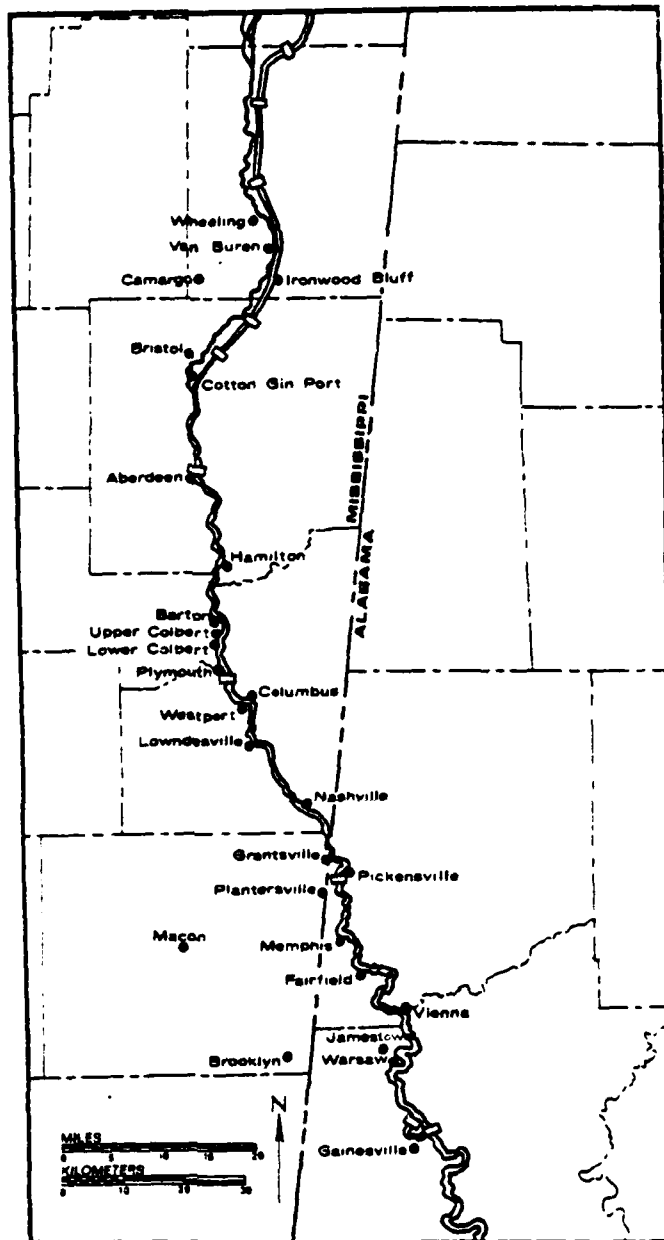


FIG. 29. THE RIVERPORT COMMUNITIES OF THE UPPER TOMBIGBEE AREA IN THE NINETEENTH CENTURY.

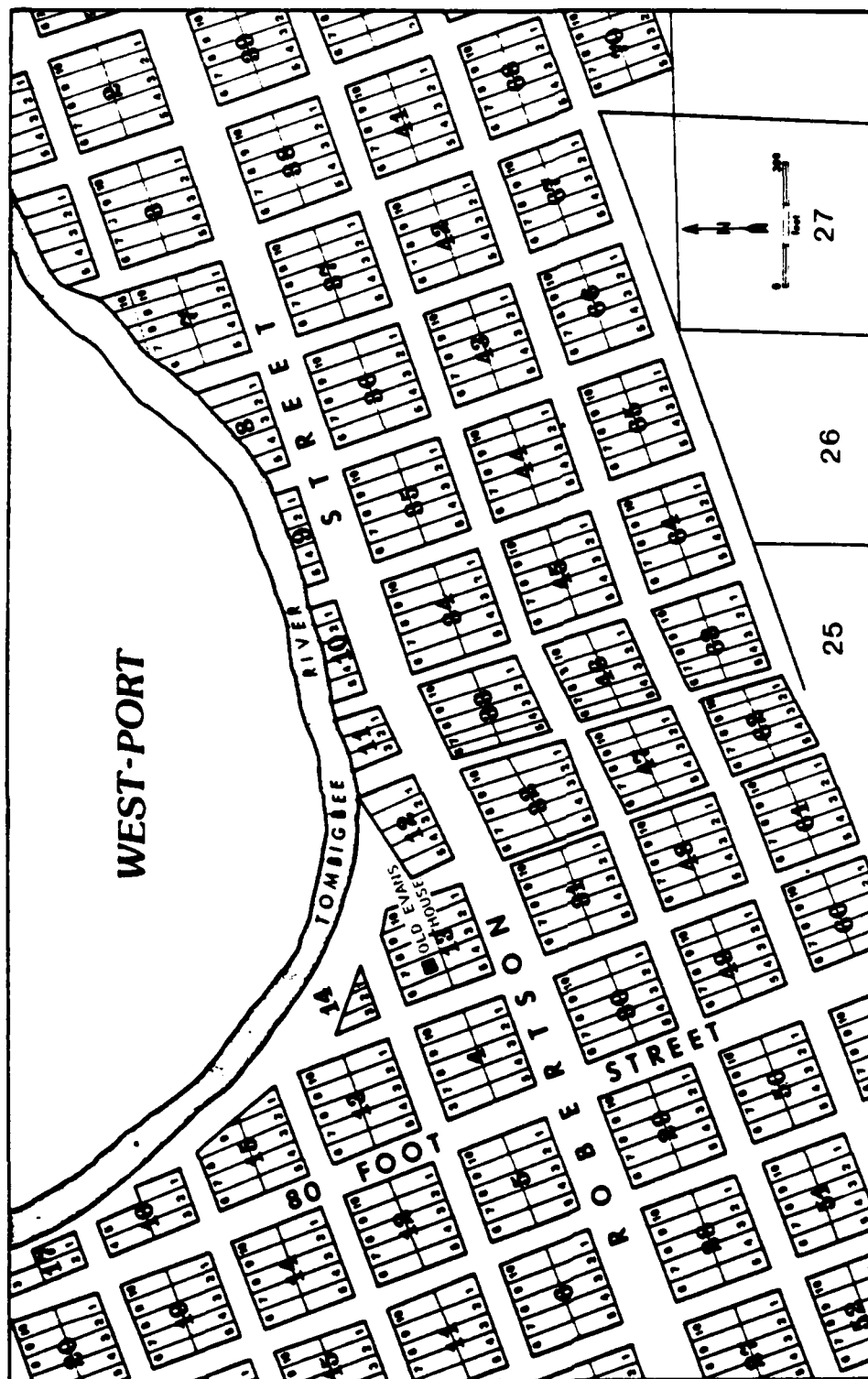


FIG. 30. PLAT OF WEST-PORT, 1827, FROM LOWNDES COUNTY DEED RECORDS.

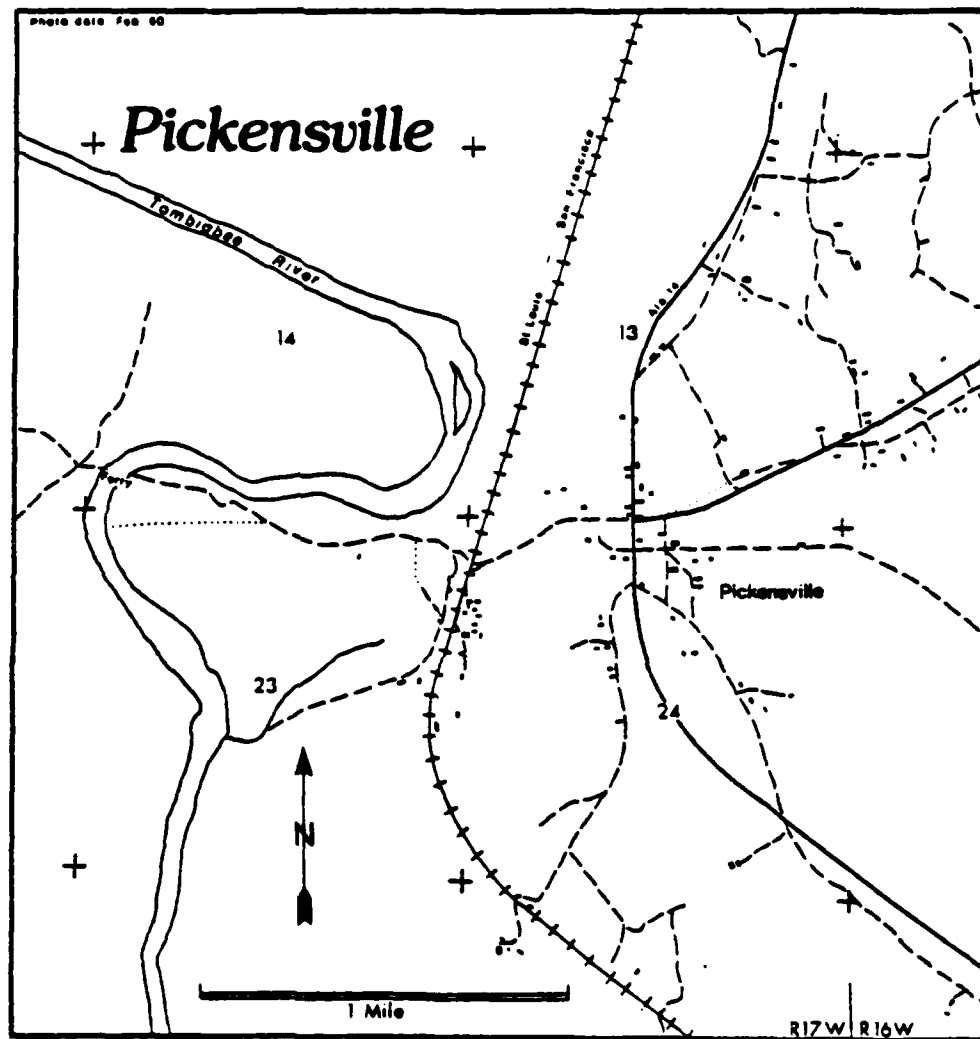


FIG. 31. PICKENSVILLE VICINITY, 1960, FROM AERIAL PHOTOGRAPHS.

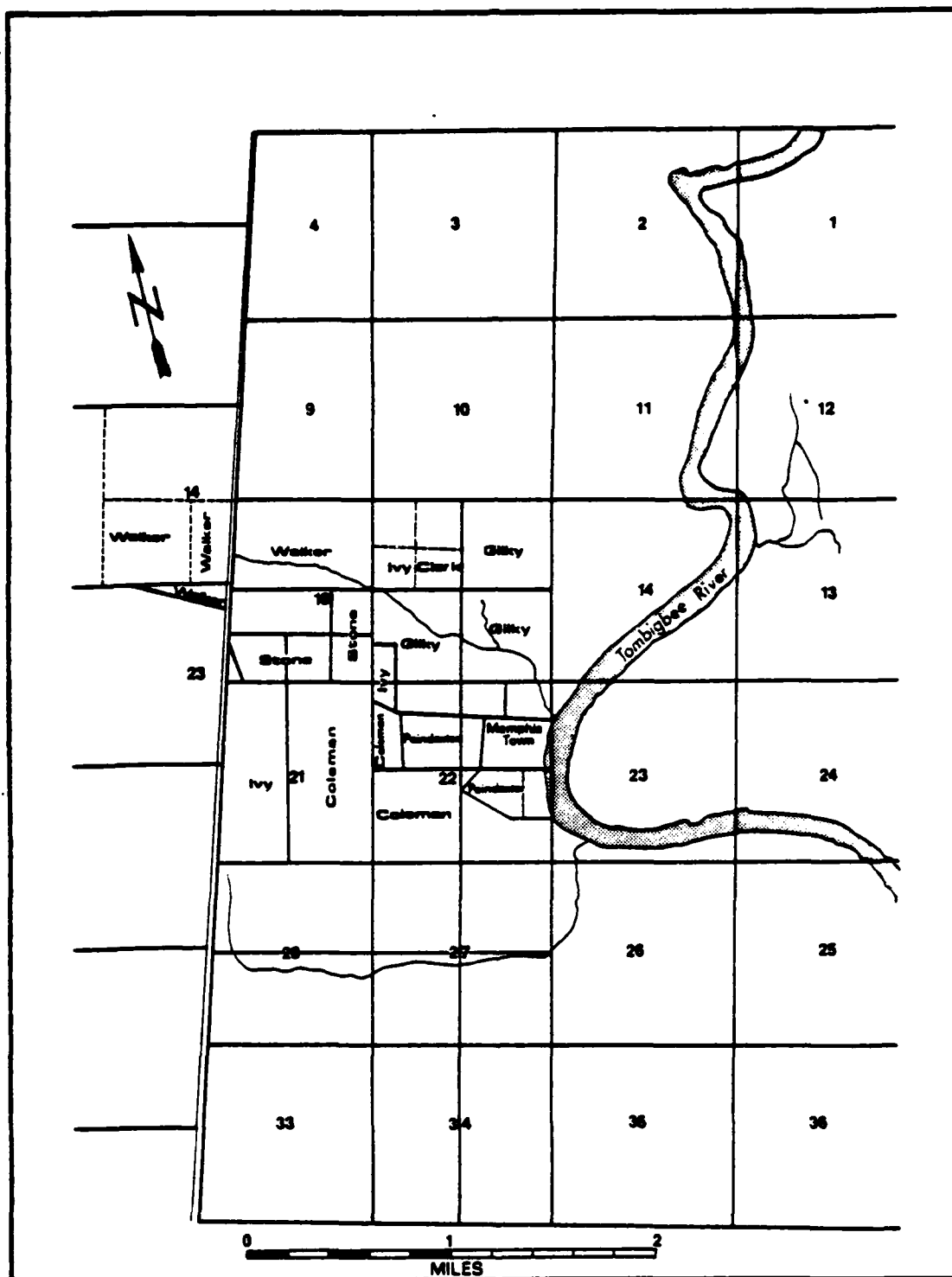


FIG. 32. SITE OF MEMPHIS, 1892, FROM PICKENS COUNTY DEED RECORDS.

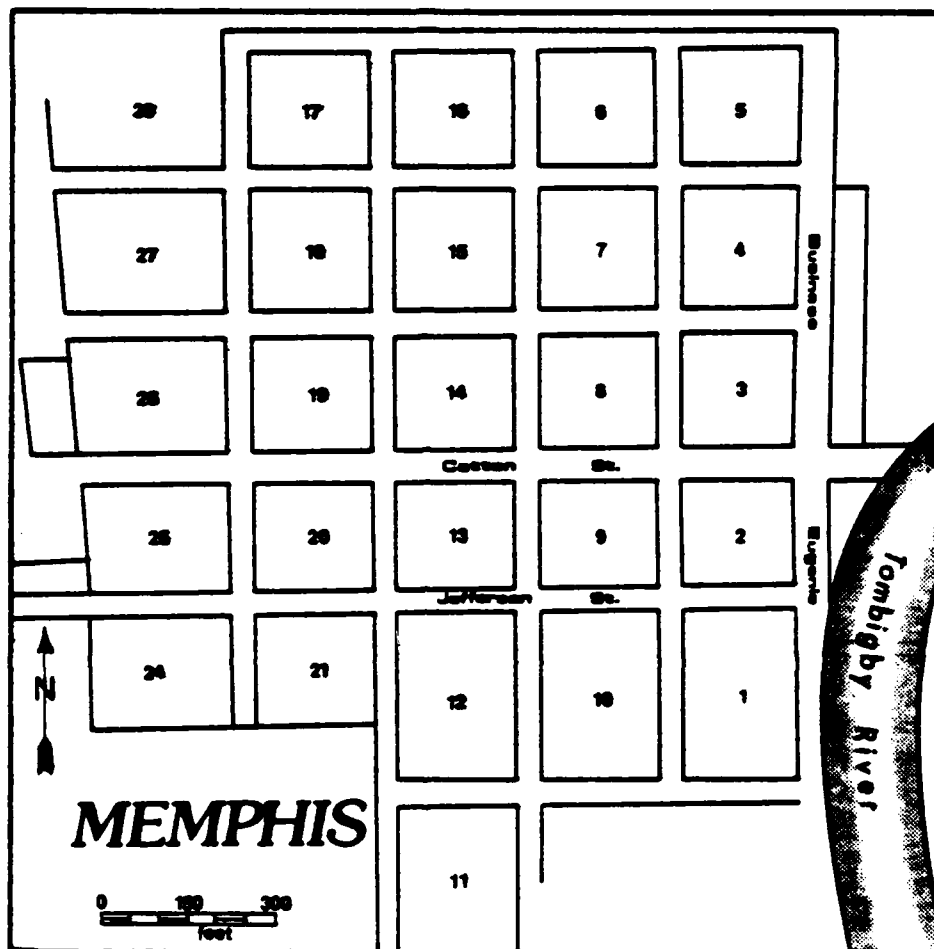


FIG. 33. PLAT OF MEMPHIS, FROM PICKENS COUNTY DEED RECORDS, 1892.

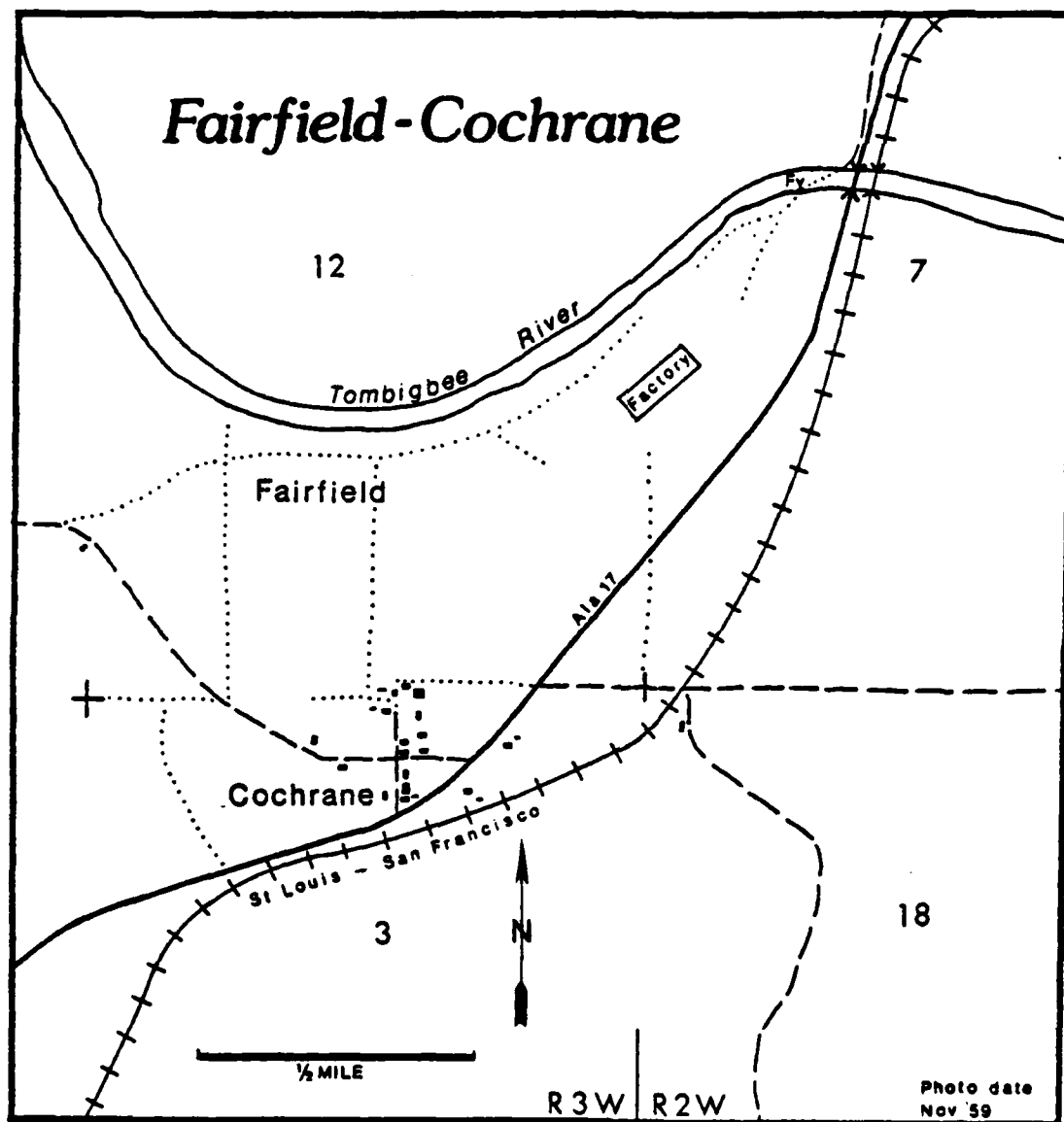


FIG. 34. FAIRFIELD VICINITY, 1959, FROM AERIAL PHOTOGRAPHS.

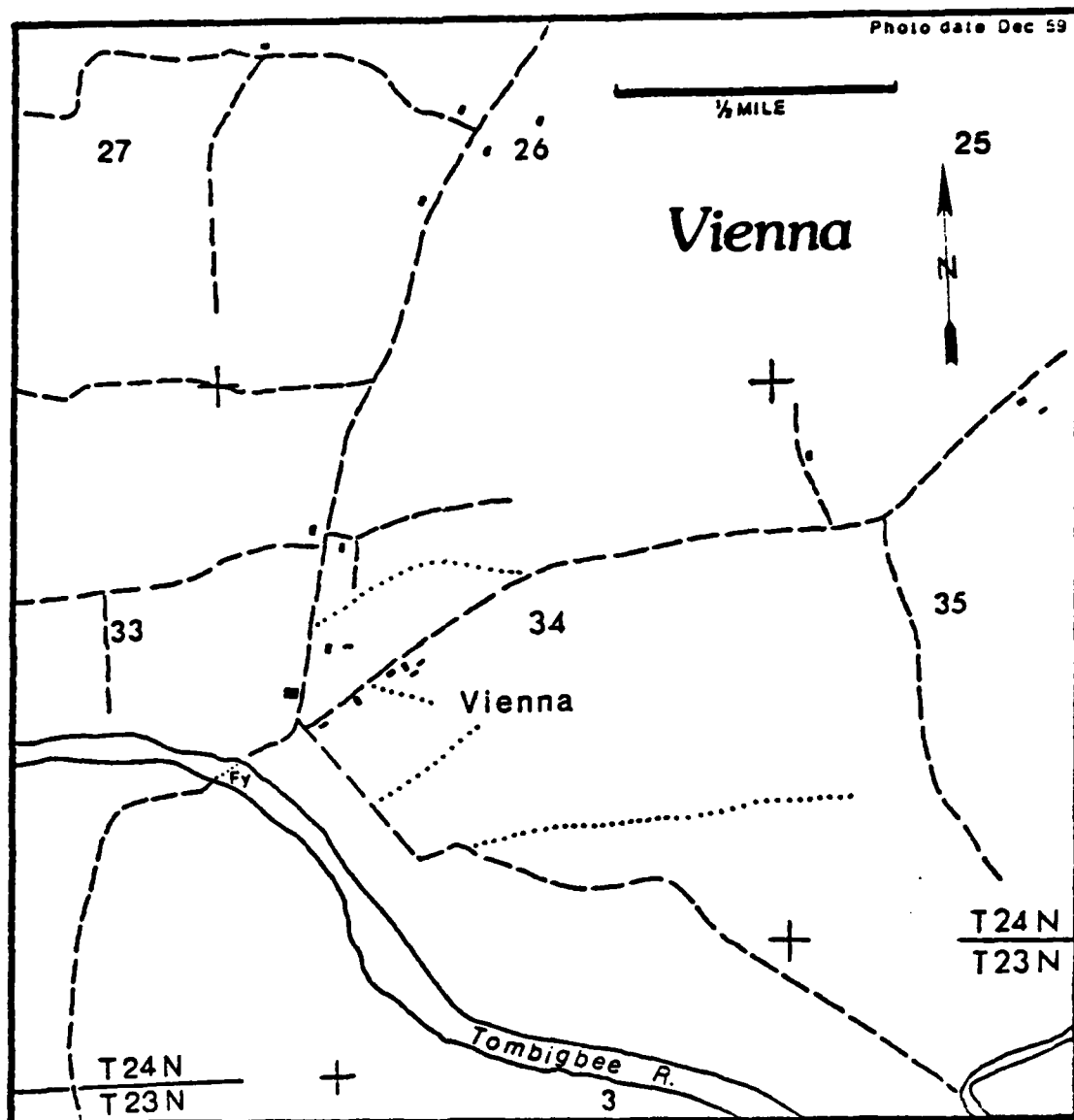


FIG. 35. VIENNA VICINITY, 1959, FROM AERIAL PHOTOGRAPHS.

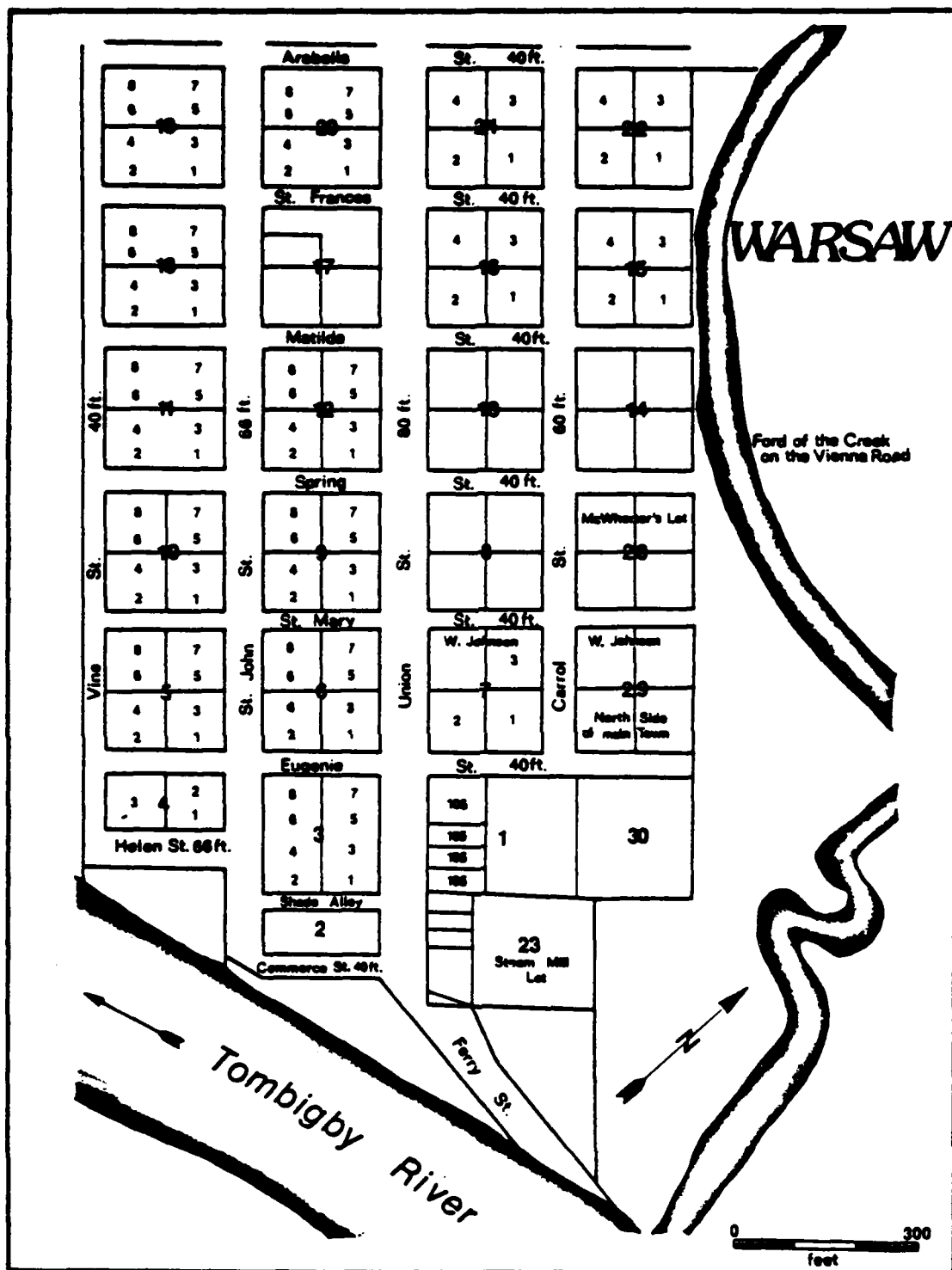


FIG. 36. PLAT OF THE TOWN OF WARSAW, 1840, FROM SUMTER COUNTY DEED RECORDS.

River ports evidenced certain topographic similarities in location. Most were established at a major crossing point, either ford or ferry, on the Tombigbee River. Virtually all were built where bluffs approached the river. A commonly preferred site was at the junction of a Tombigbee tributary (e.g., Vienna, Warsaw, Nashville, Columbus, Plymouth, Hamilton, Aberdeen, Ironwood Bluff) which in the early years may have helped to focus traffic.

Railroad Towns

The early speculation in river towns was paralleled to some degree in the latter part of the nineteenth century by the subdivision of lands along the railroads. Such activities were carried on both by the railroads as corporate endeavors and by private entrepreneurs hoping to cash in on fortuitous locations on these new avenues of trade. Among the town sites consciously promoted by the railroads were Artesia and West Point on the Mobile and Ohio; Nettleton, Amory, and Aliceville on the St. Louis-San Francisco; and Cochrane on the Alabama, Tennessee and Northern. Town promotion was viewed by the railroads in the late nineteenth and early twentieth century as one way to recoup their initial investments. This was particularly true of railroads like the M & O and Frisco, which received substantial land grants to encourage construction (Hoerl, 1975).

As with the river towns, junction points were favored as the focus of trade, and sometimes railroad staging points were significant as at Artesia and Amory. Some of a town's success could thus be predicted because they would be occupied by railroad workers. In some ways such communities can be looked upon as a variety of company town. The internal structure of railroad towns also resembled that of the speculative river towns. Grid street systems were laid out parallel and perpendicular to the main line. Commercial activities congregated along one or both sides of the railroad and along the main artery perpendicular to the tracks. Such was the pattern at Artesia, West Point, Okolona, Nettleton, Amory, Belmont, and Iuka. A similar focus was exhibited by Cochrane, Brooksville, Crawford, Paden, and Tishomingo. Residential blocks were set off away from direct contact with the main tracks. When a railroad town outgrew its original plat the subsequent subdivision tended to conform to the Township and Range grid (e.g., Amory, Fig. 37).

While the railroads were responsible for a massive reorientation of trade patterns after 1850 their main influence on the urban pattern was to foster the economic base of some existing towns at the expense of others. In some instances, however, when a new railroad town developed close to, but not conformant with, a pre-existing community, the old community merged with or migrated to the new one. Some examples were Burnt Mills transferring into Tishomingo (Summers, 1957), Cotton Gin Port removing to Amory (Rodabaugh, 1975c), Franconia merging with Aliceville (Ivey, 1954;Clanahan, 1964), and Fairfield losing its identity to Cochrane (Ivey, 1954;Clanahan, 1964). At places where the railroad passed on the outskirts of town, similar internal structural adjustments were sometimes made (e.g., Macon, Aberdeen, Columbus, and Pickensville) with residences being repelled by the tracks and commercial and industrial facilities attracted.

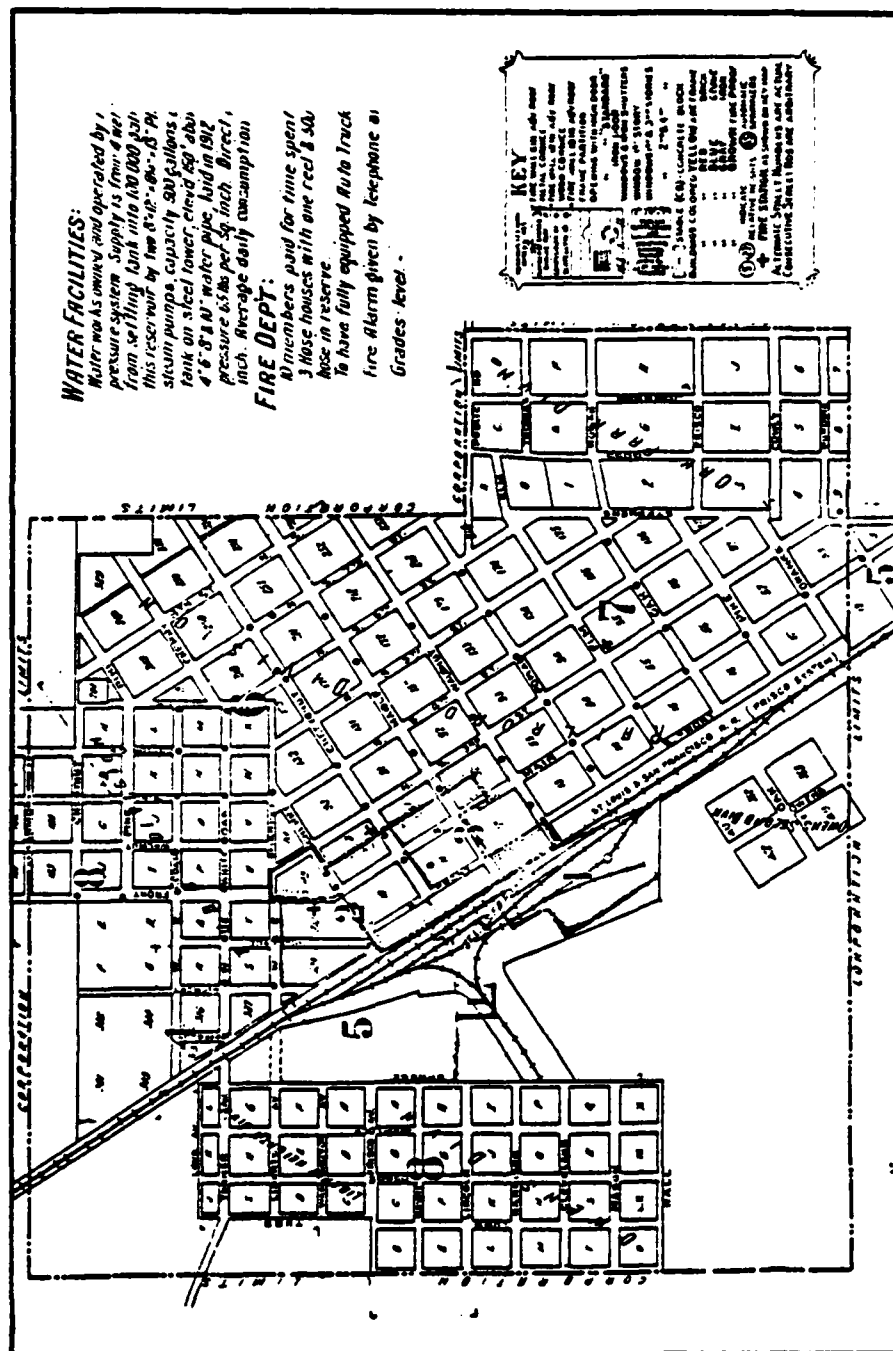


FIG. 37. AMORY FROM THE SANBORN ATLAS, 1918.

General Commercial and Residential Structure of Towns

Major difficulties were experienced in attempts to determine the internal spatial structure of early towns. While old city directories provide lists of commercial activities by street address, and while Sanborn fire insurance atlases are available for Columbus, Aberdeen, Amory, and Fulton after 1885, the physical arrangement and actual dimensions of structures in the smaller towns and villages are less readily obtained. The statements which follow must be viewed as generalizations from a substantially incomplete record.

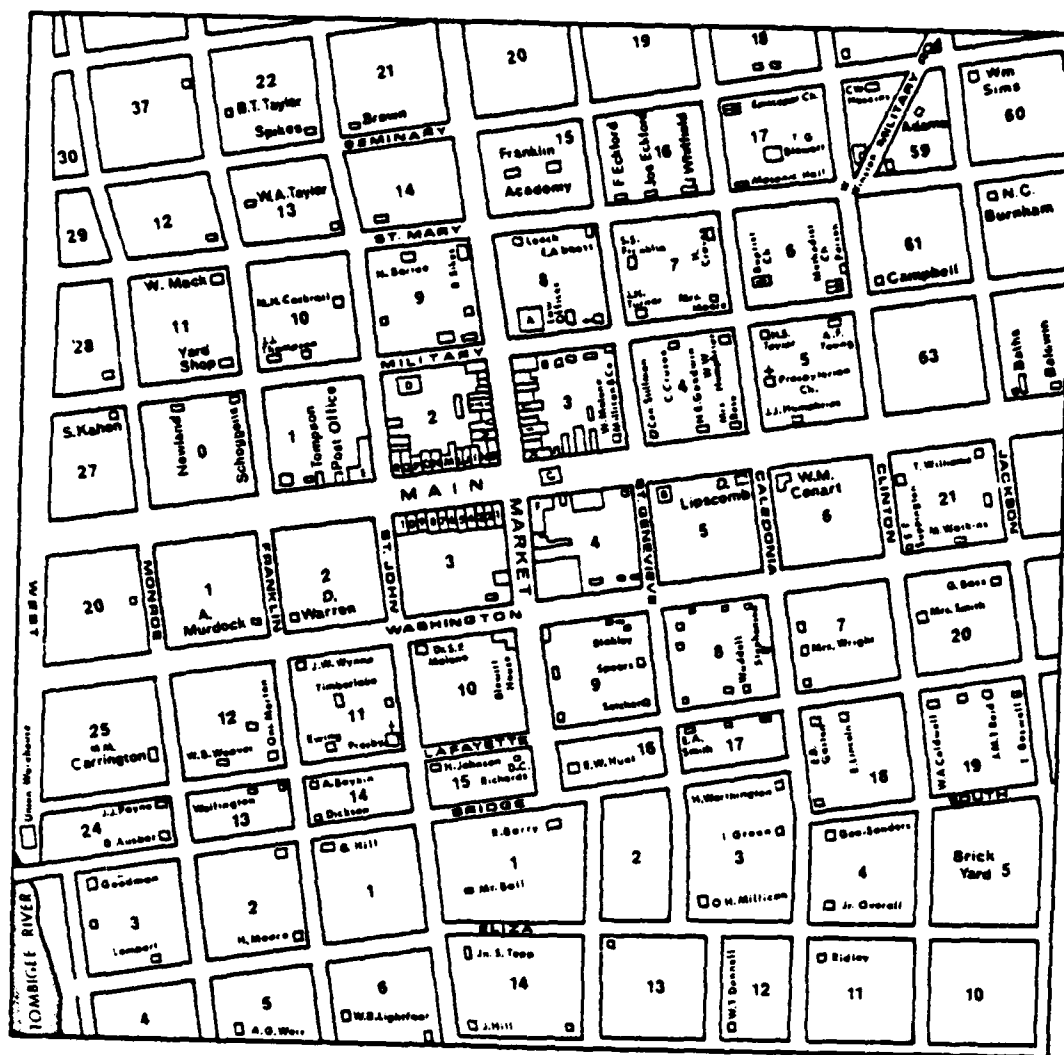
Towns were invariably platted according to the rectangular gridiron street system, the easiest land subdivision of all to lay out when speed or the desire for land speculation guided the hand of the surveyor. The rectangular survey system adopted by the Continental Congress and the policies for disposal of western lands established in 1785 governed the settlement of the American West and South until the closing of the frontier (Pattison, 1957; Thrower, 1966). Section lines became rural roads. Where such roads intersected small hamlets grew up slowly or were laid out with an eye to quick development stimulated by clever promotion and exaggerated claims of their advantageous locations. The original right angle crossing provided the base lines for new streets parallel and perpendicular to the section line roads. Such land subdivision gave no encouragement to the creation of an aesthetic urban environment.

