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NINETEENTH CENTURY FOODWAYS IN PIEDMONT GEORGIA

KAREN GREEN WOOD

Athens

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by

KAREN GREEN WOOD
B.A., West Georgia College, 1972

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ACKNOWLEDGEMENTS

I would like to dedicate this thesis to the memory of the Park's Mill site. Although the site now rests under ten feet of water in Lake Oconee, this fact may be viewed as just another phase in the long and rich history of the site and of all the Oconee River area. The Wallace Reservoir Project, which the Park's Mill site was part of, provided many archaeologist the opportunity to study this important area of prehistoric and historic occupation in Georgia. I am grateful for the opportunity to be part of this project.

Many people have made important contributions toward this study. Although I cannot mention everyone, I would like to offer my appreciation to all, named and un-named. I take sole responsibility, however, for any misconstructions that may appear.

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CHAPTER 1 INTRODUCTION

Until now there have been no studies of historic vertebrate remains in the piedmont of Georgia. Faunal remains from a number of historic sites along the South Carolina, Georgia, and Florida coasts have been studied, but the interior has received little attention. One of the primary goals of this study is to establish a data base for future research in the piedmont of Georgia and perhaps for neighboring states as well. Two piedmont sites, the Robert Toombs Historic site in Washington, Georgia, and the Park's Mill site in southeastern Morgan County, Georgia were analyzed and the results are presented here. Both sites were occupied from very early in the nineteenth century all the way into the twentieth century. This study is primarily concerned, though, with the nineteenth century.

In the title, the word "foodways" is used. Foodways "refers to the whole interrelated system of food conceptualization, procurement, distribution, preservation, and consumption shared by all members of a particular group" (Anderson 1971:XL). The intent, then, of this study is to go beyond a simple examination of what people ate. A note of explanation should be made here, however. Due to the nature of vertebrate remains, the scope of this research has been

limited to the meat portion of foodways. This is not to degrade the importance of the vegetable part of sourthern diet. Vegetables were an important part of the southerner's diet and should be included in any analysis of historic foodways. Unfortunately botanical remains from these sites were not analyzed. In the future botanical remains from piedmont historic sites should be analyzed so that a more comprehensive understanding of foodways can be realized.

Although the plant portion of diet is not discussed to any degree here, the examination of the meat portion of the diet will provide data on one important part of the diet. According to many of the traveler's accounts, meat served as a very significant part of North American's diet (Martin 1942:46). This seems to be a reoccurring theme among the many accounts (Hodgson 1824; Olmstead 1856; Trollope 1969; Vance 1935). It nevertheless must be taken as an assumption and not a fact at present. The hardy appetites of the frontiersmen and women, together with an English cultural preference for meat, may have greatly enhanced the desires for meat in the diet of early North Americans. The advancing technology that accompanied the development of the United States may have increased this preference for meat in the diet. Many of our economic, sociological, and ecological problems of today may be intricately woven into the emphasis placed on meat consumption early in American history (Ross 1980). Foodways means much more than just what people ate. The technological developments of the nineteenth century are

discussed to present a better understanding of the events surrounding changes in food habits.

The examination of documents is an important part of this study. A number of anthropologists over the years have realized the importance of historical research. There have been arguments over whether anthropology was really a branch of science or history. Historical archaeology has in recent years been attacked on similar grounds (Schuyler 1978). E.E. Evans-Pritchard argued in the early 1950's that anthropologists should be more concerned with studying societies within a historical context (Evans-Pritchard 1961). Since Evans-Pritchard, a number of anthropologist and historians have realized the values of both anthropology and history (Thomas 1963; Hudson 1974; McFarland 1977 etc.). David C. Pitt authored a book on using Historical Sources in Anthropology and Sociology (1972). Pitt, a student of Evans-Pritchard, emphasized, as Evans-Pritchard did, that documentary records can provide a time depth for understanding events and changes through time. He refers primarily to social anthropology and the problems that have plagued static ethnographies and the "ethnographic present". The use of historic records within historic archaeology is also important for reliable interpretations of the structure and dynamics of a site, all of which must be placed within a larger temporal framework (Griffin 1978).

Acknowledging that "the two disciplines are indissociables", Evans-Pritchard agreed with Levi-Strauss

that the difference between history and social anthropology was "one of orientation, not of aim" (Evans-Pritchard 1961: 21). Therefore, this research is an attempt to use archaeological data along with historical data for a better understanding of the intricacies of nineteenth century foodways in the Georgia piedmont.

Unfortunately, many historical archaeologists have had to justify their raison d'etre. Why excavate sites for which documentary records are available? Usually the documents are lacking in specific areas of research, or they may be biased, or totally erroneous. There is an even more important reason, which I will address shortly. Particularly in the area of foodways there is a general lack of good documentary sources. Food patterns and practices and subsistence activities in general have often been regarded as too humdrum or uninspiring an aspect of human life to be worth mention. Many have failed to remark on food, or if they did, it was in such matter-of-fact or generalized terms that it offered little in the way of worthwhile information.

Lewis Binford tells the perfect anecdote to this dilemma in a paper he presented to a conference on historic archaeology several years ago. He recounts his fieldwork among the Nunamiut Eskimos. He was interested in studying patterning of artifacts, particularly bone, at a camp a group of Nunamiut occupied in 1948 and that was recorded by an earlier researcher. Binford excavated the 1948 hunting camp, carefully recording all the bone and other artifacts in

detail on maps. He then began to interview individuals who had been participants at this early camp, and to ask them about why certain bones were found in various places around the camp. What he found was that it was totally futile to ask the Nunamuiut about the bone patterning; they remembered nothing and cared even less about it! They might expound at length on a bone arrow but when it came to explaining why certain bone elements tended to occur in a particular part of the site neither the men or women knew why. This emphasises the point that people tend to take food procurement, preparation, and disposal so much for granted that they hardly even acknowledge it (Binford 1983).

There is a final and more important justification for historical archaeology mentioned earlier, and a reason I would like to present for doing the research I have done here. Schuyler states that historical archaeologists are basically "concerned with the creation of cultural images of the past that are more complete and to some degree different than those generated from documentary history alone" (Schuyler 1978:1). This is why I have chosen to take the route I have and to put together an analysis of zooarchaeological material, complemented by historical data. It is hoped in this way that through a synthesis of both realms a more complete understanding of the past can be achieved.

CHAPTER 2 THE PIEDMONT AND ITS HISTORY

This chapter contains the background setting for the research in this thesis. The piedmont is environmentally and historically separate from the other three physiographic provinces that occur in Georgia. The piedmont stretches across the wide central portion of Georgia (Figure 1), bordered on the north by the Appalachian Mountains and the ridge and valley provinces, and on the south by the coastal plain province. An environmental setting is briefly presented to describe the piedmont region as an geographical, physiographical, and environmental area. A description of the historical background of two archaeological sites analysed in this study are presented next. The last and longest section involves an overall historical examination of the nineteenth century and those details involving foodways based on documentary research.

The Piedmont

The piedmont province is characterized by gently rolling hills with broad, level interfluvial ridges dissected by

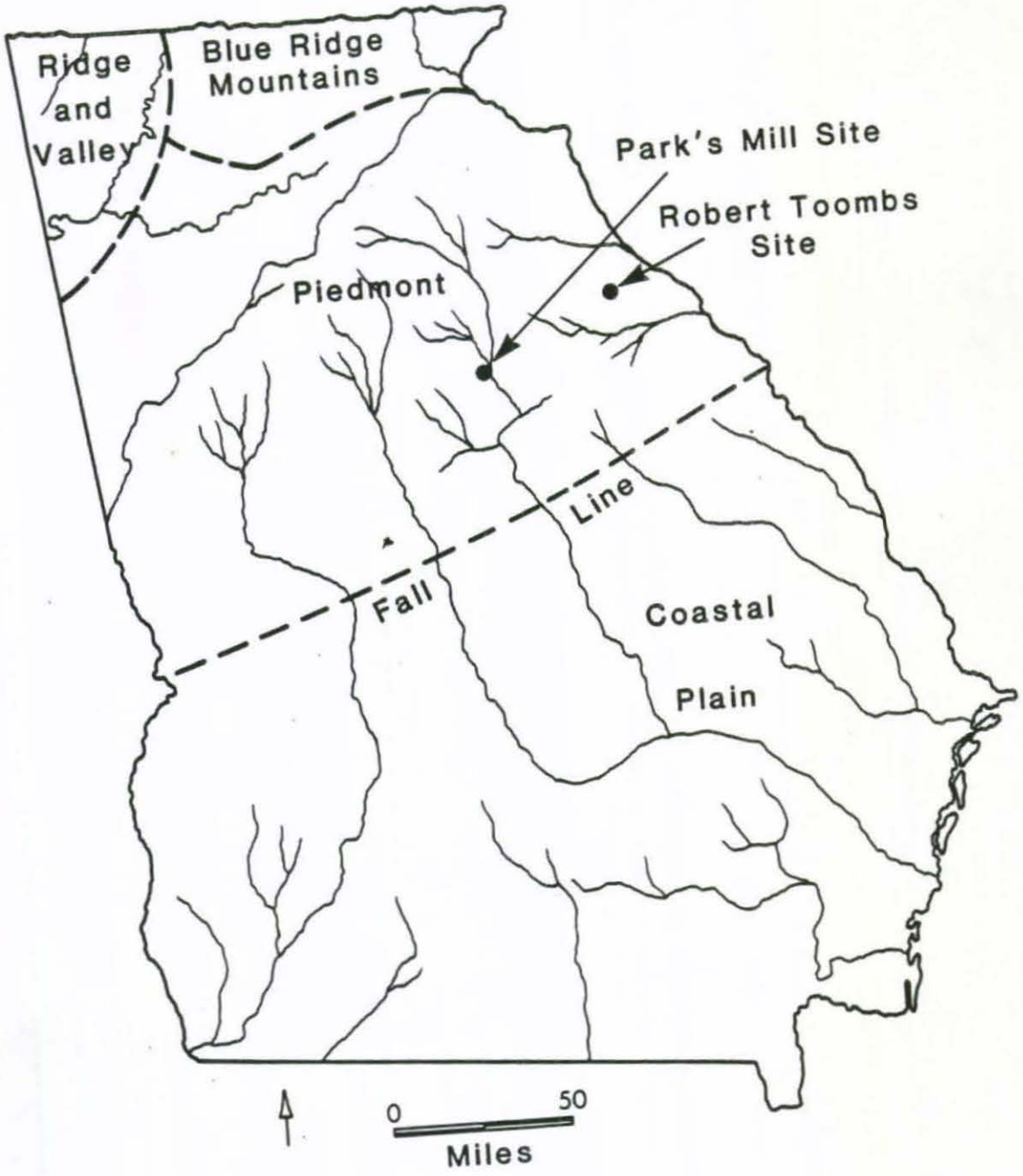


Figure 1. Physiographic Regions of Georgia with location of sites.

valleys and streams. Some of the larger streams and their tributiaries exhibit steep cuts and deep valleys in places (Fenneman 1938:131-132). For the most part, though, the topography of the piedmont is rolling with a dendritic pattern of streams intersecting the gentle slopes and uplands (LaForge et al. 1925:58). The area where the piedmont meets the coastal plain has been traditionally referred to as the fall line because it is characterized by rapids and falls in most of the streams that flow over this intersection between the two provinces (See Figure 1). The piedmont is subdivided into the upland and lowland areas. The upland areas tend to exhibit stronger relief, particularly as the highlands are approached. The lowland piedmont tends to exhibit less relief although there are steep areas in places such as stream valleys. The underlying piedmont structure is composed of ancient Appalachian bedrock which has been greatly degraded by the later formation of the piedmont and intrusions of granite, gneiss, quartzite, and acidic and basic rocks.

The characteristic soils of the piedmont are the red sandy clay loams. Because of the severe erosion that has occurred since European farm practices began 200 years ago, the red clay subsoils that underly the topsoil are evident over much of the piedmont. Many of these topsoils were shallow and quickly washed into the streams once Europeans began to farm the area.

Today we hear of and see the results of the intensive agricultural practices of these early southern farmers. A 1974 study by Stanley Trimble, a geographer, who examined the effects of erosive land use in the south since the early arrival of Europeans until 1960. Trimble begins by stating:

> "The Southern Piedmont is one of the most severley eroded agricultural areas in the United States. Much of the Piedmont has been stripped of the topsoil, and many areas have been dissected and gullied so badly as to render the land unsuitable for agriculture. The debris from this erosion has filled stream channels and valleys to varying degrees, often swamping the adjacent bottomlands"(Trimble 1974:1).

Through volumetric quantifications Trimble estimated that the Georgia piedmont lost on an average 7.5 inches of its topsoil between 1700 amd 1970. He asserts that minimal erosion occurred during aboriginal times. Early accounts by European travelers reported clear streams in the south. The greatest land erosion occurred during the period from 1860 to 1920 when cash crops such as cotton, tobacco, wheat, and corn were being grown. Trimble describes the typical erosive land use pattern as one that involved clearing the forest, exploitively farming and depleting the soils, and then abandoning the depleted fields, which continued to erode until vegetation could finally grow up and slow down the rapid erosion (Trimble 1974).

Originally, the Georgia piedmont was covered with a flora of decidous hardwoods, mixed hardwoods containing some pine, and predominately pine forests. At the time Europeans

first arrived in the Georgia piedmont dispersed fields and second growth forests were also noted and attributed to Indian agricultural practices, although the Indian impact on the landscape was minimal as compared to the later European impact (Wharton 1978:144). A considerabe part of the piedmont was cleared and farmed by Europeans, reaching a peak sometime during the mid-eighteen hundreds. Due to a lack of conservative measures the soils were quickly exhausted and severe soil erosion resulted over most of the piedmont. Worn out land was abandoned and gradually reverted to second growth forests dominated by pine (Trimble 1974). The fauna of the piedmont is diverse, including a variety of mammals, birds, amphibians, reptiles and fishes.

The climate for the piedmont is temperate. Summers are hot and winters are moderately cold. Morgan county may be used as a generally good example of the typical climate in the province. During the summer months temperatures often exceed 90°F in the afternoon and temperatures over 100°F are common.There tends to be varibility in the temperature range during the winter months, with temperatures ranging from 20° F to 80°F. The rainfall averages 120.7 centimeters annually (Payne 1965:2).

Park's Mill Site

The Park's Mill site is located on the western side of the Oconee River approximately 5.5 kilometers from its

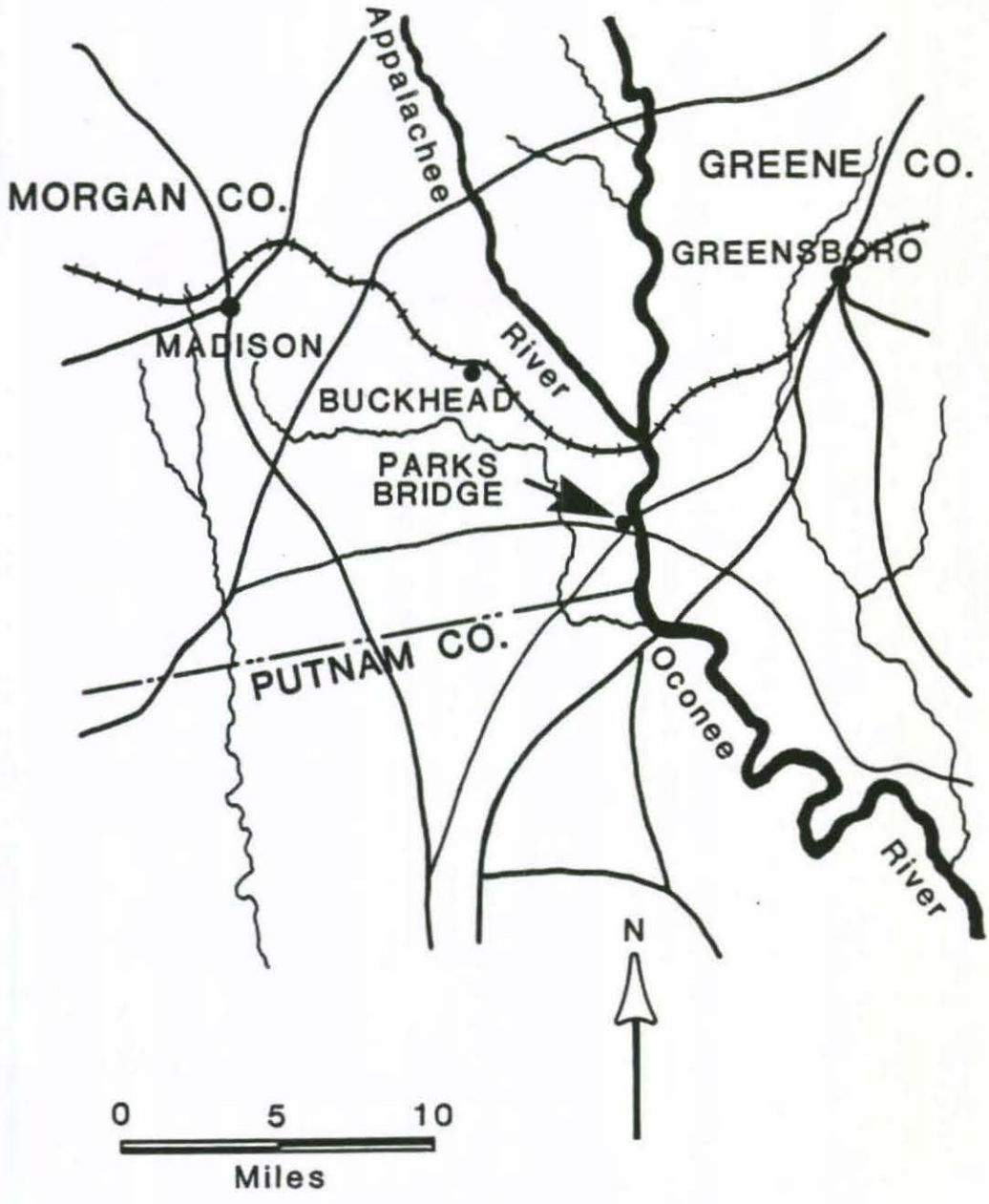


Figure 2. Park's Mill or "Park's Bridge". Based on 1859 map (Butts 1859).

confluence with the Apalachee River (Figure 2). The site, located along the banks of the Oconee River in a rural area of southern Morgan County, Georgia, was a small community at one time. Many structures have been built and replaced over the years at the site. At the time of investigation, the orginal Park's Mill house along with several adjacent outbuildings, barns, and other structures still stood, along with other structures within the community limits.

Until 1802 all of the land in piedmont Georgia from the western bank of the Oconee River and west was under the control of the Creek Indians. From time to time white settlers had illicitly crossed the Oconee River and settled on the western banks during the late eighteenth century. This included the ill-fated Trans-Oconee Republic established by Elijah Clarke in 1794 (Hunt 1973). A number of forts were placed along the Oconee River on the eastern bank to protect the white settlements, which were sometimes raided by angry Creeks retaliating for the white invasions of their western landholdings. In 1802 the Creeks officially ceded the land west of the Oconee River to the State of Georgia.

Many American revolutionary soldiers and their families migrated to Georgia in the years following the end of the War for Independence. James Park, a soldier of this war, purchased land lot 337 on the west side of the Oconee River in Morgan County in 1807. The Three Chops Road, an old road that crossed the Oconee River in Greene County into Morgan

County, became the second stagecoach road through Georgia in 1808. This road, also known as the Seven Islands Road, ran from Philadelphia, Pennsylvania, to Charleston, South Carolina, to Augusta, Georgia and from there to New Orleans, Louisana (Hunt 1973).

Richard S. Park, an elder son of James Park, astutely recognized the potential for the spot where the stagecoach road crossed the river into Morgan County. In 1809 he requested a tavern license for the site. Sometime during this period Richard built a tavern and public house at the stagecoach road crossing. In 1810 James Park transferred part of land lot 337 to his son Richard who, with the help of some of his slaves, began to develop the site. A few years later (1819) he was joined by a sister, Betsy Ann Park, and her slaves. Betsy Ann figured prominantly in the running of the tavern and inn. Very early (1810) a saw mill and grist mill were built. Sometime fairly early a toll bridge was built across the Oconee, as there is mention in the Morgan County records for 1823 of Parksbridge. A tenant family by the name of Youngblood took up residence on the site in 1824, as did additional slaves. Within three years Richard Park also had a store and post station on the coach route (Bartovics 1978).

Richard Park continued to increase his landholdings in the area by buying up his sibling's shares of lot 337 until he had complete ownership of the whole James Park estate on the west side of the Oconee River. (James Park also owned

land on the Greene County side of the river where his home is still standing today). Enterprising businessman Richard Park continued to develop the site with the addition of a small cotton gin, a forge, a number of domestic structures (both tenant and slave), and barns during the first half of the nineteenth century. In addition to the property along the Oconee River in Morgan County, Richard Park bought property in counties all over Georgia, including Habersham County, where gold was found in the 1830's. Park became a wealthy man, which is evident in the $133,933 estate he owned at the time of his death in 1851. At the time of his death he had no will nor any male heirs, therefore a probate inventory was made in 1853 listing all of Park's personal property. This invaluable document lists store contents, outbuilding contents, domestic animals (some by name), all of his nearly one hundred slaves (by name and some by occupation as well), and as well as a room-by-room listing of the contents of the Park house including $63,642.21 cash on hand.

Betsy Ann Park and James E. Park (Richard's and Betsy Ann's nephew), inherited the house and both lived there for a number of years. Sometime between the time of Richard's death and 1864 the toll bridge across the Oconee River was replaced with a ferry above the dam. The ferry continued in operation until the late 1950's. This is the ferry that

Jefferson Davis is reputed to have used to cross the river while fleeing from the Union forces (Hunt 1973:64).

Although the Park house escaped destruction during the Civil War, Geary's Raiders, a unit of General Sherman's army led by General Geary, burned the mill in 1864. Betsy Ann Park had died in 1861 and James E. Park inherited her part of the estate. Sometime around 1870 the mill was rebuilt and continued to operate into the early twentieth century. The events between 1870 to the late 1890's are somewhat uncertain, although it is known that James E. Park in 1879 had the Park's Mill site changed over to Greene County because of some "economic interests" that behooved his change of residence! (Bartovics 1978:21).

In 1897 Charles L. White from Minnesota purchased most of the Park's Mill property. This inaugurated a new period of development for the Park's Mill site, one of commercial farming. A store and post office were also established in the Park's house. During this period the site became known as Riverside. It does not appear that the house was actually occupied by the Whites at this time, as Mrs. White preferred a little more civilized lodging than the old Park house offered. Around 1917 Charles White's son, Fred, married Grace Davis, a local girl from nearby Buckhead, and moved into the Park house. Fred operated an automative repair business on the property as well as running a dairy farm and the store. During the first and second quarters of the twentieth century Park's Mill became a thriving little

community with many tenant and sharecropper families living on both sides of the river. In fact a couple of the black tenant farmers still lived there until innudation by Lake Oconee.

During the 1970's Georgia Power began to proceed with their plans to impound the Oconee River at a point a few miles above Lake Sinclair in Putnam County, Georgia. One of the stipulations for Georgia power's license to build the Wallace Dam was the removal and restoration of the historic Park's Mill House beyond the reservoir edge.

Robert Toombs Historic Site

The Robert Toombs site is situated within the town limits of Washington, in Wilkes County, Georgia (Figure 3). The state of Georgia purchased the house in 1973 and began a program to restore and interpret the house and grounds for public viewing. This involved architectural, historical, and archaeological research of the site (Morgan 1981).

Wilkes County was created from part of the "New Purchase", a large section of land between the Ogeechee and Oconee Rivers, that the Creek Indians ceded in 1773 to Georgia as payment of a large debt they owed traders. In 1777 Wilkes County was formed from a large part of this ceded land and in 1790 the state legislature began to create other counties from the larger Wilkes County (Crane 1929; Morgan 1981).

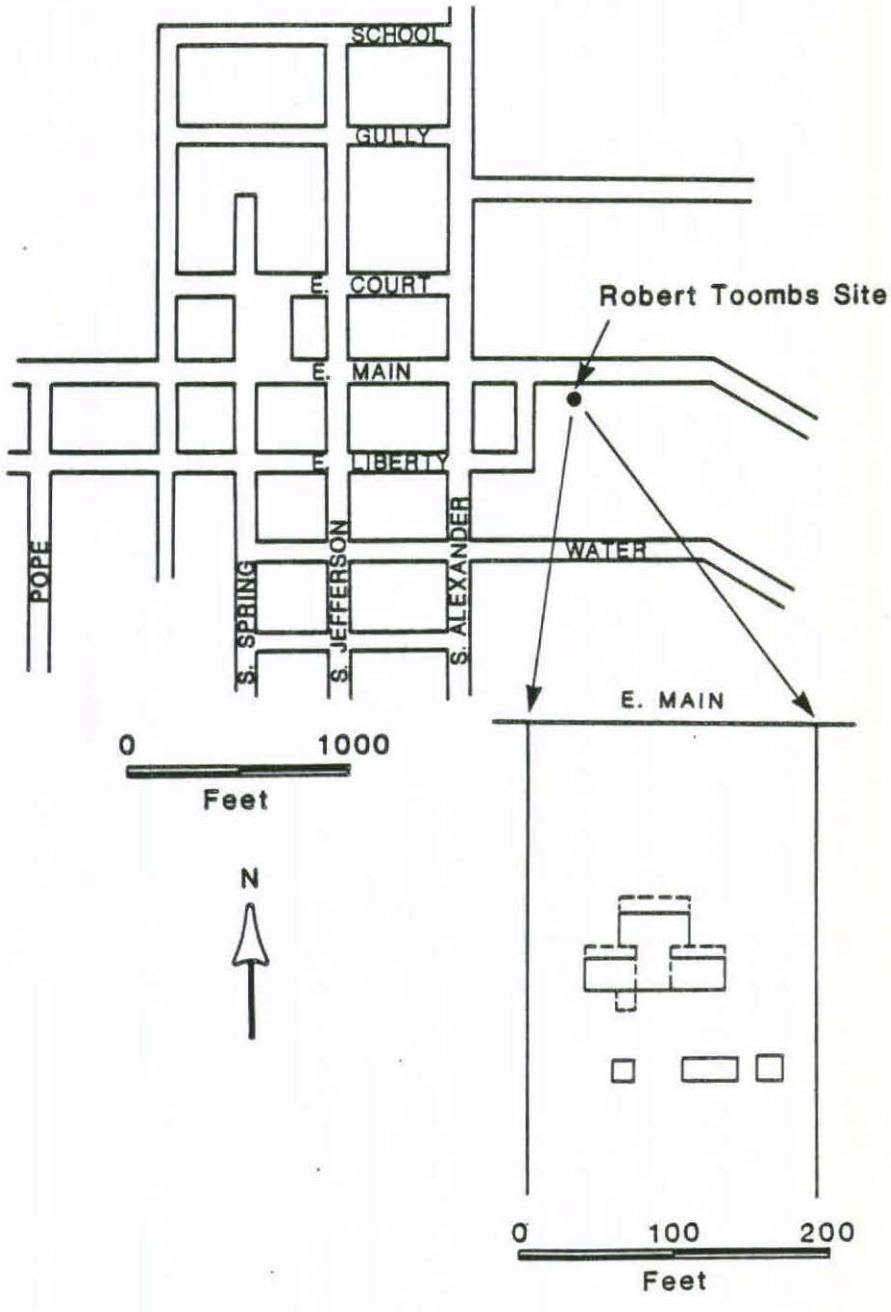


Figure 3. Washington, Georgia with Toombs site located. Based on 1917 Sanborne Map.

A few people had settled in Wilkes County perhaps as early as 1773 or 1774 (Bowen 1950:7), before the county was officially formed. A county courthouse was built somewhere prior to 1780, when the Supreme Executive Council, a Georgia Whig faction, met in Augusta, Georgia. One of the orders of business was the establishment of the city of Washington to be laid out near the Wilkes County Courthouse. The city of Washington was situated on a ridge between the Broad and Little rivers (White 1849:609). The establishment of settlers in the area was a primary focus in the development of the piedmont at this point in Georgia's history. To encourage settlers in the Washington-Wilkes area, each head of household could secure a 200-acre headright (Coleman 1977:83).

In 1794 Dr. Joel Abbot, a young Conneticut physician, arrived in Washington, Georgia and in 1797 he built a two-story house over a raised basement. Dr. Abbot died in 1826 and William L. Thomas bought the Abbot house and added to the front of the house. In 1837 Robert Toombs purchased the site and made a number of additions to the house.

General Robert Toombs is best remembered as a great Georgia statesman and the Secretary of the State for the Confederacy. Robert Toombs was born in 1810 in Wilkes County to Robert and Catherine Toombs. His father, a wealthy cotton planter in the county, died when Robert was five. At his father's death Thomas R. Cobb, an important Georgia statesman, became young Robert's guardian and mentor.

Robert attended Franklin College (now the University of Georgia), but was expelled for playing cards. He later received a law degree from the University of Virginia. In 1837 Toombs became a member of the Georgia State Legislature along with a friend and fellow Wilkes Countian, Alexander H. Stephens. In 1845 he was elected to Congress and in 1853 he was elected to the U.S. Senate. Toombs gained a reputation as an eloquent and witty orator. Although he was a defender of slavery, he was considered a fair and just man.

When war broke out between the states, Toombs was elected Secretary of State for the Confederacy. Toombs differed with Jefferson Davis, President of the Confederacy, on many issues of running the Confederacy. He applied for and received an appointed command of the Georgia Brigade and fought in Virginia, while still remaining in the Confederate Congress. At the end of the war Union Troops came for Toombs at his house in Washington. While his wife stalled them, he escaped on horseback. Toombs fled the country first to Havana and then to Paris, where Mrs. Toombs later joined him. Robert Toombs returned to the United States in 1867 where he resumed a very lucrative law practice. He spent his final years in Washington, often conversing with his longtime friend, Alexander H. Stephens (Vice-president of the Confederacy), who even had a room reserved for him at the Toombs' home. In December of 1885 Robert Toombs passed away at this home. The house became the property of

Toombs's relatives and remained in the family until its acquistion by the state. A number of additions and modern improvements were added to the house and property between Toombs' death and the state's purchasing of the site.

