Tilling the Earth

Georgia's Historic Agricultural Heritage
A Context

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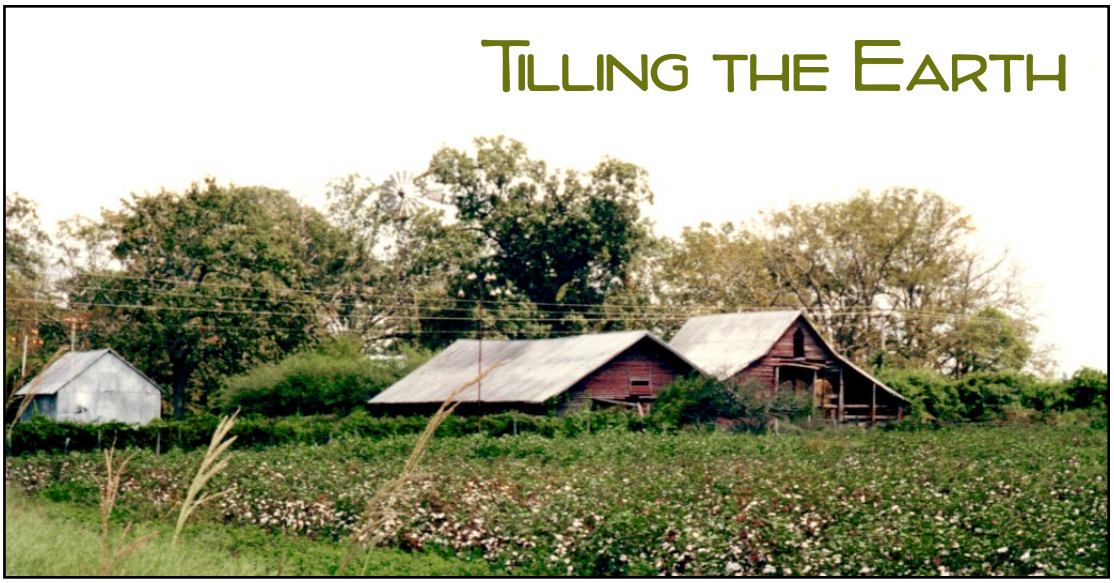

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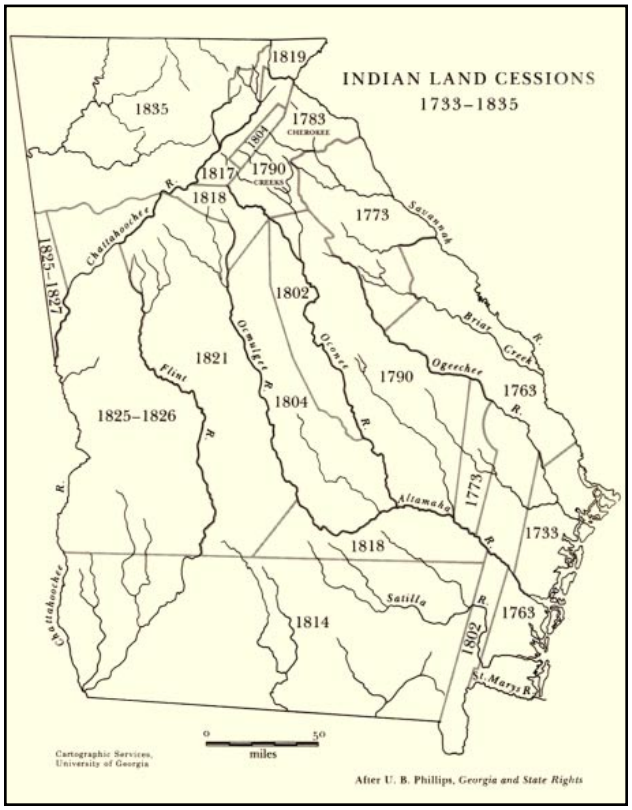
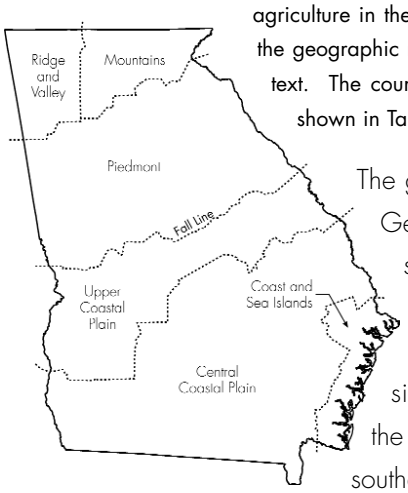
I. Introduction

Since its beginnings, Georgia's history has been an agricultural history. Native Americans, the state's first residents, are believed to have developed horticulture about 3,000 years ago and by the time of European contact had created complex societies whose existence was based largely on the agricultural production of their village fields and farms. The agricultural bounty of the region was one of the aspects touted in journals and other promotional literature of the Colonial period and was the primary lure that drew immigrants to the colony. A series of land annexations and expansions would draw successive waves of settlers and their servants with the promise of agriculturally productive lands. Georgia's industrial origins were tied to agriculture as textile mills moved south to gain proximity to cotton fields (Gregg 1845). Cities and towns grew primarily as points of trans-shipment where agricultural produce was brought, packed, and sent on to market. By the later 19th century railroads would connect cities and towns in an effort to move this agricultural bounty more efficiently, and by the 20th century roads would follow the railroads and trucks would take on some of the task of moving the state's crops. While it may not now be evident, much of the state's current physical character can be traced to this agrarian past.

Georgia grew through a series of land grants and acquisitions, and this figure shows the state's development over time. Source: Coleman (1991).



Environment and geography influenced agriculture in the state. This map shows the geographic regions used in this context. The counties in each region are shown in Table I in Section V.



The geographical size of Georgia, the largest state east of the Mississippi, and the environmental diversity expressed from the Atlantic shore at the southeastern edge of the state, to the inner Gulf plain to the west, to the heart of the Appalachian mountains on the State's northern edge, when coupled with a population which drew its origins from across Europe and the Americas as well as Africa, produced a complex agricultural mosaic on the land. Our discussion of the state's agricultural heritage is rooted in its geography, dividing the state into six regions: the Ridge and Valley, Mountains, Piedmont, Upper Coastal Plan, Central Coastal Plan, and Sea Islands and Coast. Understanding the cultural manifestations of this agrarian past is the objective of this context. Agricultural sites consist of three components: below-ground - the archaeological evidences of earlier occupants and structures no longer standing; above-ground - the dwellings, barns, and outbuildings which contribute much of what we think of as agricultural sites today; and the ground itself - the remnants of a cultural landscape expressed in

the locations of fields, orchards, and other human imprints.

This historical context for agriculture in Georgia was prepared with funding provided by the Georgia Department of Transportation (DOT), in cooperation with the Federal Highway Administration (FHWA), and the Georgia Historic Preservation Division (HPD) of the Department of Natural Resources (the State Historic Preservation Office or SHPO). It represents a collaborative effort by the DOT, the HPD, the FHWA and New South Associates to examine Georgia's agrarian history, identify the types of resources – historic structures, archaeological remains, and landscapes – associated with this history, and to provide recommendations on the assessment of agrarian resources for nomination to the National Register of Historic Places. This study is a result of primary research undertaken by New South Associates coupled with the input and recommendations of the SHPO and DOT as developed during a series of meetings in which various topics were analyzed and discussed. Representatives of the Federal Highway Administration also attended and participated in some of these meetings. The result is a study guide whose intent is to help the user understand the agrarian past, accurately record its vestiges, and evaluate their significance within a regional and historical context.

Given the expansiveness with which agriculture covered the state, it is not surprising that evidence of this past is all around us - for archaeological sites, historic properties, and rural landscapes, agriculture is one of the, if not the, most common category of resources. However, because these resources are, or were, common, there is a tendency to undervalue them. When identified through cultural resource surveys conducted to assess the impacts of proposed federally sponsored, aided, or administered undertakings, agricultural sites are routinely deemed insignificant. And yet while the agrarian past is a familiar past, for those of us born in the post World War II era which signaled a shift away from agriculture, this is still a foreign past, and as we enter the next millennium it is evident that agricultural sites will become less common and that our understanding of agriculture will become less clear. This is a critical juncture; the time to look at the agrarian past and recognize what is both familiar and foreign.

This duality within agricultural sites - their familiarity and foreignness - is most notable when attempting to evaluate their significance for nomination to the National Register of Historic Places. On the one hand, agricultural sites can be argued to be mundane properties incapable of fulfilling the requirements of either Criteria A, B, C, or D. On another, agricultural sites embody and exemplify the most significant element of Georgia's history, and hence could all be argued eligible. Somewhere between these extremes lies reality. This context attempts to determine where.

Section II provides a brief overview of Georgia's agricultural history. This overview is intended to be a point of origination for understanding Georgia's agrarian past, but the pertinent source material source should be sought for a more comprehensive understanding of this past as well as a more detailed discussion of particular elements. Section III provides a discussion of agricultural types. Typology is a key element of any context since its establishes the parameters and contents of the study universe. The typology presented here attempts to address both the emic and etic aspects of agricultural sites, what was present, and what is present, and how these resources are and were classified.

Section IV provides an overview of agricultural landscapes including a discussion and description of the various building types found on farms and plantations. Section V presents the architectural inventory of agricul-

tural properties in the state, while Section VI presents the archaeological inventory. These sections look at what is known and recorded for historical agricultural sites both in the historic structure files and in the archaeological site files for Georgia. Pulling historic context, typology, and inventory together, Section VII discusses the National Register of Historic Places eligibility of agricultural resources. This section provides recommendations and guidance for evaluating resources, looking at both resource management issues (what is common and what is rare within the state's agricultural inventory) as well as research issues (what is known and what is unknown about the agrarian past) which are the twin engines driving resource evaluations. This last chapter also provides guidance on sources for future research as well as data collection strategies.

For much of our history, agriculture defined life in Georgia. Here members of the William Pickens family pose in front of their log barn in Gwinnett County, ca. 1889-90. Courtesy, Georgia Department of Archives and History.

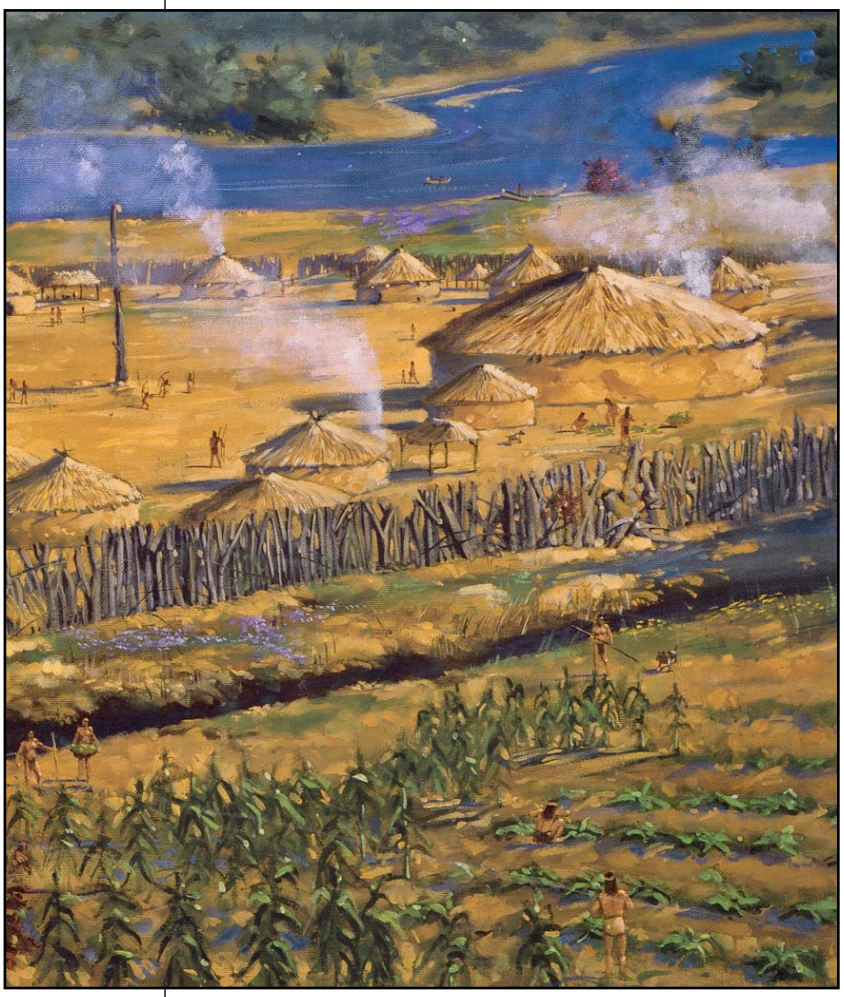
II. An Agricultural Overview of Georgia

The First Agriculturalists

The first agriculturists in the state of Georgia were its Native American inhabitants. In portions of the Southeast, Native Americans began practicing some limited agriculture by planting squash perhaps as early as 1000 BC (Hudson 1976). Plants such as maygrass and sunflower have been found in Georgia at a date of around 450 BC (Raymer et al. 1997), probably reflecting a horticultural level of planting. Archaeological evidence for cultivating squash in Georgia has been found as early as 80 AD in the Middle Chattahoochee River Valley (Cantley and Joseph 1991) and about 100 AD on Brasstown Creek in Towns County (Raymer et al. 1997). A shift from small, widely dispersed settlements to fewer, larger villages in or near floodplains was due to an increased focus on agriculture. By the time this shift in settlement location was complete, after AD 1150 (Sassaman et al. 1990) Native Americans were clearly practicing maize agriculture. It was about this time that they began cultivating beans as well. Other plants included sunflower, sumpweed, chenopodium, pigweed, knotweed, giant ragweed, and canary grass (Hudson 1976).

The primary Native American crop, maize, is a crop that can quickly deplete the soil's nutrients, but Southeastern Indians relied on agriculture only for part of their food. They obtained a large proportion of their food by hunting, fishing, and gathering wild edible plants. Therefore, their need for agricultural lands was not as great as it would have been if they had relied primarily on agriculture. This may be part of the reason that their fields did not become quickly exhausted. Also, since rivers would periodically flood, the backwater areas would receive a deposit of silt that would help rejuvenate the soils. The fields were initially cleared by girdling the large trees with rings cut into the bark using stone axes. The trees would die and they were either burned or left to rot with crops planted around them. Fields that had been used the year before had to be cleared in the spring of weeds and cane (Hudson 1976).

This artist's conception of Native American life at the Rucker's Bottom site, Georgia, shows the development of villages adjoining fields in the floodplain of the Savannah River. From *Beneath These Waters* by Sharyn Kane and Richard Keeton, National Park Service (1993).



Because suitable soil for riverine agriculture was scarce the Indians developed a strategy designed to give maximum yield from relatively small fields. They accomplished this through intercropping and multiple cropping. Intercropping consisted of planting several types of vegetables together in the same field while multiple cropping consisted of planting two successive crops on the same field in one season. One of the most common strategies for intercropping was growing corn, beans, and squash together. The beans could use the corn stalks for climbing and the squash could be planted between hills of corn and beans (Hudson 1976).

When Europeans began to settle the Georgia area, Native Americans adopted some of the plants introduced to them. They began planting orchards of fig and peach trees and also planted melons and other crops (Hudson 1976). As agriculture became more important to Native Americans their primary settlements were villages established on the terraces of major creeks and rivers. Buildings in these villages and ceremonies reflected the increased focus on planting. Typically, villages had public buildings for storing crops, such as granaries for maize and beans. Ceremonies relating to foods or crops, such as the Green Corn Ceremony, were universal among southeastern Indians and were celebrated with only small variations from group to group. The Green Corn Ceremony coincided with the ripening of the crop of late corn, which would provide them with the necessary food to carry them through the winter months. With increased European contact, the importance of this ceremony dwindled and finally died out entirely (Hudson 1976).

William Bartram visited the Indian inhabitants of the Carolinas, Georgia and Florida during his travels in the 1770s. He noted that:

An Indian town is generally so situated, as to be convenient for procuring game, secure from sudden invasion, having a large district of excellent arable land adjoining, or in its vicinity, if possible on an isthmus betwixt two waters, or where the doubling of a river forms a peninsula. Such a situation generally comprises a sufficient body of excellent land for planting Corn, Potatoes, Beans, Squash, Pumpkins, Citrus, Melons, &c. And is taken in with a small expence and trouble of fencing, to secure the crops from the invasion of predatory animals. . . This is their common plantation, and the whole town plant in one vast field together; but yet the part or share of every individual family or habitation, is separated from the next adjoining, by a narrow strip, or verge of grass, or any other natural or artificial boundary … After the feast of the busk is over, and all the grain is ripe, the whole town again assemble, and every man carries off the fruits of his labour, from the part first allotted to him, which he deposits in his own granary; which is individually his own. But previous to their carrying off their crops from the field, there is a large crib or granary, erected in the plantation, which is called the king's crib; and to this each family carries and deposits a certain quantity, . . . supplied by a few and voluntary contributions, and to which every citizen has the right of free and equal access, when his own private stores are consumed; to assist neighbouring towns, whose crops may have failed; accommodate strangers, or travellers; afford provisions or supplies, when they go forth on hostile expeditions; and for all other exigencies of the state: and this treasure is at the disposal of the king or mico;… to have an exclusive right and ability in a community to distribute comfort and blessings to the necessitous (Van Doren 1955: 400-401).

1730-1750:
The Trustees' Search for Staple Crops

The Spanish missions of the Georgia coast were impermanent settlements aimed at religious conversion, which appear to have had no influence on the state's agricultural development. The first permanent Europeans in Georgia settled near the mouth of the Savannah River and in other coastal areas. This area was the first region to be cultivated by European settlers and was defined by the original Indian cession made in 1733. This consisted of a narrow belt along the coast less than 30 miles wide from the Savannah River to the Altamaha River including the Sea Island (Bonner 1964). The labor force used to work the agricultural fields during this early period consisted of poor, free and indentured Europeans instead of enslaved Africans who were used in neighboring South Carolina. These laborers worked to produce the two staples most seriously considered by the Trustees, wine and silk for the independent landowners (Coleman 1976). In their search for profitable crops a "Trustee's Garden" was laid out in Savannah. It consisted of a 10-acre area containing a wide variety of soils. Because of Georgia's warm environment, exotic plants were cultivated consisting of oranges, olives, apples, pears, figs, vines, pomegranates, cotton, coffee, tea, bamboo, and also palma christi and other medicinal plants. Of all the experiments in exotic productions, silk appeared to offer the greatest promise and winemaking was also considered (Bonner 1964:13).

The Trustees were apparently not aware of or ignored the failure of older Southern colonies in the production of silk. The argument for producing silk was that little male labor was required, and that the work could be performed by women, children, and could be used to employ the Indians. The advantages were seen to be that, in comparison to Italy which produced most of the silk, Georgia wages would be lower and that the land was cheaper to rent. For twenty years, the inhabitants of Georgia were encouraged to produce silk. Two filatures were eventually established in Savannah and Ebenezer. Also, the Trustees paid producers high prices for the silk and offered special bounties. They encouraged the planting of Mulberry trees and, in fact, required every grantee to plant at least 2,000 of these trees for every 500 acres granted. On every 100 acres at least 1,000 trees were to be planted. By 1740 these requirements were reduced, but for every four male slaves, one female slave had to be sent to Savannah for instruction in the silk industry (Gray 1933:186-187).

Winemaking was attempted early in the settlement of Georgia. A quantity of Malmsey and other varieties of wine-producing grapes were sent from Madeira to the Colony and several foreign vignerons were also brought in to start experimental vineyards. One of them imported Oporto and Malga vines and other varieties and set up one of the experimental vineyards. He asked the Trustees to lend him 200 sterling to assist in setting up his garden. He promised that within three years he would have 40,000 vines growing which he could then sell to colonists. Although the Trustees agreed, they never carried out the arrangement (Gray 1933:190).

The Trustees were not particularly interested in cattle raising, but it was considered to be one of the easiest occupations since it required little effort from the herdsmen. The hardest work would be branding and slaughtering and much of the cattle could be kept on ungranted lands. Colonists commented on the shortage of dairy products and a lot of this shortage was due to the inferior small breed of milk cows (Coleman 1976:122). The extensive pinelands in the Coastal Plain, which were considered agriculturally inferior, were primarily used for cattle range. Hogs ate young pine shoots, but in general the region was considered more favorable for cattle (Gray 1933:139). The Salzburgers at Ebenezer had "great

herds of cattle" and the Trustees maintained a large herd in a cowpen at the town. In 1776 there was a list of large cattle ranches between the upper Ogeechee and the Savannah rivers which showed herds ranging from 1,500 to 6,000 head (Gray 1933:149). In the plantation districts, where the production of stock for exportation to the West Indies was prominent, it was not uncommon for there to be a herd of 1,000 head of cattle on a single plantation (Gray 1933:150).

It was impossible to develop the lumber and naval stores industries on a large scale because of the shortage of capital and labor as well as the early land policy which did not allow for the granting of more than 500 acres to one person (Coleman 1976:128). One of the goals of the founders of Georgia was to prepare potash from lumber to take the place of large British imports from Russia. Potash is a potassium salt that is used as fertilizer as well as in the production of other products such as soap. However, it was found to be more profitable to ship barrel staves and heading, shingles, and dimension lumber to the West Indies. This was the primary focus of the lumber industry rather than the production of tar, pitch, and turpentine. The introduction of slaves into Georgia in the 1750s and the relaxation of the 500-acre land limit increased the importance of the lumber industry. The exportation of tar, pitch, and turpentine never amounted to more than a few hundred barrels during this time (Gray 1933:158).

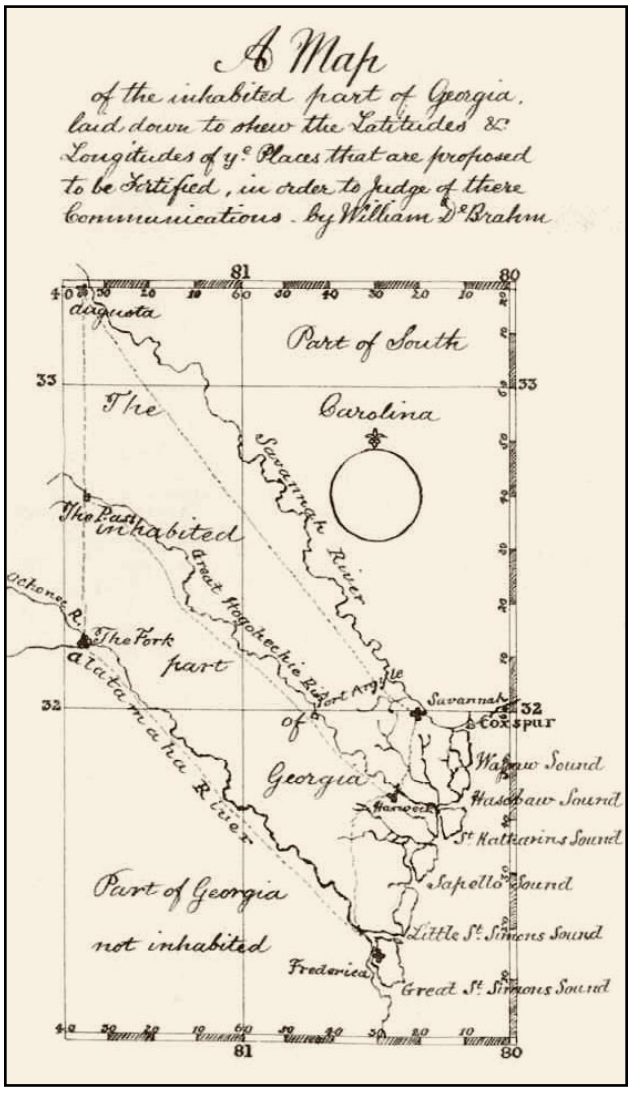
Most of the farms prior to 1750 were small and also produced subsistence crops. Corn was grown in large quantities, but not as a profit-making crop. It was grown for local use as food for humans and livestock. However, because many of the settlers were not experienced farmers there were food shortages. Had it not been for the Trustees' store from which they were fed, many would have gone hungry, if not starved. By the late 1730s enough crops were being grown to feed most of the settlers, and for the first time in 1738 the people at Ebenezer township produced enough to have a small surplus to sell or feed their livestock. However, as late as 1741 the inhabitants of Darien and Frederica were still depending on the Trust for food, and by the following year many of them had left the settlements (Bonner 1964; Coleman 1976). Crops grown for food consisted of corn, Indian peas, potatoes, rice, and garden vegetables (Coleman 1976:118). Founded as an outpost in 1735, Augusta was in a relatively thriving condition in regard to subsistence crops. The town had 40 families, a garrison of 20 soldiers, and three trading houses that employed 500 horses in trade with the Indians. The town never experimented with exotic plants, but primarily grew corn, small grains, and livestock (Bonner 1964:22).

A number of the early colonists were not happy with their land grants, as the Trustees had provided many of them with sandy, unproductive, land. Since they were unable to sell their grants, some of them simply abandoned these tracts and moved into the interior (Crawford 1988). During this early period when no more than 500 acres were granted and slavery was illegal, farms were small single family operations with a dwelling house and perhaps a barn and several sheds. As with early settlements in other neighboring colonies, early land grants were most likely to be found on high ground adjacent to deep, navigable creeks or rivers, which provided the main transportation routes of the colony (South and Hartley 1980).

1750-1785: The Establishment of Plantation Slavery

The yields on staple crops were disappointing for the Trustees and there was not enough being produced to form the basis for extensive trade. Because indentured

servants were sparse in supply and because they were poor field workers, the ban on slaves was dropped by 1750. Larger tracts of land were being sold as well because the Trustees dropped their 500-acre limit. As a result, wealthy landowners from South Carolina began to buy up lands along the Savannah River and Georgia became a slave state (Coleman 1976; Smith 1985). By this time, the colony of Georgia was spread out along the coast from Savannah to Darien and up the Savannah River to Augusta.



DeBrahm's Map shows the inhabited portion of the state in 1756.

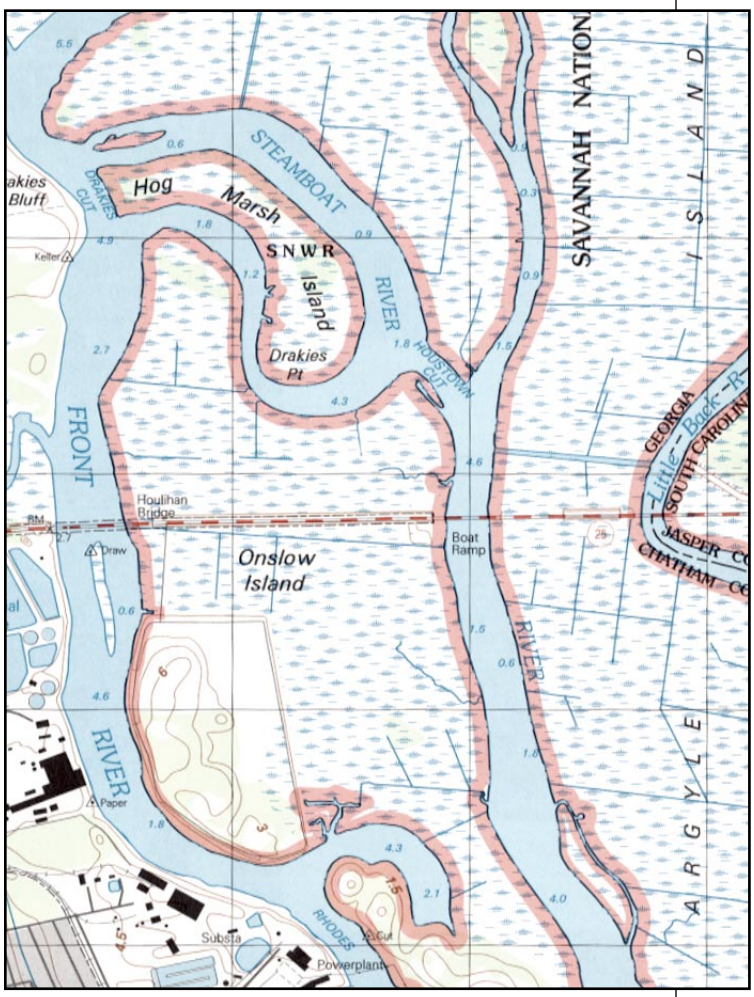
In the 1770s Bartram noted the denser concentration of planters along the coastal rivers which were used in the production of rice and the sparsity of inhabitants of the Sea Isles:

> *It may be a subject worthy of some inquiry, why those fine islands, on the coast of Georgia, are so thinly inhabited; though perhaps Amelia may in some degree plead exemption, as it is a very fertile island, on the north border of East Florida, and at the capes of St. Mary, the finest harbour in this new colony. If I should give my opinion, the following seem to be the most probable reasons: the greatest part of these are as yet the property of a few wealthy planters, who having their residence on the continent, where lands on the large rivers, as Savanna, Ogeeche, Alatamaha, St. Ille, and others, are of a nature and quality adapted to the growth of rice, which the planters chiefly rely upon for obtaining ready cash, and purchasing family articles; they settle a few poor families on their insular estates, who rear stocks of horned cattle, horses, swine, and poultry, and protect the game for their proprietors. The inhabitants of these islands also lie open to the invasion and ravages of pirates, and, in case of a war, to incursions from their enemies armed vessels; in which case they must either remove with their families and effect to the main, or be stripped of all their moveables, and their houses laid in ruins (Van Doren 1955:77-78).*

With the legalization of slavery and change in the land granting policy, planters and slaves changed the coastal plain lands, which were virtually useless to the first colonists, into formidable units of production. Plantation agriculture offered exceptional financial returns to those with the capital and labor needed to harness the land.

This was particularly the case with rice agriculture. The conversion of swamplands into rice fields required the construction of massive earthen dikes and ditches and the building of wooden trunks that would allow the tidal flow of the rivers be harnessed to flood and drain the enclosed rice fields. The magnitude of this construction was such that remnants of the tidal rice plantation dikes and ditches are still recorded on USGS topographic maps of coastal Georgia.

The presence of rice plantations along the rivers near the coast is still shown by the appearance of rice dikes and ditches, recorded here on the current Port Wentworth USGS 1:24,000 scale quad map.



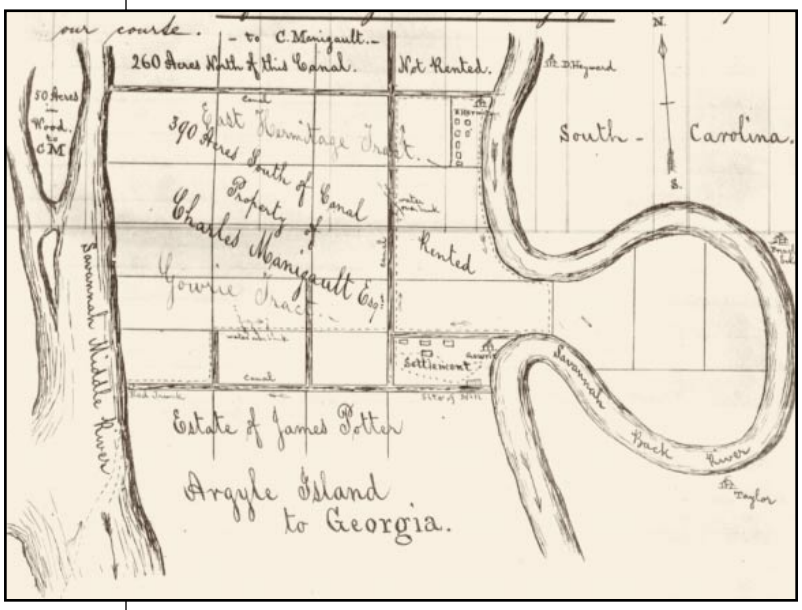
Swamps along rivers and streams were made into large expanses of rice lands. The upland oak and hickory forests were cleared for growing provision crops for the plantation's inhabitants and some indigo, and the pine barrens supplied pine lumber for plantation buildings and fences. In the winter months when agricultural activities were at a low, lumber was cut into barrel staves and shingles (Stewart 1988:231-232). After the official introduction of slavery into Georgia, the population increased rapidly from 1,700 whites and 420 blacks in 1751 to 9,900 whites and 7,800 blacks in 1766 (Bonner 1964:9; Federal Writers Project 1938:316).

With the introduction of slavery, many planters from South Carolina and their slaves began developing rice plantations along the Savannah River. It is likely that much of the knowledge of rice as a crop, and the technology needed to establish rice fields, dikes, and ditches, came to the New World from Africa (Carney 1996). It was at this time that the method of using tidal flow for the cultivation of rice was introduced in South Carolina. Before that time, rice and indigo were planted and grown in inland swamps or in upland fields (Smith 1985). Of course, tidal rice agriculture was restricted to the coastal area where the ebb and flow of ocean tides could be used to flood and drain the fields using salt-free tidally influenced water. Tidal rice growing was much more efficient than inland swamp agriculture because the water was more easily controlled. In the inland swamps prolonged drought limited the amount of flood water and heavy rains upstream could break a dam and wash out the fields. In addition, inland and upland rice cultivation exhausted the soil whereas tidal sites were constantly being nourished by alluvial materials from the river. Therefore, inland swamp and upland rice agriculture was almost completely abandoned for tidal rice cultivation (Hilliard 1975:58).

The initial outlay of labor for tidal rice culture was great since it required that a system of dikes, canals, and gates or trunks be constructed in the swamps along the banks of the rivers. It was estimated that 40 slaves and 200 acres of suitable swamp land, in addition to tools, equipment for cleaning and processing the rice, and food for the upkeep of the workers for a year were necessary to begin such an enterprise (Bonner 1964:17). Many established South Carolina planters began rice plantations in Georgia on the Savannah River since they were best equipped for this labor and financial outlay (Smith 1985).

Although tidal rice agriculture was begun as early as 1758 on Winyah Bay in South Carolina, the great shift did not occur until after the American Revolution. However there was evidently considerable use of these tidal swamp lands in Georgia before the Revolution since in 1771 James Habersham noted that tide swamp plantations had not suffered as heavily from devastating floods as had the river swamp plantations above tidewater (Gray 1933:279). Joyce Chaplin (1992) believes that the Revolution spurred on this change to tidal culture because of a desire to adopt new techniques which would restore the plantation system and bring on "better times". Eventually, there were rice plantations all along the tidally influenced areas of the Savannah, Ogeechee, Altamaha, Satilla, and St. Mary's rivers (Stewart 1988:235).

The layout of rice plantations varied, dependent upon the acreage involved and the disposition of the land. Tidal rice plantations were by nature built along the rivers within 15 miles of the coast which were affected by the tide. Swampland was converted to rice fields, and high ground for settlement, livestock, and other crops. The extent and diversity of the latter depended to a large degree on the amount of high ground contained within the plantation. For example, settlement of Charles Manigault's plantations on Argyle Island, just north of Savannah, was very compact, with the overseer's house, slave settlement, and rice mill all clustered in a small area near the Savannah Back River. This area is shown on an 1867 plat of the plantation. This same area, including the settlement location, appears entirely as swamp land on the current USGS map (see figure on page 9), with the "canal" connecting the back and middle Savannah Rivers still recognizable just above the Houlihan Bridge, as well as the rice ditches extending from the canal.

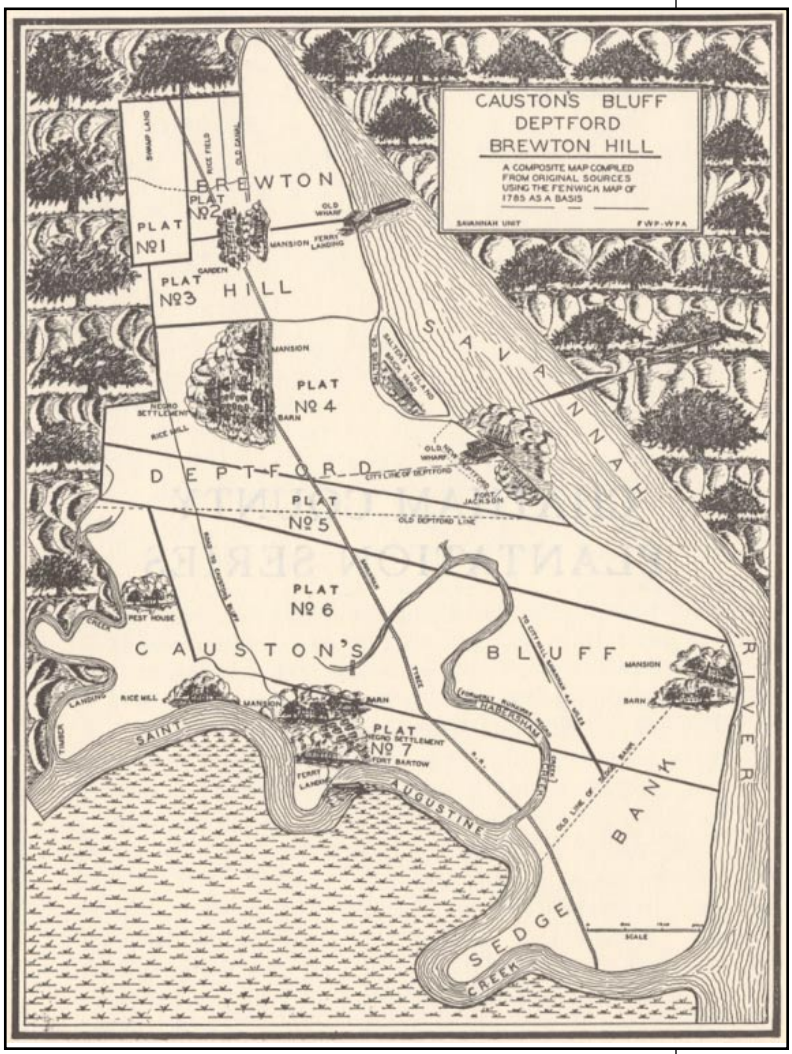


This 1867 plat of Charles Manigault's plantation on Argyle Island reflects a compact settlement as the swampy environment of the plantation offered little high ground for habitation.

Elsewhere, tidal rice plantation settlement was more dispersed. A plat showing the primary features at Causton's Bluff, Deptford, and Brewton Hill plantations, three related properties on the Savannah River south of Savannah, show main houses located on high ground, often along the river, with slave settlements and agricultural outbuildings (barns etc.) located a discrete distance away. Rice

mills are shown at a further distance (presumably near the fields themselves) at Causton's Bluff and Deptford, while Deptford also possessed a brickyard located on a small island in the Savannah River. Causton's Bluff also had a Pest House, located well away from the plantation, where diseased and ill slaves would be sent. Settled by Thomas Causton in 1733, Causton's Bluff contained a large garden and orchard, a vineyard, 200 head of cattle, and a mulberry plantation that was identified in 1741 as the fourth largest in the colony. It was noted that "[t]his obvious prosperity… was in decided contrast to the poor condition of many of the plantations along the Savannah River, where most of the lands were tidewater acreage suitable only for rice production" (Granger 1947:6). Even within a particular agriculture type, such as rice plantations, there was considerable variation due to the environment.

This plat of Causton's Bluff, Deptford, and Brewton Hall plantations shows the distribution of rice plantation features ca. 1783. Granger (1983).



While not as important as it was in South Carolina, Florida, or the West Indies, indigo was grown with limited success in Georgia. Since it was planted in the uplands and during the off-season for rice, it complemented rice agriculture well. The abrupt decline in rice prices during the 1740s resulted in an increase in the production of indigo. By 1750 the crop was well established on the Sea Islands and along the Ogeechee River. From the Trustee's point of view, the main problem with cultivating indigo is that it cut down on the production of subsistence crops which were vital to the fledgling colony. It also tended to exhaust the soil after a few years of planting which also interfered with subsistence crop production (Bonner 1964). The production of indigo was no longer profitable during and after the American Revolution since the British bounty had ended (Stewart 1988:241). With the prevalence of tidal rice agriculture, which increased per acre yields, indigo was virtually abandoned since it never recovered from the effects of the war (Lees 1980).

Hemp was cultivated under similar circumstances as indigo and its processing was less difficult. In 1762 a bounty to encourage the production of hemp was introduced by the colonial government and the crop doubled the following year. Although the crop never reached the importance of a leading staple, it was among the more significant crops exported by the end of the Colonial period (Bonner 1964:20).

Some cotton was grown during the colonial period, but for domestic use rather than for sale. Bartram noted that "[t]he cotton is planted only by the poorer class of people, just enough for their family consumption; they plant two species of it, the annual and West Indian" (Van Doren 1955:78). During the imperial crisis that resulted in the American Revolution, Georgians significantly increased cultivation of cotton for the first time. Americans who supported the non-importation resolutions of the early 1770s were cut off from British sources for cloth of all types. According to Chaplin (1991:178), cotton cultivation became a patriotic activity as well as sheering sheep for wool rather than slaughtering them.

The production of silk was considered to have great potential in the colony. Silk required the feeding of mulberry leaves to the silkworms, so mulberry trees were planted on many farms and plantations; in fact, the planting of mulberry trees was a condition of land tenure in the early Colonial period and by 1750 it was made a requirement for holding the office of deputy in the Commons House of Assembly. Mulberry trees were usually planted in cornfields about 30 feet apart, and required little care other than an annual pruning. Producing silk from mulberry leaves was another matter. Mulberry trees began to bud in May and at that time silkworm eggs were gathered and placed in small boxes lined with paper. These were kept in a warm place, usually next to a fireplace. Within five days the worms would begin to hatch and were fed mulberry leaves. While an ounce of silkworm eggs might produce five to ten pounds of silk when mature, they would eat several hundred pounds of mulberry leaves before reaching maturity. The mulberry leaves had to be handpicked to avoid bruising the tree, and since a silkworm could eat its weight in leaves in a day the gathering of leaves was an ongoing and constant process, as the leaves could not be kept for more than 48 hours. As the worms grew they were removed from boxes and placed on racks or shelves where they had to be protected from cats, birds, rodents, and extreme temperatures. It took six weeks for the worms to reach maturity and enter the spinning phase. At this time they were attached to dry branches or vines which were placed against the racks. A silkworm would spin for about five days, at which time it has produced a ball, known as a cod, which was removed for unwinding and processing as silk. The cods were placed in warm water that was gradually heated until the silk threads appeared. The thread was then unwound with great care taken to avoid knots and breaks (Bonner 1964:13-14).

The British Parliament and the colonial government supported the silk industry. In 1749 the Common Council appropriated 40 shillings sterling for every woman in the colony who learned the art of silk-winding within a year and bonus of five pounds was given to the first three women who acquired the skill, all Salzburgers. The Salzburgers at Ebenezer were the most successful silk producers, and while many abandoned silk production after 1751, they continued the business up until the American Revolution when the British invaders devastated the town (Bonner 1964:16). Silk showed an increase in production during the 1750s. In 1760 1,205 pounds of raw silk was exported. This was the first year that over 1,000 pounds of silk had been produced. The highest year was in 1767 when 1,961 pounds of raw silk was produced (Coleman 1976:209). Some silk was produced in Georgia as late as 1790 and there were several attempts to revive the industry in the nineteenth century, all of which resulted in failure (Bonner 1964:17).