If a town prospered, then both its commercial and residential areas grew and this sometimes required structural shifts in the land use pattern. Whereas the earliest commercial ventures sought proximity to the riverbank, as the town grew it generated its own demands which encouraged commercial activities and services to locate closer to developing residential areas. At the same time, as commercial areas grew they did so at the expense of older residential areas so that there was commonly a transition zone on the margin of the commercial district which was occupied by both commercial and residential uses. In most towns there is no marked segregation of major land use classes although areas dominated by a particular land use category can be recognized.

Commercial Activities

The intra-urban locational pattern of commercial activities differed little from town to town. This might be expected since the commercial base of railroad towns, county seats, and river ports was the same and in a number of instances the main towns qualified in each of the three functional categories. Retail activities were usually clustered around the point of major traffic activity whether it was the river front, rail front or courthouse front. Often in smaller communities the point of peak traffic flow was a road intersection. Competition for land proximal to the point of peak traffic flow tended to create a peak land value point at the most heavily trafficked location.

Retail activities were usually arranged in ranks away from the point of peak traffic, and were located in buildings which fronted on the main high-traffic street (Figs. 38-48). They had narrow storefronts and extended deep into their respective city blocks. In towns where the courthouse square



- | | | | |
|---|---------------------------------|----|----------------------------------|
| A | COURT HOUSE | R | J.J. SHERMAN DRY GOODS |
| B | TOWN HALL | S | D.C. RICHARD & CO. BOOK STORE |
| C | MARKET PLACE | T | B.B. WILKINSON DRY GOODS |
| D | JAIL | U | HADEN & OTTLEY GROCERIES |
| E | EAGLE HOTEL | V | D.M. MATTHEWS & CO. AUCTIONEERS |
| F | COLUMBUS HOTEL | W | WINSTON & HILL GROCERIES |
| G | A.N. JONES & CO. DRUG STORE | Y | W.J. SMITH SADDLER |
| H | FRANKLIN & BROS. DRY GOODS | 1 | R.N. PHILPOT & CO. GROCERIES |
| I | H. JOHNSTON MERCHANT TAILOR | 2 | YONGUE & SMITH DRUGGISTS |
| J | COLUMBUS WHIG OFFICE | 3 | ALFRED THACHER GROCERIES |
| K | G. HILL DRUG STORE | 4 | W. OSGOOD DRY GOODS & SHOES |
| L | KEELERS DRY GOODS | 5 | DICKSON & WILLIAMS GROCERIES |
| M | T.H. MARCH & CO. EXCHANGE | 6 | ECKFORD & CAGE DRY GOODS |
| N | TAYLOR HALE & MURDOCK DRY GOODS | 7 | WEAVER MULLEN & CO. DO |
| O | J. DECHERD & CO. DRY GOODS | 8 | A. CURTIS & CO. SHOES & CLOTHING |
| P | G. FRAZEE MERCHANT TAILOR | 9 | J.M. DUNN GROCERIES |
| Q | F.B. & W. WARD JEWELERS | 10 | C.W. BROWN DO |
| R | COZART & SHELTON DRY GOODS | | |

FIG. 38. DOWNTOWN COLUMBUS, 1859, FROM LOWNDES COUNTY LIBRARY ARCHIVES.

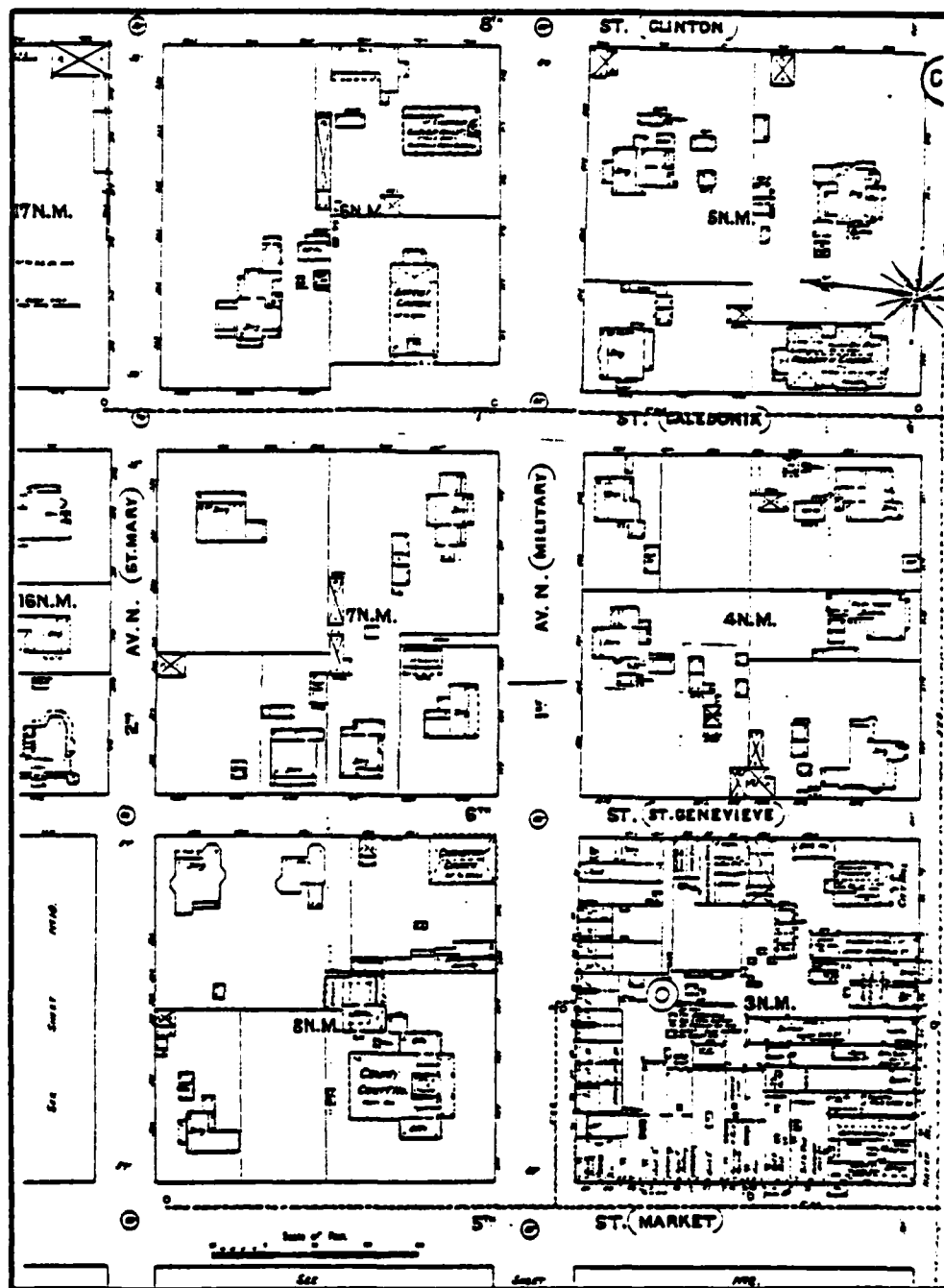


FIG. 39. SECTION OF DOWNTOWN COLUMBUS FROM SANBORN ATLAS, 1890.

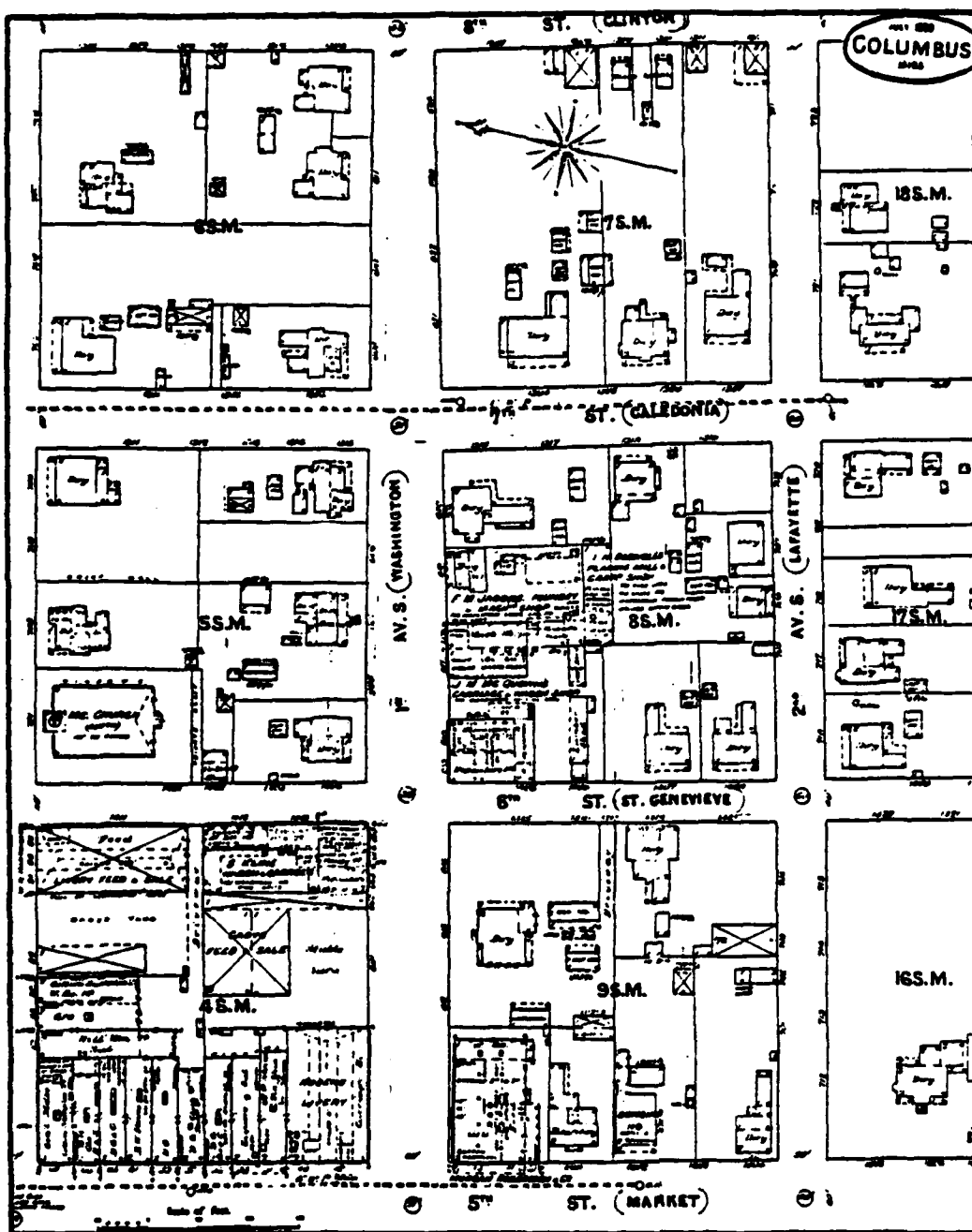


FIG. 40. SECTION OF DOWNTOWN COLUMBUS FROM SANBORN ATLAS, 1890.

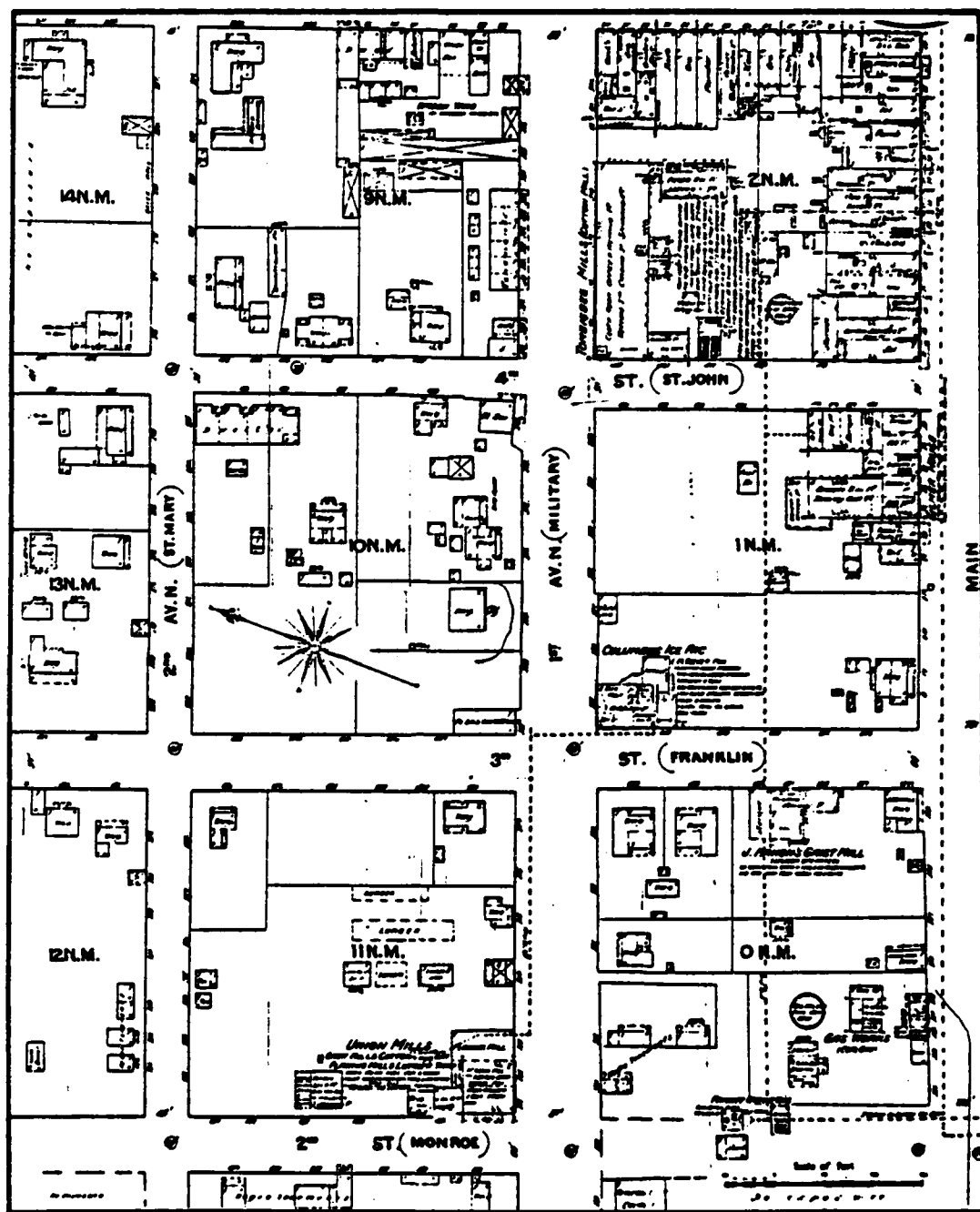


FIG. 41. SECTION OF DOWNTOWN COLUMBUS FROM SANBORN ATLAS, 1890.

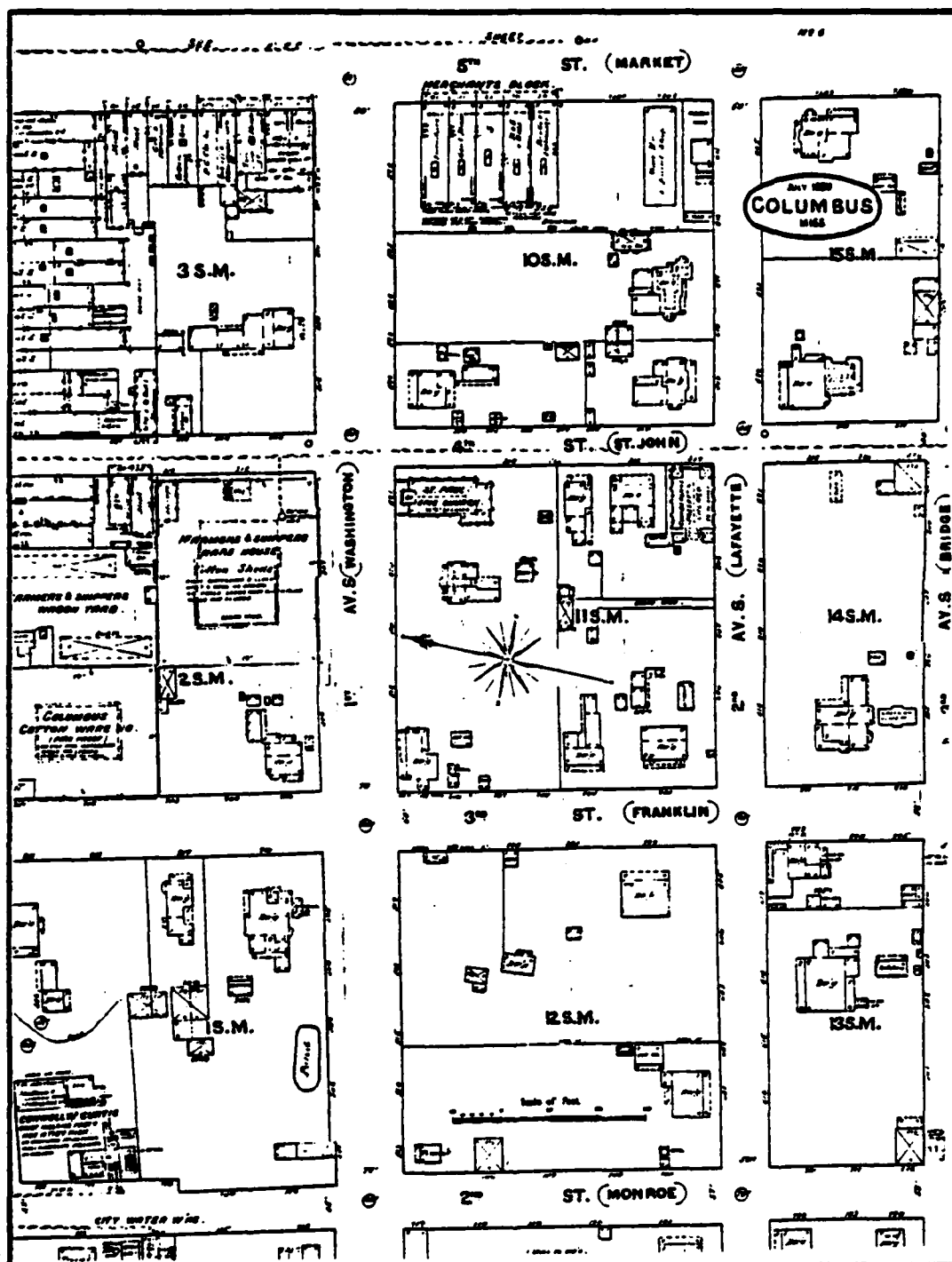


FIG. 42. SECTION OF DOWNTOWN COLUMBUS FROM SANBORN ATLAS, 1890.

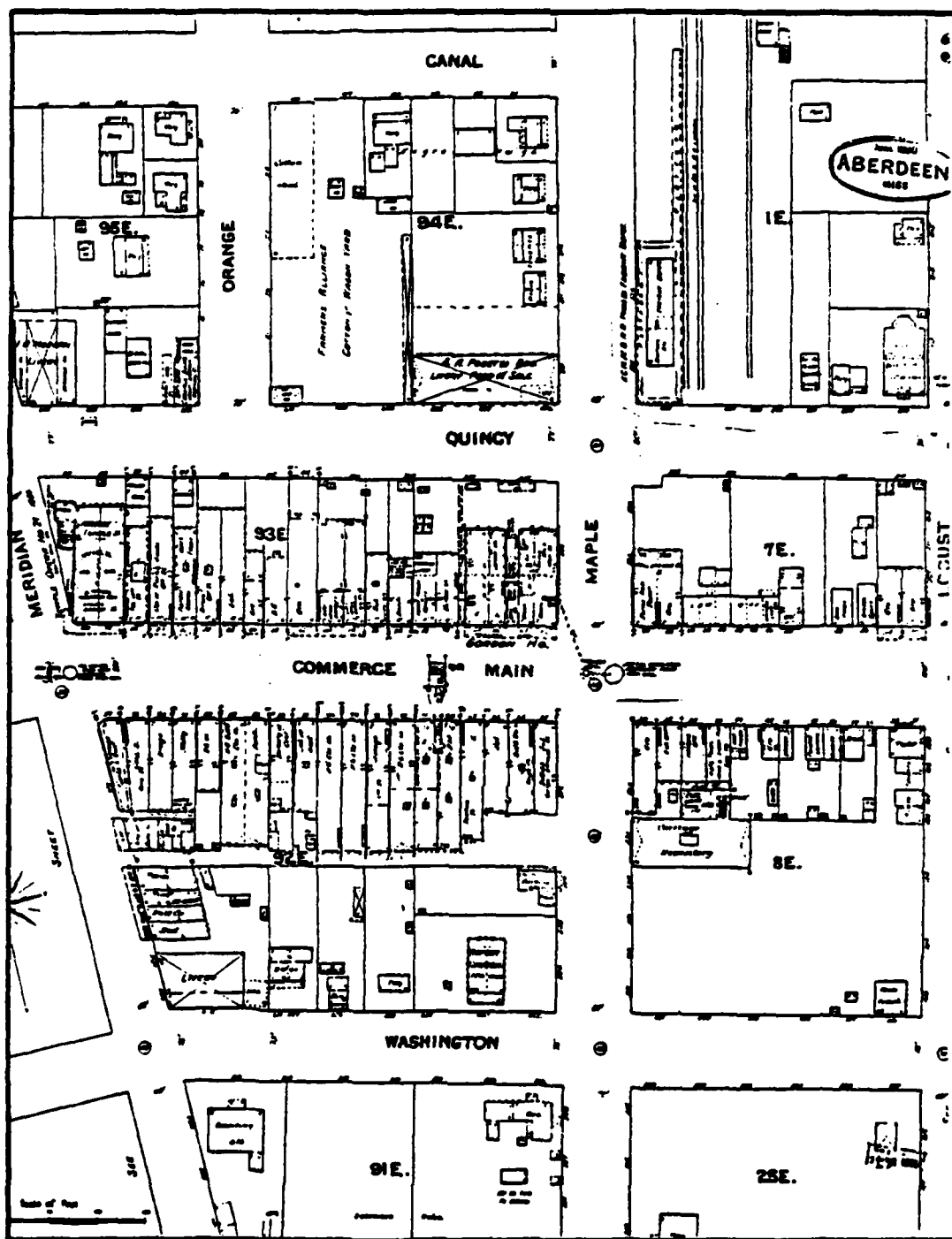


FIG. 43. SECTION OF DOWNTOWN ABERDEEN FROM SANBORN ATLAS, 1890.

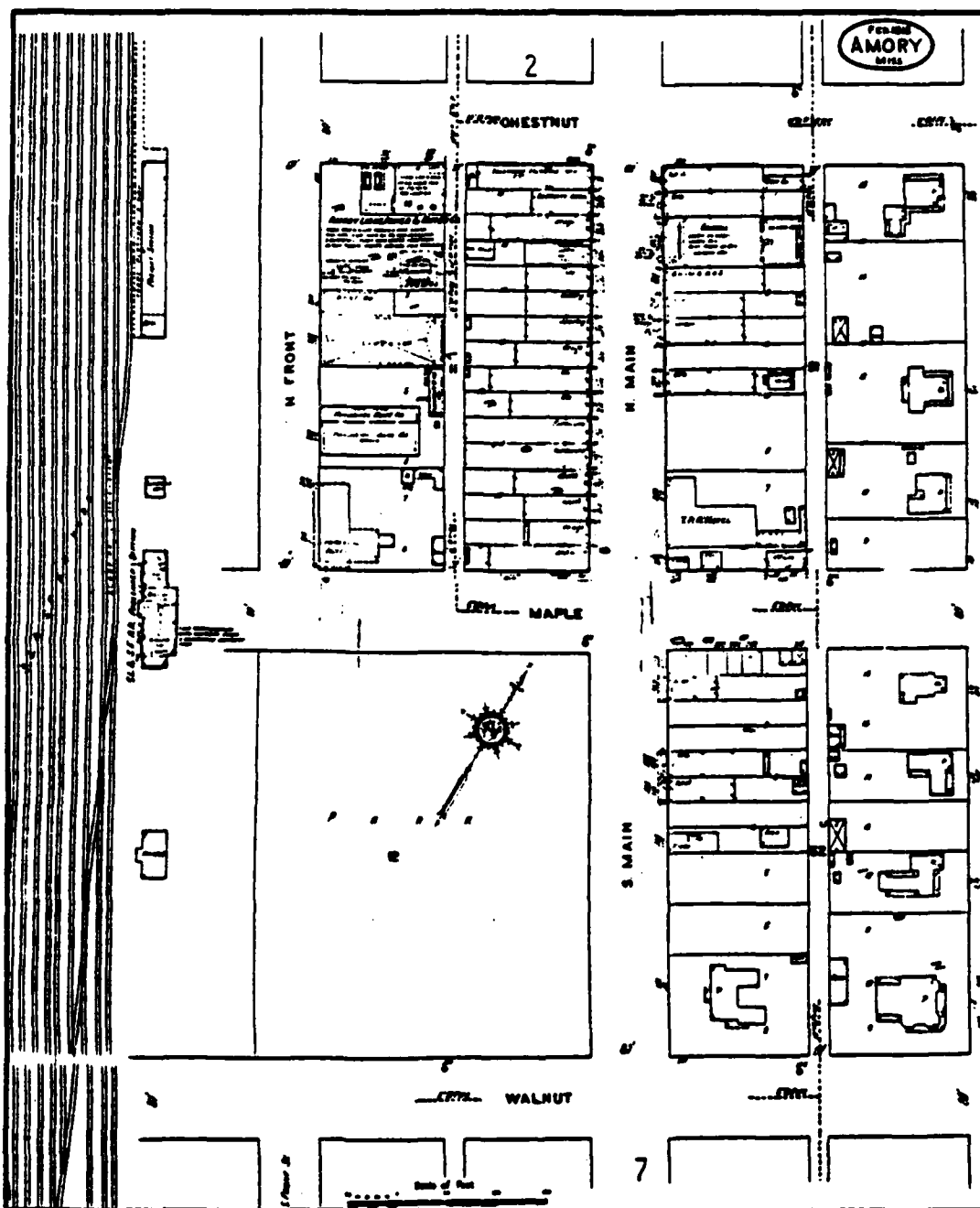


FIG. 44. DOWNTOWN AMORY FROM SANBORN ATLAS, 1918.

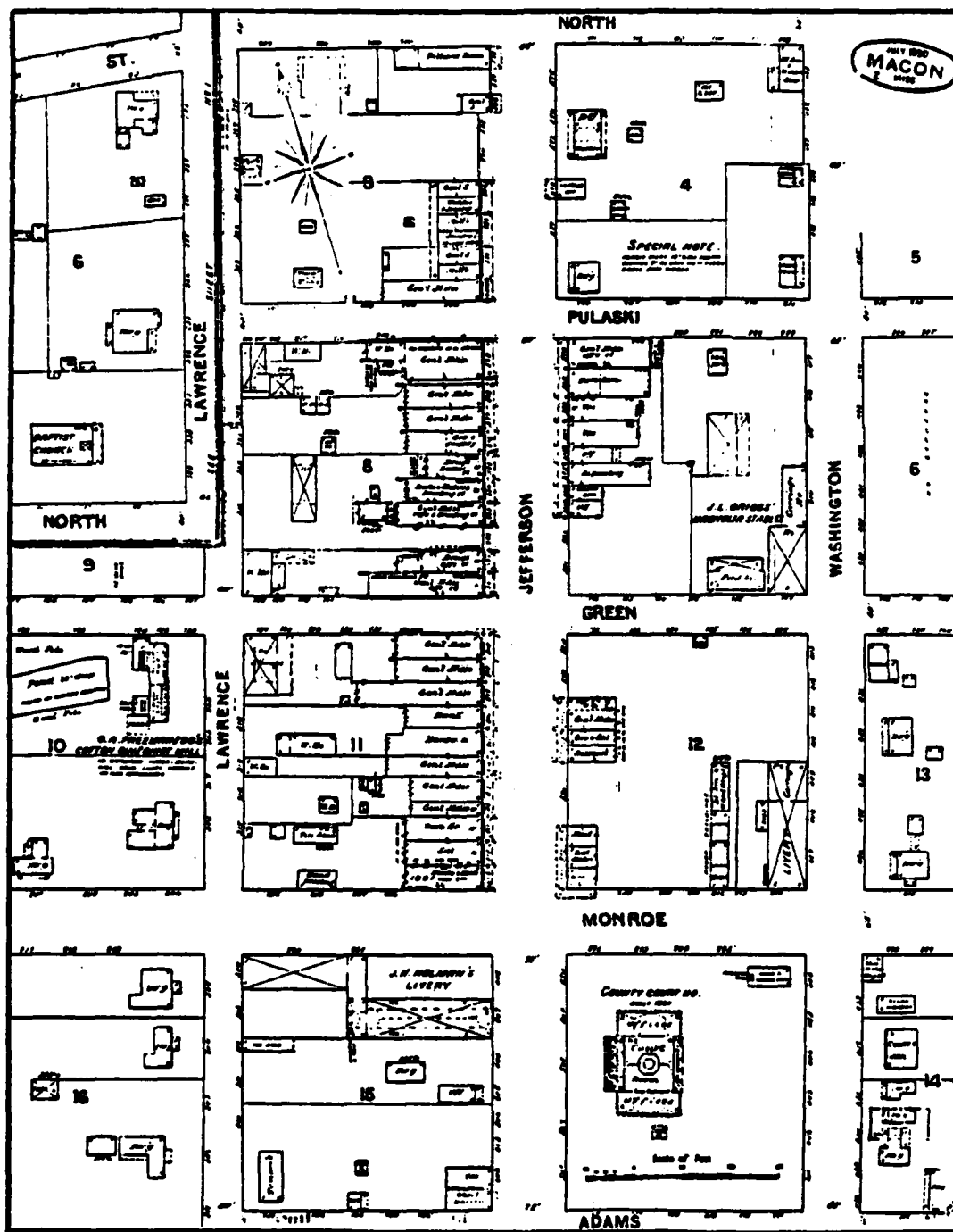


FIG. 46. DOWNTOWN MACON FROM SANBORN ATLAS, 1890.

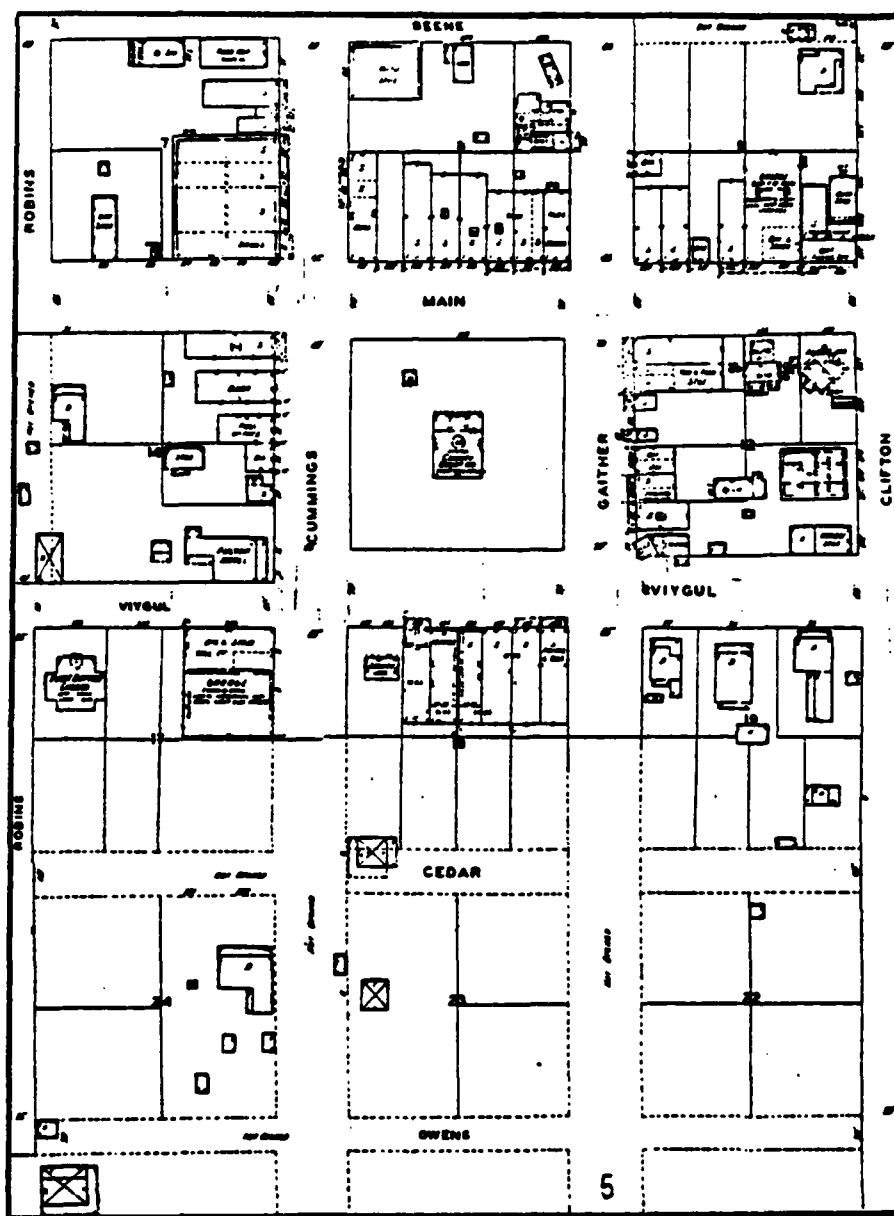


FIG. 47. DOWNTOWN FULTON FROM SANBORN ATLAS, 1929.

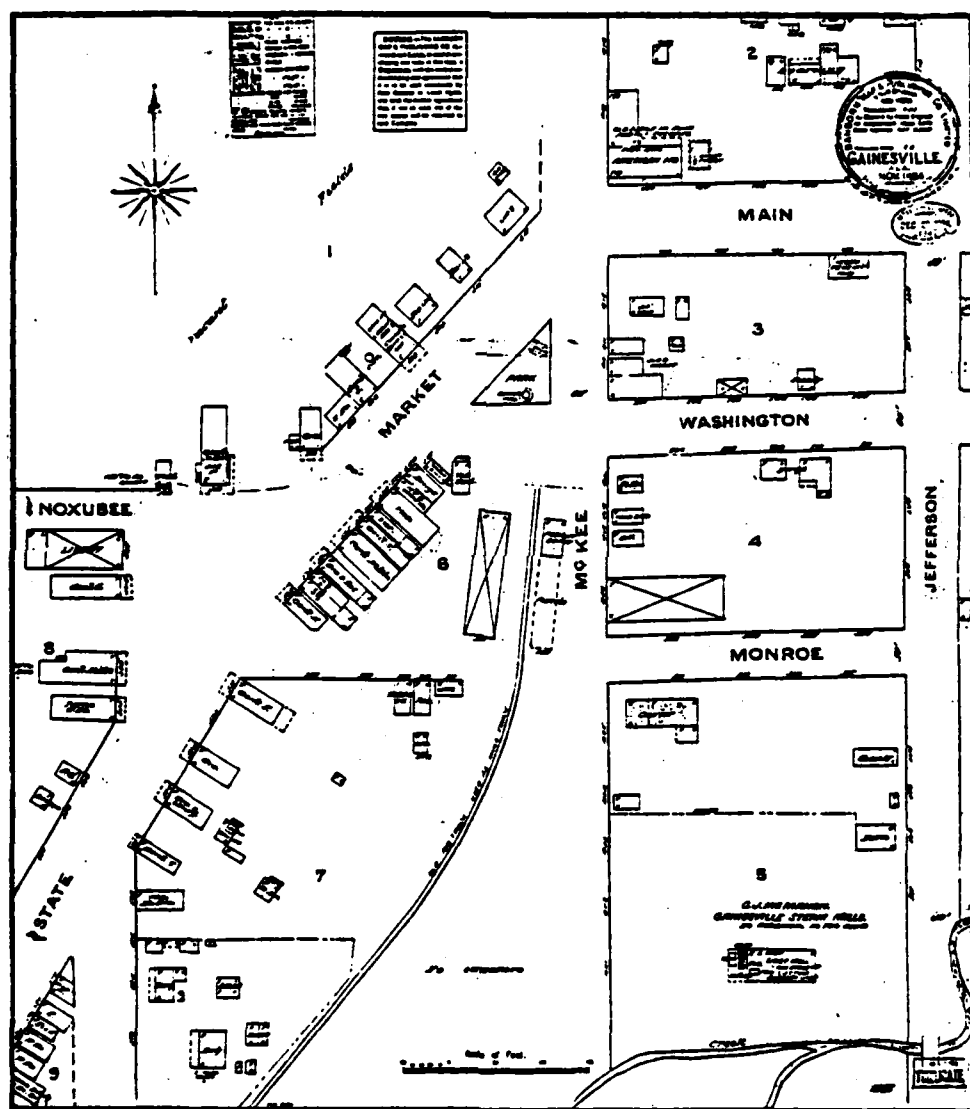


FIG. 48. TOWN OF GAINESVILLE FROM SANBORN ATLAS, 1884.

provided a central focus, stores were arranged around the square so that their fronts faced toward the courthouse. Store buildings had an almost universal rectangular shape which was applied whatever the block structure of the town plat. In small towns even during the antebellum period, stores were built primarily of wood (Atherton, 1949). In the later nineteenth century in the larger towns brick construction predominated, probably as an attempt to reduce fire hazard. The conformity of design in southern store building has been noted by Pulliam and Newton (1973:1):

At least since about 1840 and through the first third of the twentieth century, the small store nearly always assumed a plan similar to the shotgun or the bungalow house types. Such a store was longer from front to back than it was wide; the ridge of its gable roof ran the length of the structure; gables usually overlooked the front and rear--although the front gable might have been concealed behind a false front; shed additions were frequently added to sides, rear, front, or in a combination of these. Some had a second story that served as storage, a meeting hall, office space, or a residence. Nearly all were built of wood. Nearly all small-town shops, crossroad stores, plantation commissaries, company stores conformed to this basic plan. Yet each was unique, reflecting subtle differences from owner to owner and from community to community, as well as special characteristics of different kinds of business.