A Historical Perspective on Foodways in the South

The Park's Mill and Robert Toombs sites have been presented from a particularlistic viewpoint, each primarily within its own historical setting. The following is a discussion of the developments of the nineteenth century, as they pertain to foodways. This is offered as a backdrop to help place the two sites within a framework of the times. A discussion of the people and their diet, the social classes and some of the characters--the travelers who describe southerners during the period, will be presented first. This will be followed by a discussion of technology and its impact on changes in foodways and food production during the century.

Some comments about travelers are warranted here. A considerable number of travel accounts were consulted during my research. It quickly became apparent that these accounts often seemed very biased. During the eighteenth century it was very much the vogue for wealthy Europeans to tour the Americas and to recount their tales in letters, journals and books. You find a variety of accounts ranging from favorable to condescending to belligerent. Most of these individuals were from the upper classes of European society

and were accustomed to European refinements and servile attitudes from most of the people whom they came in contact. This is particularly true for those individuals who offered services, such as inn keepers, stagecoachmen, restaurant workers, etc. In the newly independent America the snobbish, European, class distinctions were inappropriate. These new Americans were independent and there was little of the social classes (at least early on) evident in European society. All "men" were "equal". Many European travelers were pompous and overbearing, treating the Americans as inferior. This met a cold reception in America. There were a few travelers who were quite perceptive of these new attitudes. One such was John Melish, who wrote in 1812 "There are no waiters, no hostlers, nor boots here, in the same sense as in Britian, they are all freemen, equal in the eyes of the law " (Melish 1818: 360).

Few other travelers were as perceptive as Mr. Melish, so that arrogance was met with coldness which in return caused a torrent of unpleasant descriptions of these "rude Americans". Such accounts as Mrs. Trollope's Domestic Manners of the Americans and Frances Kemble's searing account, Journal of a Residence on a Georgian Plantation in 1838-1839, are filled with detailed descriptions of the rude, crude, and unrefined Americans. As the northern states reached a sufficient state of development, you began to see a number of northern travelers in the south as well (Olmstead 1856, 1860), who often were just as biased in

their accounts of southerners as the Europeans were of Americans in general.

Another important factor in many traveler's accounts concerned the important issue of slavery. Abolition was on the minds of many of these traveler's and their descriptions often reflected the pros or cons of southern slavery (Fogel and Engerman 1974:170).

All of these biases and ethnocentrism are evident in their descriptions of the foods, as well as in other aspects of culture the traveler observed. In using traveler's accounts these ethnocentrisms must be realized and dealt with appropriately. There are few other documentary sources available that describe early foodways. In the case of food, the same foods occur over and over again in the accounts, which would tend to support that these foods were being eaten. How much exageration is involved is difficult to ascertain. I think the biggest problem (which isn't necessarily a problem here) comes in the accounts of how bad the food was. As Edgar Martin, author of The Standard of living in 1860, has aptly stated, "If an Englishman doesn't like American meat, is it the meat or his taste which is at fault? If a northerner expresses his dislike for southern cooking, is the cooking bad, or is it just different? (Martin 1942:75). There is no doubt that the conditions these travelers met were often quite deplorable, particularly by our standards today! Nevertheless, the conditions of the times were perhaps greatly exagerated in

many instances. Historians in the last twenty years have begun to shy away from travelers accounts because they often are unreliable (Deetz 1974:26). However, traveler's accounts are used in this study with the biases of the observers taken into account. Agreement between accounts was looked for and those accounts which seemed overly biased or bitter were usually ignored.

The People of the South and What They Ate

At the beginning of the nineteenth century much of the present state of Georgia still legally belonged to the Indians. After the Revolutionary War the population of Georgia began to swell with a general westward expansion of the state and the country. In 1802 Georgia agreed to cede the land from the Chattachoochee River to the Mississippi to the United States in exchange for the promise that the federal government would remove the Indians from within the remaining territory of Georgia in a due time. This began a series of Indian land cessations by the Creek and Cherokee Indians that continued until 1835, with the final removal of the Cherokees occurring in 1828 (King 1966:87-88, 101).

Early settlers in the interior of Georgia were small-time farmers who were primarily intent on clearing the land and eking out a living for their families. These early frontiersmen brought a few domesticated animals with

them (such as pigs, sheep, cows, chickens etc.) and hunted those game animals available. They also brought such European vegetables as cabbages, onions, carrots, beets, etc. and adopted many of the Indian vegetables. Most important of these was corn, but sweet potatoes (a South American cultigen), squash, and beans were also added to the diet. The pigs, cows, and chickens were generally turned loose and left to forage for themselves. Often these animals became feral and were hunted like other wild game. The early Europeans adopted many of the Indian techniques for hunting and plant gathering as well. Very quickly there developed a food pattern that was a modification of traditional European and American Indian diets. In other words, these early settlers brought with them some of their Old World plants and animals but also adapted themselves to their new world environment and exploited those plants and animals readily available (Booth 1971:3).

In 1800 cotton planters began to move into the piedmont intent on growing cotton as a cash crop, with the aid of slave labor (King 1966:102). The piedmont was still sparsely settled when the planters began to flow into the country. Many of these planters were from the older inhabited areas of the lower south or from Europe. Often they were quite well-to-do and brought with them many slaves and European refinements. They had much more variety in their diet than the earlier frontiersmen. Mutton, lamb, veal, various fowl, seafood, rice, asparagus, spinach, etc.

appeared more often on their tables. It is interesting to note that although many of these wealthy planters had a variety of good foods available, they often ate a simple diet much akin to that of the yeoman farmers and frontiersmen--salt pork, chicken, corn cakes, and perhaps potatoes or sweet potatoes. However, when guests arrived they would "go all out" and prepare special meals with a flourish of dishes in the offering. For many of these planters, especially those immigrants from the low country, this was part of a pattern of being prudent that had developed early in the settling of the origional colonies (Davis 1976:41). In a study of southern diet patterns, Emily Maclachlan presents, what she sees as a trifold "southern culture pattern" that developed early in southern history: the frontiersman riding on the wave of western expansion, the wealthy planter with his many slaves, and the yeoman farmers, the "plain people " of the south, who made up most of the souls therein (Maclachan 1935:12). To Maclachan's three culture patterns I would add a fourth, the slave pattern.

Each of these groups varied their diet somewhat, but to each group there appears to have been certain common elements. Meat (salt pork usually), cornmeal, molasses, some wild game, chickens, and a few vegetables , apparently were eaten by most classes, whether poor or wealthy, black or white (Craven 1930; Johnson et al 1935; Foust 1969). The travelers noted over and over again the meat, meal and

molasses--the three M's (Johnson et al 1935)--that were invariably served to them (Hodgson 1824; Olmstead 1907; Mesick 1922; Trollop 1969;).

The travelers quite often experienced the table fares of all classes during their journeys. There were many inns and taverns along the roads, but in many remote areas there was no public housing available. The customs of the times were that many private homes (from the southern planter on down to the poorest homesteader) were open to the weary traveler. Hospitality was a common trait among these early settlers, although it varied from person to person and depended to some extent upon the traveler himself. Many settlers, some willingly some begrudgingly, did open their homes to the wayfarers and as a result many travelers were able to experience family life at most economic levels (Yoder 1969).

Poor whites and slaves seemed to have eaten basically the same foods. Meat (bacon), cornbread, molasses, greens, coffee, and wild game, were the common fare for black and white alike (Craven 1930:17; McIlwaine 1929:xx). A number of travelers felt that southerners ate nothing but bacon and cornbread. One visitor recounted his fare at a poor white house in Georgia as "coffee, without sugar, fried bacon, and cornbread mixed with water only; there were no vegetables, butter, or other foods" (Martin 1942:59-60). There is probably more literature currently on slave diet than any other economic group in the south. The diet of slaves

varied depending on the judiciousness or the generosity of the planter. It appears that in general a peck of corn meal, three to three and a half pounds of pork, and a quart of molasses were the common weekly allowance for adult slaves, although the amounts varied (Olmstead 1856; DeBows Review 1858; Gray 1923; Vance 1935; Martin 1942; Nixon 1946; Lumpkin 1947; Genovese 1972; Owens 1976). Fogel and Engermann state that the idea that the slaves were underfed is incorrect. According to them, the slave diet "was not only adequate, it actually exceeded modern (1964) recommended daily levels of the chief nutrients" (Fogel and Engermann 1974:115). Several other foods sometimes replaced or supplemented the above mentioned foods, such as beef, vegetables, seafood, flour, etc. Many slaves had "truck" gardens, raised pigs and chickens, and were sometimes permitted to hunt, although it was illegal for slaves to have guns in some places (Martin 1940: 65). The slaves often sold their vegetables, domestic animals, and captured wild game to their masters or other whites and used the money to buy luxury items such as whiskey, tobacco or cloth (Martin 1942; Otto 1975; Genovese 1972). Some slaves stole food from their masters to supplement their diet, either due to a food deficiency, lack of enough variety, or just to "get even" (Gibbs et al. 1980:211).

The yeoman farmer's diet was not that different from the slave or poor-white's, other than a little more variety and quantity perhaps. They still ate pork and corn (hominy,

grits, cakes, etc.). More vegetables such as peas, greens, beans, cabbages, turnips, sweet and white potatoes were consumned. Beef, some mutton, chicken, turkey, geese, and wild game were more prevalent, as well as eggs, milk, butter, and fish were available. (Dodd 1919; Maclachlan 1932). For most southerners (the yeoman farmers or common people), though, bacon, corn bread, and a few garden vegetables with some fresh meat ever so often, composed the majority of the diet (Van Deusen 1928:269).

Many of the inns and taverns were run by well-to-do farmers, merchants, planters and common men or "men of small means" (Yoder 1964:16). The lodgings offered were sometimes good but more often poor and the food fared about the same. One need only read the accounts to hear the repeated moanings from travelers about the poor conditions and "unpalatable" foods. Of course, as mentioned earlier, many of these travelers were exceedingly fastidious in their food and lodging preferences. After a night spent in a crowded room complete with bed bugs, the weary wayfarer would appear at an often crowded "public table" of sixty to eighty persons where "tea and coffee, and every variety of flesh, fowl, and fish, wheat bread, Indian corn bread, buck wheat cakes, etc" were consumed in ten minutes or less (Olmstead 1856:310). One traveler in Georgia (1831) was awakened one morning by the inn proprietor who wanted his bedsheets for a table cloth, because they were the cleanest in the inn. The somewhat bemused traveler consented since he logically

figured he would rather eat off his sheets than someone else's! (Truett 1935:103).

Some inns "offered a profusion of meat, poultry, and pastry" (Olmstead 1856:31), while others stuck more to the swine's flesh, molasses, and cornbread fare (Yoder 1969: 134). George Featherstonhaugh reported eating "little pieces of pork swimming in hog's grease, some very badly made bread, and much worse coffee" at a frontier inn in Arkansas (Featherstonhaugh 1844:109). In remote areas crude log taverns with poor lodgings and food existed as long as frontier conditions did, after which these inns disappeared or were replaced by more refined taverns that offered improved lodgings and food (Truett 1935; Yoder 1969).

The planter's diet was similar to the yeoman farmers except again more varied and plentiful amounts were generally available. Some have identified the diet for the low country aristocracy as one of "variety, profusion, and replention" (Vance 1935:417). A number of travelers described the opulence of foods served them by the wealthy planters. Mrs. Basil Hall described a dinner with an aristocratic family in Columbia, South Carolina in 1828: she states they ate ham,

> "turkey, roast and boiled, chickens, roast ducks, corned beef, and fish, together with various dishes of sweet potatoes, Irish portatoes, cabbage, rice and beetroot....For second course we had eight pies down the side of the table, six dishes of glasses of syllabub and as many jellies, besides one or two "floating islands", as they denomiate what we call whipped cream, and odd corners filled up by ginger and other preserves " (in Pope-Hennessy 1931:208-209).

In Virginia, Olmstead dined at a planter's home where he ate hot corn bread, sweet potatoes, "four preparations of swine's flesh, besides fried fowl, fried eggs, cold roast turkey, and opossum, cooked I know not how, but it somewhat resembled baked suckling-pig" (Olmstead 1856:92).

When a traveler happened to call on the governor of Georgia in 1852 he "found him dining on corn bread and bacon, dry ship bread, corned beef, and the upper part of a pig's head " (Martin 1942:59). From these descriptions it is easy to see that the diet of the upper class could mirror that of the poorer yeoman farmers or be as extravagant as one could possibly want.

In all instances a few patterns are clear. Southerners, like most Americans, ate a tremendous amount of meat. This was commented upon again and again by many (Olmstead 1856; Hodgson 1824; Mesick 1922; Trollope 1969; Martin 1942; Vance 1935; etc). Horace P. Batcheler commented that

> "as a flesh-consuming people, the Americans have no equal in the world...They ususally have meat three times a day...I have seen gentlemen choose as many as seven or eight different kinds of animal food from the bill of fare, and after having all arranged before him in a row...commense at one end and eat his way through in half a dozen minutes" (in Martin 1942:46).

Hard working farm families often consumned for breakfast "chicken, steak, fish, salmon, ham, fresh pork, sausage, sidemeat, rabbit, parboiled quail, and squirrel (Watkins and Watkins 1973:46). The early settler brought with him an European fondness for meat, which Rupert Vance

believes grew out of proportion in frontier conditions where there were few other resources (Vance 1935:415). Although it is generally thought that the earlier frontier offered a bountiful and diverse amount of resources, it may be that frontiersmen had or spent little time procuring these resources. Edgar Martin states that fish were never an important part of the southern diet because the "whites were either too busy or too indifferent to do much fishing" (Martin 1942:61). Whether this is strictly true, these early settlers may have been somewhat restricted in their procurement of wild resources because they were so strapped for time in clearing the land, planting, and various other tasks. A stock of salt pork probably kept many families going for months on end. As the country became more settled and populated a love for meat, and particularly pork, was carried over even when a number of other foodstuffs were readily available. Martin states that meat consumption reached an all time high in 1860 and then began to decline after the Civil War (Martin 1942:72).

As early as the 1830's many Americans began to be concerned about the amount of meat their fellow countrymen were consuming. Many attributed the ills of society to flesh-eating and urged a vegetarian diet as a means of improving the lot of mankind (Hooker 1981:103). One author, a Mr. Alcott, expressed in his book on housekeeping that animal foods, including eggs, milk, and butter, were to be strictly avoided unless there were no other foods

available (Alcott 1849). Pork above all others is most often mentioned as the most popular food animal. This was true for most of America at the time, but particularly for the south. As one women traveler commented, "bacon, not bread, seemed to be the staff of life" (Martin 1942; 61). Over and over again the pig is mentioned as a favored food source. A Columbus, Georgia doctor in the 1850's claimed that, "The United States of America might properly be called the great Hog-eating Confederacy, or the Republic of Porkdom" (Hooker 1981:112). David Hundley reported in 1860 that the middle class southerner believed bacon to be the best meat there was (Hundley 1980:85). Sidney Andrews in his travels through the south immediately after the Civil War noted the "range of eatables is exceedingly narrow and swine's flesh constitutes at least half the food of all classes outside the towns and cites (Andrews 1971:182).

Pigs were an important animal on most every farm and were probably one of the the first animals that a pioneer possessed. They were easy to care for because they could be allowed to forage for themselves. Pigs were easier for the farmer to slaughter on the farm than the heavier beef animals (Martin 1942:49). Pork was the perfect food. It was cheap and easy to preserve by salting or smoking and therefore was ideal for the frontiersman, who had little means or the time to keep fresh meat (Maclachan 1932:117). A slice of salt pork could be fried up quickly and along with some corn dodgers or johnny cakes, a meal was soon

ready. Salt pork was easy to carry while traveling. All parts of the pig were used, from the head to the tail--headcheese, souse, pickled feet, pig stomach, scrapple, chitlings; the pig provided lard for cooking and seasoning other foods. Besides the above pig trimmings, the pig provided hams, bacon, ribs, backbone, fatback or sow belly, leg of pork, suckling pig, and sausage. The term bacon had a different meaning during this time than it does today. Bacon was used as a somewhat generic term for pork and could include a variety of pork meat cuts. Pork was usually either roasted, broiled, boiled or fried. Often shoats, young plump pigs, who had had their feet and heads removed, were roasted or barbecued (Edgeworth 1860).

According to the accounts it seems everything was fried in pig fat (Olmstead 1907; Mesick 1922; Pope-Hennessey 1931; Kemble 1961; Andrews 1971; Dr. Wilson in Hooker 1981, etc.). One raised in the south even in the twentieth century knows this practice still to be quite common to many southerners. This heavy use of frying was quite disgusting to the well bred English traveler (Mesick 1922). As the northern states became more continental in their food tastes, greasy southern food practices were viewed with disdain by many northerners as well (Beecher and Stowe 1971).

Beef rated second to pork in volume of meat consumed but may have been more prevalent than pork on certain southern

tables, primarily among the rich and urban dwellers. Apparently beef was consumed more in the northern states (Hooker 1981:113). Paul W. Gates argues that northerners actually ate more beef than pork (Gates 1960:214). John Bonner states that cows were more important in Colonial Georgia than hogs, sheep, goats, or poultry (Bonner 1961:30). Beef was most often eaten fresh, as it preserved poorly. Beef jerky was the most common preserved beef, although barrelled beef and mess beef were produced also . Beef would have been consumed fresh on the farm primarily during the slaughter season in late fall and early winter. Often when farmers slaughtered a cow they shared it with neighboring farm families, as a whole cow would spoil before the family could consume it all. By sharing among families fresh beef could be spread out over a longer period of time, as each cow was slaughtered during the season (Hilliard 1972:44; Hooker 1981:112). Along the coastal areas and in larger cities, where butchers and transportation allowed, fresh beef was more readily available (Dodd 1915:209). The most common way of preserving cow flesh besides beef jerky was corned beef and mess beef. After the meat packing and canning industries developed, these became more available in many stores. Mess beef consisted of smaller cuts of beef than those used in curing or in barrelled beef (Aldrich 1922:37). The most often mentioned fresh beef preparation was beefsteaks, although exactly how beefsteaks were cut was not mentioned in any of the literature (Hodgson 1824; Mesick 1922; Trollope

1969). Hooker states that in Charleston, South Carolina, beefsteak was considered a masculine dish and was often served to "men at supper parties after the women had left the table" (Hooker 1981:113). Other beef dishes included roast beef, beef heart, beef kidney, beef cakes, stew beef, a la mode beef, brisket, rump steaks, and beef a la daube (Abbel 1849; Edgeworth 1860). Beef was fried, broiled, boiled, fricassed, and stewed; beefsteaks were usually fried.

The use of milk and butter in the south is documented but it is difficult to ascertain how often they appeared on the table. Emily MaClachlan found in her study that the poor tenant farmer had little or no milk in his diet, but as one ascended the economic scale the consumption of milk increased (MaClachlan 1932:7). Many of the early travelers recorded the lack of milk and butter on southern tables. Adam Hodgson noted that it was quite common "to be unable to procure either milk or butter where eighteen or twenty cows are kept, solid animal food being much preferred" (Hodgson 1824:149). Basil Hall in 1828 mentioned that although they saw hundreds of cows wandering in the woods in eastern Alabama there was no milk to drink. However, a little further along he was able to obtain milk (in Lane 1973:76). In Waynesborough, North Carolina Francis Kemble asked for a glasss of milk at a tavern and was told they had no such thing. In another inn in North Carolina she was given a glass of soured milk in a "tumbler covered with dust and dirt" (Kemble 1961:25, 27). Evidently the use of milk varied considerably from household

to household, with it much more common in the more prosperous homes. Martin attributes the apparent lack of milk consumption to lack of good transportation systems, lack of refrigeration, poor knowledge of its nutritional value, and "low purchasing power" (Martin 1942:74). Butter is often described as tainted, rancid, or heavily salted (Olmstead 1856:305; Yoder 1971:134; Hooker 1981:227).

Lamb and mutton were consumed much less in the south. Lewis Gray stated that "there was a strong prejudice in the south against mutton, a prejudice that must have been widespread, judging from frequent references to it" (Gray 1941:832). Mutton and lamb most often occurred on the table of the more affluent southerner. Leg of mutton with oysters, mutton pie, and mutton tea were the only mutton receipts listed in an 1860 receipt-book (Edgeworth 1860). An 1849 cookbook listed only "to boil leg of lamb or mutton" and "mutton chops" (Abell 1849:90).

Poultry was common on almost all farms, so much so that it was probably left off many inventories and accounts because of its prevalence. Frances Kemble stated that poultry was the major "animal repast" (Kemble 1981:20). Travelers often cited eating "fried fowl" so that it is difficult to be sure what type of fowl was being consumed (Olmstead 1856, 1907; Mesick 1922, etc). Chickens, probably the most common fowl, were usually left to forage for themselves, although some were regularly fed and housed. The chicken was an easy and readily available fresh meat source

that could be killed, plucked and cooked in a very short amount of time. Chicken was, therefore, a good meat to prepare for the unexpected guest. Gray reports of some chickens on one plantation that evidently had learned a long and hard lesson so that when a "dressed-up" stranger appeared the hens all scattered in a flurry (Gray 1941).

Domesticated turkeys, geese, ducks, and pigeons were also common poultry on many farms and plantations. Hodgson reported that he ate turkey at almost every table (Hodgson 1824: 31) and many other travelers mentioned turkey (Olmstead 1856; Meskick 1922; Pope-Hennessey 1931). Whether these were wild or domesticated is not known, although there were probably both.

Pigeons were mentioned only occasionally (Akehurst-Lines Family papers 1874; Southern Cultivator 1887:Vol. XLV). General Nathanael Greene acquired a newly built house in Savannah following the Revolutionary War that was equiped with a poultry house that was ca. 50 feet long by 20 feet wide, compartmented for various types of fowl, and with a pigeon house on top that housed 1000 pigeons (Davis 1976:40)! Hooker noted that in West Virginia in 1853 passenger pigeons were slaughtered in large numbers and "were eaten fresh, dried, and pickled made a cheap food for servants and hogs, and were used to fatten hogs". I found no mention of passenger pigeons being eaten or even sighted in the south during the nineteenth century. One northern cookbook

mentioned how to cook pigeons (Abell 1849:97), but a southern cookbook made no mention of pigeons (Edgeworth 1860).

Many areas of the south abounded in wild game. Venison, opossum, squirrel, and rabbit were consumed, but how often and in what amounts cannot be determined. Opossum seems to have been popular among many classes (Olmstead 1856; Watkins and Watkins 1973). Although no descriptions of how the opossum was prepared before cooking were found, there was a good description of how to cook one. The 'possum was scalded like a pig and then scraped. It was then placed in a pot of water and boiled with vinegar, onions and pepper. The 'possum was then placed in a roasting pan along with cooked sweet potatoes and baked until brown (Hosch 1968:145). Olmstead mentioned that a baked opossum he was served reminded him of suckling pig (Olmstead 1856:92). Muskrats were reportedly sold in the market of an unknown southern city (Hooker 1981:223); and a wayfarer who stopped at a small log cabin in Missouri was fed skunk (Yoder 1969:143).

Fish are very difficult to judge in respect to their importance in the southern diet. Along the coast seafood such as, oysters, lobster, crab, shrimp, salt fish, etc. were mentioned (Olmstead 1856; Pope-Hennessey 1931; King 1966), but there is practically no mention of fish being consumed in the interior. It may have been that it was so common a food in those areas where streams were present that no one bothered to mention it. As already mentioned Edgar Martin stated that southerners ate little fish (although he stated

it was plentiful), mainly due to indifference or lack of time (Martin 1941:61). I am not so sure this is true even though the literature is too incomplete to be certain. Hilliard states that fish were relied on heavily in areas were they were abundant (Hilliard 1972:48). Receipts for baked salmon, cod-fish, boiled mackerel, and boiled sturgeon are mentioned in Mary Edgeworth's southern cookbook as well as one receipt for turtle soup. In the receipt she mentions cutting off all the meat suitable for baking and laying it aside and placing the "bones, fins, entrails, heart and liver" along with a piece of beef in a pot and stewing them (Edgeworth 1860:126, 122-125).

Although pork and corn were the mainstay in most southerners' diet, there was plenty of other foodstuffs available for supplementing their diet. Only for the poorest whites and slaves, many of whom after the Civl War became tenant farmers, was the diet so limited. MaClachan concluded that after the Civil War the sharecroppers' diet became severely limited to corn, fat-back, and molasses because of the strict demands of their cotton landlords. After the war the southern economy deteriorated so that the cash crop cotton was reinstated and became "a greater tyrant then ever" (MaClachan 1932: 24). The sharecropper replaced the slave in the labor force and entered a no-win situation where cotton was planted up to the door step and there was no time, energy, or land for growing much food. The landlord or local merchant suppplied the cornmeal, molasses, and salt pork, at

high prices, and the sharecropper rarely ever could even make "ends meet". The diet of the sharecropper and tenant farmer became a carryover of the frontier diet, surviving well into the twentieth century (Maclachan 1932:11).

Technology

This section will present a discussion on livestock care in the south, followed by industrial developments that affected the food products of the south and the nation. Some comments on the secondary effects of technology and the resulting changes in foodways will also be discussed.

Livestock. The settlers in the new colonies brought with them their standard domesticated animals of the old country--cow, oxen, pigs, sheep, goats, horses, chicken, geese, etc. Some of these fared better than others in the new environment of the south. Cattle were one of the first animal stocks to be purchased by the Trustees of Georgia, who bought their stock from South Carolina (Bonner 1965:25). Cattle were raised on open ranges. The cowpen became a well known landmark in the Georgia and southern frontier (Bonner 1965:25). Cleared areas in the woods, surrounded by a few rustic cabins to house the herdsmen's families, a stock yard, and corn fields, were the standard makings of the cowpen. Large herds of cattle ranged the open woodlands, particularly in lower Georgia, where the first settlements were established. When the interior lands opened up after the

Revolutionary War, open ranges became common in the upcountry as well (Bonner 1965:25,50). These early cattlemen were a rough and resourceful group, an important survival trait in areas where cattle rustlers, Indians, and other "ruffians" were a natural part of the landscape (Vance 1925:147). Range cattle were allowed to fend for themselves. The natural grasses were basically poor and the resultant stock were a scrawny lot, particularly after a winter of near starvation. Because there were no attempts to pen up the stock, breeding was haphazard at best. Parasites and diseases were also a common problem (Bonner 1965:29). As the frontier lands became more settled, the range cattle industry began to decline (Vance 1935:149). Farmers moving into the range areas often sought these cleared cowpen areas to settle and farm (Bonner 1965:25).

Pigs were allowed to forage in the colony but were considered a nuisance because of their destructive rooting habits. General Oglethorpe outlawed pigs from the city limits of Savannah and once had roving pigs shot at Fort Frederica (Bonner 1965:30). Pigs were kept at a distance from the settlements, therefore. Sheep were introduced around 1735 and goats followed in 1741. Geese appeared to be more popular in the colony than sheep or goats, primarily because of their down and their habit of consuming "noxious weeds and grasses harmful to livestock" (Bonner 1965:30). Horses were always less common and this lack caused problems particularly for the herders who needed horses to ride for

the roundup. Buying horses from other areas of the colony was expensive; sometimes efforts were made to capture feral horses that had escaped from the earlier Spanish herds in Florida (Bonner 1965:24).

After the Revolution, the early colony of Georgia suffered economic decline, partly as a result of the war and partly from a number of hurricanes and gales that devastated the rice plantations between 1804 and 1825. New crops began to replace rice--cotton, tobacco, and sugar. The interior upcountry began to be rapidly settled. Tobacco became a popular crop and by 1800 tobacco markets and warehouses were common in many cities in the upcountry. However, the development of cotton as the major cash crop was the "most significant feature of Georgia agriculture during the half century following the Revolution" (Bonner 1965:51). Bonner states that "garden vegetables and fruits were not emphasized in this incipient Cotton Belt of the eastern Piedmont in 1820" and by 1830 Georgia led the south in cotton production (Bonner 1965:55:56).

With this emphasis on a cash crop economy of cotton, livestock care and maintenance were basically ignored. One significant development in livestock during this period was the introduction of the mule into the cotton culture. The mule was readily accepted because of its incredible strength and tenacious ability as a work animal capable of perservering despite poor treatment. It became a very important work animal on plantations and farms alike.

Due to a series of droughts during the late 1820's and early 1830's a number of years of bad crops occurred. Low cotton prices and tariff controversies complicated matters, as well (Bonner 1965:57:58). Many planters and farmers had been so intent on cotton production that little land or effort had been provided for the raising of livestock and food. Food shortages occurred in some areas and many individuals began to urge planters to spend more time raising their own food and livestock, instead of importing animals from Kentucky and Tennessee. The Southern Cultivator, a Georgia farm journal that catered primarily to the more affluent planters and farmers of the piedmont, began to publish in 1843. In 1845 the magazine began to urge planters to grow more of their own food and become more self-sufficient. Prices in pork had greatly increased in 1844 due to a "falling off in the amount of pork slaughtered in the west last season" and this was used to demonstrate that the planter shouldn't become too dependent on fluctuating market prices (Southern Cultivator 1845 (Vol. III):40, 75). These urgings continued to occur in the pages of the magazine as well as admonishments for the poor care of livestock in general.

The early hog of Georgia was known as the land piker or razor back, described as "long and slim, long legged and long snouted, slab sided, large boned, gaunt bodied, flat eared, with arched back and bristles erect from head to tail" (Gates 1960: 217). The land piker foraged on acorns and roots,

occasionally supplemented by corn or other foods. Some farmers turned their hogs loose in orchards or newly harvested corn fields. These half-wild hogs were often hunted as wild game, and there are many accounts of these animals running over the landscape of the south. James S. Buckingham, a world traveler, reported in 1839 that he had a pleasant stay in Athens, Georgia except for "the incessant and uninterrupted chorus kept up every night by the dogs, cows, and hogs, that seemed to divide among them the undisputed possession of the streets at night". He reported that hundreds of these animals roamed the streets foraging and vying for the superiority of their class! (in Lane 1973:166). The pork produced by these hardy hogs was of an inferior quality to that of pen-raised hogs. Bonner reports that dispite this, the fact that so little effort was involved in their care and that relativley cheap pork could be bought (from the midwest), kept back the development of improved swine stock for many years (Bonner 1965).

