INTEGRATED HISTORY AND ECOLOGY OF

TEA FARM PARK

CURRICULA MATERIALS FOR TEACHERS

May 1993

INTEGRATED HISTORY AND ECOLOGY CURRICULA FOR TEA FARM PARK, CHARLESTON COUNTY, SOUTH CAROLINA

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PREFACE

The goal of this publication is to help teachers and students participate in a unique program integrating South Carolina's cultural heritage, the history of South Carolina's coastal area, and coastal ecology. For example, traditional history explains that rice was an important crop in eighteenth and nineteenth century South Carolina but fails to explain how rice was uniquely suited to the soils of the Lowcountry or how the engineering feats of African and African American slaves were necessary to make rice profitable.

An integrated curricula, while relatively new to many programs, is very simple. It recognizes that our current method of teaching isolates both the student and teacher from the broad pattern of interdisciplinary understanding. Integrated curricula allow the student to better understand how diverse concepts come together to promote a fuller understanding of the world and essential concepts involved in the lesson materials.

By integrating cultural heritage and ecology, the Tea Farm program provides a more exciting and more realistic view of South Carolina. It promotes a greater interest in both history and ecology. It also allows students and teachers to understand the dynamic nature of both the ecosystems of the park and the history of the region. It encourages students to understand, not simply to memorize and parrot. This integrated curricula is developed to increase critical thinking and maximize the participation of the student in the learning process. Coupled with the field experience of visiting Tea Farm Park, the program will maximize the ability of the student to learn from doing.

This booklet is organized to allow teachers to quickly identify the information essential for curriculum development -- maximizing the educational potential of Tea Farm. Included is information on the goals and objectives of this program, additional background information to provide teachers with the cultural heritage and ecology content necessary to teach the lessons, four individual teacher lesson plans, student worksheets, and extension activities.

While designed for use *primarily* in Grade 8, to correlate with the instruction of South Carolina History, these materials have wide applicability. With relatively little modification they can be used in Grades 2-12.

Finally, we want to thank all of those who have reviewed these curricula materials and contributed to their success, including the entire staff of the Charleston County Park and Recreation Commission, especially Mr. Jeff Schyver and Mr. Mark Madden. In addition, Mr. Bill Smythe with the Charleston County School District and Mr. Curtis Franks with the Avery Research Center for African American History and Culture at the College of Charleston graciously assisted, contributing greatly to the usefulness of these materials.

CONTENTS

INTRODUCTION

These units focus on major themes in the history of Tea Farm, as well as Charleston County and South Carolina:

- Native American use of the land and resources,
- plantation life and the contributions made by African Americans,
- rice production and how it altered the culture and ecology of South Carolina, and
- the development of alternative economies after the Civil War, such as tea production.

Because Tea Farm parallels so many of the major historical themes in South Carolina and is located in a fresh/brackish water environment, it is especially capable of providing students with a unique field opportunity, combining an appreciation of South Carolina's heritage and ecology.

Organization

Each lesson plan is presented in a fairly standard approach utilizing the BSAP (Basic Skills Assessment Program) model familiar to most teachers in South Carolina. Each section contains:

- objectives that are taught in the particular class,
- background information the teacher will need for the class, as well as sources for additional information which can be used by either the teacher or the students, and
- a lesson plan.

Each lesson plan is organized in a two-page format read horizontally. Following the lesson plan are typically a variety of worksheets suitable for a wide range of grade levels and needs. At the top of the page is the lesson title. The "Getting Started" section is read vertically and contains the pre-planning information necessary before the lesson is taught. It includes the time needed for each lesson, although this can obviously be varied as necessary and desired. Also included are the materials necessary to teach the lesson.

The "Lesson Objectives" are presented in the next section and are correlated with the "Instructional Approach." The Instructional Approach contains three important components: exploration, development, and application. This approach has also been borrowed from *BSAP Science: Teaching Through Inquiry* and its goal is to encourage hands-on inquiry, helping students to learn through doing. This is a uniquely effective approach applicable not only to science but also to history and social studies.

The "Lesson Procedures" provide a detailed, step-by-step approach for teachers to follow

in the implementation of the various lesson plans. Obviously this organization can be modified by teachers to incorporate additional information or to fit shorter class periods. Finally, the "Full Circle Questions" are designed for the students' use and are intended to complete the learning inquiry process. These questions may form the basis for additional class discussion, student notebooks, or essay questions.

The Tea Farm Experience

Tea Farm is an ecology and social studies "field laboratory." A trip to the park offers a unique experience each and every time since the environment changes daily and seasonally. The history of the park offers equal opportunities to explore a wide variety of issues. But, like any "field laboratory," there are hazards. In particular, visitors should be aware of several features.

- **Poison Ivy and Poison Oak** - If students are not familiar with the appearance of poison ivy and poison oak, they should be reminded not to touch the plants and vines. While we encourage students to explore the environmental diversity of Tea Farm, please be sure that plants are not mutilated or destroyed. It just may be that the plant being uprooted in rare or unique. Visitors should also be encouraged to stay on the cleared pathways.

- **Fire Ants** - Tea Farm has numerous fire ant nests. Students should be warned not to disturb these nests. Again, staying on the cleared paths will help ensure that no one is injured.

- **Snakes** - There are a variety of poisonous and non-poisonous snakes. All snakes, however, are part of the delicate balance of nature and should be allowed to live. Snakes are also more fearful of you than you should be of them. Please stay on the paths, and snakes will avoid you. Be sure to instruct students not to touch, poke, or prod any snakes they might see during their visit.

- **Alligators** - Like snakes, alligators are happy to avoid human contact, although they are curious and hungry. They can also run very quickly on land. Please maintain a safe distance. Do not taunt them. NEVER encourage their attention by offering them food.

- **Ticks** - There has been a lot of concern about ticks during the past several years, with good reason. By staying on the cleared paths, the potential for picking up ticks will be greatly reduced. All students should be reminded to examine themselves for ticks after the trip is over.

While these warnings may make Tea Farm seem inhospitable, there is nothing at Tea Farm that isn't found anywhere in the "country" or rural sections of South Carolina. Simple preparations, common sense, and staying on the paths will ensure that your visit to Tea Farm is not only rewarding, but also safe. Remember, YOU are a visitor to the home of Tea Farm's wildlife. Please respect the wildlife -- and their home. Likewise, Tea Farm is the "home" of much history, please show an equal respect for that heritage. All artifacts, like the wildlife, are protected.

PREHISTORIC NATIVE AMERICANS AND ECOLOGY

Goal and Overview

The goal of this lesson is to help the student become more aware of how Native Americans lived in harmony with the environment around them.

This lesson correlates with Huff's *The History of South Carolina in the Building of the Nation*, Chapter 2, "The Earliest Americans." It also incorporates elements of the natural sciences and biology.

Native Americans lived in South Carolina for nearly 14,000 years before the first Europeans arrived. During that time the Native Americans adapted to a wide range of environmental conditions in South Carolina. Along the coast they found abundant resources which eventually allowed them to live permanently in settled villages until the sea level changed and this was no longer possible. This lesson will help students better understand how the Lowcountry ecology can support small groups of people "living off the land." This life in harmony with nature can be contrasted with the European lifestyle which incorporated clear cutting forests, intensive agriculture, and rice fields created from the swamps. While the Native Americans lived with nature, Europeans attempted to change nature to suit their needs. While the Native Americans used almost everything they found in nature for food, clothing, medicine, or other needs, the Europeans saw Carolina primarily in terms of wealth. Does this make the Native Americans primitive? Does this make the Europeans more advanced? What did each group do to the environment around them?

By comparing the two approaches - one of stewardship and one of unregulated use, students can better understand the emerging environmental problems facing the Lowcountry. By learning about the real Native Americans in South Carolina, the students can better appreciate their history and the way they lived their lives. There are still descendants of South Carolina's Native Americans living in the Lowcountry. These people, known as "Settlement Indians" chose to live among the English settlements. Students may be interested to learn more about these people and their efforts to have their ancestry recognized.

Native American Prehistory

About 12,000 B.C. the large amounts of water tied up in glaciers resulted in the lowering of sea levels by up to 65 feet, opening up a land bridge between Siberia and Alaska. This land bridge, called Beringia, allowed the movement of animals, plants, and, eventually, people, into North and South America. The earliest inhabitants, known as Paleo-Indians, gradually moved into the "new world," following the game they commonly hunted -- mammoths and mastodons.

The Paleo-Indian period, lasting from about 12,000 to 8,000 B.C., is evidenced by special tools, such as a spear point known as Clovis. The Paleo-Indian occupation, while widespread, does not appear to have been intensive. Artifacts are most frequently found along major river drainages. No Paleo-Indian projectile points, however, have been recovered from the Charleston County area. It may be that many of the Paleo-Indian sites were located on the sandy coastline and so were covered by water as the glaciers began to melt.

Unfortunately, little is known about Paleo-Indian subsistence strategies, settlement systems, or social organization. Generally, archaeologists agree that the Paleo-Indian groups consisted of small bands, were nomadic, and were both hunters and foragers (relying on both animals and plants for food). While population density, based on the isolated finds, is thought to have been low, toward the end of the period there was an increase in population and groups began to become more territorial.

The Archaic period, which dates from 8000 to 2000 B.C., does not form a sharp break with the Paleo-Indian period but is a slow transition characterized by a more modern climate and an increase in the diversity of material culture. Archaic period assemblages are rare on the coast, although the sea level is anticipated to have been within 13 feet of its present stand by the beginning of the succeeding Woodland period. Many Archaic Indians lived inland, adjacent to the floodplain swamps of major drainages. These areas offered extensive ecological diversity and provided a wide range of food sources.

Most Archaic period sites found in Charleston County are small and contain relatively few artifacts, primarily a wide range of spear points, known by such names as Palmer, Kirk, Morrow Mountain, and Guilford. The Archaic Indians, like the Paleo-Indians before them, lived in small groups and frequently moved to follow game and visit new areas for plant foods.

The Woodland period begins by definition with the introduction of fired clay pottery about 2000 B.C. along the South Carolina coast (the introduction of pottery, and hence the beginning of the Woodland period, occurs much later in the Piedmont of South Carolina). The earliest pottery made in North America is called Stallings and was first made in South Carolina. It is recognized by the inclusion of Spanish Moss as "temper" to help hold the hand-molded clay together. Slightly later, a pottery known as Thom's Creek was made. Just like Stallings, except for the use of sand rather than Spanish Moss, Thom's Creek pottery was made up to about 1000 B.C.

An early type of site typical of this period are the "shell rings" found from McClellanville, South Carolina south into Georgia. These doughnut-shaped rings measure 150 to 300 feet in diameter, and the ring may be anywhere from 3 feet to 30 feet in height. The rings, once thought to be mysterious, are actually nothing more than giant trash piles. Composed of shell, animal bone, broken artifacts, and soil, these shell rings are composed of trash discarded by the Native Americans who lived on them. Archaeologists have found evidence of the houses, hearths or fire pits, and even where the oysters were steamed open on and around these rings. The clear interiors were communal areas and were, therefore, kept clean.

The subsistence during this early period was based primarily on deer hunting and fishing, with supplemental inclusions of small mammals, birds, reptiles, and shellfish. Various calculations of the probable yield of deer, fish, and other food sources identified from shell ring sites indicate that sedentary life was not only possible, but probable. The Native Americans learned very early that the South Carolina coast was so rich in food that they could easily live in one area year round, simply by scheduling when they would use different types of foods.

Toward the end of the Thom's Creek phase there is evidence of sea level change, and a number of small, non-shell midden sites are found. Apparently, the increasing sea level drowned the tidal marsh (and sites) on which the Thom's Creek people relied.

The succeeding Deptford phase, which dates from 1100 BC. to A.D. 600, is characterized by fine to coarse sandy paste pottery with a check-stamped surface treatment. The Deptford settlement pattern involves both coastal and inland sites. The coastal sites, which are always situated adjacent to tidal creeks, evidence a diffuse subsistence system and are frequently small.

The inland sites are also small, lack shell, and are situated on the edge of swamp terraces. This "dual distribution" has suggested to some archaeologists that these Deptford Indians may have moved back and forth between the coast and the interior of South Carolina.

The pottery made by the Native Americans during the Deptford period is characterized by a surface treatment using a wooden paddle carved to look like a waffle iron. When stamped on the wet pottery the paddle left what archaeologists call a "check-stamped" design. Through time the designs on these paddles changed and archaeologists can use these different designs to date the pottery.

Curiously, these "designs" served a very functional purpose in the manufacture of hand coiled pottery. The paddles were used to compact the wet clay, obliterating the coil lines which would otherwise have been areas of weakness in the clay pots. But smooth paddles, because of the surface tension of the wet clay, would have removed the surface of the pot, causing damage. The various motifs carved into the wooded paddle, however, allowed the surface tension to be broken.

The Middle Woodland occupations in South Carolina are characterized by a pattern of settlement mobility and short term occupation. This period is characterized by the use of sand burial mounds and ossuaries along the Georgia, South Carolina, and North Carolina coasts. Middle Woodland coastal plain sites continue the Early Woodland Deptford pattern of mobility. While sites are found all along the coast and inland to the fall line, shell midden sites evidence sparse shell and few artifacts. Gone are the abundant tools and artifacts used by the Thom's Creek people.

In many respects the South Carolina Late Woodland may be characterized as a continuation of previous Middle Woodland cultural assemblages. While outside the Carolinas there were major cultural changes, such as the continued development and elaboration of agriculture, the Carolina groups settled into a lifeway not appreciably different from that observed for the previous 500 to 700 years. This situation would remain unchanged until the development of the South Appalachian Mississippian complex.

The South Appalachian Mississippian, dating from about A.D. 1100 to 1600, is the most elaborate level of culture attained by the Native American inhabitants and is followed by cultural disintegration brought about largely by European disease. The period is characterized by complicated stamped pottery, complex social organization, agriculture, and the construction of temple mounds and ceremonial centers.