The naval stores and lumber industry began to flourish after 1750 although it never reached the status it did in the Carolinas. For instance, between 1768 and 1772 the value of tar, pitch, and turpentine exported from Georgia totaled £597 sterling. In South Carolina at that

time it was £24,188 sterling and in North Carolina it was £133,759 sterling (Kay and Cary 1995). Georgians were more interested in wood products and produced more products than South Carolina, but not nearly as much as North Carolina. In this same time period, the value of pine boards and barrel staves exported from Georgia totaled £33,573 sterling. In South Carolina it was £13,293 sterling and in North Carolina it was £82,878 sterling (Kay and Cary 1995). Lumber was processed primarily in Savannah, for use in the shipbuilding, furniture, and for domestic architecture.

During the colonial period, cattle were raised by farmers and planters either on their own land or on public land. By the mid 1750s many ranges in South Carolina became overstocked, making Georgia's ranges more desirable. It was very cheap to raise cattle on public lands and the only expenses for a herd of several thousand were a few herdsmen and salt. By the mid 1770s herds between 1,500 and 6,000 were reported in the area between the upper Ogeechee and Savannah rivers which had become a favorite area for cattle drovers. Most of the cattle were driven to the coast where they were slaughtered for local use or for export. Nearly 1,000 barrels of beef were exported yearly from 1768 and 1772 and the amount only increased over time (Coleman 1976:213).

Agriculture in Georgia became increasingly like South Carolina's. Most of the land granted in the 1750s and 1760s was located along the coast, either on the mainland or islands. By 1760 Governor Wright reported to London that all of the good coastal land between the Savannah and Altamaha rivers had been granted as far inland as the Indian boundary. If Georgia was to receive more settlers then some of the cultivable land owned by the Creek Indians would have to be obtained. The Creeks ceded approximately 2,400,000 acres, which freed up coastal areas between the Altamaha and the St. Mary's rivers, and there was some additional land behind the original coastal Indian cession. This included lands from north of Ebenezer Creek to the Little River just above Augusta (Coleman 1976: 207). Large quantities of land were granted during this period, mainly to encourage and augment agriculture. One of the most prosperous agricultural areas in Georgia was the Salzburger settlement at Ebenezer. The Salzburgers were producing enough Indian corn, beans, upland rice, potatoes, barley, and wheat to take to the markets in Charleston, Purysburg, and Savannah. There was also a filature for silk, two sawmills, and one gristmill in the town (Coleman 1976:209). Further development inland occurred after a 1773 treaty with the Creeks which expanded the Georgia frontier up the Savannah River about a mile below the mouth of the Tugalo River (Anderson and Joseph 1988:334).

In slaveholding regions of the state and in areas where rice plantations flourished, a task system of slave labor was developed which provided some freedom within the confines of slavery. The task system involved a certain quantity of work which was required to be accomplished within a single day, after which the slaves could tend to personal gardens and be involved in some limited economic pursuits. In other areas, the gang system prevailed where slaves were required to work from sun-up to sundown (Berlin 1980). It has been noted by researchers that once the slaves were involved in working the task system, it was virtually impossible to get them, and sometimes their masters, to move to what was considered to be a more profitable system of gang labor (Edelson 1999; Morgan 1983:105-106).

Between 1752 and 1775 there were three agricultural forms in Georgia: the coastal plantations, the family farm or small plantation mainly in the upcountry, and the small subsistence farm on the frontier. On the coastal plantations rice was primarily grown with the labor of African

slaves. Indigo and rice complemented each other as agricultural crops since indigo grew in upland settings and had to be worked during a different season than rice. However, indigo never reached the importance of rice. Corn and other crops were also grown in the uplands, and livestock were pastured on unused swamp or uplands (Coleman 1976:210).

Farms existed on the coast, but were much more common in the area between Ebenezer and Augusta after 1763. By 1775 there were many substantial farms worked by their owners and perhaps a small number of slaves. But there were an increasing number of large farms/small plantations consisting of a few hundred acres that were worked almost entirely by slaves. These primarily grew corn, some European small grain, and livestock. The most desired areas for these farms were along the Savannah and Ogeechee rivers and the navigable creeks that emptied into them (Coleman 1976:210).

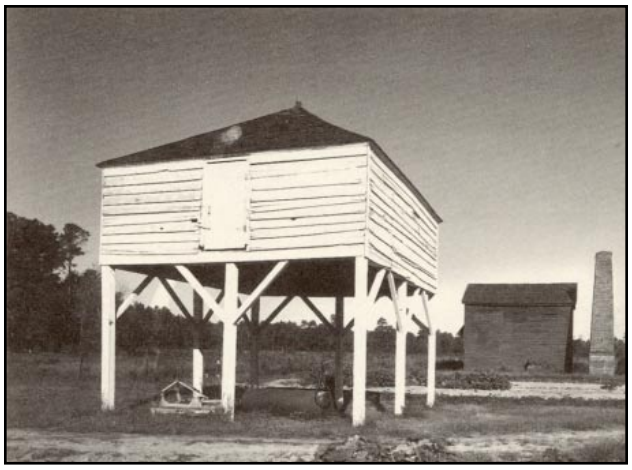
The smaller plantations of the upcountry had no staple crop. In 1772, a property located about 30 miles west of August was described as having 440 cattle grazing on ungranted nearby lands, a large peach orchard, 36 acres of Indian corn, 26 acres of wheat, 12 acres of barley, and 16 acres of tobacco. In addition, it produced 40 barrels of pork, 26 of beef, 33 pounds of silk, 420 pounds of indigo, and some hides and fresh meat. This is probably typical of small upcountry plantations, except for the production of silk. Their products were usually sold in Augusta (Coleman 1976:210-211).

Further inland to the west and north were the subsistence farms on the Georgia frontier. Here, corn and other foodstuffs were raised for home consumption and cattle and hogs were pastured on nearby ungranted land. Most of the farmers were poor, but hoped to improve their status, which they often did. These would be known as yeomen farmers by 1775, referring to self-sufficient farmers who owned their own land as the former free-holding farm class in England had been known. They often hunted for food and pleasure and some deer skins and harvested lumber products if they had a way to transport the goods (Coleman 1976:211).

The American Revolution caused an economic collapse since produce and goods could no longer be sold to Britain. For the Native Americans living beyond the Georgia frontier, the economic problems were due to the collapse of the deer skin trade. The Cherokees had been slowly losing their hunting grounds and the two combined left the Cherokees impoverished (McLoughlin 1984a and 1984b). As for coastal rice plantations, the war left them in disrepair and thousands of slaves escaped either to the British lines or to the backcountry to find refugee with the Creeks or to Florida to live with the Seminoles (Smith 1985:29).

Relatively little is known, either cartographically or archaeologically, about settlement plans during the second and third quarters of the eighteenth century. During this time, large rice plantations began to emerge and the population began to increase with the importation of numerous slaves as well as the efforts of Carolina planters to buy land and bring in their own slaves. It is not very clear as to what composed a mid-eighteenth century coastal plantation, but it is likely that in plan they were smaller, but similar to, rice and indigo plantations of the nineteenth century. Coastal plantation settlement typically consisted of a main house complex containing the dwelling house, house slaves' quarters, kitchen, other main house support buildings, and ornamental and kitchen gardens. In many instances, this complex would be enclosed with a fence to keep out the free ranging cattle and other livestock. The main settlement tended to be located adjacent to navigable water and on high, dry ground. Nearby would be a single or double row

of slave houses with an overseer's house at one end. The rear yards of slave houses would often have been fenced in for garden space. A second (and on larger plantations third and even fourth) slave settlement area might also exist. These tended to occur close to the tidal rice fields or adjacent to the old inland swamp fields. Other buildings near the fields or near grazing land might include a winnowing house, a rice barn, and stables or barns for animals. On plantations where indigo was grown there may have been vats where the indigo was processed. In the backcountry were yeoman farms and smaller plantations that were worked almost entirely by slaves. These probably consisted of a farmhouse and a cluster of support buildings, including a few slave houses. On the Georgia frontier were small family operated subsistence farms that supplemented their income with hunting for food and deerskins.



This winnowing house at Mansfield Plantation in South Carolina, and the steam-powered rice mill behind it, are examples of rarely preserved structures associated with the rice plantations of the coastal region. Source: Vlach (1993).

1785-1865: Rice, King Cotton, and the Establishment of Staple Crops

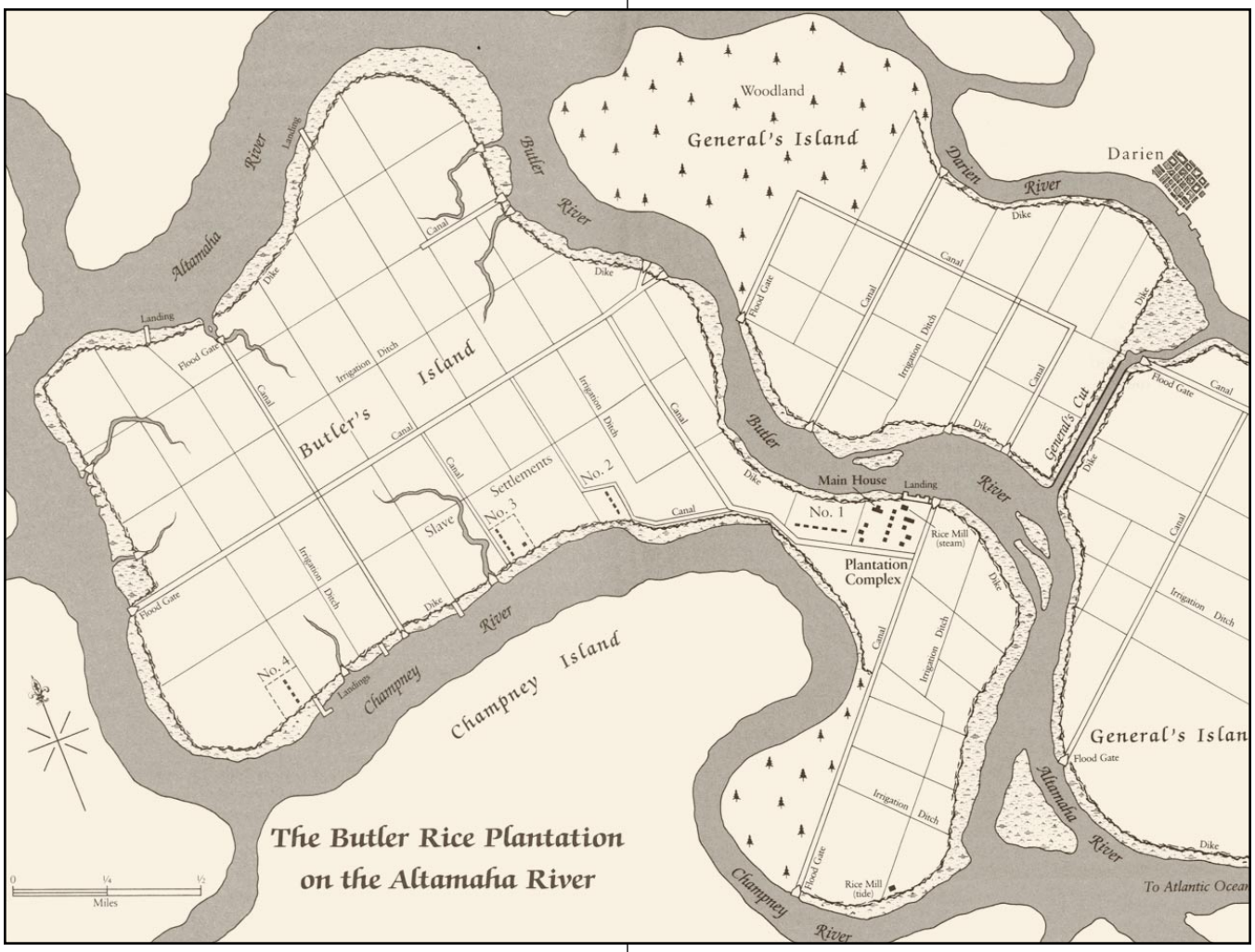
After the Revolutionary War, the rice coast was slowly rehabilitated and plantations became thriving and profitable businesses once again. Those planters who had been loyal to the British had their lands taken away by the new state government. Approximately 200,000 acres of rice plantation were confiscated and resold or distributed. Several Revolutionary War heroes were given gifts of large plantations. Nathaniel Greene received a 2,170-acre plantation called Mulberry Grove along the Savannah River. The plantation had 500 acres of rice fields and 200 acres of highland fields suitable for the cultivation of other crops. Improvements consisted of a rice mill, barns, overseer's house, a handsome residence, slave quarters, gardens, fruit orchards, and a variety of shrubs (Smith 1985:30-31).

The invention of the tidal powered rice mill by South Carolinian Jonathan Lucas in 1793 combined all of the processes of milling rice: grinding, winnowing, pounding, screening, and polishing. This invention increased the productivity of rice plantations immensely. Not all plantations had mills, but toll mills were set up for smaller planters where they could have their rice milled for a small percentage of the grain (Gray 1933:730). This freed up the slave population for other purposes, since milling by hand was very labor intensive. As early as 1822, Richard I. Turnbull declared that the condition of slaves in the rice region in the past thirty years had "greatly improved by reason of introduction of water culture and of rice mills" (Gray 1933:722).

Rice production became large scale in the early nineteenth century. Georgians who had cultivated rice before the Revolution expanded their operations. Carolinians who were experiencing soil depletion and declining profits due to rising costs extended their interests to Georgia (Smith 1985). Methods for growing tidal rice became increasingly standardized in the South Carolina and Georgia lowcountry. In the 1820s and 1830s articles began to appear in agricultural journals about rice culture, discussing methods that should com-

monly be used. Later on in the nineteenth century, rice plantations were described as "a huge hydraulic machine" (Stewart 1988:243). Rice plantations were similar to those before the American Revolution. However, with the increased amount of tidal swamps being improved into rice fields, the operations were much larger. There would have probably been more slave houses in the existing settlements and new slave settlements adjacent to new fields. In addition, some of these plantations would have had rice mills and some of these would have had toll buildings so that neighboring planters who didn't own a mill could process their rice for a fee. Merle Prunty (1955) has examined the layout and organization of antebellum plantations throughout the South. He chose Hopeton Plantation on the Altamaha River as representative of antebellum units because of its coastal location and because it grew both rice and cotton. The Hopeton plat shows the settlement as being clustered, with the main house at the end of an avenue, slave quarters radiating in three directions, and a cluster of service buildings and sheds. There were numerous plantations that deviated from this norm, due to the manner in which they grew, but in general, they were all rel-

The rice plantation created by Major John Butler and successfully operated by his son Pierce Butler was one of the largest in coastal Georgia. Note the appearance of both tidal and steam powered rice mills, as well as the locations of four slave settlements. This plantation was the topic of Frances Kemble's *Journal of a Residence on a Georgian Plantation in 1838-1839* (1984) as well as Malcolm Bell's *Major Butlers Legacy: Five Generations of a Slave Holding Family* (1987). This plan is from Bell.



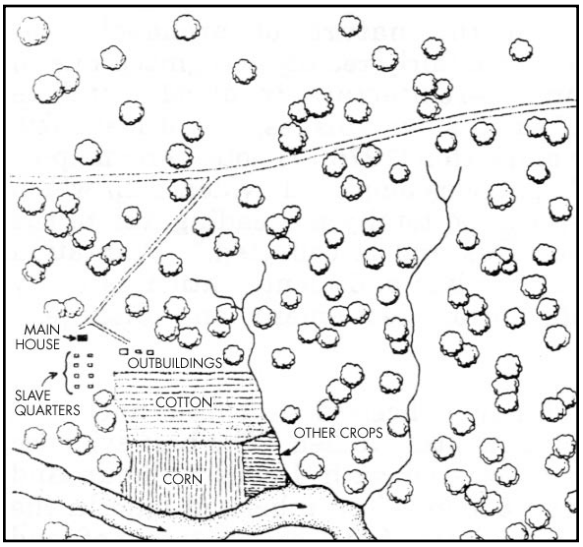
atively similar. On cotton plantations new slave settlements appeared adjacent to new fields, sometimes on newly acquired lands, while old settlements next to exhausted fields were often abandoned (see Anderson and Joseph 1988:422).

Eli Whitney invented a fully operational cotton gin in early 1793 while visiting Mulberry Grove Plantation on the Savannah River. This helped to open up a bottleneck in cotton production which according to Chaplin (1993) transformed rustic and slaveless upcountry yeomen farmers into planters. The cotton gin, the established pattern of commercial agriculture in the coastal region, and the growing market for cotton in Britain brought about the beginnings of the era of "King Cotton".

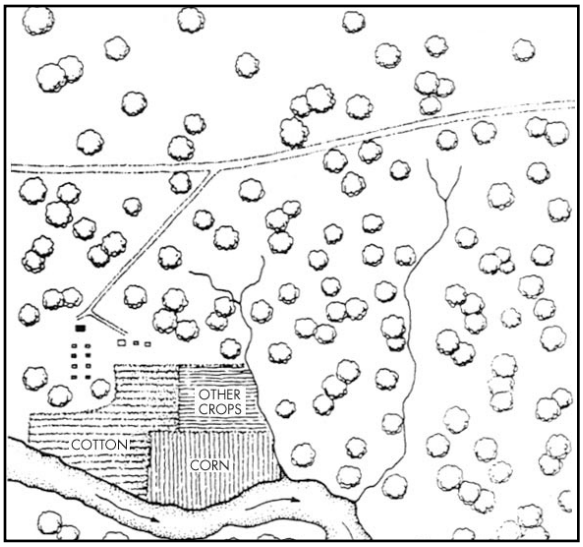
The primary development of upland cotton in the early nineteenth century occurred in the eastern portion of central Georgia. The process of transferring cotton to market was expensive, since the Savannah River was only navigable below the Fall Line at Augusta and other rivers were only navigable to the edge of the Sandhills. Nonetheless, the area began to thrive and people flocked in bringing slaves with them or buying more slaves. This resulted in the area passing quickly through a number of economic phases, from fur trading to a diversified economy of farming and handicrafts to a regime of commercial plantations (Gray 1933:685). Between 1790 and 1850 the slave population in Elbert County rose from 23 percent to 48 percent (Anderson and Joseph 1988:370). At the turn of the century Oglethorpe County was the western frontier containing a scatter of log houses and range livestock. The Oconee River still formed the western boundary of planters, but in 1802 and 1804 lands held by the Creeks were ceded and settlement moved two tiers of counties west to the Ocmulgee River. The area west of this line was not settled for another two decades until Indian title could be extinguished (Gray 1933:686).

The settlement plan of upcountry cotton plantations was less structured and defined than that of the coastal rice plantations. The differences in settlement were a product of both crop and environment. Coastal rice plantations were closely tied to the rivers and swamps. These plantations were also self-fertilizing, as the tidal flow which flooded the rice fields brought with it various nutrients. Rice plantations thus exhibited a structured, stable, and defined settlement plan as main houses, agricultural buildings, slave villages, and the fields themselves were all intended for long-term use and occupancy. Cotton, on the other hand, was extremely exhaustive of soil nutrition. It was less tied to any particularly environmental attribute, growing well in a variety of soils. The rolling topography of the piedmont, however, created problems with erosion, which washed away the open soil of fallow cotton fields. As a result, most cotton fields were used for only a period of three to five years. The settlement pattern appears to have been one in which the main house and immediately supporting agricultural buildings (barns, livestock pens, smokehouse, etc.) were built on level ground generally near a road or trail and were generally of permanent construction, although generally not as elaborate or as substantive as their counterparts on the coast. Woods would be cleared and cotton fields established near this initial settlement, often on the level land adjoining streams and rivers as well as along broad ridge tops. Slave villages were constructed near these fields, initially in proximity to the main house complex. On cotton plantations, villages were moved from time to time to stay close to the agricultural fields. As cotton fields became exhausted, new lands were cleared and new fields established, and new slave villages were built alongside. Slave cabins on upcountry cotton plantations were most commonly built of log and were in essence an impermanent architecture which left few traces and of which few have survived. Frame cabins, which were fewer, are more likely to remain.

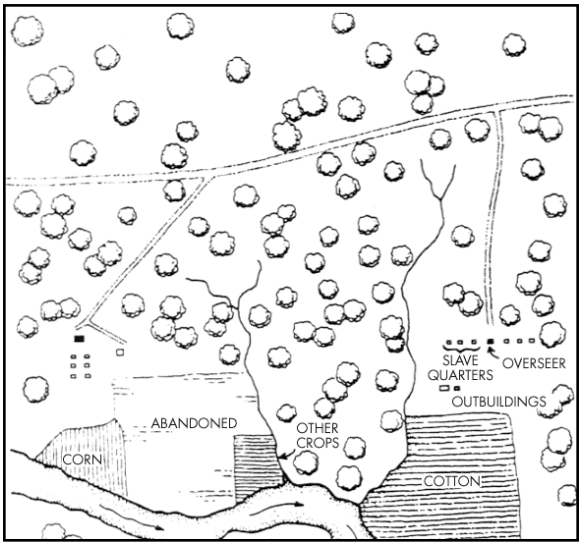
This conjectural plan illustrates the shifting pattern of an upcountry cotton plantation, as cotton fields become exhausted and new fields cleared, and as slave villages were relocated to remain near the fields. From Anderson and Joseph (1988).



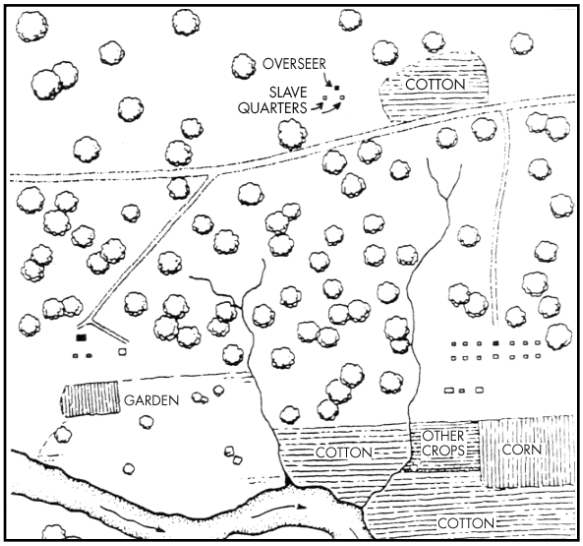
STAGE I: Initial occupation. Lands cleared adjacent to main house complex, 400 acres in cotton, corn and other crops. Slave village of eight houses shelters total population of 48. No overseer.



STAGE II: Crops rotated, new fields established adjacent to older fields. Slave population now 54, housed in ten cabins. Now 600 acres improved land.



STAGE III: Fields adjacent to main house mostly exhausted and abandoned, new fields established down river. Slave population now 60, mostly housed at new village under the supervision of an overseer. 800 improved acres.



STAGE IV: Fields surrounding main house abandoned except for small garden. Four slaves live at main house as servants. Main focus now at new village, which has an overseer and 97 slaves housed in thirteen cabins. Beginnings of a third field complex north of the road with a second overseer and seven slaves. Now 1,000 acres improved.

The Development of and Upland Cotton Plantation

"[James] Calhoun expanded on inherited land in the vicinity of Millwood Plantation through the purchase of at least six tracts of land containing more than 1,000 acres.... In the spring of 1832 Calhoun sent an overseer and four slaves to 'form a settlement' at Millwood.... Initial work consisted of clearing 60 acres and beginning the construction of a crib dam.... At this point in its history, Millwood was a satellite of Midway Plantation. In 1834 Calhoun wrote that he was preparing materials for building at Millwood in preparation of moving there. Calhoun's relocation from Midway to Millwood may have indicated the abandonment of the former due to impoverished fields.... With... extensive holdings along either bank of the Savannah, it is likely that Calhoun dispersed his labor force to take advantage of his best lands.... [I]n February of 1842 Calhoun received an inquiry on the availability of some of his lands from a gentleman who had heard that 'most of your force has been removed near the river,' suggesting that a particular slave village had been relocated. From Anderson and Joseph (1988:424-426).

Another area of cotton agricultural development was along the coast. In 1786 Sea Island cotton was introduced to Georgia. This type of cotton grew best on the Sea Islands and on the mainland within thirty miles from the coast. Some people believed that it was due to the presence of salt either in the soil or the atmosphere. The northern limit was about the 33rd parallel, which includes the southern half of the state. Most of the Sea Island cotton was planted in the sandy uplands, but experimentation with planting it on drained sea marshes worked well (Gray 1933:735). By 1803 the staple began to flourish, when Francois Andre Michaux, a French naturalist, noted the crop had become more prized than rice and that coastal planters figured that one good cotton harvest was worth two of rice (Stewart 1988:241). The prices of Sea Island cotton began to drop in the 1820s and the high profits of the earlier days never returned. Rice was the more economically reliable crop, and those who owned rice lands turned increasingly to it as their staple crop.

The combination of Sea Island cotton and rice made coastal Georgia the richest region in the state, while short staple cotton was creating its own fortunes elsewhere. As these two crops came to dominate the state's agriculture, there was concern and comment on the need for diversity. In his speech as president to the newly formed Union Agricultural Society, Thomas Spalding of Sapelo Island insisted that coastal Georgia was a new Garden of Eden. He remarked:

> *Gentlemen, we are in the climate of Chaldea and of Egypt, of Greece, of Tyre, and of Carthage. We are in a land where rice, wheat, and cane, indigo, cotton, and silk, where the olive and the vine not only grow but will find their favorite home if man will only lend his aid . . . Let us turn with renovated energy, let us turn with renewed exertions, to the repairing of the past, and the improvement of the future, remembering, that when God abandoned man in paradise, to save him from*

despair, he plucked from Eden's bower One Flower and planted it in his bosom; watered by love divine, it grew; and grows there still. It is Hope. In every dark, disastrous hour, look to this flower, for it has an amuletic power, far beyond the Lamp of Alladen [sic], far beyond the Ring of Solomon (Spalding 1824).

Because he felt that Georgia could support numerous crops, Spalding called for the agricultural diversification of Sea Island plantations since he believed that dependence on cotton alone would lead to agricultural ruin. Therefore, he created a program that emphasized staple crops, but also secondary crops and experimentation with new plants. He experimented with indigo, silk, olives, rice and oranges, crop rotation and reversible plows (Sullivan 1992:107-108).

The creation of the Union Agricultural Society marked the organized beginning of societies and journal contributions by Georgia planters in order to promote agriculture and rural economy and share information on various agricultural pursuits. The most popular journal was the *Southern Agriculturist*, which began publication in Charleston in 1828 under the editorship of South Carolinian, John D. Legare (Sullivan 1992:109). Another popular journal was *DeBow's Review*, which was published out of Louisiana. Other journals emerged including *Southern Cultivator, Farmers' Register, Carolina Planter, Soil of the South, and Farmer and Planter*.

After the turn of the century, some coastal planters began growing sugar cane. In 1815 Thomas Spalding wrote a pamphlet entitled "Observations on the Method of Planting and Cultivating the Sugar-Cane in Georgia and South Carolina" published by the Agricultural Society of South Carolina. He described the results of nearly ten years of cane cultivation on Sapelo Island, where methods predicated on the Georgia Sea Island's distinctive environmental conditions had been devised to overwinter seed cane (an important step borrowed from Louisiana according to Spalding), utilize swamp land for cane cultivation, and maximize labor resources at harvesting (Brooker 1991:115).

South Carolina planter James Gregorie remarked that:

between Darien and the Altamaha, Milledgeville on the Oconee and Macon on the Ocmulgee, there are at this time more than one hundred plantations, upon which Sugar Cane is grown, and Sugar manufactured in the more or less quantity. On the Savannah River also, there will be one hundred plantations this year on which Cane will be grown in greater or less degree (The Southern Agriculturist 1829:98; quoted in Brooker 1991).

Sugar cane flourished better south of the Altamaha River. Counties bordering the St. John's River reported high annual yields in the mid-nineteenth century. For instance, Lowndes County produced 198,000 pounds and Thomas County produced 109,000 pounds. The more northerly counties produced considerably less. Glynn County produced 71,000 pounds, Effingham County 22,000 pounds, and McIntosh County 3,000 pounds (De Bow 1854:216-217). In 1828 there were 100 plantations between the Altamaha and the Oconee rivers growing sugar cane, and an equal number along the Savannah River. Sugar cane was grown throughout southern Georgia as a syrup crop for home consumption (Gray 1933:748).

On a visit to Sapelo Island, Thomas Spalding remarked that,

sugar cane has travelled up the Altamaha river, and its tributary streams from Darien to

> *Milledgeville, and from Darien to Macon, until every log house in this space had its sweets in abundance. However poor the individual may be, however limited it labors, some portion of this labor is set apart for this purpose (The Southern Agriculturist 1833:143; quoted in Brooker 1991).*

James Hamilton Couper owned the largest cane-producing plantation. His sugar works for grinding the cane and boiling the syrup were the largest on the coast and were an industry in themselves. While growing cane was not more labor intensive than cotton or rice, the harvesting and processing required much more labor. Because sugar cane production was labor intensive and not as profitable as cotton or rice, it had nearly ceased to be grown for commercial purposes by the late 1830s. Small patches of sugar cane and sorghum continued to be grown for home consumption, however (Stewart 1988:265-266). Sugar cane was a secondary cash crop and was usually grown on Sea Island cotton plantations. Plantations which also grew cane sometimes had a mill and boiling house, but these were somewhat rare.

Long-staple cotton, rice, and sugar cane were the staples of coastal agriculture, while cotton moved inland through the Central and Upper Coastal Plains and into the Piedmont. None of these crops did well in the Wiregrass and Pine Barren portions of the southern Central Coastal Plain. Livestock, which were common throughout the state, were of greater importance in these areas. By 1850 the average piney woods farmer owned two plow horses, 50 head of cattle, less than ten sheep and more than 60 hogs. They were also involved in subsistence farming (Malone 1986:59). Boasting of Georgia's resources, the *Milledgeville Recorder* reported that:

> *The pine lands of the State, including one-sixth at least of all its territory is now unproductive. That opens a vast field for enterprise. We consume annually many millions of pounds of wool, . . . Why not, then, produce all the wool we use? . . . Again, the finest beef range in the world is in the pine woods. Hides, tallow, beef, horns and bones, are items of great wealth to be drawn from that region. And no small item of commerce must be the production of turpentine itself. There is no business which promises such a return for the capital employed, as the raising of sheep and beef cattle and the making of turpentine (in DeBow's Review 1850).*

Another "crop" with a broad distribution in the state was timber. Up through the Civil War the naval stores industry remained centered in the North Carolina pine belt, but as the demand for spirits of turpentine grew during the 1830s the frontier moved south along the coastal plains. By 1860 it had reached the Georgia coastal lowlands (Wetherington 1994:116). The naval stores industry focused on the production of tar and pitch from tree sap. Pine trees, and in particular the southern longleaf pine *(Pinus palustris)*, produced greater quantities of sap and gum than northern pines, in part because of the longer growing season. During the winter months when the pine sap did not run, trees would be boxed, which entailed cutting cavities into the pine trees about one foot above the base. About mid-March, the sap would begin to flow into the boxes and was then transferred to barrels. The flow peaked in July and August and then tapered off at the beginning of November. In the late 18th century, German traveler Johann Schoepf noted that "[o]ne man can readily care for 3000 boxes, and that number is generally assigned to one negro, the negroes doing the most of this work. At the best and warmest season one negro can easily fill 15-20 barrels of turpentine a day.... It is reckoned that from 3000 boxes more than 100-120 barrels in the average should be obtained in a summer. For these 3000 boxes some

12-15 acres of forest should suffice, according as the trees stand close or far apart, and are strong or not" (Morrison 1969:141).

Slaves were employed as hackers (also known as chippers) once a week. This involved making cuts into the tree to encourage sap flow. Dippers were constantly busy emptying the boxes as they filled. Because of the constant care needed in hacking and dipping during the warmer months, slaves - typically males - were sent out to work the trees and lived in "workers' camps" set up in the woods. According to Avirett (1901:69) it usually took no more than 10 to 12 years to deplete a section of forest of sap. After that, the wood was cut for lumber or staves and the slaves moved on to a new area. Therefore, these camps were typically small isolated sites occupied seasonally for only a few years.

Tar kilns were created of earth and wood for the conversion of sap into tar. The construction of a tar kiln required the excavation of a shallow pit 20 feet in diameter with a trench running from its center to a second, smaller but deeper (generally six feet) pit just beyond. Twelve to fifteen cords of lightwood would then be split and stacked so that their ends were in the center of the pit. Stumps, knots, roots and branches were placed in the center. The stacked wood reached a height of about seven feet and the top was closed with a roof of split logs. This structure was then covered in pine boughs and green logs were stacked around the exterior, forming an octagonal shape. A six-inch layer of sand and clay was placed over the exterior. A hole was cut in the roof, late in the afternoon, and the interior was set on fire and allowed to burn over night. This hole was subsequently covered the next morning. By later that day tar would begin to run through the trench, which often contained either a metal pipe or a wooden trough to channel its flow, and would pour into a barrel in the six foot deep external pit. A yield of one barrel of tar per cord of wood, or 12 to 14 barrels per kiln firing, was considered good. Once the firing was complete the kiln remains would consist of a raised ring of dirt and charred wood surrounding a slight depression, with a deep hole to one side. Remains of tar kilns are still encountered as archaeological sites (Harmon and Snedeker 1997:148-149).

During the late eighteenth and early nineteenth centuries relatively few settlers came into the southern part of the area between the Ogeechee and Oconee rivers, because it was made up largely of pine barrens that were ill suited for agriculture. The up and coming agricultural area was north and west of Augusta and most of the new settlers took up land there. Tobacco, which grew well in this area of the state, became the chief money crop of the upcountry until cotton surpassed it. The state legislature was anxious to secure a solid reputation for the tobacco grown in Georgia and from 1778 to 1797 provided a series of acts which required tobacco to be inspected. There were tobacco inspection warehouses established in Augusta as well as other towns such as Petersburg. Located upriver from Augusta, Petersburg was founded in 1780 and by 1810 boasted 332 residents and a town paper. The long (70-75 foot) flat bottomed boats used to ship tobacco and other crops through the shoals of the upper Savannah River to Augusta were know as "Petersburg Boats." However, with the shift to cotton agriculture, Petersburg, and other town like it, declined. In his 1849 *Statistics of Georgia*, George White noted (Coleman 1991, Anderson and Joseph 1988:384-388):

> *This was once among the more prosperous towns in Georgia; but it is now in a state of dilapidation. A feeling of melancholy and loneliness is experienced by the visitor when he remembers what the town was in former days.*

During this time the Georgia upstate was still occupied by Creek and Cherokee Indians. Although the Creeks removed themselves from Georgia by the 1830s (Hudson 1976:458-459), the Cherokees tried to remain in the northern portion of Georgia and acculturate into the white population. This acculturation was rapid and profound and consisted of the adaptation of Euro-American modes of economic production as well as political organization. By the 1820s, the Cherokees had achieved political stability and were involved in the agrarian economy of the American South. Their economy turned away from the fur trade to focus on the sale of livestock and grain to the Euro-American community. This shift in economic focus also caused a shift in settlement patterning, organization of labor and material culture. The nucleated village disappeared to be replaced with discrete farms and plantations (Klinck and Talman 1970). Females were no longer exclusively involved in farm production. Males and black slaves were increasingly sharing that role. Also, males were no longer primarily hunters, but were now pastoral. Although females retained their role as horticulturist and housekeeper, they also began being involved in cloth production (Perdue 1979; Bays 1991; McLoughlin 1988; Young 1982). Cherokee farms began using Euro-American technology such as the plow and draft animal. They also began to build houses indistinguishable from their Euro-American neighbors.

After gold was found in the area in 1828, the state government began trying to enforce compacts made in the early part of the century with the Cherokee to remove them from their land. The state appropriated Cherokee lands and then redistributed them in a lottery in 1832. It was up to the lottery winner to physically evict the Cherokee occupants from their homes. It wasn't until 1838 that the government began the forced removal of the Cherokees.

The lands to be distributed by the lottery were surveyed in 1832 into 160-acre land lots and 40 acre gold lots. Residents of Georgia who had lived in the state for three or more years and who were 18 years of age or older and citizens of the United States were eligible to participate in the lottery. Some of the first owners who acquired land through the lottery quickly sold their tracts because many were primarily concerned with finding gold rather than farming. Others occupied the land and farmed it; however, some were awarded steep hilly lands that were practically worthless and which were often abandoned. Some lottery participants were lucky enough to win fully operable farms that had been previously occupied by Cherokee families (Riggs 1996). According to land valuations done in the 1830s, Cherokee farmsteads typically contained a log house or cabin, and sometimes a corncrib and a stable. A few of them contained other structures such as a hot house, kitchen, smoke house, spring house, barn, still house, blacksmith shop, other shop, mill, store, and other miscellaneous buildings (Welch and Jarrett 1837).

The white inhabitants who occupied the vacated Cherokee lands were primarily involved with agriculture. They grew corn, potatoes, wheat, rye and oats. Other crops included cabbage, turnips, apples and peaches (Nesbitt 1896:338). No cotton was cultivated, but livestock, such as cattle, sheep, and hogs were allowed to forage over the open land (White 1849).

By the Civil War, Georgia was a state of many regions with a number of agricultural staples on farms varying in size from vast plantations on thousands of acres to subsistence farms on a couple hundred acres. In the mountains, small family farms were located primarily in the valleys near the most fertile lands. In addition to subsistence crops, farmers kept a few cows, cattle, sheep, and some pigs. In 1848 Charles Lanman visited this part of the state. He described it as (Murray 1935:292):

Evidence of Cherokee Homesteads

The Cherokee's property in Union County was appraised by federal agents Shaw and Kellog in 1836. Their "valuations" give a sense of the appearance of Cherokee farmsteads. For example, Shaw and Kellog recorded the following elements for three Cherokee farmsteads on Brasstown Creek. (Cable et al. 1997:81):

Valuation No. 46

John Walker, a full blood on Brasstown Creek in Union County near the No. 6 line

1 cabin 30.00, 1 smokehouse 15.00		$45.00
1 out house & stable 25.00 1 crib 5.00		$30.00
1 out house & stable 15.00 1 horse lot 5.00		$20.00
10 acres upland @ 8.00 patch 5.00		$85.00
18 peach trees @ .75 & 8 apple trees @ 1.50		$25.50
	Total	$205.50

Valuation No. 47

Salagatahee, a full blood, head of Brasstown Creek in Union County, Georgia

1 cabin 25.00 & 1 cabin 15.00		$40.00
3 acres creek land @ 8.00 & 1 patch 10.00		$34.00
31 peach trees @ .75 & 25 apple trees @.25		$29.50
	Total	$103.50

Valuation No. 48

Yohnuguskee or Drowning Bear, a full blood on the head of Brasstown Creek in Union County, Georgia

1 cabin 15.00, 3 acres upland fenced @ 8.00		$39.00
10 peach trees @ .50 & 14 apple trees @ .25		$8.50
	Total	$47.50

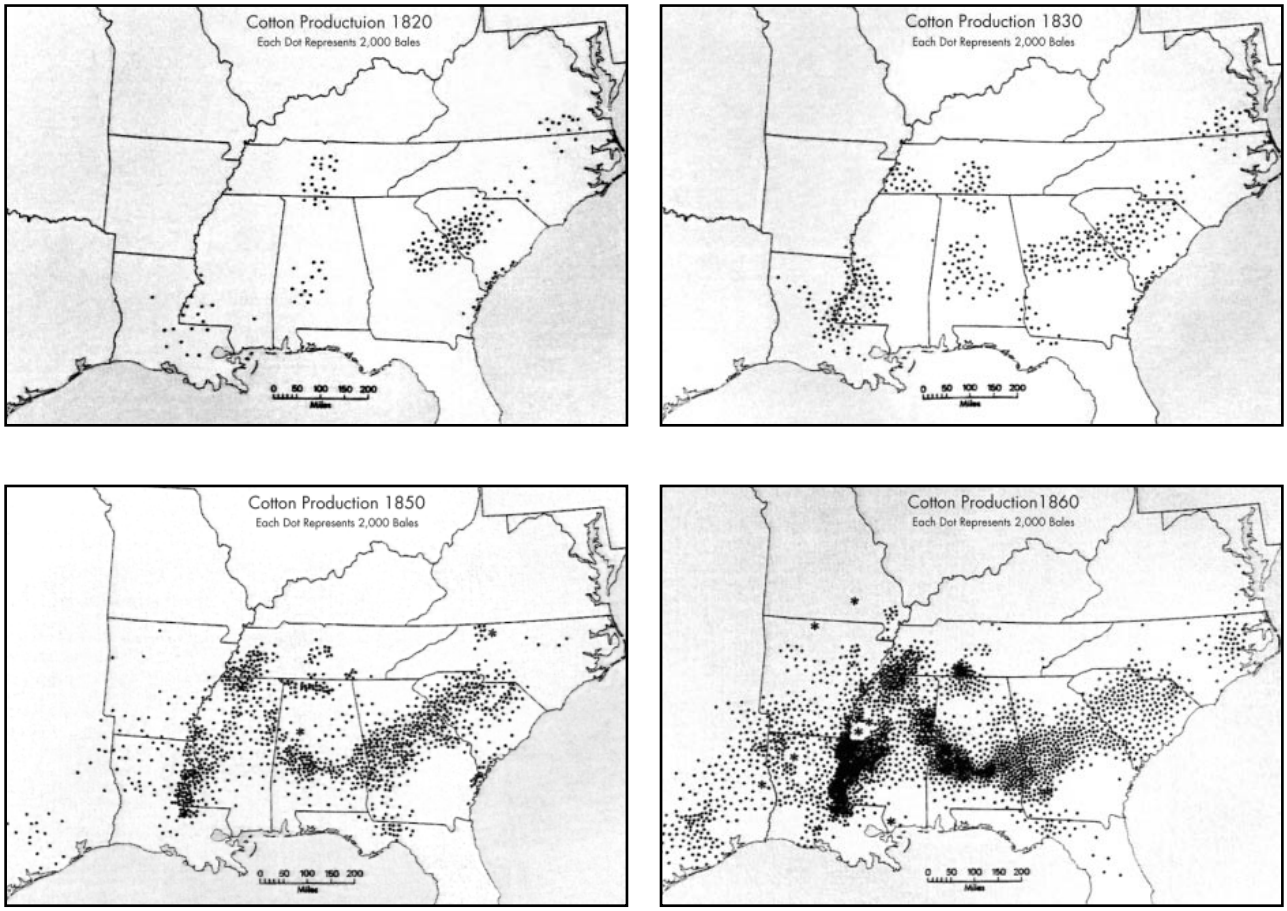
fertile valleys and wooded mountain-sides, dotted here and there with rude cabins surrounded by rocky patches of corn, potatoes, wheat and rye. The frontier manner of life still prevailed, and farming was subsidiary to hunting and trapping. The men lived a life not far different from that of the Indians whom they had supplanted.