By the 1840's the depression in the cotton economy caused many farmers to begin to diversify and invest more time in livestock. Range land had all but disappeared and the pig, because of its tenacious foraging habits, had to be penned. Most fences were poor and because of the scarcity of wood, due to the overclearing of the forests, it was often difficult to keep hogs out of the fields or fresh crops (Gates 1960:218; Bonner 1965:62, 140,145). Many hard feelings developed between neighbors as a result of uninvited hogs

feasting on their green corn fields (Hardeman 1981:196-197). During the 1850's wire fences (cheaper than wood) began to appear on some farms and this brought some relief to beleagured farmers (Bonner 1965:145). The term "hog tight", in reference to fences, developed during this period (Gates 1960:218). The small farmer probably continued to allow his hogs to roam on unimproved land even after many planters began to pen their stock up--out of necessity! James Foust suggests these small farmers probably had a greater number of hogs, cows and other food crops (except sheep and mules) than his larger neighbors, because he expended less time and land on cotton (Foust 1969:190). Bonner also states that the average Georgia farmer of the 1850's was more diversified with more livestock and corn on his farm and less cotton than the traditional planter. The undependable cotton prices had taught the farmer to be more self-reliant so that even after cotton prices began to increase after 1850 he remained somewhat cautious (Bonner 1965:89).

The improvement of livestock breeding began to develop in the early 1850's, primarily among the planter class, which tended to have more time and money to purchase and experiment with new stock. For many planters it became an enjoyable pasttime and for many it was a quite serious endeavor. The Berkshire hog was one of the first imported hogs brought in to improve swine stock. It produced a much larger quantity of meat, provided a structured regime of feeding was followed. The amount of work involved and the fact that the

Berkshire was much more suspectible to warm climate diseases made it unappealing to the average farmer and planter. Another method of hog growing that caught on with many farmers was developed by a planter in western Georgia. Mr V. M. Barnes used common stock, fed them farm plants such as corn and peas, and then quickly slaughtered them at a year old, when they often weighed as much as 140 to 190 pounds each (Bonner 1965:145:146). After the War the number of imported breeds began to increase, although as late as 1893 room for improvement was still being expressed (Southern Cultivator 1893 (Vol. LI):5).

Cattle raising did not improve until better grasses were developed for grazing. There were no good native grasses in the piedmont. Many planters were not too thrilled with encouraging good grass growth because of the cotton culture economy. Before 1850 there was no substantial effort to improve grasses. Richard Peters, an innovative planter outside Atlanta, began experimenting with livestock in 1847. He urged other farmers to upgrade their livestock by purchasing good stock animals. Dairy herd improvement was slow although the need was there, particularly since so many travelers complained about the quality and quantity of southern milk and butter (Bonner 1965:127,134-135). The 1845 Southern Cultivator (Vol. III) urged farmers to take better care of their cattle in order to increase their supplies of milk, cheese, butter and beef. In 1846 the Hereford cow was presented as a good milker (Southern Cultivator Vol IV).

Later issues of the Southern Cultivator continued to admonish farmers for their poor livestock care habits and each issue had articles on good stock varieties of cattle, particularly milkers.

Although sheep and goats appeared early in the colonies, they were never as popular as most other livestock. The south as a whole never showed the interest in sheep that other areas such as New England did, although Georgia led the rest of the deep south in the number of sheep produced in 1839. There were several inherent problems with sheep in the south. The typical farm practice of allowing the herds to roam the countryside did not work well for sheep, because they were too suspectible to predators such as dogs and wolves (Bonner 1965:139). Again and again in the pages of the Southern Cultivator, The Plantation, and The Southern Farm and Home dogs are mentioned as the most important impediment to a successful sheep industry in Georgia. Wolves had been eradicated from most of the populated areas of Georgia by 1840 (Bonner 1965:140), but wild dogs and those belonging to farms continued to be a big problem. Many urged that the Georgia legislature pass laws to tax dog owners, and although there was considerable interest in the sheep industry starting around 1845, no such laws were ever enacted (Bonner 1965:139-140). One final problem in the sheep industry in Georgia was that there was little market for mutton in the south. For unknown reasons southerners in general--both black and white--seemed to have little interest

in mutton or goat flesh. Bonner suggest that this lack of interest was overshadowed by the popularity of the hog to Georgia farmers and planters (Bonner 1965:141-145).

Interest in a poultry industry began to grow around 1850. Up until that time the "dung hill fowl" had reigned as the primary and the most common chicken type. As with other "barnyard animals", the chicken had been allowed to run free and therefore provided a lean and somewhat stringy meat. The 1854 Southern Cultivator (Vol. XII) devoted a number of pages to poultry farming. A Hancock County planter offered plans for a poultry house he had constructed on his property. It consisted of a two-story building, which housed chickens on the first floor and pigeons on the second floor. On the same page the editors noted that they had been receiving a number of letters of interest on poultry raising methods, poultry houses, etc. (Southern Cultivator Vol. XII: 85). The 1855 (Vol. XIII) issue of the same magazine stated that poultry were important to the United States, but there was a great lack of good information on poultry raising. By 1871 the Southern Farm and Home contained several articles on poultry breeds. One article (Vol. II:28:-29) presented breeds by outstanding characteristics, ie. prolific layers: Hamburg, Leghorn, Poland, etc. Turkey raising was also emphasized and it was suggested that turkeys should be raised in the less populated areas of the state (Southern Farm and Home Vol. II:299). During the 1850's a number of turkey breeds, as well as peacocks, guineas, quail, ducks, geese, and pigeon breeds

were being introduced in Georgia (Bonner 1965:147). In 1880 for the first time census figures were given for the amount of poultry raised in Georgia. Poultry, particularly chicken, far surpasssed all other livestock in production for the lower piedmont area of Georgia (Harper 1922:3-27).

By the late eighteen hundreds improved livestock in the south had come of age in Georgia. One individual wrote in the pages of the Southern Cultivator:

> "Twenty-five years ago the scrub cow, the razor back hog and the dung hill fowl held undisputed sway. It was a difficult matter to get the people to cut loose from the old way. But thanks to the educating power of the agricultural press...Col. Richard Peters..Col. Robert E. Park...these relics of the past are disappearing" (Southern Cultivator 1893 (Vol. LI):5).

Industry and Change. Transportation was an important factor in the development of agriculture and industry in the south. Prior to the development of railroads in the south, goods were exchanged on a fairly local scale. Hilliard points out that small towns in the cotton belt regions often served as local markets for the exchange of goods. The local farmer brought in his produce which he exchanged for merchandise (Hilliard 1971:186-187). The local store became a marketing agent for farm crops. Barter was an important means of trade and the country store exchanged its merchandise for produce, which it in return distributed in order to meet its wholesale bills (Atherton 1949:47). Many store owners loaded produce onto wagons and traveled over the countryside dispensing their goods in this manner. Itinerant merchandising became

one way of getting goods to people in less populated areas, particularly in the ante-bellum days (Atherton 1945:45).

Small scale localized droving of livestock also occurred. Often hogs from the mountainous regions of North Georgia were brought south into the less hilly areas for sale (Watkins and Watkins 1973:87-88). Larger drives of hogs and cattle came primarily from Tennessee and Kentucky. Atherton reports that some Tennessee storekeepers actually participated in the business of driving livestock to markets in Virginia and Georgia (Atherton 1949:98). In these ways livestock were brought to areas where there was a demand, primarily among planters, prior to the building of railroads.

Railroad construction began in Georgia during the 1830's. By 1838 the Central of Georgia Railroad had completed tracks to Greensboro, Georgia and by 1841 had reached both Madison and Athens as well as Washington (Phillips 1908:237). The coming of the railroad meant many changes for the south. Many areas that had been remote were opened up by access to the railroads; settlements often grew up around the railroad. The transportations of foodstuffs was an important aspect of this development. Plantation owners, who concentrated on cotton growing with little emphasis on food production, were able to obtain foods more easily.

One industry that greatly benefited from the new railroad system was the meat packing industry. Meat packing began as early as 1655 in Springfield, Massachusetts. Local

low level meat packing was present in the north and on a very limited scale in the south for many years after this. As the western plains opened up and livestock raising became centered in the midwest and west, long drives of cattle and hogs across the Alleghenies to the eastern markets were made (Hinman and Harris 1939:16,19). In the south there were fewer markets for live cattle and dressed meat. New Orleans was probably one of the biggest centers for meat packing in the south, although pork packing was never really centered in one place. Quite often pork and other foodstuffs received in New Orleans were repacked and sent out of the south to eastern markets or to the West Indies, and were not even consumed in the south (Gates 1960:220).

Early meat packing began to develop in Cincinnati and Chicago during the second quarter of the nineteenth century. Cincinnati was the leading slaughtering and meat packing center up until the Civil War. The Civil War provided an important stimulus to the meat packing industry, as it did to many other industries (Hinman and Harris 1939:28). The Midwest quickly became an important center for meat production and Chicago stockyards took the lead in this production. One of the most innovative inventions in the meat packing industry occurred in 1871 when a railroad car was fixed with an ice refrigerator and sent loaded with dressed beef to the east. Prior to this beef and pork had been preserved primarily through salt and pickle curing of hams, bacon or mess pork or beef, corned beef, or air-drying

(Bushnell 1901: 150). Refrigeration now allowed the more ready availability of fresh meat to markets far away from the Midwest.

Canning was another way of preserving meats, although the importance of canned meat in the south was limited until after the Civil War. Oysters as well as lobster and sardines were canned along the east coast as early as the 1840's. Canned meats were in big demand for supplying Union troops during the Civil War. As early as 1800 Holland had packed fish in air-tight sealed tin cans. In 1825 the tin-plated can was patented in New York and by 1851 hermetic seals were being used in Maryland to can oysters and fruits (1856). In 1852 the very important steam cooker or "autoclave" was patented. A few years later (1856) Gail Borden began to produce condensed milk in cans. The years following the Civil War saw continued improvements in food processing and canning (May 1937: 433-438). Canned foods offered a new source of meat and vegetables, and with the advent of home canning it became an important means of preserving summer and fall harvests.

How quickly canned foods appeared in the south and how important they were in the southern diet is difficult to ascertain. A number of old grocery store receipts for the 1860's to 1870's in the Baber-Blackshear Family Papers (1796-1939) shows that canned lobster, in particular, was consumned by the family on a fairly regular basis. How consistent this would be for families on a lower economic

scale is difficult to say. Several Georgia newspapers advertised lobster, oysters, sardines, mackerel,and herring, but did not specify that it was canned, although this may be assumed (Washington Independent, Dec. 21, 1860). Before refrigeration, canned seafood was probably the only source of marine fish for people of the interior, who could not afford to travel to the coast.

Probably one of the most important inventions in the kitchen was the cookstove. Cooking on an open fireplace must have been only slightly less challenging and enjoyable than the Crusades. Standing before a blazing fire dressed in a long skirt and wrestling with heavy cast iron pots on cranes or pothook's, the cook could not have avoided singed eyebrows and hair, blistered hands, smoke-filled eyes and weakened backs. The cookstove allowed the cook to stand upright at last! It was much easier to mix, stir and taste foods, and to control and change temperatures (Beecher and Stowe 1971:69; Hooker 1981:96).

The cookstove was invented by Benjamin Thompson, better known as Count Rumford, around 1800, but his flat top range achieved very little popularity. In 1815 the Jame's cookstove was patented in New York. However, it was not until about 1830 that the first cookstoves were marketed in America. Only the wealthy could afford them and it was probably not until well after the end of the Civil War that the cookstove began to appear in many southern homes (Wright 1964:113, 128; Hooker 1981:96). The first cookstoves were

small cast iron boxes that stood on four legs with the oven raised at the back of the stove, although some models had the oven locatd below and to the back of the cooking surface. These types of stoves were still being advertised in southern newspapaers and magazines as late as 1893 (Southern Cultivator; The Washington Independent; The Chronicle and Constitutionalist; and The Washington Gazett). Later models became more upright and by at least 1872 the cookstove with a mantel-shelf had been developed. Even later models added the waterback reservoir and the roller-door-closet-shelf (Wrought Iron Range Company). All of these convenciences were a boon to the comfort and economy of the kitchen. In examining newspaper and magazines in Georgia it is difficult to tell how important an item the cookstove would have been in the piedmont Georgia kitchen. Although sewing machines were regularly advertised in all the newspapers and magazines examined after 1860, the cookstove was sparsely advertised up until the 1880's. Perhaps it sold itself and needed little advertising. The fact that it did appear in some wealthy southern homes fairly early is attested by the fact that the personal property appraisement for Ambrose Baber of Macon listed in 1846 one cooking stove and oven (Baber-Blackshear Family Papers: Folder # 10). Jennie Akehurst Lines mentions in a letter to her sister in 1862 that in setting up household they had not yet purchased a cookstove but soon would (Akehurst-Lines Family Papers 1850-1949).

With the coming of the cookstove and the changing attitudes of Americans about food and nutrition new trends in the organization of the kitchen and eating areas occurred. During the early nineteenth century the dining room developed, bringing the family out of the kitchen for their meals. Of course, in the south the detached kitchen had kept diners out of the cook's hair much earlier. But, for those homes without a separate building for cooking, the developement of the dining room served to separate the cook from the consumer faction. With the development of the dining room more attention began to be paid to the table settings. Sets of china and glass became more common as factory costs in glass and ceramic wares decreased. The two-tined fork that had become so common in the late eighteenth century gave way to the three-tined and a little later the four-tined fork. Those homes that still served food with two-tined forks were marked as behind the times (Pope-Hennessey 1931:208; Yoder 1969:140; Hooker 1981:96-97). The kitchen began to receive a lot of attention in its organization, as well. Catharine Beecher and Harriett Stowe spent a number of pages in The American Woman's Home (orginally published in 1869) explaining how one should organize her kitchen most economically. A diagram (Figure 4) of the optimal kitchen plan was presented, showing that everything in the kitchen had a place. The cookstove was placed in the "Stove Room", probably because of the heat it emitted, but perhaps also because of its somewhat cumbersome appearance (Beecher and Stowe 1971:32-36).

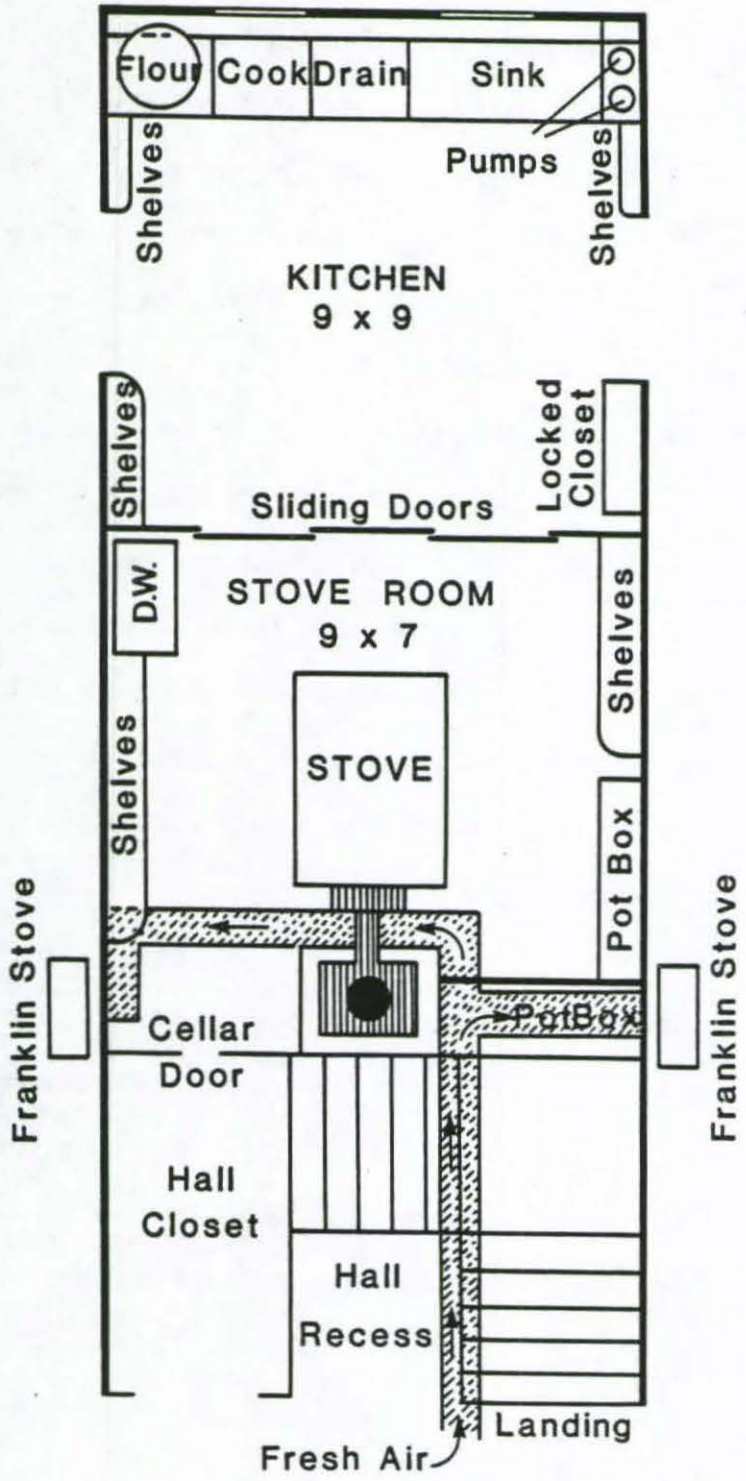
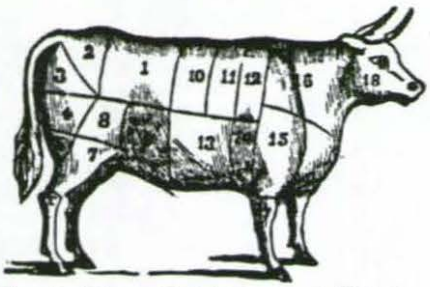


Figure 4. Mid-Eighteen Hundreds Plan of Kitchen (Beecher & Stowe 1971).

Cleanliness and organization are traits emphasized during this period, as they are today. Ideas about nutrition were beginning to be felt and the importance of cleanliness in food preparation and serving were being realized. This was a far cry from the traveler who reported at one inn "a manure pile near the kitchen door provided suitable hatching beds for the multiplication " of flies (Yoder 1969:138). Window screening, developed during the 1860's, served as a useful aid in slowing down the entrance of flies into the household (Hooker 1981:212).

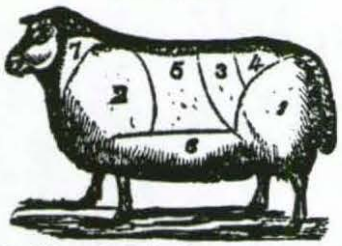
The cookstove along with refrigeration probably were the most instrumental factors in the changing of types of cuts of meat available. Figure 5 is an illustration of a meat cut diagram from an 1849 cookbook for cow, sheep, and pig (Abell 1849). The cuts were few, although they generally were so nondescript that it is difficiult to decide what they were except in very general terms. It was stated in 1901, "Hams, shoulders, sides or barrel pork composed the selling list of thirty years ago: today the variety of cuts is bewildering to an outsider" (Bushnell 1901:154). From 1870 on, then, cuts of meat must have changed radically. The American Woman's Home was an important book for its time and exemplifies these radical new changes that were taking place in food. In the pages of the book are outlined a "new" and "better" way to prepare meat. The French are lauded for their economical use and preparation of meat, where "the rule is so to cut their meats that no portion designed to be

BEEF.



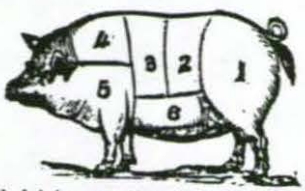
1. Sirloin. 2. Rump. 3. Edge bone. 4. Buttock. 5. Mouse buttock. 6. Leg. 7. Thick flank. 8. Veiny piece. 9. Thin flank. 10. Fore rib: seven ribs. 11. Middle rib: four ribs. 12. Chuck rib: two ribs. 13. Brisket. 14. Shoulder, or leg of mutton piece 15 Clod. 16. Neck, or sticking piece. 17. Shin. 18. Cheek.

MUTTON.



1. Leg. 2. Shoulder. 3. Loin, best end. 4. Loin, chump end. 5. Neck, best end. 6. Breast. 7. Neck, scrag end.
Note.—A chine is two loins: and a saddle is two loins and two necks of the best end.

PORK.



1. Leg. 2. Hind loin. 3. Fore loin. 4. Spare rib. 5. Hand. 6. Belly, or spring.

Figure 5. 1800's Diagram of Stylized cuts of Cow, Pig, and Sheep (Abell 1849).

cooked in a certain manner shall leave wasteful appendages which that mode of cooking will spoil..." The authors continue discussing past American practices by saying that, "The fact is, this way of selling and cooking meat in large gross portions is of English origin, and belongs to a country where all the customs of a society spring from a class who have no particular occasion for economy" (Beecher and Stowe 1971:179-180). Meat should be cut up into portions and the bone, sinew, gristle, fat, etc., cooked in the accorded ways to make soups, meat jellies, and so forth.

The proper method of cooking meat is also discussed by Beecher and Stowe. Two classes of cooking meats are given: one of keeping juices in the meat (baking, broiling and frying) and one of extracting juices (soups and stews). The old ways of frying destroyed the flavor and nutrients, while quick frying (the French method) kept the juices in the meat. The cookstove offered the cook the opportunity to cook her meats in a more economical and nutritional manner .

One final comment on foodways that appeared numerous times in the documents was, "the rapidity with which they dispatched their meals"...the whole attitude of Americans toward eating and drinking was a strictly utilitarian one" (Mesick 1922:104). This habit no doubt was a carryover from the frontier period when more important matters than the repast needed attending. Hard labor in clearing the land and working the soil created huge appetites and a heavy meat diet provided the much needed protein for this work. As knowledge

of food and nutrition increased during the latter half of the nineteenth century many of these old habits were rectified, although I'm not so sure bolting down one's food has totally disappeared.

CHAPTER 3 RESEARCH

Interest in the piedmont as a rich area for historic archaeology has been slow to develop. There have been a few sites excavated over the years, but few have been reported on to any extent or detail. Most of the excavations have been limited in scale, done in conjunction with architectual studies to aid in the restoration of historic buildings. John Morgan presents in his 1981 report on the first archaeological work at the Robert Toombs site a table that represents all the sites know to have been excavated in the piedmont, at the time of his study. He lists 12 sites that have been archaeologically investigated in piedmont Georgia--three are eighteenth century and the rest are nineteenth century. This list is based on available site reports filed at the Georgia State Historic Preservation Office (Kelley 1939; DeBaillou 1954; Kelso 1971; Carillo 1972; Garrow 1979; Mistovich and Blair 1979; W. Wood 1979; Garrow 1980; K. Wood 1980a, 1980b; W. Wood 1980; Gresham et al. 1981). Not included in this list are the three historic sites from the Wallace Reservoir Project (including the Park's Mill Historic Site). Reports on these sites are currently being prepared. Also not included in Morgan's list

are archaeological investigations on historic Georgia sites from the U. S. Army Corps of Engineer Russell Project, which are also in preparation. Few of the Russell Project sites have received intensive zooarchaeological analysis, however. Of all the sites listed by Morgan where survey and testing was conducted, only one the Macon Trading Post site (Kelley 1939), actually was excavated. None of the twelve sites Morgan listed had faunal analysis.

Since there have been no comparable zooarchaeological analysis done on any historic faunal materials, other areas of the state and the south have to be consulted for comparative purposes. The Georgia coast has received a fair amount of attention in the last few years, along with the South Carolina, Florida, and the Louisana coasts. Collections from a site in Tennessee as well as from one site in the South Carolina interior have also had zooarchaeological analysis in recent years. Those sites that contained primarily nineteenth century components are reviewed below.

Review of Zooarchaeology Literature

John S. Otto excavated the Couper Plantation site on St. Simons Island, Georgia in the early 1970's. The site was occupied from 1794-1860. Otto examined the faunal materials from some of the slave's quarters, the overseer's house and the plantation kitchen to get a good cross-status view of food patterns. He found that at the planter and slave's

quarters wild fauna individuals were slightly more prevalent than domesticated fauna individuals. However, the overseer's deposits had primarily pig remains amoung domestic animals. Beef and pork were equal as far as ratios of individuals were concerned for the slaves and the planter's family. Otto used Theodore White's (White 1953) and C. A. Reed's (Reed 1963) method of estimating weight and edible meat portions based on numbers of individuals and predicted weight averages for individuals of each taxon. According to this method beef exceeded pork in weight estimates at the site. Otto also found that saw marks were present on bones at the planter's kitchen, suggesting cuts of meat (roasts, shoulders, etc.). However, at both the overseer and slave's quarters there were no saw marks observed on the bones of the domesticated animals recovered. There were indications that the plantation workers used hatchets or cleavers to break open the bones for stewing so that the most nutrition could be obtained from the small amount of meat available to them. Saw marks on the planter's kitchen bone refuse would therefore indicate higher status (Otto 1975, 1977).

Theresa Singleton found more cow than pig bones at the Butler Plantation slave's quarters near Darien (occupied from the late eighteenth into the third quarter nineteenth century), although plantation records indicated that pork predominated (Singleton 1980:180). Since beef does not cure as well as pork, Singleton suggests the beef was being slaughtered at the plantation and eaten fresh. The fact that

the recovered pork bones tended to be jaw and feet portions may be a representation of the parts of the pig consumed fresh by the slaves, with the remainder being cured for salt pork. Singleton believes that the slaves were consuming all portions of the cow and pig because there was no full-time planter present (Singleton 1980:173-176). Singleton did not discuss butchering marks, but only dealt with the various portions of bones present (i.e. scapulae, vertebrae, mandibles, etc.). There were also problems with Singleton's sample, such as the poor preservation of the bone and the fact that she only weighed the bone and did not calculate bone count, MNI (Minimum Number of Individuals), edible meat, or biomass.

Excavations were conducted by the University of Florida in the 1970's at the King's Bay Plantation near St. Marys, Georgia. The plantation was occupied from the late eighteenth century into the first half of the nineteenth century. Excavations centered on the main house, a supposed slave site, and an outbuilding. Analysis indicated that cow outnumbered pig in individuals and biomass at the planter as well as the slave dwellings. More wild game, such as venison, was also noted in the planters deposits (Smith et al. 1981). At the outbuilding a heavy dependence on beef was indicated, although pig, deer, black drum, and a few small mammals added some variety to the diet (Johnson et al 1979).

At the Telfair site in Savannah, Georgia, excavated in 1982 by Nicholas Honerkamp, vertebrate remains were examined

that dated to the first half of the nineteenth century (Reitz 1983). Data at the site indicated that the diversity of species used was lower for this urban site than at sites in a more rural setting. Very few sawed bones were found and the fact that a number of large bone fragments occurred probably indicated that many bones were being broken open before, during or after cooking. Both wild and domesticated fauna were being used, although the domestic fauna was much more prevalent. Beef was most common based on biomass percentages, followed closely by pork. Chicken was very common based on MNI, but was low in biomass. Caprines (sheep/goats) were not significantly represented at the site (Reitz 1983a).

Farther up the coast from Savannah, at Charleston, South Carolina, the Charleston Convention Center site was excavated in 1981 by Nicholas Honerkamp. Vertebrate remains from several nineteenth century features and other contexts were analyzed. Both wild and domesticated species were exploited, with domesticated species occurring more often. Again cattle occurred more often than pig. There was evidence that some meat were being purchased, although some animals were slaughtered on the site as well. There were a considerable number of large mammal bones. Some sawing was indicated on bones, although not a significant amount. Probably bones were being cleaved and broken apart during food preparation (Reitz in Honerkamp et al 1982).

Several sites along the Gulf coastal region have recently been excavated by Coastal Environments and their faunal remains analyzed. David Kelley examined vertebrate fauna from two lots in New Orleans: one representing a more affluent business family and the other representing middle to lower class individuals (Kelley 1981). Using allometric scaling and Lee Lyman's minimum butchering technique (Lyman 1977), Kelley found that beef was more prevalent than pork "in all cases". Kelley examined cuts of meat and found generally that cuts of beef reflected status. The more expensive cuts (such as sirloin, rib, etc.) were most often found at the lot of the more affluent family, while the cheaper cuts (chuck, etc) appeared more often at the middle-lower class site. Wild fauna represented few of the species identified at the sites, domesticated animals providing the primary source of food for these two sites (Kelley 1981).

The New Orleans Hospital Site, a late nineteenth century site, was excavated in 1982 by R. Christopher Goodwin and Associates. Most of the vertebrate remains came from an orphanage and nearby residences of low to middle income families. Vertebrate analysis centered on a comparison of diets between the orphanage and the urban houses. It was found that the diet of individuals at the houses included more chicken and wild fauna than at the orphanage. At both areas of the site pig individuals were slightly more common than cow individuals. However, if biomass had been

determined this would probably not have been the case. Fish were a very minor component of the diet at both the orphanage and the other houses. Cuts of meats were primarily from the meaty portions of the animals. It was assumed that meat was obtained from a market or butcher (Reitz and Ruff 1982).

The Elmwood Plantation site is located in the low lying area outside of New Orleans. The site was originally occupied by the French prior to 1790, and was operated up until the 1840's. Excavations at the site were made during 1982 by R. Christopher Goodwin and Associates. Although the sample size was quite small at the site (only 45 individuals), some distinct characteristics were apparent. There was a much higher incidence of caprines (Sheep/Goats) at the site than has been the case at other sites. The use of domestic animals in general was higher at the site as well. Wild mammals such as rabbit (Sylvilagus spp.) and opossum (Didelphis virginana) occurred more, although wild birds were used very little. Fish were exploited very little. Diversity at the site was quite low, compared to other coastal sites. All of these levels of occurrence, of course, could change dramatically if a larger sample size was available (Reitz 1983b).