The Charles Towne Landing site is an example of a South Appalachian Mississippian village, and the Santee Mound on Lake Marion in Clarendon County is an example of one of the many mounds in South Carolina. These groups produced pottery decorated with very elaborately carved wooded paddles, often including vessels in their burials. Society was no longer egalitarian, as it had been during the Woodland Period, but was sharply divided between the priests and the common people. By A.D. 1400 archaeologists know that these groups were growing corn, beans, and squash, although hunting was still very important, especially during the winter and spring, before the next crop was planted. The temples and mounds were built to honor their gods and encourage agricultural success.

The history of the numerous small coastal Native American tribes is poorly known. These tribes were of little political or economic importance to the English. They were also quickly destroyed by alcohol, slavery, and disease. Today all that remains of many of these groups are their names -- Wappoo, Stono, Edisto, Kiawah -- to remind us of the people who lived in South Carolina before European contact.

Native American Subsistence Resources

White-Tailed Deer, *Odocoileus virginianus*

Of all the animals found archaeologically, the white-tailed deer are ubiquitous. A variety of uses exist for the different parts of the deer, so that almost all of the animal was used prehistorically by the Native Americans in some manner. Different bones were split to make needles or awls, rattles, flutes, bracelets, and beads. Antlers were used to make spear points, flakers, and even fish hooks. Sinew and entrails were made into bow strings, rawhide, throngs, and "thread". Deer brains were combined with green corn to tan leather. The skin, hooves, and antlers were rendered into glue. Heads, skins, and antlers were used as decoys in hunting and as status/clan indicators. Hides were sewn into clothing. The average dressed weight of a deer is about 45 pounds, so they also contributed significantly toward the Native American diet.

The deer is a browser with well-defined regional forage preferences, largely oriented toward hardwoods and evergreen vines. Acorn masts form an especially important food source from September through May. Deer typically feed in early morning or evening and are considered nocturnal animals.

Hunting of deer was largely a solitary pursuit which took place throughout the year. Only after the Europeans arrived and there was a tremendous pressure to obtain large numbers of deer hides did the Native Americans participate in the environmentally damaging fire drives. In this practice large areas were set on fire to drive the animals into a waiting trap. Of course, this form of killing reduced or eliminated the population; it frequently took years for the deer population to return to normal.

Raccoon, *Procyon lotor*

Raccoon bones are found at almost as many archaeological sites as the bones of the deer. Although not an especially large animal, the raccoon can weigh about 20 pounds, at least half of which is edible. Raccoons were used by Native Americans not only as a food source (being an especially important source of fat) but also for the pelt.

The raccoon prefers woodland edges dominated by hardwood species and is rarely encountered during the day, being a nocturnal species. The only exception to this is when the range incorporates salt marshes or estuarine areas, where the animal will be active during low tide, regardless of the hour. It is likely that most raccoons were trapped by Native Americans with the traps set along the animals' trails through the underbrush or along the edge of the water.

Rabbit, *Sylvilagus* sp.

There are two primary species of rabbit used by Native Americans, including the eastern cottontail and marsh rabbits. Each has a more or less mutually exclusive range with the Eastern cottontail typically found in well drained wooded areas and open fields. The marsh rabbit is usually found close to salt or brackish water.

Rabbits are most active at night and tend to hide during the day. It is likely that the Native Americans trapped rabbits, although their low population densities and small size reduced their importance as a food source or for pelts.

Turkey, *Meleagris gallopavo*

During the prehistoric period the turkey was almost as useful as the deer. It was used as a food source; its bones were fashioned into tools such as awls and spoons; and feathers were prized for making cloaks and in the manufacture of arrows.

The turkey is able to adapt to a wide range of habitat conditions, although they tend to prefer areas of mature, mast-producing hardwoods with a mixture of understory plants such as dogwood. The forest is used for roosting while old fields or edge areas generally provide the best cover for nesting.

Wild turkeys are flocking animals and spend the late fall through early spring in flocks of 30 or more in wintering home ranges of about 50 acres. These flocks break up in late March for the breeding season; the young are born in May, and reach a weight of 5 to 10 pounds by October when the birds begin to congregate again. This seasonal cycle would make it much easier for the turkey to be hunted in the winter, although hens with juveniles could be taken in late spring and summer.

Blue Crab, *Callinectes sapidus*

The only crustacean of any importance to Native Americans is the blue crab, which occurs on mud or sand bottoms over a wide range of salinity. Today the males are called jimmies; the females, sooks; those bearing eggs, sponge crabs. Those about to shed their shells are called shedders or peelers, while those which have just shed are called soft crabs.

Blue crabs are especially abundant in the estuaries and at the mouths of tidal creeks (where predatory fish tend to congregate). The average size of the crab is five to six inches (measured as the width of the shell across the back, measured from spine tip to spine tip), and they have an average live weight of about a quarter pound. Of this, only about a half an ounce is edible meat. Given this low yield, the crab was never a primary food source.

During the warm months crabs frequent the shallow estuarine waters, but during the cold months they seek deeper water and would probably not be available to the Native Americans. Crabs can be taken with a baited line, in crab traps, or caught singly on tidal flats as the tide ebbs.

Fish (many different species)

A very large number of different fish are found at Native American sites along the South Carolina coast. The most frequently identified include the red and black drums, the sea catfish, the gar, the flounder, the Atlantic menhaden, and the mullet. Most of the fish identified from archaeological sites are marine and can be found in the intertidal creeks, estuaries, and rivers. A few fish, such as the bowfin and the channel catfish, while usually inhabiting freshwater areas, may enter brackish waters, or may be caught during periods of high freshwater runoffs. The bulk of the fish are available from May through November, with fewer species available in the winter and early spring.

Many of the fish taken (such as the flounder, drum, catfish, and gar) represent larger predators which are not found in the intertidal creeks, but at their mouths, feeding on the smaller fish, such as the mummichog, spot, Atlantic silversides, and silver perch, which follow the tide. Some of these smaller fish also travel in schools, migrating in and out of the intertidal creeks with the tide.

The presence of two different categories of fish suggest that two different collection techniques were employed. For the small fish found in the shallow waters, Native Americans may have used gill nets or seines, collecting the fish as they were flushed out of the small channels with the ebbing tide. The larger, predatory fish found at the mouths of the channels could have been caught using spears, nets, or hooks. It is unlikely that weirs were used in South Carolina because the tidal range is too great.

Blackberry or Dewberry, *Rubus* spp.

The blackberry is a low, trailing shrub with scattered, stout prickles. The plant has white to pinkish flowers and black, juicy fruits about 3/4 of an inch long. Blackberries bloom from March to April and fruit from April into May. They are found in thickets, open woods, along the edge of disturbed areas, and on sandy flats.

The plant is best known for its fruit, a common food source to Native Americans. In addition, the Cherokees used blackberry as an ingredient in a decoction to regulate urination. The root or leaves were used in a tea, both as a beverage and as a remedy for diarrhea. It served as an astringent and tonic. These uses continued into the historic period. In addition, blackberries as a preserve, were used as a laxative because of the irritant action of the seeds. During the Civil War the leaves were used as a substitute for tea.

Muscadine, *Vitis rotundifolia*

This vine usually trails on the ground or over bushes, although it can also be found climbing high in trees. The leaves are small with blunt teeth and shiny on both sides. The clusters of fruit are small, although the purple berries are large, often up to 3/4 inch in diameter. The skin is thick and tough. The flowers form from May through June, and the plant fruits from August through October. The Muscadine is found in low woods, primarily with stands of second growth mixed hardwoods, as well as on sandy soils.

The Cherokee used the leaves to draw soreness from the breast after the birth of a child. A tea was made from the leaves to improve the blood and as a tonic. It was also used for diarrhea. Most commonly, however, the muscadine was used as a food source. The Scuppernong and several other southern cultivated grapes were developed from this wild species. It is often used as a grape for local wines.

Sunflower, *Helianthus annuus*

The sunflower is an annual plant that grows wild from about 2 to 9 feet high. The lower leaves are generally heart shaped. The flower heads are from 3 to 6 inches in diameter and are composed of a brown or dark purple seed disk 1 to 2 inches across, surrounded by a row of bright yellow ray flowers. The plant produces its flowers and seeds from June through October. Commonly found today in gardens, the plant is widely scattered throughout the region, being found wild in waste areas and in fields.

Originally the sunflower originated to the west and was transported into the Southeast, arriving at least by the third millennium B.C. at which time it may have been found cultivated in small garden plots. The seeds have been widely used as a food source while the Cherokee used a dry powder from sunflowers to induce sneezing.

Goosefoot or Pigweed, *Chenopodium* spp.

Goosefoot is an annual herb with lanceolate leaves about 6 inches long and 1½ inches wide. The plants are usually about 30 inches high with whitish or greenish-yellow flowers occurring from June until the first frost. The seeds are very small and dark brown or shiny black. Today the plant is common in disturbed areas, waste places, and in cultivated fields.

This plant is one of the early eastern North America cultigens with its use going back to at least the Archaic Period. By the Early Woodland period some archaeologists have suggested that it was already a staple food in the region from southern Illinois to Ohio and south to Alabama. Unlike other weedy plants used by Native Americans, there is some evidence that goosefoot was actively encouraged and propagated. Both the seeds and greens of goosefoot were probably collected and it is known that the young leaves of the plant make a pot herb, much like spinach. The leaves are high in calcium, iron, carotene, riboflavin, and ascorbic acid.

This plant continued to be important into the historic period. Among Lowcountry African Americans, an infusion of the plant was used as a vermifuge for children. A decoction was used to bathe feverish infants. Leaves were used with salt to allay menstrual cramps and to promote abortion.

Yaupon Holly, *Ilex vomitoria*

The yaupon (also known locally as "cassena") is usually a low shrub, although it can occur as a "tree" upwards of 25 feet in height. It is an evergreen, and the leaves are about 2¼ inches long, oval, leathery, dark-green, and glossy on the upper surface. The plant blooms in the spring and produces abundant small clusters of red fruits in the late fall which stay on the plant through the winter. Yaupon is found in maritime forests, on sand-dunes, and on hammocks. Where present it frequently forms dense thickets.

The Native Americans gathered the leaves, drying them, and then making a very strong tea (the leaves contain a large amount of caffeine). Called the "Black Drink," this tea was a powerful emetic and was used during the Green Corn Ceremony at harvest time. During this period the old ways were purged, ensuring purity and rejuvenation for the new crop. The Black Drink was a very important part of the ceremony. Since the plant is found only in the Coastal Plain, the leaves were traded inland for hundreds of miles. The Cherokee used the plant as a cure for dropsy and also to evoke ecstasies.

In the historic period yaupon was brewed less strongly to make a popular hot beverage, often used as a cold remedy. As a decoction the leaves were taken internally to cure fever. The leaves continued to be used as an emetic and powerful diuretic.

There were two attempts to produce cassena commercially. One farm was owned by the Sheratons of Mount Pleasant. The other was first known as the Kinloch Plantation, later Mount Pleasant Plantation, then Jouette Cassena Tea Plantation. These efforts failed since the owners could not compete with maté (a South America yaupon or cassena).

Corn, *Zea mays*

Corn is a common farm crop, known to virtually everyone. Corn could be planted in April, or even in late March, with the result that it was ready for harvest before the worst of the summer droughts. The Native Americans planted corn in a number of small, cleared fields which they

periodically allowed to become fallow. As the fields were cleared later, the beneficial plants (such as persimmon) were allowed to remain while the other trees and brush were removed.

Corn was introduced into the Eastern United States perhaps as early as 100 B.C., although it does not seem to have made its way into South Carolina much earlier than perhaps A.D. 1100. The Native Americans cultivated corn with other crops such as beans (*Phaseolus vulgaris*) and squash (*Cucurbita pepo*). Accounts of the early Spanish explorers suggest that Native American corn production was limited with the harvest being exhausted by the late summer or early fall.

The Native Americans relied on green corn, basing much of their religion on corn agriculture. The food was a staple of their diet. In the historic period, corn was cultivated on lands unsuitable for cash crops such as indigo, rice, or cotton. The leaves, as well as the grain, were used as a stock feed. The leaves and stems are often used as silage since they contain a very high percentage of sugar. The tassels of the male flowers are rich in vitamins. African Americans boiled corn husks and red peppers together to make a decoction for chills and fever. "Blade tea" was commonly brewed during the Civil War as a diaphoretic.

Native American Ecology

During much of prehistory, the Native Americans participated in what archaeologists call a focal economy, emphasizing a few selected animals or plants such as deer or corn with a range of other resources used to supplement the diet. This focus on one or two resources, however, did not damage the environment since the Indian population was low and the groups frequently moved to new areas. Consequently, while different species might become depleted in a limited area, they were never totally exterminated.

Archaeologists are still trying to determine if the limited resources may have played a part in limiting the size of Native American groups, or if the groups were artificially limited by the Indians themselves, to ensure that the size of the population didn't exceed what the area could support.

In the Early Woodland Period, groups realized that they could live year round on the coast without the need to constantly move because of the rich and varied resources. By carefully scheduling when different resources would be taken, they found that there was abundant food, allowing larger populations and permanent settlements. During this period archaeologists see a wide range of mammals, reptiles, birds, fish, shellfish, and plant foods being used.

As the coastal environment changed and the sea levels began to slowly increase, drowning the areas used by the Early Woodland Period groups, the Native Americans again moved from location to location, hunting game and collecting plants.

Just prior to Spanish and English contact, many of the Native American groups began to rely more heavily on domesticated plants. Although plants like corn did not produce yields sufficient to last from harvest to harvest, they did allow permanent settlements, frequently in the floodplains along rivers. Curiously, much of the agricultural expertise of the early colonists was adopted from these Native Americans and some of the foods we eat today -- such as corn -- were unknown prior to European contact with North America's original settlers.