Other writers have suggested three possible reasons for the dominance of the gable front store in the nineteenth century South. Hamlin (1944) insists that Americans in the early nineteenth century had a fascination with things Greek, and this coincided with the widespread dissemination of the country store across the landscape. Kniffen (1965) pointed out through his concept of the "Dominance of Contemporary Fashion" that while novel styles tend to be adopted first in the east they tend to become dominant in areas of new development. This, he says, explains why Alabama and Mississippi became, after about 1840, largely collections of wooden Greek temples. J.B. Jackson (1972) with his concept of "Other Directed Architecture" noted that each age has its own "welcome signs" built into the structures of buildings designed to serve the public. It was the exterior form of the country store which symbolized in the Southern mind a group of services and social functions provided there, and thereby assured its continuation.

The locational arrangement of specific retail businesses in towns is not predictable. While a limited amount of clustering was evident among individual uses, such as groceries or law offices, commercial areas were characterized by a jumble of functions ranging from bakeries to hardware, to banks, to hotels, to jewelry, to tailoring, to saloons, and others (Figs. 38-48); small-scale manufacturing (e.g., harness making, gunsmiths, tinsmiths, cabinet making, and shoemaking) was common in the business district, as were certain warehousing and storage activities (e.g., cotton storage and livery stables). In the larger towns, Columbus and Aberdeen, business districts were comprised almost entirely of commercial activities, although in some instances the rear side of business blocks accommodated Black tenant houses, and in a few locations in the business district, apartments were incorporated within the store structure.

Warehousing appears to have been a significant commercial function in both the large and small towns. The great emphasis was on cotton storage and three types of locations are common. The first is on the river bank, presumably related to the early role of steamboats in cotton transshipment. Cotton warehouses at the river bank were particularly characteristic of the small river ports (Fig. 49). A second type occurred adjacent to the railroad tracks, primarily in cities such as Macon, Aberdeen, Columbus, and West Point (Fig. 50). The third location occurred close to the retailing district and is more difficult to explain (Figs. 51 - 53). Perhaps this location was related to the proximity of lodgings for patrons of the warehouse, although several of the warehouses provided quarters for both visiting clients and their animals.

While the physical structure of individual cotton yards or warehouses varied considerably, they appear to have had several common elements. One was the cotton shed or warehouse. In general a shed had open sides while a warehouse had walled sides. Cotton sheds varied considerably in floor area but were usually rectangular in shape. Commonly, cotton sheds were arranged to enclose an open yard on three sides, and frequently the floors of the sheds were dirt. Another feature of the cotton warehouse was the camphouse used by wagon drivers employed in the hauling of the cotton from farm to warehouse. A third component was the wagon yard for overnight storage of wagons and animals, and a fourth feature appearing less commonly was an eating house. Some combination of these elements is to be expected in any cotton warehouse site.

Residential Structure

The residential areas of the larger towns generally extended for a number of blocks away from the business district. While there was no marked separation or clustering of residences by particular socio-economic category of occupant, certain generalizations can be made about the organization of residential areas. These are graphically expressed in schematic diagram form in Figure 54. The most substantial houses were located close to, but not in the business district and usually on the highest, driest ground available. This was probably a reflection of the fact that the business and professional people of the town were generally the people of greatest affluence, and they required both access to their places of business and an aesthetically attractive residential environment.

Between the business district and the better quality houses was a narrow zone occupied by miscellaneous uses and by lower quality housing. This was the case at Columbus, both southeast and east of the downtown area, and at Aberdeen on the northeast, southeast and southwest sides of the business district where expanding businesses both commercial and industrial extended into older residential areas. Outside the Fall Line Hills region such transitional areas were primarily populated by Blacks. Poor quality housing was also found towards the edge of town, beyond the higher quality residential housing. Such housing was occupied by both whites and Blacks. In some locations close to the railroad or the river, heavier industries (e.g., cotton mills, sawmills) were interspersed with the lower quality residences.

In most residential blocks only a small fraction of the total block area was covered by building structures. In the higher quality residential areas lot sizes tended to be larger. There the residential unit consisted of a big

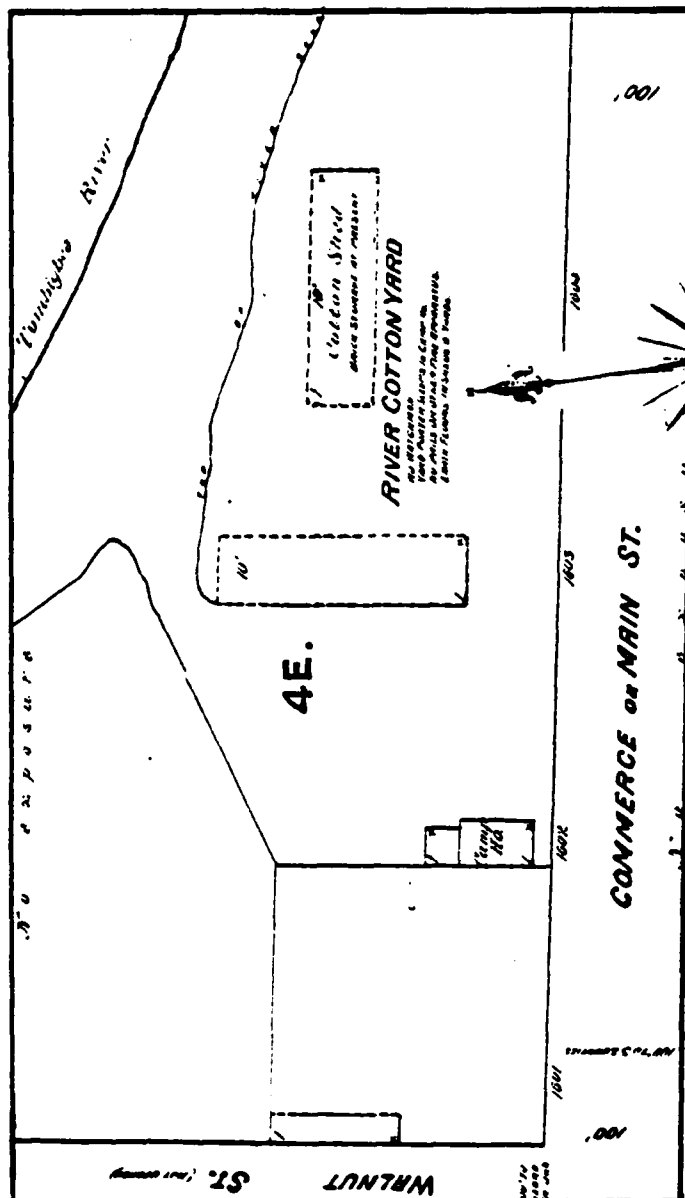


FIG. 49. RIVER COTTON YARD, ABERDEEN, FROM SANBORN ATLAS, 1890.

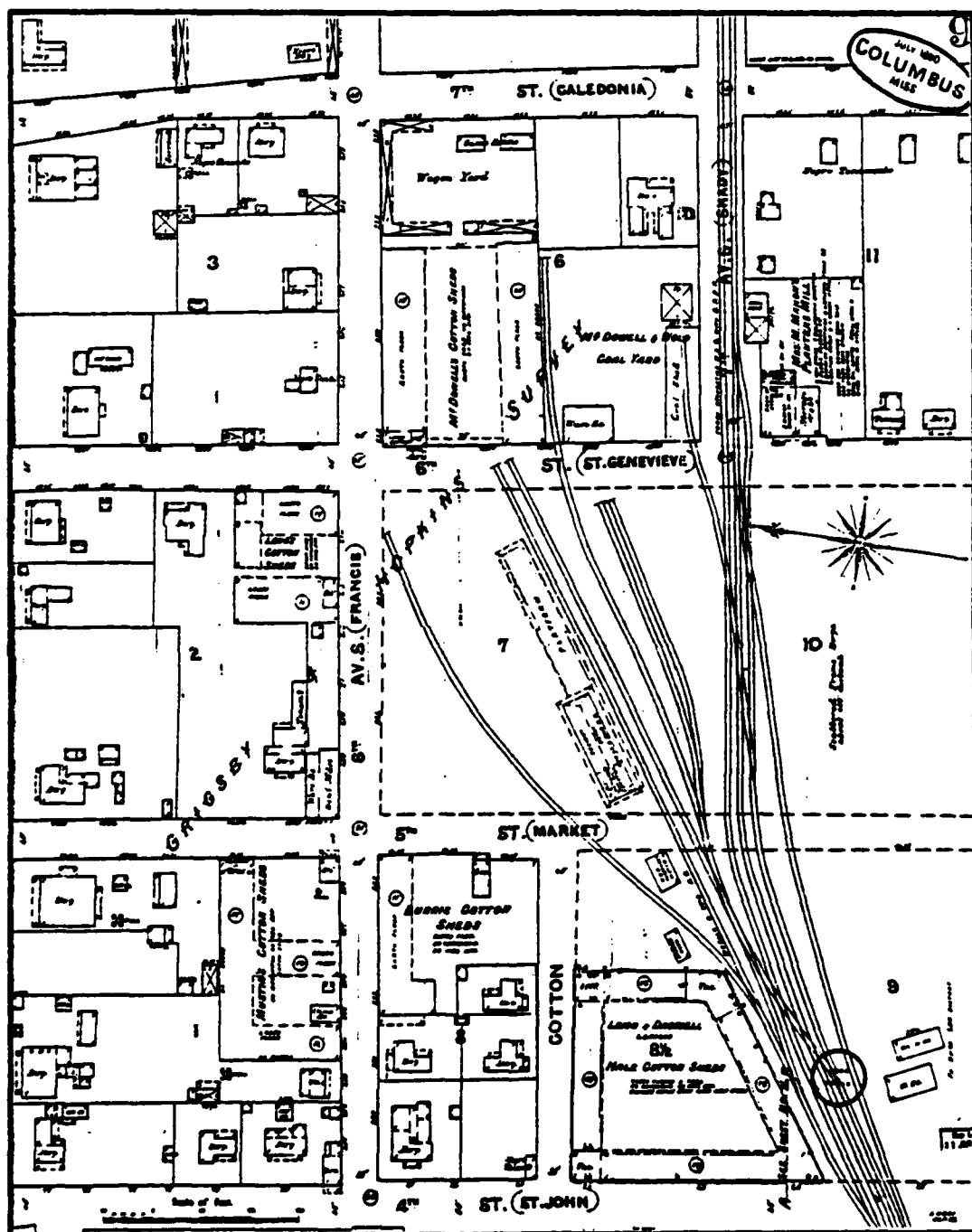
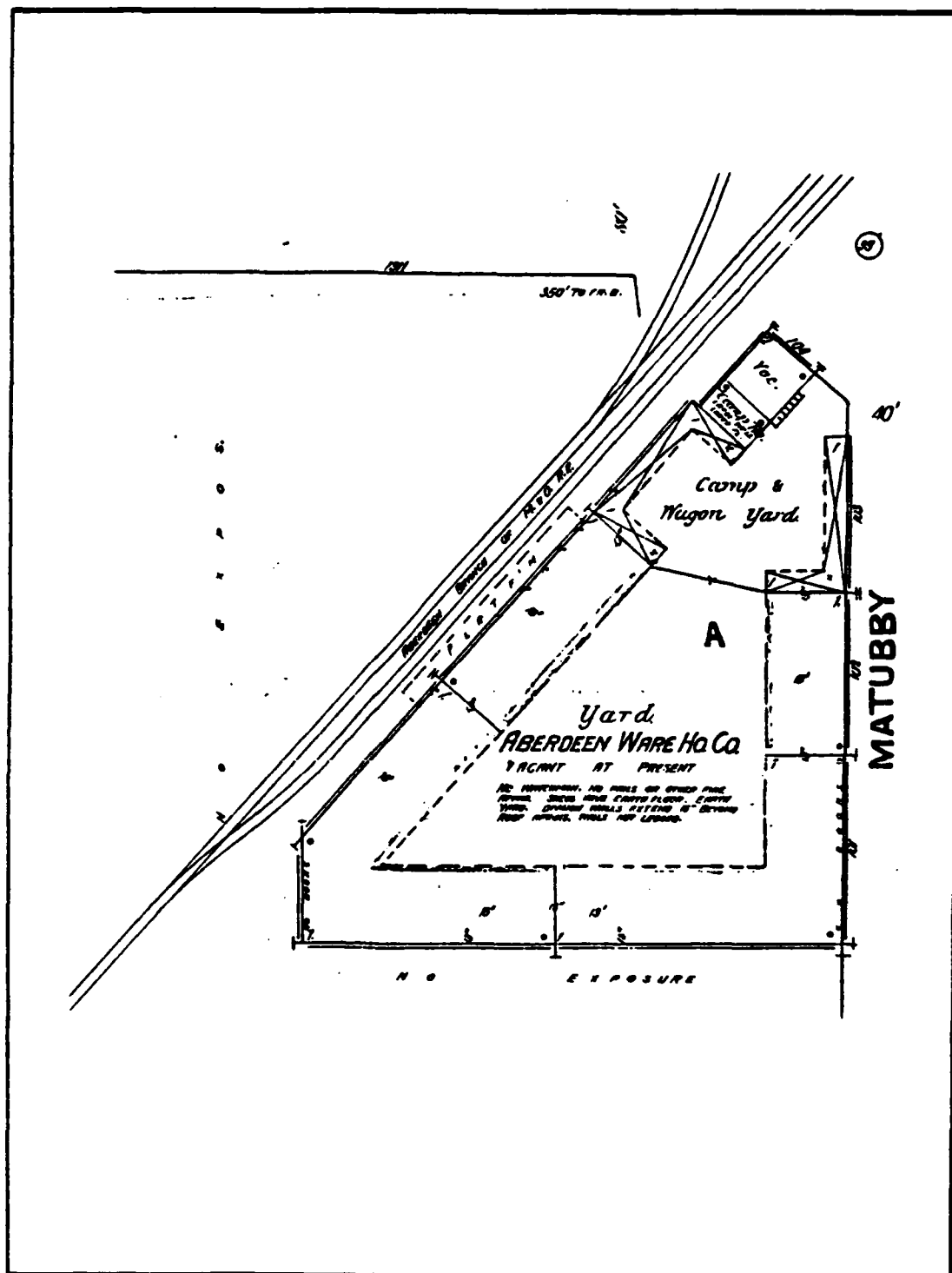


FIG. 50. COTTON WAREHOUSES, COLUMBUS, FROM SANBORN ATLAS, 1890.



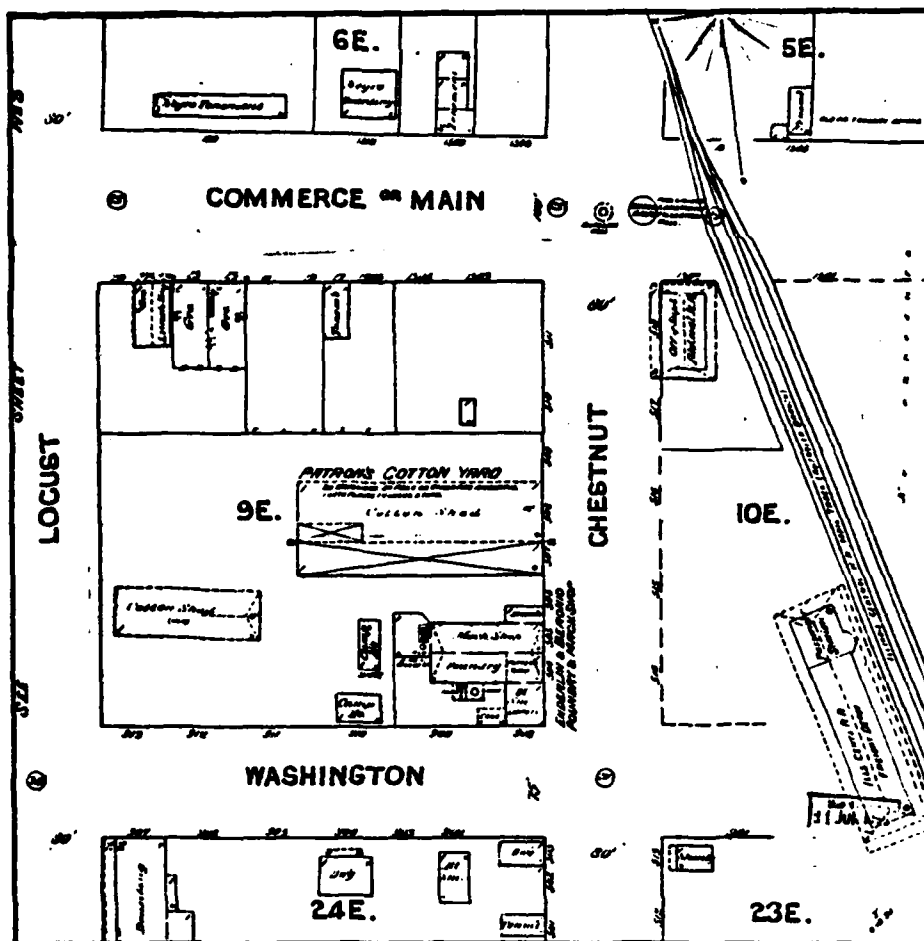


FIG. 52. PATRON'S COTTON YARD, ABERDEEN, FROM SANBORN ATLAS, 1890.

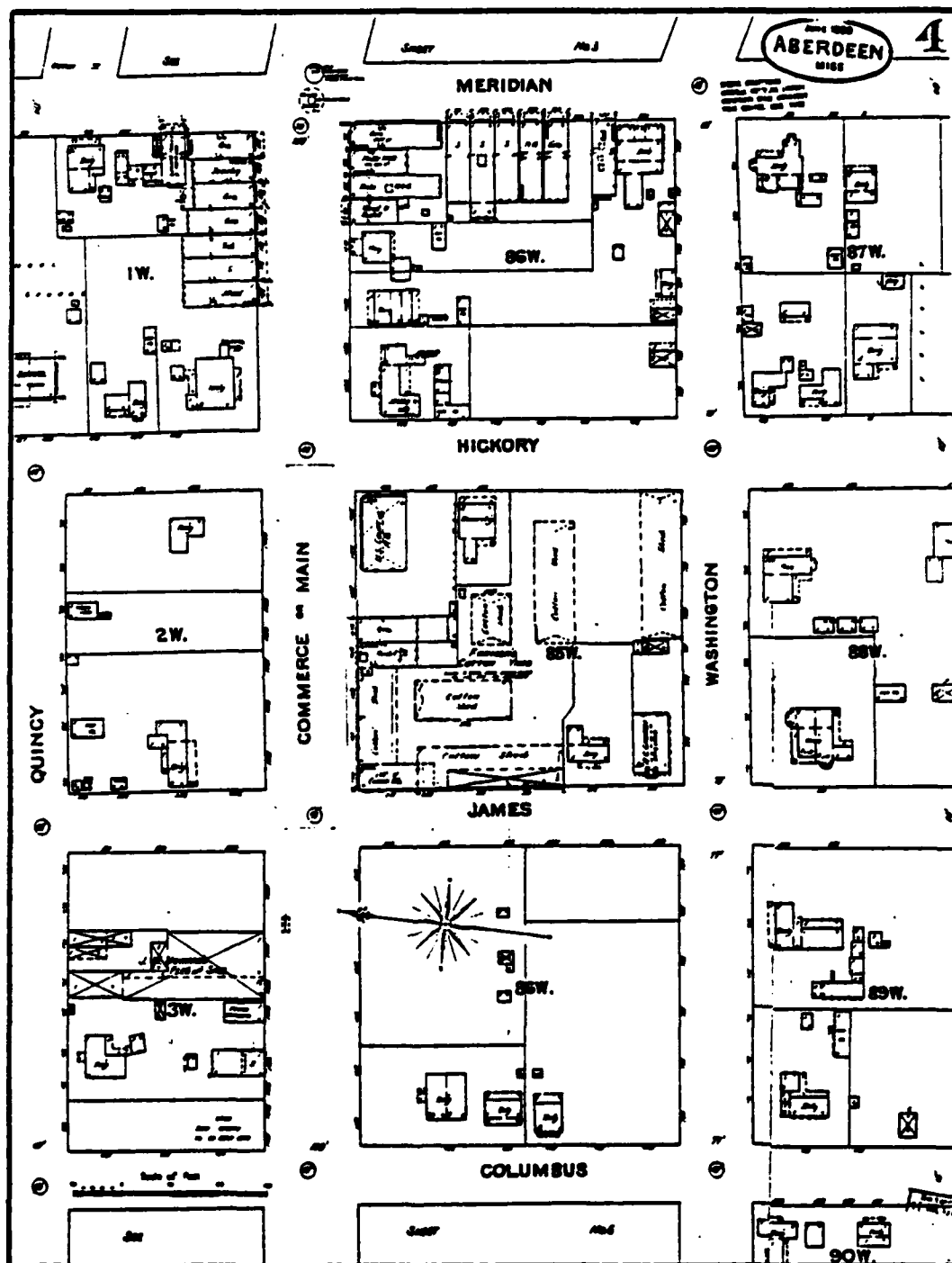


FIG. 53. FARMER'S COTTON YARD, ABERDEEN, FROM SANBORN ATLAS, 1890.

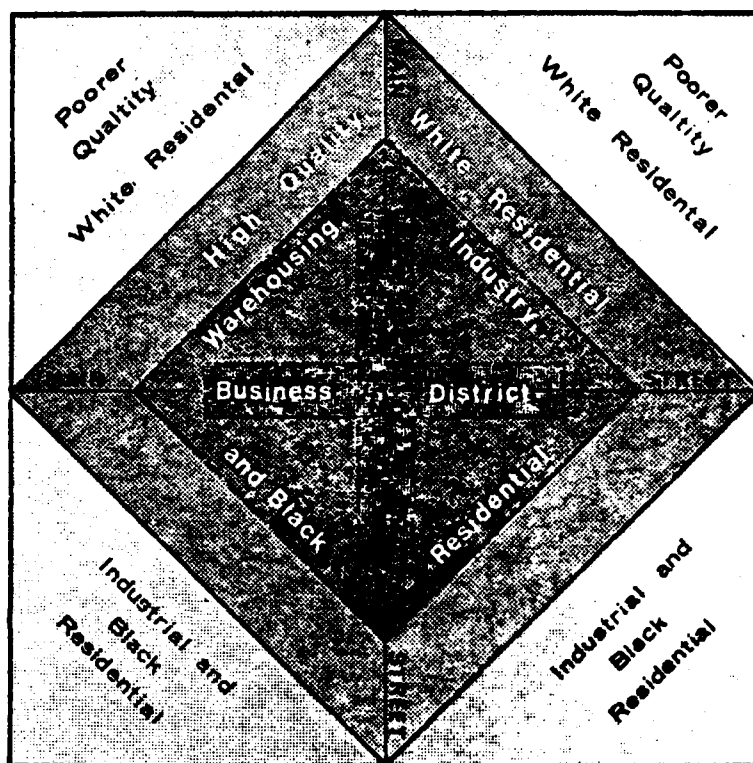


FIG. 54. GENERALIZED STRUCTURE OF URBAN PLACES IN THE UPPER TOMBIGBEE AREA IN THE LATE NINETEENTH CENTURY.

house fronting on the street with servants' quarters (routinely Black) and sometimes stables and carriage houses to the rear. In the poorer housing sections which were primarily owner-occupied, lot sizes were less, residences were smaller and the rear of the lots contained outhouses and sheds for tools. Rented houses, particularly Black tenements, were frequently built side by side with little or no yard space and no satellite buildings. The marked physical separation of Blacks from whites did not occur in most towns during the nineteenth century although in some of the late-developing railroad towns, such as Amory and Aliceville, an "across the tracks" Black community was evident from the beginning.

Rural Hamlets

While platted towns may have been the most prominent central places in the Tombigbee Valley they were not the most numerous. That honor went to the lowest order of central places, the rural hamlet. Varying in form according to their location and degree of development, rural hamlets, frequently known as "communities" or "settlements" by their occupants, were widespread throughout each topographic division. Their sites varied from road junctions to rail flag stops, and from crop-processing places, to river landing or crossing points, but their *raison d'être* and physical structure were quite similar.

Rural hamlets were generated by the basic social and economic needs of the rural population. The main social needs were those of kinship, religion, and communication and the main economic needs were food and staple manufactured goods. The location of hamlets was determined by some favored topographic or cultural feature. Such features included a hilltop or bluff (e.g., Pleasant Ridge [Fig. 55], Mt. Hebron [Fig. 56], Garden, Union Bluff, Moore's Bluff), a road junction (e.g., Darracott originally named Southern Crossroads [Fig. 57], Caledonia, Mantachie, Tilden, Burton), a railroad crossing (e.g., Strongs, West Greene, Binford [Fig. 58], Forreston, Panola), a well or spring site (e.g., Kolola Springs, New Site), a ferry, ford, a bridge site (e.g., Bridgeville, Waverly [Fig. 59], Steens, East Aberdeen, West Fulton), an industrial site (e.g., Bay Springs, Burnt Mills, Bigbee, Bigbee Valley [Fig. 60], a landing (e.g., Windham's, Newport, Lowndesville), or some combination of these.

Some hamlets remained stable in size and location over extended periods of time, but their density and site arrangements underwent adjustment reflecting the general cycle of economic activity in the region. A content analysis of maps of the area from 1820 - 1970 shows a steady increase in the number of hamlets from 1820 - 1920 with two main periods of development: a period from 1840 to 1870 when hillpoints, road junctions, and river shipping points were the main factors in location, and a period from 1880 to 1920 when railroad building provided the major stimulus to growth. Since 1920 the hamlet structure has undergone serious decline as work patterns, shopping habits and residential choices of the people have changed subject to industrial development and automobile ownership.

Even during the nineteenth century while the total number of hamlets was constantly increasing there were always some communities whose fortunes were subsiding. Hamlets are perhaps the most flexible element of the central place landscape because their structure entails so little capital investment. As a

Pleasant Ridge

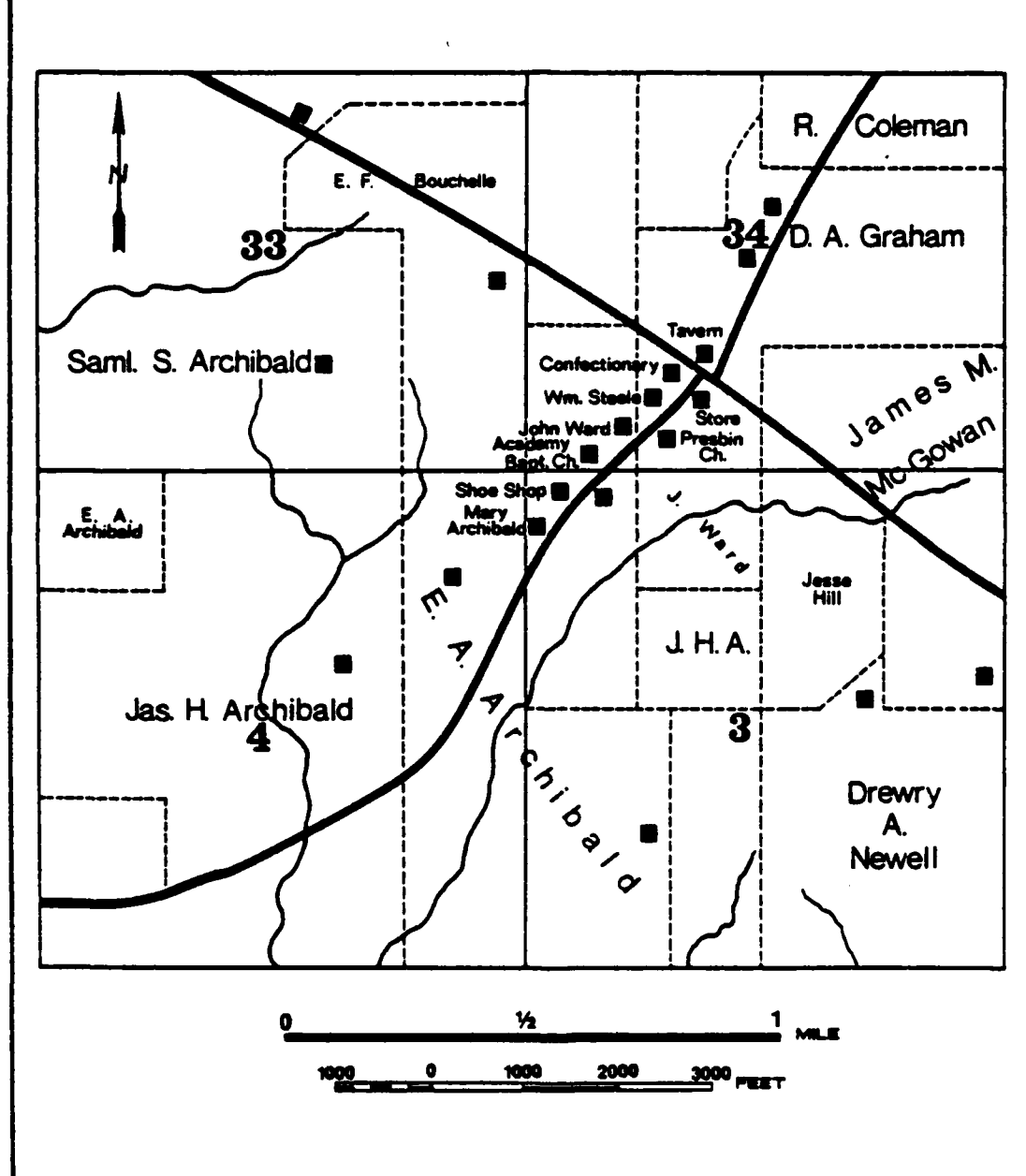


FIG. 55. PLEASANT RIDGE COMMUNITY, 1843 (AFTER SNEDECOR).

Mt. Hebron

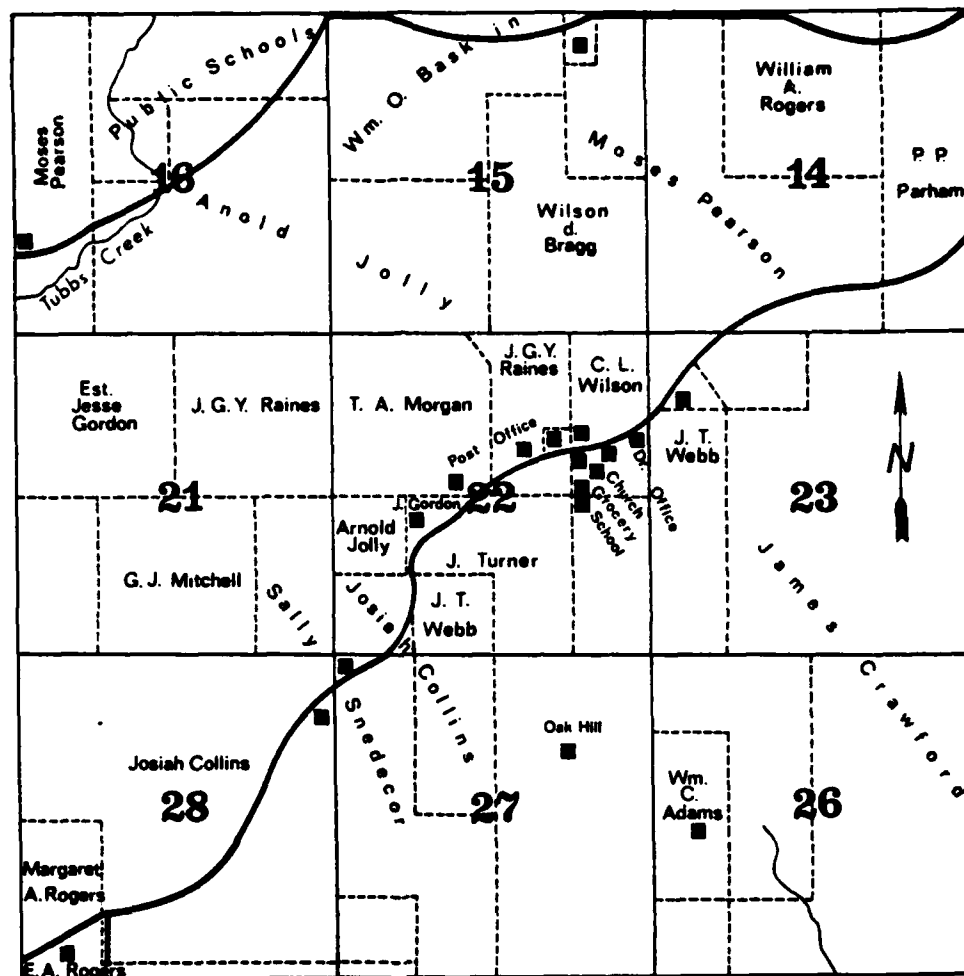


FIG. 56. MT. HEBRON COMMUNITY, 1843 (AFTER SNEDECOR).

Darracott Crossroads

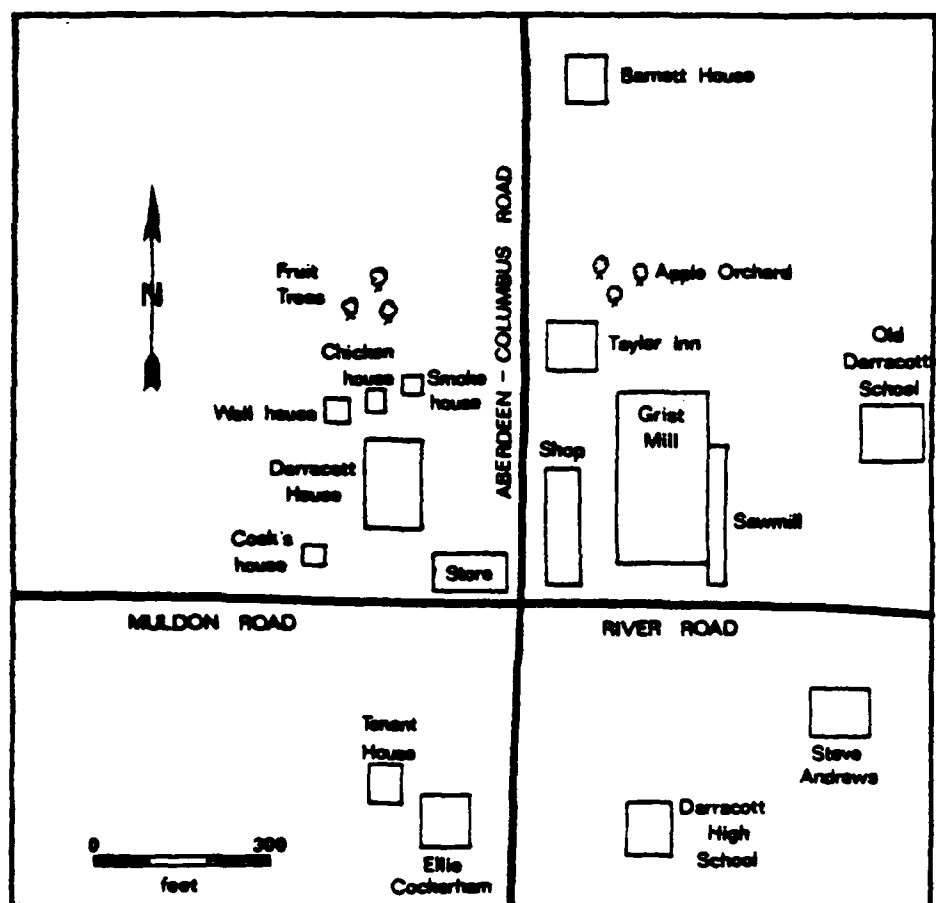


FIG. 57. DARRACOTT COMMUNITY, 1914 (AFTER MORGAN, 1978).

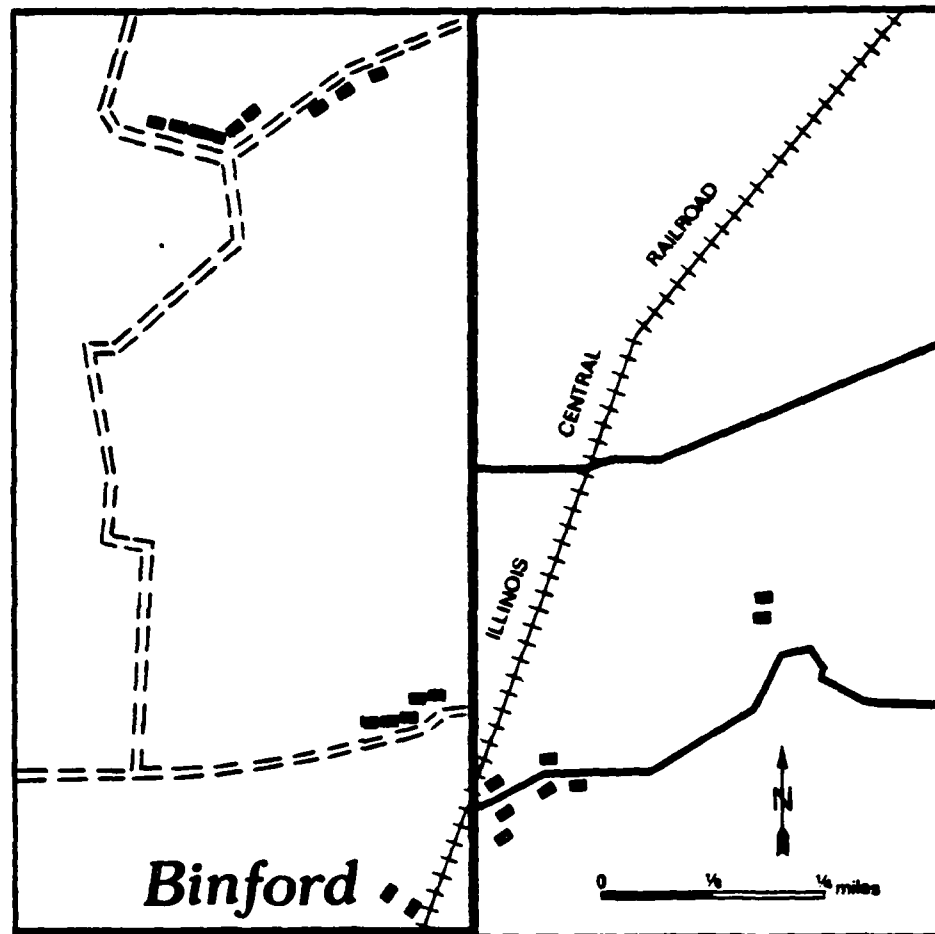


FIG. 58. BINFORD COMMUNITY, MONROE COUNTY, 1903, FROM SOIL SURVEY.