Only a few interior nineteenth century sites have had zooarchaeological analysis completed. One of these is the middle Tennesse site The Hermitage, occupied during the early nineteenth century. The Hermitage was the plantation home of Andrew Jackson, seventh president of the United States. The

site is located in the Tennessee Central Basin near the confluence of the Stones and Cumberland Rivers. The Cumberland River forms two large bends on the west and north edges of the site. The plantation was occupied by the Jackson family from 1804 to ca. 1850 (Jackson died in 1845). Although referred to as a farm by Jackson, the Hermitage was a plantation in a more practical sense. During the period of 1820 to 1840 the Hermitage comprised around 1000 acres with over 100 slaves inhabiting the site (Smith et al. 1976:7).

When Andrew Jackson first bought the Hermitage he resided in a cabin, which became known as the First Hermitage. Several other cabins are included in this early portion of the site. The Jackson family moved into a larger house, known as the "Mansion" in the early 1820's. After the Jackson family moved, these earlier cabins probably served as guest quarters and later, around 1830, they became slave quarters (Smith et al 1976:13). As the farm developed into a plantation and small community, the site as a whole became the Hermitage.

Several seasons of excavation at the Hermitage began in 1970, when an area of the mansion was excavated by Samuel D. Smith. In 1974 and 1975 the area of the First Hermitage, including several of the early cabins, was excavated. Another field season in 1976 examined the remains of two brick slave dwellings on the site (Smith et al. 1977:97).

Faunal remains were recovered and examined from a total of six structures associated with the nineteen century

occupation of the site. By combining the Mansion, and East, West, and South cabins assemblages I arrived at a MNI of 225. The species list indicated a fairly diverse faunal assemblage. Species diversity was not figured for the Hermitage site, however, I took the liberty of calculating Shannon and Weaver's (1949) diversity index based on minimum number of individuals. Diversity for the site was on the slightly high side (3.1329). Domesticated animals were most heavily utilized. Pigs were by far the most prevalent individuals and may have provided as much as 56% of the mammal individuals consumed at the site, while cows provided 37.5% and mutton only 3.2% of the individuals. Wild animals such as gray squirrel, woodchuck rabbit and opossum, etc., represented only 3% of the mammal individuals. Chicken was the most common fowl (41.2%). Turtles, such as softshells and snappers, as well as wild birds such as mourning dove and the Canada Goose were also consumed. Fish from the nearby Cumberland River or Stones River were eaten, particularly the freshwater drumfish and catfish (Smith et al. 1976, 1977).

The site closest to the two Georgia piedmont sites is the Millwood Plantation, located in the piedmont on the Savannah River, in Abbeville County, South Carolina. The plantation was owned and operated by James E. Calhoun between 1832 and 1889. After his death in 1889, the plantation continued in operation through the second quarter of the twentieth century. Many of Calhoun's former slaves continued on the plantation as tenant farmers and sharecroppers. Excavation

at the site occurred in 1981 as part of the Richard B. Russell Reservoir Project. Charles E. Orser was Principal Investigator for the site. Several structures occupied by slaves, tenant farmers, and Calhoun were excavated. Time Line Dates would seem to indicate that most of the dates for these structures centered around a mean of 1870 (Orser et al. 1982). Data for the zooarchaeological materials was included in this preliminary report.

A variety of species were identified, with domesticated food animals representing 47% of the total individuals and wild animals representing 45%. Pigs represented 37% of the domestic food animals while sheep represented 18%, cows 14%, goats 2% and chickens 25%. The occurence of sheep (18%) is curious as none of the samples from other sites, other than Elmwood, have exhibited such a high ratio of sheep. Turtles such as the spiny softshell and the pond slider make up 11% of the species while fish, dominated by catfish made up 16% of the species identified. These would have been available from the nearby Savannah River (Orser et al. 1982).

Species diversity was not calculated for the site. However, based on the species list available in the report, species diversity was determined. Species diversity based on minimum numbers of individuals was moderately diverse (2.7041) . Weight figures are not presented, although judging from the numbers of individuals and bone counts, domestic animals would have provided the most edible meat if biomass had been determined.

An intrasite comparison was made between five structures to detect social and economic status. It was discovered that the data did not seem to reflect differences in the animals or portions consumed, but there did seem to be a slight indication that at three of the structures individuals may have had only limited access to non-domesticated animals. These were thought to be the homes of tenant farmers and possibly an overseer (Orser et al 1982). No weights were given for any of the bone analyzed at the site. The sample size of 109 individuals and the apparent inability to separate nineteenth from twentieth century bone seem to be inherent problems within the data and subsequent analysis.

A study similar in some aspects to this one was published by Karen Mudar (1978). Mudar examined "socio-cultural variables" in diet for two sites in Michigan. One site was a early nineteenth century district located in Detroit and the other was a late eighteenth through early nineteenth site--the Gilbert site--located in a rural area on the Straits of Mackinac. Mudar made a intrasite comparison between several ethnic structures at the Detroit site. She found that ethnic and economic status could be detected in the faunal assemblage. Cattle seemed to have been consumed by all groups. However, the more affluent families consumed more pork. The consumption of caprines seemed to have been related to ethnicity, with the poorer French families consuming the most, followed by the wealthy French, and lastly by the non-French. Inter-site comparisons indicated

that 100% of the mammals consumed at the urban site were domesticated while at the Filbert site only 56.3% were domesticated. The diversity of species was much higher at the rural site, where almost half of the species being wild (Mudar 1978:369).

Although Washington State is farther removed from the southeast than Michigan even is, some interesting faunal analysis on butchering patterns has been done on materials from a 1900 U.S. Army dump, Fort Walla Walla. R. Lee Lyman (1977) examined the types of interpretations that could be determined from the available zooarchaeological data concerning elements present. He discovered that certain cuts of meat seemed to be preferred. In the case of beef, prime rib and "cafe round" were quite common. Lyman also determined that these cuts were slightly different from present day cuts. Most of the cow, pig, and sheep appeared to have been purchased already butchered. Lyman's data offer some interesting suggestions concerning developing butchering practices and meat cut preferences, although his findings are still preliminary.

Research Goals

The importance of diet in history is being emphasized in many areas of study around the world. The French Annales School is currently stressing diet in the social history of

humans (Forster and Forster 1975; Forster and Ranum 1979). The Annalistes emphasize

> "the relation of dietary habits to a whole pattern of folklore and culture ranging from the almost timeless rhythm of the isolated village to the rapidly changing mores and values of a whole national society in the throes of urbanization and industrial growth" (Forster 1975: x).

Therefore, food habits may indicate general changes in the culture of a society, although a one to one relationship cannot necessarily be ascertained (Forster and Ranum 1979:vii).

What happened in the piedmont of Georgia during the 1800's must be viewed as a part of a bigger picture of national and world growth. The nineteenth century represents a dynamic period of time for development and change in the south, the United States and the world. Most of this growth and change hinged on the intellectural and technological stimulus generated during the period.

The goal of this thesis is to examine foodways as recorded in vertebrate faunal remains deposited during the nineteenth century in the piedmont of Georgia. Research of historic documents provides a good background for the analysis and interpretations of the zooarchaeological materials of the two historic piedmont sites. The most important contribution of this research is to provide basic data, anticipating that new data will be forthcoming from others. Certain problems or topics are to be addressed in the research, being mindful that data from these two sites will be the first of its kind from the Georgia piedmont. Much

more data will have to be added before really valid comparisons can be made. The topics to be addressed are:

1) Regionality. Can regional foodway patterns be recognized in the south and more specifically in Georgia? How distinct is the piedmont from the coast? This is not an attempt to necessarily support environmental determinism, but there may be distinct social, economic, and environmental differences which should be reflected in foodways.

2) Variability of Diet. How dependent were people on domesticated animals? How much of their diet was supplied with wild foods--mammals, birds, reptiles and fish?

3)Prevalence of pork over beef or vice versa. Does this have anything to do with regional differences? Which source seem to be the most favored?

4)Status differences. What can be determined about class differences in foodways and are these related to regions?

5) Intersite differences. The Toombs site represents a wealthy and prominent Georgian, who lived in an urban, although small town, setting. Park's Mill represents a wealthy, but rather obscure individual in a rural setting. How do the faunal materials compare and contrast at the two sites?

6) Changes through time. Can changes in food patterns be detected through the century?

7) Butchering practies. Are there general trends that can be detected in the faunal material at the two sites? Are there more sawed, cut, or hacked bones? Are there

indications that specific cuts of meat are preferred? Are there intersite differences in butchering practices, such as more purchased cuts of meat at the Toombs site as opposed to Parks Mill?

In the next chapters historical and zooarchaeological data are used to address the above topics and questions.

CHAPTER 4 METHODS

The faunal material identified and analyzed for this research came from two nineteenth century sites in the piedmont of Georgia (the sites are approximately 54 miles apart). Each site represents a somewhat different segment of historic settlement patterns in the Piedmont--one is in an rural setting and the other is in a urban setting. The reasons for mitigation and the methods of excavation differ also. A preliminary note of explanation is offered here concerning the methods of recovery used at each site. The matrix from the Toombs site was not screened whereas the soil from the Park's Mill Site was screened through one-quarter inch hardware mesh, except in the case of one feature, which was screened through one-eighth inch hardware mesh. The lack of screening results in lose of small items. Therefore bones from small mammals, birds, turtles and fishes may not have been recovered from the Toombs site. The possibility remains that small-boned animals were not used at the Toombs site, however this problem cannot be addressed until excavations using screens are conducted. The lack of screening should not hamper recovery of large bone items, therefore remains

from large animals such as cow, pig, deer should not be effected. There should not necessarily be any ratio biases between the Toombs' site data and the Park's Mill data as far as large animals are concerned. However, there may be problems with the Toombs' data concerning intra-site ratios of wild versus domestic animals or fish versus birds, etc. Inter-site comparisons between the two sites may be hampered also.

Park's Mill Site

The Park's Mill Site was first visited by archaeologists from the University of Georgia during the 1974-75 survey of the Wallace Dam and Reservoir (present day Lake Oconee). At this time the site was walked over and an informal surface collection made (DePratter 1976:214-220). In the summer of 1976 test units were excavated directly behind the Park's Mill House on a raised artificial terrace. A subsurface structure (Structure E) was isolated and a portion of it was excavated over a six-week period. At the end of the testing phase it was thought that the structure was probably a kitchen due to the amount of historic ceramics and faunal material found and the close proximity of the structure to the main house (Figure 6). In addition to testing immediately behind the main house, a tenant structure named the Youngblood House was also tested. This structure was no

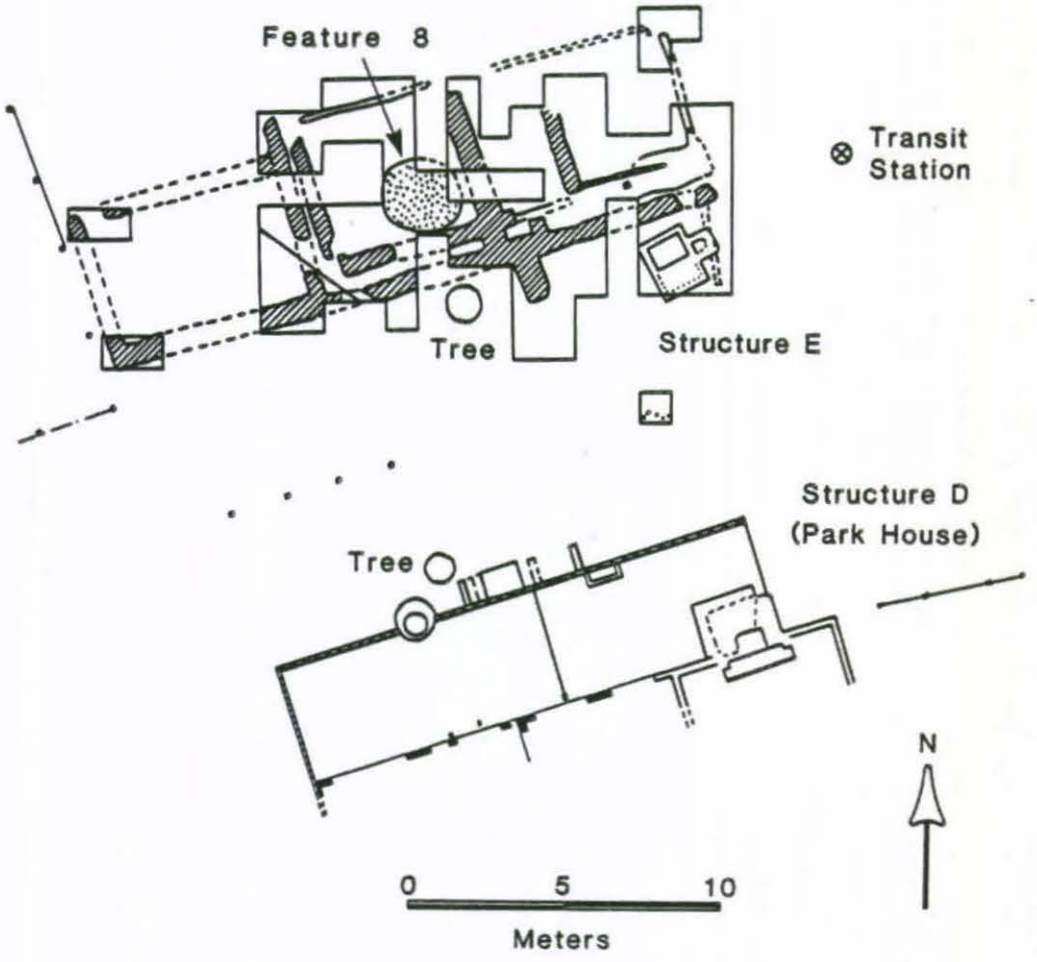


Figure 6. Plan of Structure E at Park's Mill (Bartovics 1978).

longer standing but its location was well documented and obvious from the corner stones and chimney base. After these two areas were tested, the rest of the site was subsurface tested with a posthole digger. A detailed map was made of the site, including all standing structures and all identified subsurface structures at the site (Wood and Wood 1976). Shortly thereafter an additional surface collection was systematically made in an area north of the house (Butler 1977).

In the fall of 1978 the University of Georgia began final mitigation at the site, as innudation was imminent within a few months. Excavations were carried out at the Youngblood House, at the mill , around the footings of the Park's Mill House (which had by then been removed from the limits of the reservoir pool line), and at the possible kitchen located behind the house. All but one of the standing tenant dwellings at the site were tested briefly on the exterior. Detailed architectural drawings were made at all the standing structures on the site including the tenant houses, barns and storage sheds.

A small amount of faunal material was recovered from the Youngblood House and from some of the test pits of the tenant dwellings. Structure E behind the Park House produced abundant faunal materials in stratigraphic sequences. It is from Structure E that the faunal materials analyzed in this study were recovered. Structure E was chosen for analysis

because it offered the only well stratified discrete nineteenth century materials.

Structure E (Figure 6) was excavated on a grid that coincided with the 1976-77 grid system. Vertical control was maintained with a permament transit station tied into a temporary bench mark for checking elevations. Most units were dug in one-meter squares and all fill was screened through 0.64 cm. hardware cloth. Feature 8 was fine screened using 0.16 cm. screen, however. Soil samples for flotation and pollen analysis were taken from each unit and level. The units at Structure E were dug in natural levels. Separate lot numbers were assigned to each grid square for each level. Features were assigned separate lot numbers as soon as they were recognized as such. Detailed profiles and plans were drawn of the excavation as fieldwork progressed. A detailed map using an alidade was made at the end of fieldwork for the excavated units in Structure E.

Excavations were carried out over a period from September to early December, 1978. Four natural stratigraphic zones were uncovered as well as a total of eleven features. Structure E turned out to be a very complex building of stone and brick foundations measuring in total length 22 meters by 7 meters wide. The foundations would indicate one to two early structures with several additions and foundation repairs present (Bartovics 1978:30).

Structure E consisted of four rooms, based on the layout of the stone and brick walls. Artifacts from the

fourth room on the western portion of the structure were not included in this analysis because of the small sample size and the uncertainity of its temporal relationship to the rest of the structure. The middle room may actually have been a large central hall or dog trot. Four basic stratigraphic levels were identified in the structure. The top level, Zone A, was a humic zone which contained a mixture of nineteenth and twentieth century materials. This level was not analyzed because of the twentieth century disturbances. The second level, Zone B, had a range of mean ceramic dates (South 1977:214) from 1842.4 to 1858.8, depending on the room. This layer was basically uniform in soil coloration and texture (a brick rubble matrix) across the structure . The third level, Zone C, was fairly uniform in the east and middle rooms with a mean ceramic date range of 1837.5 to 1846.3. However, Zone C in the west room was considerably different in soil coloration and consistency, and was therefore kept separate as an analytical unit in analysis. Zone C in the west room had a mean ceramic date of ca. 1840. A Zone D, also in the west room, was designated which was restricted primarily to Feature 8, to be discussed below. Because excavations tended to be deepest in the west room, the bottom level, Zone E, was primarily located here. Zone E had a mean ceramic date of 1830.8 and may actually have been associated with the occupation of the building. All the levels above Zone E are thought to be secondary deposits brought in to fill the structure after it was abandoned (Bartovics, Personal

Communication 1983). The difference in time periods between the levels below Zone A is roughly 30 years, a fairly short period of time in deposition.

Two levels excavated on the southern exterior of Structure E were included in the analysis also. No mean ceramic dates have been determined for these levels, although it is believed that they probably belong to a slightly different time sequence than the interior levels (Bartovics, Personal Communication 1983).

Feature 7 was a very small feature that had a mean ceramic date of 1856.3. However, the small amount of artifacts recovered gives the date a low reliability.

Feature 8 (also Zone D), a large basin shaped feature located primarily in the west room, is the best primary deposit at the site. It contained a tremendous amount of bone and a number of artifacts one would associate with food remains. A badly rusted fork, knife, and large iron spoon, as well as an almost complete willow-pattern blue transfer printed whiteware plate were found. The plate had a maker's mark (Robinson, Wood, and Brownfield) with a manufacture date of 1838-1841--a very short period of manufacture and excellent for pinpointing the terminus post quem of the feature. Besides a large amount of other ceramic and glass fragments, other interesting artifacts in the feature included a cast iron hook and several iron plate fragments. This feature was probably the result of trash disposal from the Park house. Feature 8 was probably filled during a

fairly short period of time. The ceramics provided a fairly tight mean ceramic date of 1848.7, with a TPQ of 1851 (Bartovics, Personal Communication 1983). Feature 8 was fine screened (0.16 cm), enabling the complete recovery of very minute bone fragments.

Feature 9 was a small feature containing a number of ceramic sherds, glass, a small quantity of bone and a variety of other artifacts including two small metal knives. The feature had a mean ceramic date of 1856.8.

Feature 10 contained the usual ceramics, bone, a fishing weight, and an axe blade. A mean ceramic date of 1845.3 was determined for the feature.

These four features were the only features that contained bone and were closed context nineteenth century deposits. They were all located within the interior limits of Structure E. All the features and midden levels contained a variety of personal objects such as straight pins, buttons, jewelry and an abundance of nails and other metal objects, besides the ceramic and glass fragments.

One other artifact of interest to this research was discovered not during excavations but while searching through some early photgraph's owned by the White family, last owners of the site. In a photograph of the mill and dam is a wooden fish trap platform, located below the dam and near the east bank and mill side of the river (Figure 7). The photograph was not dated, but was found with several other photographs that were taken around 1900. How long the trap may have been

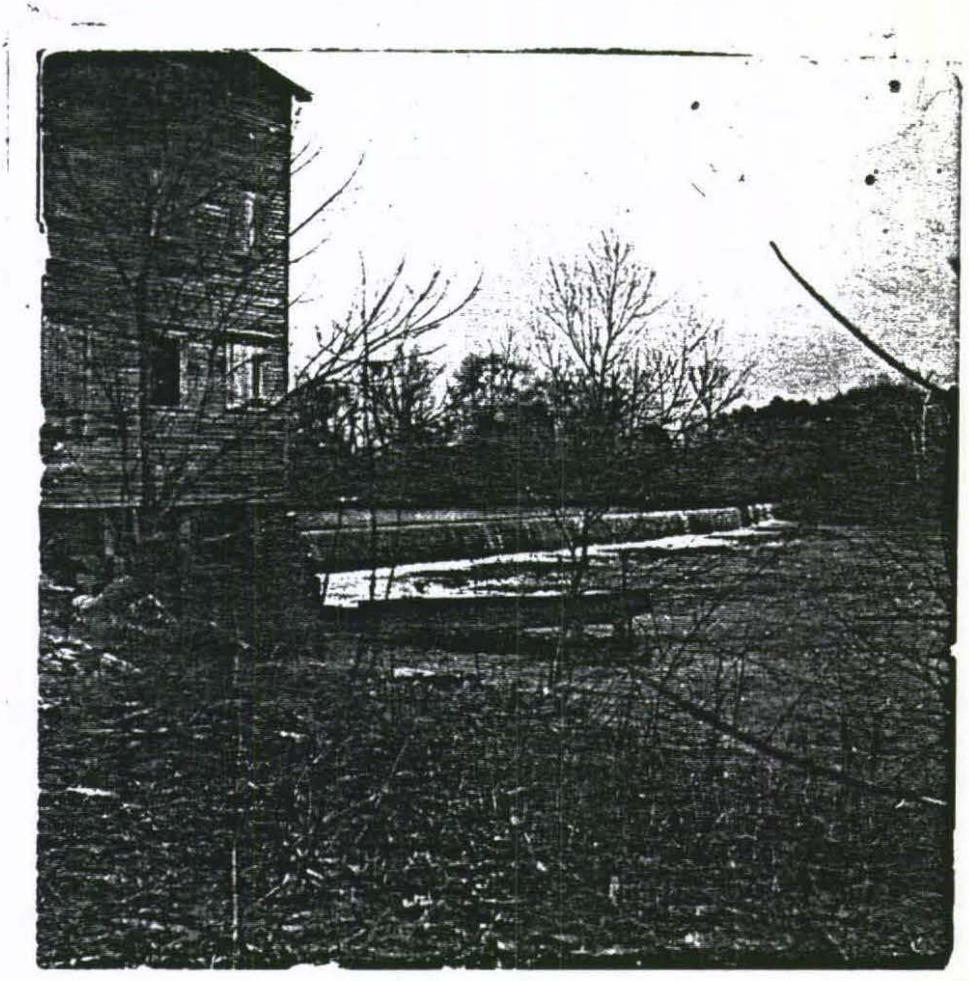


Figure 7. Early 1900's Photograph of Fish Trap at Park's Mill.

there cannot be ascertained, but it's presence is important. It indicates a type of fishing technology present at the site that possibly was used there quite early. This will be commented on further in Chapter 6.

The association these deposits have with the Park family cannot be determined absolutely. Structure E is located approximately ten meters behind the Park house (See Figure 6). It is logical that the Park family may have deposited their garbage in Structure E, and more than likely Feature 8, a short term deposit, is associated with the house. However, the zones found in Structure E may have also been brought in to quickly fill up the abandoned structure. It should be kept in mind when making associations between artifacts and the Park family that a definite association is not a certainty by any means.

Robert Toombs Historic Site

After the purchase of the Toombs property in 1973 the Georgia Department of Natural Resources began a two-fold plan, which involved preservation and interpretation of the site. An immediate goal was to stabilize the house and then to carry out an architectural project to examine the construction patterns for the house over its nearly two-hundred years of existence. In order to stabilize and provide better climate control in the house it was necessary

to modify the basement area. Because this was potentially destructive to any archaeological resources there, the first phase of archaeology was instigated in 1976. This involved the excavation of a number of footing trenches and associated features. Excavations were conducted by John R. Morgan of the Department of Natural Resources. The data from these investigations aided in interpretations of construction patterns as well as adding to the general architectural research conducted for the house (Morgan 1981:3-4).

At the time the state purchased the Toombs site a number of outbuildings were standing behind the house. These were part of the site and consisted of five buildings: a barn, a dovecote, a well house, a possible smokehouse/chicken coop, and servants' quarters (Figure 8). Documentary background on the origin of each of these structures is lacking and therefore it was difficult to determine how they fit chronologically into the overall occupation at the site. In March of 1981 field investigations were begun by Morgan Ray Crook (West Georiga College) on three of these structures: the dovecote (Structure A), the (possible) smokehouse/chicken coop (Structure B) and the barn (Structure C). The intent was to define patterns of artifacts around and in the structures and to look for features indicating earlier structures or areas of activity (Crook and O'Grady 1981:4).

The following is a description of the fieldwork based on the report by Ray Crook and field director Patricia O'Grady.

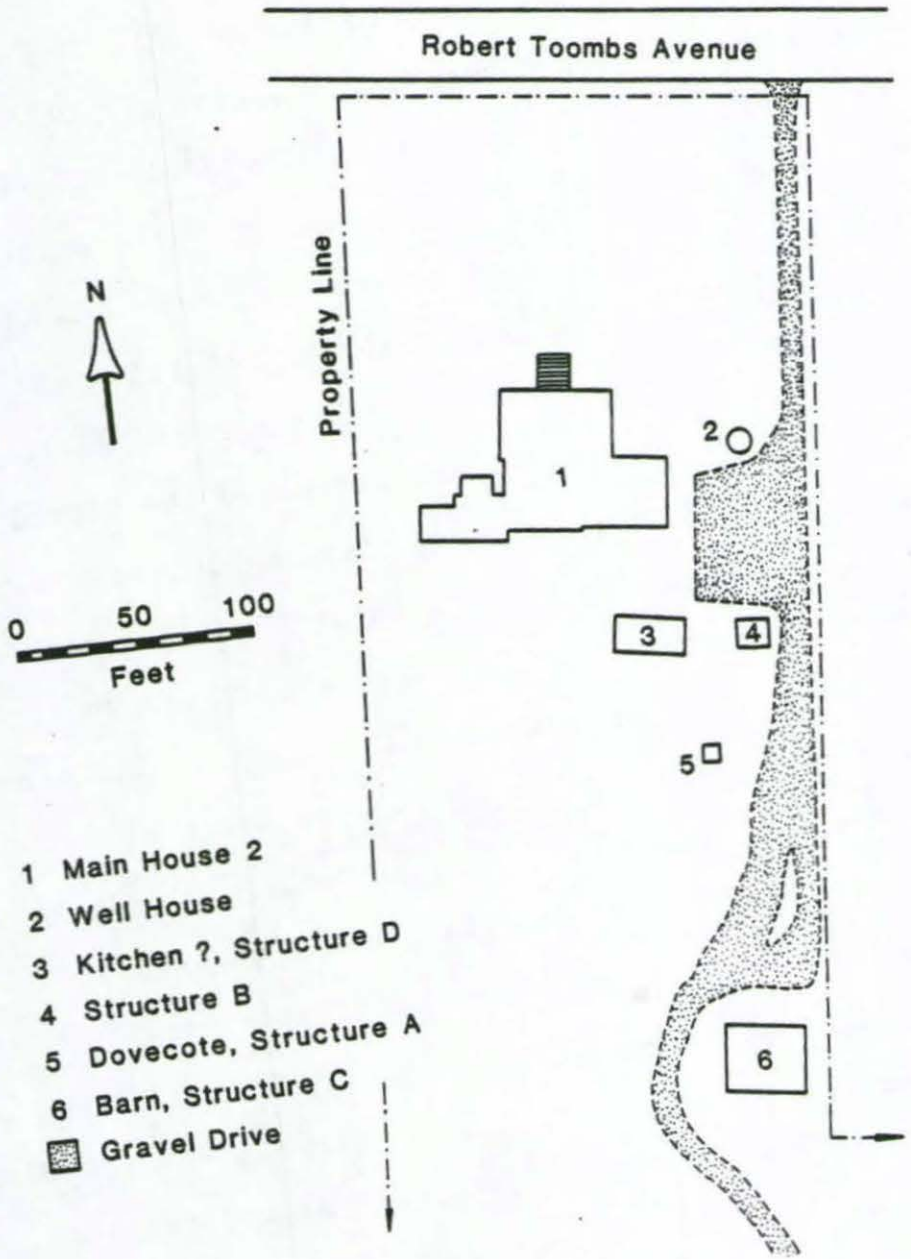


Figure 8. Plan of Robert Toombs Historic Site (Crook and O'Grady 1981).

At each of the three structures a grid was set up that followed the floor plan of the structure and extended 1.5 meters out from the exterior walls. The excavation units varied according to the particular structure. All artifacts, whether found singly or in clusters, were assigned different field specimen numbers and were plotted in situ on a map with a plotting disc and measuring tape using standard English measurements. In a few areas where it was thought that functional use or dating of the building might be possible, the matrix was troweled and screened through one-quarter inch mesh hardware cloth . All the units were excavated to sterile subsoil (Crook and O'Grady 1981:4-6).

The dovecoat (Structure A) was a raised structure southeast of the Toombs House (Figure 8). Nine units were excavated under the structure and extending 1.5 meters out from the exterior walls. Almost all artifacts occurred in the humic zone, which measured 5.0 to 30.5 centimeters in thickness and was underlain by a heavy red clay subsoil. Structure A contained materials dating from 1780 through the present. Most materials dated from 1820 until the present, however. It was determined that the structure was standing during the time that Robert Toombs lived at the site.

Structure B, a dirt floor chicken coop and possible smokehouse, was excavated in two phases. A grid was laid out for the interior of the structure. In the first phase, 1.5 by 1.5 meter squares were excavated in each corner of the interior structure and 1.5 meter by .31 meter strips were

excavated along the interior walls. In the second phase the entire interior floor of the structure was excavated and artifacts were plotted. In areas beneath an open portion of the south wall and underneath the north and west doors the matrix was screened through one-quarter inch hardware cloth. The stratigraphy was quite similar to that of the dovecote. A humic zone ranging from 5.1 centimeters to 20.3 centimeters in thickness contained most of the artifacts, and was underlain by a red clay subsoil. A number of features were excavated from Structure B, but only one is of concern here, Feature 9. This feature contained a dense concentration of faunal remains. Structure B contained materials dating from the late eighteenth century all the way into the twentieth century. The structure is thought to have been standing when Robert Toombs was living at the site.