Further to the west, close to Alabama, was the area known as the Great Valley. The farms were about the same size as their mountain neighbors, but the land was more fertile and there were a few farms that grew cotton and had slaves (Range 1954:3). Murray (1935:293) notes that the valleys produced little more than the subsistence of the people. Geographically and economi-

cally the northern counties had very little in common with the remainder of the state. During the first surge of white settlement of northern Georgia, the hunger for land was not for agricultural wealth, but rather for gold, but by the 1840s, digging and panning exhausted resources near the surface and there was nothing left to do but make a living from the soil (Crawford 1988).

During the antebellum era the upper Piedmont was still located on the periphery of the cotton economy. However, by the 1850s some of its sub-regions were integrated into the market system. Historian David Weiman (1987) studied two upper Piedmont counties and discovered significant differences between DeKalb and Floyd counties. In this area in general, corn was the principal food crop. Wheat, small grains, peas and beans, and potatoes supplemented the household's supply of food and feed crops. These households were abundantly supplied with essential food crops and produced a more diverse mix of grains than the Cotton belt. However, the two counties differed in that DeKalb was more oriented toward producing food crops, while com-

These maps, from Samuel Hilliard's *Atlas of Antebellum Southern Agriculture* (1984), show cotton production in the southeast between 1820 and 1860. Each dot represents 2,000 bales of cotton. In Georgia, production was found predominantly in the Upper Coastal Plain and Piedmont, with a limited amount of cotton grown along the Sea Islands. As this figure shows, by the time of the Civil War, Georgia had fallen behind Alabama, Mississippi, and Louisiana in the amount of cotton grown, although the state was still one of the leading southern cotton producers.



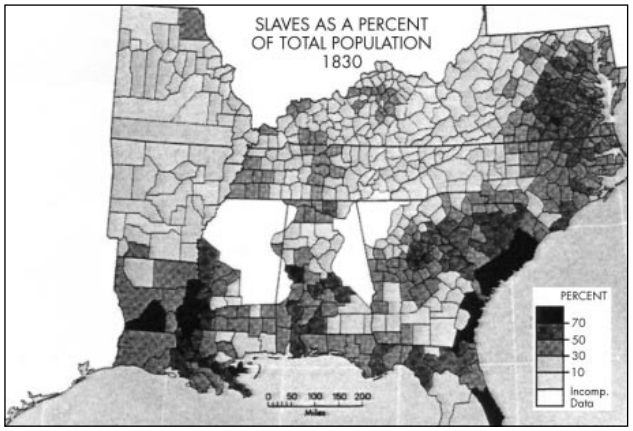
modity production of food crops and cotton was limited in scope quantitatively and geographically. In contrast, Floyd County used self-sufficient production as a secondary activity. Farmers marketed over half of their annual output, including corn, wheat, and cotton. This pattern was not broken until after the Civil War when the upper Piedmont was thoroughly integrated into the cotton economy. This was, in part, due to the building of the Western and Atlantic railroad as well as other railroads, which provided better opportunities to get cash crops to markets (Weiman 1987). However, it was really the lower portion of the Piedmont that flourished. It contained vast cotton plantations with numerous slaves who outnumbered the whites. Corn and livestock were also prominent on these plantations (Range 1954:4).

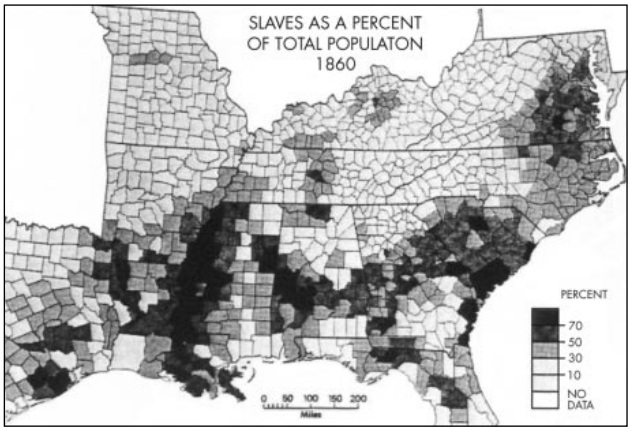
In the Coastal Plain the soil was sandy with a few outcroppings of clay and the soil was not particularly fertile. The most fertile areas were along the Flint River in the southwestern corner of the state in the Upper and Center Coastal Plain and along the coast. In the southwestern portion of the state, the slave population grew dramatically and cotton was grown in increasing quantities. Along the coast were the wealthy Sea Island cotton plantations and the rice fields, which continued to flourish (Range 1954:4-5).

The rest of the Coastal Plain had little economic value. This area, known as Wiregrass Country, was covered in a thick forest of pines and was where large livestock ranches were located. Vast herds of sheep and cattle wandered over the landscape, left alone, until time for shearing and branding. There were a few small farms with little to no cotton planted. Considered even more "worthless" than the Wiregrass Country was the Flat Pine Belt along its northern edge, also known as the Pine Barrens. Only a handful of people lived there and typically raised the "razorback" variety of swine (Range 1954:6).

Georgia's agricultural diversity was tied in part to its geographic diversity, but despite diversity cotton was king before the Civil War. Small subsistence farmers who could, grew cotton, and planters, whose estates enjoyed

This map of the southeast in 1860, showing the percent of African-American slaves as a portion of the total population, illustrates the association between slave holding and the cotton belt and rice plantations. In Georgia, the slave population in the Upper Coastal Plain and Piedmont ranged from a low of 30 percent of the population to greater than 70 percent of the population. The slave population of the Sea Islands and Coast was consistently greater than 70 percent except in Chatham County with its urban center of Savannah. From Hilliard (1984).





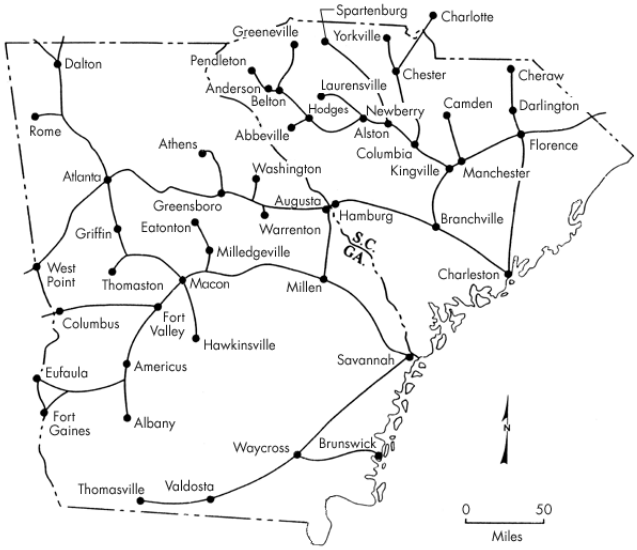
the economic bounty King Cotton provided his subjects, expanded their landholdings through the acquisition of the lands of farmers. These dynamics changed the landscape of Georgia's population, as enslaved African-Americans became a predominant facet of the cotton belt through the Upper Coastal Plain and Piedmont. On the cotton plantations, most slave labor was organized under the gang system. Slave gangs worked from sunup to sundown (or, as it was sometimes referred to be the former slaves, from "can to can't") under the supervision of a driver. The annual routine of cotton plantations, which applied to a lesser degree to farmsteads that grew cotton, has been reconstructed by historian Julia Floyd Smith (in Anderson and Joseph 1988:413):

> *During January and February, any cotton remaining on the plants was picked, sunned, ginned and packed for shipment; fields were cleaned, plowed, and prepared for spring planting. Planters who used fertilizer had it spread at this time. Wood was cut, hauled, and spit for fence rails; logs were burned, fences repaired, and new ones built; buildings and tools were repaired; vegetables were planted.*
>
> *During March and April, light furrows were made in corn and cotton fields, and seeds were planted and covered by hand with a harrow; vegetables were cultivated and cornfields plowed. In May, cotton was 'barred.' Barring off cotton or siding cotton was done by running single furrows with a one-horse turn-plow close alongside the rows of young cotton plants, throwing earth to the 'middles.' This lessened the labor of the first 'chopping.' Chopping was followed by 'splitting the middles,' throwing earth back again to the ridges on which the cotton plants stood. As cotton plants grew, cultivation was done with shallow plows, or 'sweeps.' Between May and August cotton and corn were cultivated until ready to be picked. The first picking of cotton began in August.*
>
> *From September to January cotton was picked, ginned, and pressed, and shipped to market. Teams of mules or oxen were used to haul the wagons of baled cotton to market. 'Goading six of eight yoke of oxen all day and camping by night' while hauling cotton was the 'winter routine' of many plantation slaves. During the fall, peas were gathered, sweat potatoes were dug and stored in straw-lined mounds of earth called 'banks,' corn was gathered and shucked, fodder was stored, ditches cleaned and repaired, wood cut and hauled, and new ground cleared. Thus one growing cycle overlapped the next, [and] though there was some variation form this general schedule, the work of cotton growers was essentially the same everywhere.*

The landscape of King Cotton was one of dispersed farms and plantations centered on small towns which provided market functions for cotton and which offered stores, a hotel or two for farmers and planters on their visits to town, a post office, taverns and restaurants, and a doctors, as well as the residences of doctors, merchants, hotel owners, cooks and restaurant owners, etc. Roads connected the countryside to towns and towns with one another, while railroads connected the major towns with the cities and in Georgia with the port of Savannah.

1865-1920: The Postbellum Era, Cotton, and the Agrarian Revolution

The Civil War devastated the economy of the American South. Houses, barns, railroads, and bridges had been



In Georgia, the distribution of rail lines was clearly influenced by the spread of cotton and along the coast of rice. Two east-west lines served the Upper Coastal Plain and Piedmont respectively, while a third east-west line connected the coast to Savannah. A north-south line connected Atlanta with Chattanooga, Tennessee, and Augusta with Savannah. Another line from Augusta ran to Hamburg, South Carolina and from there to Charleston – the Hamburg to Charleston line was the oldest in the South. From Anderson and Joseph (1988).

destroyed, crippling southern agriculture, and the destruction of cities, factories, and warehouses paralyzed the economy. For planters, the loss of their buildings and farm equipment was minor in comparison to the effect brought about by the loss of their slave "capital." Slaves made up a major proportion of their financial investments and according to at least one estimate for the "cotton South," the investment in slaves amounted to almost sixty percent of the total investment required for the operation of a typical cotton plantation (Ransom and Sutch 1977).

The emancipation of the slaves forced Georgians who owned plantations to evolve a new system of farm labor and management. In the first years after the war a contract wage labor system was imposed almost universally by the Freedmen's Bureau. Many former planters liked the wage labor system since it allowed them direct supervision over the workers and provided them with a method of overseeing productivity. However, former slaves often had very specific and individual requirements or requests for their labor contracts, which frustrated the owners (Range 1954). Because of complaints by freedmen, a share system was established where they worked either as a cropper or renter. Former slaves considered it a better system since they believed that anything was better than working in a gang for wages which, to them, closely resembled slavery. With the share system, they believed that they would have more direct control over their economic lives with little interference from the white man (Range 1954).

Wage labor contracts gradually gave way to two kinds of tenancy: sharecropping and share-renting. Previous to the share system was the squad system, which combined small-scale gang labor with the share system. Squads typically consisted of a kin-based group who worked an

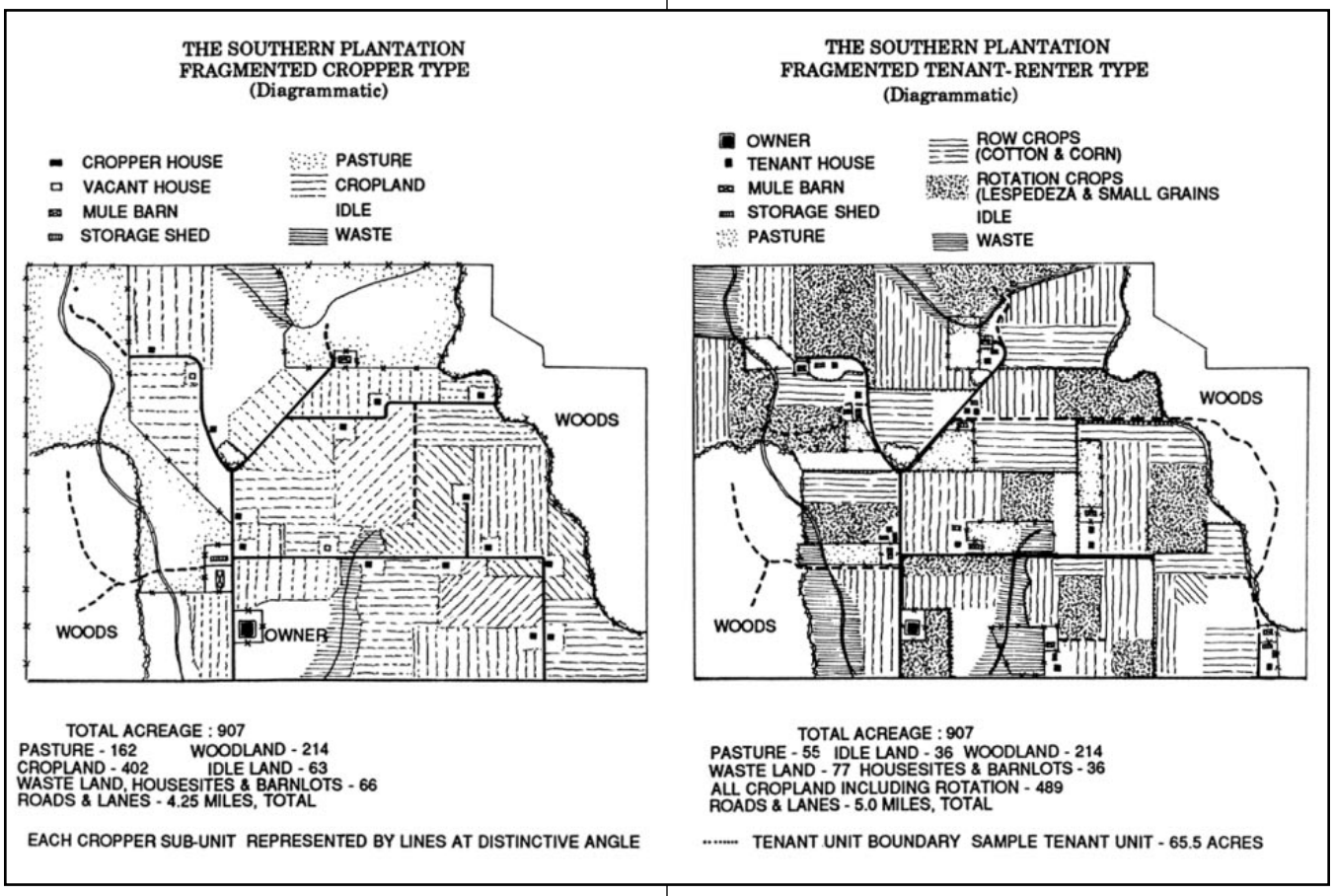
Workers operating a cotton press in Thomas County, ca. 1895. Courtesy, Georgia Department of Archives and History.

area of land for a share of the crops. This produced a settlement system consisting of small, dispersed villages that were intermediate between a nuclear settlement and

a fully dispersed occupancy (Orser 1988). Wage labor systems tended to produce settlements similar to those found at antebellum slave settlements, while sharecropping and renting produced a much more dispersed settlement system (Prunty 1955). Sharecropping required the tenant to pay the landlord part of the crop produced, while renting required that he pay a fixed rent in either crops or money. In sharecropping, the tenant supplied the labor and half of the fertilizer, while the landlord supplied the land, house, seed, tools, work animals, animal feed, wood for fuel, and the other half of the fertilizer. The landlord, in return, received half of the crop at harvest. In share-renting, the landlord supplied the land, housing, and either a quarter or a third of the fertilizer costs. The tenant supplied the labor, animals, animal feed, tools, seed, and the remainder of the fertilizer. Generally, when the crop was harvested it was divided in proportion to the amount of fertilizer that each party supplied. However, there were variations on this type of contract (Orser 1988).

Prunty (1955:467-482) indicates that the settlement patterns associated with share croppers and share renters varied, with the primary difference being the ownership of cultivating equipment and the animals needed to the use this equipment, the "tools and the mules." In the "cropper" settlement plan, these were provided by the landowner and were usually kept associated with the landowner's house or in another centrally convenient

These diagrams by Geographer Merle Prunty depict differences in the layout of share cropper and share renter plantations in the postbellum era. Sharecropper settlement was still centered on the plantation main house complex and most of its lands were devoted to cash crops – cotton. The share renter system led to a pattern of dispersed mini-farms and greater diversity in the types of crops produced. From Prunty (1955).

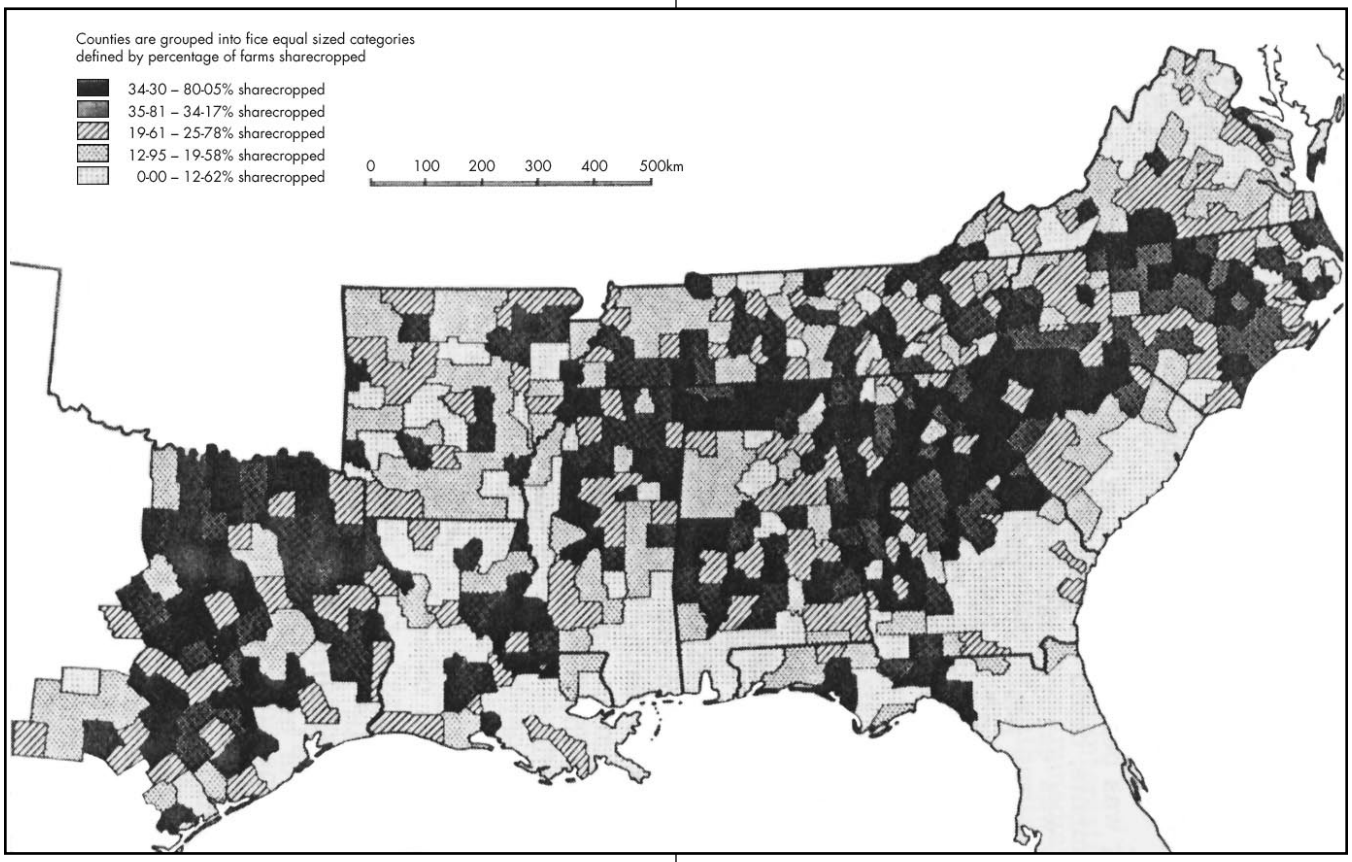


place. The settlement pattern thus resembled the earlier plantation pattern, which much of the land devoted to cotton and with fields centered on a main house complex. The only difference was the dispersal of sharecropper cabins in association with each sharecropper's plot. These cabins generally stood in isolation, without supporting agricultural buildings. In the "renter" pattern, the dispersed tenant cabins acted more as individual farms, and hence each supported and possessed the ancillary structures needed for agriculture, including barns and storage sheds. The share renter settlement plan was also more diversified and was more likely to support subsistence crop production and to leave lands idle.

In the share cropper system, all of the tenants worked together to prepare the fields for planting, and individual plots were then assigned. There is thus less visible break from field to field on sharecropper plantations than on share renter plantations, where individual tenants determined the layout and organization of their farms. The latter system allowed for greater individuality and responsibility. Janie Hampton remembered with pride the abilities of her father, a tenant farmer (in Ramsey et al. 1986:79-82):

> *[there] really wasn't anything around the farm he couldn't do. He used to get farmer's magazines.... he was just apt at learning things.... He had an orchard.... He had different kinds of peaches. He had red peaches, then he had a real sweet white peach. And then he had apricots, plums. He used to graft trees and make them grow, you know, mixed fruits.*

This map shows the percentage of farms which were sharecropped across the southeast. In Georgia, sharecropped farms dominated the northern half of the state, the Upper Coastal Plain and Piedmont, which were also the lands governed by King Cotton. From The History Group (1981:16).



Yours, Ours and Mostly Mine

Ed Brown, a Georgia sharecropper, described the annual routine of a sharecropper and the relationship between the landlord and sharecropper (in Maguire 1975:55-59):

Beginning in January I'd be on my feet by sunup an me and my mule would be goin day after until the land was broke up and turned.

At first Md. Addision say 'How is your crop, and how is you getting along turnin your land? Take care of the mules. Don't rush because I want them to last....

In February to my mind it was usually too cold to fish. But we went on breaking and turning land and pulverizin it. And we went rabbit and coon and possum huntin.

I'm going regular to the boss about once a month for furnish money. 'Ed, when you gonna start plantin your crop?'

I'm waitin till the moon quarter, about the fifteenth of March.

In March with a four-inch scooter on my hayman stock I'd streek off my rows to plant cotton. About the fifteenth I'd put in some soft corn to give me early feed for my hogs and cows. Then I'd have almost two weeks in March and all of April to plant cotton...

Along about April the bossman would say, 'Ed, is your cotton getting ready to chop?'

...If I have good weather the cotton will come right up, about half a leg high, I don't plow deep the first time I cultivate it in May.

...Mr. Addison ain't come out yet. He still settin to the office leavin it in my hands.

'Well, it look good' I tell him. 'It's loaded down with squares and I seen a bloom this week.' In about a month he ask again...

Now the boss ask, 'Is our cotton doin pretty good?'

In July when the furnish money has give out my met is about to give out too...

I see the boss and he say, 'Do you know where we can get you a job?'

'Maybe I can get one to the sawmill but I got the mules to take care of and that would mean I got to leave the crop...'

'Put the mules in the pasture. You can notice them and work at the sawmill and make your own way.'

...Pickin time...

Now [Mr. Addison] goes out to the crop.... 'My crop is lookin pretty' [he] say to my wife.

By the latter part of September it's all picked. I gather my peanuts or whatever I've raised and take the rest of my cotton to the warehouse and get it ginned and baled. Now Mr. Addison can handle it and just as sure as you're livin he'll call it his'n. 'My cotton, my corn, my crop.'

He used to go back and forth around to different people and doctor on the animals.... He knew when to plant certain things that grew underground. It was a certain moon that you plant those on. And things that grow above, the ground, things that you freed from the stalk and then there was some produced things to be picked.... There's a significance in it. And there is a certain time if you kill your hog and your meat will be dry.... And there's certain times you kill it and chew it and the meat will be good and tender and everything. And the fat will come from it. And then there is a lot in feeding an animal. When you get an animal ready for the table, the market, there is certain things you feed him and certain ways and it will turn out.

Ms. Hampton's father used his abilities as a share renter to save enough money to purchase his own farm.

While much of the old plantation area of Georgia was involved in the share system of agriculture, there were areas of the state which continued to consist of subsistence farms or small independent family owned operations. African Americans joined the ranks of farm owners. In the pine belt region, which contained subsistence and herding operations, Malone (1986:72) describes the inhabitants as "well fed, raised large families, and built simple but well-constructed houses and outbuildings, many of which still survive." In the mountain region small subsistence farms prevailed. Around 1880 the vast majority of farms in the state were owner operated with only about 29 acres improved on the average 175-acre farm. There were typically about seven people living on a single farm. Corn was the major crop planted, with some oats and wheat, and most farms had over ten chickens and swine (Harper 1922:26).

The postbellum period also saw an effort to apply science to help pull the South out of the long depression that existed throughout the latter half of the nineteenth century. The state's low yield per acre accentuated the need for creating methods to increase productivity. As late as the 1880s Georgia farmers were, in general, having faith in the land. Most were not ditching or terracing their fields and sub-soiling and crop rotation were either rarely or poorly done. After the war, there were efforts to use fertilizers or manures to improve the soil. Unfortunately, numerous unscrupulous businessmen were selling farmers bogus "cure-alls". This problem was partially responsible for the creation of the Department of Agriculture in 1874, the nation's first state department of agriculture (Georgia Department of Agriculture nd.a). The Department was a regulatory and enforcement

By the early postbellum era erosion had become a major problem in the Piedmont, and was responsible for washing away much of the topsoil from Georgia fields. Terracing, the construction of stone walls and break dams, and other techniques were used to try to control erosion, and plants, such as kudzu, were also introduced as an erosion preventative. From The History Group (1981:125).

agency and its initial functions included fertilizer analysis and inspections, which successfully drove away all fraudulent operators. Many farmers began to contribute reports on their experimentation in various printed mediums (Range 1954:118-122). Harry Hammond discussed the impact of erosion to the Savannah River Valley Association in 1888. He noted that the "denudation" of the "upper country" had left great gullies, whose red clay washed onto the lowlands and flushed away the nutritive topsoil. This erosion was accelerated by improvements to the river; "clearing out the channel and confining the current with wing dams" had increased water velocity and its capacity to drain the runoff of the eroding uplands. As this "deluge of mud" spilled into the river, it become more prone to floods which destroyed even more cultivated land (Anderson and Joseph 1988:452).

Demand and high prices drove cotton's return to the throne in the postbellum years. The amount of land planted in cotton increased as tenant farmers, share croppers, and yeoman farmers all dedicated large amounts of their land to the crop to take advantage of the increase in prices. Despite this cotton frenzy in the state, many people called for agricultural diversity in order to keep Georgia self sufficient and economically secure. While many did not heed this call, being lured away by the idea of wealth through the cotton monocrop, others attempted the production of livestock, grasses and grains, or horticultural products (Range 1954: 103). Nonetheless, by 1869 there were great numbers of people who believed that the South was fit for nothing but cotton and by 1870 it seemed that farmers had all but forgotten about the value of corn, wheat, oats, potatoes, peas, and grass (Range 1954:90-91).

The campaign for agricultural diversification continued and during the years between 1870 and 1900 the State Department of Agriculture, the Georgia Agricultural Society, farm journals, and many individuals pushed the need for movement away from the cotton monocrop. There were four basic arguments used against cotton: 1) cotton prevented self-sufficiency in home supplies; 2) the usual cotton crop flooded the world market and caused low prices; 3) cotton was more expensive to produce than other crops which, combined with low prices, made it unprofitable; and 4) the concentration on cotton was responsible for land misuse and other bad farming practices (Range 1954:91). This call went largely unheeded, often due to farmers' conservatism since they were unfamiliar with planting other crops on a commercial scale. Many who did try to diversify did not attempt to teach themselves about the success of others and, therefore, often planted orchard trees too closely together and fields were improperly cultivated and manured (Range 1954:96).

Livestock was the first to arouse the interest of farmers, primarily because the fact that livestock production required fewer hands than most field crops, fruits, or vegetables. With the labor difficulties after the war, this was seen as the easiest type of farming. In addition to developing a beef industry, a number of venturous individuals established dairies. There was also an increase in horse and mule raising. The diversification movement also achieved a slightly quickened interest in poultry (Range 1954:103-106). The Wiregrass region had long been heavily involved in livestock and continued to do so into the postbellum period. In 1880, the average piney woods farmer used horses rather than mules for his subsistence farming. He had fewer cattle and swine than he did just before the Civil War, owning on the average two dozen of each. He ranged far more sheep; 43 on the average (Malone 1988).

The state agriculture department continuously praised the state for its suitability for livestock and by the late 1880s the *Southern Cultivator* was giving as much attention in

its print space to livestock as it was to crops. Despite these attempts to increase the interest in livestock development, only a small dent in the state's land-use system was made between 1865 and 1900. In fact, 77 counties showed a reduction in dairy cows between the 1880 and 1890 census. The swine population did not substantially increase either. The Civil War cut the two million swine population in half, but within a few years it rose back up to 1.5 million. However, no permanent increase took place after that time. Sheep declined sharply from over 500,000 in 1880 to only half that number in 1900 (Range 1954:106-107).

After the Civil War, there was an immediate effort to revitalize the rice industry. Unfortunately, little came of it and rice production quickly declined through the latter half of the nineteenth century. The most significant recovery of rice in Georgia was in 1879 at Hopeton Plantation on the Altamaha River where 1,020,000 pounds were produced on 710 acres. Tariffs imposed on foreign rice were a significant factor in the revival of rice agriculture in the 1880s. This made it possible to sell rice at some profitability. There were serious problems, though. Labor had become more expensive after the Civil War and laborers were not nearly as efficient. It was concluded that, of all the staples, rice could only be produced profitably under the old plantation system. In addition, during the 1880s Louisiana began to seriously concentrate on developing its potential in rice culture. By 1899 Louisiana was producing approximately seventy percent of the total American rice crop. Numerous hurricanes at the turn of the century damaged the dwindling rice crops along the Carolina and Georgia coasts. A storm in September of 1906 made Mrs. Elizabeth W. Allston Pringle (the famous "Woman Rice Planter") of Georgetown, South Carolina comment: "I fear the storm drops a dramatic, I may say tragic, curtain on my career as a rice planter." Later that year she remarked, "The rice planting, which for years gave me the exhilaration of making a good income myself, is a thing of the past now - the banks and trunks have been washed away, and there is no money to replace them" (Clifton 1978).

As previously mentioned, up until 1860, North Carolina dominated the lumber and naval stores industry, but as the demand for spirits of turpentine grew in the 1830s, the frontier moved southward along the coastal plains of South Carolina and Georgia (Wetherington 1994:116). In the 1870s the state Department of Agriculture advocated the lumber industry as a means of diversifying, and with the development of the railroad network, sawmills and turpentine distilleries developed in southwest Georgia. The greatest expansion of the lumber industry was during the 1890s when declining forest resources in North Carolina sent many operators running off to southwest Georgia. By the end of the decade Georgia ranked seventh in the lumber industry (Range 1954:156).

Turpentine still in Thomas County, ca. 1895. Gum brought from the woods was distilled into turpentine and rosin. The barrels were used to store the naval stores. Courtesy, Georgia Department of Archives and History.

Later in the nineteenth century, many farmers in the middle and southern portions of Georgia attempted to redevelop the cane sugar and sorghum industries to replace cotton. The acreage in sugar cane tripled between 1875 and 1890 and between 1870 and 1900 the production of cane syrup increased six-fold. However, no refinery was ever built within the state of Georgia, which created difficulties for refining, packing, and marketing the crop (Range 1954:108). By 1920 no sugar was reported being produced in the agricultural census. The production of syrup did, however, increase in the late nineteenth century (Tootle 1957).

Mule-powered syrup mill in Green County, ca. 1925. Courtesy, Georgia Department of Archives and History.

There was also an effort to increase the acreage in oats and wheat. It wasn't until the late 1870s that an earnest interest in oats took place, after declining cotton prices. A rustproof seed was popularized by the state department of agriculture in 1875, which significantly helped problems with low yields per acre by protecting oats from the rust fungus. From about 1879 to the mid-1890s, well over a half a million acres were planted on a yearly basis. However, production declined in the late nineties. Interest in wheat also fluctuated; often in opposition to cotton and oats. When one was on the increase, the other was on the decline. In 1898 Irwin and Worth counties reportedly planted one hundred times as much wheat as before, replacing 1,000 acres of cotton (Range 1954:108-109).

Attempts of Georgians to diversify by means of livestock or grasses and grains during Reconstruction never quite matched the achievements in horticulture in either quantity or permanency. Of particular importance were the peach orchards. Although peaches had been grown in Georgia for a long time, as late as 1870 the forty-acre orchard of Judge J. D. Cunningham of Atlanta was the only commercial peach orchard in the state. Several varieties of peaches were brought in during the 1870s and with a variety of attractive, large, solid peaches Georgia was in a position to compete with other peach growing sections of the country (Range 1954:110). The introduction of the Elberta variety of peach, which was developed by Samuel Rumph of Marshallville and was named for his wife, became a sensation in the northern markets. Other peach varieties developed in the state included the Georgia Belle, Hiley, Dixigem, and Dixired. The combination of improved rail transportation and the development of mechanical refrigeration spurred an increase in peach production in the late nineteenth century, by which time E. W. Hiley of Fort Valley would own the largest peach orchard in the state and world. It contained approximately 350,000 trees on more than 2,000 acres and Hiley employed more than 800 seasonal pickers (Georgia Department of Agriculture nd.b).

Georgians also ventured into growing fruits and vegetables for market between the years of 1865 and 1900, an agricultural economy that would be known as truck farming in the twentieth century. Although some of this

farming was done before the Civil War, the collapse of the plantation system caused people to believe that farming should be done on a smaller amount of acreage. By the latter nineteenth century, the spread of roads and railroads assured them that crops could reach their markets. As early as 1867, one farmer near Augusta was shipping watermelon to New York and his profits were so great that others followed in his footsteps. By the late 1870s truck farming was flourishing around Savannah where five steamers a week left port carrying fruits and vegetables to northern cities. It was during the 1880s and '90s that truck farming received its greatest attention. In 1882 the Vegetable and Fruit Growers Association was organized and in the following year, fifty truck farmers raised $300,000 worth of produce and trucking had spread to all parts of Georgia. In 1890 Francis A. Exley brought together three coastal plantations into a single truck farm with 3,700 acres. He turned out enormous crops of Irish potatoes, cabbage, and beets. By the mid-1890s strawberries were a top crop and watermelon was considered king of the Wiregrass country (Range 1954:112-113).

Men spraying insecticide on peach trees in Jones County, ca. 1900. Courtesy, Georgia Department of Archives and History.

Commercial nut growing also began in the postbellum period. In 1886 the *Cultivator* reported that several men had been successful in growing and marketing pecans on a small scale near Savannah. Pecans were native to the US and had probably been introduced to Georgia by Native Americans. In 1887 Nelson Tift started an orchard of 500 trees near Albany. Two years later he had 2,500 pecan trees. Georgia's production lagged behind other states, however. In 1889 there were only 97 acres planted in pecans in Georgia, as compared with 1,000 acres in Mississippi and 2,000 acres in Louisiana. Experimentation, organization, and promotion led to a dramatic increase in pecan production between 1880 and 1910. G. M. Bacon of DeWitt, S. W. Peck of Hartwell, and J. P. Gill of Albany were all pioneers in the development of the pecan industry, as was H. P. Stuckey of the Georgia Agricultural Experiment Station who conducted pecan research. By the turn of the century there were 30,000 nut bearing commercial trees in the state of Georgia. As a result, the Southern Nut Growers Association was established in Albany in 1901. In 1907 the Georgia/Florida Pecan Growers held their first convention, and this group would evolve into the Southeastern Pecan Growers Association which is still active today. There were several thousand acres planted in pecans by 1900 (Range 1954:113, Georgia Department of Agriculture nd.b).

Seed farming was also a venture that started during the diversification movement. However, it did not take off quickly. By 1890 census takers found 31 seed farms in the state, although a few more appeared in the 1890s. Tobacco also got a slow start. Although it had been grown throughout the state during colonial times, it was never grown commercially. Difficulties in curing and marketing the product prevented rapid development. It was

not until 1892 that tobacco got a foothold. By the end of the century approximately one million pounds of tobacco were being grown on 2,000 acres in the state. The introduction of the blended cigarette in 1913 increased the demand for tobacco and its production in the state. By 1919 Georgia was producing 11.6 million pounds of tobacco on 23,800 acres with an average yield per acre of 488 pounds (Range 1954:113-114).

During the 1890s, cotton prices varied greatly. When prices were low, farmers tried to diversify their production, and as they diversified, and cotton production declined, prices would increase and farmers would turn back to cotton production. With this fluctuation between cotton and home supplies, it appears that corn production was never affected. It steadily increased in production from 1,700,000 acres in 1866 to 3,570,000 in 1900. As previously mentioned, dairying, truck farming, and orchard fruits got a permanent foothold, but efforts to develop other livestock, tobacco, small grains, small fruits, nurseries, seed farms, and other things were premature (Range 1954:116).

Workers threshing grain in the fields, Carroll County, ca. 1900. Courtesy, Georgia Department of Archives and History.

In 1888 the Georgia Experiment Station was established at Experiment, Spalding County. The station was part of a national program to improve agriculture through chemistry, engineering, and planning, spurred in the southeast by erosion and concern over the reliance on cotton as the primary crop. These agricultural stations were funded by the legislature as part of the state's university system, and usually operated various stations around the state whose primary function was to experiment with different crops and varieties to determine which were best suited to a region's climate. The system still operates in Georgia through the University of Georgia, with the College Experiment Station located in Athens, the Georgia Experiment Station in Griffin, and the Coastal Plain Experiment Station in Tifton. There is also a Central Georgia Branch in Eatonton, a Georgia Mountain Branch in Blairsville, a Northwest Branch in Calhoun, a Southeast Branch in Midville, and a Southwest Branch in Plains. In the 1880s and 1890s the Station's work was primarily aimed developing improved crop varieties such as Empire cotton, Chancellor wheat, Dixie crimson clover, Arlington and Atlantic oats, Georgia 101 and 103 corn, Dixie Spanish peanuts, Hunt and Dulcet muscadine grapes, and Truhart pimiento. Other developments included improvements in food processing, development of improved cultural and pest control practices with peaches, evaluation of forages for dairy and beef animals, and the development of a mobile soils testing laboratory (Georgia Department of Agriculture 1954:10).

King Cotton continued to rule during the first twenty years of the twentieth century, but with the coming of the boll weevil and its devastating effects on the crop came a significant adjustment in agricultural land use, which resulted in, finally, the success of agricultural diversification. Briefly, during World War I, it appeared that diver-

sification would occur because of low cotton prices in 1914 and the loss of Germany as a market. During the war there were special food production campaigns in the South promoted by the United States Department of Agriculture and aided by agricultural colleges, extension services, farmers' associations, agricultural journals, businessmen, and the press.

Organized in Atlanta in 1900, the Cotton Growers' Protective Association pleaded with farmers to regulate their production since bumper crops often resulted in a drop in price, but farmers did not listen. By 1905 Georgia ranked next to Texas in cotton states with an increase of $77,000,000 in the value of the cotton farms. Ten years later the cotton crop was worth three times the amount it was in 1900 and it only got more valuable during World War I. With its increasing prosperity, cotton remained king, much to the dismay of those pushing diversification. This reign ended in the 1920s with the attack of the boll weevil, the Great Depression in the 1930s, the New Deal agricultural programs, and in the 1940s by World War II. Upland cotton farmers began to pursuit peanuts, tobacco, and livestock. Thousands of owners and tenants deserted farming altogether.

Wagons loaded with cotton wait in front of a cotton gin in Siloam, Greene County, ca. 1920. Courtesy, Georgia Department of Archives and History.

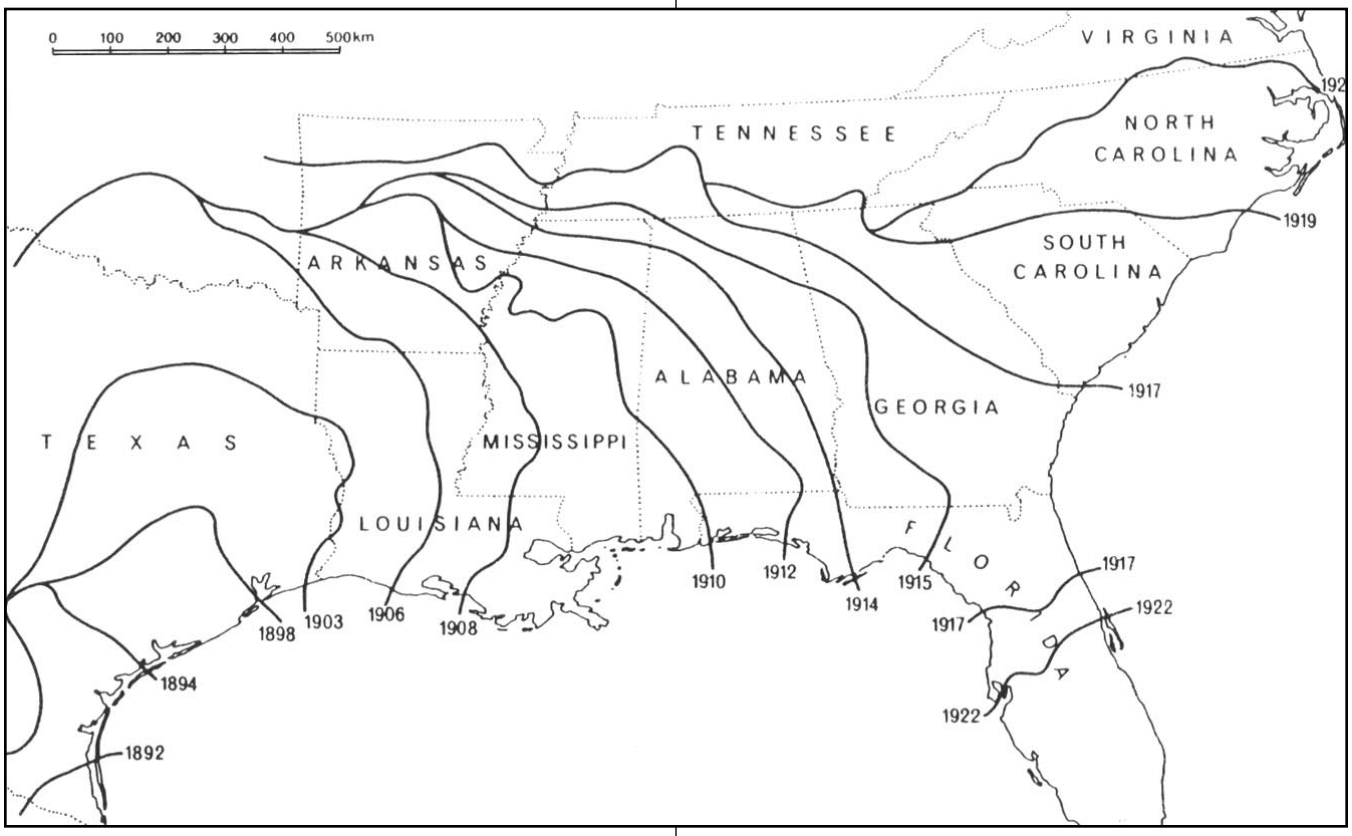
1920-1950: The Death of King Cotton and the Birth of Successful Agricultural Diversity

During the early 1920s nearly 3,500,000 acres of farmland went out of production. The effects of the boll weevil lessened in the latter half of the 1920s, but cotton never again reached its earlier levels of production. Before the boll weevil, cotton accounted for 66 percent of the value of all Georgia crops. In 1929 it accounted for only 47 percent (Range 1954:173-174).