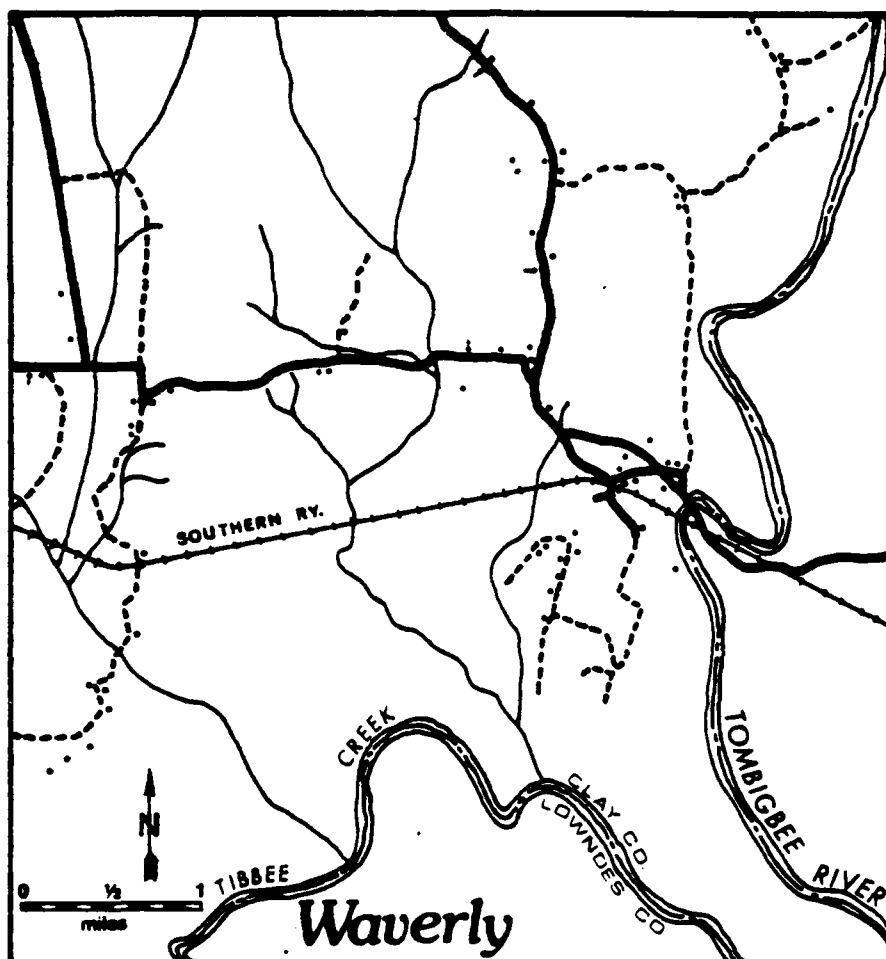


FIG. 59. WAVERLY COMMUNITY, 1903, FROM SOIL SURVEY.

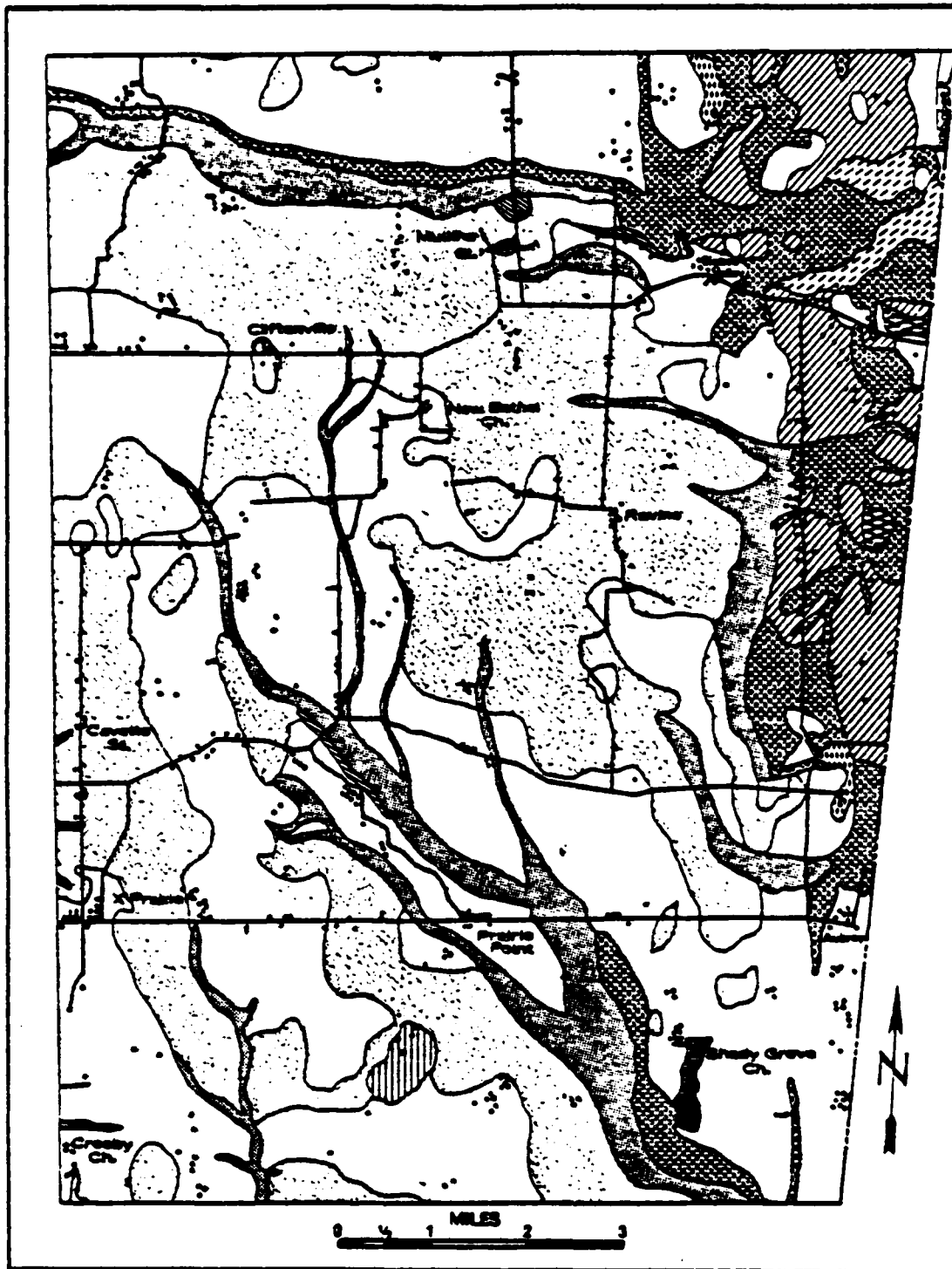


FIG. 60. SETTLEMENT PATTERN OF NORTHEAST NOXUBEE COUNTY, 1910, FROM SOIL SURVEY.

result the locational inertia which characterizes more elaborate communities is absent, and relatively minor population shifts will cause a major impact on hamlet distribution. The changing of a road alignment which diverted traffic, or the laying of new railroad which increased accessibility, the failure of an industrial enterprise which affected employment, and out migration of agricultural labor which reduced the total market demand, were all factors affecting the viability and physical presence of rural hamlets in the Upper Tombigbee throughout the nineteenth century.

While some hamlets exhibited elements of rectangular block structure, particularly those at crossroads such as Darracott (Morgan, 1978: Fig. 57) or Palo Alto (Prout, 1975), most had an unpredictable or random arrangement of buildings. The purpose of the rural hamlets was the desire on the part of some farmers to locate close to basic services such as the general store, post office, blacksmith, carpenter, miller, and doctor, and the desire by the providers of such services to locate themselves in population clusters and at route junctions or crossings. In some instances the services appeared first, in other instances hamlets pre-dated the services.

Whatever the reason the components of settlement varied little from hamlet to hamlet. Perhaps the most common element was the country store, one of the best recognized features of the southern rural landscape. Frequently a rural hamlet was named after a store or its owner (e.g., Thompson's Store, Allen's Store, Evan's Store, Strong's Store).

Country stores in the Upper Tombigbee exhibit all of the characteristics defined by Pulliam and Newton (1973) discussed earlier (pages 160 - 172). This is the case whether they are old and abandoned or relatively recent and still used. The number of stores varied from hamlet to hamlet with one being the general rule, but with several occurring where population and traffic were of sufficient density to encourage them.

Another frequent member of the hamlet community was the post office, often housed in a store. According to Alwin (1974: 183), post offices were allocated according to public demand:

Citizens of a community who desired a post office submitted a request to the Post Office Department and stated why they thought a post office should be established, the number of patrons who would be served, and the names proposed for the office. Although there was no fixed minimum population requirement, that factor was considered by the department. Other factors considered were the nearness of existing postal units and the relative cost involved, including the transportation of mail to a newly established unit.

There are good records of post office activities and as a result it is possible to learn something of the changing character of the rural settlement pattern through analysis of time and place of post office operations. While some post-hamlets were longstanding, others existed for periods as short as two or three years. Adjustments in the post office pattern sometimes reflected complaints about poor location by the people being served, but more often than not they reflected physical shifts of the population. Many of the early post offices were located in the port villages of the Tombigbee, but as time went on railroad sites became more popular. The local significance of a post-hamlet can probably be charted fairly accurately from the installation and removal of its postal service.

CHAPTER VII

INDUSTRIAL ACTIVITIES, FACILITIES AND SYSTEMS

General Nature and Location of Industrial Operations

The nineteenth century South has commonly been described as a region with a very poorly developed industrial structure. Using statistical data, the descriptions of travelers resident outside the region, the statements of some Southern industrial promoters (e.g., Grady, Tompkins, deBow), and assumptions about the occupational preferences of the Upland South and Tidewater cultural traditions, a variety of writers have depicted the nineteenth century South as a manufacturing desert with only a very few oases of industrial activity.

It is true that there was a widespread dependence on goods manufactured in the home or on the farm which persisted through large parts of the South up to 1900. According to Brinkman (1973: 50), "poor transportation facilities, especially in frontier or rugged areas, often made it difficult to market agricultural produce, and the settler had to invest time and effort in the production of essentials or wants which he did not have the opportunity or means to purchase." Such was the case before the Civil War in the Upper Tombigbee Region, although there was a gradual divergence in home manufacturing activity between those areas dominated by the plantation tradition and those areas characterized by the Upland South tradition. Brinkman (1973: 56) noted such contrasts across the South:

After a brief revival in some areas during the Civil War, the production of home-made goods again declined in most parts of the country by 1870, the last date at which the census reports the value of home-made manufactures. In contrast to the national situation, a definite concentration on home manufactures is evident in the rugged areas of the upper South, where there is a growing population, now relatively more isolated than ever before, with little to sell or barter for factory-made goods. Thus between 1840 and 1870 there was an almost complete reversal of the distribution of the production of home-made goods in the United States, with former concentrations declining, and other areas, notably those in the upper South, becoming the areas of concentration.

While dependence on domestic production remained significant in the upland areas and while some historians persist in viewing the Old South as "planter, plantation, staple crop and the Negro, all set in a southern rural scene," research is beginning to show that manufacturing was more important in the nineteenth century Southern economy than previously realized.

From the 1830's Southerners began to look to manufacturing to diversify their economy. The Panic of 1837 devastated Southern agriculture and left the South prostrate (Gray, 1933). The Southern Commercial Convention became an

annual fixture in the Old South after 1837 when delegates met to devise a remedy for low cotton prices. Manufacturing was one of the solutions suggested at the convention. As the South struggled through the depression, investment in manufacturing increased. When the sectional crisis worsened in the late 1840's, some Southerners urged manufacturing as another weapon for southern economic independence. A Mobile journal declared that domestic manufacturing was "the only safe and effectual remedy against Northern oppression" (Griffen, 1960: 114).

Southerners responded to the call for the development of industry by establishing primary processing industries. Such industries first appeared on plantations or in plantation areas as responses to the large farm's need for construction materials or for crop processing. Through time, however, the benefits of large volume production were realized, and as transport facilities developed, as technological capabilities increased, and as the antebellum plantation system dissolved, there was a gradual shift of industrial activities away from the plantations toward urban and transportation centers.

This was true of the Upper Tombigbee Valley, as it was elsewhere, and a variety of such light industries reflecting local production of cotton, wool, corn, and timber were operating there in the latter part of the century. Among them were cotton ginning and compressing, cotton spinning, cotton oil production, corn and wheat grinding, tanning, wool carding, brickmaking, fertilizer mixing, sawmilling, and metal and wood fabrication. For purposes of analysis these activities are grouped into six categories: (1) cotton ginning, (2) cotton compressing, (3) milling industries, (4) metalworking and woodworking, (5) brickmaking, and (6) miscellaneous industries.

While these categories were functionally dissimilar, there were frequently locational advantages to be gained by combining some of these operations in the same factory. This was particularly the case where the same water wheels or steam engines could be used to power a variety of processes such as ginning, gristmilling, sawmilling and woodworking. The locational association of such activities was common during the early years of settlement, when industrial activities were largely confined to the farm, and to particularly advantageous streamsites where a head of water was available.

In the latter part of the nineteenth century, as the steam-engine freed industry from its ties to streampower and as public demand for industrial services increased, there was a locational shift of industry away from rural areas and plantations and into the towns which functioned as central place nodes in the transport system and provided industries with easier access to both raw materials and to markets. By the end of the nineteenth century all of the industries except sawmilling were concentrated in the small towns, particularly the county towns. The sawmilling industry and to some degree the cotton ginning industry remained in rural areas because of the need to reduce the bulk of the raw material prior to transportation.

While examples of major industrial categories were scattered throughout TRMRD, it is important to emphasize that such industries provided only a small portion of the employment of the region and were of primarily local significance. Research has failed to indicate any industrial plant in the TRMRD before the end of the nineteenth century with regional significance, with the exception of the Bay Springs textile factory (Adams, Smith, et al., 1979). In general the

industries of the Upper Tombigbee appear to have been characteristic of a region with a poorly developed industrial structure.

One of the striking aspects of the small scale industrial activity in the valley was its concentration in the towns rather than the rural areas. While there were exceptions such as Bay Springs and Cochran's Mills, industrial activities of all kinds tended to locate in the towns where they were best adjusted to their service areas. Specific industrial sites varied in their intra-urban locations but few clear-cut patterns can be determined. While there is a general tendency for industries to cluster around transportation facilities, or close to the commercial district in towns, many exceptions are evident. In a number of instances industries occur within or adjacent to residential areas, and the land use segregation enforced in modern American cities by municipal regulation is noticeably absent.

Cotton Ginning

Aiken (1973) has shown that from a historical geographic viewpoint there were several stages in the evolution of cotton ginning in the United States. The first arrangement resulted from the widespread adoption of the Whitney gin. According to Aiken (1973: 199-205):

Although public ginneries existed from the beginning of commercial cotton culture, ginning was primarily a plantation activity before the Civil War. A planter established a gin plant by purchasing the gin stand, the running gear, and the baling press and by building a structure to house the machinery. The typical ginhouse was a two-story wooden building. The lower floor contained the running gear, the chief component of which was a large wheel propelled by four horses or mules. The outer edge of the wheel had cogs which geared it to a spur wheel connected by a leather belt to the gin stand on the floor above. Ginned cotton was discharged into the lint room which was situated either behind or below the gin stand.

The Civil War caused significant changes in the system of cotton ginning as it did in many other aspects of Southern life. Before the war cotton ginning was largely performed on the plantation as part of the carefully scheduled annual round of slaveholding activities. After the War as the tenant labor system replaced the slave system there was a surging demand for public gins in the areas of cotton cultivation. In the 1866 Report of the United States Commissioners of Agriculture one correspondent commented:

Another radical modification of the former (prewar plantation) system, which ought to be made immediately, and which would give to cotton-growing an impetus which it could derive from no other sources, is the building of neighborhood gin-houses in well-chosen locations, so as to be central to large farming communities. These mills should be propelled by steam, and furnished with the best of apparatus for ginning and baling cotton, and also for extracting oil from cotton seed. The existence of such a mill within the distance of five miles would be a strong inducement to the small farmer and the poor immigrant, from the northern States or from Europe, to engage at once in the planting of cotton.

According to Aiken (1973: 201), the new public ginning system

. . . did not break completely with the past, for existing machinery was incorporated into it. The two-story design, with gin stands on the second floor and the drive mechanism below, was a definite carryover. The two-story arrangement, however, had disadvantages, which led to other building designs; for one thing machinery on a second floor increased vibration. About the turn of the century, a one-and-a-half-story gin plant was introduced, in which the gin stands were on the ground floor, and one end of the building had an elevated platform to accommodate the up-packing press. But the one-and-a-half-story design never completely superseded the two-story arrangement, which continued to be built as late as the 1930's. In a two-story building, the hazardous drive mechanism was below the main work area, and many ginners considered this desirable. Moreover, some felt that the elevated press platform of the one-and-a-half-story building was a greater disadvantage than the vibration was, because of the steps that had to be climbed.

Several arrangements were employed in order to locate all machinery on the ground floor. In one arrangement the lower part of the press was placed in a pit. Although many cotton gins of this type were constructed, they had disadvantages associated with water seepage in the pit and with repair of the lower part of the press. A satisfactory solution to the problem came with the development of a press that packed down rather than up, permitting all machinery to be on one floor.

In addition to machinery arrangements, the number of gin stands and the type of building materials used influenced design. The length of a building was related to the number of gin stands in the battery. Width was influenced by the number of batteries of gin stands. Most plants had only one, although double-battery cotton gins were common in towns. The majority of the gin buildings were constructed of wood, brick, or corrugated steel on a wood frame. Brick and corrugated steel buildings were the most common types in towns. Rural cotton gins were usually of wood or corrugated steel.

Little documentary evidence has been discovered with which to develop patterns of structure or location for the early plantation-based cotton gins in the TRMRD. After the Civil War, however, when the number of public gins increased and when concentration took place in the towns, more detailed information becomes available. Sanborn insurance maps constructed in the late nineteenth century for Eutaw, Gainesville, Columbus, Aberdeen, Amory, and Fulton exhibited a number of ginning operations. In the rural areas information remains sketchy but indicates a density in the late nineteenth century of one gin for every five to seven square miles.

The gins were primarily steam operated and frequently associated with some other compatible industrial activity such as grainmilling (Fig. 61) or sawmilling (Fig. 62). In some instances several industrial activities were integrated in the same plant in association with cotton ginning. Becket (1910) described his family's operation in Aberdeen in the 1850's as follows:

It consisted of two long brick buildings, each about forty feet wide and separated by a driveway twenty feet wide, which was bricked up at each end, with a large double gate at each end for ingress and egress.

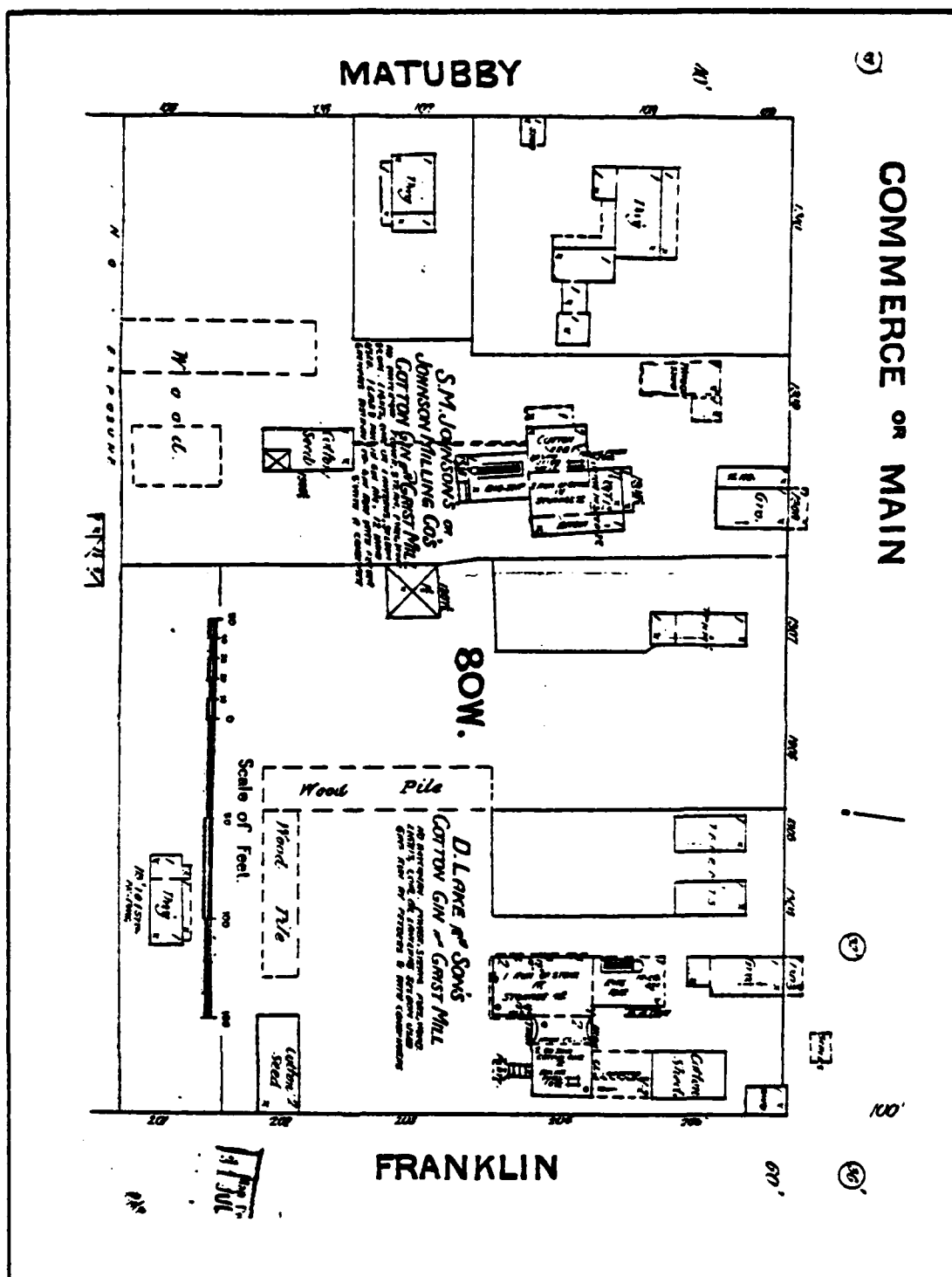


FIG. 61. TWO COTTON GIN AND GRIST MILL PLANTS, ABERDEEN, FROM SANBORN ATLAS, 1890.

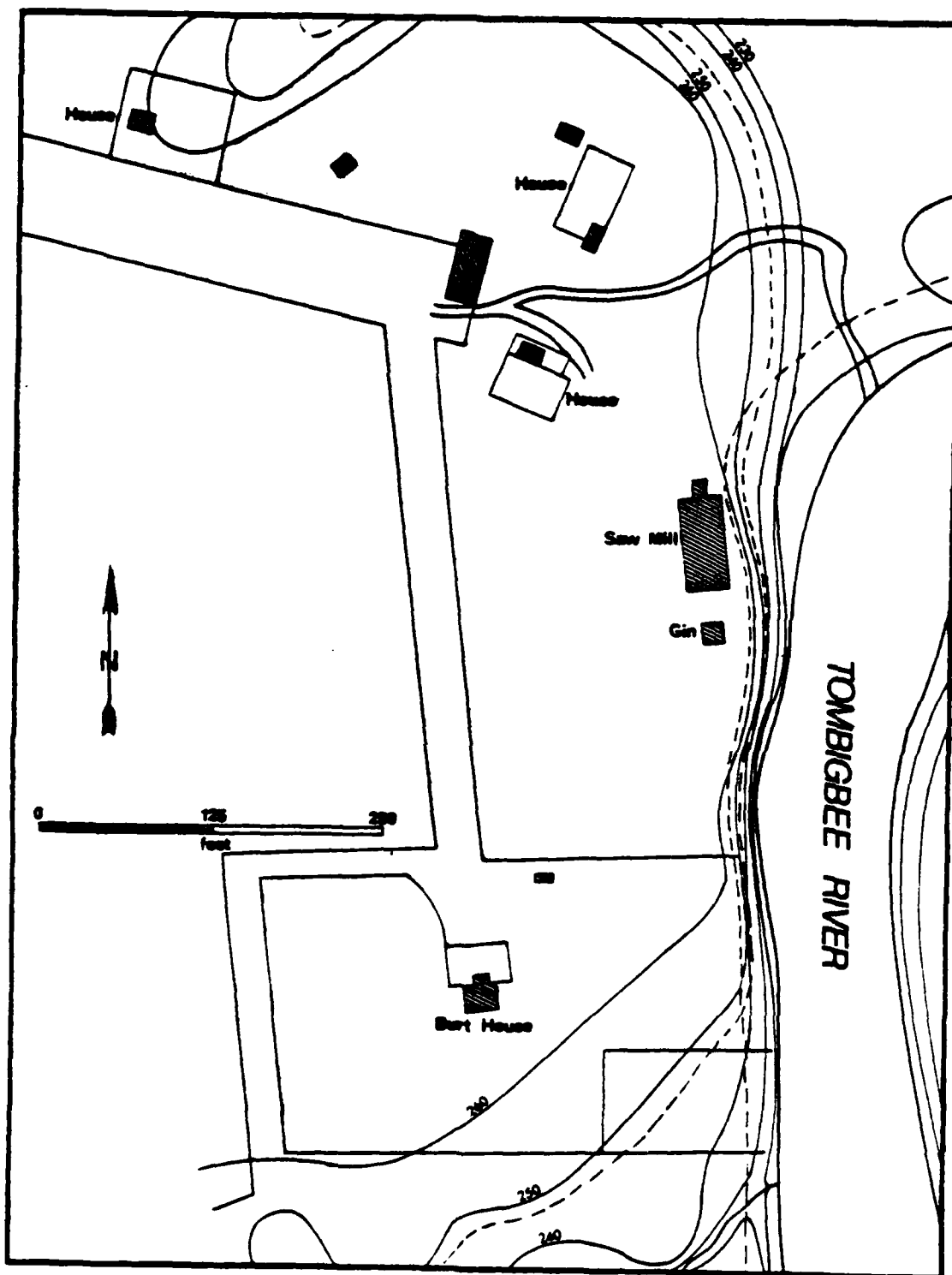


FIG. 62. WAVERLY COMMUNITY, 1888 (AFTER GEORGIA-PACIFIC RAILROAD SURVEY).

In the south end of the west building was the workshop of Mr. Hays, who made all the patterns for molding; a place for the finished castings; a place for the molds, and a place where the molding was done; the blast furnace and stack, wherein the cast iron was melted; a blacksmith shop, and last, in the north end, a place for the different parts of the gins before they were assembled in the complete gin.

In the other, or east building, was first the bookkeepers office and the general headquarters office, in the south end; also a space for the finished gins. There was an upper story, open at the front end, with no steps, but with a wide incline going up gradually so that gins and heavy materials could be carried up and down on trucks.

In the lower story, on the left-hand side, were the lathes for iron and steel, the blast fan for the molding stock, the emery wheels for finishing the front side of the breast ribs for the gins, the dies for cutting the gin saws, etc, etc. On the right-hand side, including a brick offset, was the engine, flywheel, etc., and farther along, in the north end, a general store place.

Upstairs were, first, the wool cleaning and wool-carding machines, next the flour mill, next the corn mill, and, in the north end, the planing and tongue and grove machines, band and circular saws, etc.

Outside, in a separate brick building, built about fifty feet away to reduce the cost of insurance, was the dry lumber kiln. . . . Wool was brought for many miles from every direction, as was also the wheat. . . . The wool-carding machines did not run continuously, and the wheat mill was kept busy almost all the time, but the corn mill was generally overcrowded, getting days and sometimes even weeks behind, so that we had to run it at dinner time, 12 to 1:30 o'clock to catch up. The capacity of the corn and wheat mill was each ten bushels an hour For the foundry, we bought up all the old cast-iron wheels, stoves, and cast-iron, in any and all forms, for miles around, but had to import the balance needed in pig-iron by steamboats until the railroad came and the steamboats were discontinued. We reached the point where we imported nothing but the circular plates, or disks, from which the saws were cut with our dies, and the necessary amount of pig-iron for the castings. Everything else, except for the foundry, was homemade.

We had begun making cooking utensils, stoves, wheels, and all kinds of cast-iron implements for home and farm when the war came on. All this kind of work was then stopped, and the factory was converted into a gun and cannon factory.

Plants similar in scale to that described by Becket are shown in Figs. 41, 46, 50, and 61.

While determination of the precise pattern of cotton ginning adjustments in the Upper Tombigbee is dependent on further research, field survey indicates a high probability of conformance to Aiken's thesis. Few active cotton ginning plants remain in the Upper Tombigbee area today because of the general decline of cotton growing in competition with soybean and cattle production. Most of the cotton currently grown is produced in areas of the

Pontotoc Ridge and Tombigbee terraces, where scattered isolated public gins can still be found. The present distribution of gins, however, is skeletal compared to the former ubiquitous presence of these facilities which were so essential to the economic life of the region.

Cotton Compressing

The geography of cotton ginning has been well studied but the geography of cotton compressing has not. One of the greatest deficiencies of cotton as a commodity in the early years of production was its great bulk compared to weight. While manual and animal power was used from the beginning to compact cotton on the plantation, it was the advent of the steam-driven compress which most facilitated the reduction of cotton bulk. The steam compress had a processing rate considerably greater than that of the gin and as a result fewer were needed. This resulted in larger service territories with compresses usually being found in urban centers. Frequently they were situated adjacent to the railroad tracks where their product could be loaded directly into cars for transshipment. Such was the case at Columbus (Fig. 25), Amory (Fig. 63), and Macon (Fig. 64). Frequently, cotton compresses were found in association with cotton gins or cotton oil mills, and were operated by common owners.

Milling Industries

The milling industries can be categorized as those relying for their operation on rotary motion applied to the driving of lathes or belts, which in turn were connected to other machines or tools for processing operations. The main members of this activity group were cotton oil processing, grist-mills, sawmills, and woolen mills, although metalworking and woodworking were somewhat related.

In the early nineteenth century the milling industry was primarily restricted to gristmilling and sawmilling because cotton oil technology was not yet developed and wool processing remained a domestic occupation. Prior to the Civil War, sawmilling and cerealmilling activities were of only local significance. Mills were small and were generally waterpowered. Grist and sawmills, like cotton gins, were ubiquitous and were found wherever economic demand and favorable topographic circumstances coincided. The economic demand with respect to grain production in the early years was universal; timber production was concentrated in the Fall Line and Pontotoc Hills. Topographic circumstances were most favorable where a reliable and sufficient head of water could be provided to drive the mill wheel. Such locations occurred much more frequently on the east side of the Tombigbee terraces. Because of the desire to take advantage of the most suitable topography, some watermills were located in situations remote from other settlement activities, although mill-sites coincident with stream crossings were common. It is not always easy to determine whether a stream crossing helped to determine a millsite or vice versa. Sometimes millsites were operated in conjunction with general stores in an apparent attempt to create reciprocal benefits from user attraction.

With the introduction of the steam engine, the production capability and reliability of milling was enhanced with the result that steam mills spread

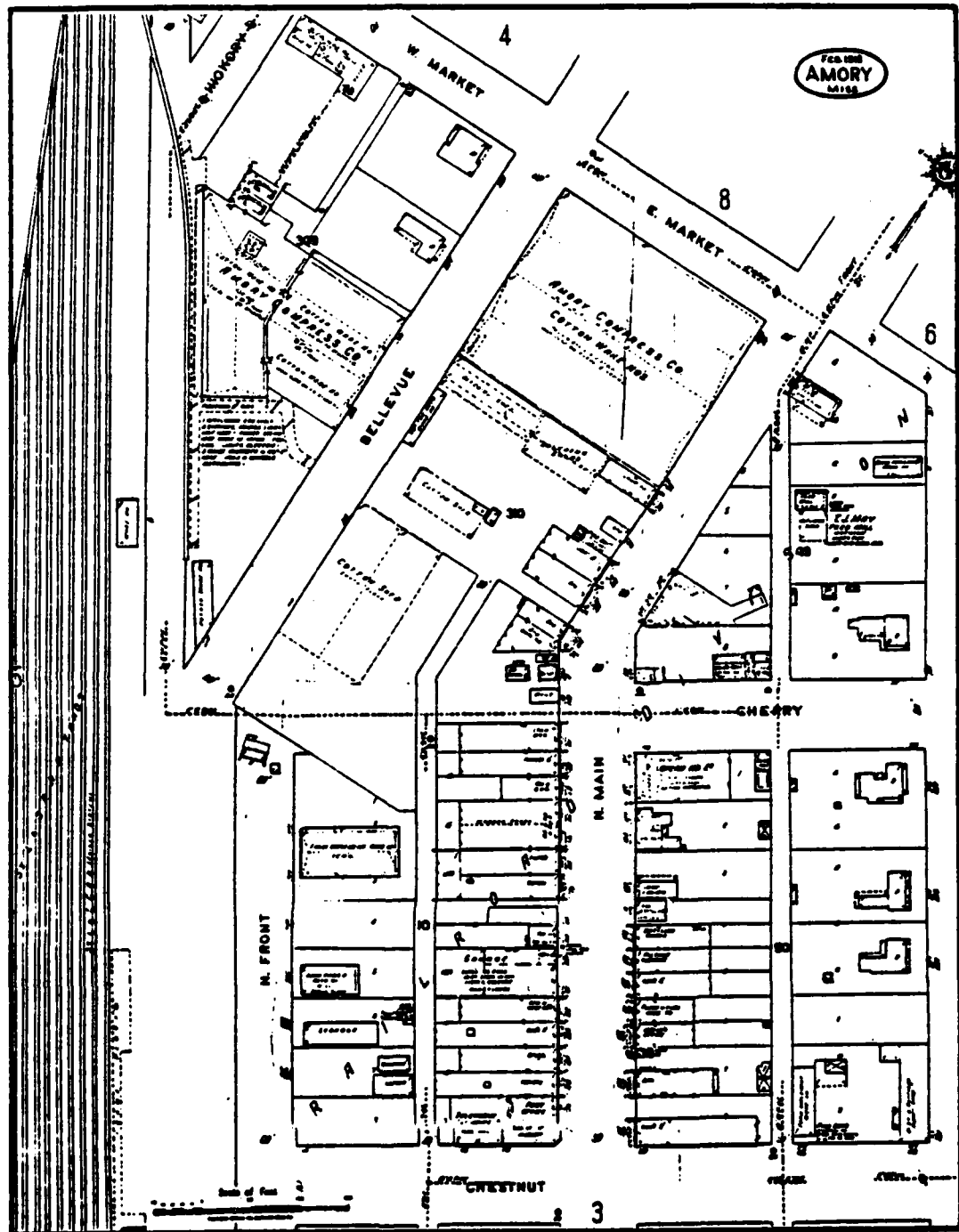


FIG. 63. AMORY COMPRESS COMPANY, AMORY, FROM SANBORN ATLAS, 1918.

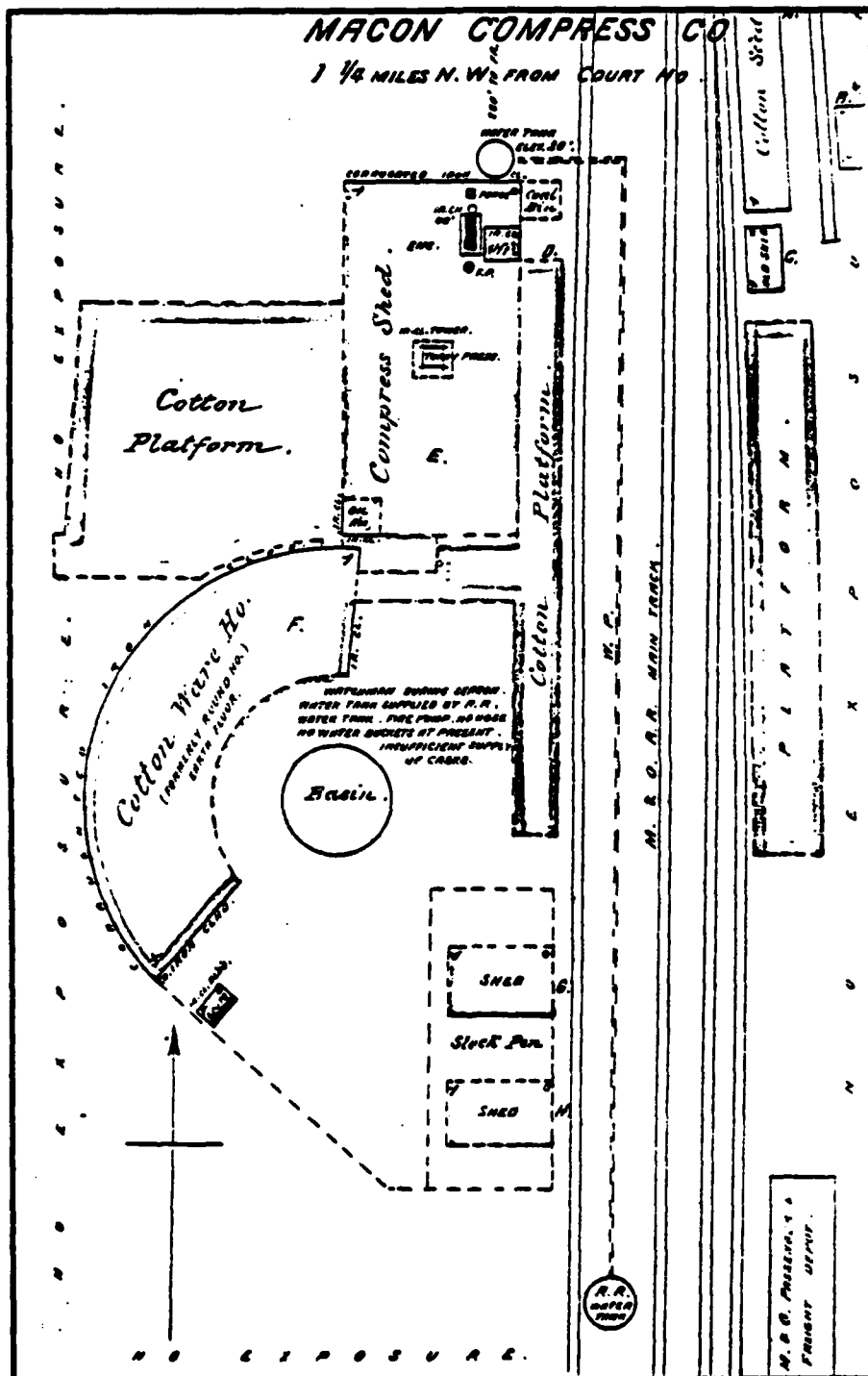


FIG. 64. MACON COMPRESS COMPANY, MACON, FROM SANBORN ATLAS, 1890.

rapidly after the Civil War. Steam mills were virtually unrestricted in their choice of location if wood was available for fuel. Consequently, steam mills were built on a variety of sites both urban and rural, usually away from stream courses. With the reduction in cereal production as cotton growing expanded, gristmills declined in numbers; the development of woollen mills also suffered as sheep production diminished. Sawmills continued to expand in the late nineteenth century, however, as did cotton oil mills. While these facilities were oriented to raw material supplies, their locations were also conditioned by transport factors.