During the historic period the world the Native American's knew began to crumble. In an effort to obtain trade goods they thought would equalize relations, the Indians engaged in fire drives, killing hundreds of animals in a few hours and dramatically changing the ecological

balance of the Lowcountry.

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PreHistoric Native Americans & Ecology

Getting Started	Lesson Objectives	Instructional Approach
Time Needed • 1 - 2 hours for tour of Tea Farm • Two 45-55 minute class periods (teacher may choose to expand time spent in class or tour)	*First Session - tour of Tea Farm* A. The student will be introduced to the types of plants and animals used by the Native Americans in their daily lives. B. The student will be exposed to different ways the Native Americans acquired or used the various plants and animals.	**Exploration** Whole Class (visiting site & discussion)
Lesson Materials Provided by Tea Farm: • Guided or self-guided tour of Tea Farm • Tea Farm Curricula Plan, including lesson plans and activity sheets for teachers to use on site and in classroom.	C. The student will understand how each of these plants and animals affected the lives of the Native Americans. D. The student will understand his place in history by discovering how he may use these plants and animals in his own daily life.	**Development** Whole Class (discussion)
	Remaining Class Sessions- conducted by teacher D. The student will explore how Americans may continue the use and protection of certain native plants or animals today or in the future.	**Application** Whole Class (discussion &/or writing project)

"Full Circle" Questions

(Questions which help relate the past to the lives of students today)

1. Did you recognize any of the plants (or animals) discussed at Tea Farm Park?

2. Would any of these plants (or animals) grow (or live) in your neighborhood? If they do, does your family use or recognize them?

Pre-Historic Native Americans & Ecology

Lesson Procedures

1. The tour of Tea Farm will illustrate the various forms of native plants and animals that were available to the Pre-Historic Native Americans in the Low Country:

a. turkey	a. blackberries
b. deer	b. corn
c. rabbit	c. muscadine
d. raccoon	d. sunflower
e. blue crab	e. chenopodium or goosefoot
f. fish	f. yaupon holly

2. The tour will explain how these plants and animals could have been used by the Native Americans for food, clothing, or decorative purposes.

3. The tour will explain the seasonality and environmental requirements of these plants and animals and how that could affect their use.

4. Encourage students to discuss the availability of these plants or animals in their neighborhood or part of the state and why may some not be found in your neighborhood or part of the state. How might this have affected the lives of Pre-Historic Native Americans in your part of the state?

5. Encourage interaction with students in discussing how these plants or animals may be used in their own daily lives. What may be used today instead of some of these plants and animals? Which of these plants or animals might now be considered "domesticated"? How do we obtain food, both plant and animal, today as compared to the Pre-Historic Native Americans?

6. The teacher will assign students to research the use or protection of certain native plants and animals by Native Americans, African Americans, European Americans or people in other countries.

"Full Circle" Questions (continued)

3. How would your family's life be affected if any of these plants (or animals) become extinct?

4. What are some of the plants (or animals) you use that were not available to the PreHistoric Native Americans?

Eighteenth Century European Quotes

A Fire Drive

As we went up the River, we heard a great Noise, as if two Parties were engag'd against each other, seeming exactly like small Shot. When we approach'd nearer the Place, we found it to be some *Sewee Indians* firing the Canes Swamps, which drives out the Game, then taking their particular Stands, kill great Quantities of both Bear, Deer, Turkies, and what wild Creatures the Parts afford (John Lawson, in the Santee River area of South Carolina, 1701).

Turkeys

Of Turkeys they have abundance; especially, in Oak-Land, ... I have been often in their Hunting-Quarters, where a roasted or barbakued Turkey, eaten with Bears Fat, is held a good Dish; and indeed, I approve of it very wells; for the Bears Grease is the sweetest and least offensive to the Stomach of any Fat of Animals I ever tasted (John Lawson, discussing the Indians of North Carolina, during the first decade of the eighteenth century).

Corn

The *Indian* corn, or *Maiz*, proves the most useful Grain in the World; and had it not been for the Fruitfulness of this Species, it would have proved very difficult to have settled some of the Plantations in *America*. It is very nourishing, whether in Bread, sodden, or otherwise . . . . It refuses no Grounds, unless the barren Sands, and when planted in good Ground, will repay the Planter seven or eight hundred fold; besides the Stalks bruis'd and boil'd, make very pleasant Beer, being sweet like Sugar-Cane (John Lawson, describing the Carolinas, 1701).

Grapes

[T]he fox Grape-Vine, produces single Berries, much the Size of a middling Cherry. . . . What is peculiar to South Carolina, and the more Southern Provinces, is, that although Vines are met with on high and in low Lands, yet the Vines on high Places produces none or very few, while the Vines in low Grounds are always full of that pleasant Fruit (William de Brahm's report on South Carolina, 1751-1771).

NATIVE AMERICAN PLANTS

Unscramble the names of these Native American plants.

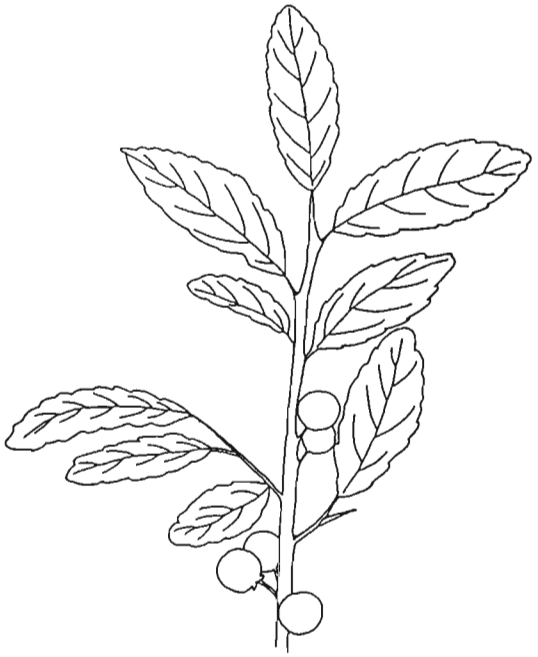
How many of these can you identify on your tour of Tea Farm Park?

WUNLOREFS

_ _ _ _ _ _ _ _ _

CESMANIDU

_ _ _ _ _ _ _ _ _



ANUPOY LOHYL

_ _ _ _ _ _ _ _ _ _

KLYBRACERB

_ _ _ _ _ _ _ _ _ _

HENDIPOMOCU

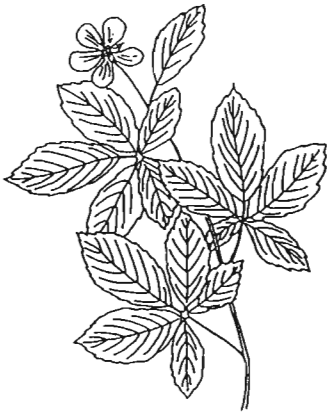
_ _ _ _ _ _ _ _ _ _ _

NATIVE AMERICAN FOODS WORD PUZZLE

Find these Native American Foods in the puzzle. The hidden words are spelled from left to right and top to bottom. Circle the words as you find them.

CHENOPODIUM	MUSCADINE	SHELLFISH
TURKEY	SUNFLOWER	CORN
BLACKBERRIES	RABBIT	RACCOON
YAUPONHOLLY	DEER	FISH

D E E R Z Y R W K Y C O R N T
E S U N F L O W E R Q N R F N
R A C C O O N W A F N B A S I
R R K C D L O P M H W S B R I
W U N C X N F N R X G M B G V
X P P A C H E N O P O D I U M
M U S C A D I N E R T D T V T
N M Y A U P O N H O L L Y F N
S S H E L L F I S H D W K C G
B L A C K B E R R I E S C L G
H Y O T U R K E Y G D L J D D



PLANTATION LIFE

Goal and Overview

The goal of this lesson is to help the student better understand the lives of the plantation owner and the plantation slave.

This lesson correlates with Huff's *The History of South Carolina in the Building of the Nation*, Chapter 8, "Life in the Carolina Low Country" and Chapter 16, "Life in the Antebellum Years."

Some apologists writing in defence of the South have argued that her "Negroes [were] well-cared-for and happy." We know, however, that the great wealth of the Southern plantation owner was built on the backs of the African American slave. In fact, when we look at a Lowcountry plantation, whether we are looking at the main house, the slave cabins, the gardens, the corn crop, or the rice fields, we are looking at the labor of African Americans. Largely this labor profited the slave owner. The differences in the lives of the owner and the slave on most Lowcountry plantations were as vast as the difference between night and day.

Students may wonder why archaeology is used to explore the lives of owner and slave. They may wonder if history books don't have all of the necessary answers. History, however, is *typically* written by the literate, the wealthy, and the powerful. There is a great deal written by the plantation owner, but virtually nothing by the plantation slave (although the "slave narratives," several of which are cited at the end of this section, provide reminiscences from slavery). What the owner wrote of his slaves included primarily "economic" information -- how many slaves he owned, how much work they could do, how many blankets he had to purchase for them, how much food he gave them each week -- all issues having to do with profit and loss. Almost nothing was written by the slave owner about the daily lives of the slaves. Consequently, they became the "invisible" people. Archaeological research, however, is slowly changing all of this, helping to shed new light on the African American slaves of the South Carolina Lowcountry.

Tea Farm History

Re-creating the history of the Tea Farm tract was complicated by this portion of current Charleston County previously being part of Colleton County, the destruction of Colleton County records during the Civil War, a variety of rather poorly prepared plats, and the changing of plantation names and boundaries in this part of Charleston County.

Fortunately, research at the South Carolina Historical Society in Charleston identified an obscure collection of American Tea Growing Company legal papers in the Edward McCrady, Jr. Collection (28/336/3). These included extensive title search notes, documents, and correspondence by William Henry Parker and T.W. Bacot (Charleston attorneys), probably in the late nineteenth and early twentieth centuries (ca. 1890 to 1910).

Bacot, drawing heavily on Parker's earlier work, notes that,

the records of Colleton County were destroyed by fire at Columbia at the time of

> the capture of that city by General Sherman. That part of the chains of title, therefore, which antedates 1865 has necessarily been made up from deeds in possession, recitals of these to other deeds, and, in some cases, from mere notes and memoranda (sometimes unsigned) found among the papers of former owners (South Carolina Historical Society 28/336/3).

Had these notes not been found it would probably have been impossible to extend the history of the park past about 1880.

The problems relating to the changing plantation boundaries and names has been at least partially overcome through detailed cartographic comparisons and scalings. While problems remains with *exact* boundaries, this research has been successful at generally delineating core tracts.

The Tea Farm tract was originally part of the rather extensive Holly Grove or Stanyarne tract. Bacot notes that,

> this property was owned by the Stanyarne family, probably as far back as the latter portion of the 18th Century, but the earliest Deed which we find on record and have been able to examine, is the following, which passed the property out of the heirs and representatives of Jas. Stanyarne (South Carolina Historical Society 28/336/3).

This deed, dated February 6, 1823, reveals that the heirs of James Stanyarne sold the property as a result of an equity suit at public auction to Paul Mazyck. The tract was described as "Stanyarne Hall" and "Laurel Hill," making together one plantation of about 1182 acres.

The earlier history of the two tracts, Stanyarne Hall and Laurel Hill, is briefly mentioned on a undated plat "copied from Purcell's papers" (South Carolina Department of Archives and History, McCrady Plat 6425). This plat indicates that Stanyarne Hall was "originally granted to Col. Robert Gibbs . . . May 29, 1704," while the Laurel Hill tract was granted to "Thos. Elliott . . . June 27, 1711."

The Stanyarne family, while poorly documented, appears to have been an early force in South Carolina. James and John were brothers and both appear to have accumulated tremendous wealth during the late eighteenth century. John Stanyarne at his death, for example, owned over 5000 acres on Kiawah Island, Johns Island, St. Helena Island, and in Charleston (Charleston County Wills 1771-1774, pp. 286-305). His brother James owned not only property in Colleton District, but had also purchased 1200 acres of the Oketee or Devils Elbow Barony from Sir John Colleton prior to 1777.

The Stanyarnes were also at least small players in the colonial politics of South Carolina. In the context of pirate or privateer trade, James Stanyarne sided with the "Goose Creek Men," a powerful circle of Barbadian immigrants centered in the Goose Creek area who opposed any restriction on Charleston's thriving trade with freebooters or privateers (sometimes pirates). John, on the other hand, was a staunch supporter of the Lords Proprietors and their attempts to end privateering.

The earliest plat identified for the area dates to 1816 (South Carolina Department of Archives and History, McCrady Plat 6424). This plat shows the location of "Stanyarne Settlement" on the Stanyarne Hall tract (Figure 1).

Based on the time period and the activities of his neighbors, it is also likely that Stanyarne's investment in the tract was directly tied to rice production.

The Mazyck family held this property until 1849, when it was sold to Edward C. Perroneau. In June 1851 Perroneau placed a mortgage on the property with R.L. North. Although Perroneau continued to hold the plantation through the Civil War, by 1867 he placed another mortgage on the property.

About 1865 a plat was made of Stanyarne and adjacent property (South Carolina Department of Archives and History, McCrady Plat 5087). This plat is very similar to the undated plat "copied from Purcell's notes," and both are probably taken from a mid-eighteenth century plat which no longer survives.

The 1865 plat, a portion of which is reproduced here as Figure 2, shows the "Farr Settlement" south of the Jacksonboro Road, the Hugh Rutledge "old settlement" to the northeast of Stanyarne, and "Coat's Old Settlement" to the southwest of Stanyarne. While these three settlements are off the survey tract, the 1865 plat also shows the location of what appears to be a slave settlement with an associated cluster of perhaps support structures on Laurel Hill Plantation. This settlement consisted of a single row of eight structures oriented north-south and a second loosely clustered complex of five structures slightly to the east. Stanyarne's settlement is not shown on the 1865 plat. However, since this was a copy, perhaps of a copy, it is difficult to know what was retained, what was added, and what was dropped. Regardless, the shapes and boundaries of Laurel Hill and Stanyarne Hall are clearly shown.