The boll weevil reportedly reached Thomasville on August 25, 1915, and by 1921 had swept through the entire state. The "winged demon" devastated cotton harvests. In 1914, before the weevil's arrival, the average Georgia farm produced 252 pounds of cotton per acre. By 1923 that average had dropped to 106 pounds per acre. Damage from the weevil reached its peak in 1925, and the weevil continues to threaten Georgia's cotton fields in the present (Georgia Department of Agriculture nd.b).

During the Great Depression, more cotton was being produced than could be absorbed in the world markets at a profitable price and, therefore, cotton prices dropped. In 1933 the Agricultural Adjustment Act (AAA) was passed with virtually no opposition in Georgia. This act asked farmers to voluntarily rent part of their cotton land to the Secretary of Agriculture who would pay them three and a half cents per pound of cotton that would not be grown. In addition, cotton farmers were paid a subsidy on a portion of the crop in order to bring the pur-

chasing power up close to that experienced between 1909 and 1914. The AAA brought the acreage planted in cotton down to about 45 percent of what it was during the 1910-1914 period. It had been discovered, however, that the few people who were not taking advantage of the Act were reaping benefits with a reduction in their crops. With favorable weather, ingenious use of fertilizer, and good lands, an acreage limitation was not enough (Range 1954:177; Daniel 1985). So the Bankhead Act was passed which added marketing quotas to the program of acreage limitations. If those quotas were exceeded, then there was a financial penalty. The AAA was, for the greater part, brought to an end in 1936 with the invalidation of some of its key provisions. The majority of Georgia farmers was opposed to this and petitioned the government to control production. As a result, the Roosevelt administration produced a new program under the Soil Conservation and Domestic Allotment Act. This act paid a certain amount per acre for diverting land from cotton to crops which would build and conserve the soil. However, since it was not compulsory, it did not have the same effect as earlier legislation had on restricting crops. Georgia farmers began returning to the cotton crop, planting about 500,000 acres more than during the AAA days and in 1937 reaped the second largest crop since 1918. This resulted in a sharp drop in prices and, once again, cotton farmers called for effective controls. In the following



The boll weevil spread north and east from Texas, reaching western Georgia by 1915. By 1921 it had spread across virtually all of the state. The adult boll weevil measures from 3 to 8.5 mm from its snout to the tip of the abdomen and is reddish to gray brown. Boll weevils hibernate and adults begin to emerge in February. They lay their eggs singly within cotton squares, and an adult female can lay up to 200 eggs. The larvae then hatch and feed on the cotton square, causing it to drop from the plant within 3 days. The larvae continue to feed until they reach adulthood at which time they begin laying their own eggs. In the south, there are usually four generations of boll weevils in a growing season. The map is from The History Group (1981:143).

year, a new AAA program was established which continued and strengthened the provisions of the 1936 Soil Conservation and Domestic Allotment Act. It also provided compulsory authority to limit the amount of cotton that could be marketed without being penalized. There were minor adjustments afterwards, but this program was still in force in 1950 (Range 1954:177-179). Cotton remained Georgia's most important cash crop since cotton agriculture and cotton products provided employment for more people than any other commodity (Georgia Department of Agriculture 1954).

World War II further limited the production of cotton in Georgia. Export practically stopped and field labor was increasingly difficult to get. In addition the government announced in 1942 that edible crops were needed for the war effort. By the end of the war Georgia's acreage in cotton was the smallest planted since 1869. By 1950 the state's cotton acreage was 80 percent lower than in the peak year of 1918 (Range 1954:180).

There was some effort to make hay a minor cash-producing crop. However, unsuitable varieties of Northern, European, and Asiatic plants could never prosper because of too much moisture during the curing season and too little livestock. Efforts at planting alfalfa also failed. Due to the boll weevil problem, there was some effort to grow hay to bolster the income and by the late 1940s approximately 1,500,000 acres were devoted to the crop. During the 1930s soybeans came to the attention of Georgia farmers. In the early '30s only a few thousand acres were planted, but during 1937 through 1946 Georgia averaged 133,000 acres a year. Cowpeas were planted on a similar scale as well. The velvet bean had phenomenal success in the early twentieth century and by 1917 they were grown on 1,300,000 acres. Afterwards, the crop was planted in an area from 500,000 to 1,000,000 acres (Range 1954: 186).

Corn had always been grown in Georgia in large quantities, but it was never able to compete as a cash crop with other states. Therefore, it was determined that there was no real need to increase acreage beyond what was needed for local use. Throughout the first half of the twentieth century the size of the crop fluctuated between 3,500,000 acres and 4,500,000 acres. Wheat, rye, barley, and sorghum also were never really considered with any enthusiasm and, in fact, wheat production dropped in the early twentieth century (Range 1954:186).

Corn shucking on the London farm, south of Dahlonega, Lumpkin County, ca. 1890. These social gatherings often rotated from farm to farm. Courtesy, Georgia Department of Archives and History.

Of all the grain crops, oats were the only one that received any real attention. The oat yield per acre gradually increased from 12 bushels per acre in the nine-

teenth century to double that in the early twentieth century. By the late 1940s oats were being grown on 700,000 acres per year. None of the crops mentioned above were considered worthy substitutes for cotton as a cash crop. While many of them helped to bolster the livestock industry, only corn was listed as one of the state's major sources of income, and most of that was being used at home. None of it was really exported. Georgia farmers were able to find two crops that could replace cotton: tobacco and peanuts. Both of these crops were grown primarily in south Georgia (Range 1954:187).

Tobacco had always been grown in Georgia on a small scale and there was even a small "tobacco boom" at the end of the nineteenth century, which resulted in the development of the cigar-type Sumatra tobacco industry in Decatur County. By 1907 it included the largest shade tobacco plantation in the world. This was the only permanent result of this premature boom. With news of the impending approach of the boll weevil, farmers began to consider growing tobacco again. While initial efforts were not encouraging and prices were low, as World War I progressed the tobacco outlook took a turn for the better. Prices improved and experienced growers from the Carolinas moved into Georgia and the outline of a good tobacco belt was established. Tobacco thrives in a sandy loam soil and so tobacco became a staple crop of the Central Coastal Plain and Upper Coastal Plain. It is a labor-intensive crop. As the leaves begin to ripen they fade from green to yellowish green. The best harvests are obtained by "priming," during which the leaves are snapped off a plant three to five at a time, beginning at the bottom of the plant. Priming occurs once a week, and mature plant will take four to six weeks to be fully harvested. After harvest, the leaves must be cured. Curing took place in tobacco barns. Tobacco could be either air-, fire-, or flue-cured, but most twentieth-century Georgia tobacco barns were flue-cured. These tall, cubical structures are typically 16 to 24 feet on a side, with two small access doors on opposite ends of the barn. Curing takes places in three stages. In the first, heat is maintained at between 90 and 100 degrees Fahrenheit for 24 to 40 hours. The temperature is then increased in the second stage to 135 to 140 degrees for 30 to 36 hours. This fixes the color of the leaf. In the final stage the heat is increased to 160 to 165 degrees to dry the stem. Ventilator openings in the tobacco barn walls are then thrown open so the tobacco can absorb moisture from the air, and the curing process is complete (Georgia Department of Agriculture nd.b). By 1918 fifteen counties were producing tobacco and the number of warehouses were increasing. By 1927 tobacco had become Georgia's second most important cash crop. During the Great Depression, price drops made the industry suffer considerably and New Deal agricultural programs included it as one of the crops that needed to be controlled to fit the market. In 1934 the Kerr-Smith Tobacco Control Act was passed which provided marketing quotas. Between 1934 and 1950 (with the exception of

Workers stand in rows of shaded tobacco in Decatur County, ca. 1920. The shade is provided by stretching strips of unbleached cloth to form a partial covering and yet let some sunlight in. Courtesy, Georgia Department of Archives and History.

1939) the tobacco crop was restricted, but profits were assured (Range 1954:187-189).

Despite Georgia's great success in tobacco, it was still only a small national player producing just five percent of the nation's crop. Most of the warehouses were operated by Carolinians who spent only a few weeks out of the year in Georgia. Tobacco's future development was somewhat handicapped by a shortage of storage warehouses and re-drying plants (Range 1954:189).

Peanuts were the second crop that replaced cotton as a staple crop. African slaves who had used them as a staple of household gardens (Hall 1991) probably introduced peanuts, or ground nuts or goober peas, to the New World. Peanuts were grown in slave gardens on Georgia plantations. They were not widely recognized as a food source by people of European descent, although the editor of the *Albany Patriot* recommended in 1846 that they be fed to hogs in place of corn. Food shortages of the Civil War led both white southerners and Union troops to try the crop and peanuts became a more important food crop after that. There was increased interest in peanuts during Reconstruction as part of the diversification movement and Georgia hog farmers had been growing them for grazing. In 1899 about 100,000 acres were planted for that purpose. Improvements in machinery for growing and handling peanuts as well as increased knowledge about their food value to humans and animals allowed peanuts to develop into an important commercial crop by World War I. Like tobacco, the arrival of the boll weevil precipitated the growing of peanuts. This as well as high prices offered for vegetable oils caused peanut production to increase ten-fold between 1916 and 1919. Several oil mills were constructed in south Georgia to handle the product. By the end of the 1930s more than 500,000 acres were planted in peanuts and Georgia became the national leader in peanut production. The acreage devoted to peanuts peaked in 1942 at 1,500,000 acres. Since 1940 Georgia has produced and harvested about one third of the nation's peanut crop (Range 1954:189-190; Georgia Department of Agriculture 1954, ndb).

Jimmy and Billy Carter examining peanut crop on Carter Farm, Sumter County, ca. 1977. Courtesy, Georgia Department of Archives and History.

A crop found in association with peanuts is blue lupine. This flower was particularly beneficial as a winter planting to protect peanut lands from erosion while increasing soil nutrients. Blue lupine came to be extensively planted in Georgia during World War II with its demand for greater planting of peanuts to produce peanut oil. By 1950 there were approximately 156,000 acres planted in lupine which yielded 140 million pounds of seeds valued at $6,000,000. For a number of years a blue lupine festival was held in Dooly County (Georgia Department of Agriculture 1954).

Another important development in Georgia was in the field of general horticulture. Throughout the early half of the twentieth century orchard fruits held the leading place in the realm of horticulture. Although peaches were

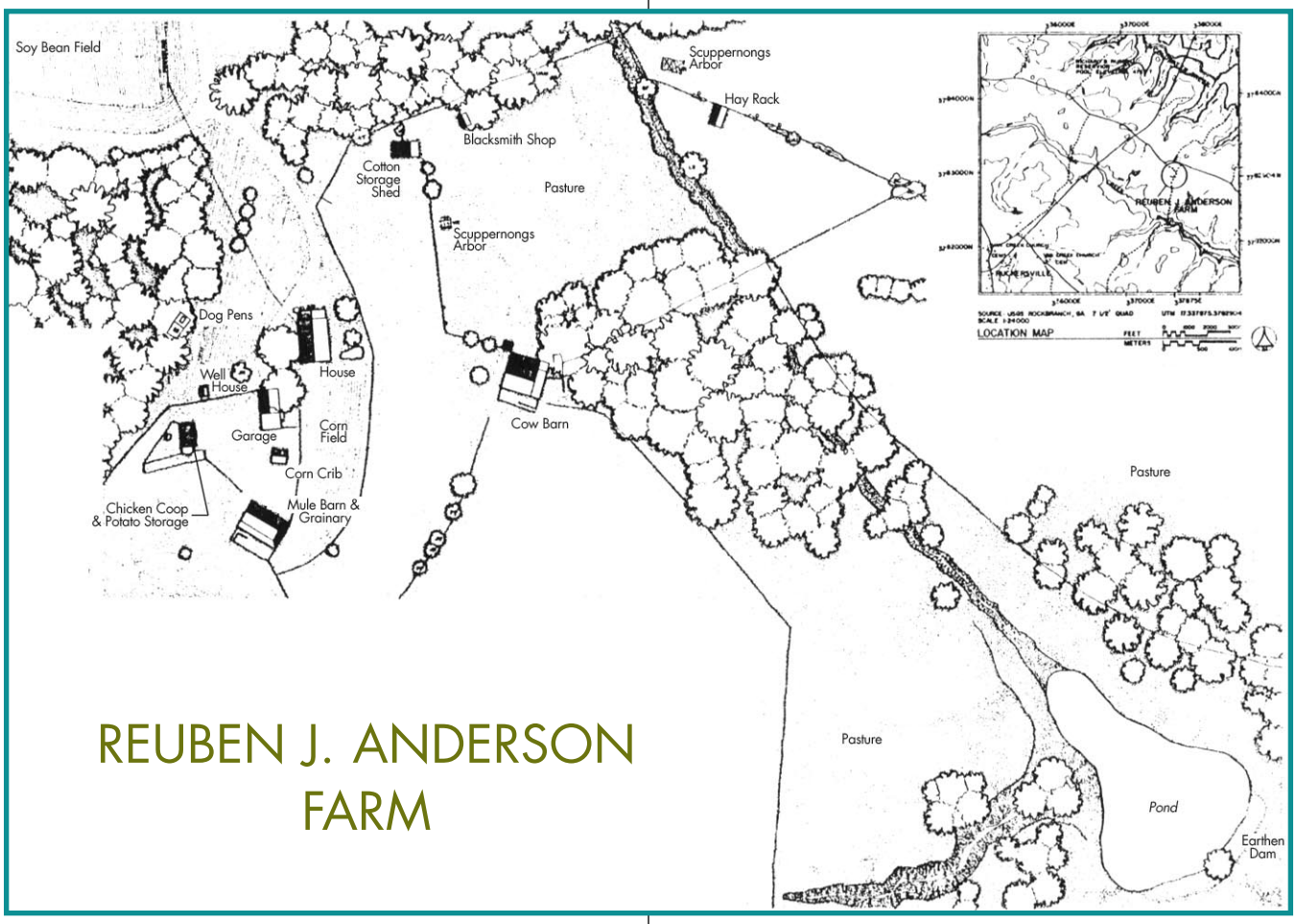
grown at a large scale in the nineteenth century by 1904 as many as 3,000,000 trees were being planted each year. Georgia boasted the largest peach orchard in the world, which was owned by J. H. Hale of Fort Valley and contained 350,000 trees on 2,160 acres. By 1910 the state agricultural department inspected 382 orchards most of which grew peaches, and the census reported more than 12,000,000 peach trees in the state. Peach growing peaked in the early twenties when about 15,000,0000 trees were reported. Unfortunately, overproduction and low prices forced readjustments in production in the late twenties and the Great Depression made the situation worse. After this time, peach production declined and by 1935 only about half the number of trees was counted as had been in the previous peak decade. In 1950 only about one tenth of the 10,000,000 bushel crops of the late twenties was yielded which was the smallest crop reported since the beginning of the Reporting Service in 1909. Other orchard crops produced in minor amounts during this period were apples, as well as pears, cherries, and plums (Range 1954:191-193). Jarvis Van Buren, a native New Yorker who moved to Georgia in the 1840s, promoted the growth of apples. Van Buren established Gloaming Nursery on 10 acres in Habersham County near his home in Clarkesville. He began collecting apple seedlings from the old Cherokee Indian orchards in north Georgia and believed that these native apples could be improved to produce varieties on par with those from New York. Because of his efforts, Habersham and Hall counties became the center of the Georgia apple industry. By 1930 there were approximately 1,400,000 apple trees, all in the north Georgia mountains, down from a peak of 2,800,000 trees in 1910 (Georgia Department of Agriculture 1954, ndb).

The effort to produce pecans as a cash crop was permanently successful. By 1910 Georgia had about 450,000 trees, most of which were growing in the Albany and Flint River areas. Planting continued to increase and by 1925 more than 2,000,000 trees were planted. Pecans became so popular that they were planted and sold as a speculative venture. From 1910 to 1925, various real estate promoters planted pecan groves that were then sold in 5 and 10 acre plots. The developers made exaggerated claims about the value of pecan "farms"; one advertising (in Georgia Department of Agriculture, nd.b):

> *A pecan grove of five acres nets $2500 yearly with no worry, no loss of crop, and little cost of upkeep. The papershell pecan begins bearing in two years, produces fifty to two hundred and fifty pounds at ten years, with yearly increases thereafter.... Five acres will keep the average family in comfort.*

Production increased from around 27,000 pounds in 1927 to nearly 40,000,000 in 1948 (Range 1954:193-194). By the early 1950s Georgia led the nation in the production of pecans and produced more than half of improved varieties (Georgia Department of Agriculture 1954).

Just behind orchard development was the development of truck farming. World War I and the expected arrival of the boll weevil stimulated interest in this area during the twenties. In 1920 less than 12,000 of the 310,000 farms in Georgia were raising vegetables for the commercial market. With the arrival of the boll weevil the acreage devoted to vegetables was up to 109,000 and peaked in 1935 at 147,000 acres. There was a decline afterwards, but at least 100,000 acres were maintained and in 1948 3.7 percent of farm income was obtained from this source. In 1947 Georgia ranked eleventh among the 48 states in the amount of land devoted to truck farming. Crops commercially grown consisted of watermelons, which occupied the



REUBEN J. ANDERSON FARM

This plan of the Reuben J. Anderson farm in Elbert County was created by the Historic American Buildings Survey (HABS). The Anderson farm ranged in size from 50 to 200 acres and was created after 1920. The lay-out shows the informal plan which characterized many smaller southern farms, which were organized largely upon the dictates of the land and the desires of the farmer and lacked formal symmetry. At the Anderson farm, as with most others, outbuildings which supported the main house, including the chicken coop and well house here and in other instances smoke houses, ice houses, and other buildings, were located near the dwelling, while the agricultural buildings, in this instance the cow barn, cotton storage shed, blacksmith shop, hay rack, and mule barn, were all located a slight distance away. Note the use of much of the available land for agriculture; the house is flanked by a garden and backed by a cornfield, while much of the immediately surrounding land is pasture. Anderson and Joseph (1988:551).

dominant position, lima beans, snap beans, cabbage, cantaloupes, cucumbers, lettuce, onions, tomatoes, English peas, and Irish potatoes. The most unusual truck crop grown in Georgia was the pimiento pepper in the central part of the state (Range 1954:195).

The production of the pimiento came about when Spalding County farmer Georgia Riegel sampled a can of Spanish pimientos from his local grocer's shelf. Riegel realized that these pimientos were far superior to the ones available in the United States and in 1912 he was able to obtain a small packet of pimiento seeds for the American consul in Spain. Riegel developed a pimiento strain suited to Georgia, known as "Perfection," and followed his interest of the plant by learning the Spanish

roasting and processing techniques. This led to the construction of a processing and canning facility known as the Ponoma Products Company in Ponoma. By 1929 Georgia produced 12,350 tons of pimientos. Walter Graefe, who became the President of Ponoma Products, organized the Georgia Pimiento Canners Association in 1933 to improve production in the state, and by the 1940s Georgia had 20 pimiento processing plants and led the nation in processing and production. Operating at full capacity, the Ponoma plant could produce 200,000 cans of pimientos a day. Its products were shipped worldwide (http://www.hts.gatech.edu/south/georgia/butts/butind31\html). Pimiento acreage peaked in 1950 at 32,000 acres, and labor issues involved in the harvesting of field and diseases led to a decline in pimiento growing. However, the state is still the nation's leader in the processing of pimientos, and the success of the crop was such that at one time it was proposed that the state's nickname be changed from the Peach State to the Pimiento State (Georgia Department of Agriculture nd.b)

Nurseries and seed farms had developed in the late nineteenth century, but only with moderate results. However, at the turn of the century two major nurseries developed: H. G. Hastings and Company in Atlanta and P. J. Berckmans' Fruitlands Nursery in Augusta. These two companies attempted to break Georgia's dependence on northern nurseries. By 1904 there were 210 nurseries in Georgia, but they dropped in numbers by 1909 when the Commissioner of Agriculture complained that most of the stock was coming from outside of Georgia from 96 companies while there were only 60 nurseries selling within the state. At this same time a young grower by the name of Paul Dearing Fulwood began a nursery in Tifton. When several of the large canning corporations found that Fulwood's tomato plants were hardier, could be harvested earlier, and were considerably cheaper than growing them in their own greenhouses in the North, a large market opened up for Georgia plant growers. As a result, several large growers emerged around Tifton and the industry rapidly grew. Companies such as Campbell Soup and Stokely-Van Camp were buying much of Georgia's plants and by 1946 a billion tomato plants and hundreds of millions of onion, broccoli, cabbage, pepper, lettuce, and other seedlings were being shipped to northern companies (Range 1954:195-196). Also of interest was the site of the Albany nursery, which was selected in 1932 by the State Board of Forestry as the first state owned forest seedling nursery in Georgia (Georgia Department of Agriculture 1954).

Livestock production was one of the most significant and revolutionary developments in the attempt to find a substitute for cotton. Although livestock had always received some attention, it was not until the Great Depression, the New Deal, and World War II that farmers gave serious attention to the animals. Between 1933 and 1950 the state's income from animals increased ten times. However, in 1950 Georgia was still one of the lowest ranking southern states in the number of animals. Within the realm of livestock, poultry became a significant contributor of cash income to Georgia farmers. The industry became commercially important after World War I and by 1920 Georgia's flock and egg production increased by more than one third. The boll weevil epidemic further increased the importance of poultry and co-operative selling facilities were established in various communities. During the 1930s farmers were encouraged to raise poultry by county agents, agricultural colleges, and articles in agricultural magazines. The industry received a boost from feed dealers and distributors who began providing feed and chicks on credit. Jesse Dixon Jewell, a feed dealer in Gainesville, is credited with the expansion and promotion of the poultry industry in that area. Jewell provided feed and chicks to farmers in the Gainesville area on credit. Cotton farmers were familiar with this

system, as it was similar to the relationship many had had with local stores where they bought items on credit and paid their bills when the harvest came in. Jewell is credited with developing the poultry industry around Gainesville into a vertically organized agribusiness. He hatched eggs for broiler stock, contracted with farmers to raise the chicks, provided feed to the farmers on credit, and processed and sold the mature boilers. In exchange for a guaranteed market for their birds and minimal cash outlay, the farmers provided housing for the birds, equipment and labor (Georgia Department of Agriculture nd.b).

Woman and child feed broilers in front of poultry house, Barrow County, ca. 1950s. Courtesy, Georgia Department of Archives and History.

The vertical integration model developed by Jewell spread and helped Georgia to become one of the nation's leading poultry producers. While in the 1940s the size of most chicken farms was limited to no more than 5,000 broilers, by the 1960s operations with 100,000 to 200,000 birds were common (Georgia Department of Agriculture nd.b). By the 1950s, Georgia was the leader in broiler production and Cherokee County led the state (Georgia Department of Agriculture 1954).

Although not as spectacular as poultry, the beef and dairy cattle industry achieved some importance. The industry got off to a slow start because of a general disinterest in cattle and because of "Texas fever" which was spread by ticks in the late nineteenth century. It wasn't until the end of the twenties that the fever was eradicated and beef and dairy products showed considerable increase. Along with this came an increased interest in the planting of grazing lands and by the mid century Lespedeza for grazing or hay was being planted, as well as Ladino and Crimson clover, Fescue, Bermuda and Coastal Bermuda, and several other grasses. In the twenties and thirties beef production hovered around 85,000,000 to 1,000,000,000 pounds a year. But after 1940 there was a gradual increase throughout the decade until there was an 80 to 100 percent rise in production. As for dairy farms, the number of cows milked showed no appreciable increase in the first half of the century and butter production actually decreased slightly. The industry was given some economic security with the development of the Milk Control Board in 1937 to prevent unethical practices that had previously hampered the industry. By 1940 there were 2,000 dairy farms, with another 914 by the end of the decade (Range 1954:202-206). By the early 1950s the industry contributed about 40 million dollars in cash income annually (Georgia Department of Agriculture 1954).

Swine production improved considerably throughout the early twentieth century, not by numbers but by the quality of the stock. The fleet-footed razorback lost popularity and blooded stock, which could produce large and healthy litters, were getting serious attention. However, Georgia never achieved the status of being able to produce all its own pork. Although there was an effort to increase the number of sheep farms, they continued to

disappear from the Georgia landscape. At the turn of the century there were 300,000 animals which dwindled to only 9,700 in 1950 (Range 1954:207).

In the twentieth century trees began to be considered as a major crop. Because of the reckless management of timberlands in the nineteenth century, Georgia's timber and naval stores industry was in distress by 1904. In 1920 the United States Forest Service stated that almost all of Georgia's virgin timber was gone and it was predicted that within ten years all of the big saw mills would be out of existence. It was this crisis that lead to better forest management and in the ensuing thirty years the state experienced a minor revolution. In 1921 the state created the Georgia State Board of Forestry, which worked to control, fires and promote reforestation. The Federal government increased its cooperation with the states and then the New Deal brought in large programs of conservation, reforestation, and research. After the low point in the Great Depression, the lumber and naval stores industries became prosperous and before the mid century, lumber cutting was at a record high of two billion board feet per year. Reforestation was going on at such a pace that plantings were keeping up with the demand for wood products. Naval stores productions peaked around 1930 and then levels dropped during World War II. Afterwards, production was up again to about 242,000 barrels at the end of the forties. A new development in the forestry industry was an interest in pulp for paper mills. Serious interest was aroused in the thirties by Dr. Charles H. Herty when he began experimenting with making white paper newsprint. However, it was never produced on a large enough commercial scale to replace Canadian and Swedish spruce. Union Bag and Paper Corporation opened its first mill in Savannah in 1936, and by 1950 six more mills were opened. The market for pulpwood grew and production jumped from 47,000 cords in 1935 to more than 2,300,000 cords in 1950 (Range 1954:209-211).

One problem that plagued the South from the Civil War through to the Depression was the growth of the rural population and the lack of economic opportunities outside of agriculture. The United States Department Agriculture 1938 *Yearbook of Agriculture* reported:

> *the occupancy of poor agricultural soils by poor people is greatest in the southeastern third of the United States, especially in the hilly portions of this region . . . . People continue to farm poor land either because they do not have the means to acquire better land or because they cannot get jobs that offer them more for their labor. Poor land is cheap and therefore available to poor people. It is, in fact, the only kind of land that poor people can generally get (U.S.D.A. 1938: 65).*

The Georgia Piedmont is one area which contained the kind of soils that "melt like sugar and flow like water". Severe gullying was possible and Healy (1985:216) notes that "in one famous Georgia case, a tiny gully started by poor farming practices in the early 19th century has grown into a canyon 150 feet deep." That gully is now Providence Canyon State Park.

While there were some efforts to improve the highly eroded soils of Georgia in the nineteenth century, the first erosion control demonstration project was established in 1934, headquartered in Athens. It included 104,070 acres in Jackson, Madison, and Clarke Counties. Similar projects were established in other areas of Georgia the following year. As part of a nationwide effort to develop and demonstrate soil and water conservation methods, the project was set up under the United States Department of the Interior and later transferred to the Soil Conservation Service of the United States Department of Agriculture (Georgia Department of Agriculture 1954). One of the legacies of soil erosion

control in the South is kudzu. Originally introduced in the late nineteenth century as an ornamental known as the "porch vine", it saw widespread use in the thirties and forties for erosion control and soil restoration (Kovacik and Winberry 1987:43-44).

The greatest shift in Georgia's agricultural history has come about in the years since World War II. The post World War II economy saw an increase in industry in the state as well as increasing urbanization. The advents of the air conditioner, the automobile, and the airplane all have had major effects on the landscape. Atlanta, Georgia's capital, has developed in the one of the fastest growing human settlements in history and former farmlands in the 11 county metropolitan Atlanta areas have become consumed by suburbanization. Similar changes in land use have occurred around other major cities including Augusta, Columbus, Macon, Valdosta, Savannah, Brunswick, and Rome. In 1989, broilers were Georgia's agricultural product with the greatest value, worth an estimated $1,250,425,000. Agricultural production has shifted away the urban centers with the southwestern corner of the state, the lower central coastal plain, as the agriculturally most productive area. Cotton, once king, was valued at $106,868,000 and was grown on 260,000 acres in that same year. Wheat was valued at $82,880,000 and was produced on 700,000 acres in that year, while corn was valued at $137,418,000 and planted on 550,000 acres and tobacco was valued at $145,624,000. In 1989 peanuts were Georgia's second leading agricultural commodity, valued at $506,763,000. Pecan production was valued at $55,852,000; peaches at $23,260,000. Truck farming and vegetables were another important part of the agricultural economy with a value of $177,153,000 (Georgia Department of Agriculture nd.a). The Georgia Department of Agriculture (nd.a) noted that "the proximity of state farmers' markets and an upwardly mobile urban population indicate a strong future for specialized vegetable production."

Mechanization has also changed the appearance of farmsteads. Fields have become larger and more regular in shape – the small opportunistically sited fields of earlier Piedmont farmsteads were ill-suited to cultivation by modern equipment. Agri-business often resulted in the consolidation and specialization of farms, as well as the loss of livestock pens since mules were no longer the farmsteads motive power. Family owned and operated subsistence and cash crop farms have thus largely vanished from the landscape, and are now a part of Georgia's agricultural legacy.

III. An Agricultural Typology

Introduction

One of the most important objectives in the development of any context for historic preservation is the establishment of a typology that defines how objects related to the context are classified and identified. A typology is, in essence, an ideology, defining how things are grouped, identified, and categorized. The ideological aspects of typology are magnified when dealing with historic resources, as the historic dimension brings into consideration the differences between current systems of classification and those used in the past, the etic and emic aspects of classification. Our efforts to develop a typology are further fragmented by the disparate disciplines and approaches to the agrarian past. For architectural historians, landscape architects, and historic archaeologists, "agrarian site" has different meanings and our typology must attempt to rectify and relate these distinct perspectives into a unified whole.

One of the most elemental aspects of this typology is to define what it is we mean by agricultural or agrarian property. Agriculture can be described as "the science, art and business of cultivating the soil, producing crops, and raising livestock" (dictionary.com). Thus any activity in which the land is managed for the production of a plant or animal product which is then put to human use can be considered as an agricultural activity. This definition would incorporate activities normally classified as silvicultural, namely the raising of forest products. Silvicultural activities would appear to be like agricultural activities in that the land is modified for the cultivation of a crop, in this case trees, which are planted, managed, and harvested at growth. While not grown for human consumption, as are many agricultural plants and animals, trees are none-the-less grown for human use, and in this respect are similar to cotton, one of Georgia's primary crops. However, silviculture differs from agriculture in the length of the growing season, which runs for years as opposed to months, and in the labor and infrastructure needed to support timber production. Agricultural activities require human labor on a seasonal basis and the creation of a system of buildings and other support structures to sustain this labor as well as the crop production. Silviculture requires the sporadic use of human endeavor over an extended period of time and correspondingly does not necessarily require on-site or nearby support facilities for its operation. Silvicultural activities are not currently covered by the Georgia Department of Agriculture and silviculture will thus be treated in our typology as an ancillary to agriculture rather than a type of agriculture.

Returning then to our definition of agriculture as "the science, art and business of cultivating the soil, producing crops, and raising livestock," an agricultural property can be defined as one created and maintained primarily for the purpose of cultivating the earth, producing crops, and/or raising livestock. The emphasis in this definition is on the word "primarily." Agricultural properties also served as human residences; other human residences also produced agricultural crops and livestock. A residential property created as a residence and whose occupants found employment in some sector other than agriculture is not an agricultural property even if it contains a garden to supply vegetables for the family table and livestock pens to provide chicken, pork or beef. In the past, most rural residences in Georgia, and some urban households, routinely had gardens for the production of fresh vegetables and chicken coops, hog pens, and cattle yards for the raising of meat for the table. These actions were, however, supplemental, rather than fundamental, to the income and existence of the household, and such properties should not be considered agrarian. Recognizing agricultural properties is thus dif-

ficult since a rural house and barn within this definition are not necessarily agricultural. In order to aid the identification of agricultural properties, the following definition is offered:

> *An agricultural property is one which, through its standing architecture, archaeology, landscape, and/or history clearly conveys that its primary historic purpose was for the cultivation of the earth, the production of cash or staple crops, and/or the raising of livestock.*

Given this definition, a rural property consisting of a house and livestock pen or house and small shed or house and barn would not be defined as agricultural unless other source material, such a historical research or archaeological studies, indicated that it had functioned as an agricultural property historically. To further elaborate on this description, from a standing structure perspective, an agricultural property is defined as

> *a property consisting of a residence as well as at least one agriculturally related support facility, such as a barn, shed, livestock enclosure, smokehouse, chicken coop, silo, or other facility, or a residence associated with an agriculture landscape; or three or more agricultural support structures on a property whose residence is no longer standing; or a property possessing an agricultural landscape, as evidenced by fields, terraces, pasture, and other landscape element; or a property which while not meeting the definitions outlined above can be shown through archaeological research to contain evidence of the former locations and functions of no-longer extant structures; or any property which through historical research can be identified as an agricultural property as defined above and which would appear to contain sufficient integrity to archaeologically express its structure and function regardless of the number of above ground resources which are still present.*

Using this as our starting point, our next question is "how do we define these properties in order to develop a typology?" The first step in creating a typology of agricultural properties is to look at how historic agriculturalists themselves defined and described their properties. However, it is difficult to distinguish exactly how historic agriculturalists thought of and classified agricultural sites. Agricultural writings are geared toward management issues, both in personal journals and in nineteenth century agricultural publications, and as a whole are written primarily for the benefit of planters and cash-crop farmers. Descriptions of individual properties themselves can be found in sales advertisements and other sources. For example, Pierce Butler, in a letter of 1809 describing his Sea Island plantations to a potential purchaser from South Carolina, wrote (Bell 1987: 116-117):

> *Several Years past I was offered One Hundred Thousand pd Sterling for part of the Estate in question. I declined the offer considering it short of the Value. I then grew 400 bales of Cotton and from six to seven hundred Tierces of Rice-Of my working Negroes I keep from 40 to 50 male slaves out of the field, to wit, about 14 house carpenters, 2 mechanics, 6 ship carpenters, 12 to 15 Ditchers, 4 Tanners, Curriers and Shoemakers. I turn my own leather, make my own shoes and those of my Neighbors-my own harnesses etc. 4 Blacksmiths, three masons, 2 brick makers, two painters who are also sail-makers-Should you incline to put most of these in the field you would of course much increase the income. I have always had in view the Improvement and Enlarging of my Estate more than an immediate extension of income, intend-*

ing from time to time to add to the number of my Negroes. I wished to have land in order for them. I believe I have nearly doubled the quantity of River Land banked in on my River Island since I refused the £100,000 Sterling. I have put up several Valuable Buildings since that time and added very considerably to the Value of my Estate in every respect. My carpenters require no White man to enable them to erect as good a House as I would desire to occupy. They glaze also. My ship carpenters have built me two Sea Vessels without any white person directing them. I make all my Cotton machinery-We never Ginn by hand....

The Lands consist of Sea Island Land and an Island in the Altamaha, in the best pitch of the tide of 1,490 acres-This land is of the first quality & there are at least 700 acres banked in. I do solemnly assure you that I would not exchange that Island for any land my friend William Alston owns. I cultivate to great advantage best Cotton on my River Lands. My friend Mr. Alston can only cultivate Rice. The mail stage stops within about one mile of the Island. My residence is on a Sea Island, more healthy in my Estimation at Every Season than Charleston. I have a small box that could be added to for a family-My own people are quite competent to making the addition. The number of negroes when I last had a list, as my memory serves, for I am now where I cant lay my hands on the paper, amounted to 580. I have 4 settlements on my River Island, 2 on the Island of Little St. Simons which belongs wholly to me and is capable of two to three other settlements. I have three settlements on the Island of Great St. Simons where my residence is. I can go from the Sea Island to my River Island in two hours & I don't know that I can give you any other general description.

In general, when describing their holdings, historic agriculturalists appear to have listed the attributes cited by Butler; the quantity and quality of their lands (the quantity of improved acreage, their volume of production) and secondarily the facilities which supported this agricultural production (barns, gins). Homes received less mention. Settlement plans are noted only as generalizations, such as the numbers of slave settlements.

Farm workers pitching hay from wagon into hayloft, Jones County, ca. 1910. Courtesy, Georgia Department of Archives and History.

Historic agriculturalists appear to have thought of their own and others' agricultural properties in terms of scale - total acreage, improved acreage, and bushels per acre. No detailed typology of agricultural sites emerges from a review of historic documents. Scale, however, did produce the one system of classification that does appear in the historic record, the division of properties into plantations and farms. Likewise, historic agriculturalists wrote of themselves as planters or farmers.

The plantation has been defined by a number of historians. Its general attributes, as used here, include:

1). The separation of labor and management. Planters, by definition did not personally work the earth, but instead oversaw the work of others. Historically, "planting" appears to have referred to the management of large-scale agricultural efforts (including clearing, tilling, planting, weeding, and harvesting, activities which were also all part of the routine on farms), whereas "farming" indicates personal or familial agricultural activities.

2). The use of non-familial labor. Plantations are chiefly defined by their labor force, which during the antebellum era consisted largely of enslaved African Americans, while during the postbellum era economically and politically disenfranchised tenants and sharecroppers filled this role. The use of slave labor alone cannot distinguish the plantation, however, since farmers also held slaves. The distinction would appear to be one of numbers, with plantations employing approximately 5 or more slaves and farmers less than 5. Another way of separating plantations and farms on the basis of labor was whether or not familial labor was employed. On farms with small slave holdings the farmer and his family still worked the fields alongside their slaves, something that did not often occur on the plantations.

3). An agricultural focus on cash crops. Plantations were agri-businesses; their success or failure was dependent upon the sale of the crops they grew. Plantations were thus dependent on the production and sale of cash crops, most notably rice and cotton in Georgia, but also tobacco, indigo, and other crops. While subsistence (food) crops were grown on the plantation, the bulk of the plantation's produce was cash crops. Farms, on the other hand, primarily produced subsistence crops, since a farmer's first obligation was to feed his family, and the cash crops which were grown were only produced in limited quantity as a supplemental income.

4). Large landholdings. Plantations required larger tracts of land because of their emphasis on producing cash crops and because the income cash crops yielded encouraged the acquisition of yet more land. Plantations thus usually consisted of 500 or more acres of land, and successful planters often owned multiple plantations. Farms, on the other hand, were smaller. Most farms in Georgia were less than 500 acres in size, and farmers rarely owned more than a single property.

Following from this historic typology, our classification divides the agrarian world into plantations, farms, and others. *Others* is provided as a catch-all for those quasi-agricultural operations which were neither plantations nor farms. Included in this category would be industrial or commercial enterprises intended to support historic agriculture, such as cotton gin houses, grist mills, and vegetable canneries, as well as silvicultural enterprises such as a timber plantations and nurseries. Plantations would consist of large scale agricultural operations dependent on the labor of a primarily or exclusively non-familial labor force and producing cash crops, while farms would consist of smaller scale agricultural operations whose labor was provided in large part by the owner and family and whose production emphasized the growth of subsistence crops.

Within these broad types we can expect agricultural properties to be further subdivided by a number of temporal, physical, geographical, and cultural attributes. Some of these aspects are likely to not have been recognizable by historic agriculturalists because of their very nature. For example, historic farmers and planters probably thought little of the changes time had produced in agricultural properties, and yet time certainly influenced how farms and plantations were constructed, designed, and planned, as well as the crops they produced, and hence time should also yield changes in typology. Geographic region would also produce variation, since geography influences climate and natural environment, and as a consequence the crops grown in one region may not be suited to another, and the layout of an agricultural property in one part of the state may vary from the layout of a property elsewhere in response to terrain, soils, and crops. Tied in part to time and in part to geography, the crops themselves would to some degree effect how an agricultural property was organized and developed, as well as the types of supports structures and landscape alterations needed to produce that crop. For example, rice plantations are distinctively different from cotton plantations because of the creation of diked and ditched rice fields, and thus rice plantations are an identifiable subtype of plantation. Finally, culture must be recognized as providing the social framework within which people made decisions about the types of barn to built, the organization of their farmstead, the ways crops were grown, and the equipment used to work the land. Agriculture in Georgia was not monoculture in either the crops that were grown or the people who grew them; in both instances there were many variables. All of these attributes would be expected to share in the creation of an agricultural typology, and yet our review of the existing literature of recorded archaeological and architectural agrarian properties failed to identify clearly discernible subtypes incorporating these variables.

In part this failure reflects the nature of agrarian sites. As ever-evolving properties whose owners and crops changed over time, many agricultural properties represent the layering of cultures and crops over time, not all clearly evident but all evident to some degree, making the identification of particular subtypes difficult if not impossible. The failure to clearly discern and unravel these types also reflects the transitory nature of agriculture; over time structures have been abandoned or reused for other purposes, fields overgrown, owners have moved on, agriculture has passed as a primary reason for existence, with the result that agricultural sites have lost many of the identifiable characteristics of their existence. Finally, the failure to segregate agricultural subtypes is in part the result of a lack of comparative research within the state. While this context takes an initial look at the differences in agricultural properties by time, region, crops, and culture, a comprehensive examination of this topic is beyond our scope. Looking at agricultural properties, looking at what we know, and looking at what we should expect, we begin to recognize how much we don't know about agricultural properties.

The following discussions provide thumbnail sketches of the typological implications of each of these themes: time, region, crop, and culture. They are intended to highlight expectations and questions for other researchers studying and recording agricultural sites. The following three chapters, on landscape, archaeology, and architecture, will elaborate on what is known and recorded for each as well as the discipline-specific subtypes of properties.

Time, Typology and Region

Our view of typology recognizes the following periods, as outlined in the overview, although this scheme is

somewhat artificial and there is likely little difference between properties on either side of the year marking the boundary between two periods, but much greater differences between properties as one moves toward the respective alternate beginning and ending dates of a period. The agricultural periods we recognize, and their characteristics, are presented below.