The character of the cotton oil industry in the South has been treated by Shue (1904: 260-264). Cotton oil mills were to be found in Columbus (Fig. 65), Aberdeen (Fig. 66), Macon and West Point. Examples of lumber milling facilities are provided in Figures 67 - 71.

Metalworking and Woodworking

Most of the historic industrial operations in the Upper Tombigbee were concerned with the primary processing of raw material commodities, but there were a few manufacturing and fabricating plants scattered through the area. Such plants were most common in the larger towns of Aberdeen and Columbus where their locations gave them access to both labor supplies and to markets. Among the recorded manufacturing plants were forges and foundries, agricultural equipment assemblers, wagon builders, and cabinet and furniture makers.

Evidence of such activities is provided both by nineteenth century city directories and by early city maps, particularly Sanborn Life Insurance maps of the 1880's and 1890's. The preferred locations for such industries appear to have been either close to the city center commercial area, or on the periphery of the city close to either the river bank or the railroad, or both. Residential areas and industrial operations were usually well separated. Such a location may be explained on the basis of fire hazard, transportation access, and lower cost sites for the peripheral locations, or of the need to be close to trade activities and to display wares for a downtown location. Central city sites were particularly significant for wagon building and machinery assembly. In at least one instance of record, at Aberdeen, a cotton gin assembly operation functioned as part of an integrated system devoted both to cerealmilling and to wool carding. Such compound industrial operations may have been common and a need for further research is indicated.

Brickmaking

Brickmaking was a widespread activity in the region from the earliest days of settlement, when bricks were in demand for such purposes as chimney, and well construction, and support pillars for buildings. It was particularly significant in the more affluent farming areas and rapidly became an established plantation industry. The raw material requirements could be met in many areas where clay soils and woodland abounded. Labor skills were minimal, but transportation costs were a significant factor. As a result, there was a wide distribution of small brick kilns serving local neighborhoods, with the market frequently being limited to individual plantations. In some instances bricks were shipped south from the Upper Tombigbee by steamboat but

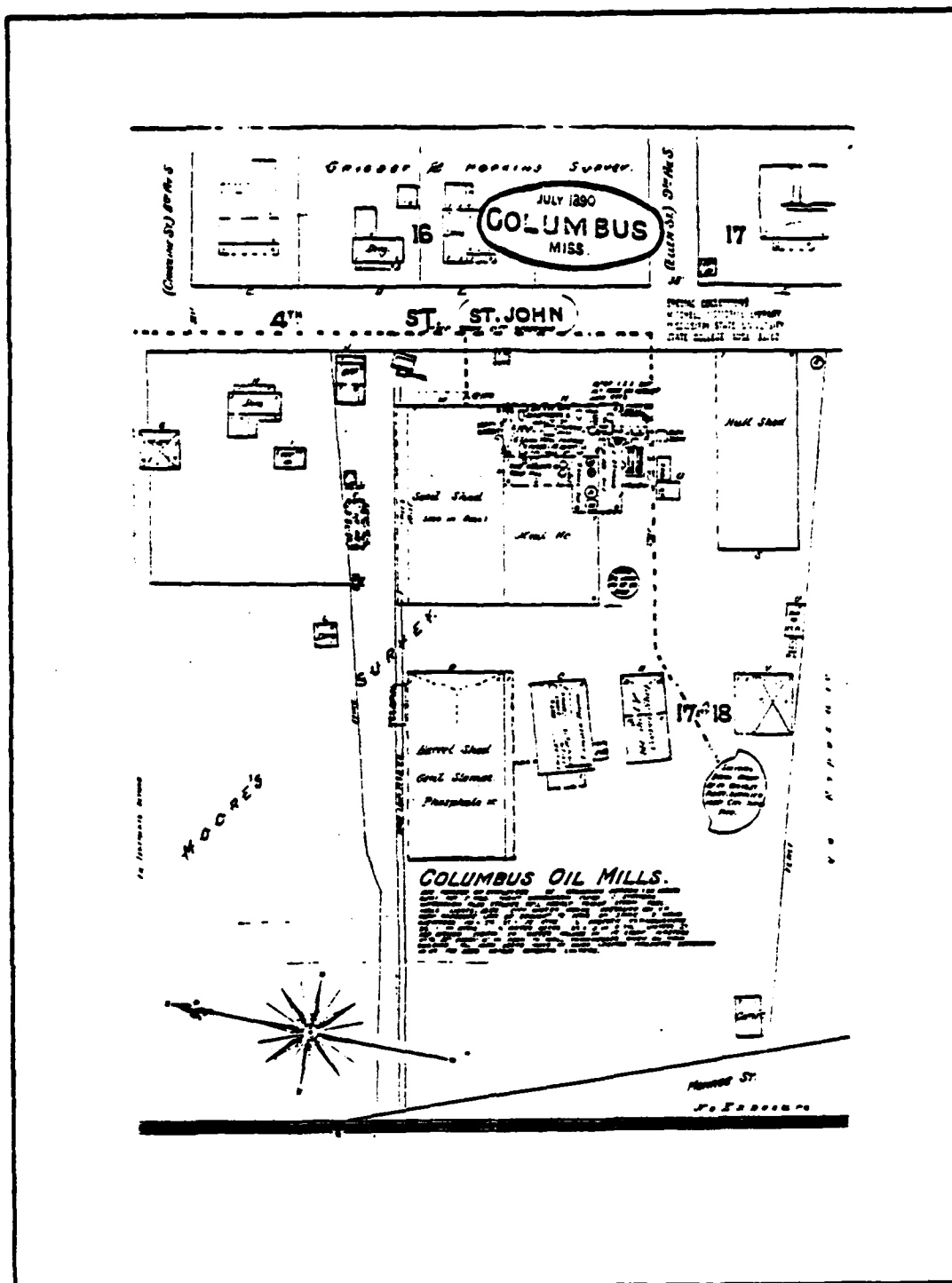


FIG. 65. COLUMBUS OIL MILLS, COLUMBUS, FROM SANBORN ATLAS, 1890.

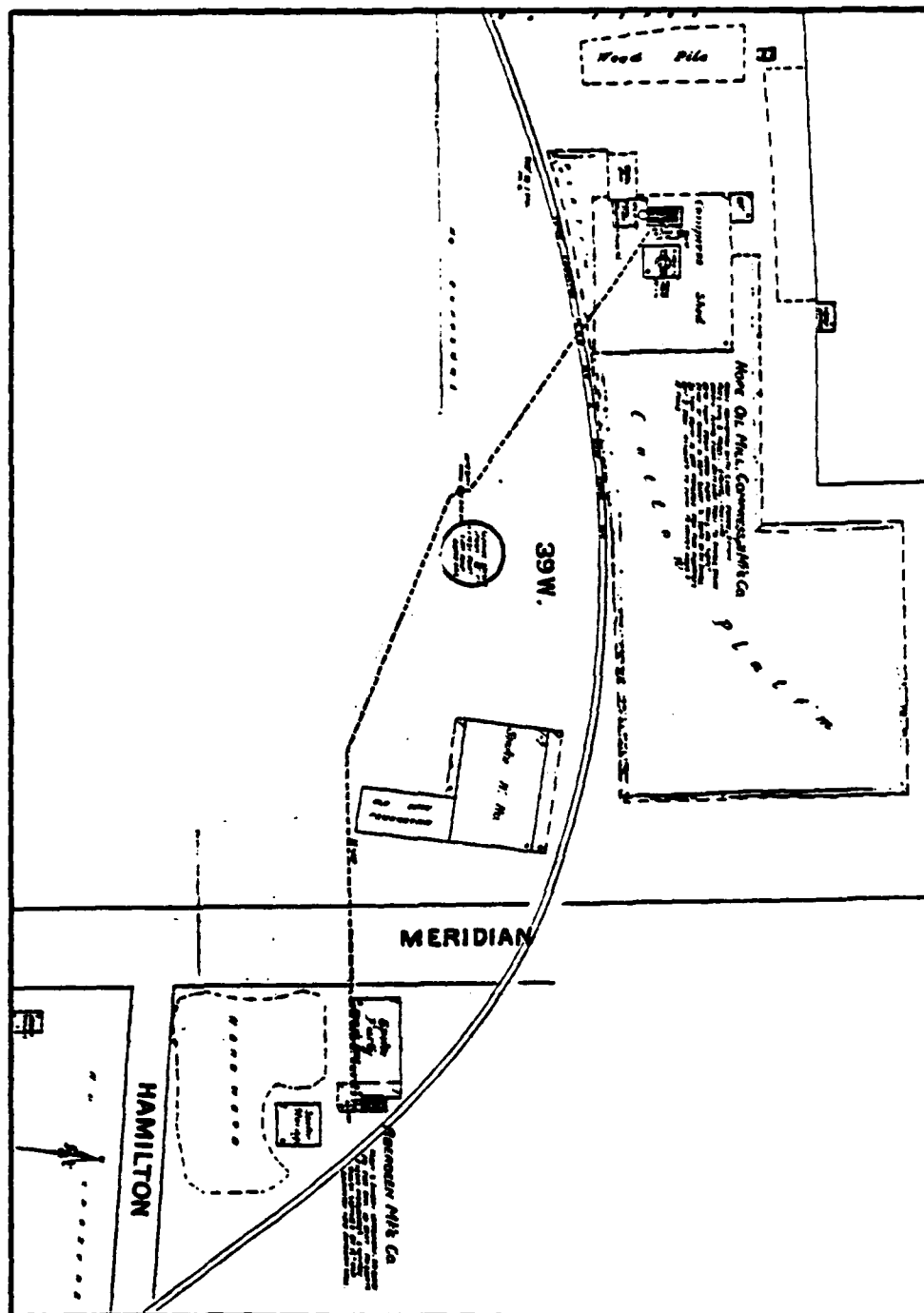


FIG. 66. HOPE OIL MILL, COMPRESS AND MANUFACTURING COMPANY, ABERDEEN, FROM SANBORN ATLAS, 1890.

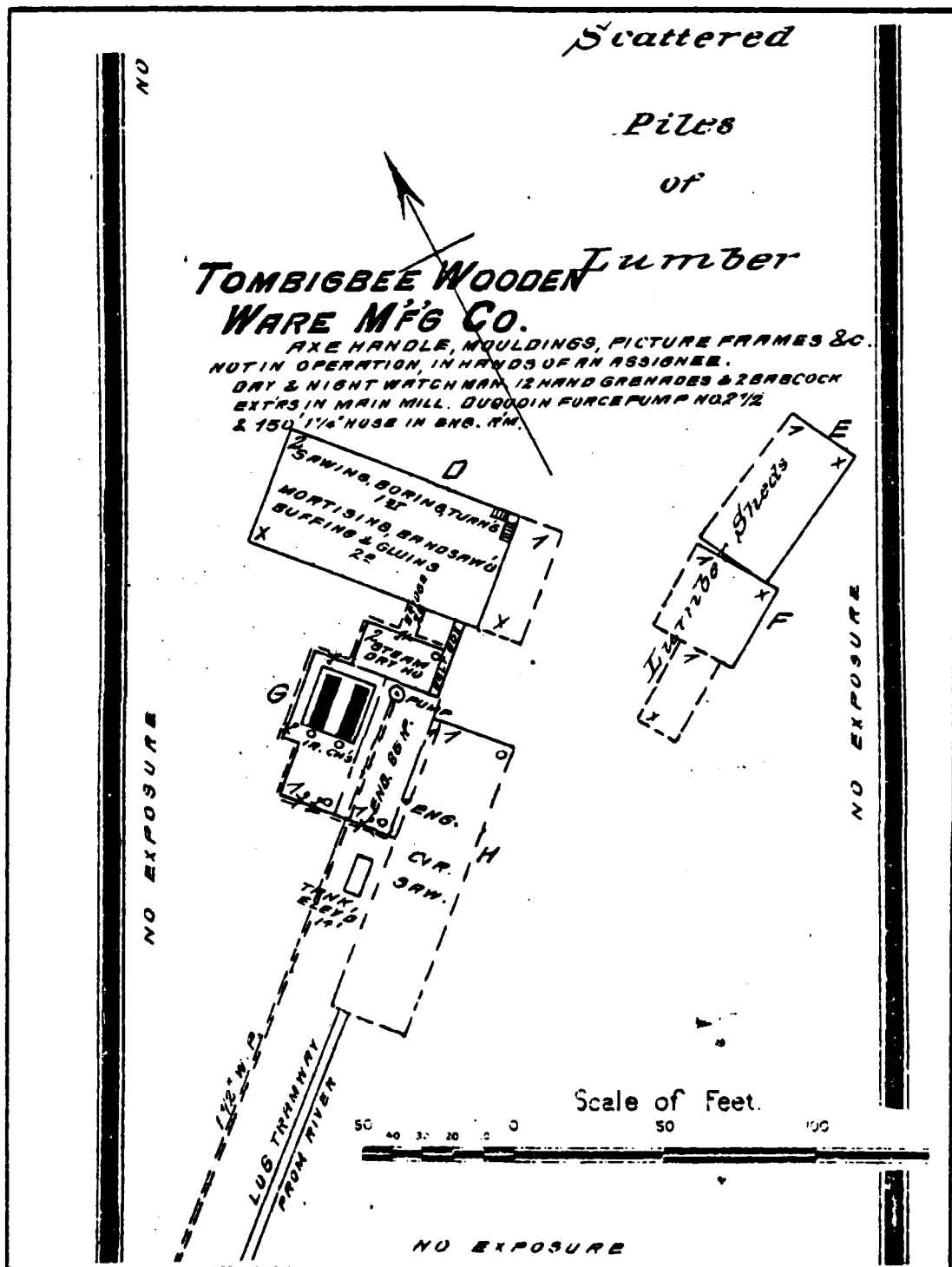


FIG. 68. TOMBIGBEE WOODEN WARE MANUFACTURING COMPANY, COLUMBUS, FROM SANBORN ATLAS, 1890.

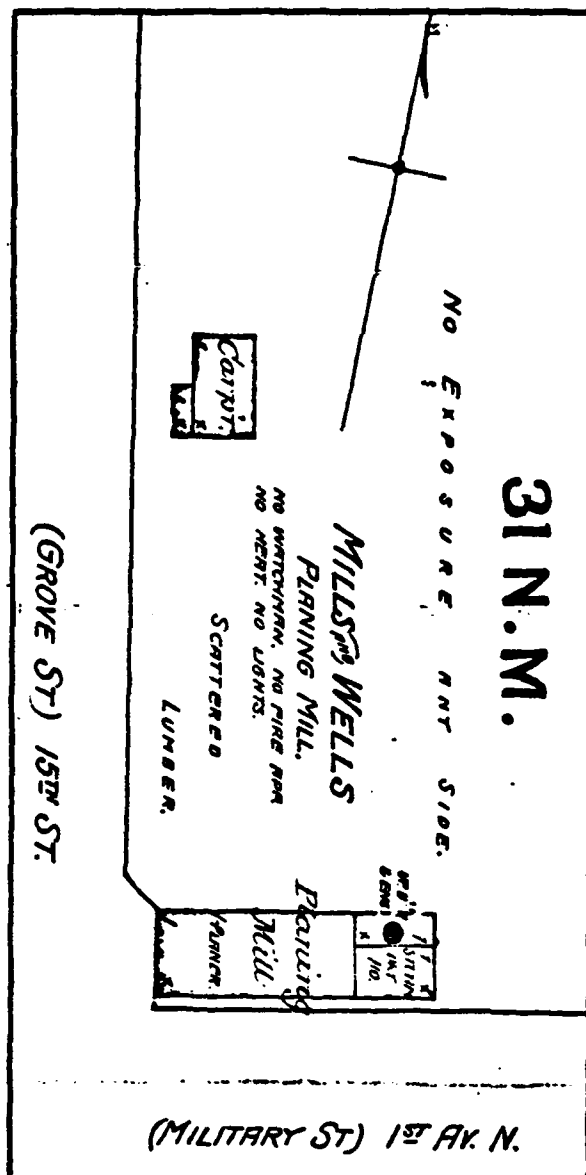


FIG. 69. MILLS AND WELLS PLANING MILL, COLUMBUS, FROM SANBORN ATLAS, 1890.

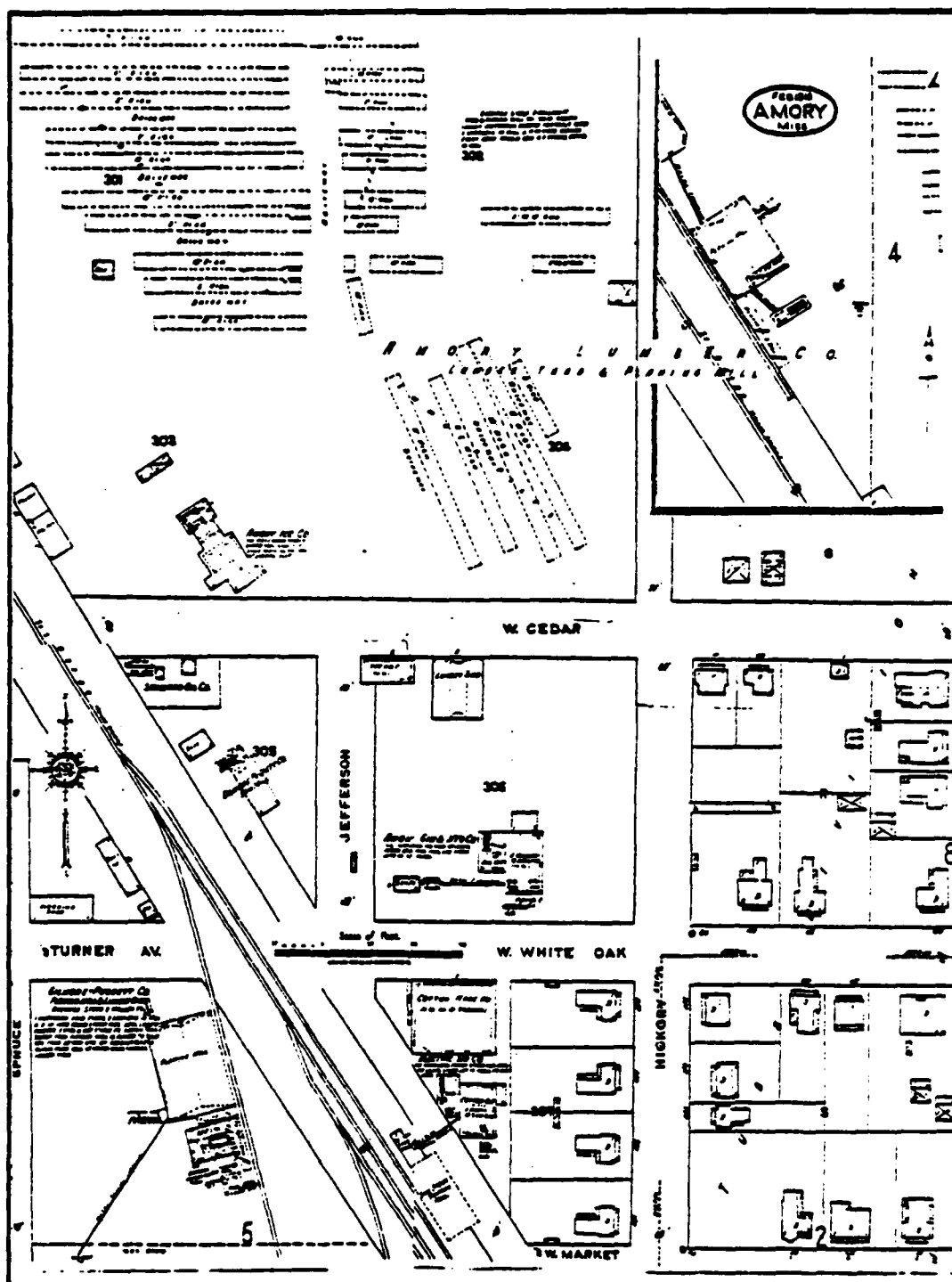


FIG. 70. AMORY LUMBER COMPANY, AMORY, FROM SANBORN ATLAS, 1918.

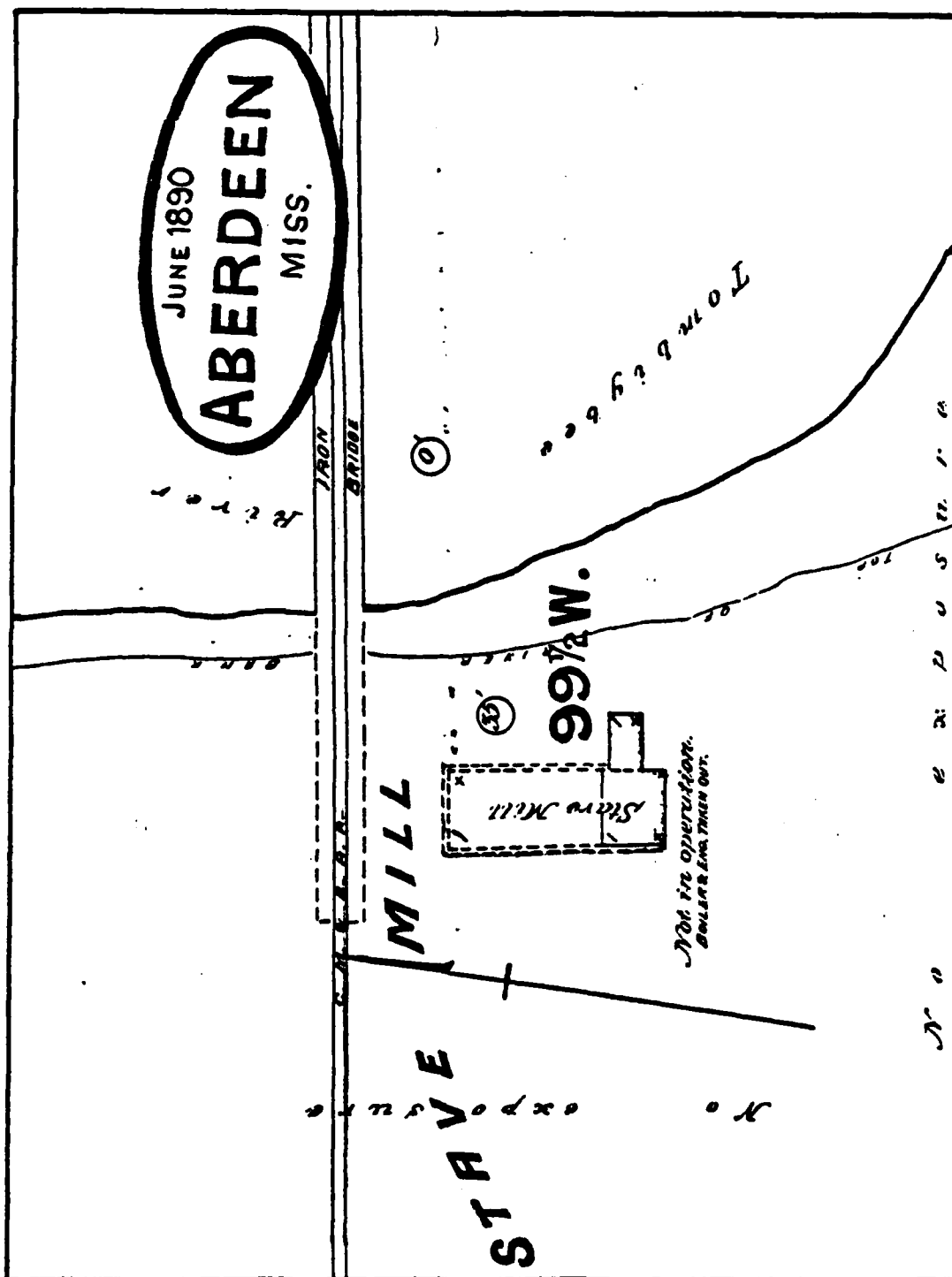


FIG. 71. GEORGE REYNOLD'S STAVE MILL, ABERDEEN, FROM SANBORN ATLAS, 1890.

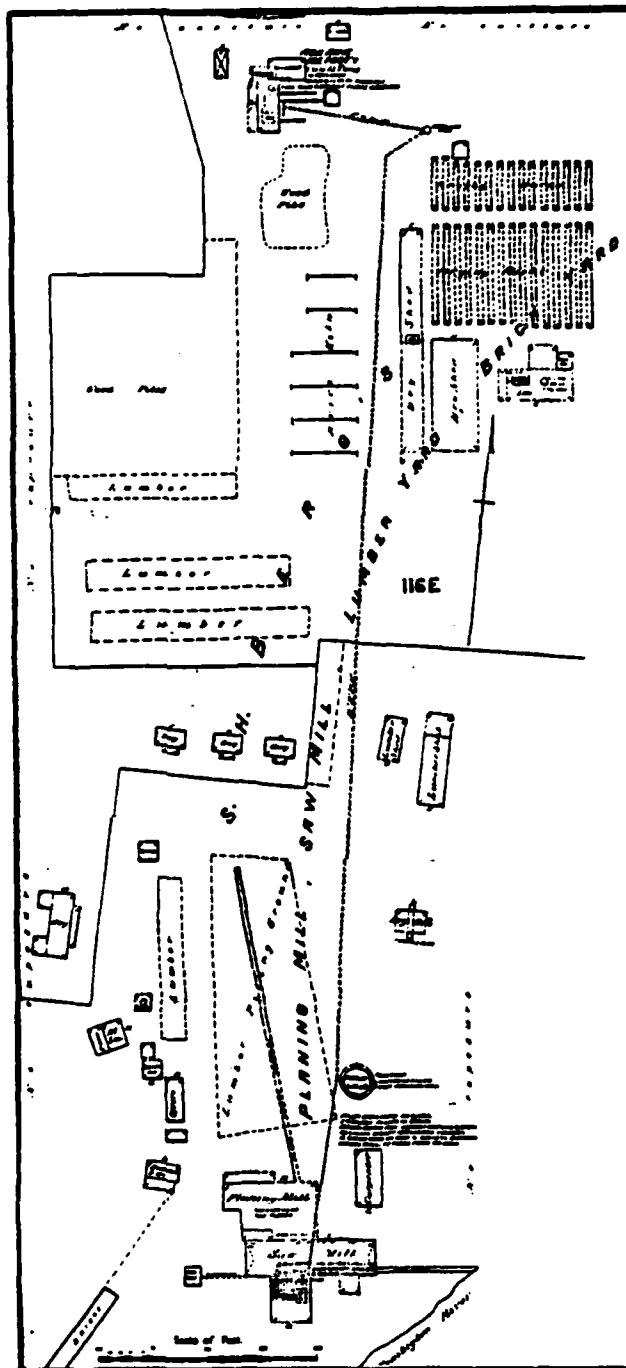


FIG. 72. S.H. BERG'S PLANING MILL, SAW MILL, LUMBER YARD AND BRICKYARD, ABERDEEN, FROM SANBORN ATLAS, 1890.

the export trade does not appear to have developed extensively until the arrival of the railroad (Cliatt, 1967; Fig. 72).

After 1865 the railroad radically changed the nature of the brickmaking business, in combination with changed labor conditions and reorganized farm operations. The railroad cheapened brick transportation and made competition a factor over wider areas. Larger scale producers and those with access to superior raw materials were enabled to prosper at the expense of the traditional operation (Cliatt, 1967).

The result by the end of the nineteenth century was a concentration of brick production in a few urban railroad centers, particularly Columbus. By that time coal had supplanted wood as the furnace fuel and only railroad centers were in a good position to import that commodity. Bricks were exported by rail, particularly to the south where good brickmaking earths were in scarce supply. Atkinson and Elliott (1978b) have provided an excellent analysis of mid-nineteenth century brickmaking practices in the Upper Tombigbee Valley. Limekilns for the production of building lime were frequently found in association with brickkilns.

Miscellaneous Industries

Four other industrial activities occurred commonly in the Upper Tombigbee in the nineteenth century and seem worthy of mention. Agricultural fertilizer production developed largely after 1870, as did icemaking. Fertilizer production ranged from the processing of guano, nitrates and cotton seed residue, to the extraction of lime. Agricultural lime plants were usually located in areas of chalk outcrop adjacent to the railroads in the prairie, and the lime was transported by rail or wagon to areas outside the prairie where soils were lime deficient. Fertilizer plants were located most commonly adjacent to crop processing plants, particularly to cotton gins and compresses. The principle of location appears to have been one of trade attraction through association or combination. Similar locational principles applied to feed mills, several of which were found in the larger communities. Icemaking plants were more commonly found in the interface area between the residential and commercial sections of town where they could best serve their local markets. Several references were found to tanneries in the period before the Civil War but they appear to have declined after that date. The tanneries were features of the rural landscape, probably small scale, and related to the pastoral tradition of the Upland South settlement areas. They were likely located adjacent to streams because of their requirements for water supply.

Miscellaneous Settlement Features

Virtually all of the material forms produced by the historic settlement process can be dealt with in the categories of agricultural, transportation, urban or industrial functions, but there are several prominent landscape features which do not easily fall into any of these classes. Among them are schools and colleges, churches and cemeteries, stagecoach inns, cotton slides and warehouses, and recreational facilities. While it is difficult to estab-

lish locational principles with respect to all of these features, their presence and visibility suggests that they are worthy of mention.

Churches, cemeteries, and schools may to a large degree have been reflections of population concentrations and their social needs. While country churches and cemeteries are today found in relatively deserted rural areas, they were probably not originally so situated. More likely, they were established in fairly well populated areas at route nodes where their accessibility and service role would be fostered. Usually, both churches and cemeteries were placed on hill sites, probably for a combination of both practical (drainage), philosophical, and aesthetic reasons. Rural schools in the early years were usually either private plantation schools or private city academies established for the education of the elite white planter and commercial classes.

Cemeteries vary in size and form and have qualities which reflect the nature of the communities which they served. Most cemeteries are small, with some restricted to individual families (e.g., the Cook family at Fairfield). In the more affluent farming areas of the Black Prairie and Tombigbee Terraces cemeteries with more elaborate tombs and tombstones occur. In the Fall Line Hills the quality of tombstones diminishes and many graves have no inscription on the native rocks which mark them. Occasionally, abandoned cemeteries are much larger than average, indicating that they originally serviced substantial communities (e.g., Memphis).

Rural schools in the early years of settlement were either private plantation schools or private city academies for the education of elite white planter and commercial classes. One-room schoolhouses were common, and a few of the more recent of these buildings still survive. There were isolated instances of special purpose schools such as those at Mayhew or at Charity Hall near to Cotton Gin Port. The founding and operation of the Mayhew Mission has been described by (Love, 1910: 363-401). Built by the American Board of Commissioners for Foreign Missions in 1820 to educate the Choctaw, the Mayhew Mission School operated until 1832.

According to Love (1910: 372), the mission was modeled after others established by the Board of Missions and consisted of a group of log cabins, the school, a lumberhouse and a grainery. The details of the site as provided by Love (1910: 374) are

As the site of the Mayhew Mission is an historic locality in East Mississippi, the Field Notes, filed April 27, 1832, by William Dowsing at the Land Office of Mississippi at old Washington, then the Capitol of the State, is here given:

North boundary T. 19. R. 15. East on 6th mile east.

The township ran between the two rows of houses, leaving some of the dwelling houses to the north, together with the horse mill and an excellent barn, about sixty feet square. The rest of the houses were to the south of the line, as was also the plantation. Having corrected the 1/4 section post, it stands in the garden at Mayhew, being a black-jack post 41 ch. 4 lks. Bearing trees N. 83° W. 91 lks. to a china tree

14 in. diameter, S. 87° W. 77 lks. to a china tree 4 in. diameter 44° 46 lks. through the pailings and garden six miles 2 ch. and 9 lks. to a persimmon post at the N.E. corner of T. 19. R. 15 East.

Owing to the great prominence of the place in the early history of the country, a description or mention of the several roads terminating at or passing through Mayhew may not be inappropriate. The Treaty Road, running almost due south from the station, was cut preparatory to the Dancing Rabbit Creek Treaty in 1830. The United States Commissioners passed over this road, both going to the treaty ground and returning therefrom. The Athens and Mayhew Road leading a little west of south. The so-called old Military Road passed from the northeast and ran half a mile to the west, then bearing to the southwest. Two roads of great prominence and importance lead to the east, one to Plymouth, the other to Columbus. None of these roads are now in existence, with possibly one or two exceptions. The building of railroads has changed almost completely the line of dirt roads in that vicinity.

Formal recreation facilities in the Upper Tombigbee in the nineteenth century are striking for their absence if church meeting grounds are excluded. One interesting exception which appears in the 1880's, however, is the roller skating rink, found in both Columbus and Aberdeen. These seem to have been instituted by cotton warehouse operators as a way of deriving revenue in their off season. The smooth, hard clay floor of the cotton storage yard probably made an ideal skating surface.

Stagecoach inns and taverns were once essential features of the cultural landscape, providing food and rest stops for travelers. Most of these were small and located at strategic points on the best traveled roads. Many of the inns and taverns were located in towns such as county seats or railroad junctions or river ports (e.g., Columbus, Aberdeen, Pickensville). Others were located at points where mealtimes occurred on particular stage schedules. Such examples are those at the hamlets of Darracott and Lunch, the latter named specifically because of its function as a midday meal stop. Route crossing points seem to have been particularly favored as the sites for inns and taverns.

Cotton slides and cotton warehouses developed as a result of needs experienced by cotton growers in their attempts to export produce. In many instances the best all-weather approaches to river transportation were via high ridges. Where these ridges abutted the river, bluffs were the characteristic resulting landform. Transport of the heavy cotton bales from the top of the bluff to the river involved a considerable manpower problem which was resolved by the development of graded banks of various kinds to facilitate the sliding of the bales down the river bank to the landing.

Cotton loading was one problem in transportation, cotton storage was another. Cotton, if it is to retain its quality, must be kept dry during transportation. Because steamboat schedules were somewhat unreliable, cotton, assembled at river ports for export, frequently had to wait for days or weeks for suitable transport. As a result a number of storage sheds or warehouses were built at the more prominent landings and railroad shipping points to handle the in-transit cotton. Such cotton warehouses usually comprised not only storage sheds but accommodations for draft animals and wagon drivers involved in the carriage of cotton from the farms to transshipment points.

CHAPTER VIII

THE RELEVANCE OF PREDICTIVE MODELS TO HISTORIC SITE ANALYSIS IN THE TOMBIGBEE RIVER MULTI-RESOURCE DISTRICT

One of the most important of the varied objectives of the Research Design was the structuring of analysis of the settlement system to test a variety of settlement models proposed by social scientists. It was anticipated that formulating and testing such settlement and economic models would produce a framework for evaluating the significance of the archeological sites, and a foundation for systematically selecting sites for extensive excavation as well as providing data for inferences on the operation of the social and political systems within the region. Several examples of the types of problems considered suited to address through the modeling approach were provided in the Research Design.

Based on these suggestions a number of models were selected for study in terms of their potential utility to mitigation activities in the TRMRD. The variety of these models reflects the catholic view of models presented by Skilling (1964). He argued that a model can be a theory, a law, an hypothesis, or a structured idea. It can be a role, a relation or an equation. It can be a synthesis of data. Most important from the geographical viewpoint, it can also include reasoning about the real world by means of translation in space (to give spatial models) or in time (to give historical models) (Chorley and Haggett, 1967).

Most models can be viewed to be both idealized and predictive (Haggett, 1965). Models are idealized because they provide a simplified structuring of reality which presents supposedly significant features or relationships in generalized form. They are predictive because they describe norms and standards of behavior, form, and function which are commonly replicated. They can be used to infer the character of a situation or operation where only partial information on that situation or operation is available.

Models are highly subjective approximations in that they do not include all associated observations or measurements but, as such, they are valuable in obscuring incidental detail and in allowing fundamental aspects of reality to appear. This selectivity means that models have varying degrees of probability and a limited range of conditions over which they apply. The most successful models possess a high probability of application and a wide range of conditions in which they seem appropriate. Indeed, the value of a model is often directly related to its level of abstraction. However, all models are constantly in need of improvement as new information appears, and the more successfully a model is originally structured the more likely it seems that such improvement must involve the construction of a different model.