Structure C is a two-story barn located southeast of the Toombs house. Excavations units within the structure were laid out based on the configurations of the structure. Each unit was shovel skimmed and troweled to the sterile subsoil. The stratigraphy was more varied at the barn than at the other structures. Inside the building the humic zone ranged from 2.5 to 7.6 centimeters deep and consisted of a loose black and grey top soil, underlain by red clay. Most of the faunal remains seemed to be concentrated in the southeastern portion of the barn. In this area a concentration of bone was found. It is thought that this represents an area of butchering. The barn was also determined to be standing

during Toombs' life, since it contained eighteenth through twentieth century materials.

In June of 1981 Crook and O'Grady returned to the Toombs site to investigate Structure D (Figure 8), which was thought to have functioned as a detached kitchen, and to test the grounds around the site. Faunal material was recovered from Structure D and from the transect tests placed on the northern grounds of the site. The faunal material from these transects is not discussed in this study because of the nominal amount recovered and the fact that there were no dates for the materials recovered.

Structure D was excavated in three phases. The interior of the structure consisted of two rooms with a central chimney and fireboxes opening into each room. Originally, the structure had a dirt floor. At a later date wood flooring was added. In the first phase of excavation the east room was gridded off in line with the existing floor joists. The stratigraphy exhibited a layer of loose grey soil, underlain by hard packed grey soil. Underneath this was the sterile red clay subsoil. The grey soils ranged from 7.6 to 6.4 centimeters in depth. An area of whitewashed clay occurred around the hearth area and another area of hard packed red clay occurred around the northeast door opening of the east room.

The second phase involved the excavation of the west room, which was gridded off in line with the floor joists and which exhibited a stratigraphy similar to that found in the

east room. The hearth in the west room was quite similar to the one in the east room, but with the addition of an attached warming or baking oven. Most of the recovered artifacts were in the vicinity of the hearth area. Because there were fewer artifacts in the west room, Crook and O'Grady believe that wooden flooring was put in at an earlier date in the west room than the east room. The structural date is uncertain for Structure D. A single artifact, a ceramic sherd with a maker's mark, found in the builders trench had a terminus post quem of 1888, which may have been intrusive. The traffic areas and the coins in the east room suggest the building was functioning by 1856 or perhaps a litle earlier (Crook, O'Grady, and Carroll 1981:48).

The third phase consisted of excavations on the exterior of Structure D. An area extending 1.5 meters out from the exterior walls, with the exception of the east wall which extended out 3.8 meters, was excavated. The stratigraphy indicated a humic layer 4.6 to 25.2 centimeters deep, (depending on the unit), underlain by sterile red clay subsoil. A builders trench was located along the northern unit (Crook, O'Grady, and Carroll 1981:25-28). Structure D, orginally thought to have been a kitchen, probably served as a residence for house servants. The fact that the hearths were not particularly large and the general lack of artifacts used in food preparation, greatly reduced the likelihood that Structure D served as a kitchen (Crook,O'Grady and Carroll 1981).

At each of the structures a variety of non-bone artifacts were recovered. Earthenwares, stonewares, porcelains, and glass occurred in varying densities at each structure, as did the usual nails, miscellaneous metal fragments, and personal artifacts. These artifacts covered a temporal range from late eighteenth through the first quarter (and later) of the twentieth century, although the nineteenth century was best represented (Crook and O'Grady 1981, Crook, O'Grady, and Carroll 1981). It would appear that deposits at the site are primarily from the late (fourth quarter) nineteenth century, based on the percentage of different types of ceramics and the makers marks. There seems to be a higher percentage of ceramics that were manufactured in the latter part of the century. All the maker's marks are 1880's or later, as well. This evidence would seem to indicate that these artifacts were deposited very late in the nineteenth century or early in the twenthieth century.

There is no way to directly link the artifacts recovered from these structures with the Robert Toombs occupation. This causes problems with interpretations concerning behavorial patterns directly associated with the Toombs family. This is one of the inherent problems in archaeological interpretations of this nature. The lack of good association between the data and the Toombs occupation should be remembered when reading the results and discussion.

Laboratory Methods

The faunal materials identified and analyzed for this study are from two very different nineteenth century piedmont sites. The faunal material at the Robert Toombs site are from five standing structures behind the main house. The materials basically are from one stratigraphic level, since most of the cultural materials were excavated from the humic zone. Bone preservation was quite good generally. There tended to be a preponderance of large bones. This may be due to the recovery techniques. Some of the bone from the sample is undoubtedly from the twentieth century since twentieth century artifacts were found in this zone. For the purposes of this paper all of the material from the analytical units was combined to give a summary of the animals used at the site.

The Park's site materials analyzed for this study were taken only from those zones of Structure E determined to be from the nineteenth century. The remains of Structure E were buried at the time of discovery and therefore represent a stratigraphic buildup. The three levels lying below the A horizon (Zone A) are discretely nineteenth century. Although each zone represents a discretely differenct level of deposition, chronologically there are only 30 years difference between the mean ceramic dates of Zones B, C, and E (Zone D is Feature 8). A total of ten analytical units were defined: four zones from the interior of the structure,

four features (7, 8, 9, and 10), and two zones on the southern exterior of the structure. Bone preservation ranged from poor to fairly good.

Faunal materials from the two sites were identified using the comparative collection of the Zoooarchaeology Laboratory at the University of Georgia, Department of Anthropology. The samples analyzed contained vertebrates only. Some invertebrates were located at structure E. A list of these appears in Appendix C, which identifies all the lots analyzed that also contained shell. Standard zooarchaeological procedures for identification and analysis was used on the vertebrate remains studied from the two sites. On the following pages a brief explanation of these procedures will be presented.

For each of the analytical units skeletal elements, number of bones, and bone weight for each taxon were noted. Identification to the species and generic level was the optimal goal and was often possible. However, some bone could only be identified to the family level either due to is fragmentary nature or to the lack of a comparative specimen. In some cases bone could only be identified to its class level (mammal, bird, fish, etc.). Some of the most fragmented bone could only be identified as bone (Ud.). At the unidentifed bone level the number of fragments was not determined, and bone weight was the only quantifying measure made.

For elements identified notes were made on symmetry, whenever this could be determined. This information enabled the determination of Minimum Numbers of Individuals (MNI), one of the basic analytical devices used in zooarchaeology (White 1953). For example, if three right femora for squirrel (Sciurus spp.) are noted in a sample, then it can be assumed that three individual squirrels were present. Sex, age, and size are also determining factors in pairing of elements, so that if you had a pair (a left and a right) of femora, but the right was decidely larger than the other, then it would be assumed that two individuals were represented instead of just one. If a pair of adult chicken tarsometatarsus were identified and one exhibited a spur and the other didn't, then it would be assumed that male as well as female individual were present.

Use of MNI as an analytical device presents a number of problems or biases (Grayson 1973,1981). MNI tends to emphasize smaller animals because it gives them equal treatment with the larger animals (Odum 1971:82). In analyzing a sample containing eight catfish individuals and one pig individual, it may seem that catfish provided more meat when in actuality the one pig represents a much larger portion of meat than the eight catfish. Biases can also creep into the sample according to how excavation units are aggregated for purposes of analysis. Donald Grayson (1973) presents an excellent discussion of three general methods used: the minimum distinction method, the maximum distinction

method, and one that is based on stratigraphic levels. The minimum distinction method is the aggregating of materials into a minimum of units and thus into one or a few large units, which may basically ignore the archaeological units designated in the field. The maximum distinction method tends on the other hand, to use all or most of the archaeological units designated in the field. The minimum distinction method produces fewer counts for MNI, while the maximum distinction method tends to create a higher number of individuals. Grayson feels that a third method based on "stragigrahpic divisions" is the best of the three.

At the Park's Mill site each unit designated for analysis represents a stratigraphic layer either inside or outside of Structure E. Each feature was kept as a discrete analytical unit (all of the features were from the interior of the structure). A total of ten analytical units resulted. There are a total of eight analytical units at the Toombs site with each unit representing a structure. At structures B and D there are three units, each representing the interior, exterior, features and /or rooms. This is similar to the method Grayson recommends as the best way for determining analytical units and consequently MNI. Despite the problems and biases, MNI still remains useful and is probably the most extensively quantifying method employed by zooarchaeologists.

A recent analytical method developed to help avoid some of the problems of MNI is biomass estimations based on

allometric scaling. A number of methods have been developed in recent years for determing usable meat and biomass from archaeological bone (Prange et al. 1979; Wing and Brown 1979; Reitz 1982a, 1982b). T.E. White originally described a method of usable meat weights in a paper published in 1953. White presented a list of mammals and birds, their average weights and the percentages of these weights that were figured to be the usable meat (White 1953). Although White's methods of calculation are still used by many, it is apparent that there are problems with it. The most obvious problem is that growth of an animal cannot be determined as an average based on constant percentage of the total body weight of an animal (Reitz 1982b). The actual live weight of animals varies within a species from region to region, and from past to present based on sex, age, nutrition, also. The live weight figures presented by White did not take all of these factors into consideration.

Biomass determinations used in this study are based on the idea that "animal skeletons scale allometrically with body mass so that skeletons of large animals are proportionately more massive than those of small animals" (Prange, Anderson, and Rahn 1979:103). An allometric formula is used based on linear regression to determine biomass:

$$Y=ax^b$$

Table 1 presents the allometric constants used to calculate biomass. Biomass is determined from the weight of the archaeological bone and gives you an estimate of the actual

live meat for that particular quantity of bone(s). There are certain limitations or biases for biomass, however. One of the most evident is that it tends to "over-emphasize" the larger animals, just as MNI tends to over-emphasize the smaller animals. Another bias is the fact that archaeological bone experiences a number of depositional forces that may alter the bone in such a way that the results may not be reliable or uniform. This will be discussed in more detail in Taphonomic section that follows at the end of this chapter. Used in conjunction with other analytical methods, such as MNI, biomass serves as a very useful tool.

Another analytical method used in this study is diversity and equitability indices, which demonstrates the degree of variability in a sample and attempts to detect species specialization present at a site. Diversity is calculated using the Shannon-Weaver Diversity Index (Shannon and Weaver 1949) and quantifies the number of different species present in a sample. Equitability is calculated using the Sheldon Evenness Index (Sheldon 1969), which measures "the degree of dependence on the utilized resources and the effective variety of species used at a site" (Reitz 1983a:37). The formulas used for the calculations are:

$$H^1 = p_i \log_e pi \qquad \text{(diversity)}$$

$$E = H^1 / H \max \qquad \text{(equitabilty)}$$

Table 1. Allometric Constants Used*

Taxa	N	Slope (b)	Y-Intercept(log a)	r^2
Mammal	97	0.90	1.12	0.94
Bird	307	0.91	1.04	0.97
Turtle	26	0.67	0.51	0.55
Bufo terrestris	**15	0.86	1.40	0.86
Snake	26	1.01	1.17	0.97
Osteichthyes	393	0.81	0.90	0.80
Siluriformes	36	0.95	1.15	0.87
Perciformes	274	0.83	0.93	0.76

Logarithimic Formula Used

$Y=ax^b$ or $\log y=b (\log x) + \log a$

Y = body weight, kg
X = skeletal weight, kg
a = Y-Intercept
b = slope
r^2= correlation cO-efficient

*Reitz and Cordier 1983
**Wing and Quitmyer 1983

pi is the nth species divided by the total sample size. H represents "the diversity index and H max is the natural log of the number of observed species" (Reitz 1982a:38). The highest possible value for diversity is 4.99, which would indicate a large number of different species present at a site. The highest possible equitability value is 1.0, which would indicate an equal range or distribution of species. A low equitability would indicate few species and the exploitation of one particular species over the others (Reitz 1983c:38). Some argue that the Shannon-Weaver statistic has no valid relationship to field observations and cannot be used in "biological interpretations" (Hardesty 1977:44).

All of the above statistical methods are subject to sample size distortions. Several people (Wing and Brown 1979; Casteel 1979, 1981) have determined that in most cases a sample size of at least 200 individuals or 1400 identifiable bones must be achieved for reliable analysis and interpretation. The rationale behind a sample size of at least 200 is the concept that when 200 individuals have been identified at a site statistical measures demonstrate that most of the species used at the site have been recognized. Therefore, at approximately 200 MNI the number of species identified tends to level off. Casteel (1976; 1977) demonstates that small samples are much more subject to biases than larger samples. Of course these are guides to be used in determining the adequacy of a sample. Quite often a sample will not meet the 200 MNI requirement, but that does

not necessarily mean it should be tossed out, only that the tendency toward an incomplete or inaccurate species list should be kept in mind when making interpretations.

Whenever possible the sex and age of identified individuals was noted. Determining the sex of individuals represented by archaeological bone is usually difficult as there are few bones in a sample that indicate sex. Deer antlers, baculae, and spurs on the tarsometatarsus of Galliformes are good male indicators. Medullary deposits (Rick 1975) in the interior of bird bones, the lack of spurs on Galliformes tarsometatarsus, and epipubic bones in some mammals are good female indicators.

Age is usally based on fusion of epiphysis and diaphysis, teeth eruption and wear, and other indicators such as texture of bone. It is known that epiphyses fuse at a fairly regular rate for mammals, although such factors as nutrition can alter the age at which fusion actually occurs. At present there are a number of good studies on the ageing of animals (Silver 1970; Schimid 1972; Gilbert 1972). In identifying bones, the identifier notes the degree of epiphysial fusion on the various elements identified. Most of the available literature deals with mammals such as pig, cow, horse, sheep, deer, dog, etc. It is much more difficult to find similar ossificatioin data on wild mammals such as squirrel, rabbit, opossum, etc. Although birds do not show epiphyseal lines, it is possible to determine age to a degree from texture and shape of the bone. Problems with data recovery, sampling

errors, changes in fusion rates of species over time, castration, etc. can cause biases in the interpretation of archaeological animal population ages based on epiphyseal fusion. The age of fusion of an element must be viewed as a range and not as representing a single point in time (Watson 1978:97). During analysis the bone fusion or texture was noted whenever possible for mammals and birds.

Bone modification was noted for all identified bone. The classes of bone modification that were recorded were: animal gnawings (usually dog or rodent), pathologies, and human alterations such as working of bone into tools, burning, or various butchering marks produced during meat processing. These modifications can be indicative of how people prepare their meat for consumption, if bones were used as tools, if the bone was discarded in such a way that dogs and rodents had access to it, and if there were certain types of pathologies or wounds.

During analysis the distribution of various elements for each species was noted mainly for mammals and birds. Element distribution studies can be useful in looking for the preference of certain portions of an animal in the diet. Of course the biases can be numerous due to various depositional factors, as will be discussed in the taphonomy section. Some of this can be overcome with a larger sample size.

All appropriate bone was measured with a dial caliper, and these measurements appear in the appendices D and E. Bone measurements were taken according to those guidelines

set forth by Angela von den Driesch (1976) These data add to the information being accumulated from sites in the southeast and will provide a quantitative standard for size range for various species in the region.

Taphonomy

Taphonomy is a branch of paleontology defined by Efremov (1940) as "the science of the laws of embedding". Taphonomy is concerned with the processes of transformation that living organisms undergo as they become part of the geological record. Taphonomy is an important field of study for both archaeology and paleontology. Taphonomic studies have proved invaluable in interpreting sites that contained a mixture of human and non-human bones in the same context (Brain 1981; Behrensmeyer 1975,1978).

A number of cultural and non-cultural factors may influence patterns of disposal. As Michael Schiffer has pointed out, clustering of artifacts may only indicate disposal patterns and not necessarily activity areas (Schiffer 1972). The depositional processes that artifacts undergo should be of interest to all archaeologists who are burdened with a mass of cultural materials needing interpretation (Gifford 1978:78).

Once artifacts are discarded or lost, a number of processes affect them as they enter the archaeological record. Bone deposited in one place may be strewn around by

dogs or other scavangers, as well as by humans, who may tramp and kick them. Bone decomposition is carried out by a variety of forces that usually start with human preparation techniques prior to disposal. Butchering, marrow extraction, bone grease processing, and later reductions in the size of meat portions for appropriate cooking methods often radically change the bone (Bonnichson 1973; Binford and Bertram 1977; Yellen 1977). Cooking processes can chemically alter and weaken the bone structure--boiling, broiling, roasting, and burning cause the bone to become brittle. As a result, once in the ground the bone may become more susceptible to chemical forces and decomposition (Reitz 1982a:15). Scavenger gnawings of bones also cause physical destruction of the bone, rendering it unidentifiable.

Often bones enter the archaeological record without ever being a part of the cultural events of a site. Scavengers often end up as archaeological bone as well as serving as a disruptive force. Scavengers such as rodents may become prey of other animals. Pets sometimes end up in the archaeological record as well. Animals may be brought to a site by humans to serve purposes other than food also (ie. fur and hide processing). A number of individuals have discussed these problems and some offer methods to help rectify them (Shotwell 1955; Thomas 1969; Isaac 1971; Ziegler 1973).

Historic sites suffer the same ills as do other archaeological sites. From our closeness in time and association with American historic materials we are more aware of other problems that affect the deposition of artifacts. Stanley South (1977) has discussed a number of disposal patterns he believes are associated with ethnic groups in American historic sites. German immigrants and descendents disposed of their trash differently than did English immigrants. Deposition practices may also vary among social status levels, too. Euro-American practices of saving material cultural items, such as family heirlooms, can skew chronological assessments of features and other contexts. The passing of items from upper class households to lower class households can also skew interpretations. John Otto found good evidence of this practice at the Cannon's Point Plantation; many hand-me-downs of ceramic and glass ware ended up in the slave quarters (Otto 1975). Patterns of butchering can cause differential concentrations of animal parts. Some features may represent food remains disposed of after the family meal, while other features may contain the unwanted portions of animals disposed of during slaughtering and processing; and some features or sheet middens may contain both. The fact that many eighteenth and nineteenth century sites along the coast have few pig bones may be a result of the consumption of barrelled pork, which might have had fewer bones than fresh pork (Honerkamp et al. 1982:198).

As a result, it may seem that pork was a less important food source when it actually may have been quite important.

Artifacts used in food procurement or preparation often may not end up with the food remains. Fish hooks, baskets, nets, etc. probably don't end up with the fish bones very often. Hatchets, saws, cleavers, and knives probably won't be found with the slaughtered animals bones either. Forks, knives, spoons, mugs, plates, and bowls may or may not be found with the chicken legs and roast bones.

Understanding, or at least being aware and therefore cautious of all these factors, is imperative to valid interpretations of archaeological data. Archaeological "research should encompass all processes, cultural and natural, affecting the material traces of human behavior" (Gifford 1978:101).

CHAPTER 5 RESULTS

The goal of this study is to examine the vertebrate materials from the Toombs and Park's Mill sites as a whole, and to synthesize data from the site within the context of nineteenth century vertebrate diet in the south, and in general, piedmont Georgia. In this chapter the results of the analysis will be presented separately for each site. At the Toombs site seven analytical units resulted from seven excavation units plus a feature at Structure B. At the Park's Mill site the excavation unit, Structure E, was divided into ten analytical units based on six stratigraphic levels (inside and out of the structure) plus four features from within the structure. The results are a summary of the data from all the units combined for each site. These units were briefly discussed in the field and laboratory methods of the Methods Chapter (4).

As far as sample size is concerned, neither site meets the criterion of 200 individuals set up by Wing and Brown (1979:118-121). Park's Mill does have a considerable more than 1400 bones identified to at least class level. Park's Mill with 181 individuals might be considered a

fairly reliable sample. However, the Toombs Site with 108 individuals and 1,018 bones may not be too reliable.

Following a discussion of the resulpts from both sites, a section on species description is presented. This is provided to inform the reader of the habits and habitats of the species identified at both of these piedmont sites.

Park's Mill Site

The species identified at Park's Mill are presented in Table 2 and summarized in Table 3. Biomass tabulations are presented in Table 2 along with the other quantified data. Table 3 includes only those taxa for which MNI were determined and the corresponding biomass totals for each animal category. Wild Aquatic species were the most dominant (46%) category as far as MNI was concerned, followed by wild terrestrial mammals (26%) and domestic animals (22%). However, domestic animals represent 83.5% of the biomass while terrestrial animals represent only 9% and aquatic animals 8%.

Of the domesticated animals pig (Sus scrofa) is the most dominant both in individuals (48%) and in biomass (87%) followed by chicken (Gallus gallus) with 40% of the individuals and a biomass of 3%. The presence of cow (Bos taurus) with 10% of the individuals and 9% of the biomass is low compared to pig. It is known from an 1853 personal

Table 2. Park's Mill Species List

Species	Ct.	MNI #	MNI %	WEIGHT Gms	BIOMASS Kg	BIOMASS %
Ud. Mammal	2169			2072.90	29.5763	43.48
Cf. Didelphis virginiana	1			0.38	0.0110	0.02
Didelphis virginiana Oppossum	29	6	3.31	34.27	0.6981	1.03
Cf. Eptesicus fuscus Big Brown bat	1	1	0.55	0.24	0.0073	0.01
Cf. Sylvilagus spp.	1	1	0.55	0.03	0.0089	0.01
Sylvilagus spp. Rabbit	20	6	3.32	13.42	0.3069	0.45
Cf. Sciurus spp.	4			4.67	0.1075	0.16
Sciurus spp. Squirrel	275	23	12.71	55.30	1.0061	1.48
Tamias striatus Chipmunk	1	1	0.55	0.04	0.0015	0.002
Cricetidae Mice, rats, etc.	3	1	0.55	0.30	0.0089	0.01
Cf. Oryzomys palustris Rice rat	1	1	0.55	0.15	0.0048	0.01
Peromyscus spp. Fieldmouse	1	1	0.55	0.01	0.0004	0.001

Table 2. Park's Mill Species List, continuation

Species	Ct.	MNI #	MNI %	WEIGHT Gms	BIOMASS Kg	BIOMASS %
Rattus spp.	1			5.70	0.1260	0.19
Cf. *Rattus rattus*	1			0.25	0.0076	0.01
Rattus rattus Roof rat	4	2	1.10	0.26	0.0078	0.01
Proycon lotor Raccoon	1	1	0.55	2.51	0.0602	0.09
Artiodactyl Even-toed hoof animals	1			3.02	0.0711	0.10
Cf. *Sus scrofa*	23			77.79	1.4607	2.15
Sus scrofa Pig	495	19	10.50	1666.20	23.9989	35.28
Odocoileus virginianus Deer	1	1	0.55	35.88	0.6597	0.97
Cf. *Bos taurus*	2			68.34	1.1782	1.74
Bos taurus Cow	6	4	2.21	146.08	2.5828	3.80
Cf. Caprinae Sheep/goat	1	1	0.55	9.61	0.2016	0.30
Ud. Bird	677			65.29	1.1015	1.62

Table 2. Park's Mill Species List, continuation

Species	Ct.	MNI #	MNI %	WEIGHT Gms	BIOMASS Kg	BIOMASS %
Cf. Anserinae Geese, Swans, Ducks	1	1	0.55	1.29	0.0257	0.04
Cf. Anatinae Geese	1	1	0.55	0.18	0.0043	0.006
Anas Spp.	1			1.36	0.0270	0.04
Cf. Anas platyrhynchos	1	1	0.55	0.46	0.0101	0.01
Anas Platyrhynchos Mallard	1	1	0.55	0.78	0.0163	0.02
Meleagris gallopavo Turkey	4	3	1.66	5.48	0.1046	0.15
Cf. Gallus gallus	9	1	0.55	4.01	0.0800	0.12
Gallus gallus Chicken	110	15	8.29	49.52	0.7899	1.16
Cf. Colinus virginianus	1			0.12	0.0030	0.004
Colinus virginianus Common bobwhite	6	3	1.66	1.26	0.0267	0.04
Zenaidura macroura Mourning dove	4	2	1.10	0.36	0.0084	0.01
Ectopistes migratoris Passenger pigeon	1	1	0.55	0.14	0.0034	0.005

Table 2. Park's Mill Species List, continuation

Species	Ct.	MNI #	MNI %	WEIGHT Gms	BIOMASS Kg	BIOMASS %
Ud. Turtle	17			2.91	0.0682	0.01
Chelydra serpentina Snapping turtle	2	2	1.10	5.22	0.1161	0.17
Cf. Emydidae Box & water turtles	3	1	0.55	0.61	0.0227	0.03
Chrysemys spp. Cooter	2	1	0.55	1.59	0.0100	0.01
Chrysemys Cf. concinna River cooter	1	1	0.55	0.09	0.0063	0.01
Cf. Trionyx spp.	2	1	0.55	0.64	0.0287	0.04
Trionyx spp. Softshell turtle	52	6	3.32	74.36	0.8884	1.31
Anura Toad/frog	2	2	1.10	0.08	0.0082	0.01
Ud. Snake	3	1	0.55	0.13	0.0018	0.003
Ud. Fish	875			73.36	1.1478	1.69
Lepisosterus spp. Gar	27	3	1.66	3.53	0.0917	0.14
Alosa sapidissima American shad	1	1	0.55	0.09	0.0042	0.01

Table 2. Park's Mill Species List, continuation

Species	Ct.	MNI #	MNI %	WEIGHT Gms	BIOMASS Kg	BIOMASS %
Catostomidae Sucker	132	13	7.18	13.93	0.3056	0.45
Ictalurus spp. Catfish	373	43	23.76	54.30	0.9339	1.37
Centrarchidae Sunfishes	2			0.16	0.0060	0.01
Centrarchus macropterus Flier	1	1	0.55	0.10	0.0041	0.01
Lepomis spp. Bream (sunfish)	5	2	1.11	0.28	0.0096	0.01
Lepomis macrochirus Bluegill	1	1	0.55	0.08	0.0034	0.01
Micropterus spp. Bass	18	4	2.21	2.81	0.0767	0.11
Ud. Bone				417.69		
TOTAL	5378	181		4979.56	68.0266	

Table 3. Park's Mill Habitat Summary

Habitat	Park's Mill Site MNI #	MNI %	BIOMASS Kg	BIOMASS %
Domesticated Mammals	24	13.3	26.7833	80.8
Domesticated Birds	16	8.8	0.8699	2.6
Wild Terrestrial Mammals	38	21.0	2.7399	8.3
Wild Terrestrial Birds	9	5.0	0.1431	0.4
Wild Aquatic Birds	4	2.2	0.0564	0.2
Wild Aquatic Amphibians	12	6.6	1.0722	3.2
Fishes	68	37.6	1.4292	4.3
Commensal Species	10	5.5	0.0407	0.1
TOTAL	181		33.1347	

property inventory, made after the death of Richard Park in 1851, that there were 46 head of cattle at the site then. There was only one sheep or goat (Caprinae) element tentatively identified during analysis . The 1853 inventory indicated that 3 goats and 60 head of sheep were then present at Park's Mill. They may have been used for their milk and fleece instead of as a meat source or their remains were simply not excavated. Chickens were not mentioned in the 1853 inventory but their presence there is indicated by 8.5% of the individuals and 2.5% of the biomass. Probably they ran loose, as was common during that period, instead of being cooped up (Gray 1941:208).

Wild terrestrial animals were dominated by squirrels (Sciurus spp.) which represented 49% of the individuals and 35% of the biomass for wild terrestrial animals. No other wild terrestrial animal was found in these quantities. Rabbit (Sylvilagus spp.) and opossum (Didelphis virginianus) each had 3% of the individuals. Opossum had 24% of the biomass and rabbit 10.5% of the biomass in the wild terrestrial category. The almost total lack of deer is interesting and may represent the fact that the deer population in piedmont Georgia (as in most of Georgia) was declining in the mid to late 1800's and had completely disappeared by 1900 (Jenkins 1953:20). Turkey was quite low with 6% of the individuals and 3.5% of the biomass for wild terrestrial birds. Historical evidence indicated that the turkey population was quite diminished by the mid 1800's in

piedmont Georgia (Jenkins 1953:36). As noted in the species list, one element (scapula) of the now extinct passenger pigeon (Ectopistes migratoris) was identified.

Although the wild aquatic category had the largest number of individuals identified (46%), they were quite low in the amount of biomass (8%). Fish were dominant within this category with 82% of the individuals and 56% of the biomass. Catfish (Ictalurus spp.) was the most prevalent of the fishes representing 64% of the fish individuals and 65.5% of the biomass. Sucker (Catostomidae) followed with 19% of the individuals and 2% of the biomass. One American Shad (Alosa sapadissima) was identified from a ceratohyal. Turtles represented 13% of the wild aquatic individuals and 41% of the biomass. The softshell turtle (Trionyx spp.) was the dominant turtle representing 54.% of the turtle individuals and 85 % of the biomass. The snapping turtle (Chelydra serpentina) followed with 18% of the turtle individuals and 11% of the biomass. Wild aquatic birds represented a small portion of the wild aquatic category, with only 5% of the individuals and 2% of the biomass.

Commensal species were a small portion of the sample having only 6% of the individuals and .12% of the biomass. Rodents were dominant with 50% of the commensal individuals and 54% of the biomass. One possible Big Brown Bat (Eptesicus fuscus) was tentatively identified and placed in this category.

Diversity and Equitability tabulations are presented in Table 4 . As stated earlier, diversity and equitability (Shannon and Weaver 1949; Sheldon 1969) are used to establish statistically how diverse the subsistence base is a site. At the Park's site diversity based on individuals is moderate, 2.85, while equitability, 0.7683, reflects the normal pattern for that range, with a heavier use of a few species and less use of other species. On the other hand, biomass diversity is low, 1.25, as is the equitability, 0.3369, which reflects the predominance of pork.