Native American (ca. 1580 to ca. 1730 along the coast; to ca. 1830 in the mountains) - The Native American period is both a cultural designation as well as temporal period but is taken here to include the century plus of initial contact before European settlement, roughly the period from the late 16th century through 1730s when Europeans and Native Americans were beginning to interact. Agricultural properties of this period would consist largely of Native American villages and farmsteads, although in certain instances the association between Native American villages and Spanish missions along the coast could have resulted in a hybridization of agricultural properties. This period would also relate to the agriculture of the preceding period in that early historic agricultural settlements often were placed on earlier Native American sites and in instances incorporated Native American fields, crops, and structures. The Native American period would also overlap the first three of our historic agricultural periods, as "contact" was an ever-shifting frontier that slowly retreated from the coast to the mountains. By the 1830s land surveyors recording property in North Georgia would specifically record and enumerate the buildings they contained. For example, historical research conducted for the Brasstown Valley archaeological excavations in Towns County (Cable et al. 1997:81-82) reveals that the property owned by John Walker, a full-blood Cherokee, included one cabin valued at $30, a smoke house valued at $15, an outhouse and stable valued at $25, a second outhouse and stable valued at $15, a corn crib worth $5, a horse lot worth $5, 10 upland acres worth $8 each, a "patch" worth $5, 18 peach trees worth $0.75 each and 8 apple trees valued at $1.50, for a total property value of $205.50. European settlers who moved into the area following the Cherokee removal actively sought properties like John Walker's and other Cherokee farmsteads.

1730-1750: the Trustees' Search For Staple Crops - The majority of agricultural properties constructed during the first 20 years of Georgia's history can typologically be described as farms since slavery was outlawed in the Colony prior to 1750. However, there was likely considerable variation in the organization of these early agricultural sites related to the types of crops they produced as well as the locations they inhabited. Both the naval stores and livestock industries of the era required little in the way of permanent support structures and would accordingly have left scant traces. In South Carolina, Africans who were familiar with livestock rearing often accomplished the care of cattle herds. Archaeological work there (see Wheaton et al. 1983) reveals sites consisting of isolated African-American slave villages composed of earth and wall trench houses, and comparable sites may have been found in Georgia despite the prohibition on slavery. The majority of agrarian sites were likely small farmsteads that would also have left scant traces. However, other sites may have been more substantive in construction, such as Wormslow of Noble Jones, a ca. 1740 fortified tabby homestead near Savannah (Kelso 1979). Agricultural properties of this period are most likely to be expressed as archaeological sites.

1750-1785: the Establishment of Plantation Slavery - The establishment of plantation slavery represents the initial fluorescence of agriculture in the state. Agricultural properties of this period are focused in two areas: within the Sea Islands and coast and within the river valleys of the major river systems into the eastern piedmont. The

plantation emerged as an agricultural property type, initially through the development of coastal rice plantations, and to a lesser extent indigo plantations. Two types of rice plantations developed: inland swamp rice agriculture and later in this period tidal flow plantations. Tidal flow plantations developed with impounded rice ponds surrounded by earthen dikes which were flooded and drained through a series of trunks which operated off of the hydraulics of the tidal surge. These plantations were limited to an approximately 15 mile wide zone along the coast where the tidal surge was sufficient to raise and lower the level of coastal rivers.

Both plantations and farmsteads spread inland during this period, although primarily along the rivers with the greatest density of settlement found within or overlooking river floodplains. Riverine plantations primarily produced subsistence crops although there was some experimentation with tobacco and short staple cotton. Plantations which were established during this period were likely successful during the following period and hence plantations of the antebellum and national period may contain archaeological and architectural remains of this early era as well.

1785-1865: the National and Antebellum Periods and the Establishment of Staple Crops – While rice continued to be an important crop in this period, the introduction of long staple cotton on the Sea Islands and Eli Whitney's invention of the cotton gin in 1793, coupled with the Industrial Revolution's revival of the textile industry in England and New England, resulted in a population explosion and a dramatic increase in the numbers and distribution of agricultural properties in the state. Georgia would physically double in size during this period as a result of Native American land cessation; populations would move into all areas of the state; and agricultural properties would move into a range of locations and environments.

Both farms and plantations would increase in number and distribution during this period. Variability is expected to have increased alongside numbers; as agriculture moved into new areas and as new settlers moved into the state and became agriculturalists it is expected that the diversity of Georgia's agricultural history would increase. This is the most complex of the various periods in Georgia's history.

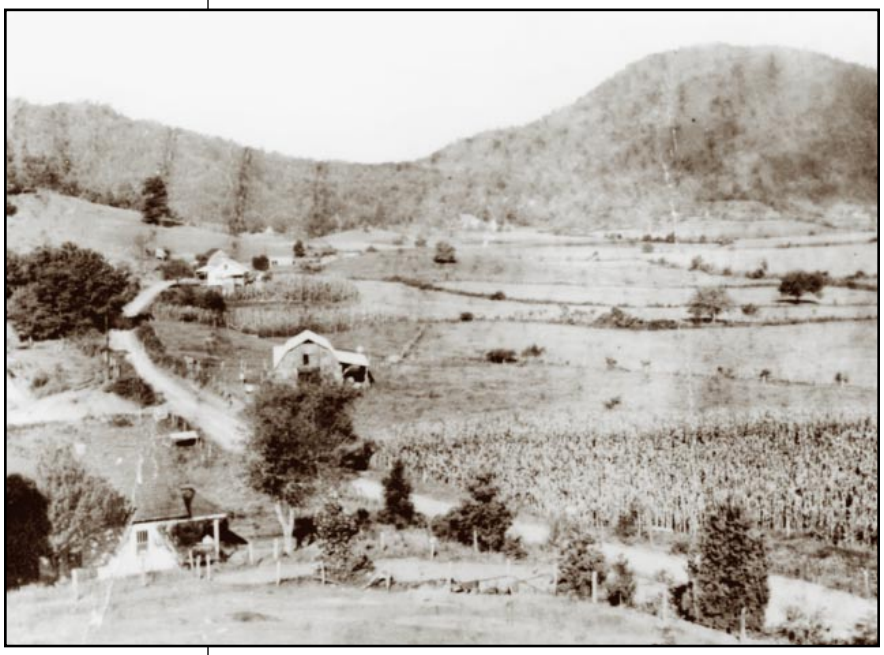
1865-1920: the Postbellum Era, Cotton and the Agrarian Revolution - The Civil War presented a major disruption in the Georgia's agricultural history and led to the formation of a new type of agricultural property, the tenant farm. The abolition of slavery transformed plantation labor and share cropping and tenancy emerged as economic strategies to allow large, quasi-plantation operations to continue to exist, while also providing a source of employment and residence for freed African-Americans. The second area of change during this period saw the introduction of progressive farming techniques as farmers and planters began to recognize the devastating effects that erosion had on piedmont agricultural properties. Crop rotation, terracing and other landscape modifications appear in this era as agriculturalists shifted their focus to the long-term health and productivity of their properties.

1920-1950: the Death of King Cotton and the Birth of Successful Agricultural Diversity - The efforts to diversify Georgia's agricultural production and sustain soils and fields were accelerated by declining cotton prices and the boll weevil. Crop diversification, soils management, and federal initiatives to reward farmers for leaving land fallow all resulted in changes to the agrarian landscape and well as structures. Re-use of buildings for alternative tasks resulted in modifications during this period, while neglect brought about by a less intensive agricultural regime resulted in the decline of buildings.

Region and Typology

For the purposes of this study, the state was divided into six physiographic sub-regions. The boundaries were drawn based on a variety of factors including soil divisions, geographic landforms, climate, and crop production regions as shown on Department of Agriculture maps from various dates. For statistical purposes, an individual county was never divided into different regions, but was included in the region with the largest portion of its land. These six areas are shown on page 1 as Ridge and Valley, Mountains, Piedmont, Upper Coastal Plain, Central Coastal Plain, and Coast. The Upper Coastal Plain includes the Sand Hills, and the Central Coastal Plain includes two areas sometime referred to as flat pine woods and rolling wiregrass. The Coast region includes the Sea Islands. For some purposes in this report, the Mountains and the Ridge and Valley areas may be combined due to their similarity. These two regions, along with the Piedmont, lie north of the fall line and will be referred to as upland Georgia. Lowland Georgia will be defined as the area south of the fall line.

The regional influences on agricultural typology are easily categorized in some instances, and less well defined in others. Certain crops, most notably Sea Island (long staple) cotton and rice, were geographically limited to the immediate coastal plain and hence the agricultural sites associated with these crops are geographically confined. Elsewhere, the influence of region is less certain. Riverine lands were uniformly identified in state atlas, statistics, and census material as having the greatest agricultural value, and it thus follows that more physically extensive agricultural properties as well as more elaborately constructed sites would be expected within and along the state's major river valleys than at other locations within the same geographic zone. A more dispersed settlement and landscape can also be hypothesized for the Georgia mountains, where agricultural properties may have utilized multiple discontiguous smaller fields as arable and level land was at a premium and less extensive in area. What is unknown, but of interest, is the degree to which, if any, economically comparable agricultural properties may have varied in form and plan based on differences in geography. This topic is one that should be addressed in the future by scholars of Georgia's agrarian past.



View of agricultural landscape in Rabun County, early 1900s. Wolf Fork Valley can be seen in the distance. Courtesy, Georgia Department of Archives and History.

Crops and Typology

As noted above, certain crops, most notably rice, resulted in the creation of highly specialized agricultural properties. Other crops were more interchangeable, and had less influence on the formation of farms and planta-

tions. Specialized properties such as nurseries, seed farms, sod farms, and orchards would obviously have a different structure as well as a different set of support structures than mixed subsistence/cash crop farms.

Ethnicity and Typology

The ethnic dimension of Georgia's agricultural typology is one of the most complex issues. While ethnicity almost certainly influenced the design and creation of agricultural sites, the dimensions of this influence are unclear. Major ethnic groups who contributed to the creation of Georgia's agricultural landscape included the English, the Africans, the Germans and the Amish/Mennonite/Moravian sects, and the Scots-Irish. Because evidence of ethnicity, and ethnicity itself, disappeared over time, the ethnic element of site typology may be best addressed through archaeology, and the architectural study revealed little ethnic variation in agricultural sites of the last century. Unfortunately, there are few archaeological studies of ethnic farmsteads in the state to work from.

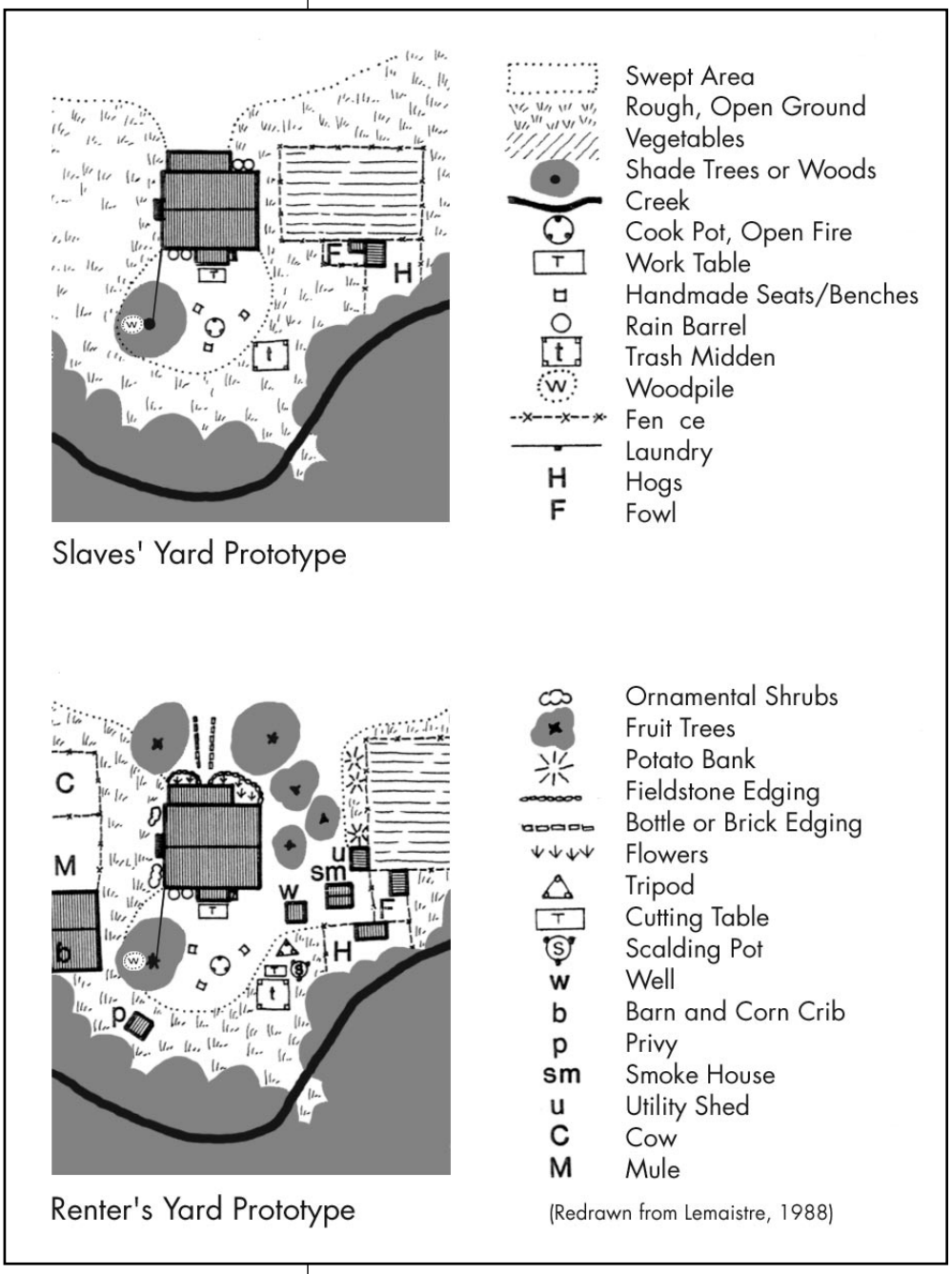
The work of Dan and Rita Elliott (1990, 1992) at the German Salzburger settlement of New Ebenezer provides the most comprehensive look at the ways in which German ethnicity was expressed in the archaeological record. The New Ebenezer settlement was composed of both the town site and outlying farms, and much of the archaeological work to date has focused on the town. The Elliotts do note that the Germans were renowned for the pharmacological interests, and suggest that herb gardens including plants with pharmacological uses would be one potentially identifying element of Germanic farmsteads.

The most comprehensive look at ethnicity in agriculture is for African-American sites. Africans were important players in Georgia's agricultural drama from the outset; it is thought that rice agriculture and the systems and construction it required were brought to the southeast from Africa (Carney 1996). The African element in agrarian sites has been addressed in part by Richard Westmacott's *African-American Gardens and Yards in the Rural South* (1992). While Westmacott's focus is on yards and gardens, and not agricultural sites per se, his study considers agricultural traditions in Africa and relates their adaptation to the southeastern landscape. Westmacott (1992:11) notes that the African agricultural system has been referred to as "vegeculture" and relies on plants reproduced through vegetative propagation, namely root crops like taro, yams, sweet potatoes, and manioc. Vegeculture requires less field preparation and structure than "seed" agriculture, which characterizes European farming, as small patches can be cleared and planted and as the plants will reproduce and continue to grow in a location with little effort by the farmers. Various plants can co-exist in the same planting area, and Westmacott notes that one of the characteristics of vegeculture is the integration of root crops, climbers, and trees all into a single patch. Root crops can be harvested as needed, unlike seed crops that mature at a given time and require coordinated efforts for harvest as well as subsequent storage. By their nature, root crops are not amenable to mechanized planting or harvesting. Individual plots do lose their soil nutrients over time, and hence either require fertilization through manuring or the creation of new plots. Slash and burn clearing of forested areas is often used to clear planting plots and provide fertilization through ash and charcoal.

Westmacott noted several aspects of the African American yard and garden that were in part the product of ethnic identity. The most notable was the use of the yard as an extension of the kitchen. Posnansky has identified this same element (1999:28-29). Posnansky describes West African yards as swept, with various

activity areas where potting, basket making, food processing, and other activities occurred. For West Africans, as well as southern African-Americans, the yard served as an extension of the house, and Posnansky notes (1999:28) that "[t]his extramural use of space is possibly the most important and pervasive aspect of West African life..." Westmacott echoed this in his study of southern gardens, noting swept yards as one definitive aspect of African-American households. He also observed that the "...yard is still used for many kitchen tasks..." Activities that occurred in the yard were clustered in different areas. The well was an important feature of the yard and activities such as laundering occurred near the well. Cleaning vegetables and canning fruits and vegetables also occurred in the yard. In earlier times, vegetables were stored in pit features in the yard. Subterranean pit features for the storage of plants and root crops over the winter are recorded in the 19th century historical and archaeological literature. George McDaniel (1982:154-155) reports that shallow "vegetable kilns" were common in the yards of African-American homes in Maryland, where they were described as "a circular hole in the ground about two feet deep into which vegetables were stored on a bed of straw and then covered with more straw and a mound of dirt." A similar feature was described to Richard Westmacott (1992) by Elizabeth Windom of South Carolina, who indicated that her mother "used to dig a pit, something square down in the ground, like you're

Comparative plans of a slave house yard and a share renter yard, showing features and activity areas. From Westmacott 1992:4.



going to bury somebody, and she'd set plants down in it, then she'd pull some pine straw over it and some boards to hold it."

Butchering activities, which would include tables, hoists, and hearths, also occurred in the yard. Hog processing areas were a common feature of a number of the yards recorded by Westmacott, and were probably more common farther back in time. Building materials were also stored in yard areas. Westmacott notes that the recycling of building materials was an element of survival on most African-American farms, and that much of the architecture was vernacular and built from recycled and salvaged pieces of wood, tin roofing, wire, and other materials (recycling, however, appears to have been an attribute and characteristic of many southern farms). Thus piles of stored material appeared at a number of the houses surveyed by Westmacott (1992). This aspect also occurred on Euro-American farms, and at the Finch Farm reported by Joseph and Reed (1997), piles of wood and other building materials marked one side of the house yard. Recycling and reuse thus appear to be elemental aspects of agrarian properties, and as a behavioral category, recycling is indicative of the integrity of an agricultural property, rather than the loss of integrity. One instance of recycling described by Westmacott (1992:46) poses questions for archaeology. Westmacott noted that flower gardens, paths, and other features were distinguished in swept yards by borders, and in one case illustrated a pathway defined by two parallel rows of bottles which had been pressed neck down into the ground.

IV. Agricultural Landscapes, Buildings and Structures: An Overview and Description

The Landscapes of Agriculture

Agricultural sites are, at their most fundamental level, historic landscapes. For the agrarian past, people and places were wed to the land, and our understanding of these resources, both standing and subterranean, can only exist within landscapes. For purposes of the National Register of Historic Places, a rural historic landscape is defined as "a geographical area that historically has been used by people, or shaped or modified by human activity, occupancy, or intervention, and that possesses a significant concentration, linkage, or continuity of land use, vegetation, buildings or structures, roads and waterways, and natural features" (McClelland et al. nd:1-2). Rural historic landscapes differ from other kinds of historic properties due to the proportionately smaller number of buildings and structures per amount of acreage. Agricultural land is the most common type of rural landscape, and usually refers to land that has been used primarily for cultivating crops, raising livestock, or related activities. Landscape characteristics related to agriculture are the "tangible evidence of the activities and habits of the people who occupied, developed, used and shaped the landscape to serve human needs; they may reflect the beliefs, attitudes, traditions, and values of these people" (McClelland et al. nd:15). These cultural landscapes are not frozen in time, but they continuously evolve as vernacular expressions of the lifeways of the groups of people who settle on them and utilize them. The challenge of identifying patterns in agricultural landscapes and evaluating them by National Register criteria is made more difficult by the transitory nature of many of these functional landscapes.

As noted in the previous chapter, Georgia does not possess a homogeneous physical or cultural landscape. The settlement of upland and lowland regions of Georgia proceeded from different core cultural "hearth zones" (see Kniffen 1965 and Pillsbury 1989). This fact, combined with a diverse geography in a large state, resulted in a variety of traditions and practices that manifested themselves on the cultural landscape. Many of the first lowland settlers came inland from the English-colonized cities of Savannah and Charleston. Enslaved Africans also influenced the landscape through farming and building practices. The evolution of the upland South, including northern Georgia, began with the southward migration of Pennsylvania settlers along the valleys of the Appalachians. European influences were more complex and included German, Scots-Irish, and English. Traditions from Virginia and the Carolinas also combined with a demanding physical environment to create a mixed milieu. The presence of the Cherokee nation prevented significant Euro-American settlement in north Georgia until the 1830s, but the Cherokees also contributed cultural elements to the landscape. Smaller groups, such as the early Salzburger settlers of Effingham

Current landscape view of McLemore Cove, a National Register District in Walker County, Ridge and Valley Region.

County and the more-recently-arrived Mennonite communities in southwest Georgia, affected more limited areas, but are also worthy of further study.

Eleven landscape characteristics that describe human activity are included in National Register Bulletin 30, *Guidelines for Evaluating and Documenting Rural Historic Landscapes* (McClelland et al. nd). The first four are processes, and the remaining seven are physical components that are evident on the land. This classification system may be used as a tool for gathering and organizing information, as well as assessing the significance of specific rural properties. The eleven characteristics, some of which may interrelate or overlap, are as follows:

- Land uses and activities
- Patterns of spatial organization
- Response to the natural environment
- Cultural traditions
- Circulation networks
- Boundary demarcations
- Vegetation related to land use
- Buildings, structures, and objects
- Clusters (i.e., groups of farmsteads, etc.)
- Archeological sites
- Small-scale elements.

Many of these elements may or may not be historic. Historic integrity requires that the various characteristics that shaped the land during the period of significance be present today in some recognizable form. No landscape will appear exactly as it did in the past. The landscape is layered, with some resources disappearing and others being added through time. Depending on significance, the presence of some characteristics is more critical to integrity than others. A farmstead may exhibit land use areas for crops and grazing, as well as a yard surrounding the residence; boundary demarcations such as walls and fences and irrigation ditches; organizational alignment of buildings and structures; and circulation networks of paths and roads. Change can be either evolutionary or drastic. Evolutionary change reflects subtle variations in land use, while drastic change often indicates the introduction of intrusive elements (Melnick 1981:56).

Specific types of agricultural landscapes have not been extensively studied or categorized in Georgia. A review of aerial photographs of the state from the late 1930s and early 1940s revealed a few patterns. Farm locations were generally in close proximity to rivers and roads. The proximity to rivers was more pronounced in upland regions to the north where settlement patterns and field boundaries followed drainage patterns. Where topography was irregular and elevations were varied, the field clearings followed the low-lying areas like fingers, and the size and shape of tracts were variable. In areas with ridges and valleys, the settlements were in the valleys next to the ridges. The valley floor was reserved for agriculture, the valley edges and higher ground used for development, and the steepest and highest ground

Cotton fields and barns in Sumter County, Central Coastal Plain, are often arranged in somewhat uniform rectilinear patterns.

was largely left untouched. Denser development often appeared near crossroad settlements. These patterns were apparent in McLemore Cove in Walker County, as well as in the Sautee and Nacoochee valleys in White County.

This characteristic settlement pattern of north Georgia is strikingly different from the more evenly dispersed development in other portions of the state. In the coastal plains, the farm tracts appeared more uniform in shape and often larger in size. Fields near the coast and Sea Islands were sometimes delineated by man-made irrigation canals once used for flooding rice plantations. Much of the low-lying marshy land in this region is not usable for agriculture. Since farm density variations are influenced by multiple factors, both environmental and cultural, it is difficult to generalize. Settlement density and recognizable farmsteads appeared more pronounced in the Piedmont than in the higher uplands regions. Where flooding was a concern, houses were often located on the highest ground. Throughout the state, most domestic outbuildings were commonly clustered near the main house, with barns and corncribs at greater distances. Often there is no clear pattern of layout. Where tenant houses existed, they often appeared a short distance from the main complex on the edges of fields, sometimes arranged in a linear fashion.

Two of Georgia's identified rural landscapes include the "landscape of expediency" and the "landscape of work." A few early inhabitants practiced the former when land was more plentiful, and settlers could move once they had depleted the land. It involved a "slash and burn" mentality that paid little heed to consequences such as erosion. In contrast, the landscape of work occurs primarily on farms of all sizes, dating from the 18th century to the present. Its functional form met everyday needs while bringing a sense of efficiency, order, and neatness to the working environment. It is described as follows (Historic Preservation Section 1991:I-39):

> *Major components include a farmhouse, outbuildings, outdoor activity areas, a well, a small "kitchen garden" in a side or rear yard, agricultural fields and woodlots, and sometimes a small grove of fruit or nut trees. These components are linked by networks of paths, fences, and functional sight lines. Everything is arranged according to a simple, practical, but not always rigid geometry of straight lines and rectangles. There is often a straight path, unpaved, through the front yard from the road to the front door; this path frequently "extends" through the central hallway of the farmhouse to a rear porch and the back yard. Porches, both front and rear, and trees in the front and back yards provide shade for the house and outdoor activities.*

The layout of Jarrell Plantation in Jones County (Piedmont Region), now a state historic site, illustrates the "landscape of work."

Several studies of farmstead landscapes suggest a separation between male and female activity areas, which may also reflect the separation of household production from agricultural production (see Glassie 1975:144, Stine 1989, Adams 1987, Joseph and Reed 1997). In essence this plan separated household activity areas and buildings from agricultural activity areas and buildings. Surrounding the farm house would be buildings and structures associated with family life: a smoke house for storing meats, a chicken coop for eggs and fresh poultry, root cellars for the storage of root crops, wells, stables for horses and carts needed for the family's transportation, vegetable gardens, and yard activity spaces such as hog slaughtering areas. The agricultural area would include the buildings needed to support the agricultural activities: barns, sheds, silos, stables, mills, etc. Glassie (1975:144) describes this division strictly in terms of gender: "the old farm had two centers, the house and barn, around which smaller dependencies were dropped. Beside the house are the outbuildings needed by the woman in order to get food on the table; beside the barn are the outbuildings needed by the man to keep the cattle fat." Stine (1989) suggests that this separation of agricultural and domestic space was promoted by agricultural journals of the Victorian era, while Adams (1987) suggests that this separation reflects different production areas and the control of domestic versus agricultural production.

In a study of farmsteads in the Russell Reservoir on the Savannah River of northeastern Georgia and northwestern South Carolina, Worthy (1983:75) identified six aspects of farm settlement plans:

- Random clustering of domestic and service occupations, frequently situated on hilltops or other prominent points. Placement is a factor of changing views of "convenience".

- Individual buildings for separate functions: dwellings, storehouse, livestock barns, pens for fowl, smokehouse, etc., although sometimes these structures are combined to serve more than one function.

- Dwelling, well, privy, storage shed, and chicken house are closely placed, as these represent areas primarily associated with household activities. The yard surrounding these structures is frequently swept.

- Barns, larger animal pens, equipment buildings, forges and other male activity areas at a slightly greater distance from dwelling cluster. Access to these facilities is around rather than through the yard.

- The house faces the probable path of human approach, and is frequently shaded by trees.

- Fields are irregularly arranged and follow natural topography. Fields are situated to make use of the best available lands; farms are situated to provide best access to fields.

The swept yard was a common form of landscaping in rural Georgia in the eighteenth and nineteenth centuries. As noted above, it was frequently but not exclusively associated with African-American farms. Virtually nonexistent today, it featured a dirt yard swept clean of all grass or other ground cover. Miriam Gnann, descendent of a Salzburger family in Effingham County, describes her family's early twentieth century farmyard as follows:

> *There was no grass – just white sand. The chickens had the run of the place and helped keep grass down with their scratching and eating seeds. But the trees shed leaves, berries*

and stems constantly, so the yards had to be swept nearly every week, especially in the summer and fall. For yard brooms we gathered gallberry bushes from the woods, let them dry until the leaves died, then beat the leaves off, tied the bushes together and swept with them. The yard was very pretty when we finished, with the curving strokes in the white sand. (Gnann 1991:14)

Historic farmsteads are much more than assemblages of buildings, structures, and fields. Other important elements include terracing, irrigation patterns, fencing and walls, ornamental or designed yards, kitchen gardens, grape arbors, hedges, fence rows, paths, and drives. The unique symmetry of a pecan grove in south Georgia or an apple orchard in the northern part of the state are both significant features in the rural landscape. Unfortunately, these types of features have not been well documented in the literature, making it difficult to elaborate on their dates, patterns, and occurrences.

Plantation landscapes were more formal than farmstead landscapes but shared the division of domestic from agricultural spaces. Of interest on plantations was the placement of slave villages, which by their very nature were a defining element of the plantation. On smaller plantations, villages were often placed intermediate between the main house and the agricultural area. While village settlement is relatively stable on rice plantations, for cotton plantations village locations appear to have been of temporary construction and to have shifted over time as the locations of the cotton field themselves were shifted (Anderson and Joseph 1988:422).

Archaeologically, agricultural landscapes contain refuse deposits, the locations of subterranean yard features, the remains of earlier structures, and evidence of field locations. Archaeologists are often concerned with the location of trash deposits, since the artifacts contained in these deposits can provide information on the lifeways and diet of farmers, planters, slaves, tenants and others who lived in the agrarian world. Four patterns of refuse disposal have been identified on historic farms (Joseph and Reed 1997). The earliest of these is Stanley South's (1977) Brunswick Pattern of Refuse Disposal, in which trash was thrown out the immediate rear door of domestic structures or kitchens. This pattern has been identified in association with colonial era sites, and does not appear to have continued into the 19th century. However, on colonial sites the accumulation of trash on old ground surfaces can be used to identify the locations of nearby buildings. Artifacts which accumulate as surface deposits are referred to a midden. By the 19th century, farmers and others appear to have been more conscientious in their disposal of trash, and began carrying trash to the rear of the farm yard before throwing it away. In some instances these rear yard middens may have accumulated along fence lines. Archaeologists working in Georgia commonly dig small holes (roughly one foot in diameter) and screen the dirt from these shovel tests to recover artifacts. Organic staining, or dark brown-black, may also represent the location of sheet middens, since food remains such as meat scraps and vegetables were thrown away as part along with household trash including broken pottery, bottles, etc.

Sanitation concerns and changes in container technology led to shifts in refuse disposal patterns in the late 19th century. Trash burning became common on many farmsteads, with ash from these fires being distributed over fields in some instances to improve fertility. Burnt trash was also sometimes subsequently scattered in or over yard middens. However, the wide-spread adoption of bottles as containers, coupled with erosion in the piedmont, led to the disposal of bottles and other refuse in nearby gullies and ravines. In Piedmont Georgia, trash deposits from the late 19th century can be expected to

be found in gullies adjoining the farm. This refuse disposal pattern is common on 20th century farmsteads of the uplands, and was considered as a means of helping to slow erosion as well as a way of disposing of numerous bottles which would not burn easily and which were not suited for disposal in rear yard middens, as the broken glass would prove dangerous to both humans and animals.

Farm and plantation yards also often contain archaeological features associated with agricultural activities. A feature is any remnant of human activity left in the soil. For example, if a post hole was dug into the ground, and over time the post eventually rotted and the hole filled in, then if the soil is cleaned off above the location of that post a stain will be left showing both the post hole and often the post mold, the remnants of the post. Agricultural yards contained a number of subsurface features. Root cellars or vegetable kilns were commonly dug to store root crops such as potatoes over the winter. These features were generally three to four feet long, rectangular to oval, and three to four feet deep. They were often lined with straw and covered with boards and earth during the winter. Hearths, or firing pits, were a common feature of many farm yards as a number of agricultural activities required heating. For example, when it was time to butcher hogs they would first be boiled in a large iron kettle in order to loosen the skin and make it easier to remove. Archaeological evidence of these "hog scalding" pits would consist of a large (four foot or so in diameter) shallow pit filled with ash and bones scraps. Ice houses, which were found on larger farms and plantations, were commonly excavated into the ground. Remnants of posts can be used to define the locations of former fence lines, as well as the locations of buildings of post-in-ground construction. When buildings were constructed on raised piers of either brick or stone, a common occurrence on Georgia farmsteads during the second half of the 19th century since the air circulation below the buildings floor would help ameliorate Georgia's temperate climate, there are often subsurface remains of the piers themselves, as well as drip lines, shallow depressions formed by the water running off building roofs in an era before gutters. There are often also shallow irregular features found which would have been underneath the floor of the building. These features are best described as "dog wallow" pits, formed as farm dogs sought to avoid the Georgia sun by digging shallow burrows under houses and other buildings.

The remains of chimneys can normally be readily identified by a remnant pile of brick or stone – these are often the most readily observable remnant of houses as well as agricultural outbuildings which required heat, such as tobacco curing barns and smoke houses. Even where the remnant brick or stone was later gathered for re-use elsewhere, the remains of the chimney base can be discerned under the ground. One chimney type which was common to the South that is a little more difficult to recognize archaeologically is the mud-and-stick chimney. Mud-and-stick chimneys were made of small pieces of wood – sticks and logs – with a heavy chinking of clay and with a clay interior lining. These chimneys were common on log cabins of slave houses in the upcountry. Since a wooden chimney was susceptible to catching fire itself, these were normally built so that they leaned away from the cabin and were supported upright by an angled wooden pole. In the event the chimney caught fire, the farmer would simply pull this pole, allowing the chimney to topple away from the house and burn without damaging the dwelling. Mud-and-stick chimney bases can be recognized by a pad of fire-reddened earth, sometimes with a remnant floor lining of fired clay.

Storage cellars were commonly found within kitchens as well as dwellings. Pit storage features are often found in front of the hearth of kitchens. While these cellars probably served as "cupboard" for root crops and vegetables

to be consumed over the winter, they are often occur with African-American slave cabin sites. Archaeologist Patricia Samford (1999) suggests that in some instances,

This 19th century dwelling was built with a mud-and-stick chimney, shown with its characteristic lean away from the wall of the house. Since the chimney was constructed of wood, it would be allowed to collapse away from the house in the event it caught fire. From McDaniel (1982:73).

these subfloor pits may have served as ancestor shrines. Noting the preponderance of subfloor pit cellars on slave sites in Virginia (where more than 150 pits have been excavated) and using the artifacts from two pit features in Virginia and North Carolina, Samford suggests that these features may have served as ancestor shrines, which were a common feature of West African households. While shrines in West Africa were raised and visible within the home, Samford believes that African-Americans within the enslaved community may have felt compelled to hide their religious beliefs, and artifacts associated with ancestor worship, out of fear that they might otherwise be appropriated by slave owners. These types of features, and their research potential, should be recognized during future excavations of African-American sites in Georgia.

Wells and cisterns for the collection of drinking water are common on agricultural sites. Cisterns were subsurface containers constructed of brick which were used to collect rain water. They were commonly placed near one of the rear corners of the main dwelling, and gutters from the dwelling would then terminate in downspouts and brick drains leading to the cistern. Cisterns appear to occur more frequently along the coast, where the ground water was brackish and unsuited for drinking, and where rain water hence offered the most palatable water source. Wells were commonly dug within the house yard, often near the kitchen. Well houses were frequently built over the location of the well, to protect it from leaves and other debris which might otherwise blow in.

Privies were common on rural sites up to the 1950s, by which time sewer lines and septic systems had replaced most privies. Privies were normally found in the rear house yard, far enough from the main house to keep their odors away, but near enough to make them convenient. As a general rule of thumb these features were found within 100 feet of the house and were usually located along rear or side yard lines. Historically, privies appear to have been abandoned or replaced at roughly 10 to 15 year intervals, as they reached a point where no amount of cleaning of privy "muck" could reduce their stench. It is thus common to find multiple privies, often in a row, on older agricultural sites. These features are highly valued by archaeologists as they were often used as trash dumps once abandoned and have been known to yield excellent collections of intact or reconstructable bottles and ceramics as well as dietary information which can be recovered through the collection and flotation of the privy deposits themselves. All of the subsurface features discussed above have the potential to serve as trash deposits, and features are thus more highly valued by archaeologists when assessing a site's research potential than middens, as the trash

deposited within a feature normally dates to a relatively short period of time (at most one or two years) which can be associated with a specific occupant of a farm or plantation, whereas midden deposits may represent several years of artifact accumulation which have furthermore been broken up and redistributed by foot traffic and which hence have less research value.

One traditional aspect of agriculture that is detrimental to archaeology is southern agriculture's inclination to recycle resources, including the reuse of former house sites and yards as fields. A pattern which occurred on a number of agricultural sites would have the farmer and his family living in a small, semi-permanent structure as the farm was being established. When finances allowed, the family would build a larger and more permanent house nearby, living in the original home until the new one was finished. Once the new house was completed and once they had moved, the original home site was frequently reused as fields, although in some instances the earlier home might have been reused as a storage building or for other purposes. If the earlier home site was abandoned, then it was often converted to use as fields and plowed. This reuse of earlier habitation sites is in part reflected by the accumulation of sheet midden and subsurface trash deposits, as the organic materials from this refuse undoubtedly produced agriculturally productive soils. Plowing, however, is detrimental to archaeological resources. While plowing in and of itself does not destroy subsurface features, plowing in combination with erosion in the piedmont could result in the loss of two to three feet of soil over time, or more, and in these instances would destroy the majority of subsurface features associated with the site. Archaeologists working on historic agricultural properties should be aware of this potential for earlier habitation sites to be located in areas which historically appear to have been used primarily as fields.

Joseph and Reed (1997) suggest that the best preserved agricultural archaeological sites are those associated with standing structures. Where house yards are intact, archaeological deposits such as middens and features are also likely to be intact. Thus any agricultural property with intact, in-situ, architecture should also have well preserved archaeological remains. The research for this context suggests that farmsteads with standing structures are not being routinely examined for archaeological remains, however. In part this reflects the documentation of many agricultural properties through county historic structures surveys, which do not require archaeological components to be identified. In other instances, projects undertaken for Section 106 compliance may examine a smaller area of potential effect for archaeology (normally the construction right-of-way) than for structures. However, in certain instances properties with standing structures are being skipped by archaeological surveys because they are looked upon as architectural rather than archaeological properties. Archaeologists and architectural historians alike should recognize the archaeologist aspect of agricultural properties with standing architecture.

The most visible evidence of agricultural landscapes were (and are) their buildings. Landscapes themselves cannot be adequately and accurately described unless agricultural buildings are adequately and accurately described. The following discussion reviews the types of buildings found on agricultural properties and their characteristics.

Farm Buildings and Structures: An Aid to Identificaiton

The architecture of the farm consists primarily of working buildings. Farms are economic entities designed for the production, processing, and storage of agricultural prod-

ucts. The dwellings, yards, fields, and outbuildings are arranged as a utilitarian unit to accomplish these tasks. Because of the South's mild climate, outbuildings are not as numerous or as large as those in the northern states, and many are not fully enclosed. The most common buildings other than barns are small storage houses for crops and animal feed. Cattle and hogs went largely without shelter, and only horses and mules were regularly stabled. On large farms certain working buildings were historically clustered near the farmhouse in transitional spaces where they were easily accessible. These included detached kitchens, smokehouses, well houses, carriage houses or garages, storage sheds, and offices. Yards and fields were sometimes differentiated by various fences and walls.

Regional variations in building types and arrangements may occur depending on the type of agriculture, the ethnic and cultural traditions of the farmers, and the physical geography of the locality. While Georgia is a geographically diverse state, available data does not yet support fine distinctions in the construction of outbuildings between various regions within the state. A few instances will be discussed where they have been documented. Many of the ethnic differences have disappeared from agricultural landscape.

One of the major complications in examining historic farmsteads lies in understanding the layers of change over time. As crops were changed or farming practices evolved, older outbuildings became obsolete. It has always been common practice to alter a building or reuse its materials in order to create a more useful structure. This can be misleading when attempting to date a structure based on materials or construction techniques. In addition, many farm buildings (such as barns and sheds) were designed for general uses and do not fit into a defined typology. Generic buildings do not provide many physical attributes to identify their uses. When the structure was intended to serve a highly specialized function, its design was more likely to reflect that need.

The following discussion is intended as an aid in identifying farm structures based on appearance. However, one should be tentative in assigning functions to buildings. Outside appearance is usually not enough to identify every farm structure. Clues may turn out to be false because functions and uses have changed. Farm outbuildings have not been studied sufficiently to make identifications based on generalizations. Because the researcher may find numerous idiosyncratic structures, thorough fieldwork requires that he or she also check archival and documentary sources. Oral interviews with local informants and property owners usually provide valuable information for the researcher. Discussion of how to conduct this research is presented in Section V.

Farmhouses

The architecture of historic farmhouses will only be briefly mentioned here, because the styles and types of these buildings closely follow the patterns of other residential dwellings in the state. Several references are available for further study, including *Georgia's Living Places: Historic Houses in their Landscaped Settings*, a 1991 publication by the Historic Preservation Section (now Division) of the Department of Natural Resources. It includes a guide for identifying and evaluating 23 distinct architectural styles and 28 vernacular house types in Georgia. Type or form is frequently confused with style. Style is primarily the decoration or ornament of a house arranged in some systematic pattern, and type is the overall form and layout. Styles reflect the tastes and attitudes of their time, often consciously copied from European antecedents. Types are not as closely linked to particular historical periods, but may follow established vernacular or folk traditions. Buildings are often described with a combination of type and style, such as

a "Gabled Ell Cottage" (type) with "Queen Anne" details (style).

Farmhouses usually have been designed for practicality and function with a layout to enhance the efficiency of the home. As the roles of nineteenth-century farm women changed from actively assisting in the fields to working in the more domestic sphere of the home, the farmhouse evolved from unified work spaces to more specialized and isolated rooms (Hurt 1996:125). Farmhouses were frequently expanded as families grew and as farms became more prosperous. The increasing importance of children resulted in separate bedrooms on more progressive twentieth-century farms. Additions and changes over time are important parts of the historical record of the farm. It was also common for a farm family to build a new home and re-use the older one for an outbuilding or some other purpose. On larger farms with tenants or other non-family workers, the property may have included an overseer's house. In a few cases the owners themselves did not live on the farm, but maintained a residence in the nearest town or some other location.