The primary focus of attention with respect to models in the Literature Search has been on the identification and prediction of spatial regularities (commonly occurring landscape features of similar form and arrangement), and on the determination of functional interrelationships of settlement activities through time. A wide variety of concepts and settlement relationships were studied in terms of their potential application to the TRMRD. These topics can be categorized into the following five groups: (1) Models of regional cultural diffusion, colonization, adaptation and change, (2) Models of ethnic settlement systems, (3) Models of type of settlement structures, spatial arrangements, use, form, dimensions, design, and material components, (4) Models of relative location pertaining to spatial situation and cultural and economic association, and (5) Models of absolute location relating to site, topographic, physiographic, or environmental associations.

Models of Cultural Diffusion

The TRMRD region during the nineteenth century was undisputably a frontier of Euro-American colonization. As such it satisfied many of the conditions established by Lewis (1977) in his model of the frontier settlement process.

Based on numerous studies of the frontier as a geographical phenomenon, and his own observations of colonization in eighteenth century South Carolina, Lewis (1977: 152) made the following statements concerning the model frontier:

A frontier may be defined as a region in which the dispersal of settlement into a new territory takes place. It is the zone that separates the unsettled and settled portions of a territory that lie within or under the effective control of a state. Collectively it is referred to as the area of colonization. As a temporal phenomenon the frontier arises with the first influx of permanent settlement and ceases to exist only when an upper limit of growth is achieved accompanied by a stabilization of the settlement pattern.

The area of colonization must remain tied to the metropolitan area from which settlement originated because it is largely dependent on the maintenance of a complex network of trade and communications linkages that serves as the route of movement for new immigrants and supplies as well as an outlet for colonial products. This network also provides the basis for the social, political, economic and ideological integration of the newly settled territory.

Thus the frontier may also be seen as a geographical expression of an exchange network designed to permit the incorporation of unsettled territory into a larger socio-economic system. Frontier settlements function as nodes in this network and reflect the distribution of personnel and material in the most efficient way to permit the integration of activities in a sparsely settled area. The limits of the exchange network at any given time effectively mark the boundaries of the area of colonization . . . the frontier model is characterized by the following five conditions. First, prolonged contact must be continually maintained between the colonists and their parent society. Second, as a result of its relative isolation and the attenuation of trade and communications linkages with the homeland the intrusive

culture exhibits a sudden loss of complexity. Third, the settlement pattern in the area of colonization becomes more geographically dispersed than that of the homeland unless temporarily impeded by restrictive conditions. Fourth, the dispersed settlement pattern within the area of colonization is focussed around central settlements called frontier towns. The frontier town serves as a nucleus of social, political, economic and religious activities within a portion of the colony and as the terminus of the transportation network linking the area of colonization to the homeland through an entrepot. Because it serves as the primary link to the national culture, the frontier town forms the nexus of the communications network within the colony. Finally as the colony changes through time it also varies geographically. The pattern of temporal growth and change in a single community is replicated spatially, with those settlements closest to the moving frontier always representing the earliest stage of frontier development. As the colony expands with the influx of new settlers, areas of earliest settlement experience marked changes in population density and settlement pattern and become integrated at the national level with the socio-cultural system of the homeland. As the frontier expands settlements grow and take on new roles as they pass through a colonization gradient. The functions of the original frontier towns become decentralized and those towns that no longer occupy strategic positions in the trade and communication network decline and may be completely abandoned.

While Lewis' model of regional development applies in the most general sense to the Upper Tombigbee, evidence from the Literature Search suggests that certain refinements may be necessary to make this "frontier model" better conform to the Upper Tombigbee experience. These refinements result both from the dimension of time, expressed through the duration of the period of economic development to the end of the nineteenth century, and from the spatial dimension of territorial expansion.

Through time, technological advances, adjustments in patterns of economic production, changes in rates of population growth, and shifts of political and administrative organization modify the character of the settlement system. Interior penetration affects the spatial relationships of the frontier with its trade and communication linkages, and of the colonists with their parent society. The result through time and space is a diminishing relationship with the European culture area and an increasing orientation to the evolving society of the new territory. These adjustments are expressed particularly in the subsistence farming economy, and in commerce and industry oriented toward the domestic market.

While the frontier town may have been the focus of cultural activity in South Carolina in the eighteenth century, the foci of settlement in the Upper Tombigbee in the nineteenth century were more numerous. The Literature Search recognized three important foci of settlement activity: (1) the individual small farm with its associated rural hamlet service and community center, (2) the ante-bellum form of plantation landholding, and (3) the frontier town exemplarized most particularly by the county seat but also by towns on a river or railroad having frequent freight transfer functions.

Each of these three settlement forms can be viewed as individual modes of cultural diffusion and adaptation, and have been characterized as model/type forms (Upland South, Lowland South and Mercantile) in earlier chapters.

While there were economic and social interconnections between the three settlement forms such interconnections were often tenuous and periodic. The Upland South farmstead functioned primarily as a subsistence unit in economic terms and consequently was only minimally part of a cash exchange system. Upland South farmers looked to cities to provide relatively little to their general life support system. In most respects they were a people limited in the diversity of their material culture, relying on family labor and craft skills to satisfy their material needs. In contrast the plantation was fundamentally involved in a cash exchange economy and experienced little interchange with the subsistence farmer. While planters were more oriented to towns for certain service needs (law, health, education, etc.), the trade economy of many plantations was anchored through the factorage system to a distant port oriented to foreign markets (e.g., Mobile). By manufacturing many of their basic needs, exporting the cotton and by importing luxury and exotic items directly between the seaport and the nearest neighboring river landing, they avoided heavy trade involvement with the regional urban network.

It is little wonder that with reliance on these two forms of agricultural operations the cultural significance of the town in the settlement process was somewhat reduced in the TRMRD. Over time a limited number of settlements in advantageous trade locations, or with designated governmental functions, were able to accrue some of the standard accouterments which would qualify them as true towns (e.g., density and size of population, variety in retail functions, extensive residential area, industrial and servicing activities). These towns were the exceptions. The majority of settlements characterized as towns in the Upper Tombigbee in the nineteenth century were, from the modern viewpoint, better defined as villages. They were frequently only skeletal communities with no more than a handful of retail, warehousing, or service functions, and minimally developed residential areas in terms of number and density of houses. They were often founded speculatively and the majority proved ephemeral as constant adjustments were made in the settlement system to economic and environmental events.

Each of the three community types played distinctive roles in the settlement process of the Upper Tombigbee and they deserve further investigation to more precisely determine the nature of their character and function. While the Literature Search found considerable documentation concerning the character of the frontier town, many details of farmstead, plantation, and hamlet operation are not well preserved and may require archeological investigation for accurate interpretation.

Models of Ethnic Settlement Forms

Attempts to determine the character of ethnically based settlement systems during the historic period through the Literature Search, were not very successful. The period of co-existence between Indians and white settlers in the Upper Tombigbee was relatively brief and is poorly documented. The archeological record must stand largely alone as the basis for interpretation. A similar situation occurs with respect to Black settlement. Because of the economic and social position of Blacks throughout the nineteenth century, little concern was given to documenting their way of life or material culture in the Upper Tombigbee. Some limited evidence is available from the contemporary record and from other regions which may provide a basis for interpreta-

tion (Wilhelm, 1975). For the most part Blacks appear to have adopted or accepted the material forms of the Euro-American settlement system.

Models of Type of Settlement Structures

A somewhat different concern of the Literature Search was to provide models of particular types of settlement structures. Such models consist of typical or standard attributes of character such as spatial arrangement of buildings and land uses, as well as building design dimensions, and material components. Among the site structures assessed in detail were ferries, fords, landings, farmsteads and plantations, stores, towns, villages, and industries. Principles of form and function have been elaborated for each of these categories in Chapters IV-VII. While individual sites of any use type have infinite variety in terms of their precise structural detail, the recurring characteristics noted in this study should provide a sound predictive guide for archeological investigation.

Models of Relative Location

When relative location was considered the Literature Search contributed mixed results. Research was conducted on the regional patterns of both cultural and economic development. Research on the geographic pattern of cultural development indicated the regional presence of the same cultural dichotomies which characterize other parts of the southern states. The primary distinctions between Upland South and Lowland South settlement forms are well exhibited in the Upper Tombigbee Valley, and there is a clear relationship in their areal expression to the major physiographic divisions of the region. Figure 73 shows the regional distribution of Upland South and Lowland South settlement types using house forms and farm arrangements as the main indicator. It also shows the main directions of cultural migration into the Upper Tombigbee area.

As with most cultural distributions particular type forms in this area co-exist with other type forms, so that in all parts of the region certain elements of both the Lowland South and Upland South cultures are found. The main regional distinctions have to be drawn on the basis of dominant characteristics, and as the map indicates Upland South dimensions do dominate in the Fall Line Hills, while Lowland South dimensions characterize the Black Belt. The Upland South settlements owe their origins primarily to migration routes through the Southern Appalachians. The Lowland South settlements owe their origin primarily to a culture stream entering the area from central Georgia and the Carolina piedmont, with a smaller influence from the Tennessee Valley. The Upland South-Lowland South model is further discussed under "Models of Absolute Location."

Research on the geographic pattern of regional economic development indicated strong correlation between the Upper Tombigbee and other colonial settlement surfaces. Patterns of both interior penetration lines and the location and relative development of settlement in the Upper Tombigbee are characteristic of settlement sequences identified by geographers in other colonial situations, and particularly in other areas of North America. The

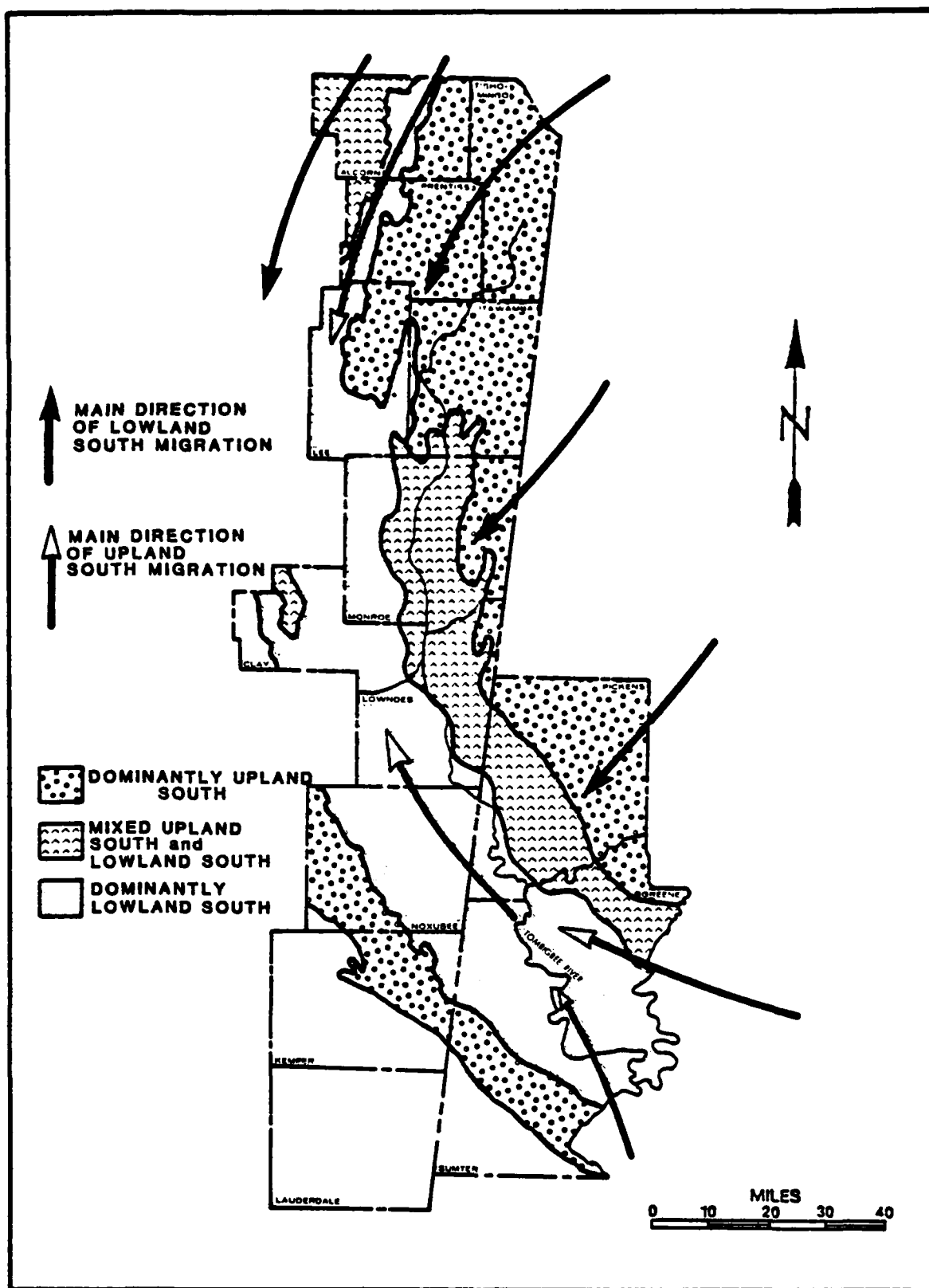


FIG. 73. GENERALIZED DISTRIBUTION OF UPLAND SOUTH AND LOWLAND SOUTH CULTURE TYPES.

periodic adjustments to developments in transportation technology and the tendency toward a progressive concentration of both population and traffic over time in the TRMRD are well established experiences.

The geographic model which best explains the early economic development of the Upper Tombigbee is the "ideal-typical Transport Sequence" established by Taaffe, Morrill, and Gould (1963). This model hypothesizes the evolution of a colonial settlement surface through a port city gateway with hinterland competition as the primary determinant of community survival and growth. According to Taaffe, Morrill, and Gould (1963: 503-505):

The first phase (of a regional transport network) consists of a scattering of small ports and trading posts along a sea-coast [Fig. 74A]. There is little lateral interconnection except for small indigenous fishing craft and irregularly scheduled trading vessels, and each port has an extremely limited hinterland. With the emergence of major lines of penetration [Fig. 74B], hinterland transportation costs are reduced for certain ports. Markets expand both at the port and at the interior center. Port concentration then begins, as illustrated by the circles P_1 and P_2 . Feeder routes begin to focus on the major ports and interior centers [Fig. 74C]. These feeder routes give rise to a sort of hinterland piracy that permits the major port to enlarge its hinterland at the expense of adjacent smaller ports. Small nodes begin to develop along the main lines of penetration, and as feeder development continues [Fig. 74D], certain of the nodes exemplified by N_1 and N_2 , become focal points for feeder networks of their own. Interior concentration then begins, and N_1 and N_2 pirate the hinterlands of the smaller nodes on each side. As the feeder networks continue to develop around the ports, interior centers, and main on-line nodes, certain of the larger feeders begin to link up [Fig. 74E]. Lateral interconnection should theoretically continue until all the ports, interior centers, and main nodes are linked. It is postulated that once this level is reached, or even before, the next phase consists of the development of national trunk-line routes or "main streets" [Fig. 74F]. In a sense, this is the process of concentration repeated, but at a higher level. Since certain centers will grow at the expense of the others, the result will be a set of high-priority linkages among the largest.

The Taaffe model appears to apply to the Tombigbee through the mid-nineteenth century when the area was economically tied to the port of Mobile. After 1860, internal developments were less oriented to the Mobile trade focus as connections to the Northeast and Midwest were opened. During the last part of the nineteenth century the settlement model which appears to have most relevance is one developed by Lachene (1964) for northern France.

According to Lachene, the initial period of settlement is characterized by a sparsely populated territory where economic activity is fairly uniform (Fig. 75a). There is little trade, and in the place of a proper transport network there are merely tracks. The economic potential is practically the same throughout the territory and growing slowly. At the end of the first stage the first transport network is created, consisting of simple roads. This network does not demand a great deal of capital, and its carrying capacity is small. Quantitatively, therefore, a great number of links are created,

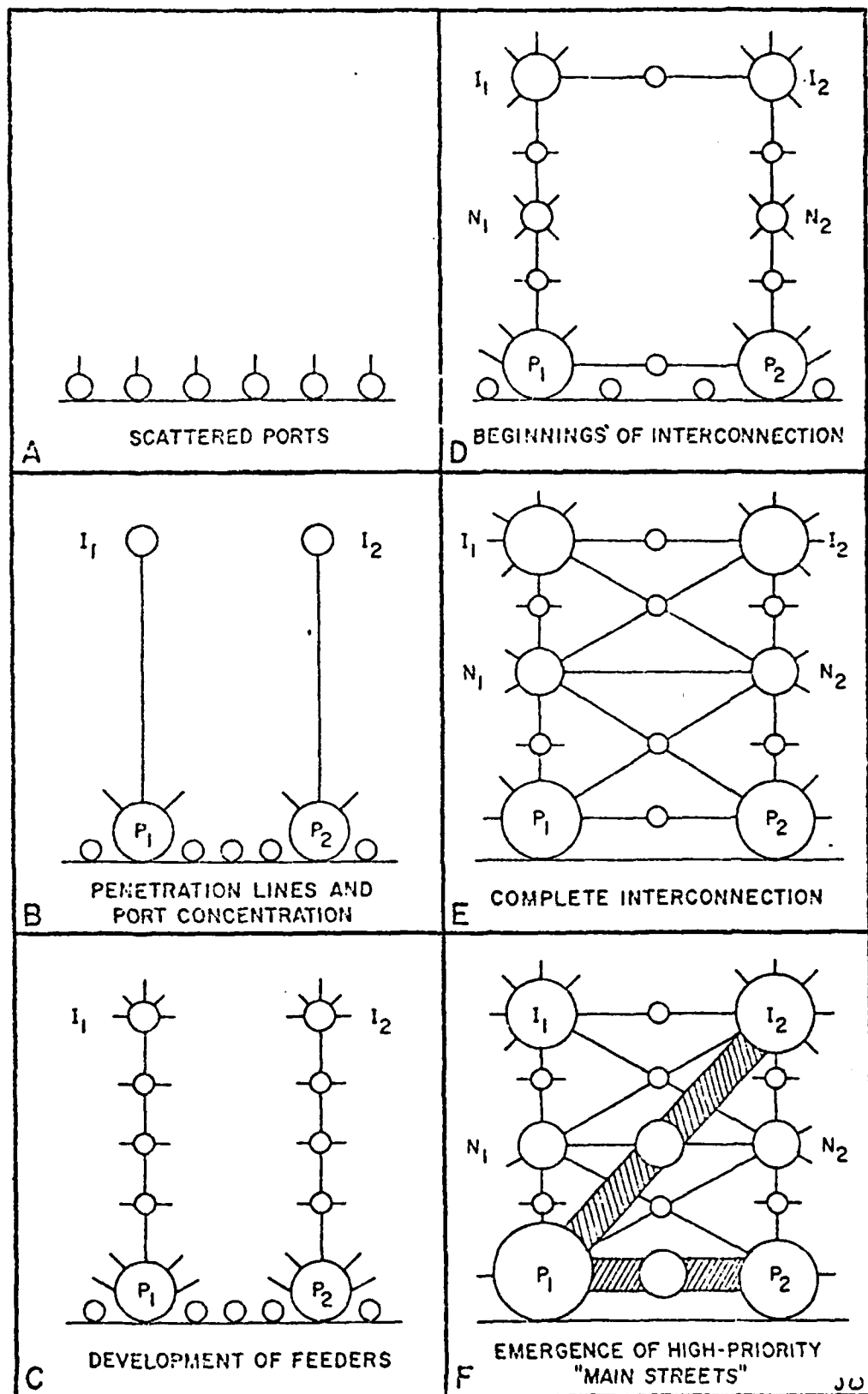


FIG. 74. THE IDEAL-TYPICAL TRANSPORTATION SEQUENCE.

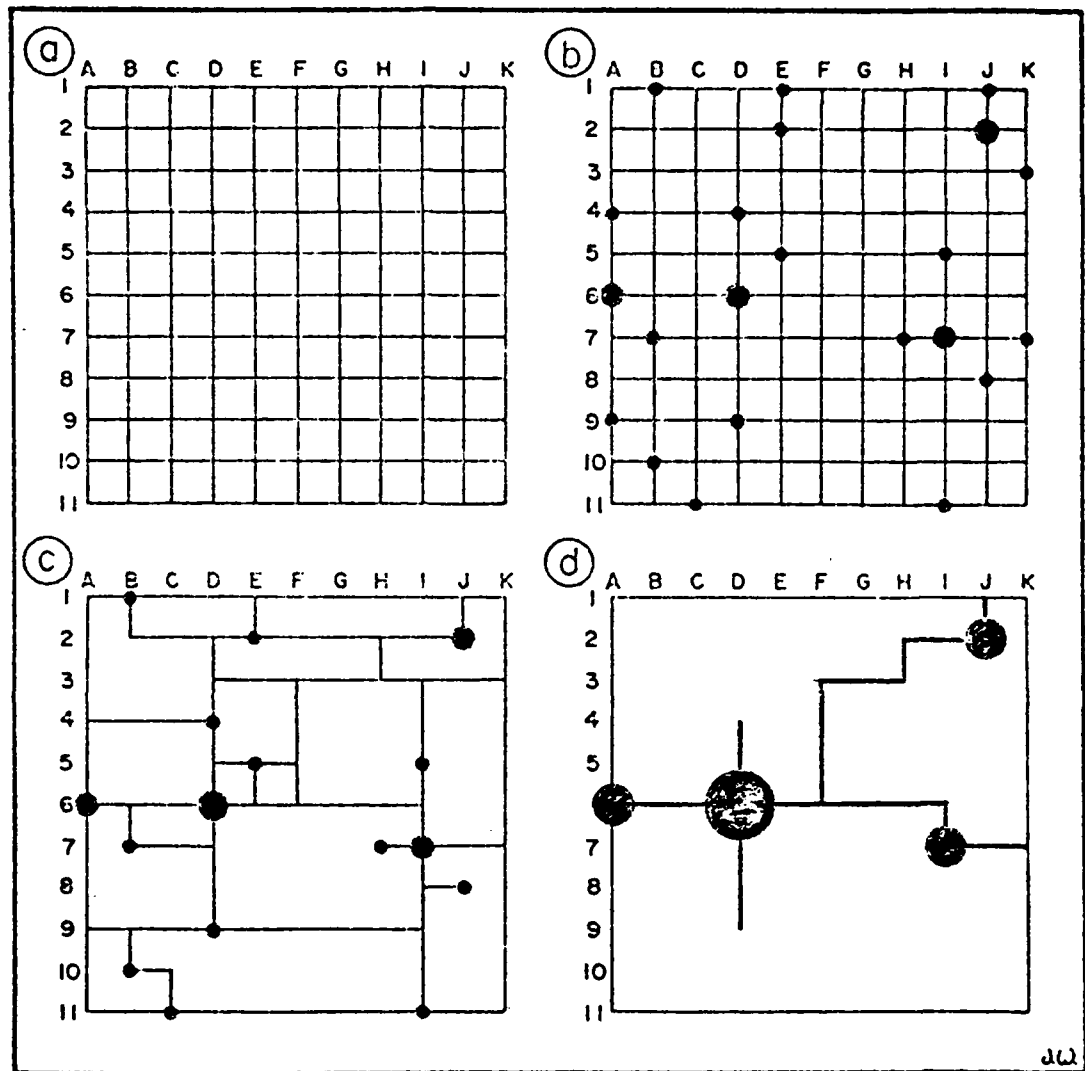


FIG. 75. EVOLUTION OF SETTLEMENT SYSTEM ACCORDING TO LACHENE.

and practically all the villages of the territory are touched by the network. The development of the network continues, and towns begin to appear at some of the intersections (Fig. 75b).

Lachene specifies no reasons for these individual emergences, but says the reasons for the choice of such intersections ought to be studied. He suggests that some of them may already have a somewhat higher potential than the others, or that irrational decisions may be responsible for their growth. All intersections do not produce towns. Four towns--A6, D6, I7, and J2--acquire a preeminence. Town A6, which is peripheral, owes its preeminence to its position as a bridgehead for trade with the outside world. The parallel to Mobile is noteworthy.

At the end of this stage of emergence the general development of the territory and the evolution of transport techniques make it possible to create a transport network of a new type such as railroads. This is characterized by greater capacity and higher capital expenditures than was the case with the former system. In order to reduce capital investment, and also because the former network is sufficient for traffic on most routes, the new network is set up only between a limited number of towns (Fig. 75c). The decision as to which towns shall be included in effect also determines which towns will be destined to grow.

The creation of the third stage improves the potential of all the points in the territory, but particularly that of points A6, D6, I7, and J2. The disparity in potentials is accentuated with the result that towns A6, D6, I7, and J2 grow even more rapidly, thus absorbing practically all the growth in the territory. When a third network, such as super highways, is created the only towns which can conceivably be joined up by this network are these same towns. In this final stage (Fig. 75d) Lachene invokes governmental regional planning decisions for the development of stronger links around one town, D6. This assures its dominant position, and a metropolis comes into being. At the same time many communities in the region suffer an economic drain and grow only slowly or decline.

While both the Taaffe and Lachene models help to explain the pattern of settlement evolution in the Upper Tombigbee within a regional and temporal context, neither is particularly valuable as a predictive tool. The models are historical ones explaining processes of settlement expansion, contraction and selective development. They do not predict either the number or precise distribution of communities within a settlement system. Such problems are better addressed by central place analysis.

During the Literature Search there was an attempt to analyze the settlement evolution of the TRMRD in terms of central place theory, a geographic concept dealing with pattern in the relative size and spacing of cities (towns). Central place theory has evolved from research on contemporary regional and urban structures where a variety of quantifiable data is readily available. The basic problem with historic application of central place theory is that essential information for certain parameters is difficult to obtain on the requisite areal scale. Where information is lacking on population size and density at conformal times and where information is lacking on spheres of influence, volumes of trade, and ranges of goods, the testing of central place

models becomes extremely problematical. The narrowly defined corridor of the TRMRD, and the lack of quantitative data on a regional scale provided an unsurmounted obstacle to assessment of the TRMRD settlement pattern as a form of central place distribution. This suggests not that central place theory is invalid for the TRMRD but that central place concepts may not be readily used there in predictive ways to facilitate archeological analysis.

Models of Absolute Location

One of the main concerns of the Literature Search was the precise location of documented sites in terms of the contemporary environment, both physical and cultural. To this end a reference file of cultural sites was assembled consisting of two elements. The first was a site locator file in the form of 7 1/2' or 15' U.S.G.S. topographic quadrangles. A second part consisted of a gazetteer of site name, type, geographic location by township and range, and a brief historic description. This reference system provided readily accessible information on the nature and location of documented sites. Interagency Archeological Services and the Corps of Engineers expressed substantial interest in the potential use of this data file to develop a predictive capability with respect to cultural sites, based upon their environmental associations.

It was determined by the Federal Project Managers that a statistical analysis of site types and locations and their environmental associations was desirable. When appropriate procedures for such analysis were investigated it was found that the site form recording system in use by the project was not adequate or valid for statistical manipulations. As a result a second inventory form was developed based upon an archeological site inventory form already adopted for use in the TRMRD (Appendix C). Information from contemporary topographic map sheets and other documentary sources was then recorded on inventory forms for each of seven types of historic cultural sites found in the District. These were settlement (small store oriented nucleations), community, town, or city, landing, ferry and ford, industry and farmstead. All information was derived from previously assembled documentary materials rather than from field investigation.

Site Characteristics

The site characteristics initially included for analysis were the following: physiographic association, geological association, topographical association, soil type, type of nearest water source, distance to nearest water source, type of second nearest water source, distance to second nearest water source, degree of site slope, proximity to navigable water, proximity to roadway, proximity to railroad, distance to nearest city, distance to nearest town, distance to nearest community, distance to nearest settlement, distance to upstream ferry, distance to upstream landing, distance to upstream bridge, distance to upstream stream junction, the same set for downstream locations, type of bank, type of street pattern (where applicable), transportation association, and corridor section (See Table 2 for categories of each).

Of these variables, physiographic association is of particular interest to the model testing aspects of this study. The major physiographic divisions

TABLE 2

Categories of Variables Used in the Analysis

Site Classification (SITCLASS)	
Settlement-Store	Ferry and Ford
Community	Industry
Town or City	Farmstead
Landing	
Physiographic Association (PHYSIOG)	
Pine Hills	Black Prairie
North Central Hills	Fall Line Hills
Flatwoods	Tombigbee Terraces
Pontotoc Ridge	
Geologic Association (GEOLOGY)	
Chester Group	Dempopolis Chalk
Tuscaloosa Formation	High Terrace Deposits
Eutaw Formation	Ripley Sand
Coffee Sands	Recent Alluvial Deposits
Mooreville Chalk	Eutaw-Tombigbee Sand
Topographic Association (TOPOG)	
Upland Bluff	Low Terrace
Ridgeslope	Intermediate Terrace
Base on Ridge	High Terrace
Bottomland Knoll	Point Bar
Active Floodplain	Channel Bar
Valley Terrace	Ridge Nose
Levee	Upland Saddle
Backswamp	
Soil Type (SOIL)	
Bedrock	Silt Loams
Gravel	Silt
Marl	Clay Loams
Sands	Sandy Clay Loams
Loamy Sands	Sandy Clays
Sandy Loams	Silty Clays
Fine Sandy Loams	Clays
Very fine Sandy Loams	Not Available
Type of Nearest Water Source (TYPEWAT) and Type of Second Nearest Water Source (TYPEWAT2)	
Marsh-Bog	Second Order Stream
Backswamp	First Order Stream
Lake	Estuary
Oxbow Lake	Ocean
Fourth Order Stream	Spring
Third Order Stream	
Slope at Site (SLOPE)	
0.0 - 2.9%	15.0 - 25.0%
3.0 - 6.9%	Greater than 25.0%
7.0 - 14.9%	
Proximity to Navigable Water (NAVPROX)	
Proximity to Major Road (ROADPROX)	
Proximity to Railroad (RRPROX)	
Adjacent	1.0 - 2.49 Miles
0.0 - 0.24 Miles	2.5 - 4.9 Miles
0.25 - 0.49 Miles	5.0 - 10.0 Miles
0.50 - 0.90 Miles	Greater than 10.0 Miles
Type of Stream Bank (BANKTYPE)	
Reach	Point Bar/High Bank
Inside Bend	Entrenched Stream
Outside Bend	Alluvial Stream
Narrow	Not Associated
Point Bar/Point Bar	
Type of Settlement (TYPESETT)	
Settlement - Store	City
Community	Other
Town	
Street Pattern (STPATT)	
Standard Grid	Checkerboard
Non-standard Grid	Irregular
Grid Combination	Not Applicable
Transportation Association (TRANASS)	
River	Railroad
Road	

conform directly with the major regional elements of the rural settlement pattern differentiated through the Upland South-Lowland South culture dichotomy. Table 4 and Appendix B show the physiographic association variable to be significantly related to the type of settlement variable, but the degree of relationship is weak. The low level of support for the Upland South-Lowland South model is most probably a result of the limited number of sites recorded in specific categories. A larger sample size would probably indicate a stronger link between site types and settlement regions.

Several problems were recognized with respect to the data. The analysis was affected by the great variation in absolute number of recorded sites in particular use categories (see page 176) (e.g., country stores 6, farmsteads 10, cities 8, industries 32, ferries and fords 40, landings 53, and communities 126). This variation was due to the problem of precisely locating particular settlement forms (e.g., farmsteads) through the regional survey approach. For some classes the number of sites treated represent virtually one hundred per cent of the historic occurrences in that class (e.g., landings, cities, communities). For others the determined sites represent a very small number of the historic occurrences (e.g., farmsteads and stores). While the statistical validity of using such low numbers to represent a class is seriously impaired, it was decided to perform the analysis on these categories with the recognition that outcomes could not be conclusive.

A second problem concerned the applicability of variables. Clearly, some variables refer only to certain types while others are generally applicable. This difference is taken into account in the analysis phase. The distance variables, especially those measuring distance to nearest type of settlement, to nearest ferry, landing, bridge, and stream junction, proved to be confounded by the widely differing ages of the sites involved and were dropped from the analysis.

Two distinct analyses were performed. The first compared a variable composed of all site types against an appropriate set of variables, taken one at a time, in 2-way crosstabulation tables. The second compared only settlement types with appropriate variables in 2-way crosstabulation tables. Three statistics were used to assess the relationship summarized by the tables: chi-square, asymmetric lambda, and the asymmetric uncertainty coefficient. Chi-square is a general test of the relationship between the observed joint distribution and a theoretical distribution that would exist if the two variables were independent of each other. When chi-square is significant, the observed and theoretical distributions are said to be different, i.e., there is variation within the cells of the crosstabulation table suggesting that the two variables being compared are related. Chi-square does not provide any indication of the relationship's strength. To measure the strength of the relationship, if shown to exist by chi-square, two statistics were used: lambda and the uncertainty coefficient. Lambda, which depends upon the modal case of the row variable, was found to be insensitive under two sets of conditions: (1) when the modal case is not strong, and (2) when there is no single mode. The uncertainty coefficient does not have these drawbacks and is more intuitively interpretable. The statistic is inverse since a small value suggests high uncertainty and a large value less uncertainty (See Table 3 for derivation of the uncertainty coefficient). Both lambda and the uncertainty coefficient can, in their asymmetric forms, allow a dependency relationship. The asymmetric form of each was used in this analysis.

TABLE 3

Derivation of the Uncertainty Coefficient (U_A)

Uncertainty $H(Y)$ is defined as:

$$H(Y) = - \sum_{i=1}^n \log_2 P_i(Y_i) P_i(Y_i);$$

where $p_i(Y_i)$ = probability of occurrence of the i th value of a variable Y .

For a 2-way crosstabulation table the uncertainty of the row variable (Y) is defined as:

$$H(Y) = - \sum_{i=1}^m P_{ij}(Y_i, X_j) \log_2 P_{ij}(Y_i|X_j);$$

where $P_{ij}(Y_i, X_j)$ = joint probability of Y_i and X_j ; i.e. of a cell in the table.

$P_{ij}(Y_i|X_j)$ = conditional probability of Y_i given knowledge of X_j .

Y_i : a category of the row variable.

X_j : a category of the column variable.

The uncertainty coefficient (U_A) is defined as:

$$U_A = H(Y) - H_X(Y) \quad ; \quad 0.0 \leq U_A \leq 1.0$$

TABLE 4

Statistical Summary of Crosstabulation by General Site Type

	χ^2^*	Λ_A	U_A
Physiographic Association	63.95	.02	.09
Geologic Association	87.30	.05	.12
Topographic Association	317.66	.39	.32
Type of Soil	108.71	.09	.13
Type of Nearest Water Source	224.80	.25	.29
Type of Second Nearest Water Source	107.10	.15	.12
Slope Type	35.67	.00	.05
Proximity to Navigable Water	269.97	.32	.37
Proximity to Major Road	113.61	.01	.15
Proximity to Railroad	115.60	.00	.11
Type of Bank	127.80	.20	.17
Type of Settlement	558.83	.40	.46
Street Pattern	178.46	.03	.06
Transportation Association	60.80	.14	.08
Corridor Section	62.07	.00	.09

*All significant at $\alpha \leq .01$.

Crosstabulation by General Site Type

The general site type classification variable was crosstabulated with physiographic association, geological association, topographic association, soil type, type of nearest water source, type of second nearest water source, slope, proximity to navigable water, proximity to major road, proximity to railroad, type of river bank, transportation association, and corridor section. All were found to be related to general site type with chi-square values significant at $\alpha < .01$.

When the strength of the relationships was measured by lambda and the uncertainty coefficient, the possibility of accurately predicting type of site by having knowledge of the included characteristics was shown to be slight. This is particularly obvious when the two statistics are viewed in their asymmetric forms which allow a dependency relationship to be posited--in this case site type is said to depend on the predictor variable. In the case of lambda, knowledge of the predictor variable is said to decrease the error in prediction of the dependent variable. For the uncertainty coefficient knowledge of the predictor variable is said to decrease the uncertainty in the prediction of the dependent variable. As shown below, the uncertainty coefficient is a more sensitive measure than lambda for any given variable.

As Table 4 shows, each of the variables used in this analysis is significantly related to the dependent variable as measured by chi-square for $\alpha < .01$. This simply means that the observed set of joint frequencies is different than the set derived under an assumption of independence, i.e., there is a relation between the two variables for each 2-way table. The demonstrated existence of some kind of relationship suggests that further investigation into the nature of each relationship is warranted. Since the variables used are scaled only nominally, statistics meant for nominal data must be used, thereby limiting the power of the tests compared to tests for interval or ratio scaled data.

Both asymmetric lambda (Λ) and the asymmetric uncertainty coefficient (U_A) provided mutually confirmatory evidence of a low to moderate relationship between the dependent variable, site class, and each of the other independent variables. In some cases lambda severely underpredicted the strength of the relationship (SLOPE, ROADPROX, RRPROX) due to a weak modal category and in others slightly overpredicted the strength of the relationship (TOPOG, BANK-TYPE, TRANASS) due to a strong modal category. In every case, however, the uncertainty coefficient, based on the whole distribution rather than the modal category, provided a more reliable measure of the relationship between site class and each of the independent variables than did lambda.

In no case did the value of U_A reach .5 suggesting that for this data set there is substantial uncertainty in the prediction of site class given any one of these variables. Only for NAVPROX did U_A approach .4 (.37). TOPOG has a U_A value of .32 with TYPEWAT at .29. The remaining variables had U_A values below .2 approaching maximum uncertainty in prediction of site class. Since no single variable was shown to be a strong predictor of site class, little more can be said about the relationships summarized in Table 3. The remaining sections of this chapter deal with a descriptive analysis of the 2-way tables exhibited in Appendix A.

Analysis of Selected Variables Related to General Site Type

The predictor variables having the greatest importance in the prediction of site classification as shown by the statistical analysis are topographic association (TOPOG), type of nearest water source (TYPEWAT), and proximity to navigable water (NAVPROX).

TOPOG

The upland bluff category is associated with 33% of the settlements, 54% of the communities, 37.5% of the towns/cities, and 30% of the farmsteads representing the greatest proportions of the mentioned site classifications to be associated with any category of topography. The remaining settlements are spread evenly among ridge slope, base of ridge, active floodplain, and levee. Of the remaining communities 20.6% are associated with ridge slope and the remainder spread among all but two of the topography categories with 7% or less. Of the remaining towns/cities 25.0% are associated with levees with the remainder on ridge slope, base of ridge, and high terrace (12.5% each).

Landings are predominantly associated with levee locations (52.8%, somewhat less with upland bluffs (20.8%) and bottomland knolls (13.2%). The remaining landings are associated with ridge slope (7.5%) and active floodplain (5.7%).