The history of the Laurel Hill and Stanyarne tracts are only superficially understood as a result of this historical investigation. Figure 3 provides some general information regarding eighteenth and nineteenth century settlements in the project area.

Two of these settlements are of particular concern. The first is Stanyarne's, situated on Stanyarne Hall. Based on this analysis, the main plantation settlement, probably representing Stanyarne's principal focus of activities was immediately to the east of the Tea Farm tract.

The only slave settlement identified from the historical research appears to have been on neighboring Laurel Hill. A portion of this settlement was within the Tea Farm tract, but of course only below ground remains exist today. This isolated slave settlement pattern may not be uncommon in this part of Charleston County and may be related to the requirements of rice production. The Hugh Rutledge plantation to the north of Stanyarne illustrates a similar remote location for the slaves, compared to a more central location for the main settlement.

In the case of Stanyarne, it appears that the main settlement was situated in close proximity to the Jacksonboro Road, which was a major coastal highway, providing transportation into Charleston. The slave settlement, however, was situated on the edge of the high ground known as Laurel Hill, adjacent to the rice fields. It seems likely that these plantations continued to be used for rice production well into the nineteenth century.

Owners and Slaves in South Carolina

From 1722 to 1762 the mean personal wealth of whites in South Carolina increased from £2730 to £6039 (or from $45,346 to $100,310 in 1992 dollars) and mean total wealth increased from £4093 to £9054 (or from $67,987 to $150,393 in 1992 dollars) during the same period. During this period slave wealth as a percentage of total wealth increased from 45% in 1722 to 51% in 1762, an indication of the increasing economic importance of slavery during this period. We also

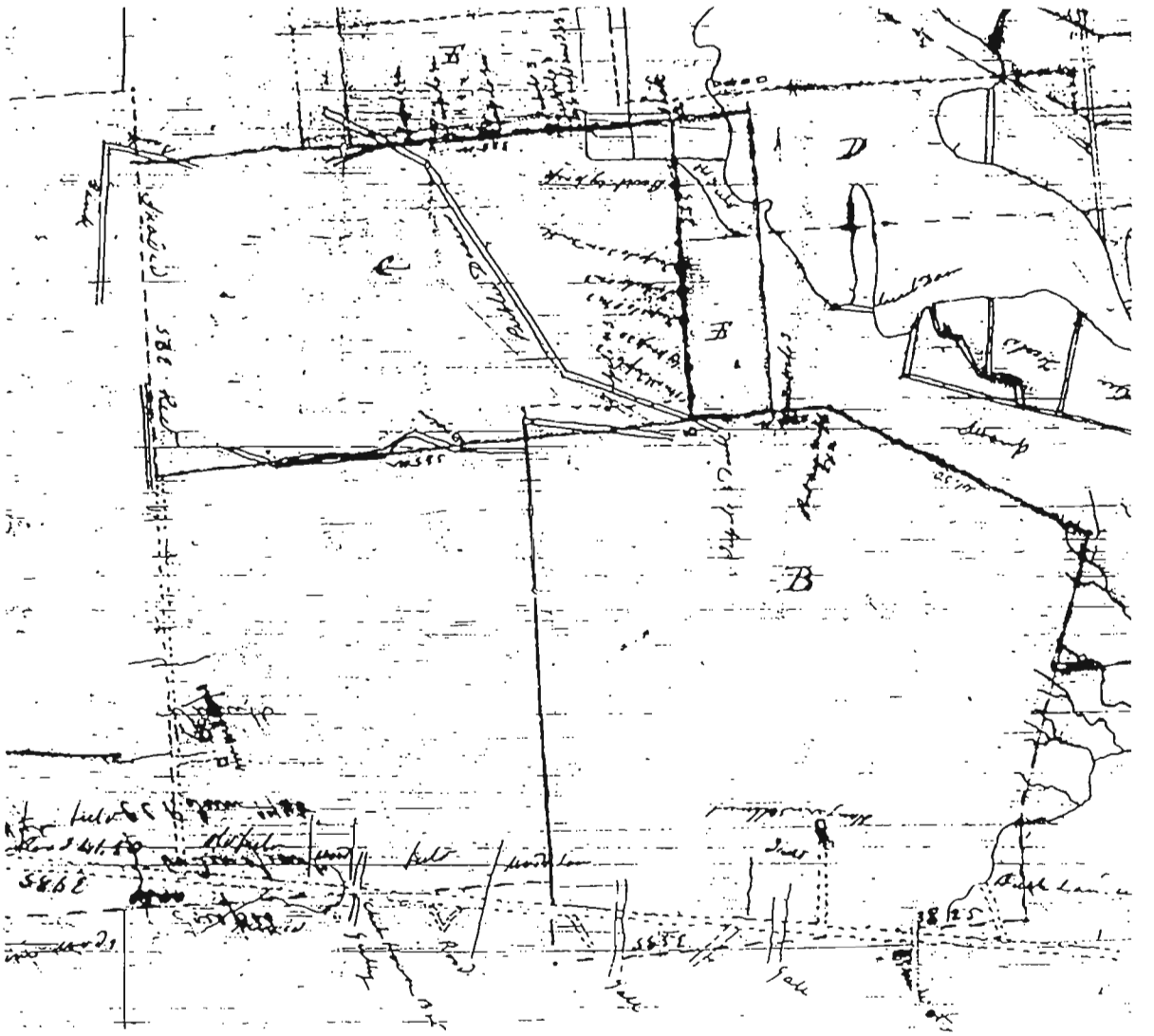


Figure 1. Undated plat of properties owned by James Stanyarne and Hugh Rutledge.

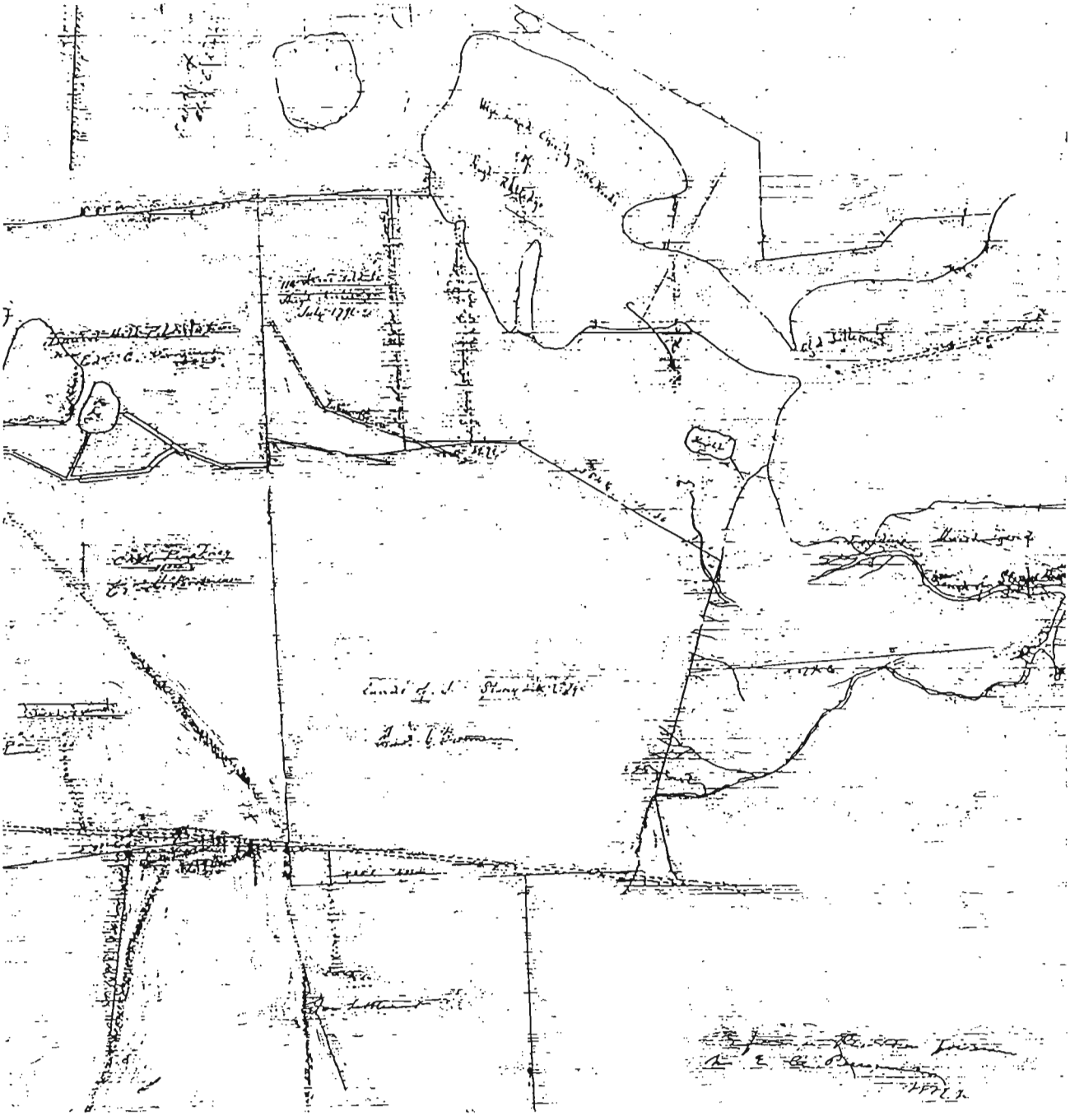


Figure 2. 1865 plat of Stanyarne and adjacent property (compare with Figure 1).

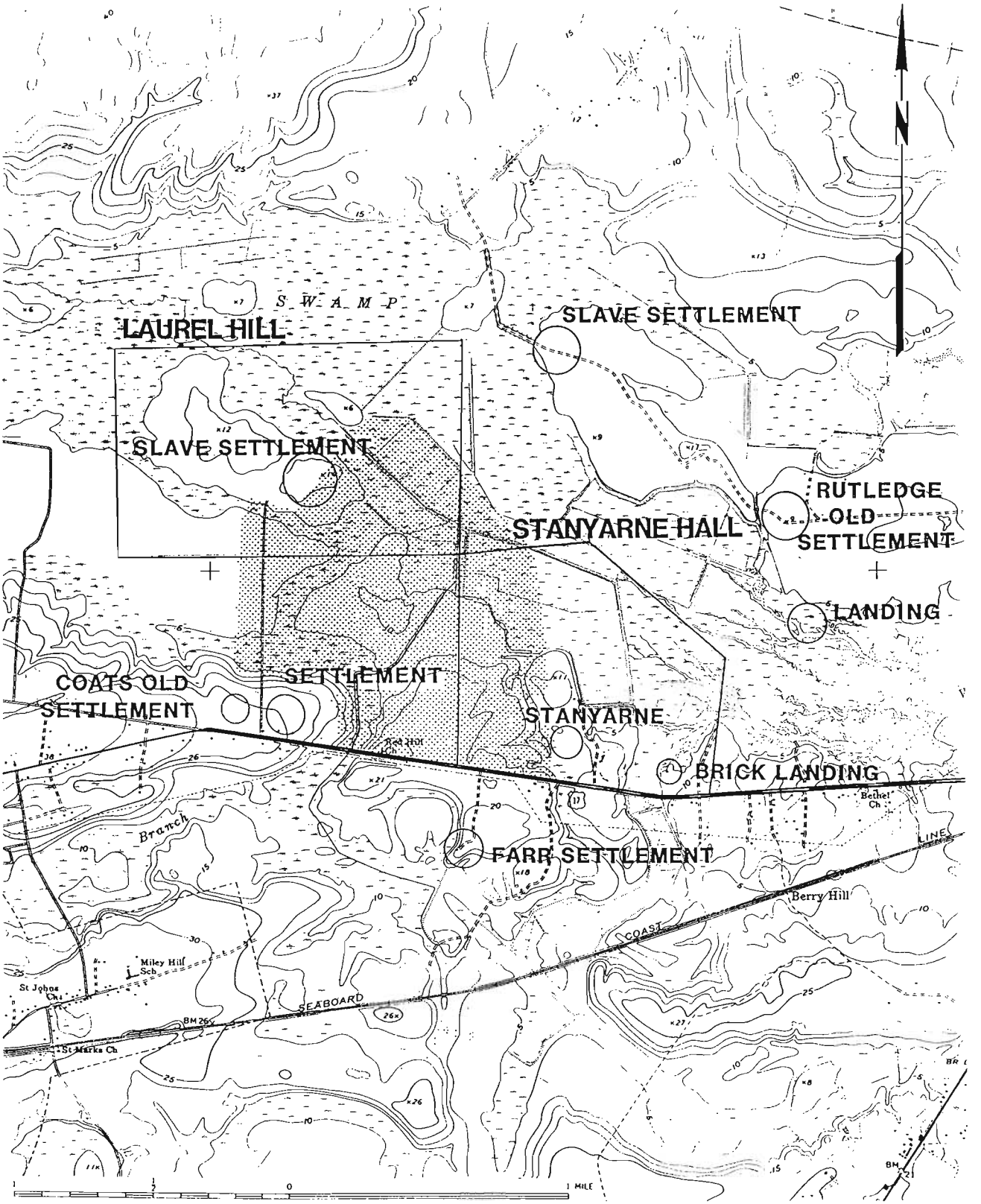


Figure 3. Location of historic properties in the vicinity of Tea Farm (shown stippled).

know that the proportion of slaves in South Carolina who lived on plantations with more than 30 slaves went from 29% in the 1720s to 64% in the 1770s, indicating that many Lowcountry plantation owners, in their quest for wealth, amassed more slaves to do more work to produce more wealth.