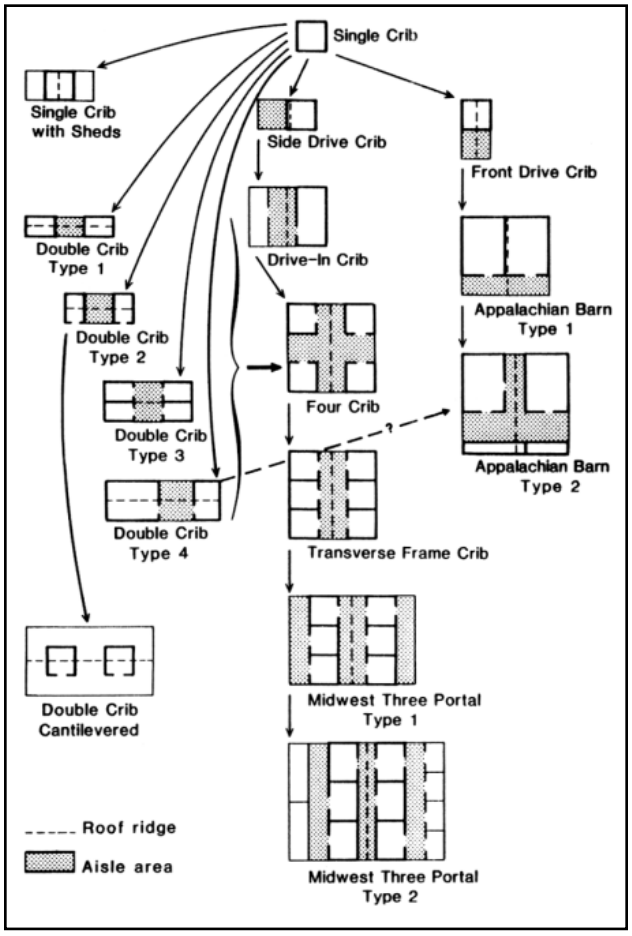
This Plantation Plain type house has two-story front porch and a picket fence in the front yard. While the illustrated example was constructed around 1900 in Effingham County (Central Coastal Plain), these were most common in rural Georgia from 1820 to 1850. Many dwellings do not easily fit into established categories. Farm families in isolated regions were very likely to design and build their own residences based on traditional forms. Rural areas were slower to adopt new styles than urban centers. By the mid-nineteenth century, agricultural journals began publishing patterns for progressive farmhouses. Regional differences became less noticeable as national styles emerged.

Tenant houses will be included as a separate category in the following paragraphs. The outbuildings and structures described below are listed in alphabetical order.

Barns

Most farms would have needed some type of barn, even if it were a very small one. Barns will be described in this section first by form and then by function. While dozens of different types of barns dot the rural landscape of North America, this section will limit the discussion to those believed to be common to Georgia. In doing so, it is possible that some unusual barn types that may exist in the state will be overlooked. Results of architectural surveys throughout the state have not yet yielded much specific information on the types of barns encountered. Researchers should also refer to the bibliography included with this context. Unfortunately, most geographers, folklorists, and historians have not focused their studies on barns in the deep South. Little need existed for large barns where the weather was generally mild. Livestock usually went without shelter, and grain was commonly threshed in the field or farmyard. Therefore southern barns always tended to be smaller, and perhaps less interesting to researchers, than their northern counterparts. Regional variations are also partly related to the different cultural hearths (i.e., core areas from which the earliest settlers migrated and from which ethnic diffusion occurred).

The earliest barns in the upland South have been labeled *crib barns*. Crib barns may have a German origin, and



These drawings demonstrate a conjectured evolution of crib barn floor plans. The transverse frame crib is one of the most common types in Georgia. (Illustration courtesy of M. Margaret Geib and the University of Massachusetts Press, from Nobel and Cleek 1995).

probably came to upland Georgia through the Appalachians from Pennsylvania. A crib refers to one enclosed space (similar to a "pen" in a house). Variations include single-crib, double-crib, four-crib, and transverse crib barns. Crib barns may or may not have a hayloft above. *A single-crib barn* consists of one enclosure, sometimes augmented by open sheds on one or more sides to shelter horses or mules. These barns often have a gable-front orientation. The earliest were made of unchinked corner-notched logs, although vertical wood siding sometimes covered them. Single-crib barns remain one of the most common types in Georgia.

This single-crib barn with a sweeping gable roof was used to store wheat and oats. It is located in Murray County in the Ridge and Valley Region.

A *double-crib barn* has two enclosures, separated by a runway. Single-crib and double-crib barns both have gable roofs, with the ridge sometimes running parallel to the entry facades. *Four-crib barns* might be thought of as two double-cribs facing each other under a common roof (Kniffen 1965:18). Usually constructed of logs, they may have originated in southeastern Tennessee, and appear to be rare in Georgia. An interesting variation on the crib barn is the *cantilever barn*, also common in some parts of east Tennessee (see Morgan and Lynch 1984, and Moffett and Wodehouse 1985). These unusual barns have upper-level projections or cantilevered overhanging lofts above crib barns (usually double-crib, but also one- four- and five-crib barns). The researchers have been unable to find any cantilever barns recorded in Georgia.

The *transverse crib barn*, which is very common in Georgia, always has its entrance on the gable end. It consists of three or more adjacent cribs on either side of a wide runway. Transverse crib barns are almost always of frame construction, and because they are relatively large, they usually have a hayloft under the gable or

This double-crib barn in Dawson County (Mountains Region) has a small hayloft over the two cribs.

gambrel roof. The barn could serve a variety of uses, with space for hay, animals, and farm implements. Shed extensions on the sides can make this barn even more versatile. There are many theories about the origins of the transverse-crib barn, but it is generally believed to be a creation of the upland South (Wilson and Ferris 1989:66). Siding on larger southern barns is more likely to be horizontal than vertical, although both types exist. As can be seen from the illustrations, these are several variations on transverse crib barns.

This 100-year-old transverse crib barn in Murray County (Ridge and Valley Region) is used for storing hay.

A less common barn in Georgia was the *bank barn*. It was built into the side of a hill, permitting easy access

This transverse crib barn in Jones County (Piedmont Region) has flanking enclosed sheds.

Animal pens inside a transverse crib barn.

from two levels. The lower level could shelter animals, and the upper level sometimes stored fodder that could be dropped through openings to the stabling floor below (Auer 1989:2). Architecturally unique *round barns* were once considered efficient and progressive. Constructed mostly between 1880 and 1930 on dairy farms, only four or five are known to currently exist in Georgia. *Appalachian barns* are large frame barns with aisles that are fully or partially enclosed. Usually no main door opens off the gable end, but there is a large loft opening (Noble and Cleek 1995:71). Hay hoods extending from gable (or occasionally gambrel) roofs are common. Hay hoods are projections at the ridge of the barn roof,

which protect or support pulley attachments used to load hay into the loft (Noble and Cleek 1995:40).

The *three-portal barn* (often called the Midwest three-portal) is a variation of the transverse crib barn. It has a

This bank barn is located in the picturesque Dial Valley in Fannin County (Mountains Region).

A large Appalachian barn in Murray County (Ridge and Valley Region) has a gambrel roof topped with small monitors (possibly for ventilation), and a projecting hay hood.

gable-front central aisle and two enclosed side aisles, all running parallel. There are many variations of the side-gabled *English barn*, none of which is extremely common in Georgia. These barns usually have a tri-partite configuration in which the doors open onto a threshing floor flanked by two mows or stock aisles parallel to the gable ends (Rawson 1979:33). Other ethnic barns exist in certain regions of the state, but most have not yet been widely documented.

Inexpensive *pole barns* gained popularity after World War II. These low, one-story barns are usually quite wide with low-pitched gable roofs. Silos reduced the need for haylofts. The framework consists of upright poles set directly into the ground, with siding hanging on them. Sills or foundations are not used, and floors are usually poured concrete slabs or the bare earth (Noble 1984:47). These barns often have multiple door openings on any side. Lightweight steel-girder trusses support roofs. Also after World War II, many pre-fabricated barns came into common use, often imitating some traditional barn forms and shapes. Sears, Roebuck and Company sold pre-fabricated barns in the early twentieth century.

This three-portal barn in Chattooga County (Ridge and Valley Region) was historically used for mules.

Barn roofs come in several forms, but the gable roof is by far the simplest and the most common. Gable-roofed barns are usually older than barns with other types of roofs, but not always. A steeper pitch may also indicate an older barn. A variant of the gable roof has a broken-pitch with sides that have a gentler slope than the center. Side sheds were also often added to gable-roofed barns. Gambrel roofs have a broken pitch where the

This English barn with gable-end additions in Floyd County (Ridge and Valley Region) is currently being used as a horse barn.

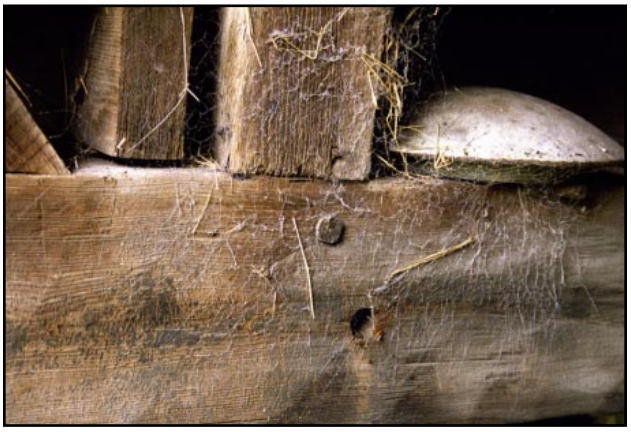
lower slope is steeper than the center. They were more expensive and labor-intensive to construct, but provided more loft space. Gambrel roofs were often built between 1870 and 1940 (Noble and Cleek 1995:16). Truss beams replaced the great cross beams and posts previously required to support huge barn roofs. This allowed vaulting gambrels of enormous capacity with sufficient clear space for hay-handling equipment in

The saddle-notched corner on this log outbuilding is partially covered by weatherboard siding.

the loft. Round or arched roofs are not very common for barns, nor are hipped roofs. A monitor roof, sometimes called a clerestory, has a center section that is raised to provide better light or ventilation.

Log barns may have distinctive corner-notching patterns, related to the ethnicity or cultural affiliations of the groups that built them. The six methods of producing a corner-timbered joint in the eastern United States were V-notching, diamond notching, full-dovetailing, half-dovetailing, square notching, and saddle notching (Kniffen and Glassie 1966). The simplest method, usually used on round logs, was saddle notching. V-notching, square notching, half-dovetailing and saddle notching were all carried into northern Georgia through the Tennessee

Frame barns yield clues to their history. The photograph above shows a hand-hewn sill with adz marks still visible on a barn of post-and-beam construction dating from the 1870s. The building was moved and the brick pier foundation is newer than the barn, which was originally a detached kitchen. The photograph below shows a mortise-and-tenon joint secured by a treenail (wooden peg) on the same building. These types of clues help in determining construction dates, which will be discussed further in the research section of Chapter V.



Valley (Kniffen and Glassie 1966). Saddle-notching predominated in southern Georgia and the coastal areas of the state, especially on barns and outbuildings.

Of the special-use barns that exist in Georgia, the most distinctive is probably the *tobacco barn*. A variety of barn forms were created in response to changing methods of cultivation and curing tobacco. Tobacco could be either air-, fire-, or flue-cured. However, most twentieth-century Georgia tobacco barns were used for flue curing. These tall, cubical structures are typically 16 to 24 feet on a side, with two small access doors on opposite ends of the barn (Hart and Mather 1961). Open sheds on one or more sides may provide shelter for the workers who strip the plants and prepare the tobacco to be hung on tiered poles inside the barn. These sheds appear in wide variety, but more than a third of the barns in south Georgia were found to have no sheds at all in 1961. Instead, nearby pine or live-oak trees were used for shelter for the stringing operations (Hart and Mather 1961:293). Flue-curing barns are typically gable-roofed, and many are unpainted. One or more exterior-fed furnaces and flues are also defining features. Where a barn was converted to either gas or oil, the outside opening of the old coal- or wood-fired furnace will be blocked up (Scism 1978).

Tobacco barns are often scattered over the farm, convenient to the fields, but occasionally they are arranged in pairs or small, connected groups (Flynn and Stankus 1978). No special type of barn is needed for air curing, but they all have numerous ventilator panels in the wall surfaces, usually vertical, but occasionally horizontal. These hinged louvers can be opened and closed as needed. The tobacco-growing region in Georgia is primarily in the counties of the Central Coastal Plain, described by geographers Hart and Mather (1961) as the Georgia-Florida Belt.

Other special-use barns that may be found in Georgia include dairy barns, milking barns/parlors, granaries or wheat houses, sweet potato houses, livestock barns, cottonseed houses, and feed houses. Most come in various sizes and forms, and almost no information is available as to their prevalence or distribution on the landscape.

The photograph above shows a 1920s flue-cured tobacco barn in Effingham County with an attached shelter for the exterior furnace. The photograph below is a tobacco barn in Berrien County with wide overhanging sheds (shade skirts) for the stripping process. Both are located in the Central Coastal Plain.

Blacksmith Shops

Blacksmith shops could exist in many sizes and forms, but commonly were little more than one-story wooden sheds with dirt floors. They may have had a large chimney or

hearth. Equipment inside would have included a forge, bellows, anvils, and other tools. Early farmers needed to be as self-sufficient as possible. The forge in the blacksmith shop is where many farm tools were made and

Some barns will not easily fit into any of the established categories. The barn above is a long gambrel-roofed stone barn in Floyd County (Ridge and Valley Region) that was once used as a dairy barn. The photograph below shows the concrete floor of an open-sided dairy barn on the Hofwyl-Broadfield Plantation in Glynn County (Coast Region).

repaired and where scrap metal was re-used. These items included wagon wheel rims, horse and mule shoes, and chains and harnesses. A building that was once used as a blacksmith shop would be difficult to identify visually unless some of the equipment remained. Few have been recorded in rural architectural surveys in Georgia, but it appears they existed on many larger farms and plantations.

The photograph above depicts an unusual two-and-a-half-story barn constructed in 1910 on the Shields-Ethridge farm in Jackson County (Piedmont Region). The upper floor was used to store wheat, and a grain chute moved it to the lower level. The side sheds were used to shelter wagons, buggies, and gear. Another type of wheat storage facility was built on the Jarrell Plantation in Jones County (Piedmont Region) in the 1930s. The photograph below shows these wheat bins that are rectangular wooden boxes with a hinged roof as the only opening.

This small open structure, shown below, operated as blacksmith shop on a large farm in Sumter County (Upper Coastal Plain).

Cane Grinders, Sorghum Mills, and Syrup Boilers/Evaporators

The photograph above shows a mule-powered cane mill on display at the Georgia Agrirama in Tifton. In the foreground of the photograph below is a circa 1850s-60s outdoor syrup boiler at Jarrell Plantation in Jones County (Piedmont Region). A well and its shelter can be seen in the background.

The process of turning either sorghum or sugar cane into syrup usually involved two structures – the crushing mill and the evaporator. These were often in proximity to one another. The early crushing mill consisted of a set of wooden or metal rollers supported on wooden stumps or a timber framework, three to four feet high. Gears and a vertical shaft were attached to a long boom or sweep that could be pulled in a circle by a horse or mule (Noble and Cleek 1995:151). The cane was fed into the mill by hand and the juice was strained into barrels or pans as it poured from the mill. In later years, steam-driven or gasoline or electric motors replaced mule power. The simplest evaporator could be an outdoor brick or stone furnace with a chimney and a metal evaporating pan or kettle. The juice was boiled, skimmed, and strained until it reached the correct consistency for either cane syrup or molasses (or sorghum syrup if sorghum cane had been used). It was then drained into jugs or jars. Brown sugar could also be a by-product of this process with sugar cane. Larger, more sophisticated operations might use quasi-industrial evaporator houses with several boilers and a series of pans and strainers for the liquid. Operators had to constantly skim froth from the cooking syrup. As it thickened, it passed from one partitioned area to another in the evaporator pan. Sorghum syrup continues to be produced primarily in the north Georgia mountains. The prevalence and distribution of the related structures is not known.

Carriage Houses/Garages

Detached carriage houses were sometimes also wagon or implement sheds. A common type at the turn of the twentieth century was a gable-front frame building with large, outward-swinging double doors. Most were simple and utilitarian, and some evolved into garages or other uses. During the automobile age, garages sometimes mimicked the design of the main house. Early garages were generally smaller than modern ones. On

large estates they may have housed a workshop and an upstairs apartment for a caretaker or other employee, but this was not common on farmsteads. In the earliest garages, each bay was no more than 10 to 12 feet wide and 18 to 20 feet deep. Detached garages are generally beside or slightly behind the main house. An early garage (one that was not converted from another building) indicates that the farm family was financially able to afford the luxury of an automobile and a special place to store it.

This garage was constructed about 1920 on the Shields-Ethridge farm in Jackson County (Piedmont Region). It has concrete block walls, wooden doors, and an unusual wood shingle design in the gable.

Chicken Houses/Coops

Chickens were allowed to wander at will on some early farms, especially in the South. As poultry and eggs became more important, nineteenth-century farmers began to provide shelter in old sheds or poorly ventilated frame structures in order to protect chickens from weather and predators. Trewartha (1948) reported chicken houses on 77 percent of all southern farmsteads in his 1940s study. Chicken houses became more standardized in the twentieth century. In order to take advantage of the benefits of sunlight, farmers made more open structures with either rows of small south-facing windows or a curtain front covered with a mesh or screening material. Where chicken farming became a specialized industry, the buildings evolved into the long, low, gentle-pitched, gable-roofed buildings that now dot the landscape of some parts of Georgia.

On smaller farms the chicken house took many forms, and few distinctive features are apparent. Farmers often used scrap or whatever materials were available for construction. Some of the interior necessities of the chicken houses could include separate spaces for roosts, nesting boxes, dust baths, and feeding and watering arrangements. One defining feature might be a "chicken walk," a wide board with narrow cross-wise strips or laths that allowed the chickens to walk directly into an opening in the roost (Noble 1984:116). Miriam Gnann of Effingham County described her family's early twentieth-century chicken houses as follows:

> *The chicken house had a slanting floor and roosts spread over it from side to side. The floor had to be scraped about every week and if there was any sign of mites, the house was sprinkled inside with a mixture of carbolic acid and water. The chickens were not fenced in, so roamed all over. Although we had nests made for them, they could steal away and make their own… We would on occasion build a coop from slats, long ones on the sides and short ones on the ends, laid alternately to about a foot and a half high, and cover it with overlapping boards. Then we'd make a nest of hay and "set a hen" on a dozen or so eggs until the eggs hatched. Each day the hen was let out of her coop for food and water. When the chicks hatched this coop was their home until they were big enough to leave their mother. (Gnann 1991:18-19)*

On the left in the photograph above is a small gable-roofed chicken house with a "chicken walk" on Jarrell Plantation in Jones County (Piedmont Region). To the right is a small privy. The photograph below shows an early twentieth-century shed-roofed chicken coop on the former Bland Farm in Bulloch County (Central Coastal Plain Region), now part of Georgia Southern University.

Cisterns

Cisterns were usually cylindrical structures of brick or stone used to store water for household or farm use. All or part of the structure might be below ground. Water would be collected, usually from the roof of the main house, and diverted to the cistern through pipes or downspouts. Their prevalence and distribution in Georgia is not known.

Commissaries/Stores/Post Offices

Plantations and larger farms may have had their own commissaries, either for tenant farmers or sharecroppers or for local trade with other farms. Farm laborers could usually purchase items such as basic food and supplies on a debit system, and the amounts would be tallied against later wages. While commissaries could take many forms, one common type was a frame one-room gable-front building with a small porch or stoop and at least a couple of windows. These often also functioned as post offices.

This one-room store of the Farmer's Educational and Cooperative Union was constructed about 1910 on the Reiser-Zoller farm in Effingham County (Central Coastal Plain Region).

Corncribs

Corncribs include a wide variety of designs and materials, although these have not been studied extensively. The term "corncrib" should not be confused with the crib that is part of a barn. The square log or frame corncrib raised a few feet off the ground is probably of Cherokee or Creek origin (Wilson et al. 1989:538). The building's purpose was to allow newly harvested ears of corns to dry slowly in order to prevent the growth of mold and mildew. Air must circulate through the structure, and therefore many were small and sometimes narrow with slatted walls.

Corncribs usually rested on log or stone piers above the ground in order to prevent moisture and vermin from affecting the corn. Small animals were also kept out by either an over-hanging skirt located a foot or two above

the ground or by large flat stones or round pieces of tin placed on the tops of posts under the crib floor (Noble 1984:107). The earliest corncribs on Georgia farms were usually small, gable-roofed, rectangular sheds constructed of logs of small diameter laid up with spaces between them. Later frame cribs might be covered by widely spaced wooden slats, and some were slanted outward at the top to provide better weather protection and to utilize the effect of gravity in unloading.

Loading and unloading corn was sometimes done through small doors or openings near the base of one wall or through hatches in or near the roof. The largest opening was usually a human-sized door in the gable wall. Corn was prevented from impeding this door by an arrangement of boards held in vertical grooves that could be removed when needed. Some cribs had several bins to separate the corn. The later use of loading elevators allowed the construction of taller corncribs. These tall, thin, slatted structures, popular after the late nineteenth century, were usually loaded from the top. Shed roofs were sometimes used. Historically, larger corncribs with multiple partitions were rare in Georgia. Drive-through cribs were sometimes created by placing one or more cribs under a single roof with a wagon runway between them. Before the corn was placed in the crib, husks were often removed in "shucking" or "husking" bees, social occasions which rotated from farm to farm. Trewartha (1948) found that 15 percent of southern farms had corncribs. In Georgia they have been recorded primarily in the northern half of the state.

This typical nineteenth-century log corncrib (above) is on display at the Georgia Agrirama in Tifton. The photograph below shows an unusual example of a larger concrete-block corncrib constructed in the early twentieth century in Jackson County (Piedmont Region). Ventilation was through horizontal openings under the eaves.

Cotton Gins

By 1860 most large cotton plantations had their own gins in a building specially constructed for that purpose (Vlach 1993). Farms where cotton was a minor crop might have a small gin in a general-purpose structure, but more often these farmers would take their cotton elsewhere for ginning. With the demise of "king" cotton, many small gins were replaced by a few large industrial ones. Most old gin houses found on individual farms today will probably be derelict or used for other purposes. Prior to the 1880s, the ginning process was labor-intensive. In the gin house the seed cotton was fed into a gin stand powered by horses or mules in order to remove the seeds. The lint cotton was then carried in baskets to a horse- or mule-powered press to make bales. By the late nineteenth century steam-powered plants integrated the ginning with the baling and automated the movement of cotton through the facility. The term "cotton gin" came to refer to the plant, whereas in its original usage it had referred to the gin stand (Wilson et al. 1989:569). The building itself is usually at least

The 1910 cotton gin house on the Shields-Ethridge Farm in Jackson County (Piedmont Region) still has much of its early equipment intact.

two stories in height with a wagon entry or covered drive-through area. Scales and other mechanical equipment, such as motors, blowers, and presses, may still be present. Cotton warehouses or seed houses were often located near the gin house.

Dairies/Milk Houses *(see also Spring Houses)*

A dairy or milk house (not to be confused with a dairy barn) was a small building for storing milk at a cool temperature until it could be used or churned for butter. About 50 degrees was considered ideal, and springhouses were often better suited for this purpose if they were available. The dairy was usually next to the cows' barn, but separate for sanitary reasons. Maintaining an appropriate temperature was a difficult challenge, particularly in Georgia's hot summer months. Farmers put insulation in the walls and ceilings, and constantly filled troughs with fresh supplies of cool well water. Crocks or cans of milk were placed in the troughs. Overhanging eaves and small louvered ventilators sometimes also helped keep the room cool. As these practices became obsolete after the age of mechanical refrigeration, the buildings themselves were modified or disappeared. These were probably never common in Georgia, where dairy farming was not a major activity.

Delco Houses/Gas Houses

Delco houses were used in the first half of the twentieth century to protect Delco or other electrical generators. They were usually very small, wood-framed buildings with concrete floors, one door, and no windows. Gas houses were similar structures used to shelter small coal gasification plants. These were both common on larger farms in rural regions before electrical utilities reached the area.

Dovecotes or Pigeon Roosts

Another outbuilding found on some farms was the dovecote or pigeon roost. Pigeons were not a major ingredient in the diet of most Georgians, but a few larger plantations did raise them for food. While the form of these structures varied, birds typically entered the roosts through round or square holes evenly spaced in rows around the structure. The Harris-Rives plantation near Sparta in Hancock County had ten "dove houses" of varying sizes prior to the Civil War (Vlach 1993:83). These were described as square boxes with pyramidal roofs raised off the ground on posts. The dovecote at the Cox-Steward Farm in Oglethorpe County was a two-story tower with pigeon roosts above and storage space below (Valch 1993:83). It was also square with a pyramidal roof. Dovecotes and pigeon roosts were probably not common in Georgia, and few are known to exist today.

Fences and Walls

Various fences and walls have divided the yards and fields of Georgia farmsteads since the seventeenth century. These are some of the most common elements in the rural landscape, yet they are often so inconspicuous that they are overlooked. The earliest fences were intended to keep free-ranging animals out of one's fields, not to

enclose animals. All the various types of fences and walls are too numerous to discuss here, but a few of the most common in Georgia will be mentioned. Rock fences and stone walls are found only in the upland regions of the state. A rock fence is usually related to land clearing and is more of a boundary marker than a fence. It is made of piles of loose, irregular fieldstones. A *stone wall* is more vertical and more carefully laid, with or without mortar.

Rail fences were once very numerous on the rural landscape, but few have survived intact. They consist of courses of split wood or saplings in sections that intersect at about 120 degree angles (Noble and Cleek 1995:170). One variant on this fence adds vertical supports at the intersection of the rails. Also known as *worm fences*, they were common in the Piney Woods areas of south and southeastern Georgia, as well as in some mountainous counties in the north. The *board fence* became possible after the production of cheap nails and dimension lumber in the late nineteenth century. Three or four horizontal boards were usually nailed to square posts. These fences were expensive to construct and maintain, and were therefore used only to restrain animals, usually horses, and not to enclose fields. They are still commonly found in prosperous horse-raising areas.

The photograph above shows a rock wall used to create a terrace on Jarrell Plantation in Jones County (Piedmont Region), and the photograph below shows a rail fence on display at the Agrirama in Tifton (Central Coastal Plain).

Wire fencing and electric fencing eventually replaced wood and stone, particularly for farm fields. The most ubiquitous fence in Georgia is the *barbed wire fence*, used to restrain cattle since the late nineteenth century. Barbs are attached to twisted strands of galvanized iron wire strung between posts. *Woven wire fences* are less common, and are often augmented by a strand of barbed wire on top. This fence was introduced in the early 1880s and consists of six-inch mesh strung between posts (Noble and Cleek 1995:177). *Electric fences* were not widely adopted until after the 1930s. Normally only one strand is electrified with a six-volt battery. Highly visible white porcelain insulators may mark the older fences (Noble and Cleek 1995:177). Early farmsteads sometimes used combinations of several types of fencing.

Granaries/Wheat Houses

Granaries or wheat houses may be considered a type of barn, and they were previously illustrated as such in this study. A granary could store any type of threshed crop or grain. A 1940s study of the geographical distribution of outbuildings found that granaries were extremely rare in the South (Trewartha 1948). Granaries could be small single-crib barns or larger two-story structures.

Greenhouses/Flower Pits

A greenhouse is a building in which the temperature and humidity can be regulated for the cultivation of delicate or out-of-season plants or crops. It may be either masonry or wood-framed with large glass windows or a glass roof. A flower pit has a low wall with no roof. It is usually smaller and less protected, and it may be partially underground. The prevalence and distribution of greenhouses and flower pits in Georgia is not known.

Ice Houses

Before the age of mechanical refrigeration, wealthier Georgians procured ice for preserving food mostly from shiploads arriving from New England. These were carried by rail to interior centers. Keeping the blocks from melting in the summer was a difficult challenge. Icehouses had few distinctive exterior features. Many were frame, rectangular structures, but some were made of brick or stone. Maximum insulation was the most critical consideration in their construction. An underground vault or pit, often dug in porous soil on the north side of a hill, usually provided the greatest degree of thermal insulation. A typical hole was six feet square and ten feet deep (Bonner 1964:184). The icehouse was constructed over this pit. Walls were either made of thick non-conducting material or, if they were wood frame, they had double planks filled with nogging of straw, bark, or sawdust. They had no windows. Roof ventilators drew off excess warm air, and roofs were sometimes also covered in straw. Great quantities of hardwood dust or sawdust were used inside the icehouse to help absorb melt water underneath, insulate the ice blocks from each other, and cover the blocks for further protection. Drainage pipes might also be employed underneath. It was important to provide extra insulation behind the door. Icehouses were found only on the wealthiest farms, and few have survived intact.

Based on exterior appearance alone, this frame ice house on Hofwyl-Broadfield Plantation in Glynn County (Coast and Sea Islands Region) is almost indistinguishable from a number of other outbuilding types.

Kitchens

Year-round detached kitchens were once very common on larger southern farmsteads, even well into the twentieth century (Noble 1984:98). They were much less prevalent in colder climates. Detached kitchens were usually located close to the rear of the farmhouse for easy access. The earliest ones had a large fireplace and chimney, which were later replaced by stoves and pipes. Typically kitchens were small rectangular one-room structures, measuring around 16 by 20 feet. The fireplace or stove dominated one wall, usually on the gable end. Some kitchens had two rooms, with the second room used as storage space or extra living space for servants or others. A dinner bell sometimes stood on its own nearby pole in the yard or in an open cupola on the roof ridge of the kitchen.

The reasons for a separate kitchen included reduction of the heat in the main house, the confinement of fire dan-

ger, the reduction of insects and other pests in the house, and the isolation of all the noise and activity generated by meal preparation. Segregation of slaves or paid workers from family members may have also played a role on some farms or plantations (Vlach 1993). Some kitchens were later attached as back wings or connected with a walkway or porch. Farmers might convert an earlier dwelling into a kitchen when a larger farmhouse was built. When a detached kitchen became obsolete, it might also be converted to another type of outbuilding. Rear ells also often functioned as kitchens in the South. Some theorize that the origin of the separate kitchen lies in continental European folk traditions, and apparently it was not a strong tradition among the first English settlers in this country (Noble 1984:98).

This re-constructed kitchen (in the foreground of the photograph) from a traditional 1870s Wiregrass subsistence farm is on display at the Georgia Agrirama in Tifton.

Mills (Grist/Flour/Lumber)

The earliest mills in Georgia were not large industrial operations, but small facilities on isolated farms or plantations where the owners had a need for milled wheat (flour) or corn (meal or grits) or sawn lumber. These enterprising farmers might also do custom grinding or sawing for nearby neighbors. Some mills served as a social centers where farmers congregated while waiting for their corn or wheat to be ground. Most nineteenth-century mills utilized direct waterpower, and were located by streams or millponds where dams and/or raceways could be built. The technology employed different types of wheels, gears, millstones, and eventually grain elevators. Steam and then electricity replaced water as a power source as the twentieth century progressed.

This 1879 grist mill was originally built in Worth County (Central Coastal Plain Region), and re-located to the Georgia Agrirama in Tifton.

Flour and gristmills on farms in Georgia were usually of frame construction, at least two stories tall, and large enough to contain the cumbersome machinery. The term "grist mill" technically applies to a corn mill, but is commonly used to refer to both corn and wheat mills, which were sometimes combined. Saw mills were often located in longer, more open structures without walls, and were sometimes operated only seasonally. Operators could use either gang saws or circular saws, which were both widely utilized after the early nineteenth century.

Offices

Larger farms or plantations sometimes had offices in a separate building on the property. These were used to keep records, pay wages, and generally take care of farm business. Most were simple one-room cottages with

a door and a few windows. A doctor's office might also be housed in a similar type building.

The office for the cotton gin on the Shields-Ethridge Farm in Jackson County (Piedmont Region) dates from the 1930s.

Privies

Privies (also known as outhouses) are usually recognizable because they are much taller than wide or deep. Privies were often poorly constructed and frequently poorly maintained. The tiny building was rarely embellished with more than a small vent or window. Decorative cutouts, often on or above the door, might represent crescent moons or stars. Some privies had two or more holes at different heights on the inside seating area to accommodate children as well as adults. "Wooden frame construction proved to be more suitable than brick or stone because it enabled the building to be moved away from the pit when desirable for periodic cleaning. In some cases the pit was extended behind the privy and covered to enable cleaning without moving the building. The lower part of the back wall was sometimes hinged to aid in this process" (Noble 1984:87). The location of the privy was essentially a compromise between sanitation and odor, and convenience, some reasonable distance behind the house. Any farmstead built before the early to mid-twentieth century probably had at least one privy. Since they were poorly constructed, few remain as more than archaeological sites.

Root/Potato Banks or Cellars

Cellars to provide storage for root crops or other foodstuffs can often be identified by a sloping door against the bank of a hill. They sometimes have a projecting ventilation pipe to circulate air and release excess moisture. Cellars could also be excavated from flat ground, and reached by a steep flight of stairs, but this was a more labor-intensive process. The ideal underground environment was dark and cool with good air circulation and fairly high humidity (Noble 1984:88). Cellars provided maximum insulation from high temperatures or freezing, but due to the state's mild climate, these were not essential in many parts of Georgia where aboveground generic structures could be used for the same purpose. They are found more frequently in the Midwest where they also provide protection against strong winds and tornadoes. Cellars could be of virtually any size or shape. In Georgia root cellars are sometimes found as masonry-lined excavated spaces under the main house. Other types appear to be rare in the state.

School Houses

Larger farms or plantations in isolated rural areas sometimes undertook the task of educating the children of the farm family, its workers and often nearby families as well. Schools on farmsteads were usually one- or two-room rectangular frame buildings with one or two doors and multiple windows. They sometimes also functioned as community gathering places. While probably not uncommon before World War II, relatively few have survived to the present time. The Shields-Ethridge Heritage Farm, near Jackson, has a recently rehabilitated schoolhouse that is sometimes open to the public for special tours or events.

Sheds/Shelters

The term "shed" is often used generically today to refer to a miscellaneous outbuilding, sometimes of insubstantial construction. It may not have been used the same way historically. It appears that the word "shed" was usually combined with a specific modifier, such as wagon shed, tractor shed, wood shed, equipment shed, cow shed, machine/implement shed, or wash shed. These were of various sizes and shapes and could be enclosed or open-sided, depending on the use. Enclosed sheds might have gable extensions or shed roof extensions to provide outside shelter. They were usually one-story, wood-framed buildings used for some type of storage. If open-sided, they might also be called shelters (such as for a wash shelter where laundry was done). Many historic resource surveys refer to any miscellaneous or unknown outbuilding as a "shed". In order to have more useful data in the future, it is recommended that more specific terms be used whenever possible.

Silos

Silos are a recent phenomenon on the rural American landscape, not employed extensively until the turn of the twentieth century. Originating on the European continent in the 1870s, they were next seen in New York and New England, then the northern Midwest, and only much later in the deep South (Noble 1984:69-70). Silos are most common in dairy regions, and relatively rare in Georgia. The silo is designed to preserve green fodder crops, usually field corn, in an unspoiled condition by providing an airtight environment. The stored material is called ensilage or silage. Earlier storage containers had not been airtight, and were designed to store only grains that had already been dried. The first silos were pits lined with stone or masonry, usually located inside a barn. Tower silos began as wooden rectangular structures of dimension lumber covered with ordinary barn siding, sometimes attached to the barn. Rectangular silos had many problems, including insufficient strength and a propensity for air pockets. A practical low-cost design for a circular silo was perfected in Wisconsin in the 1880s. Called a wooden stave silo, the structure was formed of tongue-in-groove boards soaked in water and bent into enormous hoops (Noble 1984:74). Roofs for circular silos evolved sequentially from cones to hipped cones to low domes to the hemisphere.

These two round wooden silos with metal staves and hemispheric roofs are on a diary farm in Floyd County (Ridge and Valley Region).

Around World War I, stronger and more durable masonry silos replaced wooden staves. The next form was concrete silos made of separately poured, stacked, interlocking rings. The use of a cement stave was also perfected in the early 1900s. The new silos could all be built considerably taller than the wood silos. Soon after World War II, the radically different *Harvestore* silo, known by its trade name, attained the long-sought objective of a completely airtight container. Metallic blue in color, it was 61 feet high and 20 feet in diameter, and

constructed of fiberglass bonded to sheets of metal. Newer silos are often seen in clusters or rows. While it is difficult to determine the age of a silo, those that are over 50 years old are probably no longer in use, and may be leaning or derelict. Newer silos are taller and are more likely to be made of modern pre-fabricated materials.

Smokehouses/Curing Houses

Smokehouses were once found on almost every farm in the South, because southerners have always been particularly fond of pork. Although other kinds of meat could be dried and smoked for preservation, pork was the most common for household consumption in Georgia. Hogs were usually slaughtered in the late fall, and the meat would be preserved to last until the next year's butchering. Pieces of the carcass were cut into sections and packed in salt to dry, usually for several weeks. Some smokehouses contained troughs made of hollowed-out logs for the salt-curing process. (Occasionally buildings used to store salt-cured meats were also called "smokehouses." These may have whitish salt residue on the lower walls.) The salted meat was then washed and hung in the smokehouse. The object was to expose the meat to the chemical creosote, which results from the imperfect combustion of wood. This further preserved the meat and improved the flavor. The fire was regulated to give off the greatest amount of smoke without getting too hot. Miriam Gnann recalls the process from the early 1900s in Effingham County as follows:

> *When thoroughly salted, the hams, shoulders and sides were hung to be smoked. Rotting pine wood was gathered from the woods and ignited to where it did not blaze up but would smolder to produce smoke. This had to be checked often to make sure there was no blaze, and if so, water was sprinkled to put out the blaze and smoke resumed. This procedure continued during the daytime until the meat was thoroughly cured. Then it was taken down and stored in barrels. In later years it was stored in a screened-in section of the smokehouse to keep skippers from getting in the meat. . . (Gnann 1991:31)*

Many different woods could be used for the fire, and this varied according to availability and local taste preferences. The preferred wood, hickory, was often not available. Green wood was more effective in producing smoke, but it was also important to exclude as much outside air as possible. For this reason, windows were normally absent in smokehouses. The only ventilation was through small openings or slits just under the eaves or high in the gable to provide a draft to keep the fire burning and draw the smoke through the structure (Noble 1984:89). In wooden smokehouses with dirt floors, the fire was kept in the middle of the structure in an excavated fire pit. A rarer, but more advanced, design used fireboxes that could be fed from the outside. Fires from outside stoves could also be admitted through stovepipes.

One smokehouse design, documented by Georgia agriculturist Dr. James Bonner from records dating to 1851, recommended that the smoke pass through a vessel of water on the outside before entering the smokehouse by pipe. This cooled the smoke and condensed the steam. Dr. Bonner's unnamed source also regarded dirt floors as unsanitary, because "dripping of the meat will produce noisome stench and a damp air" (Bonner: n.d.). His solution was to coat a wooden floor with several inches of sawdust and a dusting of lime, which would be cleaned and replaced periodically. Bonner's source further stated that "a filthy smokehouse is a disgusting subject to write about, but as they are so numerous, I hope to be pardoned" (Bonner 1945).

The photograph above is of a small circa 1910 smokehouse in Effingham County (Central Coastal Plain). The photograph below shows an unusually large wood-frame smokehouse on a former plantation in Sumter County (Upper Coastal Plain Region). Ventilation spaces can be seen under the eaves.

There is some variation in the types of buildings used as smokehouses. In Georgia they were most commonly constructed of wood, with some early examples of log construction. Most were rectangular and one story in height, but there are also rare examples of square two-story smokehouses in the upland South. Smokehouses could have dirt or wood floors, depending on the method of smoking. Some were raised from the ground on stone piers. The only openings, other than doors, were high ventilation flues or spaces under the eaves. A common Georgia type features a gable-end doorway with a roof cantilevered several feet over it to protect the entrance. One might find poles or hooks inside to hang the meat. The size varied, but most smokehouses were no larger than 10 by 12 feet. Larger plantations used sizable buildings that could be as large as 18 by 26 feet.

Springhouses

Springhouses were built at the sources of flowing water to protect the spring and provide a cool, clean environ-

This is an example of a late-nineteenth-century springhouse in the Nacoochee Valley National Register Historic District in White County (Mountains Region).

ment for storing dairy and other farm products. Most were of masonry construction and were often excavated into the hillside at the base of a slope (Noble 1984:82). Floors were constructed of stone, brick, concrete, or some other impervious material. Water usually flowed constantly through shallow troughs and then through an outlet back into a stream. Louvers and roof ventilators were often employed to prevent dampness and mold. Locations of springhouses on farms varied greatly depending on the available water source, although ideally they would be near the house. They were usually kept well away from possible pollution from the barn and feedlot.

Tenant Houses/Slave Quarters

Tenant houses, once common in many parts of the state, are rapidly disappearing from the Georgia landscape. Buildings that were once used as slave quarters are almost non-existent. These two types of historic resources are being discussed in the same section, because if slave quarters survived, it was usually because they were reused as tenant houses. The researcher must be very diligent in examining claims that a particular building was a slave quarter. Due to their age and poor materials and construction, almost none of these extremely significant resources remain standing. Most Georgia farmers were too poor to own slaves. A large number of slaves were concentrated on relatively few plantations.

Dwellings constructed for field slaves were usually small unpretentious cabins grouped together at some distance from the main house (Vlach 1993:153). They were commonly made of logs or wood frame covered with weatherboards. Domestic slaves generally lived closer at hand in separate buildings adjacent to the planter's residence. They might also reside in a detached kitchen or other outbuilding. Slave quarters were sometimes set behind or beside the main house, where they would not contend with it visually, but where activities could be monitored. Occasionally a planter would place an ensemble of service structures, including slave quarters, in rows along the roadway leading to the big house (Vlach 1993:21).

The most basic slave quarter was usually just one square room with perhaps a small porch. Fenestration consisted of no more than a door and a few square holes for windows, if they existed. These "single pen" houses could have another room attached, making them "double pen" or "saddlebag" types. The saddlebag configuration, with a chimney and fireplace located between the two rooms, was a very common type throughout the South. Each of the rooms had its own front door, enabling the planter to house two slave families in one dwelling. "Dogtrot" type houses could also accommodate two families. These consisted of two rooms separated by a shared open breezeway. Except for the saddlebag types, chimneys normally appeared on the exterior ends of houses.

The Hermitage, a rice plantation in Chatham County, once had two long rows of 70 or 80 brick slave cabins of the hall-and-parlor type (Vlach 1993:158). The larger of the two rooms, the "hall," was entered from the outside and served as the kitchen and workroom. The smaller "parlor" was entered through the hall and served mainly as a bedroom. When each slave dwelling was a replica of the other, the planter imposed a sense of regimentation and social control that severely impaired the expression of familial identity and uniqueness. Although slaves had no legal power, they often found ways to exert control over their surroundings by defining spaces around their quarters where they planted personal gardens, conducted community transactions, and forged coherent social groups.

After the Civil War and through the early twentieth century, many farms in Georgia relied on a system of ten-

ancy or sharecropping. The system included several varieties of economic relationships between the landowner and workers – wage hands, farming for shares of the crop, and renters. Some former slave dwellings were transformed into residences for these workers, sometimes freed slaves themselves. However most ante-bellum quarters eventually deteriorated, and tenant houses remaining today are unlikely to pre-date the late nineteenth century. One of the most common types of tenant houses in Georgia was the hall-and-parlor plan. Saddlebag types and other two-room plans were also widespread.