As might be expected, ferries and fords are strongly associated with active floodplain (85.0%). The remainder are associated with levees (7.5%), ridge slope (5.0%), and base of ridge (2.5%).

Industrial sites have no strong association with any one category of topography although 28.1% are levee locations, 18.8% are upland bluff locations, and 15.6% are bottomland knoll locations. The remainder of industrial sites are spread through virtually all other categories of topography in small proportion.

The largest proportion of sites of all types occurs in the upland bluff category with 33.8% of the total. This is followed by levees with 18.2% of all sites, active floodplain with 15.3%, and ridge slope having 13.8% of all sites. The remaining categories have less than 7% of the sites in each.

TYPEWAT

In order to assess the relationship between settlement locations and available surface water supplies, it was necessary to differentiate the various kinds of water channels present. Water features were designated as lakes or channel segments, with the channel segments separated into orders based on sequence of development. The concept of stream order has been described by Strahler (1969:483).

Given a map of a complete stream channel network we can subdivide the network into individual lengths of channel, or channel segments according to a hierarchy of orders of magnitude assuming a sequence of

numbers to the orders. . . . Each finger-tip channel is designated as a segment of the first order. At the junction of any two first-order segments a channel of the second order is produced and extends down to the point where it joins another second order channel whereupon a segment of third order results and so forth. However should a segment of a first order join a second or third order segment no increase in order occurs at that point of junction. The trunk stream of any watershed bears the highest order number of the entire system.

For the type of nearest water source, settlements were split between first order streams (66.7%) and lakes (33.3%) with no other category being associated. For communities, 48.4% were associated with lakes, 27% with first order streams, and 16.7% with fourth order streams; no other category had more than 5%. Towns/cities were split nearly evenly among lakes and first order streams (37.5% each) and fourth order streams (25%). Landings were overwhelmingly associated with fourth order streams (96.2%). Ferries and fords were also largely associated with fourth order streams (80.0%). Industrial sites were more diffuse but still predominantly associated with the fourth order stream (40.6%). First order streams accounted for 15.6% of industrial sites. Third order streams and marsh-bog categories follow with 12.5% each. No other category had more than 10% of industrial sites. Farmsteads were associated with lakes (40%), first order stream (30%), and backswamp, fourth order streams, and second order streams (10% each).

Overall, the fourth order stream (Tombigbee) is associated with 43.6% of all sites. Lakes are associated with 26.5% of all sites, and first order streams with 17.8% of all sites.

NAVPROX

Settlement-stores were all over 0.5 mile from navigable water with 33.3% between 1 and 2.5 miles and between 5.0 and 10.0 miles. The largest single category of communities was between 2.5 and 5 miles from navigable water with 19.8% between 1.0 and 2.5 miles. However, there were 18.3% between 0.0 and .05 mile from navigable water. The largest total proportion was beyond 1.0 mile from navigable water (69%). This suggests that communities as a group were not strongly dependent on riverine locational advantages but were very likely more dependent on their relationship with surrounding hinterlands. Towns/cities were clearly dichotomized with 37.5% within 0.25 mile of navigable water and 62.5% between 1.0 and 5.0 miles from navigable water. Landings were predominantly adjacent to navigable water (90.6%) as would be expected. However, one landing was found between 1.0 and 2.5 miles from navigable water.

Industrial sites were weakly dichotomized into a group between 0.0 and 0.25 mile from navigable water (46.9%) and into a group between 1.0 and 2.5 miles from navigable water (25%). The remaining industrial sites were spread among the other categories with less than 10% in each.

Farmsteads were predominantly (50%) between 2.5 and 5 miles from navigable water with 20% between 1.0 and 2.5 miles. None was adjacent to navigable water.

The adjacent category contains the largest proportion of all sites (32.4%) due to the overwhelming predominance of landings and ferries and fords in this category. No other category contained more than 20% of the sites. However, when the 1.0 to 2.49 miles category is added to the 2.5 to 4.9 miles category, 34.1% of the sites fell into this category. This distance band is dominated by settlement-stores and towns/cities.

Crosstabulation by Settlement Type

The dependent variable, settlement type, has four types or categories: settlement, community, town, and city. These are ordered by increasing size of population. The variables and their statistics are shown in Table 5.

An inspection of Table 5 will show that only four of the variables are shown to vary with settlement type as tested by chi-square: topographic association, soil type, proximity to railroad (a categorized distance variable), and street pattern. In nearly every case, including the non-significant, lambda gives a value of zero suggesting complete error in the prediction of the dependent variable. Only street pattern gives a value of lambda, 0.50, greater than zero. Of greater interest, however, is that the uncertainty coefficient is never zero, suggesting that the coefficient is measuring the contribution of the whole distribution rather than just the influence of the modal category as does lambda.

The street pattern variable has been included here as a test rather than as a true predictor variable for settlement type since, it is likely that, if the street pattern is known, so also is the type of settlement. The amount of uncertainty for street pattern is the lowest of any of the included variables which tends to reinforce the validity of the uncertainty coefficient as a measure of the importance of predictor variables.

Of the remaining three significant variables, soil type, proximity to nearest railroad, and topographic association, the values of the uncertainty coefficient are 0.21, 0.26, and 0.37 respectively. While these suggest that there exists substantial uncertainty in the prediction of settlement type using these variables as predictors, there does not exist the complete error in prediction implied by lambda. It should be noted as well that the uncertainty coefficient avoids the possibility of overstating or misunderstanding the relationship between two variables, a possibility that often occurs when only chi-square is used to assess a relationship.

Description of Statistically Significant Relationships

In this section the predictor variables having the greatest importance in the prediction of settlement type are discussed in the context of their cross-tabulation tables. The emphasis is upon the observed joint frequencies contained in the table cells which suggest either non-random or non-uniform relationships. The categories of settlement type are shown in the rows of the table while categories of the predictor variable are shown as columns of the table. The discussion will center on the percentage of row or column totals contained in cells of interest (See Appendix B for the tables). The most

TABLE 5
Predictor Variables and Cross-tabulation Statistics,
for Settlement Types

	Chi-squared*	Lambda	Uncertainty Coefficient
Physiographic Association	5.00**	.00	.07
Geologic Association	10.53**	.00	.12
Topographic Association	42.18***	.00	.21
Soil Type	39.51	.00	.26
Nearest Water Source	2.82**	.00	.05
Second Nearest Water Source	6.85**	.00	.09
Terrain Slope	5.26**	.00	.09
Proximity to Navigable Water	19.87**	.00	.16
Proximity to Major Road	15.62**	.00	.19
Proximity to Railroad	63.91	.00	.37
Street Pattern	185.54	.50	.62

*Significant at .01 unless otherwise shown.

**Not significant at .05 or smaller.

***Significant at .03.

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HISTORICAL GEOGRAPHY OF THE UPPER TOMBIGEE VALLEY.(U)
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important variables as shown by the statistical analysis are topographic association (TOPOG), soil type (SOIL), proximity to railroad (RRPROX), and street pattern (STPATT).

TOPOG

The settlement-store category was associated in equal proportion with three categories of topography: upland bluff, ridgeslope, and active floodplain. Communities were strongly associated with the upland bluff category (50.7%) with 19.9% in the ridgeslope category. For the remaining communities no more than 9% were in any other category. Towns were evenly split among upland bluff, bottomland knoll, and high terrace. Cities were split between three categories as well with 50.0% in the upland bluff category, while the remainder were split evenly between the base on ridge and levee categories.

The upland bluff category predominates with 50.0% of the settlement type in this category. This is followed by ridgeslope with 19.2% of all items in settlement type. Levee sites accounted for 8.1% of all items with base on ridge accounting for 6.2%. All other categories contained fewer than 5%.

SOIL

Clay soils were associated with 66.7% of the settlement-stores with the remaining in fine sandy loam. Communities were associated most strongly with fine sandy loam soils (39.0%) and with clay soils (11.8%). For 31.6% of the communities no soil identification was available. Towns were most strongly associated with silt loam soils (66.7%) with the remainder having no soil type identified. Cities were most strongly associated with fine sandy loam soils (50.0%) with the remainder split evenly between silt loam soils and clay loam soils.

Overall 38.4% of the settlement types were associated with fine sandy loam soils. However, 30.1% of the settlement types had no soil type available. The remaining settlement type items were spread among a variety of soil types at less than 10% per soil type.

RRPROX

The settlement-store category was most highly associated with distances beyond 2.5 miles from the nearest railroad with 66.7% between 2.5 and 4.9 miles and 33.3% between 5.0 and 10.0 miles from the nearest railroad. Communities were found in successively higher proportion as distance from the nearest railroad increased from a low of 4.4% adjacent to a railroad to 29.4% between 5.0 and 10.0 miles from a railroad. Over 50.0% were more than 1.0 mile from the nearest railroad. Towns were not located with any regularity with respect to railroads (33.3% adjacent, 33.3% between .25 and .44 miles, and 33.3% between 2.5 and 4.9 miles). All cities were, however, adjacent to a railroad.

The dominance of the community category and its direct relation with distance to the nearest railroad is mirrored in slightly diminished intensity in the overall percentages across categories of RRPROX except for the adjacent category where the predominance of the city category raises the percentage of all settlement types to 7.5%.

STPATT

The crosstabulation table with settlement type is dominated by the minor diagonal cells with the first two categories (settlement-store and community) being shown as entirely not applicable. Towns are split evenly among standard grid, grid combination, and irregular street patterns. Cities are shown as having largely grid combination street patterns (75.0%) with the remainder (25.0%) in the standard grid category.

The overall percentages across categories of street pattern are dominated by the not-applicable category (95.2%). Of the rest, 2.7% of the settlement types (57.0% of those actually coded by type of street pattern) were of the grid combination street pattern. The standard grid category accounted for 1.4% of the settlement types (28.6% of those actually evolved by type of street pattern). The remainder (9.7%) was irregular in street pattern.

Summary and Comments

When general site types were crosstabulated with various environmental associations and tested by the chi-square procedure they were all found to be related with chi-square values significant at $<.01$. This suggests that for each variable there exists some measure of relationship with site type. It also shows that certain environmental associations are more likely for some site types than for others. The predictor variables having the greatest significance for site types are topographic association (TOPOG), type of nearest water source (TYPEWAT), and proximity to navigable water (NAVPROX). The predictor variables having the greatest significance for settlement type were topographic association (TOPOG), soil type (SOIL), proximity to railroad (RRPROX), and street pattern (STPATT).

Although chi-square indicates varying relationships, lambda and uncertainty coefficient procedures show that the probability of accurately predicting type of site by having knowledge of the included characteristics is slight. The combined conclusion of the statistical tests therefore is that while there are demonstrative relationships between site type and environmental association these relationships appear too weak to enable accurate and reliable prediction of site occurrences.

It is possible that the failure to measure stronger relationships is a fault of the data gathering procedure. The data base was generated entirely from the reading of topographic maps. It is possible that more predictively important variables were omitted from the study and that several of the variables were mis-specified as well as mis-identified during the data collection phase. These problems, however, are outside the purview of the statistical analysis and will be treated further in the next chapter.

CHAPTER IX

EVALUATION OF THE LITERATURE SEARCH

The operations of this Literature Search have been primarily conditioned by the specifications of the General Research Design for the TRMRD presented in Chapter I. For the purpose of evaluation the achievements of the Literature Search must be assessed using the specifications of the Research Design as baselines or benchmarks. A comparison of the objectives stated in Chapter I, with the results of investigation presented in Chapters III - VIII shows that the Literature Search has provided substantial information on most of the subjects in question. The Literature Search responded to virtually all of the questions posed in the General Research design, and with limited exceptions was able to provide useful documentary information for mitigation purposes on the various settlement types and activities identified there. The documentary information was used to develop a narrative interpretation of both the sequence and spatial pattern of cultural events in the TRMRD during the nineteenth century.

While the general success of the Literature Search in responding to its charge can be readily substantiated, certain aspects of the design of the study, its material findings, and the utility of its analytical conclusions, seem worthy of comment from a retrospective viewpoint. Among the topics deserving of address by way of summary and conclusion are the following:

1. *The Applicability of the Regional Research Design.*
2. *Effectiveness of Interdisciplinary Research.*
3. *The Use of Documentary Information in Historic Archeologic Research.*
4. *The Problem of Determining Site Location.*
5. *The Problem of Determining Site Structure and Variability.*
6. *The Potential for the Development of Sampling Procedures.*
7. *Evaluation of Significant Historic Sites.*

Applicability of the Regional Research Design

According to House (1977:243):

. . . we would expect variability in the archeological record to stem not only from changing ideas in time and space but from numerous other processes as well. We expect the archeological record produced by a

single society in the past to exhibit considerable variability within and between sites. The most appropriate research universe for investigating a past society then is not a single site but a region, the geographical area occupied by a past cultural system, society or community. It is becoming obvious to prehistoric and historical archeologists alike that data from a single site or even a few sites in a region cannot form a basis for typifying the cultural behavior of a past society during a given interval in time.

While archeologists have come recently to this recognition geographers have long used the concept of the region as an analytical stock-in-trade in both cultural and economic geography. From the geographical viewpoint a comparative regional perspective is essential to the determination of form, pattern, and type of settlement. In spatial terms, and according to common definition, the TRMRD certainly constitutes a territorial region because of the absolute size of its areal extent. There is a real question, however, whether the TRMRD as an arbitrarily defined areal unit conforms in any way to the functional region generally conceived by the geographer or archeologist. The TRMRD is essentially an artificial construct determined by an arbitrary five mile wide corridor paralleling the course of the Tombigbee River.

As such it represents only a sliver of a substantially larger cultural and economic region which extends a large distance away from the river. For environmental and historic reasons many of the most important elements of economic and social activity in this larger region took place away from the river course (e.g., the unsuitability for occupation of river bottomlands, and the incidence of road and railroad construction). Also many of the settlement activities of the TRMRD were inextricably linked with settlement activities outside the TRMRD and their locus can only be understood in those terms. While the Literature Search was not entirely confined to the TRMRD boundaries, the emphasis on sites in that corridor limited the opportunities for regional analysis of the type suggested by Lewis (1977) and House (1977) and generally practised by geographers. As a result many of the conclusions of this study, while apparently conforming to established regional norms, must remain tentative pending the establishment of more definitive regional linkages.

The Effectiveness of Interdisciplinary Research

As indicated in Chapter I, the contract for the Literature Search required that research be conducted by an interdisciplinary team comprised of historians, geographers, and archeologists. Two of the main problems emanating from this requirement have been discussed earlier (Ch. I, page 13). On balance, however, the conclusion of the interdisciplinary research team, which functioned throughout the project, is that the results of the research are much more than simply a sum of the parts provided by the different professional inputs. Despite the early problems of interdisciplinary communication, the continued interaction of team members led to considerable cross-fertilization of ideas and insights which substantially added to the store of knowledge. While the interdisciplinary approach to research should be continued in projects of this kind, it may be advisable in future programs to more clearly specify disciplinary roles in the overall effort through some form of initial agreement with the contracting agency.

The Use of Documentary Information
in Historic Archeological Research

Based on the evidence presented in the Literature Search it might be asked to what extent the existence of maps, plats, deeds and other documentary records used by cultural geographers and economic historians make archeological field survey on historic remains unnecessary and redundant. The answer to the question can be given by considering the processes by which the documentary record is formed and preserved, and by empirically comparing the comprehensive sets of corresponding documentary and archeological data. From the theoretical perspective House (1977:244) has noted that:

. . . documents are a result of transformation processes just as the archeological record is. Valid use of documentary data . . . entails consideration of the processes by which information about past events and conditions become recorded and preserved in documents. Documents for instance, may be concerned with only specific things, they may be falsified, they become lost or destroyed. . . . Documents concerning early historic North America particularly may not contain all the information on human/land relationships of interest to the social scientist. Records from frontier situations may be especially incomplete. "Squatter" homesteads for instance are not recorded in land patents. Further . . . some settlements and other activity loci although economically unimportant may be poorly documented even within the relatively recent past. Finally it has been argued that confining historical archeology research to sites and phenomena documented in the historic record is an unwarranted limitation of the scope and potential scientific contributions of historical archeology.

The Literature Search has shown the statements of House to be applicable to the TRMRD. A number of examples of deficiencies or variations in quality of the documentary record serve to indicate that the record is not so complete as to preclude the need for archeological investigation. While for certain aspects of site location and structure the documentary record is detailed (e.g., location of lands and towns), in no instance is there complete information on the character and mode of operation of such sites, and in most instances little is known of the precise detail of operations.

There are many reasons for this, particularly with respect to the early period of settlement. Because of such events as courthouse fires, floods, poor management, and neglect, the records of most counties are incomplete before the late nineteenth century. Copies of General Land Office plats dating to various times after the 1820's are available, but they were often prepared by different people. As a result some show only topographic features whereas others show buildings, roads, fields and other improvements. The surveyors were primarily interested in laying section lines and the cultural information included was largely at the whim of the surveyor.

While a number of town plats survive they rarely show the arrangement or use of buildings, usually because they were drafted in advance of occupation by settlers. Little is known about the internal character of towns in the TRMRD before the period of the Sanborn Insurance maps (1880's). Particularly problematical for the documentary record are the sites of farmsteads and plantations. In particular, both squatter cabins and more permanent homesteads have infrequently found their way into the documentary record.

The Problem of Determining Site Location

The central theme of the Literature Search has been the "discovery" and delineation of specific settlement sites. Data gathered from documentary sources were used to establish and record numerous sites in the TRMRD corridor. Limited field investigation along with assessment of historic and contemporary records were used to investigate the determinants and structural character of these site locations. During these procedures certain data and analysis problems were recognized, relating to site location, site structure, site variability and site density.

In order to investigate the determinants of historic site location adequately it is necessary to test hypotheses about, or models of, the location of settlement features in relation to a variety of environmental variables. During the Literature Search such enquiry was pursued at two levels: (a) generalization based on observer perception and (b) quantitative analysis. A number of generalizations concerning locational factors were developed from direct observations of patterns indicated by the documentary materials. Such observations form the basis for the various judgements on locational and structural character of sites contained in Chapters IV - VII. In those chapters the location of sites is explained in terms of such variables as topography, soils, drainage, fresh water sources, access to trade and communications routes, and cultural traditions. Such analysis shows, for example, that early farmsteads tended to be located on high terraces or bluffs above the general flood level on rivers and creeks. The presence of perennial springs and the alignment of pre-existing roads or pathways were also probably determinants of farmstead location. Other determinants of farmstead location are not readily discernible from this perspective. The problem with this first approach is that it is not quantitative in character and relies upon the sound perception and good judgement of the analyst of the documentary sources. A second approach is that of quantitative analysis where hypotheses concerning site location factors are statistically tested to determine their validity. The results of such an exercise related to environmental factors are presented in Chapter VIII.

While some weak associations of site factors are indicated by the statistical procedures, they fall short of providing a level of predictability desirable and useful in cultural resource analysis. The reasons for this are several and they should be recognized and if necessary addressed in further research exercises of this kind.

The first is that statistical exercises should be determined at the outset of the study and conducted with data collected and recorded systematically for particular quantification purposes. In the Literature Search the decision to perform quantitative analysis was made at the close of the data gathering exercise. This analysis considered all the determined sites to be a representative sample of the historic universe of sites. Unfortunately in some site categories only limited numbers of sites were available, and for many sites due to the mode of data collection, complete standardized data sets were not available.

Another problem of historic site analysis is that site environments generally change relatively slowly over time in terms of their physical context, while they frequently change radically in their social and economic

context. This means that in the absence of historic documentary evidence it is relatively easy to establish a site's physical and environmental factors but much more difficult to substantiate precisely the socio-economic factors affecting site locations. Population density, volume of trade, and range of goods are extremely important criteria affecting site location but each is difficult to determine from the documentary record. This is particularly the case when the research tool is a regionally based Literature Search.

A Literature Search in the absence of detailed field investigation, produces non-standardized information concerning each site, thus producing another problem for statistical analysis. Some choice must be made, perhaps, between the option of maximizing the number of sites treated through attempting to discover as many sites as feasible in an area, and of the option of adopting an adequate regional sampling strategy which addresses fewer locations in greater detail. This latter strategy may, however, be fraught with sticky problems relating to the nature of the ideal universe and of particular sampling procedures. The desirability of pursuing an effective sampling procedure based on field reconnaissance as well as documentary research is discussed below.

The Problem of Determining Site Structure and Variability

According to House (1977: 251) "Reliable data on variability among sites formed by a single past cultural system are pre-requisite to making inferences about the behavioral variability within the system, and to understanding the articulation of that behavioral variability into a systemic whole." The same can be said with respect to the density of sites. The Literature Search indicates substantial variability in the site and structural characteristics of certain settlement types (e.g., farmsteads and industries) and limited variability among other types (e.g., platted towns and landings). Similar variations are indicated with respect to the areal density of particular site categories.

Because of the nature of the research procedure (see pp. 10-11) it is impossible to know with certainty whether the degrees of variability and density revealed by this study, are a true reflection of the actual systemic variation of the settlement distribution or simply a result of the data acquisition process. The regional approach to the Literature Search has proved itself to be an effective way to establish the superstructure of material culture in the area. However, more work on developing the details of site structure must be performed before an adequate assessment can be made concerning behavioral variability. Archeological investigation, more site specific documentary analysis, and in-depth sampling procedures stressing field investigation may be effective ways in which to pursue the infrastructure of the cultural resource record.

The Potential for the Development of Sampling Procedures

Where the primary function of a "Literature Search" is to serve as a reconnaissance with the purpose of establishing the broad character of the number and type of sites in a given region, it may be unnecessary and extremely expensive to search the record of each identifiable settlement point. A

more efficient, and perhaps as effective, approach would be to utilize some form of sampling procedure to generate the desired information. The adoption of a sampling strategy raises two basic problems: the definition of the population to be sampled and selection of the most appropriate sample from it. The population may be towns, industries, landings, farmsteads, and the like. It is that set of entities about which information is required. For the cultural geographer the population is usually defined as those items on a master list or map.

A properly chosen sample of some fraction of the whole is usually adequate to estimate the information accurately for the whole population. Where estimates from samples cannot be trusted and adequate resources are available, the whole population can be surveyed; this is called 100% sample. A smaller sample, however, is often the only feasible alternative. The problem is to make certain that the sample accurately represents the population. A sample that is not representative is called a biased sample.

According to Berry (1962:4):

Common causes of bias include deliberate selection of "typical" cases, convenient substitution of sampling units by observers, and failure to cover the whole of a chosen sample. The only certain way to avoid bias is to see that each member of the population under investigation has an equal chance of being included in the sample. Given a proper sampling method the probability of occurrence of errors of any magnitude can be calculated from information obtained on the sample. By extension the relative efficiency of the different sampling methods can be obtained. If random sampling errors are larger there are several ways in which they can be reduced, since, other things being equal, random sampling error is proportional to the square root of the number of observations. Alternatively restrictions such as stratification might be imposed, to eliminate from the sampling error differences between strata.

These differences need not be elaborated here since excellent discussions of them are available in standard textbooks.

For the purposes of geographical analysis the elements or sampling units may be: (1) points--at which the presence or absence of some characteristic is recorded or at which a value is read from some continuous pattern of variation, (2) lines (traverses)--the length of which lying on a particular settlement feature or features is of interest, and (3) small areas (quadrats)--in which the quantities of occupancy characteristics are measured. Generally, geographers have preferred some variety of area or two dimensional sample. The number of alternative areal samples is large because they may be random or systematic, independent or stratified, aligned or unaligned. In addition, sample elements may be clustered or hierarchical. A discussion of the appropriateness of various combinations has been provided by Berry (1962).

An important consideration in sampling is the appropriate size of the sample. There are some quite technical and fairly precise answers to these questions relating to tests of significance and levels of confidence characteristic of survey results. Some general principles pertaining to sample size, however, are: (1) The more disastrous the effect of poor information would be the larger the sample required, (2) The more varied the sites are

expected to be, the larger the sample required, and (3) The larger the total population being sampled the smaller the proportion of it that is required in the sample.

Evaluation of Significant Historic Sites

In theory and in practice a Literature Search is the ideal vehicle for determining whether sites are potentially worthy of historic preservation efforts. In the judgement of the authors this Literature Search has shown that the most important historic sites in the corridor area are already known and have already been formally designated (e.g., Waverly). While certain undesignated sites have some real historic interest because of their limited occurrence as a use type (e.g., Bay Springs Mill) or because of specific historic associations (e.g., Cotton Gin Port and Gaines Trace), when considered from a regional (Southeast) or national perspective their value as significant cultural resources is debatable.

According to National Register criteria the quality of significance in American history, archeology and culture is present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association and:

- a.) *that are associated with events that have made a significant contribution to the broad patterns of our history; or*
- b.) *that are associated with the lives of persons significant in our past; or*
- c.) *that embody the distinctive characteristics of a type, period or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or*
- d.) *that have yielded or may be likely to yield information important in pre-history or history.*

Based on these criteria the primary conclusion of the Literature Search has to be that the majority of the sites discussed in this document, do not satisfy National Register criteria. This judgement however must be considered in terms of the nature of the Literature Search and its particular level of investigation. To this end three points must be made. The first is that several sites appear from the evidence to be worthy of further investigation as possible National Register candidates (e.g., Bay Springs, Cotton Gin Port, historic district structures in Columbus and Aberdeen). Secondly, the Literature Search was conducted as a broad scale regional survey, and it is always possible in research efforts of this kind that evidence for some particularly significant site may be undiscovered. Lastly, it is also distinctly possible that for some specific historic site the documentary evidence which would declare its significance is lacking in the current record.

APPENDIX A

Crosstabulation Tables for General Site Type
from Computer Printout

GEOMETRY

COUNT		HOW PCT THUSCALDO CHIAU FO MOOREVIL DEFORD 1 CHIAU-TO										ROW	
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TOT PCI		1	2	3	4	5	6	7	8	9	10		
TYPESET													
SETTLEMENT													
1		0	1	1	1	1	0	1	1	1	1	3	
		0	13.3	13.3	13.3	13.3	0	13.3	13.3	13.3	13.3	2.1	
		0	1.5	1.5	1.5	1.5	0	1.5	1.5	1.5	1.5	0.0	
		0	0	0	0	0	0	0	0	0	0	0	
COMMUNITY													
2		15	61	31	12	12	12	12	12	12	12	234	
		11.0	66.9	22.6	6.4	6.4	6.4	6.4	6.4	6.4	6.4	93.2	
		110.0	62.6	93.9	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
		10.3	61.6	21.7	6.2	6.2	6.2	6.2	6.2	6.2	6.2	11.6	
TOWN													
3		0	3	0	0	0	0	0	0	0	0	3	
		0	100.0	0	0	0	0	0	0	0	0	2.1	
		0	6.5	0	0	0	0	0	0	0	0	0	
		0	2.1	0	0	0	0	0	0	0	0	0	
CITY													
4		0	1	1	1	1	0	1	1	1	2	4	
		0	25.0	25.0	25.0	25.0	0	25.0	25.0	25.0	50.0	2.7	
		0	1.5	1.5	1.5	1.5	0	1.5	1.5	1.5	3.0	0.0	
		0	0	0	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	0	0	0	
TOTAL													
		15	66	31	12	12	12	12	12	12	20	184	
		10.3	65.2	22.6	6.2	6.2	6.2	6.2	6.2	6.2	11.7	130.0	

RAW CHI SQUARE = 10.52547 WITH 17 DEGREES OF FREEDOM. SIGNIFICANCE = .0700

CRAMER'S V = .15502

CONTINGENCY COEFFICIENT = .25032

LAMBDA (ASYMMETRIC) = .00000 WITH TYPESET DEPENDENT.

LAMBDA (SYMMETRIC) = .00111

UNCERTAINTY COEFFICIENT (ASYMMETRIC) = .11111 WITH TYPESET DEPENDENT.

UNCERTAINTY COEFFICIENT (SYMMETRIC) = .00029

= .01250 WITH GEOLOGY DEPENDENT.

= .02729 WITH GEOLOGY DEPENDENT.

COUNT		NAVPROX																		
ROW COL		ADJACENT		0.0		0.25		0.50		1.0		2.0		5.0		10		TOTAL		
TYPESET		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
SETTLEMENT	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
COMMUNITY	1	1.5	10.5	9.4	6.1	21.3	10.1	16.2	93.2	95.7	15.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
	2	44.2	94.2	100.0	87.9	93.2	95.7	15.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
	3	1.4	17.1	6.1	7.5	10.9	28.1	15.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
TOWN	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CITY	1	25.0	25.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2	19.3	3.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
COLUMN TOTAL		3	24	4	11	33	44	23	10.1	15.8	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

RAU CHI SQUARE = 10.07000 WITH 10 DEGREES OF FREEDOM. SIGNIFICANCE = .0001
 CHI-SQUARE V = .21200
 CORRELATION COEFFICIENT = .38412
 LAMBDA (ASYMMETRIC) = .01000 WITH TYPESETT DEPENDENT.
 LAMBDA (SYMMETRIC) = .01788
 INCREMENTAL COEFFICIENT (ASYMMETRIC) = .10000 WITH TYPESETT DEPENDENT.
 INCREMENTAL COEFFICIENT (SYMMETRIC) = .09327

..... C R O S S T A B U L A T I O N O F
 TYPESET SETTLEMENT TYPE BY ROADWAY PROXIMITY TO MAIN ROAD
 PAGE 1 OF 1

ROADWAY

COUNT		ROADWAY									
ROAD PCT ADJACENT		ROADWAY									
ROAD PCT		ROADWAY									
TOTAL PCT		ROADWAY									
TYPESET		ROADWAY									
SETTLEMENT		ROADWAY									
COMMUNITY		ROADWAY									
TOWN		ROADWAY									
CITY		ROADWAY									
TOTAL		ROADWAY									
TOTAL		ROADWAY									

NAU CHI SQUARE = 15.4188 WITH 18 DEGREES OF FREEDOM. SIGNIFICANCE = .0103
 CRAMER'S V = .3882
 CONFIDENCE COEFFICIENT = .9188
 LAMUDA (ASYMMETRIC) = .0000 WITH TYPESET DEPENDENT.
 LAMUDA (SYMMETRIC) = .0295
 HIGHER ORDER COEFFICIENT (ASYMMETRIC) = .1052 WITH TYPESET DEPENDENT.
 HIGHER ORDER COEFFICIENT (SYMMETRIC) = .0440

..... C R O S S T A B U L A T I O N O F
 TYPESET SETTLEMENT TYPE TOWN STREET PATTERN
 PAGE 1 OF 1

SETTLEMENT

COUNT		TOWN		STREET		PATTERN		TOTAL	
TYPESET	SETTLEMENT	COL PCI	GRID	MINATION	MIN	SCABLE	NOT APPL	ROW	TOTAL
1	1	0	0	0	0	0	0	1	1
1	2	0	0	0	0	0	0	2	2
1	3	0	0	0	0	0	0	3	3
1	4	0	0	0	0	0	0	4	4
2	1	0	0	0	0	0	0	1	1
2	2	0	0	0	0	0	0	2	2
2	3	0	0	0	0	0	0	3	3
2	4	0	0	0	0	0	0	4	4
3	1	0	0	0	0	0	0	1	1
3	2	0	0	0	0	0	0	2	2
3	3	0	0	0	0	0	0	3	3
3	4	0	0	0	0	0	0	4	4
4	1	0	0	0	0	0	0	1	1
4	2	0	0	0	0	0	0	2	2
4	3	0	0	0	0	0	0	3	3
4	4	0	0	0	0	0	0	4	4
COLUMN		1.0	2.7	2.7	2.7	2.7	2.7	14.4	14.4
TOTAL		1.0	2.7	2.7	2.7	2.7	2.7	14.4	14.4

NEW CHI SQUARE = 145.40144 WITH 9 DEGREES OF FREEDOM. SIGNIFICANCE = .0000
 CRAMER'S V = .45785
 CONTINGENCY COEFFICIENT = .30809
 LAMBDA (ASYMMETRIC) = .50000 WITH TYPESET DEPENDENT.
 LAMBDA (SYMMETRIC) = .52001
 UNCERTAINTY COEFFICIENT (ASYMMETRIC) = .41751 WITH TYPESET DEPENDENT.
 UNCERTAINTY COEFFICIENT (SYMMETRIC) = .41194 = .40054 WITH SETTYPE DEPENDENT.

APPENDIX B

Crosstabulation Tables for Settlement Type
from Computer Printout

COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT		COUNT	
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		TOPOG					
SITCLASS	COUNT	COUNT		PERCENT		ROW TOTAL	COL TOTAL
		1	2	3	4		
SETTLEMENT--STOR	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
COMMUNITY	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
TOWN OR CITY	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
LANDING	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
FERRY AND FORD	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
INDUSTRY	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
FARMSTEAD	1	0	0	0	0	0	0
	2	0	0	0	0	0	0
TOTAL		0	0	0	0	0	0

RAU CHI SQUARE = 117.45470 WITH 44 DEGREES OF FREEDOM. SIGNIFICANCE = .0000
 CHAPMAN'S V = .01077
 CONTINGENCY COEFFICIENT = .71211
 LAPLACE (ASYMMETRIC) = .54024 WITH SITCLASS DEPENDENT.
 LAPLACE (SYMMETRIC) = .51837
 UNCERTAINTY COEFFICIENT (ASYMMETRIC) = .51824 WITH SITCLASS DEPENDENT.
 UNCERTAINTY COEFFICIENT (SYMMETRIC) = .54042

TYPEFUEL												
COUNT	ROW PUT	WARCH-RO	HACKSWAN LAKE	OXBOW LA	4TH ORDE	3RD ORDE	2ND ORDE	1ST ORDE	SPRING	ROW		
COL PUT	TH	P	1	2	3	4	5	R STREAM	R STREAM	R STREAM		
TOT PUT	TH	1	2	3	4	5	6	7	8	TOTAL		
SITCLASS												
SPRIFMENT--STOR	1	0	0	2	0	0	0	0	0	0		
		0	0	33.3	0	0	0	0	66.7	0		
		0	0	2.7	0	0	0	0	6.2	0		
		0	0	0	0	0	0	0	1.5	0		
		0	0	0	0	0	0	0	0	0		
		0	0	0	0	0	0	0	0	0		
COMMUNITY	2	5	2	61	1	21	1	0	34	124		
		0	0	0	0	0	0	0	0	0		
		0	0	0	0	0	0	0	0	0		
		0	0	0	0	0	0	0	0	0		
		0	0	0	0	0	0	0	0	0		
		0	0	0	0	0	0	0	0	0		
TOWN OR CITY	3	0	0	3	0	2	0	0	3	0		
		0	0	37.5	0	25.0	0	0	37.5	0		
		0	0	4.1	0	1.7	0	0	6.1	0		
		0	0	1.1	0	0.7	0	0	1.1	0		
		0	0	0	0	0	0	0	0	0		
		0	0	0	0	0	0	0	0	0		
LANDING	4	0	0	0	0	51	1	0	0	53		
		0	0	0	0	94.2	1.9	0	0	10.3		
		0	0	0	0	42.5	7.1	0	0	0		
		0	0	0	0	18.5	0.4	0	0	0		
		0	0	0	0	0	0	0	0	0		
FFARY AND FURN	5	0	0	0	0	32	0	0	0	40		
		0	0	0	0	40.0	20.0	0	0	14.5		
		0	0	0	0	24.7	57.1	0	0	0		
		0	0	0	0	11.6	2.4	0	0	0		
		0	0	0	0	0	0	0	0	0		
INDUSTRY	6	4	1	3	0	13	0	1	5	32		
		12.5	3.1	9.4	0	40.6	12.5	3.1	15.6	11.6		
		24.4	25.0	4.1	0	10.4	28.4	40.0	10.2	31.3		
		1.5	0.4	1.1	0	4.7	1.5	0.4	1.4	0.4		
		0	0	0	0	0	0	0	0	0		
FAKNSIFAD	7	0	1	4	0	1	0	1	3	10		
		0	10.0	40.0	0	10.0	0	10.0	30.0	3.4		
		0	25.0	5.5	0	0	0	50.0	6.1	0		
		0	0	1.5	0	0	0	0	1.1	0		
		0	0	0	0	0	0	0	0	0		
COLUMN TOTAL	9	4	4	73	1	120	10	2	49	275		
		3.3	1.5	26.5	0	43.4	5.1	0.7	17.4	100.0		

NEW CHI SQUARE = 22.7044 WITH 48 DEGREES OF FREEDOM. SIGNIFICANCE = .0000
 CONTINGENCY COEFFICIENT = .47345
 LAMBDA (ASYMPTOTIC) = .29531 WITH CLASS DEPENDENT.
 LAMBDA (EMPIRICAL) = .20280
 UNCORRELATED COEFFICIENT (ASYMPTOTIC) = .20432 WITH CLASS DEPENDENT.
 UNCORRELATED COEFFICIENT (EMPIRICAL) = .20032
 - .40436 WITH TYPICAL DEPENDENT.