By 1770 the total Low Country population was 88,244 people. Of these only 21.6% or 19,066 were white. The remaining 69,178 were African American slaves (plus a few free blacks). This proportion remained fairly steady until the Civil War. In 1850 only 28% of the 209,262 Lowcountry inhabitants were whites. The vast majority were African American slaves. Even when only Charleston is considered, African Americans accounted for over 50% of the total population throughout the plantation period.

Historians have also revealed that, on the eve of the Civil War, the economic position of the Lowcountry had fallen to record lows. Although the Lowcountry still led the rest of the nation in total wealth, the total non-human wealth (wealth not considering slaves) per capita had fallen to a low of less than $400. This was less than that of Massachusetts, New York, or Pennsylvania.

This economic rise and fall can be seen in the daily lives of both owners and slaves through archaeological research. It can be seen in architecture, in foods consumed, in the material possessions of each group (clothing, eating utensils), and even "luxury" items (such as wines and clocks). Throughout this period, the lives of slaves were harsh when compared to the lives of the owners. In fact, one historian has stated, "the South Carolina planters' callous disregard for human life and suffering was probably unmatched anywhere . . . ."

The list below reveals some of the differences in the material possessions of slaves and owners. Beyond this, however, there was constant control. Slaves were forced to have passes to move from plantation to plantation. Slaves were allowed to marry only with their owner's permission. Slave families could be split up and sold at will. The diet of slaves was controlled by the owner, slaves were rarely allowed fire arms and were often unable to supplement their food rations, slaves were allowed new clothing, cloth, and blankets usually once a year. Slaves were not allowed to work for pay after hours without the permission of their owner. Even slave funerals were controlled by the owner. Virtually every act, every aspect of the slave's life was controlled at some level by the owner.

An ex-slave in Beaufort County, Sam Polite, gave this account of his life on the plantation:

> Slave life on street -- two row of house with two room to the house. . . All slave have for stay on plantation in daytime, but when work done, can visit wife on other plantation [not all slave families lived together and many were broken apart by the owners]. Have pass, so patrol won't get 'um.
>
> When I been little boy, I play on street -- shoot marble, play army, and such thing. When horn blow and morning star rise, slave have for get up and cook. When day clean [after sunrise], they gone to field. Woman too old for work in field have for stay on street and mind baby. Old mens follow cow. Chillun don't work in field till twelve or thirteen year old. You carry dinner to field in your can and leave 'um at the heading [top of row]. When you feel hungry, you eat.
>
> Every slave have task [quarter acre] to do, sometime one task, sometime two task, and sometime three. You have for work till task through. When cotton done make, you have other task. Have to cut cord of marsh grass maybe. Task of marsh grass been eight feet long and four feet high. Then, sometime you have to

roll cord of mud in cowpen. Women have to rake leaf from wood into cowpen.

> When you knock off work, you can work on your land. . . . You can have chicken, maybe hog. You can sell egg and chicken to store and Marster will buy your hog. In that way, slave can have money for buy thing like fish and whatever he want. We don't get much fish in slavery, 'cause we never have boat. But sometime you can throw out net and catch shrimp. You can also catch possum and raccoon with your dog.
>
> On Saturday night, every slave that works get peck of corn and pea, and sometime meat and clabber. You never see any sugar, neither coffee, in slavery. You has straw in your mattress, but they give you blanket. Every year, in Christmas month, you gets four or either five yard cloth, according to how old you is. Out of that, you have to make your clote [clothes]. You wears that same clote till the next year. You wear it winter and summer, Sunday and every day. You don't get no coat, but they give you shoe.
>
> Slave work till dark on Saturday just like any other day. . . . But on Sunday, slave don't work. . . . . Slave don't do much frolic. . . . If slave don't do task, they get licking with lash on naked back. . . . When . . . dead, you can't knock off work for bury'um. You have to wait till nighttime to put'um in the grave. You bury 'um by the light of torch (Hurmence, pp. 77-80).

Archaeological studies, however, also reveal that the larger the plantation, the more slaves present, and the earlier in time, the less control the owner actually had. Under some conditions, the slaves were able to obtain considerable autonomy, and it is likely that many African cultural practices continued into the early nineteenth century. Examples, including some religious practices, rice baskets, and even the Gullah language, continue today.

Compared to the daily drudgery of the slaves, the plantation owner's life was varied. Often living in Charleston, the owner might only occasionally visit his plantation, checking on the planting or harvesting of crops. The plantation visit might also be an opportunity for the owner and his family to leave the "fast-pace" of the city or else provide a more healthful climate. Cities like Charleston offered not only an active social life but also allowed the owner to participate in politics, trade, and commerce.

Virtually every part of the plantation was somehow affected by the African American slave. Slave craftsmen and carpenters built the plantation houses from the ground up -- setting out the foundation, building the structure, plastering the walls, and painting the wood. Even the kitchens, dairies, smoke houses, ice houses, stables, black smith shops, and slave quarters were built, largely from scratch, by the slaves. The landscaped grounds, including beautiful gardens, were planted and cared for by slaves. The kitchen and herb garden was planted and tended by slaves. The food on the owner's table was prepared by slaves. The clearing of woods, building of canals and dikes, planting and tending rice, and eventually the harvest were all done by the African American slaves. It is impossible to ignore the forced "contributions" made by slaves.

COMPARISON OF OWNER AND SLAVE

HOUSES

Owner:	Slave:
Permanent, well built	Impermanent, poorly built
Raised off ground for air circulation	Frequently built on ground, damp
Large, many rooms	Small, often only one room
Glass windows	Wooden shutters
Large fireplaces	Small fireplaces
Many fine furnishings	Few, rustic, hand-made pieces

FOOD

Owner:	Slave:
Varied diet	Monotonous diet
Well balanced	Fat and carbohydrates
Elaborate, fancy foods	Simple stews
Included beef, lamb, fish, shellfish	Included primarily pork

CERAMICS

Owner:	Slave:
Large variety of fancy ceramics	Only fancy items were discards from main house
Many plates for fancy meals	Few plates, many bowls for stews
Many utensils, often with silver or bone handles	Few utensils, many wood, others iron
Matched sets of expensive ceramics	Mismatched pieces of cheap wares

OTHER ITEMS

Owner:	Slave:
Many wines, champagnes, other alcohol	Limited access to these
Fancy tumblers, stemware	Virtually no drinking containers
Fancy clothing items, silver buttons	Cheap clothing, bone or iron buttons
Little evidence of sewing items	Often find needles and thimbles
Rarely used tobacco pipes	Often used tobacco pipes
Fancy jewelry, rings, settings	Glass beads, simple copper bracelets, coins used as bangles

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Plantation Life

Getting Started	Lesson Objectives	Instructional Approach
Time Needed • 1 - 2 hours for tour of Tea Farm • Two 45-55 minute class periods (teacher may choose to expand time spent in class or tour)	*First Session - tour of Tea Farm* A. The student will be introduced to the buildings, ceramics, and foods the plantation owners and slaves used in their daily lives. B. The student will be exposed to different chores and responsibilities the plantation owners and slaves had.	**Exploration** Whole Class (visiting site & discussion)
Lesson Materials Provided by Tea Farm: • Guided or self-guided tour of Tea Farm • Tea Farm Curricula Plan, including lesson plans and activity sheets for teachers to use on site and in classroom.	C. The student will understand how the heritage and history of South Carolina has been created by a wide variety of people. D. The student will understand his place in history by discovering similarities between his life and past lives, or how his life reflects past events.	**Development** Whole Class (discussion)
	Remaining Class Sessions- conducted by teacher E. The student will explore how historic buildings or sites may still be used or preserved for future generations.	**Application** Whole Class (discussion &/or writing project)

"Full Circle" Questions

(Questions which help relate the past to the lives of students today)

1. Are there any historic buildings or sites in your neighborhood? What do they tell you about the people of the past?

2. Does your home (or school) have outbuildings? What are they used for?

Plantation Life

Lesson Procedures

1. The tour of Tea Farm will illustrate the different areas used by slaves and plantation owners for their homes. The use of various types of outbuildings, such as stables and kitchens, will be discussed. Different varieties of foods and ceramics used by the two different groups of people will be discussed.

2. The tour will explain the different responsibilities of slaves and owners and how some may have changed with the seasons.

3. The tour will explain how the labor of the slaves changed the look of the plantation from building design to field construction and cultivation.

4. Encourage students to discuss how historic and archaeological sites reflect the variety of people who created the buildings, landscape, and history of South Carolina.

5. Encourage interaction with students in discussing how responsibilities in the past are similar or disimilar to responsibilities today. Encourage the sharing of family histories and stories that reflect the past.

6. The teacher will assign students to research the use and importance of their favorite historic area or structure.

"Full Circle" Questions (continued)

3. What does your home and yard tell people about your family?

4. What is your favorite story from your family history? What is your least favorite? How do these reflect the history of your family?

Historic Quotes

Slave Houses

In a single room were huddled, like cattle, ten or a dozen persons, men, women, and children . . . There were neither bedsteads, nor furniture of any description. Our beds were collections of straw and old rags, thrown down in the corner and boxed in with boards; a single blanket the only covering (a freed slave talking about his house, Genovese, p. 529).

I walked down the settlement toward the infirmary or hospital, calling in at one or two of the houses along the row. These cabins consist of one room, about twelve feet by fifteen, with a couple of closets smaller and closer than the staterooms of a ship, divided off from the main rooms and each other by rough wooden partitions, in which the inhabitants sleep . . . . Two families (sometimes eight and ten in number) reside in one of these huts, which are mere wooden frames pinned, as it were, to the earth by a brick chimney outside, whose enormous aperture within pours down a flood of air, but little counteracted by the miserable spark of fire . . . . A wide ditch runs immediately at the back of these dwellings, which is filled and emptied daily by the tide. Attached to each hovel is a small scrap of ground for a garden, which, however, is for the most part untended and uncultivated (a plantation owner's wife speaking about the conditions on a coastal Georgia plantation, Kemble, p. 67-68).

Owner's House

1400 acres of land, has on it a very commodious dwelling house of excellent brick work, having twelve good rooms with fire places, in each besides four in the cellar with fire places also and wants very little repair. The gardens are extensive, laid out in good taste and are in tolerable order. The Fish Ponds and canals are superior to anything of the kind in the State and abound with excellent fish. The pleasantness of the Situation, the good quality of the land the improvements and the vicinity to the Metropolis render Crowfield a most desirable abode where profit and pleasure may be as well combined as at any one place in the State at the same distance from Charleston (September 23, 1783 ad for Crowfield Plantation in the *South Carolina Gazette*).

The Slave's Weekly Allotment of Food

of [corn] Meal 10 quarts, of Rice or Peas 8 quarts, and of Sweet Potatoes one Bushel. This is the full allowance of every adult, and the younger negroes the same, no matter what their age, as soon as they are put to task work. Molasses is given throughout the year at proper intervals. Salt Fish only in winter, Pork or Bacon and Beef during summer. The allowance of Molasses is 1 pint (for one week), of Salted Fish (Mullet or Mackerel) 2 or 3 according to size, of Pork or Bacon 2 lbs. (a South Carolina slave owner's account, Joyner, p. 91).

Planter's Diet

First was the soup; fish roasted and boiled; meats, gammon, fowls, etc. This was the dinner. The middle of the table was garnished in the usual tasty way, with

small images, flowers (artificial), etc. The dessert was, first apple pies, pudding, etc.; then iced creams, jellies, etc.; then water-melons, musk-melons, apples, peaches, nuts (description of a dinner in the 1830s).

Slave Clothing

The allowance of clothes made yearly to each slave by the present regulations of the estate is a certain number of yards of flannel, and as much more of what they call plains -- an extremely stout, thick, heavy woolen cloth, of a dark gray or blue color, which resembles the species of carpet we call drugget. This, and two pairs of shoes, is the regular ration of clothing; but these plains would be intolerable to any but Negroes, even in winter, in this climate, and are intolerable to them in the summer (Kemble, p. 88).

AFRICAN AMERICAN WORD PUZZLE

Complete the following sentences. Each answer is hidden in the puzzle. The hidden words are spelled from left to right and top to bottom. Circle the words as you find them.

1. Slaves worked on the large farms called _____.

2. An important plantation crop in South Carolina was _____.

3. Most African Americans in South Carolina in the 1800's were _____.

4. _____ is a type of pottery made and used by the slaves.

5. _____ is a cement-like mixture made with oyster shells.