A number of modifications were noted on some of the identified bone (Table 5). This gives a small clue as to how food may have been prepared and the final disposition of some of the bone remains. The most frequent bone modification was burning. However, if you look at the overall number of bones from Park's Mill burning was found in only 4% of the sample. The category "weathered" is included but it's meaning is not really understood. Bones falling under this category were often white and chalky in appearance and texture. The cut marks category generally involved small cut (knife) marks along the shaft and at the articular ends. This probably reflects the removal of meat from the bone either during prepartion or perhaps while being consumed. Cut and/or hacked marks represented clean cuts or hacks, probably made with a cleaver or hatchet. This is a small category, however, the author was quite conservative in her identifications of hacking. Bones were often hacked open to

Table 4. Diversity and Equitability

	MNI			
	Diversity	Equitability	N	MNI
Park's Mill	2.8531	0.7683	41	181

	BIOMASS			
	Diversity	Equitability	N	Biomass
Park's Mill	1.2511	0.3369	41	33.1347

Table 5. Park's Mill Bone Modification

	Burned	Weathered	Rodent Gnawed	Sawed	Cut Marks	Cut/ Hacked	Worked	Total
Ud. Mammal	151	30	10	6	64	11	2	274
Squirrel		2						2
Rabbit	1							1
Pig	5	8	1	5	6	5		30
Cow				1	1			2
Cf. Caprinae						1		1
Ud. Bird			7		1			8
Chicken	1							1
Passenger Pigeon					1			1
Ud. Turtle					1			1
Trionyx Spp.		2						2
Ud. Fish	1							1
Sucker	1							1
Catfish	1							1
Ud. Bone	39	41	6		4			90
TOTAL	200	83	24	12	78	17	2	416

get at the marrow and for making stews. There was a paucity of sawed bones, with only 12 identified for the whole site. Probably specific cuts of meat were not an important part of the diet. Several bones exhibited rodent gnawing, which would indicated that after disposal the bone laid in an area accessible to rodents. It is interesting to note that no gnawing by canines, such as dogs (Canis familiaris), were identified. There were two worked bones that were handles to knives, forks or spoons. One was plain and the other was decorated with a cross-hatched pattern.

An examination of the distribution of mammals elements (Tables 6 and 7) seems to indicate that most of the heavily utilized animals were probably processed at the site. Pig, the most heavily exploited animal (39% of the total biomass) was represented by all parts of the body. However, parts from the cranium, (57%), tended to be most abundant, particularly teeth (41%). Tarsals, carpals, phalanges, and other feet parts were quite abundant and represented 26% of the elements identified. Of course, as far as abundance is concerned, the feet and cranium possess an abundance of elements to begin with. Jowls may have been a favorite food based on the 28 jaw fragments identified. There is also somewhat higher presence of tibia (1%) and fibula (3%) elements in the remaining 17% of elements perhaps suggesting ham shanks, but only one femur fragment was identified. Table 7 is presented to demonstrate the presence of observed versus expected numbers of elements in the forelimbs and

Table 6. Park's Mill Element Distribution

	Mammals								
	Opossum	Squirrel	Rabbit	Raccoon	Pig	Deer	Cow	Caprine	Total
Cranium	2	68	2		48	1	1		122
Mandible	3	6		1	28		2		40
Teeth	5	34	1		194				234
Vertebra	10	21	3		40				74
Clavicle		7							7
Scapula		6	1		3				10
Humerus		18	1		1				20
Ulna	2	23	4		1				30
Radius	3	23	3		3				32
Pelvis		10	1					1	12
Femur		9	1		1				11
Tibia		7	2		7		1		17
Fibula		2			14				16
Calcaneus		1	1		3				5
Astragalus					3				3
Other Tarsals/ Carpals					10				10
Metatarsals					7				7

Table 6. Park's Mill Element Distribution, continuation

	Mammals								
	Opossum	Squirrel	Rabbit	Raccoon	Pig	Deer	Cow	Caprine	Total
Metacarpals					3				3
Metapodials		27	1		27				55
Sesamoids					3				3
Patella					1		1		2
Phalanx		5			66				71
Epipubic Bone	2								2
Ribs	1	3			8		1		13
TOTAL	28	270	21	1	471	1	6	1	799

Table 7. Park's Mill, Number of Observed and Expected Skeletal Components for Pig

	Observed	Expected	O/E
Forelimbs			
Scapula	3	3	100.0
Humerus	1	3	33.3
Ulna	1	3	33.3
Radius	3	3	100.0
Metacarpals	3	24	12.5
Hindlimbs			
Femur	1	14	0.7
Tibia	7	14	50.0
Fibula	14	14	100.0
Calcaneus	3	14	21.4
Astragalus	3	14	21.4
Patella	1	14	0.7
Metatarsals	7	112	6.3

hindlimbs. It is obvious from the table that the hindlimbs are better represented and demonstrating that the shanks may have been more favored. Although the element distribution shows few rib elements, it is the author's feeling that this probably was a substantial diet item based on the presence of suitable-sized ribs in the Ud. mammal category. Ribs were not identified to species unless the identification was most convincing, but 4% of the Ud. large mammal ribs were pig size. If these ribs were from pigs, bacon and fat back were probably a significant food item. The 1853 Park inventory indicated one lot (200 lbs) of bacon as well as 15,000 lbs. of pork present. The bacon may have been smoked while the pork may have been barrelled (pickled). Although, the element distribution would tend to indicate that feet and cranium parts were favorite food items, the large number of Ud. mammal bones in the medium to large mammal range (14%) probably represent the rest of the pig element distribution. These were disarticulated and hacked up during food prepartion or just after cooking. The cow is represented by only six elements from the whole sample and very little can be said for such a small sample.

Squirrel is the most dominant mammal as far as number of individuals (38%) is concerned. Table 6 indicates that squirrel possessed the most number of elements (270) after pig (471). Again, almost all portions of the squirrel were present. Approximately 40% of the elements were from the head, 38% from the trunk and limbs and the other 22% from

feet and vertebra. Slaughtering and preparation probably took place at the site.

All parts of the chicken (Table 8) were represented at the Park's site except for the tibiotarsus, or the drumstick. There is no explanation for this other than a quirk in the archaeological record. No doubt chickens were killed and processed at the site. The distributions of skeletal elements seems to fall within the normal range of consumption for today.

Table 9 is a presentation of bone element fusion for certain species identified from Park's Mill. Age may be determined based on the degree of epiphyseal fusion present in particular elements that are known to fuse at certain periods in the ontogeny of the animal. Over one-half of the pigs consumed were juveniles less than 18 months. Twenty-eight percent were sub-adults in the two-to-three year age group and only one was an adult, three and a half years or older. One cow was determined to be a juvenile less than three years old. Approximate age for a few of the other species could be determined. Six of the 16 chickens were juveniles and six were adults. Most of the squirrels were adults while all of the opossum were juveniles. Two of the turkey were adults and the goose was probably an adult.

Sex is a much more difficult attribute to determine because there are so few elements that are good sex indicators. At least two of the four opossums were females based on the presence of epipubic bones, which occur only in

Table 8. Park's Mill Element Distribution

	BIRDS								
	Ducks/ Geese	Geese	Mallard	Turkey	Chicken	Bobwhite	Morning Dove	Passenger Pigeon	Total
Skull					6				6
Scapula			2	3	5			1	11
Coracoid					12	1			13
Humerus					4				4
Radius				1	10	1			12
Ulna					3	1			4
Carpometacarpus	1	1			7				9
Synsacrum					1				1
Femur					1	3	1		5
Tibiotarsus						1	1		2
Tarsometatarsus					12		1		13
Fibula					3				3
Sternum					6		1		7
Furculum					7				7
Vertebra					4				4
Phalanx					20				20
Ribs					3				3
TOTAL	1	1	2	4	104	7	4	1	124

Table 9. Park's Mill Bone Element Fusion

Pig	
Less than 12-18 months	29
Greater than 18 months	29
Less than 3 years	3
Greater than 3 years	1
Total	62
Deer	
Undetermined	1
Cow	
Less than 12-18 months	1
Undetermined	2
Total	3
Sheep/goat	
Undetermined	1

females. Three adult female chickens were identified based on the absence of spurs (male indicators) on the tarsometatarsus. One of the female adults was a laying hen based on the presence of medullary deposit (Rick 1975). In the Ud. bird category medullary deposits were also identified on eight bone fragments, which would indicate laying hens.

Measurement of bone is a somewhat new aspect in zooarchaeology in the southeast, although it has been important in Old World archaeology for a number of years, particularly in dealing with the fine distinctions between domesticated and wild forms of the same genus (Higham 1962). All measurements made were based on the standards set forth in von den Driesch (1976). Bone measurements for several historic coastal sites are now available (Honerkamp et al. 1982; South 1982, Zierden et al. 1982; Reitz 1982c, 1983a, 1983b) and a data base has been established to help determine size of animals being utilized by historic peoples of the area. The measurements in Appendix D of Structure E at the Park's Mill site (along with the Toombs site) represent the first data for measurements of historic animals in piedmont Georgia. There are no comparative measurements in the piedmont area for historic animals. These measurements can be compared to those historic coastal sites that have measurements of corresponding species and elements. A preliminary comparison between Park's Mill and sites on the coast is basically inconclusive, primarily because there are not enough comparable measurements. Those elements and

species that did correspond tended to fall into a comparable range. The comparisons were primarily for pig and chicken.

Robert Toombs Historic Site

Table 10 is a presentation of the taxa identified at the Toombs site. Those animals tabulated for MNI are summarized according to habitat in Table 11 along with biomass totals. Domesticated animals are by far the most dominate at the site both in terms of MNI (63%) and biomass (84%), followed by wild terrestrial animals (25% of the individuals and 14% of the biomass).

In the domesticated animals category domestic birds represent 66% of the individuals but only 11% of the biomass. Chicken (Gallus gallus) was the predominate fowl, representing 87% of the domesticated birds. Pigeons (Columba livia) represent 13% of the domestic bird individuals and 1% of the biomass. Although domesticated mammals are only 34% of the domesticated animals, they contributed 75% of the biomass. Within the category of domesticated mammal, cow (Bos taurus) has 56.5% of the individuals and 77.5% of the biomass. Pig (Sus scrofa) is represented by 43% of the individuals and 22% of the biomass for domesticated mammals. Pig and cow are the only domesticated mammals identified at the site.

Table 10. Toombs House Species List

Species	Ct.	MNI #	MNI %	WEIGHT Gms	BIOMASS Kg	BIOMASS %
Ud. Mammal	290			1179.15	18.10	20.80
Cf. *Didelphis virginiana*	9			3.03	0.07	0.08
Didelphis virginiana Opossum	88	8	7.41	230.50	3.79	4.34
Leporidae Rabbit/hare	1			0.80	0.02	0.02
Sylvilagus spp. Rabbit	4	2	1.85	4.28	0.11	0.13
Sciurus spp. Squirrel	6	2	1.85	5.00	0.12	0.14
Cf. *Sciurus carolinensis* Eastern Gray squirrel	2	1	0.93	1.73	0.04	0.05
Sciurus niger Eastern Fox squirrel	1	1	0.93	1.07	0.03	0.03
Rattus spp. Rat	5	1	0.93	1.15	0.03	0.03
Rattus Cf. *rattus* Roof rat	1	1	0.93	0.30	0.01	0.01
Rattus novegicus Norwegian rat	6	2	1.85	1.71	0.04	0.05

Table 10. Toombs House Species List, continuation

Species	Ct.	MNI #	MNI %	WEIGHT Gms	BIOMASS Kg	BIOMASS %
Cf. Canidae Dog, wolf, fox	1	1	0.93	0.27	0.01	0.01
Cf. Procyon lotor Raccoon	2	1	0.93	2.91	0.69	0.79
Cf. Mephitis mephitis Striped skunk	2	1	0.93	0.62	0.02	0.02
Felis domesticus Domesticated cat	5	3	2.78	7.10	0.17	0.20
Equus spp. Horse/Mule	1	1	0.93	42.20	0.76	0.87
Cf. Sus scrofa	12			123.00	2.22	2.55
Sus scrofa Pig	62	10	9.26	637.38	10.33	11.87
Odocoileus virginianus Deer	3	2	1.85	169.20	2.76	3.17
Cf. Bos taurus	14			188.50	3.16	3.63
Bos taurus Cow	58	13	12.04	2502.80	35.76	41.10
Ud. Bird	169			109.50	1.63	1.87

Table 10. Toombs House Species List, continuation

Species	Ct.	MNI #	MNI %	WEIGHT Gms	BIOMASS Kg	BIOMASS %
Cf. Branta canadensis Canada Goose	1	1	0.93	2.03	0.04	0.05
Cf. Meleagris gallapavo	3			5.53	0.10	0.11
Meleagris gallapavo Turkey	14	5	4.63	70.97	1.08	1.24
Cf. Gallus gallus	19			14.52	0.26	0.30
Gallus gallus Chicken	220	39	36.11	408.47	5.45	6.26
Colinus virginianus Bobwhite	7	5	4.63	1.88	0.05	0.06
Columba spp. Pigeon	2	1	0.93	0.91	0.02	0.02
Cf. Columba livia	2			0.70	0.02	0.02
Columba livia Rock dove	5	5	4.63	2.40	0.05	0.06
Chrysemys spp. Cooter	1	1	0.93	1.24	0.04	0.05
Micropterus salmoides Largemouth bass	1	1	0.93	1.22	0.03	0.03

Table 10. Toombs House Species List, continuation

Species	Ct.	MNI #	MNI %	WEIGHT Gms	BIOMASS Kg	BIOMASS %
Ud. Bone				9.21		
TOTAL	1016	108		5731.28	87.01	

Table 11. Toombs Site Habitat Summary

Habitat	MNI #	MNI %	BIOMASS Kg	BIOMASS %
Domesticated Mammals	23	21.3	46.09	75.0
Domesticated Birds	45	41.7	5.52	9.0
Wild Terrestrial Mammals	17	15.7	7.54	12.3
Wild Terrestrial Birds	10	9.3	1.13	1.8
Wild Aquatic Birds	1	0.9	0.04	0.06
Wild Aquatic Amphibians	1	0.9	0.04	0.06
Fishes	1	0.9	0.03	0.04
Commensal Species	10	9.25	1.04	1.7
TOTAL	108		61.43	

In the wild terrestrial category mammals are 63% of the individuals and 87% of the biomass. Wild birds represent ,37% of the individuals and 13% of the biomass for wild terrestrials. The opossum (Didelphis virginiana) is the major wild mammal with 47% of the individuals and 50% of the biomass. Squirrel (Sciurus spp.) represent 10.5% of the individuals and 2.5% of the biomass, while deer (Odocoileus virginianus) represents 37% of the biomass and rabbit has only 1% of the biomass for wild mammals. Only two species of wild terrestrial birds were identified, the turkey (Meleagris gallapavo) and the bobwhite (Colinus virginianus). There were an equal number of individuals for turkey and bobwhite, although the turkey possesses 95.5% of the biomass. Wilkes County has the highest densities of wild turkeys of any county in Georgia today (Southeastern Cooperative Wildlife Disease Study 1980) and it may be that wild turkey has remained fairly abundant there over the years. This might account for the higher number of turkey individuals identified in the Toombs collection compared to Park's Mill, although the number is not exceptionally high at the Toombs site. It is also possible that the turkeys were domesticated, although this could not be determined during identification.

Wild aquatic animals are poorly represented at the Toombs site, with only 2% of the individuals and .17% of the biomass. No one species dominates, having one possible Canada Goose (Branta canadensis), one cooter (Chrysemys spp.) and

one largemouth Bass (Micropterus salmoides). Commensal species represent 9% of the individuals and 2% of the biomass. The horse (Equus spp.) accounts for the slightly higher biomass for the commensal species. A metapodial of a small equid, possibly a pony or donkey, was identified in this category. Rats (Rattus spp.) represent 49% of the commensal species and cats (Felis domesticus) represent 30% of the commensal species identified.

Diversity and equitabilty calculations are shown in Table 12. Based on indivduals, diversity at the Toombs site is moderately low with 2.38 while the equitabilty falls within the appropriate range of 0.7487. This demonstrates a preference for a few species and a moderate exploitation of a few other species. Calculations for biomass show a low diversity, 1.4, and an equally low equitability of 0.44. This reflects the predominance of beef in the diet of the occupants at the Toombs site.

Bone modifications at the Toombs site are shown in Tables 13. Sawed bone is the predominate modification representing 61% of the bones that were modified and 17% of all bones identified to a taxa. Out of a total of 176 sawed bones 13% were identified as being cut with a fine sawn and 75 with a coarse saw. The rest (12%) of the sawed bone was undetermined as to saw blade size. This may signify that two types of saw blades were used and that different individuals were involved in the butchering. Only 8% of the bones were hacked and only 1% exhibited small cut or knife

Table 12. Diversity and Equitability

	MNI			
	Diversity	Equitability	N	MNI
Toombs Site	2.3795	0.7487	24	108

	BIOMASS			
	Diversity	Equitability	N	Biomass
Toombs Site	1.4086	0.4432	24	61.43

Table 13. Toombs House Bone Modification

	Burned	Gnawed	Rodent Gnawed	Dog Gnawed	Sawed	Fine Sawed	Coarse Sawed	Cut/ Hacked	Cut Marks	Worked	Total
Ud. Mammal	1	15	3	2	95	10	7	11		1	145
Opossum				1							1
Rabbit			1								1
Horse/Mule								1			1
Pig					13	6	3	2	1		25
Deer			1		2						3
Cow		4	5	1	30	7	3	9			59
Ud. Bird		12		4					1		17
Turkey		2		1							3
Chicken		26	2	6					1		35
TOTAL	1	59	12	15	140	23	13	23	3	1	290

marks. Gnawing was the second (30%) most significant bone alteration after sawing. Of the gnawed bone 20% exhibited gnawing by rodents and 25% by dog. The rest could not be determined. This demonstrates that refuse bones were not buried but were left exposed at least long enough for scavengers to alter the physical appearence of many bones.

Element distribution (Tables 14 and 17) at the Toombs site for domesticated animals is quite interesting in light of the considerable amount of sawed bone involved. There is not an even distribution of elements from all portions of the cow and pig carcasses. There appears to be a lack of cranial parts from both cows (2% of the elements) and pigs (12.5% of the elements), although a few more cranial parts were noted for pig (mostly teeth). Carpals and tarsals are more representative for both cow and pig. Twenty-eight percent of the cow elements were from the carpals/tarsals while the pig had 43% of the feet parts. Normally feet and cranial portions of the cow are discarded during butchering because of their low food value (Lyman 1977:69). However, pig cranial and feet bones are quite often used for jowls, sausage, head cheese, brains, pickled feet, etc. (Southwell et al. 1949). The general lack of these bones would lead one to think that these animals were butchered elsewhere and feet and head parts were not a normal part of the diet.

Analysis of the elements and butchering marks for pig and cow was made to determine butchering patterns and cuts of meat preference. Most vertebra and rib fragments were not

Table 14. Toombs House Element Distribution

	MAMMALS											
	Opossum	Rabbit	Squirrel	Canidae	Raccoon	Skunk	Cat	Horse	Pig	Deer	Cow	Total
Skull	7		1						1	2		11
Mandible	13					1	3				1	18
Teeth				1					6			7
Vertebrae	12						1		2		4	19
Scapula	6				1				2		1	10
Humerus	6				1				7	1	5	20
Ulna	5										2	7
Radius	4						1		2		4	11
Pelvis	9		2						5	1	6	23
Femur	7	1	4			1			1		9	23
Tibia/Fibula	8	1	2						6	1	6	24
Astragalus									1		2	3
Tarsal/carpals											1	1
Metacarpal									1		1	2
Metatarsal											2	2
Metapodials								1	12		4	17
Phalanx		2							10		4	16
Ribs	9	–	–	–	–	–	–	–	–	–	1	10
TOTAL	86	4	9	1	2	2	5	1	56	5	53	224

identified to the species level because of the difficulty of positive identification. Large and medium size mammals of the Artiodactyla order are difficult to identify to the species level based on rig fragments. Therefore, for pig and cow there is a paucity of vertebra and ribs. These are probably included in the Ud. mammal category.

Seventy-two percent of the cow elements were represented by the main carcass of the animal. Forty-two percent of the main carcass was from the forequarter. Most of these elements were represented by fairly thin sawn fragments indicating small cuts of meat in the foreshank and shoulder area. Three thoracic vertebrae were cut in such a manner as to indicate rib cuts. The hindquarter area was better represented with 58% of the main carcass. Again, most of the sawed fragments were thin with a average thickness of 15.5 mm. The round was the most prevalant portion (80%) in the hind quarters. Table 15 indicates the number of observed versus expected skeletal components for cow. This shows that the hindlimbs, particularly the shank, was present more often. The small size of the sample may be partly responsible for this. It is surmised by the thickness of the bones that round and sirloin steaks prevailed. One lumbar vertebra indicated a loin cut. There did not appear to be any correlation between the two types of saw striations and certain cuts of beef.

Hindquarters and forequarters of the pig were about equally represented. Table 16 indicates the number of

Table 15. Toombs Site, Number of Observed and Expected Skeleton Components for Cattle

	Observed	Expected	O/E
Forelimbs			
Scapula	1	6	16.6
Humerus	5	6	83.3
Ulna/Radius	6	6	100.0
Metacarpal	1	24	4.1
Hindlimbs			
Pelvis	6	9	66.6
Femur	9	9	100.0
Tibia	4	9	44.4
Fibula	2	9	22.2
Astragalus	2	9	22.2
Metatarsal	2	36	5.6

Table 16. Toombs Site, Number of Observed and Expected Skeletal Components for Pig

	Observed	Expected	O/E
Forelimbs			
Scapula	2	7	28.6
Humerus	7	7	100.0
Radius	2	7	28.6
Metacarpal	1	56	1.8
Hindlimbs			
Pelvis	5	6	83.3
Femur	1	6	16.6
Tibia/Fibula	6	6	100.0
Astragalus	1	6	16.6

observed and expected skeletal components for pig. Forequarter cuts were in the shoulder area, primarily along the humerus. The humerus is most often included in what today is called the picnic shoulder (Rombauer and Becker 1964). The pork cuts appear to be similar to the beef cuts, as far as the thin cuts of bone are concerned. Two almost complete humerus shafts were present, however. These had the articular ends hacked off. The rest of the humerii were represented by thin cuts along the humerus shaft. The radii were also thin cuts from the shaft. Hindquarter cuts were from the pelvis and tibia/fibula area and were mostly from the shaft. One femur fragment was cut on both facets mid-point on the shaft. There appeared to be a general lack of articular ends present in the samples. Ham steaks may have been a favorite of the occupants of the site. There did not appear to be any pattern to saw striations and the various pork cuts.

The only other mammal that was common in the collection was the opossum. There were no feet elements of the opossum present, however, a number of cranial elements, primarily of the jaw, were present. A lack of feet elements may indicate that these were an undesirable portion of the animal, or that the animal was butchered elsewhere and the feet dicarded there. The other possibility may be that these bones were not retrieved from the archaeological record due to the recovery techniques.

The chicken was no doubt a favorite food of some of the Toombs site inhabitants. All portions of the chicken are present, although there are few cranial and feet elements. These are fragile elements, or small elements that could have been missed during excavations. The chicken represents a quick fresh meat source that can be consumed at one meal among several individuals. The few turkey elements were restricted to the wing, thigh and drumstick area. Squab (pigeon) was represented only by the wings (Table 17).

Adult animals were consumed often at the Toombs site (Table 18). Almost half (40%) of the pigs were adults at least three and one-half years of age and 40% were juveniles 18 months of age. Only one sub-adult between two and three years of age was present. Adults (over three and one-half years) comprised 38.5% of the cow individuals, while sub-adults (two to three years) and juveniles (under 18 months) each comprised 23% of the individuals. Both of the deer individuals were identified as adults. Adult chickens made up 41% of the indiviuduals and juveniles represented 38.5% of the individuals. All of the turkeys were adults. One opossum (12.5%) was identified as a possible adult. The rest were sub-adults or juveniles and two were possibly infants.

Sex determinations were few. One deer was identified as a male based on unshed antlers. One male rooster was determined by the spur on a tarsometatarsus and one adult female was identified based on the lack of a spur on the

Table 17. Toombs House Element Distribution

	BIRDS					
	Goose	Turkey	Chicken	Bobwhite	Pigeon	Total
Skull			3			3
Mandible			2			2
Scapula	1	1	9			11
Coracoid		1	18		1	20
Humerus		2	50	3	2	57
Radius		1	11			12
Ulna		2	23		4	29
Carpometacarpus		1	7			8
Synsacrum			10			10
Femur		3	24	2		29
Tibiotarsus		2	25	2		29
Fibula			3			3
Pelvis			1			1
Sternum			5			5
Furculum			2			2
Vertebra			3			3

Table 17. Toombs House Element Distribution, continuation

	BIRDS					
	Goose	Turkey	Chicken	Bobwhite	Pigeon	Total
Ribs			6			6
Metacarpal			1			1
Phalanx			1			1
	–	—	——	–	–	——
TOTAL	1	13	204	7	7	232

Table 18. Toombs Site, Bone Element Fusion

Horse	
Greater than 4 years	1
Pig	
Less than 12-18 months	11
Greater than 12-18 months	13
Less than 3 years	1
Greater than 3 years	1
Total	26
Deer	
Less than 12 months	2
Less than 2 1/2 years	1
Total	3
Cow	
Less than 12-18 months	13
Greater than 18 months	8
Less than 3 1/2 - 4 years	8
Greater than 4 years	19
Total	27

tarsometatarsus. Three chicken fragments had medullary deposits (Rick 1975) which would indicate at least one laying hen had been slaughtered.

Bone measurements are presented in Appendix E. Due to the large number of sawed bones there were almost no measurements possible on the domesticated mammals. There were quite a few measurements possible for chicken elements, however. There seems to be a fairly wide range of size present, which might indicate a number of different breeds, although sex differences might account for this also. By the late 1800's chicken breeds were quite distinct and poultry production was beginning to become a profitable business (Brown 1915).

Species Description

The following is a brief description of the animals whose remains were recovered from the Park's Mill and Robert Toombs Historic sites. These are meant to only give the reader an abridged sketch of each animal and its habits and habitats.

There were no extinct fauna identified other than the one passenger pigeon element from Park's Mill. As discussed earlier (Chapter 2) the piedmont suffered extreme soil erosion due to the erosive land use practies of the nineteenth and early twentieth centuries. This no doubt affected some species in the piedmont, but probably not detrimentally so, at least for most terrestrial animals. The use of a considerable portion of piedmont land for farming

and heavy hunting of many game animals did cause the decline and extirpation of several species, such as deer and turkey. Probably aquatic species have suffered more as a result of the increased turbidity in the streams due to erosion. Mussels, in particular, are very sensitive to changes in the temperature and silt carriage in streams. Also, the building of several dams along the Oconee River (as well as many other rivers) prevented the migration of anadromous fishes upstream for spawning.

The species descriptions will follow the basic faunal categories in Tables 2 and 10. A discussion of domesticated animals will come first, followed by other terrestrial animals, and then all the wild aquatic species. These categories are presented in Tables 3 and 10, with percentages of each category according to MNI and biomass for each site listed. There was no way to determine if the turkeys (Meleagris gallapavo), ducks and geese (Anatidae) were domesticated or wild. These birds were often domesticated and were common on farms during the nineteenth century (American Poultry Association 1874?). Because their occurence is low, while that of chicken is high, they were placed in the wild category. It is quite possible that they were present as domesticated individuals and were just not consumed as often as chicken. The commensal species represent those species thought to have entered the archaeological record as other than food remains for the site occupants. They are animals which can enter the

archaeological record as scavangers of food remains and inadvertently became part of the faunal record. They may also have been eaten. Commensal species represent a small percentage of the total species present.

Domesticated Mammals

Sus scrofa (Pig). The pig belongs to the order Artiodactyl and the family Suidae. Archaeological evidence indicates the presence of pig remains at Jerico (Jordan) in the Pre-pottery Neolithic B levels by ca. 7000 B.C. Although the pig did not become as important a domesticated animal as sheep or goats in southwest Asia, it was much more favored in China and southeast Asia (Clutton-Brock 1981:72,76). In its natural habitat, the wild pig prefers forested areas near rivers or swamps where temperatures are not high and there is less direct sunlight. The wild pigs diet consists mainly of nuts, berries, fruits, tubers and roots (Youatt 1865:47). In captivity the pig can be fed a variety of foods from fodder to human and animal wastes (Clutton-Brock 1981:73). The advantage of the pig in domestication was that despite little care a good source of meat was available, and with addditional attention a tremendous return could be realized. This is especially true considering that almost all of the pig is used in some form or another (Youatt 1865:173-176). It was not until late in the eighteenth century A.D. that the care and breeding of pigs became an important and profitable

endeavor. The introduction into Europe of several types of Asian pigs drastically changed the breeding stock in Europe (Clutton-Brock 1981:75). England became a forerunner in the breeding of pigs during this period and many breeds such as the Yorkshire, Suffolk, Chesire, etc. became popular. As already noted the care and breeding of the pig in America was somewhat slower to develop (Youatt 1865:60-61,77), particularly in the south.

The pig arrived in the New World on Christopher Columbus' second voyage in 1493 to the Indies. Feral hogs were present in the south as early as 1539 when Hernando DeSoto made his famous trek through the southeast. As DeSoto traveled through the south hogs escaped from his herd along his route. Later other travelers, Spanish missionaries, and settlers also brought pigs. Many of the pigs brought over by the Spaniards and the later settlers escaped and became wild. Presently there are two groups of feral pigs in the southern United States according to Bratton (1977:1):

(1) domestic hogs that have escaped and have bred in the wild

(2) hogs that have descended from European wild breeds that were introduced into the south during recent decades.

There has been a great deal of interbreeding between the groups and today it is difficult to try to identify wild hogs to the subspecies level (Bratton 1977:1).

Those areas of intense agriculture and land holdings, such as the piedmont, offered little habitat to feral swine,

whereas remote and uninhabited areas were better suited (Hanson and Karstad 1959:84). Such areas as the coastal plain and mountains were more conducive to feral swine because of the availability of remote uncultivated land. Today these areas still support more feral swine with up to 10 pigs per square mile. As piedmont land has reverted to forest more wild swine are occurring, mainly in lower piedmont areas (such as Hancock and Glascock counties) near the fall line (Southeastern Cooperative Wildlife Disease Study 1982). Wild hog hunting is becoming a favorite sport (Kurz 1983:79-81) and many management programs are attempting to increase feral swine populations.