The row of abandoned wood-frame tenant houses is located on the former Champion-McGarrah Plantation in Marion County (Upper Coastal Plain Region). The photograph below shows a row of former slave quarters on Ossabaw Island (Coast and Sea Islands Region). Each two-room "saddlebag" type dwelling housed two families, and was constructed of tabby, a material made from sand, lime, and oyster shell.

Tenant houses, which began as identical dwellings often in rows near the agricultural fields or along the roadside, were gradually changed over the years. Many were individualized by their residents, and some were later updated with modern conveniences, additional rooms and porches, or new exterior siding. As farms were increasingly mechanized and the rural poor moved to urban areas, tenant houses were abandoned.

Turpentine Stills

The turpentine or "naval stores" industry was historically important in Georgia, particularly in the Wiregrass region after the 1870s when North Carolina farmers moved to "set up shop" south of the fall line (Thomas 1975:4). Most of these farmers brought African-American workers with them and built villages or quarters for them on the work sites. There were a number of ways to obtain turpentine from pine resin, but they all required a distillation process. Individualized historic turpentine stills have virtually disappeared from the rural Georgia

This reconstructed turpentine still is on display at the Agrirama in Tifton. A cooper's shed was often nearby to make barrels for the turpentine.

landscape, because farmers began bringing their resin to centralized steam distillation centers after the 1930s Depression. When old stills were abandoned as obsolete, they rarely survived intact, because the equipment was broken up and sold. Only a few are known to remain in Georgia. McCranie's turpentine still, near Willacoochee, is listed on the National Register of Historic Places.

Wells, Well Houses, Pump Houses

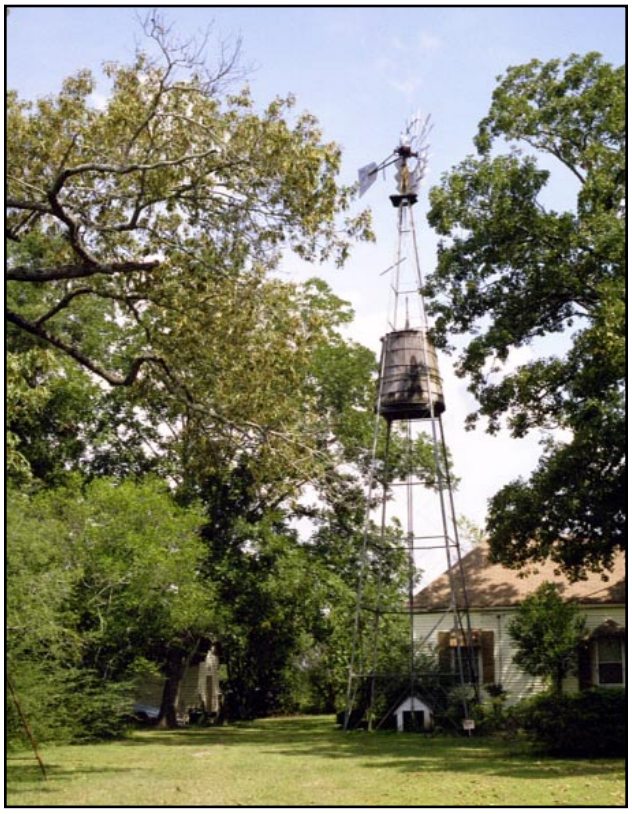
Well houses were often little more than wood-frame shelters without walls. Roofs were usually gabled or pyramidal. After mechanization, pump houses served a function similar to well shelters, but they often needed to be more substantially constructed in order to provide protection for gasoline or electric machinery. Some wells were not sheltered, just covered. Most were located as close as possible to the farmhouse. Lined with brick or stone, they occasionally ran dry and had to be re-dug. Many had a pulley wheel over the well through which there was a chain with a bucket on each end. One bucket could sit on a shelf at the top and the other could stay down in the water, to be drawn up as needed. Another type of device, called a "well sweep" arose from ancient technology. It used the heavy end of a tapered log, which was supported by a fulcrum, as a counterweight to the lighter end on which the rope and bucket were attached. The bucket could be lowered into the well by human effort, and then the heavier task of lifting it out would be accomplished by the action of the counterweight. Every historic farm once had a well or wells, but few well shelters survive. The location of older wells is sometimes discovered only through archaeological investigations.

This well sweep is a reconstruction on display at the Georgia Agrirama in Tifton.

Windmills and Water Towers/Tanks

Farm windmills in the United States date from the mid-1800s, when they were used to lift well water for livestock and later to generate electricity (Noble and Cleek 1995:141). The standard farm windmill consisted of a light, but strong, steel frame of four sloping legs, braced at intervals (Noble 1984:83). The curved steel blades were set in a rosette pattern and equipped with a rudder that allowed the blades to rotate automatically, following the wind shifts. A steel ladder provided access to the top mechanisms, which required periodic lubrication and maintenance. Some windmills were located near domestic water tanks and tankhouses. Since Georgia did not historically experience frequent water shortages, as in the American west, fewer farms needed windmills

or large water tanks. Windmills did not operate as efficiently in Georgia as in the Great Plains, because the winds in much of Georgia are less steady and more obstructed by trees.



This structure combines a windmill with a water tank within its structure (Sumter County, Upper Coastal Plain). Water was stored in elevated tanks to ensure a gravity flow.

Other Buildings and Structures

The agricultural researcher may find some buildings and structures not described in the above paragraphs, but this certainly does not diminish their importance. Some, such as gazebos and playhouses, were not mentioned because they do not relate specifically enough to agriculture. Others, such as warehouses or storehouses, defy description because the terms are extremely generic. Animal enclosures, such as pig pens, hog shelters, horse corrals, and beehives are also resources that should be studied.

Goat pen, Fannin County (Mountains Region).

This small structure was used to house a gasoline tank on the Bland Farm in Bulloch County (Central Coastal Plain).

V. Inventory of Agricultural Buildings and Structures

Inventory of National Register, Survey, and Centennial Farms

The following section will discuss what is known of historic agricultural resources through examination of files in the Historic Preservation Division (HPD) of the Georgia Department of Natural Resources. Sources consulted include the National Register of Historic Places, the Historic Resource Survey files, the Georgia Centennial Farm Program files, and various reports prepared for purposes of Section 106 of the National Historic Preservation Act. Each of these programs is described briefly below, followed by some discussion of the information derived from each.

The National Register of Historic Places is maintained by the National Park Service as the nation's official list of significant historic and prehistoric properties. The criteria for evaluation should be applied according to the U.S. Department of Interior's National Register Bulletin 15. These criteria are also described as follows in the *Code of Federal Regulations, Title 36, Part 60*:

> *The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:*
>
> *A) that are associated with events that have made a significant contribution to the broad patterns of our history; or*
>
> *B) that are associated with the lives of persons significant in our past; or*
>
> *C) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or*
>
> *D) that have yielded, or may be likely to yield, information important in history or prehistory.*

Levels of significance may be local, state or national. Recognized areas of significance are numerous, and include the category of agriculture. The significance of a historic property can be explained only when it is evaluated within its historic context. Certain types of properties, such as moved or reconstructed buildings, cemeteries, and properties that are not yet 50 years old, may not be eligible unless they also meet certain special criteria. In Georgia, properties are listed on the National Register through the HPD. Properties listed on the National Register are also automatically listed on the Georgia Register, but those listed on the Georgia Register are not included in the National Register unless they are separately nominated.

Because of Georgia's agrarian past, it was expected that a high percentage of the state's National Register listings would include agriculture as an area of significance. A manual search of the files did not find this to be the case. The actual figure is probably between 12 and 16 percent, allowing for a margin of error due to inexact nature of the research. Individual listings tended to include more of the large plantations and few small family farms. This is changing with more recent nominations, especially with the addition of several large multiple property submissions and rural districts. While a high percentage of the agricultural National Register listings appear to be in the Piedmont region, this is also a large geographic area with many counties, and these type of comparisons may not be statistically valid.

Several rural districts and multiple property submissions merit individual mention. The *McLemore Cove Historic District* in Walker County (Ridge and Mountains Region), with 293 contributing resources, is significant in agriculture for its extensive collection of agricultural outbuildings and fields. Historically, farms in this valley averaged 300-400 acres. The district is also significant in landscape architecture for its overall rural landscape, which exhibits an irregular geometric pattern in the valley floor. Two of the best known (and possibly most threatened) rural districts lie side by side in White and Habersham counties in the Mountains Region. These are the *Sautee Valley* and *Nacoochee Valley* historic districts. Both have many early settlement farmsteads, primarily small subsistence operations with varied crops. District boundaries were drawn along a USGS topographical contour line.

In the Piedmont Region, a large number of agricultural properties are included in the *Old Federal Road in Georgia's Banks and Franklin Counties Multiple Property Submission*. Numerous agricultural outbuildings along the road (presently parts of Georgia Highways 51 and 59) are significant as good examples of the types of outbuildings built and utilized in rural Piedmont Georgia from the mid-1800s into the early twentieth century. Other districts in the Piedmont with agricultural components include *Starrsville* in Newton County and the *Long Cane Historic District* in Troup County. Most of the agricultural districts south of the fall line are actually large individual farms or plantations with multiple contributing resources on the property, or small towns or crossroads communities with a few farms on the periphery.

Individually significant farmsteads are too numerous to mention. *Jarrell Plantation*, a state historic site in Jones County in the Piedmont Region, interprets more than 150 years of agricultural history on land that remained in one family for several generations. *The Shields-Ethridge Farm* in Jackson County (also in the Piedmont) remains a working family farm with 65 contributing buildings and structures in the National Register district. The *Reiser-Zoller Farm* in Effingham County (Central Coastal Plain Region) represents myriad agricultural practices from the late nineteenth through early twentieth centuries through unusually intact landscapes, buildings, and structures. Numerous plantations are listed, including *Birdsville* in Jenkins County (Central Coastal Plain), an antebellum complex that includes a pecan grove, cemetery, and many outbuildings on its 50-acre tract.

Another valuable source of information on agricultural resources in Georgia is the county survey files at HPD. Statistical data for this project was only able to utilize the computerized files for surveys conducted between 1988 and 1999. Older survey forms were done on paper and are not in the database. A large number of counties are also not yet included in the countywide surveys. These are being added as funds and local needs dictate. One major rural survey that was completed after this data was collected and analyzed was in Rabun County in the Mountain Region. The tables presented below do not provide a complete picture, as some regions of the state have a higher proportion of their counties with completed surveys. Survey forms that were completed as part of Section 106 compliance projects are also not in the computerized database. Surveyors in some counties completed the forms with a greater level of detail than others. Many did not clearly identify outbuildings, and may not have had the expertise to differentiate certain types of outbuildings. A sample survey form is included in the Appendix to this report, and surveyors should consult the Historic Preservation Division's survey handbook as guidance on how to complete the forms.

When using Tables 1, 2, and 3 below, the researcher should consider that statewide survey coverage is not

consistent and is often "spotty" for some regions. While 50 percent of the counties in the Ridge and Valley Region had statistically usable survey data, the number fell to 33 percent in the Mountains, 33 percent on the Coast and Sea Islands, 29 percent in the Piedmont, 21 percent in the Upper Coastal Plain, and 16 percent in the Central Coastal Plain. Table 1 below shows the number of recorded historic agricultural resources in the state by region and by county. It utilizes both National Register and survey data, and it includes only extant resources and not those that are listed only as archaeological sites. It does not indicate the number of contributing properties within districts, because these were not always clearly identified in older nominations. Some agricultural properties included in Multiple Resource Submissions may be missing from the data, as these were sometimes difficult to identify within the time constraints of the project.

Table 1. Number of Recorded Historic Agricultural Resources in Georgia (excluding those recorded only as archaeological sites

REGION	Individually National Register listed	Districts (considered primarily agricultural)	Surveyed properties related to agriculture
RIDGE AND VALLEY			
Bartow County	3	0	71
Catoosa County	0	0	*NS
Chattooga County	1	0	*NS
Dade County	0	0	*NS
Floyd County	4	1	*NS
Gordon County	1	0	77
Murray County	1	0	120
Polk County	0	0	*NS
Walker County	4	1	100
Whitfield County	_1_	_0_	_85_
Region total:	15	2	453
MOUNTAINS			
Cherokee County	2	0	*NS
Dawson County	0	0	59
Fannin County	1	0	100
Forsyth County	0	0	43
Gilmer County	0	0	*NS
Habersham County	3	0	55
Lumpkin County	3	0	*NS
Pickens County	0	0	*NS
Rabun County	1	0	*NS
Towns County	0	0	*NS
Union County	0	0	*NS
White County	_1_	_2_	_*NS_
Region total:	11	2	257

REGION & COUNTY	Individually National Register listed	Districts (considered primarily agricultural)	Surveyed properties related to agriculture
PIEDMONT			
Baldwin County	5	0	*NS
Banks County	0	3	*NS
Barrow County	1	0	*NS
Butts County	1	0	*NS
Carroll County	2	0	*NS
Clarke County	0	0	3
Clayton County	2	0	*NS
Cobb County	5	0	2
Columbia County	1	0	*NS
Coweta County	1	0	58
DeKalb County	0	0	1
Douglas County	0	0	1
Elbert County	2	0	*NS
Fayette County	0	0	*NS
Franklin County	7	3	*NS
Fulton County	1	0	*NS
Greene County	5	0	*NS
Gwinnett County	3	0	*NS
Hall County	3	0	*NS
Hancock County	7	2	*NS
Haralson County	0	0	*NS
Harris County	0	0	71
Hart County	3	0	*NS
Heard County	0	0	*NS
Henry County	0	0	*NS
Jackson County	3	0	*NS
Jasper County	0	0	38
Jones County	1	1	73
Lamar County	0	0	*NS
Lincoln County	0	2	131
Madison County	0	0	32
McDuffie County	2	0	70
Meriwether County	5	0	*NS
Monroe County	1	0	*NS
Morgan County	1	0	*NS
Newton County	0	1	*NS
Oconee County	2	0	*NS
Oglethorpe County	5	0	151
Paulding County	0	0	*NS
Pike County	0	0	*NS
Putnam County	3	0	*NS

REGION & COUNTY	Individually National Register listed	Districts (considered primarily agricultural)	Surveyed properties related to agriculture
Rockdale County	0	0	10
Spalding County	3	0	*NS
Stephens County	1	0	31
Talbot County	1	0	*NS
Taliaferro County	1	0	*NS
Troup County	6	1	68
Upson County	0	0	*NS
Walton County	2	0	*NS
Warren County	0	0	*NS
Wilkes County	_3_	_0_	_*NS_
Region total:	89	13	740
UPPER COASTAL PLAIN			
Bibb County	0	0	*NS
Burke County	1	0	*NS
Calhoun County	0	0	*NS
Chattahoochee County	0	0	*NS
Clay County	2	0	24
Crawford County	0	0	*NS
Dooly County	0	1	68
Doughtery County	0	0	*NS
Glascock County	0	0	*NS
Houston County	2	0	*NS
Jefferson County	1	0	*NS
Johnson County	0	0	*NS
Lee County	0	0	*NS
Macon County	4	0	*NS
Marion County	1	0	*NS
Muscogee County	3	0	*NS
Peach County	1	0	*NS
Quitman County	0	0	1
Randolph County	0	0	*NS
Richmond County	1	0	*NS
Schley County	0	0	*NS
Stewart County	1	0	59
Sumter County	2	0	*NS
Taylor County	0	0	61
Terrell County	0	0	7
Twiggs County	2	1	*NS
Washington County	1	1	*NS
Webster County	0	0	*NS
Wilkinson County	_0_	_0_	_*NS_
Region total:	22	3	220

REGION & COUNTY	Individually National Register listed	Districts (considered primarily agricultural)	Surveyed properties related to agriculture
CENTRAL COASTAL PLAIN			
Appling County	0	0	*NS
Atkinson County	1	0	124
Bacon County	0	0	*NS
Baker County	2	0	3
Ben Hill County	0	0	*NS
Berrien County	0	0	*NS
Bleckley County	1	0	*NS
Brantley County	0	0	*NS
Brooks County	2	0	*NS
Bulloch County	2	0	*NS
Candler County	0	0	*NS
Charlton County	1	0	11
Clinch County	0	0	8
Coffee County	0	0	2
Colquitt County	1	0	*NS
Cook County	0	0	*NS
Crisp County	0	0	*NS
Decatur County	1	1	2
Dodge County	0	0	*NS
Early County	1	0	13
Echols County	0	0	*NS
Effingham County	1	0	*NS
Emanuel County	2	0	86
Evans County	1	0	*NS
Grady County	3	0	*NS
Irwin County	0	0	*NS
Jeff Davis County	0	0	*NS
Jenkins County	1	0	*NS
Lanier County	0	0	*NS
Laurens County	1	0	*NS
Long County	0	0	*NS
Lowndes County	0	0	*NS
Miller County	0	0	*NS
Mitchell County	1	0	*NS
Montgomery County	0	0	*NS
Pierce County	0	0	*NS
Pulaski County	0	0	*NS
Screven County	1	0	*NS
Seminole County	0	0	*NS
Tattnall County	0	0	*NS
Telfair County	0	0	*NS

REGION & COUNTY	Individually National Register listed	Districts (considered primarily agricultural)	Surveyed properties related to agriculture
Thomas County	8	0	*NS
Tift County	0	0	*NS
Toombs County	2	0	*NS
Treutlen County	0	0	*NS
Turner County	0	0	*NS
Ware County	1	0	*NS
Wayne County	1	0	*NS
Wheeler County	1	0	*NS
Wilcox County	0	0	*NS
Worth County	_0_	_0_	_*NS_
Region total:	**36**	**1**	**249**
SEA ISLANDS AND COAST			
Bryan County	3	0	*NS
Camden County	0	2	*NS
Chatham County	2	0	23
Glynn County	4	0	*NS
Liberty County	0	1	*NS
McIntosh County	_0_	_0_	_11_
Region total:	**9**	**3**	**34**

*NS=No survey data available as of 1999.

Tables 2 and 3 were taken only from survey data, and show the numbers and types of outbuildings recorded by region. Statewide 61 percent of all farms had between one and five outbuildings, 28 percent had no outbuildings, 10 percent had between six and ten, and only 1.3 percent had more than 10. These percentages were also fairly consistent between regions. Barns were by far the most numerous outbuildings, but these were not separated into types of barns because of inconsistencies in recording or describing them. "Storage shed" was a general term available to surveyors, and this was used extensively along with "other" or "unknown." Garages, smokehouses, chicken coops, corncribs, and well houses are also well represented in most regions.

Another source of information on family farms in Georgia is the Centennial Farms Program administered by HPD. It was established in 1992 to honor Georgia's farmers and to encourage preservation of agricultural resources for future generations. Each recognized working farm must have a minimum of 10 acres or $1000 annual income. The Centennial Heritage Farm Award is given to farms owned by members of the same family for 100 years or more which are listed in the National Register of Historic Places. The Centennial Farm Award goes to farms at least 100 years old that are listed in the National Register, but continual family ownership is not required. The Centennial Family Farm Award is given to farms that have been owned by the same family for 100 years or more.

Table 2. Number of Outbuildings Recorded Per Farm, Excluding Main House, Using 1999 Survey Data

REGION	0 Outbuildings	1-5 Outbuildings	6-10 Outbuildings	Over 10 Outbuildings	Total Farms Recorded
RIDGE AND VALLEY	152 (33%)	265 (58%)	36 (8%)	1 (.2%)	454
MOUNTAINS	31 (12%)	190 (74%)	34 (13%)	2 (.8%)	257
PIEDMONT	186 (25%)	463 (63%)	74 (10%)	10 (1.4%)	733
UPPER COASTAL PLAIN	104 (47%)	90 (40%)	21 (10%)	5 (2.3%)	220
CENTRAL COASTAL PLAIN	59 (24%)	151 (62%)	25 (10%)	7 (2.9%)	242
COAST AND SEA ISLANDS	11 (33%)	20 (61%)	1 (3%)	1 (3%)	33
State Total:	543 (28%)	1179 (61%)	191 (10%)	26 (1.3%)	1939

% = Percent of total farms recorded in region

Table 3. Types of Outbuildings Recorded by Region, Using 1999 Survey Data

	RIDGE AND VALLEY	MOUNTAINS	PIEDMONT	UPPER COASTAL PLAIN	CENTRAL COASTAL PLAIN	COAST AND SEA ISLANDS
Barns (all types)	295	168	462	122	191	12
Carriage house/ garage	57	39	93	21	26	2
Chicken coop	54	63	41	10	7	2
Corn crib	60	35	46	4	20	0
Dairy	5	2	10	3	1	5
Dovecote	0	0	1	0	0	0
Ice house	0	0	0	0	0	0
Kitchen	3	4	19	3	8	0
Office	3	2	7	2	1	1
Privy	10	20	33	7	16	1
Root/potato bank/root cellar	4	1	4	1	0	0
Silo	5	1	11	6	39	3
Slave/servant/ tenant house	13	7	40	43	3	5
Smokehouse	74	40	75	9	18	0
Storage shed	124	142	268	61	180	13
Springhouse	3	9	3	0	1	0
Wellhouse	57	47	71	16	39	1
Windmill	0	0	2	6	2	1
Other/unknown	49	54	175	46	43	8

Information in the Centennial Farms files comes from the farmers themselves, and usually includes sketch plans, narrative histories, deed records, and other information. Lists are available by year, and they are arranged by county. These files were reviewed and utilized for this project, but no specific statistical data was extracted. They were useful in making some generalizations about farm layout and some descriptive comments on outbuildings. Some portions of the southern half of the state are better represented here than in National Register or survey files. Certain counties, such as Berrien County in the Central Coastal Plain, have responded overwhelmingly to the program. Researchers working within specific counties may find valuable information about crops and local farm traditions.

Guide to Research on Agricultural Resources in Georgia

Historical research plays an important role is answering questions that are crucial in determining National Register eligibility for a farmstead or other agricultural resource. Knowledge of the historic context, as well as site-specific history, provides a basis of comparison in evaluating significance. Useful sources for researching the history of a farm or rural area include: census records, family records, oral history, historic maps and plats, aerial photographs, historic photographs, land-grant records, deeds and wills, newspapers, soil surveys, local and county histories, historic periodicals and journals, commercial records, farm accounts and receipts, and marriage and death records. National Register, survey, and Centennial Farms files, available at HPD, should always be reviewed for the county that one is researching, and often also for surrounding counties.

This section will be as specific as possible about how to locate and use sources specific to Georgia. The last few paragraphs will discuss physical investigation of buildings and clues to dating them. Many of the sources below are now available on the world wide web through numerous internet sites. No attempt has been made to list all these sites, as this information is changing rapidly, but a few key search terms and web sites are mentioned in text that follows. The state-operated Galileo electronic library service is now available to any Georgia resident (www.galileo.peachnet.edu). A researcher can obtain a password from the local library in his or her county of residence.

The federal population census has been conducted every ten years since 1790, and the records are made available to the public after 72 years. The 1890 census was destroyed by fire, and no reconstruction exists. The census is useful to establish family relationships, dates and places of birth, occupations, and sometimes values of real estate owned and other data. Enumerators recorded increasingly more household information over the years. Because of varying spellings of names, researchers usually must use Soundex indexes, which provide phonetic spellings of surnames. A slave census was published in 1850 and 1860. Of particular interest is the agricultural schedule, which was conducted from 1840 to the present. The 1880 agricultural census is especially valuable for such information as the amount of improved and unimproved land owned, farm value, and crops and livestock produced. County by county aggregations of data can also provide a good understanding of the area under study. Census records in the state may be found on microfilm at the Georgia Department of Archives and History (State Archives) in Atlanta, the National Archives Southeast Region in East Point, and at several university and local libraries. Most census records are also available at the library of the Georgia Historical Society in Savannah. Several universities and other institutions now have some census data on their internet sites (begin by entering the search

term "census" and the name of the state or county needed).

Deeds provide important information about property bought and sold, including precise descriptions of the land, prices paid, parties to the sale, and the date. Deed records are located in county courthouses in the office of the Clerk of the Superior Court. (The researcher should be aware of historical changes in county names and boundaries.) The State Archives also has them on microfilm for years prior to 1900. Deeds are indexed by grantor and grantee, and can be traced backward if one knows the name of the current owner or an owner at a particular time. Deeds were not always recorded, and were sometimes recorded only after years of occupancy on a property. There is often little information to indicate the presence of houses or outbuildings, but a sudden increase in value is a clue that improvements were made.

Ownership and assessed value can be established through county tax digests, usually located in the probate court or tax office. The most current information is usually mapped and computerized. The State Archives also has some tax records on microfilm. Landowners in Georgia sometimes paid taxes on all their properties in their county of permanent residence. It is important to remember that ownership does not indicate occupation. Other land records include documentation of the distribution of lands originally obtained from the Indians. The first land grants were under the headright and bounty system, and the later grants were through one of six land lotteries conducted between 1805 and 1832. Microfilmed plats are available at the State Archives in Atlanta and possibly at other libraries. Later plats of properties are difficult to find, but they are sometimes mentioned in deeds and placed in official land records of the county.

Wills, inventories, and other estate records are also available in the county probate office or the State Archives. When estates were administered, the probate court recorded the appraised valuations of the land, dwellings, furniture and other property of the deceased. This information is very useful for research on particular properties.

The best sources for historic maps in Georgia include the University of Georgia Map Collections, located in the Hargrett Rare Book Library and the Science Library in Athens. The Hargrett Library has numerous maps from the colonial era and later (now also on the web at http://www.libs.uga.edu/darchive/hargrett/map/maps.html). The Science Library has older topographical maps and sets of county highway maps from the 1940s. The highway maps include important details such as locations of structures and even agricultural outbuildings. The Science Library also has 1930s aerial photographs of many parts of the state, which can show land-use patterns. The State Archives in Atlanta and the Georgia Historical Society in Savannah are also good sources for maps, as well as some local libraries in the counties being studied. The Sanborn Company's fire insurance maps did not normally provide coverage for rural areas. Recent aerial photographs are available on the web at Microsoft's Terraserver web site.

County histories are sometimes good secondary sources, if they are judiciously used. Many are informally written and prone to local boosterism, containing unsubstantiated anecdotal information that is not always reliable. County libraries, the State Archives, and the Georgia Historical Society are good sources for these books. Gazetteers may list such things as local mill owners or other occupations. These can be found at the State Archives, the Georgia Historical Society, and at some university and local libraries. George White's 1849 *Statistics of the State of Georgia* and R. T. Nesbitt's

1896 *Georgia: Her Resources and Possibilities* both provide some county by county statistical data.

Important periodicals include the *Georgia Historical Quarterly* and the *Georgia Genealogical Society Quarterly.* Agricultural periodicals for the southeast include the *Southern Agriculturist*, T*he Progressive Farmer, The Georgia Farmer, the Southeast Farm Press* (out of Alabama), *DeBow's Review* (out of Louisiana), *Carolina Planter, Southern Cultivator, Soil of the South, Farmer and Planter and the Farmers and Consumers Market Bulletin*. Local newspapers may have valuable information, but they are usually not indexed except for recent years. Legal advertisements for estate sales often described the house and outbuildings.

Family records, farm accounts and receipts, photographs, and histories may be available from property owners. Much genealogical information is on file at the State Archives in Atlanta or at local libraries or historical societies. The Vanishing Georgia Photograph Collection at the State Archives is filed by county. Other photograph collections may also be useful. If an architect's name is known, there is a small possibility that the plans may still be available at one of several locations. The Georgia Historic Preservation Division has a file on Georgia architects, and may have some information on where the plans are archived.

Oral history is often essential in researching an agricultural property. On-site interviews with local farmers may help determine what changes have occurred in their lifetimes, as well as establish historic uses for various outbuildings. Other long-term residents may also provide information about the community. The researcher needs the capacity for critical evaluation, especially of information on the distant past. Corroboration may be necessary. The skills necessary to conduct a successful oral history project require considerable preparation and special sensitivity to the interviewee. Many books and articles provide guidelines for this type of research, including key questions to ask. Chapter 3 of Douglas Hurt's *American Farms: Exploring Their History* (1996) is one such source.

Farmer Walter Zoller displays the rice mortars once used on his Effingham County farm.

The nature of the on-site physical examination or investigation of a farm depends on the research goals. The researcher may have only limited access from the right-of-way for a "windshield" survey, or may have complete access for measured drawings, photographs, and site plans for documentation for the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER). Most projects fall somewhere in between the two extremes, and require some level of on-site investigation. Completed documentation might include a Georgia Historic Resource Survey form (follow HPD survey guidelines); or a Historic Property Information

Form (if a determination of eligibility for the National Register is needed); or a final National Register nomination (if the property is to be listed). Location maps, site plans or sketch maps, and photographs (both contextual and building-specific) should also be included in most situations.

One of the most difficult tasks is attempting to place a construction date on non-domestic farm buildings. If this cannot be accomplished through oral or documentary sources, there are a few physical clues that may help yield an educated guess. Barns and other outbuildings often defy attempts at dating based on external appearance, because there are no established "styles" from certain periods, and many vernacular forms remained constant for decades or even centuries. For particular outbuilding types, refer to the previous descriptive discussion on each building. The researcher should look for various additions and changes over time, and be aware that farmers commonly re-used materials from older structures. One useful source for dating houses that may have some application to other structures is Hugh Howard's *How Old is This House?* (1989). Much of the information below is extracted from that source.

The earliest barns in Georgia were the previously described crib barns. If one of these is constructed of corner-notched logs, it probably pre-dates the twentieth century. The logs were sometimes later covered with weatherboard siding. Gable-roofed barns with steeper pitches may also indicate age. Gambrel roofs were not constructed before 1870, and silos did not appear in Georgia until the late 1800s.

The earliest frame barns were of post-and-beam construction. These consisted of "bents" which were made up of vertical posts and horizontal sills and girts. The heavy timbers (six-by-six or larger) were hand-hewn and may show evidence of broadax marks. Mortise-and-tenon joints were secured by wooden pegs or treenails. Hand hewing was practiced well into the late nineteenth century. The balloon frame did not come into common use in the South until the 1870s or later. The entire structure consists of smaller, stick-like members of mill-sawn lumber.

Saw marks are another clue to age, although older lumber was often re-used. Pit-sawn boards are rare after 1800. A pit saw leaves uneven, vertical, angled saw marks which could be as much as one-half inch apart. A reciprocating or up-and-down saw also cuts at a *very* slight vertical angle, but the strokes are more even at about one-eighth inch apart. This type of saw was common until about 1900. Whereas the cut lines were straight in the previous two examples, a circular saw leaves curved cuts in the wood. Circular-sawn boards suggest a construction date after 1850, and probably much later in rural areas without access to saw mills and their equipment. The use of sawed lath, rather than split lath, on walls also indicates a post-1850 construction date.

Nails are of three major types – handwrought, cut, and wire. Crude handwrought nails were widely used until about 1800, and for some purposes after that date. They have square or rectangular shanks, and the heads and points were made by hammering. Cut nails, available after 1790, could be hand-headed or machine-headed. The shaft was rectangular and tapered. Handmade heads are distinguished by a narrowing of the shaft just before the head (Howard 1989:5). These were used until around 1825. Machined-headed cut nails were not produced in any great quantity until the 1820s. The heads were flat and regular, and these were used for all purposes until about the 1890s. After that, they continued to be used for special purposes such as masonry and flooring. Wire nails, with round shafts and heads, were mass-produced in the United States

after 1870, but not widely used until the 1890s. While a wire nail on a building probably indicates a post-1880 construction date, the researcher should be aware that the building might have been re-sided or otherwise altered. Since use of these nail types overlapped, one can never presume a date based on this evidence alone.

Experience looking at many examples of farm structures in a particular area is one of the best ways to learn to date them. Exact dating is difficult, if not impossible, without a written record or a reliable source of oral history. Archaeology is another means of piecing together the puzzle of agricultural sites.

VI. Inventory of Archaeological Sites

Archaeological Sites Recorded in the State Site Files

Information on known archaeological sites in the state of Georgia is kept at the Georgia Archaeological Site File at the University of Georgia in Athens. The Archaeological Site File database has a total of 118 site type codes that are used to classify archaeological site types. Of those, 24 were considered useful for this project. There was a great deal of overlap of site types on the database inventories, meaning that sites can have more than one code designation and can be cross referenced. A total of 810 site forms that appeared to have agricultural associations were identified and copied for this phase.

It is evident that there are some problems in the way that agricultural sites are both being surveyed and recorded in the field and how they are being recorded in the site files database. There are more than 4000 historic house archaeological sites listed in the database, which were not included in this analysis. However, many of the rural house sites were probably farmsteads that were not recorded as such. To determine the extent of historic house sites which appear to be associated with agricultural activities, a 5% sample of historic house forms were pulled and reviewed. Of the 216 forms studied, 54 contained information indicating that the site was farm related. Extrapolating from this data would suggest that as many as 1100 farm related sites are included in the 4000 archaeological sites recorded as historic house sites, and are not represented in the data on agricultural sites below.

There appear to be several reasons why house sites are not being listed as farms. First, some of theses forms were created before the farm/farmstead designation was added to the site file codes. Secondly, some of the site forms are being improperly or insufficiently coded. On a number of forms, farmstead was clearly written in the site type line, but for some reason was not listed as such in the database. On some of the sites, it is not possible to determine that the site was a farm related site by looking at the site type, but in reading further on the form, the investigator made references that were clearly agricultural in nature. One recommendation to researchers is that if they find an historic structure and it appears to be farm related, they should make sure to list that association on the site form. A second recommendation is that it would be useful for the curators at the state site files to return to the site forms so they can double check all of their site forms in order to assure that they are being coded properly.

Site sizes have a considerable range, depending on how they were recorded and the size of the domestic area of the site. Farmsteads ranged in size from a low of 225 square meters (15 x 15 m) to a high of 21,000 square meters (175 x 120 m). Many of these farmstead sites are located in upland areas. In many cases, the identifiable domestic compound or the existing buildings or their ruins are the defining characteristics of the site. In other cases, the sites are identified by subsurface artifacts, and the site boundaries are delineated by positive shovel tests and artifact recovery.

Several of the farmstead sites are delineated in close proximity to cultivated or cleared field areas that are not included in the site area. In recording agricultural sites, three components should be identified: the existing structures or ruins, the subsurface artifacts of features, and the associated land. In most of the recorded archaeological sites, one of these is missing, therefore giving incomplete data. It is clear that there is a bias on the part of field archaeologists toward using structural and artifactual evidence only for their site definitions.

Other site types, such as barn or stable, terraces and field clearing, are all included as components of other sites. Most of the barn sites are part of farmstead sites. These sites should have additional designations or be listed as other site types. They all appear to be part of an agricultural component. Most of the terrace sites are small, less than one acre in most cases and are part of historic house/farmstead sites.

Plantation sites are the most puzzling. The area for the plantations recorded is not very large, considering the amount of land that would be associated with them. The recorded sites ranged in size from 1200 square meters (30 x 40 m) to 110,000 square meters (400 x 275 m). Most of the sites identified the domestic area only. This is a troubling trend, as there are clearly extensive land holdings that are associated with these plantation sites that are not being recorded. One would assume that in order to have a clear picture regarding plantation lifeways and operations, the overall size and nature of the plantations should be recorded. However, at the survey phase there is seldom sufficient historical research conducted of associated historic archaeological sites with known plantations. In the case of plantations, it is likely that multiple sites identified and recorded separately are in fact related components of a single historic entity. Some effort to recognize the possible associations between historic archaeological agricultural sites, even if speculative, should be made and incorporated in the assessment of eligibility.

Archaeologists at work on an agricultural site in Georgia.

Another site type whose association with historic agriculture is not secure is rock piles. Rock piles frequently occur on historic farmsteads as the result of field clearing (stones would be removed from field during plowing and piled along the field edges) as well as for erosion control (short rock mounds would be placed across gullies to slow erosion) and were sometimes used to mark the boundaries between agricultural properties. However, stone mounds were also constructed during prehistory as memorials and to mark graves. The association of these features with both prehistoric and historic activities has been discussed at length in the archaeological literature (see Gresham 1990).

Various mill sites were also included as agricultural site types by this study. Some of these, such as rice mills, corn mills, and sugar mills were almost always directly associated with an agricultural properties, while others, such as grist mills, could have functioned as separate operations but were often a part of larger agricultural properties.

Appendix A identifies the recorded agricultural sites by type, county, and region. By type, farms are the most common agricultural archaeological sites, accounting for 224 of the 810 resources (27.55%). Sites recorded as barns or stables, which would be part of a farm, accounted for an additional 119 resources (14.64% of the total). Terraces accounted for 27 sites (3.32% of the total). Rock piles accounted for 76 sites (9.35%), while

field walls accounted for 16 sites (1.97%) and field clearings 20 (2.46%). Not surprisingly, terraces, rock piles, field walls, and field clearings are all recorded predominantly in the upper half of the state, in the Piedmont, Mountains and Ridge and Valley regions. A single field clearing is recorded for the Sea Islands; one rock pile is recorded for the central coastal plain, and two for the upper coastal plain.

Mill sites, as a class, account for 215 sites (26.54%). One hundred and thirty of these are identified as unspecified mills and it is impossible to say whether these were directly or indirectly associated with agricultural properties. Fifty-one grist mills were most likely semi-independent commercial operations which were not necessarily associated with an agricultural occupation. The five sugar mills and one rice mill were almost certainly components of farms or plantations. Interestingly, three of the five sugar mills were recorded in the Mountains, suggesting they reflected sorghum and molasses production rather than sugar cane.

There are surprisingly few plantations recorded as archaeological sites in the state - a total of just 16. As a site type, plantations are more commonly recorded in the lower half of the state, with 15 of the total (93.75%) recorded in the Sea Islands, Central Coastal Plain and Upper Coastal Plain regions. While coastal rice and Sea Island cotton plantations were economically successful and often engendered substantial and thus diagnostic architecture, plantations as a type occurred within greater frequency in the Upper Coastal Plain, Piedmont, and in the valley sections of the Mountains and Ridge and Valley where cotton was king. The archaeological recording suggests that these upcountry plantation sites are more difficult to recognize as plantations, and many may be represented by a series of sites identified as farms or house sites whose overall association is not recognized.

By region, slightly more than 4% (n=33) of the agricultural sites in the survey were identified in the Sea Islands, 8.12% (n=66) were identified in the Central Coastal Plain, 15.5% (n=126) were identified in the Upper Coastal Plain, 48.95% (n=398) were identified in the Piedmont, 14.88% (n=121) were recorded in the Mountains and 8.49% (n=69) in the Ridge and Valley. Much of the Piedmont numbers come from mill sites which do not have secure or absolute agricultural associations. However, of the 234 farm sites recorded, 102 (45.54%) were recorded in the Piedmont. The Piedmont as a region witnessed much of Georgia's agricultural activity, and continues to be home to much of the state's population. Sites are most likely being recorded at a high rate in the Piedmont because of both this agricultural history as well as the region's growth and expansion, particularly in metropolitan Atlanta. For example, the two counties with the most farm sites recorded in the Piedmont, Gwinnett at 18 and Newton at 16, are both in the metropolitan Atlanta region.

While assessments of eligibility were not made for all agricultural sites recorded at the site files, 98% of farmstead sites which were assessed for the NRHP were recommended not eligible. While the rationale for these assessments was not always explicitly outlined on the site forms, site disturbances - primarily from plowing, timbering and erosion; the lack of preserved features; and a late 19th to 20th century age were the most frequently cited reasons for a farm site to be recommended not eligible.

Archaeological Excavations of Agricultural Sites in Georgia

The archaeological study of agricultural sites in Georgia shows a distinct bias in favor of plantation archaeology. A considerable amount of work has been conducted on the coastal and sea island rice and long staple cotton

plantations, primarily as a result of research by graduate students under the direction of the late Dr. Charles Fairbanks at the University of Florida. These studies include Robert Asher and Charles Fairbanks' landmark study of a slave cabin site on the Rayfield Plantation in Camden County (Asher and Fairbanks 1971); John Solomon Otto's excavations of John Couper's Cannon's Point Plantation on St. Simon's Island (Otto 1975, 1977, 1980 and 1984); Theresa Singleton's analysis of African-American slave settlements on Butler Island, also on St. Simon's (Singleton 1980, 1985); Jennifer Hamilton's survey and documentation of the LeConte-Woodmanson Plantation in Liberty County (Hamilton 1980); Suzanne MacFarlane's analysis of one of the Cannon's Point slave cabins (MacFarlane 1975); and Sue Moore's excavations of the Hampton and Sinclair Plantations on St. Simon's Island (Moore 1981, 1985). Other coastal plantation excavations include John Ehrenhard and Mary Bullard's examination of a slave cabin on the Stafford Plantation on Cumberland Island (1981); J. W. Joseph's examination of a slave settlement at the Walthour Plantation in Liberty County (1986); Thomas Eubanks' excavations of a sugar mill at the John McIntosh Plantation in Camden County (Eubanks 1985); and excavations at several plantation sites on the Kings Bay Naval Reservation in Camden County (Adams 1987). In general, these studies have focused on status differences as archaeologically expressed between planters and slaves and on plantation settlement plans. The quantity of work, as well as the appearance of several of these studies in published volumes and journals, represent a major contribution to the field of plantation archaeology in the southeast.

Unfortunately, considerably less attention has been devoted to agrarian archaeological sites elsewhere in the state. While several farms and plantations were archaeologically examined as part of the Richard B. Russell Reservoir project (see Anderson and Joseph 1988), all of these sites were located on the South Carolina side of the reservoir. Elliott and Webb (1992) reported on data recovery excavations at 9GW144, a late nineteenth to twentieth century farmstead in Gwinnett County, however, these excavations did not encounter strictly agrarian components. Matt Watts-Edwards (1999) presents the results of site survey at the Hudson-Nash Farm in Gwinnett County, however, Watts-Edwards work revealed that this site had suffered the effects of erosion leaving little in the way of archaeological deposits, despite the fact that the farm complex with outbuildings was relatively intact. On-going research at New Ebenezer by Rita and Dan Elliott (1990) is compiling information on aspects of the Colonial Salzburger's life and agriculture.