6. Much of the heritage of African Americans has been preserved by _____ history.

7. During and after the Civil War, slaves were given their _____.

L P L A N T A T I O N S

B A M T I A M D E U F S

C C N F L B G H P J F O

O R A L K B V B O R R P

T O A E T Y K A M Z E N

T H G S F O S L A V E S

O P K A R J L L I C D R

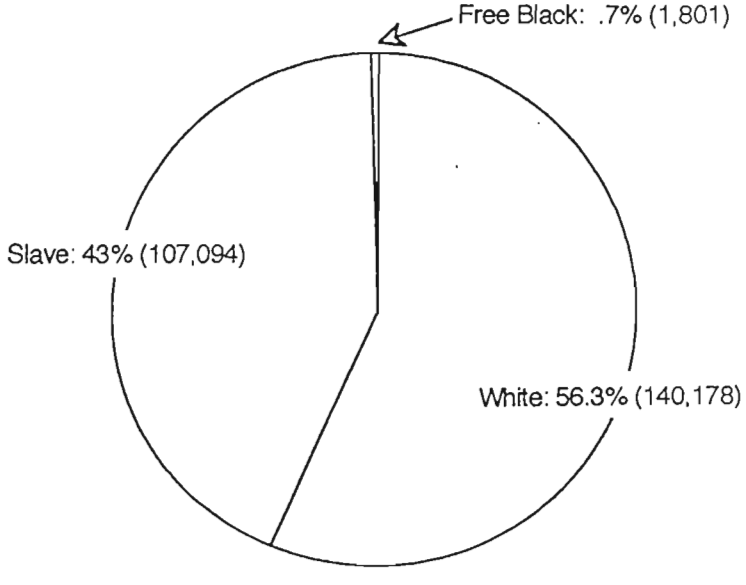
N V C O L O N O N N O B

B A E K U D M G C S M W

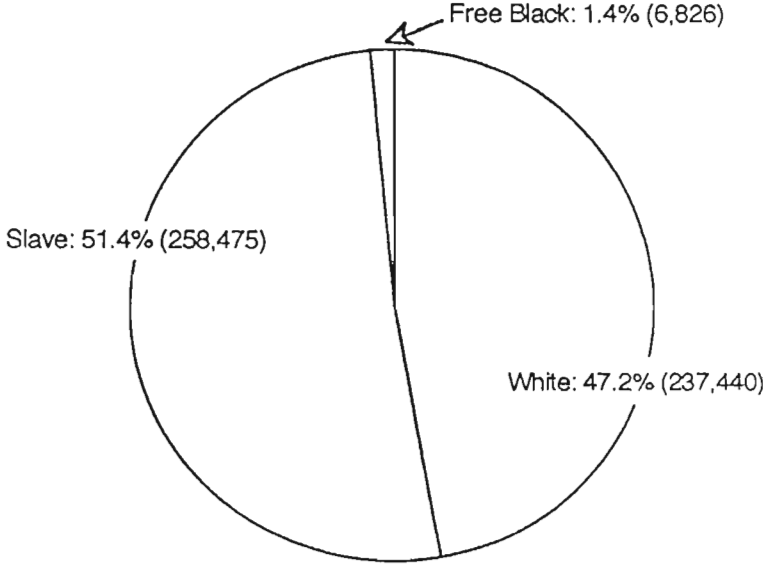
POPULATION GRAPH

Study the graphs. Then decide whether each statement is true.
If the statement is true, write **T** next to it. If it is false, write **F**.
Correct the facts in the false sentences.

Total SC Population, 1790



Total SC Population, 1820



____ 1. There were more people in SC in 1790 than in 1820.

____ 2. Most of the people in SC in 1820 were Black.

____ 3. Most Blacks were free in 1790.

____ 4. There were more Free Blacks in 1820 than in 1790.

____ 5. There were 258,475 Blacks in SC in 1820.

____ 6. The total population of SC in 1790 was 140,178.

RICE PRODUCTION

Goal and Overview

The goal of this lesson is to help the student better understand the labor of rice planting, how this crop changed the face of South Carolina, and how, even today, this economy has affected the environment of the Lowcountry.

This lesson correlates with Huff's *The History of South Carolina in the Building of the Nation*, Chapter 6, "Wealth and Slavery in Carolina" and Chapter 14, "The Age of Nationalism."

Today we see the broken trunks or dikes of eighteenth and nineteenth century rice fields being slowly, almost torturously, reclaimed by rivers and swamps. What was once stolen from nature is now returning to its original condition. This lesson will help students understand why and how rice cultivation was introduced to South Carolina; the economic, political, social, and environmental impact rice had on South Carolina; and how the rice fields are today returning back to nature. The students will be encouraged to explore the fields for signs not only of the slow evolution back to swamp but also for signs of the earlier era of South Carolina history.

Rice Agriculture

South Carolina's economic development during the pre-Revolutionary War period involved a complex web of interactions between slaves, planters, and merchants. By 1710 slaves were starting to be concentrated on a few, large slave-holding plantations. By the close of the eighteenth century some South Carolina plantations had a ratio of slaves to whites that was 27:1. By the end of the century, over half of eastern South Carolina's white population held slaves. With slavery came, to many, unbelievable wealth. Coclanis notes that:

> on the eve of the American Revolution, the white population of the low country was by far the richest single group in British North America. With the area's wealth based largely on the expropriation by whites of the golden rice and blue dye produced by black slaves, the Carolina low country had by 1774 reached a level of aggregate wealth greater than that in many parts of the world even today. The evolution of Charleston, the center of the low-country civilization, reflected not only the growing wealth of the area but also its spirit and soul (Coclanis 1989:7).

Only certain areas of the Lowcountry, however, were suitable for rice production. During the early years rice was grown as an upland or inland crop, in small fields adjacent to freshwater streams where water could be easily impounded and applied to the crop. By the early 1700s planters found that upland swamps, such as those in the Goose Creek area of Charleston, were even better suited for rice. These upland swamps, distinct from well-drained uplands, remained the focus of Carolina rice agriculture during the entire Colonial period.

Hewat, writing in 1779, describes the process of upland swamp rice cultivation:

> after the planter has obtained his tract of land, and built a house upon it, he then begins to clear his field of that load of wood with which the land is covered.

> Having cleared his field, he next surrounds it with a wooded fence, to exclude all hogs, sheep, and cattle from it. This field he plants with rice . . . year after year, until the lands are exhausted, or yield not a crop sufficient to answer his expectations. Then it is forsaken, and a fresh spot of land is cleared and planted, with is also treated in like manner, and in succession forsaken and neglected (Hewat 1836:514).

This rather simplistic commentary failed to observe the engineering feat that upland swamp rice cultivation really was. Written from the owner's perspective, it also failed to recognize that all of the work was done by the African American slave. Clearing, which alone was a monumental undertaking, was followed by the construction of dams, dikes, and trenches. By one estimate, a 500 acre rice field required 60 miles of dikes and ditches. Fields were carefully leveled to ensure that they could be completely covered by water. Rice was planted during two periods -- March 10 to April 10 and June 1 to June 10 -- avoiding May since vast migrations of "rice birds" or bobolinks passed through the state during that period and could destroy a crop. Rice was harvested in late August.

Planters slowly began to realize that the upland swamps, while much better than inland cultivation, still posed serious constraints. As interest in rice growing increased during the eighteenth century, planters became successful at using tidal action to flood rice fields. Tidal rice growing was much more efficient because the water could more easily be controlled. In the upland swamps, water control was ineffective on the freshwater streams. Prolonged drought limited the available floodwater, and heavy rains upstream often broke dams and washed out fields. Therefore, there was the problem of too much or too little water. Also, upland rice cultivation was exhausting to the soil whereas at tidal sites the fields were constantly being renourished by the alluvial material from the river.

The major areas of rice production in South Carolina eventually would include Winyah Bay, the mouth of the Santee, the Charleston area, the Edisto-Ashepoo, the Combahee, and Savannah rivers. Only certain areas of these rivers could meet the critical demands of rice growing; specifically, the area between tidal salt flats and the freshwater swamps found above the tidal zone. If fields were located too close to the ocean, salt water encroachment would destroy the rice. If fields were too far upriver, the diminished tidal effect would not allow sufficient water action to flood and drain the fields. As a result, only spotty areas of the Lowcountry rivers could be used for tidal rice cultivation.

By the mid-nineteenth century, tidal rice agriculture had been underway for nearly a century. By this time a number of written accounts detailing the process of swamp clearing and rice growing had appeared in various agricultural journals. The quantity of labor needed for this process was enormous because of the large amount of earth that had to be moved. Relatively small areas required months to reclaim and the improvement process took years on most plantations, with new fields being cleared and cultivated when the labor force was available.

When the site was chosen, the area was measured and areas of proposed embankments were marked off. A ditch and embankment was made to encircle the area. The purpose for this was, first, to keep out water to facilitate work, and second, to provide a firm base for a permanent embankment. The ditch was then filled and elevated to form the permanent embankment. Small channels were temporarily bridged and trunks installed. Then individual fields were laid out by building "cross" or "check" banks which were used to contain or keep out water within individual fields. These banks were slightly lower than the outer embankment. Smaller channels were cut across the fields to aid water movement when the fields were drained (Figure 1). The process of clearing, diking, and draining was a slow one and often took years and sometimes decades to bring

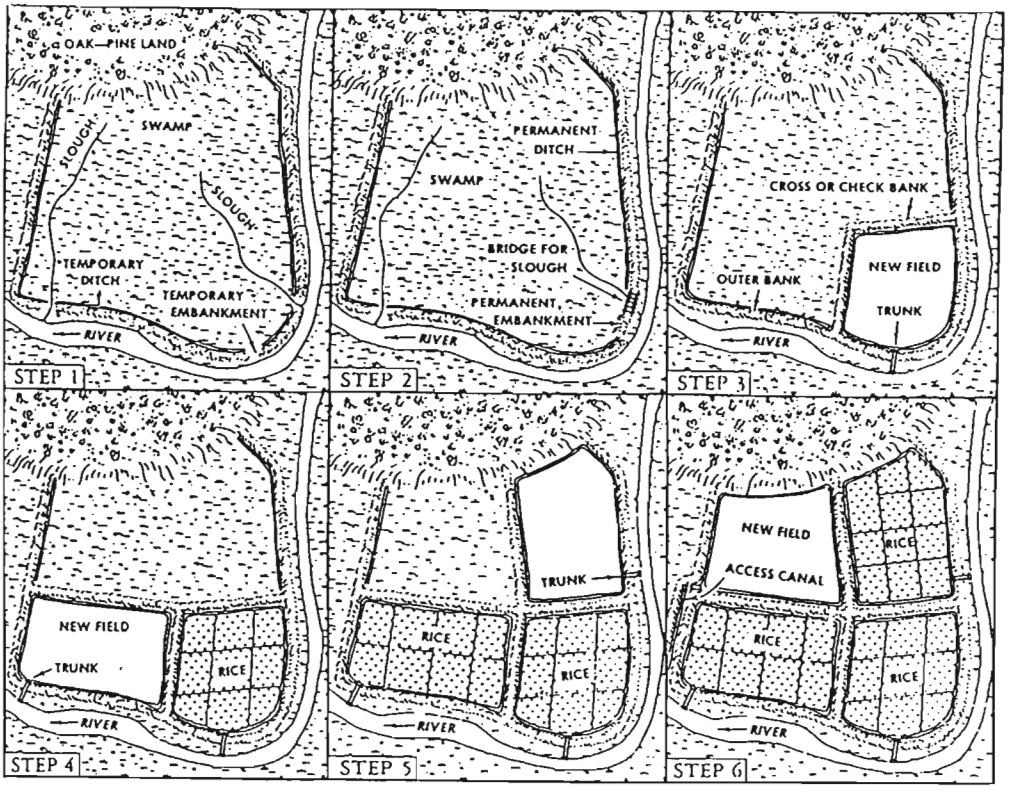


Figure 1. Sequential views of a hypothetical rice plantation (from Hilliard 1975:Figure 1).

a plantation up to its capacity. Also, this system of water control devices required continual cleaning and repair (Hilliard 1975:59-60).

If possible, fields were located next to an estuary, but, as plantations expanded, land further away was used. In these cases access canals with floodgates were built. The trunks and gates which had to be installed were ingenious devices. The trunk was capable of automatic operation during both drainage and flooding. It extended through the outer bank connecting the field with the estuary and was installed with its base at the same level as low tide. At both ends of the trunk were gates that could be locked open or closed or could be suspended so as to operate as a one-way valve. As fields were flooded, the outermost gate was locked open, and the inner gates were left to operate automatically. During high tide, the water pressure from inside the trunk would force the inner gate to open and allow water to enter the field. As the tide lowered, pressure on the field side of the trunk closed the inner gate which prevented water from leaving the rice field. By simply reversing the process, the fields could be drained.

According to one authority, a floodgate was constructed by banking the head of the canal an area ten or fifteen feet longer than the proposed gate. All the water was removed and the base leveled off. Heavy logs were then laid crosswise about five feet apart, and mud was packed between them. A plank floor about 2 inches thick was laid over them and spiked. Then planks

were driven upright into the last logs on each side to prevent leakage. On the plank floor and on either side, large squared sills were laid which measured the whole length of the gate. Large posts about fifteen feet high were mortised into these sills on both sides. Cross pieces connecting the posts at the top were attached, and planking was put on these to retain the mud from the banks. A floor sill was laid across the bottom to act as a shutting piece for the door. The doors were then hung from the top center. David Doar states that generally there was only one door, but when the gates were large and used for flooding and draining (generally from the outer banks), there were two doors.

Trunks had two sides with planking on top and bottom and generally were six to eight feet tall and twenty or thirty feet long to extend through the bank. Doors were hung from the top which had cross arms midway, allowing the doors to be lifted or let down with a lever. To open the door, it was pried open at the cross arm and the gate was lifted. As water rushed in, the inside gate was forced open (Figure 2).