Bos taurus (Cow). The cow was first domesticated around 5500 B.C. in Greece and Turkey. It is thought by some that because cattle were domesticated sowewhat later than sheep/goats or pigs, their domestication may have been somewhat more intentional. There is much speculation as to how and why cattle were first domesticated. More than likely they were not domesticated for milking originally because of their size and the difficulty in handling these large animals. After the initial stages of domestication, cattle became important animals in many areas of the world, particularly in Asia and Europe. The cow served as a source of meat, dairy products, glue, soap, leather, fertilizers, and a variety of other items. (Clutton-Brock 1981:62). Many of the first cattle brought to the New World by the Spaniards quickly escaped and became wild (Lowery

1974:513). In New England in the 1600's cattle were often herded communally, with one or two individuals of the village responsible for the care of all the village's cattle (Weeden 1894:64-65). In the south it was quickly realized that cattle raising was greatly enhanced by the mild winters and the large amount of land for ranging (Gray 1941:56). However, several accounts mention that the free-ranging cattle on the coastal plain that were small and stunted (Gray 1941; Bonner 1965). Interior cattle seemed to have faired better. Gray states that "settlers in the piedmont region and the Great Valley, being mostly farmers, and having better pastures and meadows, were more accustomed the the thrifty practies of dairying than were the planters and farmers of the coastal plain" (Gray 1941:205-206).

Caprinae (Sheep/ Goats). Sheep (Ovis aries) and goats (Capra hircus) were the earliest domesticated animals in Southwest Asia. Both are members of the Bovidae family. At Zawi Chemi Shanidar, Iraq sheep were identified dating to 9000 B. C.. Goats were identified at Ali Kosh, Iran dating to 7500 B. C. (Harris 1980:148) Economically, they became the most important domesticated animal in southwest Asia, supplying milk, meat, and hides. Sheep and goats were probably easy to domesticate because they could be herded and were not territorial animals (Clutton-Brock 1981).

Sheep first arrived with the French on the the Florida coast during the establishment of Fort Caroline on the St. John's River in 1564 (Laudonniere 1975: 142). They were

brought to St Augustine and Santa Elena in 1565. In 1585 sheep were brought to Roanoke Island by the English settlers, but had a rather short existence there. In the early years of the colony it was difficult to keep sheep because they were very suspectible to predators.

Domesticated Birds

Gallus gallus (Chicken). The chicken is most often said to have developed from the Red Jungle Fowl of southeast Asia. However, chickens may have been domesticaed in several areas and from a variety of fowl. Chickens belong to the order Galliformes, which includes turkeys, geese, ducks, pigeon, pheasants, etc. It has been an important food source since it's domestication some four or five thousand years ago (Smith and Daniel 1975). Chickens are gallinaceous birds which perch and roost, but they are more commonly found on the ground foraging for foods such as seeds, roots, berries, grains, insects, worms, etc (Weir 290:4).

Chickens were brought over to the French colony of Fort Caroline on the Florida coast around 1564 (Laudonniere 1975:142). Chickens were among the first fowl to arrive in the English colonies and it is reported that in 1609 there were 500 chickens in Jamestown. However, after a disastrous winter there this figure plummented to zero, as it did for all the livestock and most of the settlers. There were few attempts at selective breeding (except for cockfighting

breeds) and most of the barnyard fowl of the seventeenth and eighteenth centuries were mixtures of a variety of imported breeds (Gray 1941:208). It was not until the late second quarter of the nineteenth century that interest in chickens really began to develop (Smith and Page 1975).

Columba livia (Rock Pigeon). The domesticated pigeon is the rock pigeon in the wild. There are over 200 breeds of pigeons, of which most of these are found in the United States. The squab pigions seem to be the most popular in the United States because of their suitability for both the market and for show. Pigeons are flock birds, however, they are also territorial in their habits. In keeping pigeons lofts are built, such as the one at the Toombs Historic site, to house the pigeons. Usually mating pairs are kept in the lofts and crowding is avoided. Pigeons and doves are not the gentle birds often depicted. They can be quite quarrelsome, especialy when you have too many of them in a loft during mating periods.

Wild Terrestrial Mammals

Didelphis virginiana (Opossum). The opossum is the only marsupial found in North America. It ranges throughout piedmont Georgia as well as most of North America (Lowery 1974:57). The opossum, about the size of a house cat, is omnivorous, nocturnal, and arboreal. The opossum is well known for it's raiding ventures on hen houses and garbage

(Golley 1962:200). The males lose their antlers following the rut season. However, there are instances where some deer do not lose their antlers due to an "endocrine malfunction" (Lowery 1974:493).

The history of the deer in Georgia interesting. Deer were almost entirely eradicated from Georgia during the late 1800's. In fact by 1900 there were no deer in the piedmont or the mountains and only a few in isolated populations on the coast. Beginning in 1920 restocking of the deer occurred and today the population is fairly large and stable due to careful regulation by state wildlife managers (Golley 1962:204).

Wild Terrestrial Birds

Meleagris gallapavo (Wild Turkey). Wild turkeys are very large fowl of the Meleagrididae family. They are native to the eastern and southern United States and Mexico and Guatemala. However, today the turkey is a common domesticated bird over much of the world. Wild turkeys prefer wooded areas, whether in the piedmont the mountains, or the coast (Peterson 1980:144).

When Europeans first arrived in the south, turkeys were quite plentiful and had been a favorite game animal for the Indians. As the new settlers began to relentlessly hunt the turkey, as well as destroy their habitat through clearing the land, turkeys became reticent and scarce (Bent 1966:329). The

turkey's diet consists of a considerable amount of mast (beechnuts, acorns, etc) seeds, berries, as well as lizards, snakes, crustaceans, grasshoppers, etc. (Schorger 1966:192-219). Turkeys breed during the spring and the young poults hatch in about twenty-eight days (Davis 1949:105). Because the wild turkey's habits demand a wooded habitat, the population in the Georgia Piedmont during the nineteenth century would have been quite low except in remote wooded areas not under agriculture. The wild turkey is making a slow return to many areas in the south including the piedmont of Georgia. A 1980 population map for wild turkeys show a number of counties in Georgia wth low to high population densities of wild turkeys (Southeastern Cooperative Wildlife Disease Study 1980).

Colinus virginianus (Common Bobwhite). The bobwhite is a small rounded fowl belonging to the Phasianidae family. It is found througout the piedmont in open farmland, roadsides and along forest edges. Their diet consists of seeds, berries, buds and insects (Peterson 1980: 148). The bobwhite still occurs in most areas of the piedmont today.

Zenaidura macroura (Mourning Dove). The mourning dove belongs to the Columbidae family. It is a brown fast-flying bird, well known in the piedmont for its mournful cooo. The mourning dove inhabits a variety of areas in urban and rural habitats where one finds open woods, roadsides, grasslands, or scrub growth. They consume fruits, seeds, waste grains and insects (Peterson 1980:180).

Ectopistes migratoris (Passenger Pigeon). The passenger pigeon, or wild pigeon, is a now extinct bird of the Columbidae family. It's extinction is a sharp reminder of what humans can do to a species that was once thought to be of infinite numbers: the last passenger pigeon died in the Cinncinati Zoo in 1914. The passenger pigeon had a small head and neck in relation to its body and with quite attractive plummage. The passenger pigeon, a migratory bird, flew in huge flocks that supposedly darkened the sky when they flew over and would often break tree limbs from their weight when roosting. They were easily killed and hundreds could be shot in a few minutes. In the fall they began migrating from Canada and wintered over in the southern United States. Passenger pigeons ate primarily mast foods (acorns, chestnuts, beechnuts) as well as fruits, seeds of grain, and grasses . They also consumed worms, snails, ants and other insects. They nested in the spring (Schorger 1955:9)

Wild Aquatic Birds

Branta canadensis (Canada Goose). The Canada Goose is considered to be the most widespread of any of the wild geese in North America. It is well known for its V-formation flight pattern and honking voice. The Canada Goose summers in Alaska, Canada, and the northern Unites States and winters in Mexico. It inhabits bays, lakes, ponds, marshes and

fields and feeds on seeds, grasses, and aquatic plants (Peterson 1980:44).

Anas platyrhynchos (Mallard). The mallard is a marsh duck, having a "glossy green head and a white neck-ring". Mallards are surface feeders, living in ponds, creeks, rivers, and marshes. The mallard is the wild form of the domestic variety. It has a worldwide distribution, being found in the western and eastern hemispheres and may migrate as far south as India or Burma (Bent 1962:47). Mallards have a loud quacking voice and rise directly from the water into flight. They feed on land at times and consume grasses, seeds, aquatic plants, insects and even small aquatic animals (Peterson 1980:48).

Wild Aquatic Reptiles

Chelydra serpentina (Snapping Turtle). The snapping turtle is known for its unpleasant looks and disposition. They are fairly large and average 4.5 to 16 kg (10-35 lbs) for adults, although an 39.0 kg (86 lbs) snapper in captivity has been noted (Conant 1975:37). Snappers occupy permanent bodies of water such as lakes, ponds, creeks or rivers. They are omnivorous, consuming fish, birds, mammals, reptiles, small aquatic invertebrates and even vegetation. (Conant 1975:38)

Chrysemys concinnna concinna (River Cooter). The river cooter is a well known cooter to piedmont streams. It is common to see cooters basking on rocks, logs, and snags in

rivers and often they are stacked on top of each other like minature highrises. Cooters are primarily vegetarians eating aquatic plants, although, they occasionally do consume worms, insects, fish, and raw meat (Conant 1975:60-63). The fact that they are sometimes caught on trot lines attests to this fact.

Trionyx (Softshell Turtle). Trionyx is the genus of softshell turtles belonging to the Trionychidae family. The Trionyx spiniferus spiniferus (Eastern Spiny Softshell) is the most common species in the piedmont. It inhabits rivers and some lakes or still bodies of water. Although it may bask on land, it can quickly retreat into the water (Peterson 1975:77:78). Softshell turtles are omnivorous, eating a variety of plant and animals such as insects, frogs, fish, molluscs, and other invertebrates. They are quite quarrelsome animals when approached on land. (Mount 1975; Carr 1952:430)

Fishes

Lepisosteus (Gar). According to Lee et al. (1980) the Lepisosteus osseus (Longnose gar) is the most likely species of gar to ge found in the piedmont of Georgia, although the Lepisosteus occulatus (Spotted Gar) could occur in the piedmont. Gar generally inhabit fresh and brackish waters of larger streams. The young eat invertebrates and the adults consume other fish (Lee et al. 1980:49).

Catostomidae (Sucker Family). The sucker family is comprised of a larger number of species. In piedmont Georgia there are a number of sucker species such as the Minytrema melanops (Spotted Sucker), the Moxostoma anisurum (Silver Redhorse), and the Moxostoma rupiscartes (Striped Jumprock). They are found in creeks, rivers, lakes,ponds, and impoundments. They are generally omnivorous, eating insects, algae, detritius, and molluscs. Suckers generally spawn in the spring (Lee et al. 1980:425). Suckers are primarily caught by traps, seines, or gillnets (Jordan and Evermann 1969:51).

Ictalurus (Catfish). There are a large number of catfish species inhabiting the lakes and streams of piedmont Georgia. Often they are found in slow moving streams and rivers with soft mud or muck bottoms. Catfish have the distinctive pectoral spines that appear as "whiskers". A variety of species such as the Ictalurus brunneus (Snail bullhead), Ictalurus catus (White catfish), and the Ictalurus punctatus (Channel catfish), are common in the piedmont. Most catfish are omnivorous, eating aquatic molluscs, insect larvae, small fishes and algae. Spawning occurs mostly during the summer months (Lee et al. 1980:437-476). Catfish can be caught in traps, or may be fished for by hook or on trot lines (Jordan and Evermann 1969:18).

Centrarchus macropterus (Flier). The Flier "prefers sluggish lowland habitats with clear, heavily vegetated waters" (Lee et al. 1980:583). They eat primarily aquatic

invertebrates, such as Cladocera and Chironomids. They generally breed from March to May and maintain nests in colonies (Carlander 1969:37:38). It is generally fished for by hook (Jordan and Evermann 1969:336).

Lepomis macrochirus (Bluegill). The Bluegill is widespread in its occurrence due to its widespread introduction in recent times. It "inhabits shallow warm lakes, ponds, and slow flowing rivers and creeks often with abundant aquatic vegetation" (Lee et al. 1980:597). Bluegills consume aquatic vegetation, small fish, crustacea, and insects. They spawn throughout the growing season, which varies according to the region they inhabit. In Florida this may be from late winter to fall (Carlander 1969:73-118). The Bluegill, according to Jordan and Evermann (1969), ranks as the best gamefish of all the sunfishes. It is caught by hook and line.

Micropterus salmoides (Largemouth Bass). Lee et al. (1980:608) state that largemouth bass prefer "clear, quiet waters with aquatic vegetation". Largemouth bass are "one of the most important freshwater game fish in the United States" (Carlander 1969:200). They eat other fish such as bluegill, shad fingerlings, small catfish, perch, and other small Centrarchids, as well as insects, frogs, and crayfish. They generally spawn in temperatures ranging between 15.6 C to 18.3 C, which would be winter to early spring (Carlander 1969:200-275). Bass are caught by hook and line.

Alosa sapidissma (American Shad). The American Shad is an anadromus fish that always spawns in freshwater streams above brackish water. Most spawn in water temperatures around 15.5 to 17.0 C. The young remain in the freshwater streams until the fall when they return to the ocean. Young shad feed on insects--both terrestrial and aquatic--as well as small fish and crustaceans (Carlander 1969:75-82).

Commensal species

Eptesicus fuscus (Big Brown Bat). The big brown bat is large and brown with a wing spread up to one foot (Lowery 1974: 110). It is a vigorous species found living around houses and other structures in rural and urban areas as well, as in caves and tree hollows. It is nocturnal and consumes insects. In Georgia the big brown bat female usually bears two young in May (Golley 1962:66-67).

Tamias striatus (Eastern Chipmunk). The eastern chipmunk is a small member of the squirrel family. It has white and dark stripes down the back and definite cheek pouches. The chipmunk frequents open woodland and lives in complex underground burrow systems. It is a diurnal animal that hibernates during most of the winter. Chipmunks eat nuts, berries, fruits, as well as mice, insects, snails and small birds (Golley 1962:95).

Oryzomys palustris (Rice Rat). The rice rat has a gray to brown pelage and a long, slender, slightly hairy, tail. They are primarily found in freshwater marshes, although occasionally they may be found in the uplands of the piedmont (Golley 1962:111). They primarily eat seeds and "the succulent parts of the various plants that are available (Lowery 1974:228). In addition they consume insects and crustaceans. According to Lowery "rice rats are highly fecund and can produce as many as seven litters a year (Lowery 1974:228).

Peromyscus (Mouse). There are four species of mice in the Georgia piedmont: Peromyscus polionotus (Old fieldmouse), Peromyscus leucopus (White-footed mouse), Peromyscus gossypinus (Coton mouse), and Peromyscus muttalli (Golden Mouse). The old field mouse is most often found in areas where there is old field succession growth. The other three mice species prefer woodlands, particularly bottomlands. Mice such as the old field mouse and sometimes the white footed mouse build burrows while others build nests in tree cavaties or hollows. All eat seeds of grasses and other plants and insect, although "the cotton mouse is more carnivorous" than the rest. Breeding occurs throught the year for all species, although peak and lull periods will differ for each species (Golley 1962:121-123).

Rattus rattus (Roof or Black Rat). Roof rats are large and gray-black in color with hairless tails and large ears. They occur primarily in the lower coastal plain, although

there are smaller populations in the piedmont. The roof rat generally lives around old barns and buildings and consumes available grains and plants from around these buildings. Roof rats are quite prolific and breed year round. Roof rat infestations are serious due to their great fecundity and the fact they harbor such infectious diseases as the plague and typhus fever (Golley 1962:157).

Rattus norvegicus (Norway or wharf rat). The norway rat is a large brownish-black rat with a long hairless tail. It is found thoughout the piedmont (and the world!) particularly around farms, cities and garbage dumps. The Norway rat is nocturnal, omnivorous, eating whatever food items are available. It cause great commercial losses because of destructive eating habits in granaries. It breeds all year round peaking in the spring and fall (Golley 1962:154). The Norway rat was introduced to the New World sometime during the American Revolution. It is considered to be a serious pest, destroying large amounts of food resources and property. It is also the carrier of several diseases such as the plague and typhus (Lowery 1974:286).

Canidae Family (Dog, Wolves, Foxes, and Coyotes). The Canidae family are carnivores. Coyotes (Canis latrans) are not indigenous to Georgia but reports of citings in Georgia are not uncommon (Golley 1962:173-174). There are no wolves present in Georgia, but in the past Canis rufus (Red Wolf) was a common carnivore in Georgia. Two types of foxes--Vulpes fulva (Red Fox) and Urocyon cinereoargenteus

(Gray Fox)--inhabit piedmont Georgia today. Both fox species are medium size with pelages of the color indicated by their common names. "The red fox prefers more open habitats than does the gray fox", which is "most common in the lowlands adjacent to dense bottomland forests" (Golley 1962:175). The final species of the Canidae family is the dog, Canis familiaris, which was probably the first animal domesticated by humans. One of the earliest dates for dog remains is from the Palegawra Cave, Iraq, which dates to 12,000 years ago (Clutton-Brock 1981:42). Dogs are the most common of all the Canidae in the piedmont (and elsewhere) and a favorite pet for humans. Packs of wild dogs are common and can be very destructive for livestock (ie. sheep) and wild mammals such as deer (Lowery 1974:509).

Mephitis mephitis (Striped Skunk). The striped skunk is about the size of a cat and black with white stripes on it's back. It is well known for its odoriferous scent that is produced by two anal scent glands (Lowery 1974:439). It prefers agricultural areas and open wastelands rather than dense forest land. Nests are constructed in abandoned mammal burrows and in and around old structures. It is nocturnal and omnivorous, eating a variety of small mammals, carrion, insects, and fruits. Breeding season is in early spring. (Golley 1962:191-192)

Felis domesticus (Domesticated cat). The domesticated cat is the smallest species of the Felidae family. It is thought to have been first domesticated in Northern Africa in

the Nile region and was a favorite subject of art among the ancient Egyptians More recently it is thought that the cat was domesticated in a number of regions based on the variety of breeds present around the world (Lowery 1974:509). Cats arrived in the New World with the Spaniards in the sixteenth century. In 1794 cats were brought by the English to Pennsylvania to help eradicate a rampage of black rats (Mery 1969). The cat is a favorite pet of humans and is considered a useful animal for controlling mice and rats.

Equus (Horse/Mule/donkey). Horses, mules, and jackasses belong to the Equidae family to which zebras also belong. Archaeological evidence indicates the horse was first domesticated by humans in the Ukraine around 3000 B.C., while the ass was first domesticated in Egypt around 3000 B.C. (Harris 1980; 148). There were no indigenous horses in the New World prior to their introduction by the Spaniards in the early 1500's. The mule is a "hybrid progeny resulting from a cross between a female mare of Equus callabus and a jack, the male ass Equus asinus" (Lowery 1974:511). The mule has primarily served as a beast of burden. The horse played an important role in the settling of North America as a beast of burden, and as a mode of transportation. In the south it was quite important as the main method for traveling.

Suborder serpentes. There were no snakes identified to the species level from either site, although the presence of three snake elements were identified at the Park's Mill site. A large variety of species inhabit the piedmont of both the

non-venomous and venomous variety. The only venomous snakes in the piedmont are Agkistrodon contortrix, (Copperhead), Agkistrodon piscivorous, (Cottonmouth), and Sistrurus miliarius (Rattlesnake) (Conant 1975:226-238).

Order Anura. There are a wide variety of toads (Bufo) and frogs (Rana) found in the piedmont. The presence of Anura were noted at Park's Mill but the bonescould not be identified to the species level. Generally toads have "warty skin and short legs for hopping, and the typical frog has a relatively smooth skin and long legs for leaping" (Conant 1975:297). Toads and frogs have a variety of habitats from city dwellings to very remote area dwellings. They eat insects and other invertebrates (Conant 1975:307).

CHAPTER 6 DISCUSSION

Most of our archaeological knowledge about southern historic diet has come from zooarchaeological analysis on data from the coastal strip of Georgia, Florida, and South Carolina. With this new data and the data from two other interior sites, a regional diet pattern may be emerging for upland Georgia and her bordering sister states. It appears that the interior of the state may have differed to some degree in food use, primarily in pig and cow, than the coastal region. This interpretation is based on evidence from two sites examined here, as well as the Millwood Plantation (Orser et al. 1982) in piedmont South Carolina, and the Hermitage (Smith et al. 1976, 1977) in Middle Tennessee. The Toombs site appears to adhere more to the coastal pattern than the Park's Mill site, since the prevalence of beef (19%) over pork (15%) in domestic animal individuals seems to be typical of coastal collections. Park's Mill, however, has a large discrepancy between the prevalence of pork (47.5%) over beef (1%) in biomass. Percentages for MNI at both sites show that at Park's Mill 10.5% of the individuals were pig and 2% were cow, while at the Toombs site pig represented 9% and cow 12% of the individuals. At both Millwood and the Hermitage,

the use of pig (17% and 15.5% respectively) far exceeds the use of cow (6% and 1% respectively) in individuals. The above percentages for the Toombs and Park's Mill sites are based on biomass calculations, while the Millwood Plantation and Hermitage sites are based on minimum numbers of individuals, because weight and biomass calculations are not available for these sites.

Zooarchaeological analysis for the Millwood Plantation and Hermitage sites contains no biomass calculations, therefore comparisons on this basis cannot be made. Data on minimum numbers of individuals is available, however, for these sites. The sample size for Millwood (109 MNI) is almost identical to that of the Toombs site (108 MNI). Park's Mill has a sample size of 181 individuals. The Hermitage site has a large sample size (225 MNI) when the results of two field seasons are combined. Chronologically the sites cover the whole nineteenth century. The Hermitage occupation is the earliest of the four deposits, dating from about 1804 to 1850 (Smith et al. 1977). The Toombs site occupations range from the late eighteenth through early twentieth century, but seem to be most concentrated in the very late nineteenth century. Artifacts from the Park's Mill site (occupied from the early nineteenth through the twentieth century) that were from strictly nineteenth century deposits ranged from about 1830 to 1859. The 1850's tended to be the most represented time period. At the Millwood

plantation most of the time line dates concentrated around the 1870's and 1880's (Orser et al. 1982).

The Toombs site appears to be the most anomalous of the sites, being the only one of the above sites found in an urban setting and probably the latest in time as well. Washington, Georgia was a small town with a population of 2,500 in 1885 when Toombs died. When referring to Washington as urban, it is not meant to be urban in the sense that cites such as Charleston or Savannah were during the same period of time. The fact that the Toombs site is a town site and dates fairly late in the nineteenth century may explain why cow was more frequent at the site. During the 1880's beef production, centered in the midwest, reached a new high in the United States. Partly due to the availability of cattle at low prices from the western plains, their easy transportation by railroad, and the development of refrigerated railroad cars, fresh beef became a cheap and readily available meat for Americans (Ross 1981:201). According to Ross pig consumption began to decline during this same period of time because it could not compete as well with beef as a fresh meat source, since swine had been bred to produce a flesh more suitable for preservation (Perrin 1978:71). However, another very important factor that caused beef to take a lead was the tremendous profits the meat packers could realize from the by-products of the cow; the cow hide market took a great leap forward at this time (Ross 1981:202-203). The chief by-product of the pig, lard, used

as a light source and lubricant, was starting to be replaced by petroleum, as the petroleum industry began to surge (Ross 1981:203). Monopolies in meat packing, granaries, cattle farming, and a number of other food production industries aided and directed this increased beef production. Internationally, beef exports increased in the late 1880's because of a disease outbreak among European cattle, while at the same time European tariffs were placed on U.S. pork exports. Even though U.S. pork exports did begin to increase again in the 1890's, this dealt a serious blow to the pork industry (Ross 1981: 202-204).

The Toombs site, because of its location in the town of Washington on the Central of Georgia Railway system, probably felt the impact of this increase in fresh beef. The presence of butchers contributed to the availability of fresh meat and to the habit of purchasing only certain portions of an animal, based on economic means and preference. Fresh meat on a daily basis was more available in towns than in the rural areas. Hilliard believes that in the South pork continued to be consumed at a high rate after the Civil War, with perhaps even an increase in pork consumption (Hilliard 1972: 66-67). His references are to the tenant farmers and sharecroppers primarily, whose diet became locked into a consumption of the poorer cuts of the pig--the sidemeat (fatback). Probably the upper classes of the south began to change their diet by consuming more beef late in the nineteenth century, particularly as beef became so readily

available. The urban affluent would have been the more likely to change first.

A diet with heavy reliance on pork is evident at Park's Mill. Of course, the deposits studied represent a period of time before the meat industry began to promote beef heavily. Coupled with the rural setting, it is much easier to see that Park's Mill may better represent piedmont diet patterns prior to the industrial blooming of meat packing industry. By comparison, the Park's Mill data are quite similar to those from the rural Hermitage and Millwood sites. The Hermitage site is a slightly earlier and the Millwood site a little later than Park's Mill, but there is some overlaping in time among the sites. All of these sites show a heavy dependence on pork and little consumption of beef. This pattern is probably representative of the rural interior and piedmont area of Georgia throughout most of the nineteenth century.

How varied was the diet? There is no doubt that domesticated animals (Table 19) supplied the major portion of the diet at the Toombs site (63% of the individuals and 84% of the biomass) and Park's Mill (22% of the individuals and 83.5% of the biomass) sites. Besides the pork and beef consumed, chicken was an important food source. Although chicken (or fowl) is mentioned fairly often in the documents, there seems to be little emphasis placed on the consumption of chicken. Hilliard states that poultry would have been a meat primarily for special occasions and therefore not consumed on a regular basis (Hilliard 1972:46-47, 144-145).

Table 19. Summary of Faunal Categories

Habitat	MNI #	MNI %	BIOMASS Kg	BIOMASS %
Park's Mill Site				
Domesticated	40	22.1	27.6532	83.5
Wild Terrestrial	47	26.0	2.8830	8.7
Wild Aquatic	84	46.4	2.5578	7.7
Commensal	10	5.5	0.0407	0.12
TOTAL	181		33.1347	
Toombs Site				
Domesticated	68	62.96	51.61	84.0
Wild Terrestrial	27	25.0	8.67	14.11
Wild Aquatic	3	1.9	0.11	0.17
Commensal	10	9.3	1.04	1.7
TOTAL	108		61.43	

Perhaps such poultry as chicken was so common that it tended to be overlooked in the literature. Chichen would have been a source of fresh meat, and probably a desired diversion to cured meats. Fowl can be consumed in one meal with no food storage or waste problems. Fowl and wild game would have been a welcomed addition to a diet of preserved meat. Chicken represents 36% of the individuals from the Toombs site and 6% of the biomass, while representing 8% of the individuals at Park's Mill and 1.2% of the biomass. Other fowl such as turkey, duck, and goose, although listed as wild, could possibly have been domesticated. However, their presence is limited whether wild or domesticated and chicken was clearly the most exploited fowl at both sites. Chicken was no doubt the most important and frequent fowl at the Millwood Plantation site (12% of the individuals) (Orser et al. 1982), and at the Hermitage site (16% of the individuals) (Smith et al.1977).Similar levels of chicken wre found at coastal sites such as the Telfair (Reitz 1983) and Charleston Convention Center (Honerkamp et al. 1982) sites, also. Only one possible caprine (sheep/goat) bone was identified at Park's Mill and none at the Toombs site. This appears to agree with the documentation that generally states that southerners were not fond of mutton (Gray 1941). However, Richard Park did own 60 head of sheep and 3 goats in 1853, so that a source of mutton was available, although sheep may have been used more for their wool (two looms were listed in the inventory) than as food. The goats could have

been milked. Millwood Plantation stands as an anomaly since 8% of the total individuals (or 18% of the domesticated individuals) were sheep. At the Hermitage site less than 2% of total individuals (and 2% of the domesticated individuals) were sheep. With the exception of Millwood, though, interior and coastal sites tend to conform to the reported small consumption of mutton.

Wild terrestrial animals were well represented at both sites, but aquatic animals occurred primarily at Park's Mill. Wild terrestrial animals supplied 26% of the individuals at Park's Mill and 25% at the Toombs site. In terms of biomass they represent 8.7% and 14.0% respectively. The relatively large number of opossum and turkey at the Toombs site is responsible for the higher percentage of biomass. Interestingly, aquatic animals represented 46% of the individuals and 7.7% of the biomass at Park's Mill, while the Toombs site had less than 2% wild aquatics and .2% of the biomass--nominal figures at best! Catfish (Ictalurus spp.) in particular is responsible for the high number of individuals at Park's Mill. It is interesting that the Hermitage and Millwood Plantation sites, both located near large rivers (the Cumberland and Savannah Rivers respectively), had higher amounts of fish remains than did the Toombs or Park's Mill sites. At the Hermitage 11% of the total individuals were fish and at the Millwood 16%. This seems to support the idea that availability is an important criterion for inclusion in the diet. Fish and turtle are not

mentioned very often in the documents as food items, except for the coastal regions. As discussed earlier, Edgar Martin stated that southerners ate little fish (Martin 1942: 61). I believe this to be a rather unsubstantiated statement on Martin's part, despite the fact that fish are mentioned very little in the literature. The zooarchaeological data indicates otherwise, at least for those sites located on rivers and streams. Although, it takes a lot of fish to equal a pig or cow in weight, fish is a high protein and fresh meat source that could have supplied an important part of the diet.