The most comprehensive archaeological treatment of farm sites in Georgia is provided by Otteson and Riordan's (1986) Phase II assessment of Georgia Power's proposed Rocky Mountain Pumped Storage Project in Floyd County. Otteson and Riordan employed an ethnohistoric approach to their evaluation and documentation of farm sites within the Rocky Mountain project area, interweaving documentary history, oral history, architecture, and archaeology, including survey, evaluation and limited data recovery. Their assessment of nine agricultural sites placed considerable emphasis of the evaluation and assessment of spatial patterns, and their research revealed interesting trends worthy of investigation on future projects. For example, of the buildings associated with the nine agricultural properties, there were 10 dwellings; 8 barns; 5 smokehouses; 4 corn cribs; 3 each for chicken coops, sheds, garages, and mills; 2 each for tractor sheds, woodsheds, and stores; and single documented occurrences of an outhouse, a springhouse, a washhouse, and a school. Informants interviewed for the project indicated that a dwelling, barn, smokehouse, corn crib and chicken coop were the five essential components of a farm (Otteson and Riordan

1986:46-47). Plotting the distances of these outbuildings from the dwelling, Otteson and Riordan revealed that in their study area barns were located on average 405 feet from the main house (with a range of 87 to 725 feet); smokehouses 42 feet (range 33 to 62 feet); corncribs 308 feet (range 145 to 562 feet); chicken coops 90 feet (range 40 to 150 feet); garages 54 feet (range 40 to 62 feet); sheds 52 feet (range 25 to 80 feet); tractor sheds 134 feet (range 125 to 142 feet); wood sheds 77 feet (range 62 to 93 feet); the outhouse 75 feet, springhouse 275 feet, and washhouse 100 feet (only one of each was recorded) (Otteson and Riordan 1986:46-47). This pattern supports a model of bimodal farmstead settlement plan with both dwelling/domestic areas and separate agricultural areas. Using Otteson and Riordan's statistics, within 100 feet of the dwelling should be the "domestic" elements of agrarian live: the smokehouse, chick coop, garage, outhouse, wash house, and sheds. At a further distance (roughly between 150 and 300 feet) would be agricultural facilities, the barns, corncribs, tractor sheds, and livestock pens.

Issues Regarding the National Register of Historic places Eligibility of Agricultural Archaeological sites and Recommendations for Site Evaluation

There has been considerable discussion in the historical archaeological community on the National Register of Historic Places eligibility of agricultural sites. Agricultural sites are common in most parts of the country, representing the most frequently recorded site type in most rural areas of the eastern United States. As archaeologist John Wilson notes in his 1990 article "We've Got Thousands of These! What Makes an Historic Farmstead Significant?" (1990):

> The small "single family" farm is perhaps the most ubiquitous Historic period archaeological site in America, and numerous examples are regularly found by CRM surveys across the county. Indeed, the title of this paper includes a comment frequently voiced to and by federal land managers, SHPOs, and CRM contractors: "We've got thousands of these." This statement seldom implies dismissal of the entire topic. Much more often, it is delivered in an exasperated tone, challenging the listener to explain "what's so great about *this one*?"

This section outlines a series of research issues which can be addressed through archaeological research which will hopefully guide future assessments of agrarian archaeological sites as well as the ways in which they are recorded.

Settlement

Archaeology has the potential to contribute to our understanding of the spatial dynamics of agrarian sites, and particularly to provide a temporal dimension which can help us to understand how settlement plans changed over time and to look at the social and environmental conditions influencing change. Addressing agrarian settlement can contribute to a number of research concerns:

- the division of labor, on gender, racial, and socio-economic lines. For example, on southern farmsteads, the division of farmsteads into agricultural and domestic activity areas may reflect the separation of male and female activities. On both small plantations and farmsteads, the locations of enslaved African-American settlements are unknown and the archaeological identification of these resources could help to understand whether racial relationships were dif-

ferent on smaller slave holdings than on larger plantations.

• adaptation to the local environment. Agricultural settlement reflected the conditions of the environment in which a property was placed, to a large extent. It would be expected that farmstead settlement patterns would differ on farms in the coastal plain from ones in the mountains. Mountain fields would be expected to be more dispersed, taking advantage of smaller areas of level and productive lands, such as stream valleys and ridge tops, and buildings might be located on the edges of these landforms, to maximize their agricultural potential. The same constraints would not exist in the coastal plain. Regional variations in settlement will help us to understand the ways in which local environments influenced settlement plans.

• settlement as a reflection of ideology. Kenneth Lewis (1985) suggests that the highly structured and symmetrical plan of late 18th and early 19th century plantations is reflection of the Georgian mind set of the planter class. Settlement reflects aspects of ideology and the documentation of settlement plans should thus help to reconstruct belief systems. For example, the introduction of terracing and erosion control features reflects a shift in ideology with farmers placing greater importance on the conservation and long-term occupation of piedmont and mountain sites from an earlier exploitative mindset in which the land was not highly valued as the western frontier offered the potential for future migration to more productive soils.

Given the importance of settlement to understanding agricultural sites, the survey and site evaluation stages of archaeological investigation are crucial. Sites are normally defined by the presence of artifacts, and on many farm sites the areas of rear yard sheet middens may be the only locations defined as "archaeological sites." For the survey of agricultural sites, it is recommended that the standard survey grid of 30 meters be reduced to 15 meters across the entire site area. Shovel testing should record not only the presence or absence of artifacts, but also soil conditions and depths. Sheet midden deposits should be recognizable by concentrations of artifacts in organically stained (darker) soils. As these deposits occurred in the extreme rear yard in the 19th century, at a distance of 75 to 100 feet from the dwelling or more, careful observation of the landform is also an important aspect of the archaeological survey, to identify areas where dwellings and support structures may have been. In wooded locations rakes and leaf blowers may be a valuable tool at the Phase II level of investigation to remove leaf and pine needle litter from the surface in order to identify building remains or depressions indicating the locations of buildings. Shovel testing should be closely examined for the identification of cultural features, which would be recognized as non-subsoil materials at a depth where subsoil is reached in other tests. Charcoal flecking in shovel test soils should be noted as a possible non-artifactual indication of the presence of nearby features such as smokehouses, hog scalding pits, etc. Surveys should recognize the potential that earlier occupations may be located in nearby areas which were subsequently converted to fields. Nearby gullies should be examined for any downslide refuse disposal. These can often be covered by erosion, and shovel testing or probing should be conducted in uninhabitable gully bases adjoining agricultural sites to determine if artifacts are present. Survey away from agricultural sites should note any evidences of field locations, such as terraces, field clearing stone piles, roads, and remnant fence

lines, and all of these should be recorded on project maps and in notes. Historic aerial photographs, at the University of Georgia, should be examined after the field survey to determine if remnant field and structure locations can be observed which are associated with recorded sites.

Refuse Disposal Patterns

As archaeology is primarily concerned with the analysis of material culture, the identification of refuse disposal patterns is critical to the archaeological survey of agricultural sites. As noted in Chapter III, refuse disposal patterns varied over time. It is useful to know the history of a site as one measure of the types of refuse disposal patterns which might be present. For a site with a know occupation history spanning the 19th century, the identification of only late 19th century artifacts in sheet midden deposits would suggest that other refuse disposal practices took place, including the disposal of trash in subsurface pit and shaft features. The identification of a site's potential to contain features is a critical element of site evaluation, since artifacts contained within these features provide more closely dated assemblages with greater research value.

Technology

Archaeology offers the opportunity to contribute to our understanding of agricultural technology, including building technology. Our understanding of agricultural technologies is heavily weighted toward the late 19th and 20th centuries. The forms of earlier technological elements of southern agriculture, including sugar furnaces, rice mills, tobacco flues, smoke houses, ice houses, silk filatures, and other features are poorly understood. Similarly, architectural experimentation and innovation on Georgia's farms and plantations is not well known. For example, in South Carolina archaeologists have recorded examples of structures made of earth and post walls, reflecting an African or possibly French architectural style. It is unknown whether such buildings occurred in Georgia. Archaeology's greatest potential contribution to the history of agriculture in Georgia can come through the illumination it may provide on colonial and early 19th century forms and technologies.

Ethnicity

Archaeology has the potential to identify and understand cultural differences in the way people used space and materials. These differences undoubtedly existed on the farms and plantations, in the ways buildings were built, in the locations they were placed, in the crops that were grown, and in the ways they were cultivated. Much of the South's ethnic diversity has vanished over time, with the result that most of Georgia's surviving farms and plantations show little in the way of ethnic identity. The archaeological study of earlier evidences of Georgia agriculture can contribute to our understanding of ethnic identity.

Status

Archaeology can provide information on the ways in which social and economic status as reflected through material culture and architecture. This information can help us to understand how agricultural communities were formed and interacted.

VII. National Register Eligibility and Recommendations

One of the objectives of this historic context is to provide guidance in determining the eligibility of agricultural resources for the National Register of Historic Places (NRHP). The NRHP in its present form was created by the 1966 National Historic Preservation Act (NHPA) and today is maintained by the National Park Service as the nation's official list of significant historic and prehistoric properties. The program is administered at the state level through State Historic Preservation Officers (SHPO). In Georgia this office is in the Historic Preservation Division of the Department of Natural Resources. The criteria for National Register evaluation are described as follows in the *Code of Federal Regulations, Title 36, Part 60*:

> *The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:*
>
> *A) that are associated with events that have made a significant contribution to the broad patterns of our history; or*
>
> *B) that are associated with the lives of persons significant in our past; or*
>
> *C) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or*
>
> *D) that have yielded, or may be likely to yield, information important in history or prehistory.*

Certain types of properties are not ordinarily considered eligible for the NRHP unless they also meet additional standards called "criteria considerations." These properties include structures that have been moved from their original locations, reconstructed historic buildings, places that are primarily commemorative in nature, and properties that have achieved significance within the past 50 years. Such properties may qualify only if they are integral parts of eligible historic districts or if they meet the special criteria considerations which are discussed in detail in National Register Bulletin 15, *How to Apply the National Register Criteria for Evaluation*.

Another important aspect of the NHPA is the requirement that all federal agencies consider the impact of their proposed undertakings on properties that are listed on or may be eligible for the NRHP. Once historic resources are identified and evaluated, the agency works with the SHPO to find ways to minimize or mitigate any adverse effects. This process is commonly referred to as "Section 106." The suggested approach for assessing NRHP eligibility is to attempt to understand the property's historic significance first before determining whether it retains enough integrity to convey that significance. However, there may be situations, such as a limited field reconnaissance or preliminary evaluation for purposes of Section 106, where the identification process may proceed without the benefit of complete historical research. These types of visual assessments usually only consider Criterion C, but they are sometimes useful as a starting point for locating areas with resources that have potential for eligibility. However, in order to be complete, any National Register evaluation (whether for Section 106 compliance or for a completed nomination form) must consider the significance through the historic context of the property.

Evaluation entails defining significance under the four NRHP criteria (A, B, C, D), and then assessing the historic integrity of the property through the qualities of loca-

tion, design, setting, materials, workmanship, feeling, and association. The present study should enable researchers to assess how the information gathered through field survey and historical research compares to other resources and agricultural patterns throughout the state. While the NRHP recognizes properties that may be significant at the local, state, or national level, the significance of a historic property can be explained only when it is evaluated within its appropriate historic context. This provides a "frame of reference" for its place in history, a basis of comparison to other resources, and a model for identifying and evaluating important features. Levels of significance for associated properties under this statewide agricultural context may be either state or local. For example a circa 1910 cotton gin in a small town may a be locally significant representation of this resource and theme, while a 1,300-acre antebellum cotton plantation may have had an impact on the statewide economy or politics or agricultural practices.

A context establishes broad themes that should be used, along with specific time periods and geographic areas, to provide a focus for research and evaluation. Recognized areas of significance for the National Register are numerous, and include the category of agriculture. Just as a specific property may be eligible under more than one of the four NRHP criteria, it may also relate to more than one historic context. While this study concentrates on only one facet of Georgia history, an agricultural property may also have other areas of significance that should be considered for National Register evaluation. For example, a farm complex that contains significant examples of vernacular or formal architecture may be eligible under the architecture theme of Criterion C, even if it is not found to be eligible under the agriculture theme which is the focus of this context.

Farms may be part of eligible rural historic districts, or a larger agricultural complex may itself be a district if there are more than a few buildings or structures. In eligible districts, the evaluation would include determining which individual structures or elements contribute to the district. In order to do this, the researcher must determine the period of significance for the district, the area(s) of significance, past and present property types, and what critical character-defining features must remain evident in any contributing resource. Information about the history of the geographic area is also essential. A contributing building, site, structure, or object adds to the historic associations, historic architectural qualities, or archaeological values for which a property is significant.

The following questions may be applied to a property as a first step in assessing whether it is significant in Georgia under the theme of agriculture and determining how it relates to the historic agricultural context:

Criterion A-

Is the property directly associated with and reflective of one or more of the five historic time periods/themes established in Chapter II of Georgia's agricultural context, either through initial commodities, farming practices, land use, or production methods?

Criterion B-

Is the property directly associated with the life of a significant farmer, rancher or agriculturalist?

Criterion C-

Does the property contain significant, distinctive, or representative examples of either formal or vernacular agricultural architecture in its dwellings and/or outbuildings either through design or construction? Or does it retain significant, recognizable components of historic agricultural landscapes either through organization of space, use of land, boundary demarcations, clustering of structures, plant materials, or circulation networks?

Criterion D-
Is the property likely to yield important information about historic agricultural practices, commodities, land use patterns, production methods, social relations, activities, or agricultural lifestyles?

If one or more of the above questions can be answered affirmatively, the seven qualities of integrity (location, design, setting, materials, workmanship, feeling, and association) should then be applied to the resource. Integrity refers to the authenticity of the physical characteristics from which the property obtains its significance. Some of the discussion below on the seven qualities of integrity was derived from National Register Bulletin 15, *How to Apply the National Register Criteria for Evaluation* and Bulletin 30, *Guidelines for Evaluating and Documenting Rural Historic Landscapes*.

Location is the resource's geographic position or the place where the significant activities occurred. In order to have integrity of location, an agricultural property must be located either where it was constructed or where important events took place. For example, a barn that was moved after its period of significance would not have integrity of location. Spatial relationships among elements of a resource must also be maintained.

Design is the combination of natural and cultural elements that create the form, plan, style, and spatial organization of a property. For a farmhouse or outbuilding, it refers to massing, fenestration, ornamental detailing, and other architectural qualities. Building design can be compromised through incompatible additions, changes in major architectural elements such as doors or windows or chimneys, changes in character-defining features such as porches or roof lines, changes in floor plans, or any change that alters the historic design in such a way that the building no longer conveys its significance. A gristmill that has lost its floor plan and all its working machinery through conversion into a residence would not have integrity of design. The descriptive section on farm buildings in Chapter IV of this report provides some general guidance on what features may be found in various types of agricultural buildings and structures in Georgia. When possible, the researcher should also look at other local examples of similar properties.

For a landscape, design includes the layout and functional organization of land, topography, boundaries, circulation networks, structures, and vegetation. Many changes in landscape occur through time, and it may be difficult to determine how a landscape appeared during the historic period. Aerial photographs, historic maps, and land descriptions can provide critical information. Some loss of vegetation or minor changes in land use would not affect integrity, but the integrity of design could be lost through massive reforestation, changes in topographical contour lines, loss of boundary demarcations, or the addition of new roads. If a former pasture was planted in pine trees after the period of significance, its historic design may have been compromised. However, when reforestation is part of a dynamic pattern of continuing agricultural activity, it may not necessarily detract from that property's overall integrity. Other considerations such as local farming practices and patterns, historic functions and uses, and the timing of changes are also factors.

Setting is the character of the physical environment of a historic property and the relationship to surrounding features and open space. Elements of the setting include both natural and manmade features such as bodies of water, vegetation, mountains, hills, valleys, woodlands, roads and paths, streetscapes, fences, milestones, gateposts, and the relationship between landscape and buildings. If a nearby mine has left a large, open pit on or adjacent to historic agricultural fields, then that property has lost its integrity of setting.

Materials are the physical elements of construction that were used in the buildings, outbuildings, bridges, dams, fences, roads, and other structures. Regional building traditions often used indigenous materials such as native woods or stone, and these help convey the property's sense of time and place. A building must usually retain the key exterior materials from the period of significance. A farmhouse with added non-historic siding, such as vinyl or aluminum, would not retain integrity of materials. Outbuildings may be more difficult to assess for integrity of materials, because of the strong agricultural tradition of re-using materials and modifying structures for changing needs. The key questions to ask are: When were the changes made? Do the changes themselves reveal important aspects of the history and evolution of the property, or do they detract from the overall integrity of the property? Vegetation also presents a complex problem. Original plant materials may enhance integrity, but their loss will not necessarily destroy it. However, if a farm was significant for agricultural experiments on a certain type of pecan tree, then it would be more important that some examples of that tree survive on the property.

Workmanship relates to functional and decorative craftsmanship. Evidence of traditional or historic practices is exhibited in the way buildings and fences are constructed, fields are plowed, gravestones carved, and crops harvested. Farmers often made a craft of re-using and re-working older materials for functional purposes. Some workmanship, such as carving or joinery, can survive for many years, but evidence of certain practices, such as crop rotation, may disappear in a short time. Integrity of workmanship requires that some of the more tangible aspects of workmanship remain. If the rails and posts from a historic fence are taken apart after the period of significance, and re-constructed using an entirely different technique, then the fence has lost its integrity of workmanship.

Feeling is a property's ability to express the aesthetic sense of a particular time and place in history. It is less tangible than the other qualities of integrity, and it is evoked by the overall physical characteristics of the scene. If a 19th century rural historic district retains most of its original design, materials, workmanship, and setting, then it will also evoke a feeling of the agricultural life of the period. In National Register eligible properties, the sense that one has "stepped back in time" should result from authentic aspects of the landscape, rather than artificial collections of buildings and structures.

Association is the direct link between the property and the important events and persons that shaped it. A property must be sufficiently intact to reflect its relationship to historical events. For example if a farm is significant for the use of a certain type of irrigation system, then some tangible evidence of that system must remain. Continued use and occupation may help reinforce integrity, especially when a family maintains some traditional farming practices. Because feeling and association rely strongly on individual perceptions, their retention alone is not sufficient to support National Register eligibility.

All seven qualities of integrity do not need to be present for eligibility, but some are necessary. The property must retain the identity for which it is significant. While buildings and structures and especially landscapes change, essential elements of the character and feel of the property during the period of significance must remain in order for it to have integrity. Which characteristics are most critical depends on several factors, including the general characteristics of agricultural properties in Georgia and how many historic elements have survived compared to other similar properties in the area. For example, even if many buildings have deteriorated or been lost, a former rice plantation could still retain some unusual features such as intact remnants of a system of dikes and irrigation canals. Since rice has long been

abandoned as a major crop in Georgia, one would expect to find few of these. If such an element is rare or unique, the required level of integrity may not be as great as it would be for a more common type of resource.

The character of the setting outside the proposed National Register boundary may also visually affect the qualities that make a property eligible. If the physical environment outside the boundary has changed significantly since the historic period, the property may have lost that aspect of integrity. However if most of the other qualities of integrity are still intact, the property could still be eligible. A historic farmstead standing alone in the middle of subdivision development may have lost its integrity of setting, but its significance as the sole remaining example of agriculture in the area may outweigh that loss. This property could continue to reflect the qualities of design, workmanship, and materials through its buildings and landscape.

Agricultural buildings and landscapes also manifest certain changes as an integral part of their history. A property that has remained a working farm has made technological changes in order to survive, and these would not necessarily impact integrity. Examples include the addition of modern utilities or the use of irrigation equipment. Recent agricultural buildings may even be recognized as contributing to historic districts when sufficient time has passed to consider them part of the agricultural landscape. Evolutionary changes due to new crops or farming practices are less likely to impact the integrity of a resource than drastic changes such as the loss or substantial alteration of major buildings or structures, the introduction of incompatible non-historic land uses, or the loss of important boundary demarcations. However, it is also possible for integrity to be lost due to the cumulative effect of many small alterations after the period of significance. The intangible qualities of feeling and association must usually be present in order to link the past to the present in some visible way, along with some of the more tangible aspects of integrity such as design, materials, and workmanship.

In order for a property to be eligible for the NRHP in Georgia in the area of agriculture, a minimum of two of the following three elements should be represented with the required historic integrity, as defined in the preceding paragraphs. If this is not the case, then one element must have outstanding integrity and exceptional significance. In the alternative, it must be clearly demonstrated through archaeology and/or historical research that the property otherwise meets NRHP Criterion D for its information potential. Otherwise, the property would not be considered eligible for the NRHP as an agricultural resource. The three elements are as follows:

• **An extant historic farmhouse or main building for an agricultural complex.** A main building would usually be the owner's or overseer's house, but in cases where the owner did not reside on the property, it could be a major processing building such as a cotton gin or gristmill or turpentine still.

• **One or more agricultural outbuildings or ancillary structures from the period of significance.** Types of buildings or structures classified as agricultural include various types of barns, blacksmith shops, beehives, cane grinders, sorghum mills, syrup boilers and evaporators, chicken houses/coops, farm or plantation commissaries and offices, corn cribs, cotton gins, seed houses, dairies, dovecotes/pigeon roosts, pig pens, fenced animal enclosures, grist mills, root/potato banks or cellars, sweet potato houses, silos, smokehouses, tenant houses, slave quarters, turpentine stills, wagon or implement sheds, and wheat houses (granaries). Ice houses, spring houses, greenhouses, cisterns, windmills, and water towers or tanks were frequently used for agricultural purposes, as well as domestic purposes. Strictly domestic out-

buildings (such as privies, garages, Delco houses, gashouses, playhouses, or detached kitchens) are also present on farmsteads, but they are not included in this category for the purposes of classification and evaluation as agricultural outbuildings.

• An identifiable agricultural landscape with few changes from the period of significance. Possible elements of this man-made landscape include agricultural fields, pastures, orchards, vineyards, kitchen gardens, ornamental vegetation, wood lots, flower pits, terraces, curbstones, family cemeteries or gravestones, foot bridges, irrigation canals, drainage ditches, culverts, ponds, mill races, dams, roadways, paths, and boundary demarcations including fences, walls, treelines, oak allees, and hedgerows. It must not necessarily include the entire historic acreage, but it should be large enough to convey the major agricultural functions. This landscape may reflect the dynamic quality of agricultural lands and the layering of agricultural designs. The overall patterns of spatial organization, land use, and arrangements of structures and circulation networks are also important elements of the landscape.

Several possible combinations may result from the above method of evaluating National Register eligibility under the context of agriculture. For example, a farmhouse and barn may be eligible even if no historic fields remain intact, as long as both elements retain integrity. These two buildings would still be able to reflect the property's historical associations. However, a farmhouse and a privy would not be eligible for agriculture, because the privy is a domestic, rather than an agricultural, outbuilding. Alternatively, a farmhouse and associated agricultural landscapes may be eligible without any remaining outbuildings, particularly if both elements appear much as they did during their period of significance. A stronger case can be made in this situation if it is also shown through research that the farming operation did not historically rely on major outbuildings. If the farmhouse or main building no longer exists, the outbuildings and fields must strongly convey the historical associations of the agricultural history of the property. In only rare instances would a property be eligible with only one of the three elements intact. One of the few remaining examples of some significant type of early agricultural technology (such as a cotton press or gin or turpentine still) might qualify if it retains integrity. A rare resource would require a lower degree of integrity.

This deteriorating barn in Sumter County may be eligible as a contributing resource to a district that includes the land of its former plantation.

Archaeological sites present a major alternative to some of the previously discussed guidelines regarding integrity. The requirements for integrity do not apply in the same way as they do for extant structures. If a building or structure has lost its structural integrity, its potential significance may still lie in its value as an archaeological site. National Register Criterion D applies to properties that are eligible for their potential to yield information important to prehistory or history. For agricultural archaeological sites to be considered significant under the theme of agriculture, the site plan and structure must be recoverable through the archaeological identification of midden deposits and features - such as post hole stains, cellars, foundations, wells and privies - relating to the organization of the property and containing artifacts which would allow former building locations to be iden-

tified and defined. Furthermore, where a site has been occupied over an extended period of time, artifacts must be capable of being separated by temporal period, either through stratification in yard middens, through their deposition in closed-context cultural features, or through horizontal separation. Where the artifacts from multiple periods and occupations have been mixed, it is unlikely that the site will possess enough research value to be considered eligible. Archaeologists recognize that many agricultural properties with intact buildings also possess archaeological integrity, since the subsurface deposits at these sites have often not been significantly disturbed. Landscapes may also be eligible as archaeological sites when the ground retains undisturbed surface or subsurface features or remains that are capable of indicating important patterns of land use or organization or other critical information. An examination of remnants of walls, reforested fields, abandoned roadways or paths, structural foundations, fence posts, rock piles, garden borders, wells, privies, cemeteries, refuse piles, vegetation, or pollen and soil samples may provide valuable information about past uses or activities.

Assessments of significance for archaeological sites must be based on well-formulated research designs that consider the historic contexts, and explain how the information will add to an understanding of the property. Much of this research will be based on the history of the property (how long it was occupied and by whom) and archaeology's ability to segregate and address different temporal and social elements of this occupation. It may also be based on technology and archaeology's ability to address research regarding that technology (the documentation of sugar boilers for example, of which few examples remain). Archaeological research is also comparative, and so research designs should take into consideration studies of similar sites in the region to determine whether there are as yet unanswered questions which further work at a particular site might resolve. There should be a direct connection between these unanswered questions and the information that could be obtained through investigation. The importance of the site may also be increased by the lack of other sources of information, such as written records. As a general rule, older sites and sites associated with disenfranchised members of society for whom there is less written history, have a greater potential to be considered eligible for the National Register of Historic Places. Archaeological investigations for purposes of Section 106 are usually undertaken only where the proposed project may directly affect any underlying archaeological resources (called the area of potential affect or APE). Since archaeological features are clustered in rear yard areas, highway road widening projects often do not have an adverse effect on agricultural sites since there are few features in front yard areas. For additional guidance on historical archaeological sites, see National Register Bulletin 36, *Historical Archeological Sites: Guidelines for Evaluation*.

Properties meeting the requirements in the preceding paragraphs, and possessing two of the three attributes necessary to be considered eligible as an agricultural resource, will still require historical research to more clearly establish their eligibility. In order to make the connection between integrity and significance, a certain amount of historical research must always be conducted. In the early stages of investigation, the minimum information may be obtained through chains of title, historic map research, and oral history or reliable local and county histories. A consensus determination of eligibility (DOE) is often reached with this amount of information, and the research will not continue. The level of probability needed in this decision-making process may vary depending on the nature of the project.

In situations where more certainty is needed, such as contested Section 106 cases or when a National Register nomination is to be prepared, more research

sources (particularly primary sources) will also be necessary. These may include census records, newspapers, land grant and other land records, plats, family records, historic photographs, deeds and wills, church and cemetery records, soil surveys, aerial photographs, farm accounts and receipts, commercial records, marriage and death records, agricultural periodicals, and historical journals. Methods for researching a historic property are included in Chapter V of this context, as well as in National Register Bulletin 39, *Researching a Historic Property*. The historical research should help answer as many of the following questions as possible:

- Who first claimed the land and when was it settled?
- What was the property called and who were the owners during its period of historical significance?
- Who occupied and used the property historically? Did they individually make any important contributions to history?
- What were the original boundaries, how and why did they change, and what are they today?
- What buildings and structures existed in the past, what were their construction dates and historic uses, and which of them remain today?
- What materials were used and what architectural types and styles are represented? How do these reflect local and regional traditions, and how do they compare with other similar properties in the state?
- What changes in buildings and landscape have occurred through the years, and what has been the impact of these changes? How do the current conditions of the property compare to the buildings, grounds, and setting during the historical period?
- What crops/livestock were historically raised on the farm, what changes in cropping patterns and livestock were made, and why?
- Was the property used primarily for commercial or subsistence farming, and how successful was it financially?
- What were the early technologies used on the farm or plantation, and how did that change through the years?
- What systems of labor were used through the years (slaves, tenants, sharecroppers, hired labor, family labor)?
- What ethnic groups and practices influenced everyday life?
- How does the property illustrate any important themes or trends in the agricultural history of Georgia or the local community?
- Are any important events or activities associated with this property?
- Would it be more appropriate to consider this property eligible as part of a historic district?

The historical research, when tied directly to the historic context, should be used to assess the significance of the property according to the four National Register criteria (A, B, C, and D). In addition, if most of the seven attributes of integrity are also present in two of the three defined agricultural elements (main building, outbuildings, and landscape) as previously described, then the property would be eligible for the NRHP under the theme of agriculture.

Once an agricultural property has been determined eligible for the NRHP, the National Register boundaries must be established. The first step is to determine the boundaries during the historical period of significance. These could be the legal boundaries for one parcel, the

original land lot, or the political jurisdiction of a larger area. If more than one boundary existed during the period of significance, then the larger boundary should first be considered for inclusion. (This could possibly include the current land of multiple property owners.) The next step is to determine which portion of the historic land retains both historic significance and integrity and encompasses a concentration of important features or characteristics. Historical research should include a comparison of historic deeds, maps, plats, and aerial photographs with current views. If the historic property remains intact and is significant in its entirety, those boundaries should be used whenever possible. This would include agricultural fields if the arrangement, use, and division of the land add to the significance of the property and have retained integrity. Peripheral areas should be excluded if they have lost their integrity through changes in use, incompatible new development, physical visual barriers, or destruction of important character-defining features of the historic property. New housing subdivisions, non-historic roads, telecommunications towers, and industrial sites are all examples of possible intrusions on the agricultural landscape. A state highway through an agricultural property would not necessarily be a visual barrier or intrusion if the road historically existed in that location.

If the historic boundaries cannot be used, there are several possible methods for drawing National Register boundaries. These are often called "boundaries of convenience." The best method may depend on local or individual circumstances, and reasoned judgement must be used to ensure that the decision is not arbitrary. The guidance in this context report is intended to assist in those decisions. The area within the National Register boundary should have cohesiveness and continuity, but it may include some non-contributing elements. "Donut holes" or voids are not allowed within the boundary. A current legal boundary may be used even if it is smaller, but never larger, than the historic boundary, if it retains integrity. If the historic acreage has been subdivided, and one or more of the outlying parcels have incompatible new uses, then the parcel(s) that include the historic core could still have sufficient integrity to be eligible.

Other possible boundaries are rights-of-way, such as roads or paths, natural features, such as rivers or ridges, or edges of new development, such as industrial parks or modern housing. Georgia's Nacoochee Valley Historic District boundaries were drawn along the 1,400-foot contour line on a USGS topographical map in order to encompass the land farmed within the flood plain. Relatively permanent historic landscape features, such as stone walls, irrigation ditches, or rows of mature trees, may also define the National Register boundary. Lines drawn along or between fixed points such as road intersections or shorelines may also be used if they mark the edge of an area retaining historic agricultural landscape features.

At a minimum, non-historic boundaries should include all extant, intact, contiguous resources or features in their historical relationship or proximity, as well as some sufficient setting so that those features can be understood. The setting within the boundary should contribute to its eligibility. The setting outside the boundary may or may not contribute to eligibility and significance. The boundary should be clearly identifiable and it should appropriately represent the resource. If portions of a historic farm are on two sides of a highway, and both portions retain integrity, then the boundary should encompass all resources. The highway may be a non-contributing element within the boundary if it was not present in the historic period, if it has been significantly widened since that time, or if it otherwise detracts from the setting or other characteristics that make the property eligible.

Defining site boundaries for archaeological resources can be a difficult and complex task. While some of the methods in the above paragraphs would apply, there are numerous additional considerations such as artifact density, topographical and hydrological features, and land disturbance. A qualified professional archaeologist may obtain guidance in establishing National Register boundaries by referring to National Register Bulletin 36, *Guidelines for Evaluating and Registering Historical Archeological Sites and Districts* and National Register Bulletin 12, *Definition of National Register Boundaries for Archeological Properties*, as well as applicable state guidelines.

Recommendations and Conclusions

This context is only the first step in understanding the agricultural history of Georgia and the historic resources associated with it. Many questions remain unanswered and several topics may be viable projects for future researchers. There has been almost no scholarly research on barns and other outbuildings in the deep South, and therefore the descriptive section of this context was vague regarding some building types. It was also one of the original goals of this context to provide typologies for variations within the state based on geographic region, time, crops, and ethnicity, but existing databases did not support clearly discernable patterns for most attributes. The architectural and archaeological professional literature also has little comparative information regarding such variables.

Other difficulties arose from the way agricultural properties were recorded in the field, both for architecture and archaeology. More precise and consistent data-gathering and field recording and analysis is needed, particularly on forms generated by the Georgia Historic Resources Survey (for architecture) and the Georgia Archaeological Site Forms. The survey forms for buildings do have a data field for description of outbuildings and landscapes, but many surveyors did not provide adequate information in these categories. In the future, it would be useful for surveyors to utilize the descriptive section of this historic context when completing rural surveys. Another option is to include outbuilding and landscape descriptions, along with graphics or drawings, in the Georgia Historic Resources Survey Manual when it is next revised. It may be possible to raise awareness of the agricultural landscape and vernacular rural architecture through training sessions and seminars, perhaps through state preservation conferences or through meetings and activities of non-profit groups such as Vernacular Georgia and the Centennial Farms program. Vernacular Georgia has already begun a slide collection that includes depictions of many rural resources. Archaeologists should be careful to note all recognizable agricultural features, including those away from site locations, and should also carefully assess the potential of each site to contain preserved subsurface features.

These residential lots are for sale in a historic pecan grove in rural Georgia.

Historic farms and their older buildings and structures are threatened by several factors. Today fewer people than ever are engaged in farming. Changes in technology and the economics of farming, involving larger machines and production facilities, have increased farm size.

Older outbuildings are becoming obsolete, and are often left to decay. Barns are sometimes dismantled for their lumber. On smaller farms where money is scarce, rehabilitation of older structures may be a low priority for the farmer. Near urban areas, increasing real estate values are a factor in the loss of historic farmsteads to subdivision development and other projects. Where buildings were sited close to roads, the widening of those roads may threaten the agricultural resource. Increasing ridge-top development in parts of north Georgia is causing a loss of the traditional rural landscape. While some change is inevitable, the gradual disappearance of historic agricultural resources leaves the state with fewer visible reminders of a significant part of its agrarian past. For these reasons, it is more important than ever that agricultural resources be evaluated for their eligibility for the National Register of Historic Places. Study and documentation may help create an appreciation of the intrinsic value of these properties, and perhaps some will be preserved and protected.

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APPENDIX A

Archaeological Sites By Type, County and Region

Table 4. Archaeological Sites By Type, County and Region

	barn, stable	Fence, Wall	Granary	Terrace	Farm Machinery	Field Clearing	Field Walls	Rock Pile	Cattle Dip	Warehouse,Storage	Grist Mill	Sugar Mill	Unspecified Mill	Rice Mill	Mill Race	Mill Pond	Cotton Gin	Corn Mill	Corn Crib	Farm	Plantation	
Sea Islands - Coast																						
Bryan	1					1															4	Bryan
Camden									1			1	2			2				4		Camden
Chatham	3	1											4	1						1		Chatham
Glynn	6	1																				Glynn
Liberty																						Liberty
McIntosh																						McIntosh
SUBTOTALS	10	2	0	0	0	1	0	0	1	0	0	1	6	1	0	2	0	0	0	5	4	
Percent Total	8.40%	3.03%	0.00%	0.00%	0.00%	5.00%	0.00%	0.00%	100.00%	0.00%	0.00%	20.00%	4.62%	100.00%	0.00%	28.57%	0.00%	0.00%	0.00%	2.23%	25.00%	
																					33	4.06%
Central Coastal Plain																						
Appling	1																					Appling
Atkinson																						Atkinson
Bacon																						Bacon
Baker																						Baker
Benhill																						Benhill
Berrien																						Berrien
Bleckley											1											Bleckley
Brantley																						Brantley
Brooks																						Brooks
Bulloch																						Bulloch
Candler																						Candler
Charlton																				2		Charlton
Clinch											1								1			Clinch
Coffee																						Coffee
Colquitt											1											Colquitt
Cook																						Cook
Crisp	1												1									Crisp
Decatur																						Decatur
Dodge	3																			6		Dodge
Early																						Early
Echols																						Echols
Effingham		1											1							1	1	Effingham
Emanuel	1	2									1						1			10		Emanuel
Evans	2																					Evans
Grady											1								1			Grady
Irwin																						Irwin
Jeff Davis																						Jeff Davis
Jenkins																						Jenkins
Lanier													1									Lanier
Laurens																						Laurens
Long																				3		Long
Lowndes								1														Lowndes
Miller																						Miller
Mitchell	2																			1		Mitchell
Montgomery																						Montgomery
Pierce																						Pierce
Pulaski													1									Pulaski
Screven	3		1																			Screven
Seminole																						Seminole
Tatnall																				3		Tatnall
Telfair	1																					Telfair
Thomas	2																					Thomas
Tift																						Tift
Toombs																				1		Toombs
Treutlen																						Treutlen
Turner																						Turner
Ware	1									1												Ware
Wayne		2																		1		Wayne
Wheeler																						Wheeler
Wilcox																						Wilcox
Worth																						Worth
SUBTOTAL	17	5	1	0	0	0	0	1	0	1	5	0	4	0	0	0	1	0	2	28	1	
Percent Total	14.29%	7.58%	25.00%	0.00%	0.00%	0.00%	0.00%	1.32%	0.00%	16.67%	9.80%	0.00%	3.08%	0.00%	0.00%	0.00%	7.14%	0.00%	50.00%	12.50%	6.25%	
																					66	8.12%
Upper Coastal Plain																						
Bibb																				1		Bibb
Burke	1												3				2			3	1	Burke
Calhoun																						Calhoun
Chattahoochee								1					6							21	8	Chattahoochee
Clay	1																			2		Clay
Clay	1																			2		Clay
Dougherty																						Dougherty
Glascock																						Glascock
Houston																				3		Houston
Jefferson													3							2		Jefferson
Johnson																						Johnson
Lee	1																					Lee
Macon								1												1		Macon
Marion																						Marion
Muscogee		2											1		1					9		Muscogee
Peach																						Peach
Quitman																						Quitman
Randolph	3										2											Randolph
Richmond	1		1								2		16		1					7	1	Richmond
Schley																						Schley
Stewart													1									Stewart
Sumter																				1		Sumter
Taylor													2				1					Taylor
Terrell																						Terrell
Twiggs											1											Twiggs
Washington	4																			1		Washington
Webster																						Webster
Wilkinson											1								1	2		Wilkinson
SUBTOTAL	12	2	1	0	0	0	0	2	0	0	6	0	32	0	2	0	3	0	1	55	10	

Table 4. Archaeological Sites By Type, County and Region

Percent Total	10.08%	3.03%	25.00%	0.00%	0.00%	0.00%	0.00%	2.63%	0.00%	0.00%	11.76%	0.00%	24.62%	0.00%	9.52%	0.00%	21.43%	0.00%	25.00%	24.55%	62.50%	
																					126	15.50%
Piedmont																						
Baldwin		1		1			3													3		Baldwin
Banks	2																					Banks
Barrow													4									Barrow
Butts		1											2									Butts
Carroll	1	1					1				1		1									Carroll
Clarke							1			1	1		3		2		1			3		Clarke
Clayton											3		2									Clayton
Cobb	2	1		1			2	1			1		6			1				2		Cobb
Columbia		3				1		2												1		Columbia
Coweta											1				1							Coweta
DeKalb						1					6		1									DeKalb
Douglas													6							1		Douglas
Elbert	7	3									1		2					1		4		Elbert
Fayette	3												1		1							Fayette
Forsyth	5	1		1	1			1												5		Forsyth
Franklin													1									Franklin
Fulton	3	2									3		3		2		3			2		Fulton
Greene	1	1						6					4		1					18		Greene
Gwinnett	2	3		1		1		1			1		4		1					2		Gwinnett
Hall	5	1		2									1									Hall
Hancock						2																Hancock
Haralson							1						4									Haralson
Harris	1			2						1	1											Harris
Hart	2							1														Hart
Heard	6	1															1					Heard
Henry		1											4									Henry
Jackson											4		1				1			1		Jackson
Jasper	1					4		2					1							9		Jasper
Jones	1							1									1			3		Jones
Lamar															1							Lamar
Lincoln		1						13							1					2		Lincoln
Madison		1																		9		Madison
Meriweather																						Meriweather
Monroe	3											1	1							1		Monroe
Morgan	1																1					Morgan
McDuffie	1	1						5					2				1			16		McDuffie
Newton											2		3								1	Newton
Oconee											1		3		1					1		Oconee
Oglethorpe						1							1				1	1				Oglethorpe
Paulding	1	1																		4		Paulding
Pike																						Pike
Putnam	2	1		1			1	12					3		3					2		Putnam
Rockdale		2		1				1			2		1									Rockdale
Spalding													1									Spalding
Talbot	1	1													1							Talbot
Taliaferro																						Taliaferro
Troup	2	1	1	5				1								1				7		Troup
Upson								1														Upson
Walton																						Walton
Warren																						Warren
Wilkes	1				1								1							6		Wilkes
SUBTOTAL	54	29	1	15	2	10	9	48	0	2	28	1	67	0	15	2	10	2	0	102	1	
Percent Total	45.38%	43.94%	25.00%	55.56%	66.67%	50.00%	56.25%	63.16%	0.00%	33.33%	54.90%	20.00%	51.54%	0.00%	71.43%	28.57%	71.43%	100.00%	0.00%	45.54%	6.25%	
																					398	48.95%
Mountains																						
Cherokee		2					2				1		5		1	2				3		Cherokee
Dawson	1					1					1		1									Dawson
Fannin		2		3		1		5			1								1	1		Fannin
Gilmer	1	1		1				1			2				1							Gilmer
Habersham	1	3	1	1				2		3	1	1	2							1		Habersham
Lumpkin		1			1	1	1													1		Lumpkin
Pickens						1														3		Pickens
Rabun	2			1		4						1	2									Rabun
Stephens	1	7						5			1	1	1							1		Stephens
Towns		1		1																5		Towns
Union	3	4		3				7														Union
White							1						3									White
SUBTOTAL	9	21	1	10	1	8	4	20	0	3	7	3	14	0	2	2	0	0	1	15	0	
Percent Total	7.56%	31.82%	25.00%	37.04%	33.33%	40.00%	25.00%	26.32%	0.00%	50.00%	13.73%	60.00%	10.77%	0.00%	9.52%	28.57%	0.00%	0.00%	25.00%	6.70%	0.00%	
																					121	14.88%
Ridge and Valley																						
Bartow							1	2								1				2		Bartow
Catoosa	1	1																				Catoosa
Chattooga	1	2				1		1			1											Chattooga
Crawford											1											Crawford
Dade																						Dade
Floyd	7	1		1							2									14		Floyd
Gordon	1																					Gordon
Murray	1	2					1													2		Murray
Polk													3									Polk
Walker	2			1				2					1									Walker
Whitfield	4	1					1				1		3		2					1		Whitfield
SUBTOTAL	17	7	0	2	0	1	3	5	0	0	5	0	7	0	2	1	0	0	0	19	0	
	14.29%	10.61%	0.00%	7.41%	0.00%	5.00%	18.75%	6.58%	0.00%	0.00%	9.80%	0.00%	5.38%	0.00%	9.52%	14.29%	0.00%	0.00%	0.00%	8.48%	0.00%	
																					69	8.49%
TOTALS	119	66	4	27	3	20	16	76	1	6	51	5	130	1	21	7	14	2	4	224	16	
	14.64%	8.12%	0.49%	3.32%	0.37%	2.46%	1.97%	9.35%	0.12%	0.74%	6.27%	0.62%	15.99%	0.12%	2.58%	0.86%	1.72%	0.25%	0.49%	27.55%	1.97%	
																					813	

Courtesy, Georgia Department of Archives and History