..... CROSS TABULATION OF
 SITES INITIAL SITE CLASSIFICATION MY TYPEWAT2 2ND WFAST WATER SOURCE
 PART 1 OF 1

COUNT		TYPEWAT2										ROW TOTAL
ROW	COL	1	2	3	4	5	6	7	8	9	10	
1	2	0	0	0	0	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0	0	0	0	0	0
4	1	0	0	0	0	0	0	0	0	0	0	0
5	1	0	0	0	0	0	0	0	0	0	0	0
6	1	0	0	0	0	0	0	0	0	0	0	0
7	1	0	0	0	0	0	0	0	0	0	0	0
8	1	0	0	0	0	0	0	0	0	0	0	0
9	1	0	0	0	0	0	0	0	0	0	0	0
10	1	0	0	0	0	0	0	0	0	0	0	0
11	1	0	0	0	0	0	0	0	0	0	0	0
12	1	0	0	0	0	0	0	0	0	0	0	0
13	1	0	0	0	0	0	0	0	0	0	0	0
14	1	0	0	0	0	0	0	0	0	0	0	0
15	1	0	0	0	0	0	0	0	0	0	0	0
16	1	0	0	0	0	0	0	0	0	0	0	0
17	1	0	0	0	0	0	0	0	0	0	0	0
18	1	0	0	0	0	0	0	0	0	0	0	0
19	1	0	0	0	0	0	0	0	0	0	0	0
20	1	0	0	0	0	0	0	0	0	0	0	0
21	1	0	0	0	0	0	0	0	0	0	0	0
22	1	0	0	0	0	0	0	0	0	0	0	0
23	1	0	0	0	0	0	0	0	0	0	0	0
24	1	0	0	0	0	0	0	0	0	0	0	0
25	1	0	0	0	0	0	0	0	0	0	0	0
26	1	0	0	0	0	0	0	0	0	0	0	0
27	1	0	0	0	0	0	0	0	0	0	0	0
28	1	0	0	0	0	0	0	0	0	0	0	0
29	1	0	0	0	0	0	0	0	0	0	0	0
30	1	0	0	0	0	0	0	0	0	0	0	0
31	1	0	0	0	0	0	0	0	0	0	0	0
32	1	0	0	0	0	0	0	0	0	0	0	0
33	1	0	0	0	0	0	0	0	0	0	0	0
34	1	0	0	0	0	0	0	0	0	0	0	0
35	1	0	0	0	0	0	0	0	0	0	0	0
36	1	0	0	0	0	0	0	0	0	0	0	0
37	1	0	0	0	0	0	0	0	0	0	0	0
38	1	0	0	0	0	0	0	0	0	0	0	0
39	1	0	0	0	0	0	0	0	0	0	0	0
40	1	0	0	0	0	0	0	0	0	0	0	0
41	1	0	0	0	0	0	0	0	0	0	0	0
42	1	0	0	0	0	0	0	0	0	0	0	0
43	1	0	0	0	0	0	0	0	0	0	0	0
44	1	0	0	0	0	0	0	0	0	0	0	0
45	1	0	0	0	0	0	0	0	0	0	0	0
46	1	0	0	0	0	0	0	0	0	0	0	0
47	1	0	0	0	0	0	0	0	0	0	0	0
48	1	0	0	0	0	0	0	0	0	0	0	0
49	1	0	0	0	0	0	0	0	0	0	0	0
50	1	0	0	0	0	0	0	0	0	0	0	0
51	1	0	0	0	0	0	0	0	0	0	0	0
52	1	0	0	0	0	0	0	0	0	0	0	0
53	1	0	0	0	0	0	0	0	0	0	0	0
54	1	0	0	0	0	0	0	0	0	0	0	0
55	1	0	0	0	0	0	0	0	0	0	0	0
56	1	0	0	0	0	0	0	0	0	0	0	0
57	1	0	0	0	0	0	0	0	0	0	0	0
58	1	0	0	0	0	0	0	0	0	0	0	0
59	1	0	0	0	0	0	0	0	0	0	0	0
60	1	0	0	0	0	0	0	0	0	0	0	0
61	1	0	0	0	0	0	0	0	0	0	0	0
62	1	0	0	0	0	0	0	0	0	0	0	0
63	1	0	0	0	0	0	0	0	0	0	0	0
64	1	0	0	0	0	0	0	0	0	0	0	0
65	1	0	0	0	0	0	0	0	0	0	0	0
66	1	0	0	0	0	0	0	0	0	0	0	0
67	1	0	0	0	0	0	0	0	0	0	0	0
68	1	0	0	0	0	0	0	0	0	0	0	0
69	1	0	0	0	0	0	0	0	0	0	0	0
70	1	0	0	0	0	0	0	0	0	0	0	0
71	1	0	0	0	0	0	0	0	0	0	0	0
72	1	0	0	0	0	0	0	0	0	0	0	0
73	1	0	0	0	0	0	0	0	0	0	0	0
74	1	0	0	0	0	0	0	0	0	0	0	0
75	1	0	0	0	0	0	0	0	0	0	0	0
76	1	0	0	0	0	0	0	0	0	0	0	0
77	1	0	0	0	0	0	0	0	0	0	0	0
78	1	0	0	0	0	0	0	0	0	0	0	0
79	1	0	0	0	0	0	0	0	0	0	0	0
80	1	0	0	0	0	0	0	0	0	0	0	0
81	1	0	0	0	0	0	0	0	0	0	0	0
82	1	0	0	0	0	0	0	0	0	0	0	0
83	1	0	0	0	0	0	0	0	0	0	0	0
84	1	0	0	0	0	0	0	0	0	0	0	0
85	1	0	0	0	0	0	0	0	0	0	0	0
86	1	0	0	0	0	0	0	0	0	0	0	0
87	1	0	0	0	0	0	0	0	0	0	0	0
88	1	0	0	0	0	0	0	0	0	0	0	0
89	1	0	0	0	0	0	0	0	0	0	0	0
90	1	0	0	0	0	0	0	0	0	0	0	0
91	1	0	0	0	0	0	0	0	0	0	0	0
92	1	0	0	0	0	0	0	0	0	0	0	0
93	1	0	0	0	0	0	0	0	0	0	0	0
94	1	0	0	0	0	0	0	0	0	0	0	0
95	1	0	0	0	0	0	0	0	0	0	0	0
96	1	0	0	0	0	0	0	0	0	0	0	0
97	1	0	0	0	0	0	0	0	0	0	0	0
98	1	0	0	0	0	0	0	0	0	0	0	0
99	1	0	0	0	0	0	0	0	0	0	0	0
100	1	0	0	0	0	0	0	0	0	0	0	0

RAW CHI SQUARE = 107.00709 WITH 48 DEGREES OF FREEDOM. SIGNIFICANCE = .0000
 COEFFICIENT = .24877
 CONTINGENCY COEFFICIENT = .52042
 LAMBDA (ASYMPTOTIC) = .38765 WITH SITES CLASS DEPENDENT.
 LAMBDA (ASYMPTOTIC) = .31495
 UNCERTAINTY COEFFICIENT (ASYMPTOTIC) = .32031 WITH SITES CLASS DEPENDENT.
 UNCERTAINTY COEFFICIENT (ASYMPTOTIC) = .31002 WITH TYPEWAT2 DEPENDENT.

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SIBCLASS INITIAL SITE CLASSIFICATION          CR O S T A B U L A T I O N   OF      AVERAGE SLOPE AT SITE

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SLOPE											
COUNT	ROW	COL	16.0	2.0	3.0	4.0	7.0	10	15.0	2	ROW
SUBCLASS	100 PCT	100 PCT	1	1	2	1	3	1	5.02	1	TOTAL
SETTLEMENT--STON	1	5	1	1	1	1	0	1	0	0	2.2
	16.7	1	16.7	1	16.7	1	16.7	1	16.7	1	16.7
	2.4	1	1.4	1	1.4	1	1.4	1	1.4	1	1.4
	1.4	1	1.4	1	1.4	1	1.4	1	1.4	1	1.4
COMMUNITY	2	80	1	38	1	7	1	1	1	1	12.6
	43.5	1	40.2	1	5.6	1	1	1	1	1	45.8
	41.7	1	45.1	1	58.3	1	50.0	1	50.0	1	50.0
	20.1	1	13.8	1	2.5	1	1	1	1	1	1
TOWN OR CITY	3	7	1	1	1	1	0	1	0	1	8
	47.5	1	12.5	1	0	1	0	1	0	1	2.9
	3.4	1	1.4	1	0	1	0	1	0	1	0
	2.4	1	1	1	0	1	0	1	0	1	0
LANDING	4	24	1	22	1	4	1	1	1	1	53
	49.1	1	41.5	1	7.5	1	1.9	1	1.9	1	19.3
	13.5	1	11.9	1	31.3	1	50.0	1	50.0	1	50.0
	9.4	1	9.0	1	1.5	1	1.5	1	1.5	1	1.5
FERRY AND FORD	5	39	1	1	1	1	0	1	0	1	43
	47.5	1	2.5	1	0	1	0	1	0	1	18.5
	29.3	1	1.4	1	0	1	0	1	0	1	0
	14.2	1	1	1	0	1	0	1	0	1	0
INDUSTRY	6	27	1	5	1	0	1	0	0	1	32
	40.4	1	15.4	1	0	1	0	1	0	1	11.6
	10.1	1	7.2	1	0	1	0	1	0	1	0
	9.8	1	1.8	1	0	1	0	1	0	1	0
FARMSTEAD	7	8	1	1	1	1	1	0	0	1	10
	40.0	1	10.0	1	10.0	1	10.0	1	10.0	1	10.0
	6.2	1	1.4	1	8.3	1	1	1	1	1	1
	2.9	1	1	1	1	1	1	1	1	1	1
COLUMN	192	192	1	192	1	12	1	12	1	1	275
TOTAL	49.8	49.8	1	25.1	1	0.4	1	0.4	1	1	100.0

MAX CME SLOPE - 35.0720 WITH IN DEGREE OF FREEDOM. SIGNIFICANCE = .0074
 CHAMBERS V - .20194
 CORRELATION COEFFICIENT = .33846
 LAMODA (ASYMPTIC) = .0100 WITH SIXTEEN DEPENDENT. = .0000 WITH SLOPE DEPENDENT.
 LAMODA (SYMMETRIC) = -.0000
 UNCONSTRAINED COEFFICIENT (ASYMPTIC) = .04208 WITH SIXTEEN DEPENDENT.
 UNCONSTRAINED COEFFICIENT (SYMMETRIC) = .07020 = .1000 WITH SLOPE DEPENDENT.

COUNT		NAUPOHO										TOTAL	
ROW PCT	ADJACENT	0.0 - 0.25	0.25 - 0.50	0.50 - 1.0	1.0 - 2.25	2.25 - 5.0	5.0 - 10					ROW	
COL PCT	24	1	2	3	4	5	6	7					TOTAL
TOT PCT	24	1	2	3	4	5	6	7					
SITELASS	1	0	0	0	1	2	1	2					6
SETTLEMENT--STON	0	0	0	0	16.7	33.3	16.7	33.3					2.2
	0.0	0.0	0.0	0.0	6.7	13.3	6.7	13.3					
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
COMMUNITY	1	23	5	10	25	41	21	21					126
	0.4	18.3	4.0	7.3	19.4	32.5	16.7	16.7					45.8
	1.1	51.1	11.4	22.2	54.1	80.6	42.0	42.0					
	0.4	8.4	1.8	3.6	9.1	18.9	7.6	7.6					
TOWN OR CITY	1	2	0	0	3	2	0	0					8
	12.5	25.0	0.0	0.0	37.5	75.0	0.0	0.0					2.9
	1.1	4.4	0.0	0.0	7.0	3.0	0.0	0.0					
	0.4	0.7	0.0	0.0	1.1	0.7	0.0	0.0					
LANDING	0	3	1	0	1	0	0	0					53
	90.4	5.7	1.9	0.0	1.9	0.0	0.0	0.0					19.3
	53.0	6.7	14.3	0.0	2.3	0.0	0.0	0.0					
	17.5	1.1	0.4	0.0	0.4	0.0	0.0	0.0					
FERRY AND FORD	37	1	0	0	2	0	0	0					40
	92.5	2.5	0.0	0.0	5.0	0.0	0.0	0.0					14.5
	41.6	2.2	0.0	0.0	4.7	0.0	0.0	0.0					
	11.5	0.4	0.0	0.0	0.7	0.0	0.0	0.0					
INDUSTRY	2	15	1	3	8	2	1	1					32
	6.3	46.9	3.1	9.4	25.0	6.3	3.3	3.3					11.6
	2.2	33.3	16.3	20.0	18.6	3.9	4.0	4.0					
	0.7	5.5	0.4	1.1	2.9	0.7	0.4	0.4					
FARMSTEAD	0	1	0	1	2	5	1	1					10
	0.0	16.0	0.0	10.0	20.0	50.0	10.0	10.0					3.6
	0.0	2.2	0.0	6.7	8.7	9.9	4.0	4.0					
	0.0	0.4	0.0	0.4	0.7	1.6	0.4	0.4					
COLUMN TOTAL	89	45	7	15	43	51	25	25					275
	12.6	16.4	2.5	5.5	15.6	18.5	9.1	9.1					100.0

ROW CHI SQUARE = 249.8678 WITH 14 DEGREES OF FREEDOM. SIGNIFICANCE = .0070
 GAMMA'S V = .40450
 CONTINGENCY COEFFICIENT = .70381
 LAMBDA (ASYMPTOTIC) = .31544 WITH SITELASS DEPENDENT.
 LAMBDA (ASYMPTOTIC) = .32537 WITH SITELASS DEPENDENT.
 LAMBDA (ASYMPTOTIC) = .32537 WITH SITELASS DEPENDENT.
 LAMBDA (ASYMPTOTIC) = .32537 WITH SITELASS DEPENDENT.

APPROX												
COUNT	ADJACENT	0.3 - 0.0	0.25 - 0.0	0.50 - 0.1	1.0 - 2.0	2.5 - 4.0	5.0 - 10.0	TOTAL	ROW			
COL PCI	1	2	3	4	5	6	7	8	9			
TOT PCI	1	2	3	4	5	6	7	8	9			
SETBACKMENT-STON	1	2	3	4	5	6	7	8	9			
1	0	0	0	0	0	0	0	0	0			
2	0	0	0	0	0	0	0	0	0			
3	0	0	0	0	0	0	0	0	0			
4	0	0	0	0	0	0	0	0	0			
5	0	0	0	0	0	0	0	0	0			
6	0	0	0	0	0	0	0	0	0			
7	0	0	0	0	0	0	0	0	0			
8	0	0	0	0	0	0	0	0	0			
9	0	0	0	0	0	0	0	0	0			
10	0	0	0	0	0	0	0	0	0			
11	0	0	0	0	0	0	0	0	0			
12	0	0	0	0	0	0	0	0	0			
13	0	0	0	0	0	0	0	0	0			
14	0	0	0	0	0	0	0	0	0			
15	0	0	0	0	0	0	0	0	0			
16	0	0	0	0	0	0	0	0	0			
17	0	0	0	0	0	0	0	0	0			
18	0	0	0	0	0	0	0	0	0			
19	0	0	0	0	0	0	0	0	0			
20	0	0	0	0	0	0	0	0	0			
21	0	0	0	0	0	0	0	0	0			
22	0	0	0	0	0	0	0	0	0			
23	0	0	0	0	0	0	0	0	0			
24	0	0	0	0	0	0	0	0	0			
25	0	0	0	0	0	0	0	0	0			
26	0	0	0	0	0	0	0	0	0			
27	0	0	0	0	0	0	0	0	0			
28	0	0	0	0	0	0	0	0	0			
29	0	0	0	0	0	0	0	0	0			
30	0	0	0	0	0	0	0	0	0			
31	0	0	0	0	0	0	0	0	0			
32	0	0	0	0	0	0	0	0	0			
33	0	0	0	0	0	0	0	0	0			
34	0	0	0	0	0	0	0	0	0			
35	0	0	0	0	0	0	0	0	0			
36	0	0	0	0	0	0	0	0	0			
37	0	0	0	0	0	0	0	0	0			
38	0	0	0	0	0	0	0	0	0			
39	0	0	0	0	0	0	0	0	0			
40	0	0	0	0	0	0	0	0	0			
41	0	0	0	0	0	0	0	0	0			
42	0	0	0	0	0	0	0	0	0			
43	0	0	0	0	0	0	0	0	0			
44	0	0	0	0	0	0	0	0	0			
45	0	0	0	0	0	0	0	0	0			
46	0	0	0	0	0	0	0	0	0			
47	0	0	0	0	0	0	0	0	0			
48	0	0	0	0	0	0	0	0	0			
49	0	0	0	0	0	0	0	0	0			
50	0	0	0	0	0	0	0	0	0			
51	0	0	0	0	0	0	0	0	0			
52	0	0	0	0	0	0	0	0	0			
53	0	0	0	0	0	0	0	0	0			
54	0	0	0	0	0	0	0	0	0			
55	0	0	0	0	0	0	0	0	0			
56	0	0	0	0	0	0	0	0	0			
57	0	0	0	0	0	0	0	0	0			
58	0	0	0	0	0	0	0	0	0			
59	0	0	0	0	0	0	0	0	0			
60	0	0	0	0	0	0	0	0	0			
61	0	0	0	0	0	0	0	0	0			
62	0	0	0	0	0	0	0	0	0			
63	0	0	0	0	0	0	0	0	0			
64	0	0	0	0	0	0	0	0	0			
65	0	0	0	0	0	0	0	0	0			
66	0	0	0	0	0	0	0	0	0			
67	0	0	0	0	0	0	0	0	0			
68	0	0	0	0	0	0	0	0	0			
69	0	0	0	0	0	0	0	0	0			
70	0	0	0	0	0	0	0	0	0			
71	0	0	0	0	0	0	0	0	0			
72	0	0	0	0	0	0	0	0	0			
73	0	0	0	0	0	0	0	0	0			
74	0	0	0	0	0	0	0	0	0			
75	0	0	0	0	0	0	0	0	0			
76	0	0	0	0	0	0	0	0	0			
77	0	0	0	0	0	0	0	0	0			
78	0	0	0	0	0	0	0	0	0			
79	0	0	0	0	0	0	0	0	0			
80	0	0	0	0	0	0	0	0	0			
81	0	0	0	0	0	0	0	0	0			
82	0	0	0	0	0	0	0	0	0			
83	0	0	0	0	0	0	0	0	0			
84	0	0	0	0	0	0	0	0	0			
85	0	0	0	0	0	0	0	0	0			
86	0	0	0	0	0	0	0	0	0			
87	0	0	0	0	0	0	0	0	0			
88	0	0	0	0	0	0	0	0	0			
89	0	0	0	0	0	0	0	0	0			
90	0	0	0	0	0	0	0	0	0			
91	0	0	0	0	0	0	0	0	0			
92	0	0	0	0	0	0	0	0	0			
93	0	0	0	0	0	0	0	0	0			
94	0	0	0	0	0	0	0	0	0			
95	0	0	0	0	0	0	0	0	0			
96	0	0	0	0	0	0	0	0	0			
97	0	0	0	0	0	0	0	0	0			
98	0	0	0	0	0	0	0	0	0			
99	0	0	0	0	0	0	0	0	0			
100	0	0	0	0	0	0	0	0	0			

ROADPROX														
COUNT	1	2	3	4	5	6	7	8	9	10	11	12	13	14
ROW PCI	ADJACENT	0.0 - 0.25	0.25 - 0.50	0.50 - 1.0	1.0 - 2.0	2.0 - 2.5	2.5 - 4.0	4.0 - 7.0	7.0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35
COL PCI	1	2	3	4	5	6	7	8	9	10	11	12	13	14
TOT PCI	1	2	3	4	5	6	7	8	9	10	11	12	13	14
SETTLEMENT--STOR	1	1	1	0	0	1	1	3	1	0	0	0	0	6
	14.7	14.7	14.7	0	0	16.7	16.7	50.0	16.7	0	0	0	0	2.2
	1.3	3.3	3.3	0	0	1.3	1.3	5.9	1.3	0	0	0	0	1.6
	0	0	0	0	0	0	0	1.1	0	0	0	0	0	0
	0	0	0	0	0	0	0	1.1	0	0	0	0	0	0
COMMUNITY	2	10	10	4	4	10	10	21	10	11	11	11	11	124
	97.6	7.0	7.0	3.2	3.2	11.1	11.1	16.7	11.1	16.7	16.7	16.7	16.7	45.8
	77.0	33.3	33.3	33.3	33.3	26.5	26.5	41.2	26.5	41.2	41.2	41.2	41.2	35.5
	21.0	3.6	3.6	1.5	1.5	5.1	5.1	7.6	5.1	7.6	7.6	7.6	7.6	4.0
	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
TOWN OR CITY	3	1	1	1	1	0	0	0	0	0	0	0	0	0
	47.5	0	0	12.5	12.5	0	0	0	0	0	0	0	0	2.9
	9.1	0	0	7.7	7.7	0	0	0	0	0	0	0	0	0
	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LANDING	4	2	2	4	4	12	12	15	12	15	12	12	12	43
	3.8	3.8	3.8	7.5	7.5	22.6	22.6	28.3	22.6	28.3	22.6	22.6	22.6	10.3
	2.4	6.7	6.7	33.3	33.3	21.8	21.8	29.8	21.8	29.8	21.8	21.8	21.8	18.7
	0.7	0.7	0.7	1.5	1.5	4.8	4.8	5.5	4.8	5.5	4.8	4.8	4.8	6.4
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FERRY AND FORD	5	2	2	1	1	14	14	5	14	5	14	5	14	40
	5.0	20.0	20.0	2.5	2.5	35.0	35.0	12.5	35.0	12.5	35.0	12.5	35.0	14.5
	2.4	26.7	26.7	7.7	7.7	25.4	25.4	9.4	25.4	9.4	25.4	9.4	25.4	19.4
	0.7	2.9	2.9	0	0	5.1	5.1	3.8	5.1	3.8	5.1	3.8	5.1	2.2
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDUSTRY	6	5	5	3	3	12	12	4	12	4	12	4	12	32
	15.6	15.6	15.6	9.9	9.9	37.9	37.9	12.5	37.9	12.5	37.9	12.5	37.9	11.6
	6.5	16.7	16.7	23.1	23.1	21.8	21.8	7.6	21.8	7.6	21.8	7.6	21.8	3.2
	1.8	1.8	1.8	1.1	1.1	4.4	4.4	1.5	4.4	1.5	4.4	1.5	4.4	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FARMSTEAD	7	0	0	0	0	2	2	3	2	3	2	3	2	10
	0	0	0	0	0	20.0	20.0	10.0	20.0	10.0	20.0	10.0	20.0	1.6
	0	13.3	13.3	0	0	3.6	3.6	5.9	3.6	5.9	3.6	5.9	3.6	3.2
	0	1.5	1.5	0	0	0.7	0.7	1.1	0.7	1.1	0.7	1.1	0.7	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLUMN TOTAL	77	30	30	13	13	55	55	51	55	51	55	51	55	275
TOTAL	28.0	12.9	12.9	4.7	4.7	20.0	20.0	18.5	20.0	18.5	20.0	18.5	20.0	100.0

ROW CHI SQUARE = 113.41210 WITH 34 DEGREES OF FREEDOM. SIGNIFICANCE = .0000
 CRAMER'S V = .26280
 CONTINGENCY COEFFICIENT = .60720
 LAMBDA (ASYMPTOTIC) = .06431 WITH SITECLASS INDEPENDENT.
 LAMBDA (ASYMPTOTIC) = .11250
 UNCERTAINTY COEFFICIENT (ASYMPTOTIC) = .18420 WITH SITECLASS INDEPENDENT.
 UNCERTAINTY COEFFICIENT (ASYMPTOTIC) = .13130 WITH ROADPROX INDEPENDENT.

TYPESETT		COUNT									
COUNT		ROW PCT		SETTLEMENT		COMMUNITY		TOWN		CITY	
TOTAL		PCT		INIT		V		1		2	
TOTAL		1		1		1		3		4	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	
TOTAL		1		1		1		1		1	

		TRAMSS					
SITCLASS	COUNT	ROW PCI		ROAD		ROW	
		TOTAL		TOTAL		TOTAL	
		1	2	1	2	1	2
SETTLEMENT--STOR	1	0	6	100.0	2.2	A	
		0	2.9				
		0	2.2				
COMMUNITY	2	7	119	126			
		4.4	96.8	45.8			
		10.8	54.7				
		2.5	43.3				
TOWN OR CITY	3	1	7	8			
		17.5	87.5	2.9			
		1.5	3.3				
		.4	2.5				
LANDING	4	24	25	53			
		52.8	47.2	19.3			
		43.1	11.9				
		10.2	9.1				
FERRY AND FORD	5	18	22	40			
		45.0	55.0	18.5			
		27.7	10.5				
		4.5	4.0				
INDUSTRY	6	9	23	32			
		28.1	71.9	11.6			
		13.8	11.0				
		3.3	4.8				
FARMSTEAD	7	2	8	10			
		20.0	80.0	3.6			
		3.1	3.8				
		.7	2.9				
COLUMN TOTAL		45	210	275			
		27.6	76.4	100.0			

RAU CHI SQUARE = .000000 WITH A DEGREES OF FREEDOM. SIGNIFICANCE = .0000
 CONTINGENCY COEFFICIENT = .0000
 LAMBDA (ASYMPTOTIC) = .0000 WITH SITCLASS DEPENDENT.
 LAMBDA (ASYMPTOTIC) = .0000
 UNCONDITIONAL COEFFICIENT (ASYMPTOTIC) = .0000 WITH TRAMSS DEPENDENT.
 UNCONDITIONAL COEFFICIENT (ASYMPTOTIC) = .0000

SITCLASS	CORRECT				ROW TOTAL
	COUNT	1	2	3	
1	ROW PCI				
2	COL PCI				
3	FOR PCI	1	2	3	
4	SETTLEMENT--STOR	13.3	33.3	2.2	6
5		6.3	2.4	1.3	2.2
6		.7	.7	.7	
7	COMMUNITY	27	48	51	126
8		21.4	34.1	40.5	96.0
9		14.4	57.1	32.1	103.6
10		9.8	17.5	18.5	45.8
11	TOWN OR CITY	0	6	2	8
12		.0	75.0	25.0	100.0
13		.0	7.1	1.3	8.4
14		.0	2.2	.7	2.9
15	LANDING	0	5	48	53
16		.3	9.9	90.6	100.8
17		.0	6.0	33.2	39.2
18		.0	1.8	17.5	19.3
19	FEAR AND FORD	0	12	28	40
20		.0	70.0	70.0	140.0
21		.6	18.3	17.6	36.5
22		.0	4.4	10.2	14.6
23	INDUSTRY	3	9	20	32
24		9.4	28.1	62.5	100.0
25		9.4	10.7	12.6	32.7
26		1.1	3.3	7.3	11.7
27	FARMSTEAD	0	2	8	10
28		.0	20.0	80.0	100.0
29		.0	2.8	5.0	7.8
30		.0	.7	2.9	3.6
31	COLUMN TOTAL	32	150	274	456
32		11.4	30.5	57.8	100.0

MAU CHI SQUARE = 62.06701 WITH 12 DEGREES OF FREEDOM. SIGNIFICANCE = .0030
 CHI-SQUARE = .31493
 CONTINGENCY COEFFICIENT = .42912
 LAMBDA (ASYMPTOTIC) = .01000 WITH SITCLASS DEPENDENT.
 LAMBDA (ASYMPTOTIC) = .01609
 UNCERTAINTY COEFFICIENT (ASYMPTOTIC) = .00774 WITH SITCLASS DEPENDENT.
 UNCERTAINTY COEFFICIENT (ASYMPTOTIC) = .01475

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Libraries and Depositories of Records

Useful records have been found in many places, the most important of which are listed below, with some of their most interesting collections.

1. Alabama State Department of Archives and History, Montgomery. A vast collection of material on the history of Alabama. Of special interest:

John Anthony Winston papers (personal and political)
Albert J. Pickett collection
Peter A. Brannon papers
Doy McCall papers (on steamboats)
Thomas M. Owen papers
Biographical collections (very extensive)
Collections of Alabama newspapers (very extensive)
Microfilms of manuscript U.S. Census records

2. Mississippi State Department of Archives and History, Jackson. A well-managed enterprise with extensive collections of material on Mississippi. Of special interest:

W.W. Humphries plantation papers (diary, account books, contracts with sharecroppers, 1879-1883)
Henry B. Whitfield & Co., letter books, 1867-1868. (Lowndes County, Mississippi, business letters depicting failure of a proposed cotton gin-grist mill operation)
J.J. Reynolds papers relating to Tishomingo County (letters and tax receipts)
Bertie Shaw Rollins papers (letters and an account of hotels in Aberdeen, 1847-1951)
William F. Shields papers (Lowndes County plantation records, 1840-1841)
Henry B. Whitfield and Company (letters relating to the unsuccessful Cibolo Cotton and Grist Mills near Artesia in the Reconstruction Era)
William F. Shields papers, 1821-1870 (a naval officer's papers, including plantation accounts in Lowndes County)
George Hampton Young papers, 1836-1845 (a microfilm of documents belonging to the owners of Waverly plantations, mostly legal documents of limited usefulness)
Extensive collections of Mississippi newspapers
Works Progress Administration histories of Mississippi counties
Microfilms of manuscript U.S. Census records

3. University of Alabama Main Library, Tuscaloosa. Special collections include extensive manuscripts and maps. Other items of special interest:

A very extensive collection of U.S. Government publications, especially congressional documents, an almost complete collection of the annual reports of the army's Chief of Engineers
Theses on Alabama subjects
Extensive collections of Alabama newspapers
Microfilms of manuscript U.S. Census records

4. Mississippi State University Library, Starkville. Special collections include maps, monographs, and other documents. Of special interest:

Bertie Shaw Rollins papers, showing various aspects of life in Monroe County

William F. Shields papers (plantation records) of Lowndes County

Randolph-Sherman papers (microfilm), relating to Lowndes County

Microfilms of miscellaneous Lowndes County papers

5. University of Mississippi Library, Oxford. Miscellaneous items on Mississippi, of which the following are of special interest:

Clippings files on Mississippi, arranged by county

Theses on Mississippi counties

Extensive records of the lumber industry

Files of Mississippi newspapers

6. Birmingham Public Library, Birmingham. Here is found the very extensive Rucker Agee collection of early maps of the Southeast and Gulf Coast, some very rare.

7. Mobile Public Library, Mobile. Here are extensive records of Mobile and of Mobile's trade, including that on the rivers. Of special interest is the collection of Mobile city directories, showing businesses, commission merchants, factors, and names of people in the area. Steamboat landings on the Upper Tombigbee River, with distances from Mobile, are regularly listed in these directories.

8. Army Corps of Engineers Office, Mobile. Some records of the Upper Tombigbee River are kept here, but the Corps has not generally preserved archival records. Extensive atlases of the Upper Tombigbee, with dates of 1916 and 1938, preserved at the Tuscaloosa office, are currently in Mobile. The Mobile office has current maps and current records that have been useful to this project.

9. Geological Survey of Alabama Library, at the University of Alabama, Tuscaloosa. Collections of maps and documents here on geology and geography and natural history relate almost entirely to the State of Alabama. Hard-to-find tracts and monographs are often available here, and the collections include some rather rare maps, as well as comprehensive collections of maps showing current geography and geology.

10. Mississippi University for Women Library, Columbus. The principal collection of interest found here is of the records of the Tennessee-Tombigbee Waterway Authority, which has only very recently been made accessible.

11. W.A. Evans Memorial Library, Aberdeen. Extensive documents including ledgers and other account books of local enterprises. Detailed descriptions and finding aids are largely lacking, so quick and well-directed use of the collections is not to be anticipated.

12. Lowndes County Public Library, Columbus. This public library has a special collections section that undertakes to acquire items relating to the local history of the county. It has various documents, clippings, and photographs relating to the Tombigbee River.

13. Natchez Trace Parkway Library, Tupelo. The special collection here relates very narrowly to the Natchez Trace and matters directly related to it. It has a collection of maps.

14. County Courthouses of the ten Upper Tombigbee counties all contain extensive local records, which can provide the basis for research and analysis.

15. Southern Collection, University of North Carolina Library, Chapel Hill. Extensive manuscript collections cover the entire South. Of special interest to the Upper Tombigbee area are the following:

Samuel Andrew Agnew (1833-1902) diary (relates to northeast Mississippi)
Billups Family papers, relating to Noxubee County
Elizabeth Amis Cameron (Hooper Blanchard papers, describing antebellum plantation life in Lowndes County)
Belle Edmundson Diary, describes trip from Shelby County, Tennessee, to Columbus in 1864
William Ethelbert Ervin journal of Lowndes County plantation. Saw and grist mill accounts
Hairston and Wilson family papers (Lowndes County plantation)
James Thomas Harrison papers (Noxubee County plantation)
Charles Eaton Hamilton papers (Lowndes County plantation)
Ernest Haywood collection (Greene County plantation)
Holliday and Pendleton family papers (antebellum Aberdeen)
Johnston and McFaddin family papers (relates in part to Noxubee County)
John McKee papers (Choctaw and Chickasaw Indians)
Joseph Pickens McQueen papers (Greene County)
William Ruffin Smith papers (Lowndes County plantation)
James Perrin Quarles, Jr., collection (relates in part to Chickasaw lands)
Walton Family papers (Greene County, family and business)
Wetmore Family papers (Sumter County)
Gaston Hillary Wilder papers (Greene County plantation and store records)
Robert W. Withers papers (Greene County plantation, business, and medical practice records)
Marcus Joseph Wright papers (Greene County family, plantation, and legislative)

16. Duke University Library, Durham, N.C. Limited manuscripts of interest to Upper Tombigbee area, particularly:

James D. Dunn papers (Greene County business and steamboats)
A.H. Jones Invoice Book (Noxubee County trade, property lists and inventories)

17. National Archives, Washington. This institution is unsurpassed as a repository of the archival records of the United States government. Its facilities are inadequate to cope with recent creations, however. These are either being stored in temporary facilities or in the Federal records centers in various parts of the country, which now have archives branches. In the main building in Washington the following are of special interest:

Land plats from original surveys, with field notes
Records of steam vessels, including steamboats
Archival records of the Army Chief of Engineers

Post Office records

Records of aerial photographic surveys

18. Federal Records Center, Suitland, Maryland. Records of the sales of public lands are found here, in the archives branch. Still in Records are the records of the Interstate Commerce Commissions's Docket 13494, the Southern Class Rate Investigation, which were used in the present study.

19. Federal Records Center, Archives Branch, East Point, Georgia. A considerable body of records of the Mobile District Office of the Corps of Engineers is to be found here, including working papers for feasibility studies of the Tennessee-Tombigbee Waterway.

20. Library of Congress, Washington. This is a national library of a tremendous scope of operations. In its collections some items of special interest are:

Thousands of maps of Alabama and Mississippi areas in the Map Division
County histories for Alabama and Mississippi

Pictures of individuals and sites in the Prints and Photographic Division

21. U.S. Bureau of Land Management, Silver Spring, Maryland. This bureau maintains records and maps for its own operations on a very extensive scale. Its collections contain many maps showing details of survey of areas in the Upper Tombigbee Valley in Alabama and Mississippi. Of special interest are the tract books, which show original purchasers of public lands, acres purchased, precise location, price per acre, and date of purchase, arranged by townships. Microfilms of the tract books for Alabama and Mississippi have been acquired by the University of Alabama Library and the Center for the Study of Southern History and Culture of that institution.

22. U.S. Postal Service Library, Washington. This contains published records of post offices and postmaster appointments.

23. U.S. Army Corps of Engineers Library, Washington. This contains a complete set of the annual reports of the Chief of Engineers and a very elaborate comprehensive index to those reports. Most of the working papers and maps of the Corps appear to have been routinely destroyed when no longer needed in the conduct of operations.

24. Library of the Bureau of Railway Economics, Association of American Railroads, Washington. Although greatly reduced from its former glory, this is still a national fountain of information relating to railroads, including those of the Upper Tombigbee Valley.

Newspapers

[Aberdeen] Evening Tempest. 1856.

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Maps

A large number of topically varied maps were consulted during the course of the Literature Search. Many of these maps offered little information of significance to the study. The selected references which follow are those which contributed in some way to either the narrative interpretation or to the place location files. They are arranged sequentially by date rather than author to assist time period reference. In those cases where a map series is designated it is the utility of all units of the series relating to the Upper Tombigbee which is indicated, rather than the relevance of any specific unit of that series.

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- 1826 Drayton, J., Mississippi, Alabama, and Louisiana. Young and Delleker, Philadelphia.

- 1829 Finlay, A., Alabama. Young and Delleker, Philadelphia.
- 1830 The Traveller's pocket map of Alabama with roads and distances from place to place along the stage and steamboat routes. H.S. Tanner, Philadelphia.
- 1833 Bradford, T.G., Mississippi. S. Stiles, Sherman, and Smith, New York.
- 1835 Bradford, T.G., Mississippi and Alabama. W.D. Ticknor, Boston, F. Hunt, New York.
- 1836 A new map of Mississippi with its roads and distances. H.S. Tanner, Philadelphia.
- 1838 Besancon, J., Map of Mississippi. N. Cumeni Lith, New York.
- 1838 La Tourrette, John, An accurate map of the State of Alabama and West Florida carefully compiled from the original surveys of the general government. S. Stiles, New York.
- 1839 Mississippi, Louisiana and Alabama showing communication by land and water between the cities of New Orleans and Mobile, carefully reduced from the original surveys of the United States. John La Tourrette, Mobile, Alabama.
- 1842 Morse, S.E., and S. Breese, Mississippi. N.P., New York.
- 1845 Map of the State of Alabama carefully compiled from the original surveys of the general government. John La Tourrette, Mobile, Alabama.
- 1850 A new map of Mississippi with its roads and distances. T. Cowperthwait and Co., Philadelphia.
- 1850 A new map of Alabama with its roads and distances from place to place along the stage and steamboat routes. S. Augustus Mitchell, Philadelphia.
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- 1876 Post Route Map of the States of Alabama and Mississippi with adjacent parts of Florida, Georgia, Tennessee, Arkansas and Louisiana. U.S. Post Office, Washington, D.C.
- 1878 Cram's Railroad and Township Map of Alabama. George F. Cram, Chicago.
- 1881 Gray, Frank A., Gray's New Map of Alabama. O.W. Gray and Son, Philadelphia.
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- 1889 State of Alabama. Department of Interior, General Land Office, Washington, D.C.
- 1891 Post Route Map of the States of Alabama and Mississippi with adjacent parts of Florida, Georgia, Tennessee, Arkansas and Louisiana. U.S. Post Office, Washington, D.C.
- 1894 Smith, E.A., Geological Map of Alabama. Alabama Geological Survey, Tuscaloosa, Alabama.
- 1895 Mississippi. Rand McNally Co., Chicago.
- 1899 Improvement of the Warrior River, Alabama. Index and Location Map. Survey from Tuscaloosa to Demopolis. United States Army Corps of Engineers, Mobile, Alabama.
- 1911 County Rural Delivery Series. United States Post Office, Washington, and seq. D.C.
- 1916 Survey of the Tombigbee River Demopolis, Alabama, to Columbus, Mississippi, 1914. United States Army Corps of Engineers, Mobile, Alabama.
- 1937 General Highway and Transportation Map Series. Alabama State Highway and seq. Department, Montgomery, Alabama.
- 1950 7.5 Minute Series (Topographic). United States Geological Survey, and seq. Washington, D.C., and Reston, Virginia.

- 1950 and seq. 15 Minute Series (Topographic). United States Geological Survey, Washington, D.C.
- 1950 and seq. Eastern United States 1:250,000. United States Geological Survey, Washington, D.C.
- 1969 and seq. Tennessee-Tombigbee Waterway Design Memorandums. United States Army Corps of Engineers, Mobile, Alabama.
- 1978 Tennessee-Tombigbee Waterway Series. Department of Interior, Historic American Building Survey, Washington, D.C.
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