The discovery of a photograph of a wooden fish trap at Park's Mill (See Figure 7 in Chapter 4) suggests that fish procurement was important at the site. It is not known for certain how early the fish trap was built at Park's Mill, but it could have been there early . The fact that fish represented 37.6% of the individuals identified at the site seems to suggest that the fish trap may have been an important aspect of the fishing technology at the site. James Cobb has identified two types of fishing traps found on the lower Holston River in upper East Tennessee (Cobb 1978). These traps were apparently common throughout the 1800's and well into the twentieth century. At least one of the traps Cobb identified was used commercially based on records that indicated the amount and types of fish caught on a given day and the income realized from fish sales. The Park's Mill trap seems to correspond to the platform slat type of trap

Cobb identified as one of two types (the frame-pole type was the other) found on the Holston River (Cobb 1978). How often these traps were used in piedmont Georgia rivers is difficult to assess, but they could have been widely used, providing a measurable supplement to piedmont riverine site occupants diet. On days when the catch was copious the excess may have been sold or perhaps given to the slaves (Richard Park had almost 100 slaves in 1853).

Turtles at riverine sites such as Park's Mill, Millwood, and Hermitage sites were also utilized. Turtles represented 13% of the total species identified at Millwood (Pilleart 1982), 3.5% at the Hermitage, and 6.6% at Park's Mill (3.2% of the biomass). Turtle soup is the most common dish referred to for turtle and was often considered a delicacy.

The almost total lack of fish and turtle at the Toombs site is difficult to assess. The bone may have been there but not recovered because of the small size of most fish and turtle bones. These bones do not survive very well where a lot of disturbance is present also. If the lack of archaeological bone is truly representative of food practices at the Toombs site, then either the occupants did not consume fish or perhaps fillet fish was purchased.

Wild terrestrials such as squirrel (Sciurus spp.) were apparently quite popular at Park's Mill. No other wild terrestrial animal approach the quantity of squirrel individuals (13%) identified at Park's Mill. Of course in biomass (1.5%) the figure drops dramatically. At the Toombs

site opossum (Dildelphis virginiana) must have been a favorite wild game while at Millwood, rabbit (Sylvilagus spp.) and squirrel were favored. At the Hermitage site squirrel, rabbit, and opossum were almost equal in the number of individuals identified. Deer (Odocoileus virginianus) was insignificant at both Park's Mill and the Toombs sites and was totally missing from the species list at the Hermitage and Millwood sites. The Toombs site, the only urban site, had the most deer--two individuals. Deer was apparently scarce in Tennessee very early in the century, available only rarely in Georgia, and scarce in South Carolina. The archaeological evidence seems to conform to documentary accounts of declining deer populations in the south during the nineteenth century.

It seems apparent that the diet was varied, although domesticated animals supplied the bulk of the meat consumed. Reitz (1983a:16) offers the hypothesis that rural diets were more diverse than urban diets in the coastal region. This is apparently true for the interior regions as well. The Park's Mill sample is more diverse in species identified based on MNI than is the sample from the Toombs site. As mentioned in Chapter 3, diversity calculations were figured on the Hermitage and Millwood Plantation sites by the author. The Hermitage data based on two field seasons shows a slightly higher diversity (3.13) than Park's Mill (2.85). Millwood Plantation has a slightly lower diversity (2.70) than the other two rural sites, but higher than Toombs (2.38). All of

these figures are based on MNI, because there were no biomass calculations available. The fact that the Toombs and Millwood Plantation sites have lower diversity figures may reflect changes associated with late nineteenth century sites in general or may be a result of their small sample size. Probably one of the biggest differences between the Park's Mill and Toombs site collections is in the butchering practices at the sites. As discussed in the Chapter 5, Park's Mill had almost no sawed bone while the Toombs site had a fairly high occurrence of sawed bone. There appeared to be a high rate of definite cuts of meat at the Toombs site for both cow and pig. Most of the bone was of a thickness appropriate for steaks or chops. Beef steaks are mentioned by many (Hilliard 1972; Hooker 1981, etc) as a favorite beef dish. It is uncertain whether beef steak is a generic term for all steaks cut from beef, or is from a particular portion of the cow. The hindquarter of beef was slightly higher in representation than the forequarter at the Toombs site. In the hindquarter there apppears to have been a great many round, top round or bottom round cuts, the round being the best represented portion of the hindquarter at the site. During the nineteenth century this was a high value portion of beef. The highest value portion of the cow--the short loin, rib, and sirloin--is the least represented at the Toombs site. This may be a result of the fact that ribs and vertebrae that make up these cuts generally end up in the Ud.

mammal category. There was a large number of the Toombs bones in this category.

At the Toombs site there were almost no cranial parts of the pig, but many feet bones present. This may indicate that pigs were slaughtered elsewhere and the feet bones were purchased and eaten at the site, or that pig was slaughtered elsewhere on the site. From the main carcass the forequarter and hindquarter are almost equally represented, whereas the loin, ribs and belly are not. Ribs and vertebrae, representing these portions, are lacking identification at the site. Again, these bones are more difficult to identify to species. A moderate number of these bones were probably identified to the Ud. mammal category, therefore they are probably represented at the site, although they cannot be quantified. Ham and shoulder steaks were the most frequently identified pig cuts at the Toombs site. It appears that the meat consumed at the Toombs site was probably purchased from a butcher or market, particularly since most of it is beef and there is a general lack of head and carpals/tarsals and phalanges (feet) bones. Because of the large number of sawn pig bones and the general lack of cranial bones and fewer feet bones, the pig probably was purchased at a butcher or market.

However, at Park's Mill pigs were probably slaughtered on the site. Since almost no bone was sawn, cuts of meat could not be determined. Head and feet parts were evidently popular food sources. It is impossible to say much about the

main carcass portions of the pig since most are probably in the Ud. mammal category. The large number of unidentified mammal fragments are likely to be pig and probably indicate that hacking of bones was a popular method of preparation. Boiling, broiling, stewing and roasting were probably favored methods of cooking. At the Millwood plantation only three pig and two cow bones exhibited sawing while none of the sheep or goat elements showed sawing. It was felt that slaughtering took place somewhere on the site (Orser et al. 1982:620, 623). Slaughtering was determined to take place at the Hermitage site, also, although types of butchering marks were not quantified in the analysis report (Smith et al. 1977).

The literature indicates that during the latter half of the nineteenth century ideas about cuts of meat were changing. This is based on the comments of Bushnell concerning the great proliferation of meat cuts in the last few decades of the nineteenth century (Bushnell 1901:154). The Beecher sisters earlier (1861) urgings that Americans adopt the more economical and precise French cuts of meats would also suggest such a trend (Beecher and Stowe 1971:179-180). One might infer from the sawing that individuals at the Toombs site were adherring to these new trends because of the apparent sawing of many of the bones into smaller portions. Park's Mill exhibits none of this, possibly because it dates somewhat earlier or may have been less cosmopolitan. Of course a rural versus an urban setting

may also be a contributing factor here. More than likely these new trends in food preferences and practices were being felt in Washington, Georgia by the late nineteenth century.

The subject of status differences and diet practices is a much more difficult problem. There are a couple of reasons for this. First, there are intrasite problems at both Park's Mill and Toombs. Except for the large Feature 8, a primary deposit, probably associated ith the Park house, the cultural materials recovered from Structure E at Park's Mill cannot be directly attributed to the Park family (Al Bartovics Personal Communication 1983). The rest of the deposits may be less directly associated with the house, although where they originated cannot be determined. However, during analysis it was noted that there were no differences in the types of species identified at Feature 8 and the rest of the units. The main differences between the Feature 8 deposit and the rest of the deposits were in the numbers of species identified (MNI's), which were much higher in Feature 8 than in the sheet midden deposits. This was mainly due to the fact that Feature 8 was fine screened and the midden deposits were not. At the Toombs site it is impossible to say what if any percentage of the bone may be directly associated with the Toombs house, and even so there is little way to segregate possible Toombs house associated deposits from the rest of the material. Breitburg found no differences in the types of animal species present at the Hermitage mansion and the cabins on the site (Smith et al. 1976:258). However,

there may have been differences in portions of animals present at the mansion and the cabins that were not noted.

A second problem in recognizing status differences is that there are not any good comparable data for low status sites in the piedmont. Coupled with the problem of not being sure about the origins of the bone materials at the two Georgia sites, one is taxed to present any reliable interpretations on status indicators. Reitz has proposed that on the coast the presence of diverse species utilization tends to be an indicator of high status. The lowest diversity would be found among urban poor and the highest diversity among the rural affluent. The diversity for a wealthy urbanite might be quite similar to a poorer class of rural dwellers.

The consumption of mutton is also offered as a high status marker (Reitz 1983a). The presences of mutton probably does signify high status since sheep or goats appear not to have been common livestock. However, their absence cannot automatically be interpreted to indicate low economic levels. Sheep and goats were noted in Richard Parks probate inventory, but only one element was discovered during analysis. Joanne Bowen found at the Motts Farm in Rhode Island that although documents on the site indicated a high number of sheep present, few sheep were present in the faunal collection (Bowen 1975:18). Sheep were most abundant at the Millwood Plantation site, according to plantation records, during the period of 1850 to 1860. This falls within the

period of time when sheep breeding was becoming popular among many of the more innovative planters (Bonner 1965:142). A number of structures were excavated at the site with sheep occurring in several of these, although lesser quality cuts of meat were identified in some of the structures thought to be associated with tenant farmers or sharecroppers (Orser et al. 1982:635).

Although we know that the owners of the Toombs and Park's Mill sites were prosperous individuals, because of ambiguites concerning the zooarchaeological material we cannot be absolutely certain that the vertebrate remains are the direct remains of these individuals. Even if we were certain that the remains did belong to high status levels, there are no low economic sites in the area for comparison. Status determinations are uncertain and will have to remain so until more data are added from other sites for better comparative measures.

CHAPTER 7 CONCLUSIONS

The zooarchaeological analysis of data from the Toombs historic and the Park's Mill sites is the first of its kind for piedmont Georgia. The historical documentation was presented to demonstrate what was happening in the south and the United States during the nineteenth century when these sites were inhabited. The historical research I believe also shows that subsistence, as a somewhat mundane aspect of our lives, was often ignored or very casually mentioned in the literature. Traveler's accounts are one of the major sources to be consulted in dealing with what nineteenth century southerners, and specifically Georgians, were eating. This is a source that most historians regard as somewhat unreliable, but which had to be used in this instance. As stated earlier, with respect to southern diets, traveler's accounts are probably acceptable on a very general level, especially when one finds correlations among them and with other sources. Zooarchaeological data is important for filling in those lacunae in history and also for demonstrating erroneous facts in history that may have been taken as the truth.

Because there are no other piedmont Georgia sites to compare these two sites with and only one in South Carolina, no conclusive interpretations can be realistically expected at this point. Problems with the zooarchaelogical data, such as low sample size and inconsistencies in data recovery techniques, further complicate the issue. Nevertheless, a few tentative statements can be made.

It would appear that there were differences between the coastal and interior regions expressed in a preference for pork over beef. Almost all the literature expounds on this southern tradition of pork consumption, while coastal zooarchaeological evidence has shown a preference for beef. Probably the literature has mostly generalized about interior regional preferences and failed to note anomalies like the fact that coastal people had access to a somewhat different market.

Obviously, domesticated animals furnished the bulk of the meat diet for all Georgians, southerners, and Americans. Other sources, such as wild game and fish, supplemented the diets in varying degrees, depending on geographical location and economic level. In rural areas like Park 's Mill on the Oconee River, there probably was an abundance of aquatic life such as catfish (Ictalurus spp.), sucker (Catostomidae), and softshell turtles (Trionyx spp.), as well as terrestrial game like squirrel (Sciurus spp.) and opossum (Didelphis virginiana). These sources probably were a regular supplement to the diet in rural areas. However, in towns

like Washington, Georgia the diet was more restricted, depending more on domesticated animals, such as the cow, although wild terrestrials such as the opossum still provided a substantial portion of the supplemented meat. Fish, however, was served only rarely.

This points out a somewhat obvious, but nevertheless, often ignored fact among complex societies' subsistence patterns. Even at the level of civilization that the western world and specifically the United States had reached, humans still exploit the available resources of their area. The fish trap at Park's Mill is a good example of this. Hence, Higgs and Vita-Finzi's model of territorial analysis, based on catchment areas exploited by prehistoric and early agricultural groups (Higgs and Vita-Finzi 1972), probably can be applied on a somewhat modified plan to nineteenth century Georgians, South Carolinians or whomever. It would appear that variability in diet may have declined during the nineteenth century. At the same time, however, fresh meat became more available, thanks to the refrigerated transport systems and the capitalistic enterprises of North Americans. It has been demonstrated that diversity in the diet declined as humans adopted agriculture in place of hunting and gathering (Harris 1977:33-34). The intensification in food production that we have experienced in the last 150 years has probably moderated the variability of our diet even more. Although there is a wide variety of foods available in our groceries today, our economic means greatly limits our

purchasing power, particularly for urban dwellers. The tenant farmers and sharecroppers of the late nineteenth century and early twentieth century felt the tight vise grips of the intensification of the cotton and capitalistic economy more than anyone else. Their diet was probably the most restricted of any economic groups in southern history (Maclachlon 1932).

The Toombs site, because of its urban location and its later occupancy, presumably represents these changes toward a less diverse diet, concentrated primarily on beef, which had become more available during the later portion of the nineteenth century. Another trend of the times, which the Toombs site also seems to reflect, is the flourishing in the types of meat portions available. Sawed cuts of meat are almost totally absent at Park's Mill, but are abundant at the Toombs' site. This is partly a result of more available markets in an urban area, but also a reflection of the changing times (Stowe and Beecher 1971; Bushnell 1901). No longer so dependent on preserved meats, people could purchase, store, and prepare smaller cuts of meat. Views about meat cuts is a highly complex issue. As Americans departed from the frontier days and became submerged in industrialization, ideas about meat and how to prepare it changed. Causes and effects are difficult to separate out; it was all part of the intellectualization, industrialization, and capitalization processes that the

western world was experiencing. Whatever the causes, the effects can be seen on a small scale in Washington, Georgia.

Eric Ross points out in his discussion on the rise of beef production in the United States and its connection to agribusiness that diet trends have been and still are solidly related to "the place of the American economy within a larger mercantile system". He concludes that trends in beef and pork production were "not driven by sentiment or an invariant cultural logic but, just one of a number of alternative strategies, one with definite advantages under specific economic, ecological, and historical conditions" (Ross 1980: 215).

It is hoped that as more sites are analyzed in the piedmont we will be better able to assess the data from the Park's Mill and Toombs sites. More data, including botanical analysis, should provide a better understanding of the problems and topics presented in this study, as well as new insights on food patterns. How these findings fit into the social and economic developments of the century should provide a more comprehensive understanding of nineteenth century foodways.

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Appendix A

Park's Mill

List of Lot Numbers By Analytical Units

Analytical Unit	Lot Numbers			
Feature 7	225			
Feature 8	89	187	233	
	158	212	240	
	159	231	241	
	171	232	242	
Feature 9	8			
	9			
	14			
	253			
Feature 10	73			
	74			
	76			
Structure E - Interior Zone B	13	58	87	172
	28	59	88	179
	33	60	96	182
	34	61	97	197
	35	63	102	204
	44	66	104	205
	45	67	146	210
	46	69	161	228
	51	82	168	
Structure E - Interior Zone C	56	78	90	203
	57	83	99	229
	62	84	201	
Structure E - Interior Zone III (West Room)	92	107	183	
	97	163	218	
	98	180	223	
Structure E - Interior Zone IV	64	174	191	217
	80	181	192	220
	160	190	194	
Structure E - Ext. - Zone II (B)	18	40	54	111
	19	52	55	119
	31	53	101	125
Structure E - Ext. - Zone III (C)	103			
	122			
	254			

Appendix B

Toombs Site - List of Proveniences and Field Specimen Numbers

Structure A

FS# - 182, 200, 218, 263, 276

Structure B - Exterior

FS# - 341, 356, 365, 422, 463, 482, 499, 555, 562, 585, 611, 614, 745, 853

Structure B - Interior

FS# - 318, 391, 398, 399, 423, 634, 641, 646, 648, 652, 665, 668, 673, 674, 675, 680, 681, 684, 685, 686, 688, 691, 693, 695, 699, 706, 710, 711, 714, 715, 727, 728, 729, 730, 737, 729, 742, 743, 756, 762, 772, 774, 778, 792, 793, 794, 799, 801, 804, 812, 813, 814, 815, 816, 817, 819, 820, 821, 827, 829, 830, 831, 832, 833, 834, 835, 836, 838, 839, 840, 856, 858, 860, 863, 869, 872, 875, 876, 877, 879, 881, 882, 885, 886, 889, 890, 893

Structure C

FS# - 955, 956, 957, 967, 968, 970, 971, 972, 973, 976, 1001, 1004, 1019, 1024, 1026, 1035, 1065, 1096, 1120, 1140, 1211, 1412, 1429, 1493, 1528, 1587, 1650

Appendix B (Continued)

Toombs Site - List of Proveniences and Field Specimen Numbers

Structure D - Interior - East Room

FS# -	52E	114E	205E	279E	424E
	55E	116E	207E	283E	433E
	58E	117E	212E	284E	437E
	59E	118E	214E	290E	438E
	63E	119E	228E	294E	439E
	64E	120E	231E	297E	442E
	65E	121E	232E	300E	423E
	66E	127E	233E	303E	458E
	67E	130E	236E	310E	462E
	69E	132E	237E	311E	466E
	71E	134E	238E	316E	467E
	72E	135E	239E	317E	476E
	73E	136E	245E	342E	479E
	74E	143E	248E	347E	482E
	75E	144E	249E	372E	483E
	79E	146E	252E	375E	489E
	83E	149E	254E	377E	491E
	86E	152E	255E	387E	492E
	87E	158E	256E	388E	495E
	90E	174E	258E	390E	497E
	91E	175E	259E	395E	503E
	98E	176E	260E	397E	504E
	99E	180E	261E	404E	508E
	101E	181E	262E	406E	512E
	106E	187E	263E	412E	1575E
	107E	192E	266E	416E	1576E
	108E	195E	270E	417E	1561E
	109E	196E	271E	418E	1565E
	111E	198E	274E	419E	1567E
	113E	204E	277E	420E	

Appendix B (Continued)

Toombs Site - List of Proveniences and Field Specimen Numbers

Structure D - Interior - West Room

FS# -			
35	601	824	986
42	604	835	996
535	605	846	1003
540	609	847	1004
541	611	861	1005
542	618	862	1012
546	633	874	1018
548	637	879	1027
559	647	881	1032
561	648	882	1033
563	650	884	1040
565	652	885	1041
566	655	893	1044
569	658	903	1045
571	686	912	1046
572	687	913	1069
576	699	915	1072
590	714	916	1076
591	717	926	1084
592	732	959	1093
593	738	966	1095
589	771	968	1100
595	811	975	1110
598	813	976	1114
599	817	981	1121
600	818	985	

Structure D - Exterior

FS# -	
1362	1524
1371	1531
1379	1536
1380	1538
1401	1543
1438	1553
1443	1573
1461	1703
1480	1737
1487	1773
1495	1789
1503	1848
1521	1877

Appendix C

Park's Mill Lot's Containing Shell

Lot Number	Provenience
008	Feature 9
009	Feature 9
044	Structure E-Interior-Zone B
051	Structure E-Interior-Zone B
052	Structure E-Exterior-Zone II (B)
053	Structure E-Exterior-Zone II (B)
054	Structure E-Exterior-Zone II (B)
059	Structure E-Interior-Zone B
080	Structure E-Interior-Zone IV
087	Structure E-Interior-Zone B
088	Structure E-Interior-Zone B
089	Feature 8
097	Structure E-Interior-Zone B
098	Structure E-Interior-Zone C
122	Structure E-Exterior-Zone III (C)
161	Structure E-Interior-Zone B
190	Structure E-Interior-Zone IV
194	Structure E-Interior-Zone IV
201	Structure E-Interior-Zone C
210	Structure E-Interior-Zone B
233	Feature 8
241	Feature 8
253	Feature 9

Appendix D

Park's Mill, Summary of Bone Measurements*

(All measurements in millimeters)

RABBIT

Atlas

GL(mm)	GB(mm)
10.95	27.70

Scapula

GLP(mm)	SLC(mm)
9.00	4.45

Radius

Bp(mm)	Bd(mm)
5.45	5.65
	5.60

Ulna

BPC(mm)
5.05
5.25
5.35
5.45

Pelvis

LA(mm)
7.6

Tibia

Bp(mm)
13.15
13.50

SQUIRREL

Axis

H.(mm)	LA Pa(mm)
10.00	6.25

Appendix D

Park's Mill, Summary of Bone Measurements, continuation

(All measurements in millimeters)

SQUIRREL (continued)

Scapula

GLP (mm)	LG (mm)	BG (mm)
7.75	6.40	3.35
8.05	4.50	4.15

Humerus

GL (mm)	Bp (mm)	Bd (mm)	SD (mm)	GLP (mm)
10.08	41.50	7.45	3.0	6.55
10.09		7.65		
11.30		7.55		
10.90				
10.50				
10.45				
10.02				

Radius

GL (mm)	Bp (mm)	Bd (mm)
39.65	4.60	4.55
39.70	4.80	4.55
40.05	4.70	4.20
37.70	4.60	3.90
39.10	4.60	4.40
41.45	4.95	4.70
40.35	4.95	4.70
41.05	4.85	4.65
38.20	4.60	4.20
40.50	4.00	4.75
	4.70	4.55
	5.15	4.65
	4.95	5.00
	4.60	
	4.55	
	4.95	
	4.55	
	5.10	
	4.55	
	5.00	

Appendix D

Park's Mill, Summary of Bone Measurements, continuation

(All measurements in millimeters)

SQUIRREL (continued)

Ulna

GL(mm)	BPC(mm)	BPC(mm)(cont.)
50.01	3.70	3.70
50.02	3.70	3.65
48.10	4.40	3.90
48.30	3.65	3.95
46.80	3.40	4.25
47.95	3.30	3.70
	3.15	3.75
	3.80	3.80
	3.90	3.75
	3.75	

Pelvis

LAR(mm)	SH(mm)	SB(mm)
7.15	5.00	3.40

Femur

GL(mm)	Bp(mm)	Bd(mm)	SD(mm)
53.55	9.20	9.50	4.80
54.15	10.95	9.65	4.15
	10.06		
	10.90		

Tibia

Bd(mm)
5.55
5.70
6.00
5.75
6.20

Calcaneus

GL(mm)	GB(mm)
23.55	2.80

Appendix D

Park's Mill, Summary of Bone Measurements, continuation

(All measurements in millimeters)

PIG

Humerus

BD(mm)
37.50

Radius

Bp(mm)	Bd(mm)
28.50	
28.25	

Metatarsal II or IV

Bp(mm)
6.00

Metatarsal III

Bp(mm)
24.00
15.30

Metapodial II or IV

GL(mm)	Bp(mm)	Bd(mm)
54.60	9.75	5.10

Phalanx II

GL(mm)	Bp(mm)	Bd(mm)	SD(mm)
26.50	16.80	16.15	14.00

Proximal phalange

GL(mm)	Bp(mm)	Bd(mm)	SD(mm)
36.60	16.40	16.00	13.75
39.05	15.95	14.15	
49.35	21.10	18.85	17.20
37.00	17.05	14.75	13.00
34.00	21.10	16.90	14.85
21.01	9.40	7.20	6.30

Appendix D

Park's Mill, Summary of Bone Measurements, continuation

(All measurements in millimeters)

PIG (continued)

Middle phalange

GL(mm)	Bp(mm)	Bd(mm)	SD(mm)
23.00	16.15	14.10	13.25
20.70	15.60	15.30	12.80
26.05	15.35	14.55	13.90
14.90	10.01	9.55	9.70
23.55	15.80	9.75	14.50
14.01	10.02	8.05	8.80
12.20	8.95	6.45	7.20
9.15	7.45		6.20

Distal phalange

DLS(mm)	MBS(mm)	Ld(mm)
27.80	9.90	27.90
14.75	5.50	14.95
14.30	5.70	14.55
14.35	5.45	13.15
13.00	5.55	12.05
14.65	6.80	13.40
13.00	4.85	12.45
10.08	4.70	9.65
15.50	7.85	16.50
13.40	7.00	14.60
25.40	7.15	12.85
23.35	12.25	25.10
14.70	9.45	22.80
10.35	7.30	12.20
25.75	4.70	9.80
29.10	8.80	25.70
28.10	12.20	30.05
	11.90	25.85

M^3 (tooth)

Length(mm)	Breadth(mm)
24.75	20.10
34.95	

Appendix D

Park's Mill, Summary of Bone Measurements, continuation

(All measurements in millimeters)

COW

Patella

GB (mm)
57.60

DUCK

Carpometacarpus

Bp (mm)
13.90

MALLARD

Scapula

Dic (mm)
12.15

TURKEY

Radius

Did (mm)
12.05

CHICKEN

Humerus

GL (mm)	Bp (mm)	Sc (mm)	Bd (mm)
67.25	18.35	6.85	14.45

Radius

GL (mm)	Sc (mm)	Bd (mm)
59.55	2.90	5.15
64.45	2.9	5.50
	3.2	

Carpometacarpus

GL (mm)	Bp (mm)	Did (mm)
37.50	10.09	6.50
42.85	12.35	

Appendix D

Park's Mill, Summary of Bone Measurements, continuation

(All measurements in millimeters)

CHICKEN (continued)

Ulna

Did(mm)
10.80

BOBWHITE

Femur

GL(mm)	Bp(mm)	Bd(mm)	Sc(mm)	Dd(mm)
41.75	7.15	6.90	3.00	
		7.00		5.90

MORNING DOVE

Tibiotarsus

GL(mm)	Dip(mm)	Dd(mm)
39.15	6.15	4.85

Femur

Bd(mm)
4.75

Tarsometatarsus

GL(mm)	Bp(mm)	Bd(mm)	Sc(mm)
22.45	4.90	5.20	2.15

BASS

Atlas

Maximum breadth - 11.10

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*Following Von den Driesch (1976)

Appendix E

Toombs Site, Summary of Bone Measurements*

(All measurements in millimeters)

OPOSSUM

Scapula

GLP(mm)	HS(mm)	SLC(mm)
13.85	60.08	13.70

SQUIRREL

Femur

GL(mm)	GLC(mm)	BTr(mm)	Bp(mm)	SD(mm)
54.2	53.6	10.7	10.1 10.9	4.2

DC(mm)	Bd(mm)
5.5 5.5	10.2

BLACK SQUIRREL

Femur

GL(mm)	Bp(mm)	Bd(mm)	DC(mm)
53.30	10.07	10.00	5.65

HORSE, MULE

Metapodial

Bd(mm)
50.50

DEER

Tibia

Bp(mm)
42.90

Humerus

Bd(mm)
31.40

COW

Metatarsal

Gl(mm)	Bd(mm)	SD(mm)
22.10	50.00	24.90

Appendix E

Toombs Site, Summary of Bone Measurements*, continuation

(All measurements in millimeters)

TURKEY

Carpometacarpus

Bp(mm)
20.00

Femur

SC(mm)	Bd(mm)	Dd(mm)
8.65	23.70	
9.60	22.00	16.50

Tibiotarsus

Dip(mm)
20.00

CHICKEN

Mandible

Gl(mm)	LaF(mm)	LS(mm)
63.60	57.80	10.00

Scapula

GL(mm)	Dic(mm)
57.70	12.10
	13.70
	14.60

Coracoid

GL(mm)	Lm(mm)	Bf(mm)	Bb(mm)
70.60	57.60	13.20	16.00
64.50	60.00	16.40	10.10
66.90	63.50	13.70	
57.95	55.05		

Appendix E

Toombs Site, Summary of Bone Measurements*, continuation

(All measurements in millimeters)

CHICKEN (continued)

Humerus

GL (mm)	Bp (mm)	SC (mm)	Bd (mm)
105.70	26.00	10.70	20.70
74.80	21.40	7.00	15.55
72.85	23.25	7.10	15.75
79.50	22.55	8.45	17.60
	18.90		
62.40			

Ulna

GL (mm)	Did (mm)
73.25	10.02

Radius

GL (mm)	SC (mm)	Bd (mm)
78.50	3.90	7.80

Carpometacarpus

GL (mm)	Bp (mm)	Did (mm)
37.85	11.75	7.85
49.30	14.80	8.70
41.30	11.90	16.90

Femur

GL (mm)	Lm (mm)	Bp (mm)	Dp (mm)	SC (mm)
75.50	70.60	15.80	11.20	7.10
92.50	85.40	19.80		8.90
		15.70	11.70	

Bd (mm)	Dd (mm)
13.20	13.20
18.90	15.00

Appendix E

Toombs Site, Summary of Bone Measurements*, continuation

(All measurements in millimeters)

CHICKEN (continued)

Tibiotarsus

GL(mm)	La(mm)	Dip(mm)	SC(mm)	Bd(mm)
122.40	118.00	20.00	7.56	12.80
116.70	112.00	11.30		
		13.75		

Dd(mm)
13.40
12.20

Tarsometatarsus

GL(mm)	Bp(mm)	SC(mm)	Bd(mm)
85.80	15.45	7.50	14.50
93.30	15.85		16.20
93.55	16.10		16.80
	16.10		

BOBWHITE

Humerus

GL(mm)	Bp(mm)	SC(mm)	Bd(mm)
37.05		3.40	7.10
35.10	9.10	3.10	6.50
	9.50		

Femur

GL(mm)	Bp(mm)	LM(mm)	Dp(mm)	SC(mm)
40.00	6.70	38.40	4.20	2.80
39.80	6.40	37.90	5.50	2.50

Bd(mm)	Dd(mm)
6.50	5.10
6.00	5.90

Tibiotarsus

GL(mm)	Dip(mm)	SC(mm)	La(mm)	Bd(mm)
54.20	6.80	2.40	53.10	4.80
	8.30			

Dd(mm)
5.00

Appendix E

Toombs Site, Summary of Bone Measurements*, continuation

(All measurements in millimeters)

PIGEON

Ulna

GL(mm)	Bp(mm)	Did(mm)	SC(mm)
54.55		7.20	
53.20	7.00	8.70	3.60
53.00	6.70	8.60	3.40

*Following Von den Driesch 1976