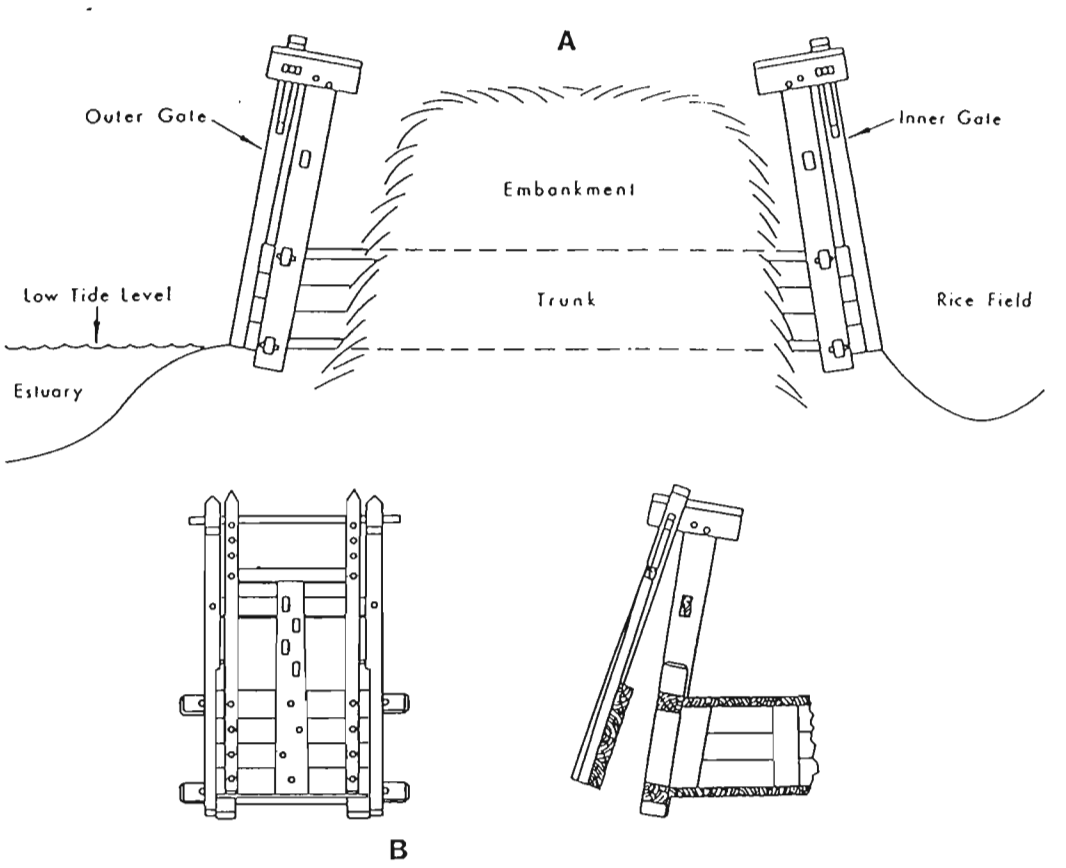


Figure 2. Details of (a) an embankment and (b) a trunk (from Hilliard 1975:Figure 2 and Doar 1936:9, 11).

Production of Rice for the Market

Rice was a labor intensive crop, not just during its growing season, but even after the September harvest. Once cut, the rice was dried on the stubble for a day, then tied in sheaves and stacked on boats called flats for transport back through the rice fields, using the access canals, to

the barns and threshing yards.

The next process, threshing, separated the heads from the stalk. As late as the mid-nineteenth century much of this work was done by hand. The bundles of grain were carefully placed on the ground, and the slaves beat the heads off the stalks with flailing sticks. Following this "winnowing," which separated the grain from the chaff, fanning took place. This was accomplished, again with much labor, by slaves using wide rice fanner baskets. The slaves "fanned" the threshed grain in the wind, allowing the chaff to blow away, while the heavier grain was retained in the baskets. Later, some plantations used winnowing houses. These were about 10 feet square and placed about 15 feet in the air on wooden posts. The rice was taken up stairs to the house where it was stored until the wind was blowing hard enough to perform the winnowing. The rice would be dropped through a grate, the chaff blown away, and the grain would land on a prepared clay floor under the house.

Following this, the rice was "pounded," to remove the outer husk and inner cuticle from the rice grain. Slaves would place a few pecks of unhusked rice, called rough rice, in a wooden mortar made from a partially hollowed tree trunk. They would then work the rice with a pine pestle, using a slow grinding motion. The outer husk would come off easily, but removing the inner cuticle without breaking the rice grain was much more difficult.

A good job resulted in 20 bushels of rough rice yielding 600 pounds of milled rice. The process would also yield broken grains, which would be used on the plantation to feed the slaves, as well as rice flour. In addition, the rice husks were used as fertilizer, the bran as livestock feed, and the stubble for livestock bedding (which would later also be used for fertilizer).

Gradually, threshing and pounding mills were developed to reduce the hand labor required to prepare the rice crop for market. First water powered and later steam powered, these mills allowed greater production, although their operation was complex and required skilled African American slave mechanics.

The Economics of Rice Production

Although the records of early rice exportation are vague, it is clear that production increased dramatically after 1705. In the late Colonial period, rice profitability also increased. Perkins observes that:

> yields were from 2 to 4 barrels per acre, and most plantations had 2 or 3 acres under cultivation for each field hand. Based on an average price of £2.3 ($150) per barrel from 1768 to 1772, slaves generated revenues annually of from £9.2 up to £27.6 ($600-$1,800), with around £15 ($975) probably the average figure (Perkins 1980:58).

Clowse points out the relationship between rice and slavery in economic terms:

> it is fairly safe to assert that the increase in rice culture was mainly responsible for the rapid growth of the slave population up to the year 1715. A "common computation" in the eighteenth century was that each field hand should produce about a ton of marketable rice annually. If this rule of thumb were applicable to the 1715 situation, every five or six barrels of rice exported represented the labor of one field hand. On this basis, a minimum of 3,500 slaves were engaged full-time in rice growing, as opposed to perhaps 500 in 1700. While such figuring must be used cautiously, the demand for slaves for the rice fields had to be sharp since

many slaves in this period must have worked primarily to clear and ready new rice lands for cultivation (Clowse 1971:170).

In 1840 Georgetown District produced 45% of the national rice crop, Charleston produced 14.7% and Colleton produced 6.8%. Between 1850 and 1860, production peaked. In 1860, 18,890,000 pounds of rice were produced in Charleston County. By 1860, South Carolina produced nearly 64% of the total United States rice crop. Prices ranged from 2.0 to 4.3 cents per pound in the 1850s.

Profits on rice plantations during the nineteenth century were variable. Governor Robert Francis Withers Allston reported in 1854 that "the profits of a rice plantation of good size and locality are about 8 percent per annum, independent of the privileges and perquisites of the plantation residence." Peter Coclanis (1989:134-141) argues that while the annual net rate of return on rice cultivation was around 25% in the 1760s, it fell to an astounding -28% by 1859. Regardless, the plantation system was run almost entirely on credit, paying off each past year's indebtedness with the sale of the new crop.

Tea Farm Water Control Devices

Several areas in the Tea Farm Park contain water control devices. One is the area labeled as "main trunk" which contains two recently built wooden control gates (treated with creosote) on either side of the causeway.

Evolution of Rice Fields

As previously discussed, the process of clearing the land and preparing new rice fields was slow and took many years of labor. When completed, the fields continued to require constant maintenance by a large labor force. New and very carefully manipulated ecological systems were created when an estuary was impounded. There were changes in the hydrography. Water circulation was reduced. There was increased sedimentation. Aquatic vegetation was smothered. Furthermore, the water chemistry was changed. The periodic draining and flooding severely limited the number of species capable of growing in the impoundments, especially in the very shallow rice fields. However, all of these changes were beneficial to the production of rice.

After the Civil War, rice production faltered as the freed blacks, known as Freedmen, had little interest in returning to rice cultivation. The final blow to South Carolina's rice production was caused by a series of disastrous storms in the late nineteenth and early twentieth centuries (especially those in 1910 and 1911) coupled with the rise of rice in Louisiana, Mississippi, Arkansas, and Missouri.

As the diked fields were abandoned, they were quickly vegetated by such desirable freshwater marsh plants as wild rice, duck potato, wild millet, and soft-stem bullrush. The combination of these abandoned fields and still operating rice fields provided migratory birds with a near ideal habitat, providing a balance between cover and food. Many of the abandoned rice plantations were sold to wealthy northern industrialists who sought out the plantations as places of refuge. They continued to maintain the remnant dikes and water control structures to develop waterfowl hunting areas. The rice fields, while no longer producing rice, were largely maintained since they promoted good hunting, at the time unregulated by either the state or federal government.

The dominant marshes included both freshwater (with salinity under 5 ppt) and brackish (with salinity over 5 ppt) types. Natural river fluctuations provided a dependable, alternating

supply of fresh and salt water. During high flows, fresh water could be impounded to promote the growth of desirable freshwater species such as smartweeds and wild millet. At low flows and with an incoming tide, salt water was used to control undesirable freshwater plants such as cattails and cut grass.

The once open fields used for planting rice which were not managed slowly converted to permanently vegetated marsh. Frequently the only telling sign of previous rice cultivation is the regularly laid out causeways (or dikes), canals cutting through the marsh, and still operable trunks to control water levels. Studies show that as the rice fields slowly changed, the plants which colonized the old fields did so by elevation zones -- in brackish waters smooth cordgrass would dominate the lower elevations, while giant cordgrass and black needlerush dominated the higher elevations. This new marsh type, in fact, was very similar to marshes that had never been impounded.

Today, at Tea Farm, the goal is not to allow the rice fields to return to marsh but rather to continue managing the impoundments as a refuge for waterfowl and other wildlife. The primary goal is to provide an optimum interspersion of open water and cover with a maximum quantity of high quality foods. This first involves determining whether the impoundments should be managed as brackish water or fresh water, since each type requires different management techniques. Currently, the impoundments are characterized by brackish water which has a salinity level of about 8 ppt., although this can be adjusted through the control of the Caw Caw Swamp runoff.

Management of brackish water impoundments will encourage such waterfowl food plants as widgeongrass, salt-marsh bulrush, and dwarf spikerush. While initially it is often helpful to drain the impoundment and then slowly allow it to refill, keeping the rice fields dry will encourage the growth of unwanted species such as smooth cordgrass -- a plant that is not attractive to wildlife. Likewise, allowing the water level to fluctuate will also discourage beneficial plants. Even the presence of a large fish population can be undesirable since the fish increase turbidity which encourages heavy blooms of blue-green algae that choke out many useful submerged aquatic plants. Fish can also severely damage the young plants by uprooting or eating them.

A number of studies on the management of the Tea Farm rice fields are ongoing, but it is clear that this is a complex undertaking. The changes in the plant populations or the appearance of the fields will occur slowly and may be difficult to spot from visit to visit. But slowly the marshes of the Caw Caw, once gold with Carolina rice, will be covered with a wide range of migratory water fowl.

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Rice Production

Getting Started	Lesson Objectives	Instructional Approach
Time Needed • 1 - 2 hours for tour of Tea Farm • Two 45-55 minute class periods (teacher may choose to expand time spent in class or tour)	*First Session - tour of Tea Farm* A. The student will be introduced to the cultivation of rice. B. The student will be exposed to the ways the natural landscape had to be changed and manipulated in order to cultivate rice.	**Exploration** Whole Class (visiting site & discussion)
Lesson Materials Provided by Tea Farm: • Guided or self-guided tour of Tea Farm • Tea Farm Curricula Plan, including lesson plans and activity sheets for teachers to use on site and in classroom.	C. The student will understand how the heritage and history of South Carolina has been affected by the cultivation of rice. D. The student will understand the importance of the old rice fields in today's ecology.	**Development** Whole Class (discussion)
	Remaining Class Sessions- conducted by teacher E. The student will explore how altering the natural landscape in the past may encourage the growth or protection of plant and animal species today.	**Application** Whole Class (discussion &/or writing project)

"Full Circle" Questions

(Questions which help relate the past to the lives of students today)

1. Did you recognize any of the plants (or animals) discussed at Tea Farm Park?

2. Would any of these plants (or animals) grow (or live) in your neighborhood? Why or why not?

Rice Production

Lesson
Procedures

1. The tour of Tea Farm will illustrate the various aspects of rice production, from seedlings to maturation and harvesting; the tour will also explain the seasonality and environmental requirements of the rice plant.

2. The tour will explain how the landscape was altered by the building of ditches and dikes and how water levels were manipulated through the use of rice gates.

3. The tour will explain the different responsibilities of slaves in the cultivation of rice.

4. Encourage students to discuss the use of slavery in South Carolina rice production. Is rice produced in South Carolina today? Why or why not?

5. Encourage the students to identify varieties of plants (giant cordgrass, cattail) and animals (wood stork, white ibis) using the old rice fields today. Encourage discussion of natural South Carolina habitats which may support these plants and animals.

6. The teacher will assign students to research the availability/importance/protection of certain plant and animal species in the marsh areas of South Carolina/Southern Atlantic states.

"Full Circle" Questions (continued)

3. How would your neighborhood have to change in order to grow these plants or protect these animals?

4. How would your neighborhood be affected if any of these plants or animals become extinct?

Historic Quotes

Rice was a labor intensive crop, requiring skill, ingenuity, and wealth. Slaves performed the tasks which made their owners wealthy:

> the first business is to drain the swamp, in which work they have no particular methods deserving notice, or which are unknown in England. The moment they have got the water off they attack the trees, which in some swamps are very numerous; these they cut down at the root, leaving the stumps in the earth . . . . However they do not wait for the ground being cleared of them, but proceed to plant their rice among the stumps. In March, April, and May they plant; the negroes draw furrows eighteenth inches asunder, and about three inches deep, in which the seeds are sown; a peck is sufficient for an acre of land: as soon as planted they let in the water to a certain depth, which is, during the season of its growth, repeated,and drawn off several times; but most of the growth is while the water is eight, nine, or ten inches deep on the land. The great object of the culture is to keep the land clean from weeds, which is absolutely necessary, and the worst weed is grass . . . . This is the only object till it is reaped, which is usually about the latter end of August or beginning of September. Like wheat in England, they prefer cutting it while the straw is a little green, leaving it on the stubble to dry and wither two or three days in case the weather is favorable: after which they lay it up in barns or stacks . . . .
>
> The next operation . . . is the threshing of it, after which it is winnowed, which was formerly a very tedious operation, but now much accelerated by the use of a windfan. When winnowed it is ground, to free the rice from the husk; this is winnowed again, and put into a mortar large enough to hold half a bushel, in which it is beat with a pestle by negroes, to free it from its thick skin; this is a very laborious work. In order to free it from the flour and dust made by the pounding, it is sifted; and again through another sieve, called a market sieve, which separates the broken and small rice, after which it is put up in barrels, and is ready for market.
>
> The reader must observe upon this account that the cultivation of it is dreadful: for if a work could be imagined peculiarly unwholesome and even fatal to health, it must be that of standing like the negroes, ankle and even mid-leg deep in water which floats an ouzy mud, and exposed all the while to a burning sun which makes the air they breathe hotter than the human blood; these poor wretches are then in a furness of stinking putrid effluvia . . . . We are told indeed that South Carolina breeds more negroes than she destroys, which is certainly a fact, as appears by the annual exportation of a few; but then let it not be imagined that it is in these properly denominated *dismals* (Carman 1939:275-279).

Rice cultivation among the Africans in the area of Guinea-Conakry was described by a slave-ship Captain at the end of the eighteenth century:

> The Bagos are very expert in Cultivating rice and in quite a Different manner to any of the Nations on the Windward Coast. They country they inhabit is chiefly loam and swampy. The rice they first sew on their dunghills and rising spots about their towns; when 8 or 10 Inches high [they] transplant it into Lugars made for that purpose which are flat low swamps, at one side . . . they have a reservoir that they

can let in what water they pleasse, [on the] other side . . . is a drain out so they can let off what they please. The Instrument they use much resembles a Turf spade with which they turn the grass under in ridges just above the water which by being confined Stagnates and nourishes the root of the plant. Women & Girls transplant the rice and are so dexterous as to plant fifty roots in one minute. When the rice is ready for cultivating they turn the water off till their Harvest is over then they let the Water over it and it stands three or four Seasons it being so impoverished. Their time of planting is in Sept (quoted in Littlefield, p. 93).

THE GROWTH OF RICE FIELDS

There are many steps in the development of a rice plantation. Some of these steps are illustrated below.

Put each drawing in order by giving it a number, 1 through 6.

Activity Sheet # 5

OLD RICE FIELDS WORD SEARCH

Find these plants and animals that use the old Tea Farm Park rice fields in this puzzle. The hidden words are spelled from left to right and top to bottom. Circle the words as you find them.

bald eagle	kingbird	wild rice
bulrush	pennywort	wild millet
cordgrass	snowy egret	wood duck
duckweed	white ibis	wood stork

A G N B P E N N Y W O R T

R C W O O D S T O R K D H

W W I L D M I L L E T B E

O E L I W H A T B Q Y U C

O D D A T E A F A R M L O

D J R B L H M C L A O R R

D K I N G B I R D C L U D

U F C L E N D E E K L S G

C U E J F P I T A B M H R

K N S N O W Y E G R E T A

E R S L O O K P L A R V S

K V A G W H I T E I B I S

O D U C K W E E D T O B X

ECONOMICS AFTER THE CIVIL WAR

Goal and Overview

The goal of this lesson is to help the student better understand how the economy of South Carolina changed after the Civil War and how alternative crops and ventures were developed to replace the previous dependence on rice cultivation in the Tea Farm area.

This lesson correlates with Huff's *The History of South Carolina in the Building of the Nation*, Chapter 22, "Life and Work in the Postbellum Years."

Once freed, many African Americans were reluctant to take up the agricultural pursuits so strongly associated with slavery. While southern propaganda tried to make the freedmen appear lazy and shiftless, in truth they were more interested in owning their own land and pursuing their own way than in continuing to work as laborers for their previous owners. Unfortunately, relatively few freedmen were able to acquire land, and many were forced to continue working in near-slavery conditions to support themselves and their families. Few African Americans, however, were interested in rice cultivation. Cotton, a major cash crop during the Antebellum period, continued to be very important in the Charleston area. New economic opportunities were explored, such as phosphate mining. In addition, several planters formed corporations to engage in tea cultivation -- a practice that later received government support. This lesson plan explores tea production and the brief impact it had on South Carolina's history.

The Postbellum History of Tea Farm

The late antebellum purchaser of Stanyarne Hall (see the lesson plan entitled " Plantation Life" for more background on the history of the Tea Farm tract), Edward C. Perroneau, placed a second mortgage against the property with E.H. Frost shortly after the end of the Civil War (South Carolina Historical Society 28/336/3). Like many other Southern plantation owners, it is likely that Perroneau was attempting to raise sufficient capital to once again begin planting his property, Stanyarne Hall. Most planters took this approach since agriculture was their only livelihood, and they were attempting to raise needed cash through agricultural activities.

Also, like many other planters, Perroneau was unable to repay the mortgage to Frost and in 1873 was sued for foreclosure. The complaint revealed that there were additional mortgages on the property, besides that of Frost, and that at least one other individual had already received a judgement against Perroneau. The court ordered the sale of the property in 1873 (South Carolina Historical Society 28/336/3).

The property was sold by J.K. Terry, the sheriff, to Edward B. Fishbane on January 28, 1874 (South Carolina Historical Society 28/336/3) who, in turn, sold the property to T.D. Jervey in February 1882 (Charleston County RMC DB O, p. 627).

Perhaps relating to this sale, a plat was prepared in 1882 showing a number of the tracts in the area (Charleston County RMC, McCrady Plat 832), including what is by this time called Holly Grove, but which represents the old Stanyarne and Laurel Hill plantations (as well as additional tracts also originally held by Stanyarne). Although this plat (Figure 1) shows no structures on

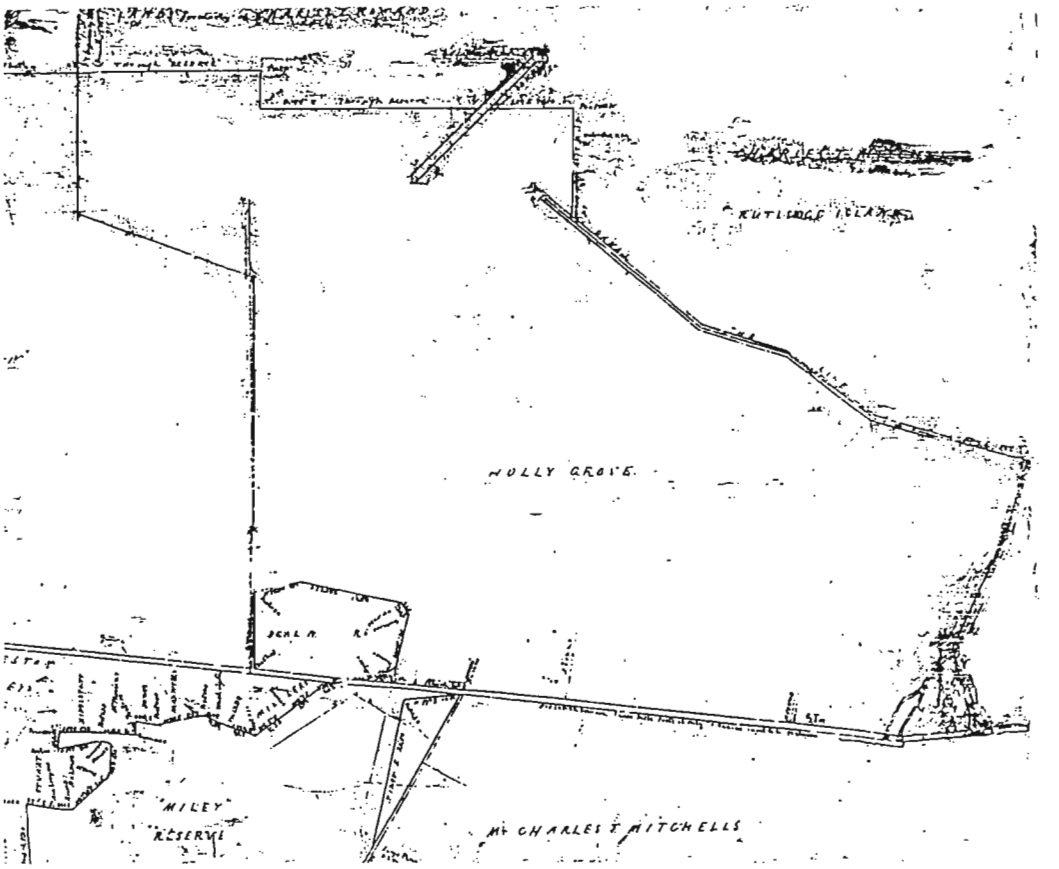


Figure 1. 1882 plat of Stanyarne Hall and Laurel Hill, now called Holly Grove.

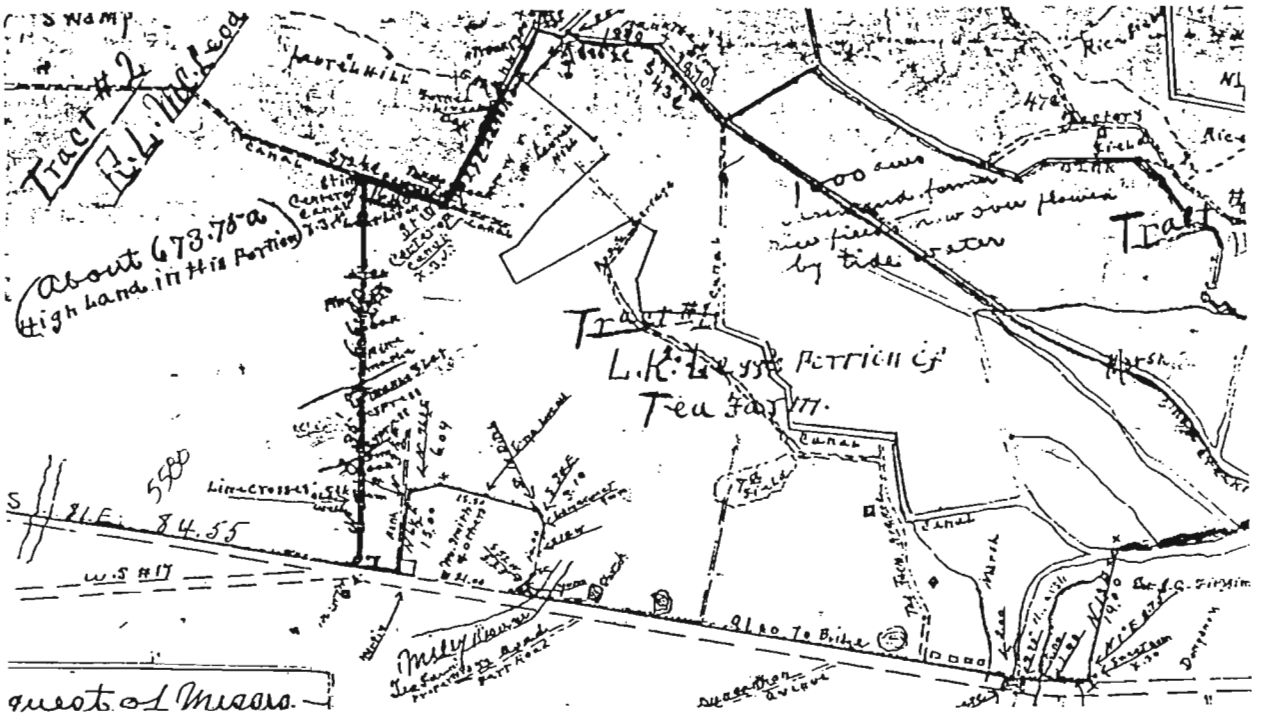


Figure 2. 1934 plat of the Tea Farm area, note "Tea Farm Avenue," field, and structures on the right edge of the plat.

Holly Grove, it does indicate a "church lot" bordering the Jacksonboro Road.

The property remained in the Jervey family until it was sold to the American Tea Growing Company in 1901 (Colleton County RMC DB 21, p. 10).

The American Tea Growing Company was chartered on February 13, 1901, during a period when there was much experimentation in growing tea in the Lowcountry. Although it is possible to establish a rather sketchy history of tea production in South Carolina (discussed below), this particular company operated for about 13 years, leaving very little evidence of its activities.

One author has suggested that the company received its impetus from the Pinehurst Tea Farm in Summerville. One of the officers, Rosewell D. Trimble, of the American Tea Company was apparently stationed at Camp Marion, in Summerville, during the Spanish-American War. During that time he became familiar with tea production and after the war returned to the Summerville area. Trimble enlisted the financial support of fellow veteran Augustus C. Tyler and purchased the old Stanyarne plantation. The first tea plants were apparently planted in 1903, and the first crop was harvested in 1906. A report by the U.S. Department of Agriculture in 1906 briefly mentioned the American Tea Growing Company, noting that the government was cooperating on experiments with the company and although "its plantations have not been completely plucked . . . the indications are distinctly favorable" (True 1906:329).

Locally, the American Tea Growing Company made enough of an impression that the post office and railroad stop at Rantowles were briefly named "Tea" for the company. Unfortunately, this early success was short-lived. In 1907 a petition in the office of the Clerk of Court of Colleton County was filed by the creditors of the company (including a former officer and stockholder, Rosewell D. Trimble), asking that a receiver be appointed to protect their investments. The petition claimed that F.O. Tyler had replaced Trimble as Manager and that Tyler owned a majority of the company's stock, primarily through his father, Augustus C. Tyler, and mother, Cornelia Tyler. The petition went on to state that Tyler had no experience in the business, was incompetent to run the operation, and failed to exercise due diligence in managing the plantation.

In 1914 the American Tea Growing Company sold the property (by this time encompassing 5442.56 acres, including Stanyarne's original 1182 acres). After several years of different owners, the tract was acquired by McLeod & Son for timber harvesting, and a new plat, dated 1934, was produced (Charleston County PB F, p. 58).

The main tract shown on this plat (Figure 2) is "Tea Farm," apparently the nucleus of the earlier American Tea Growing Company operations. By 1934 the only real remaining evidence of this enterprise is "Tea Farm Avenue," a series of six structures on the eastern edge of the tract, and a seven acre field. All of these structures and the "Tea Farm Avenue" are just outside the boundaries of present day Tea Farm Park, although the 7 acre field is within the park, as are some remaining tea plants.

Immediately after the 1937 sale, McLeod & Son drew up a document stipulating how the tract would be divided, providing that Lionel K. Legge would receive 4/14ths of the property, based on his financial contribution to the purchase price (Charleston County RMC DB K-39, p. 711). In 1940 Lionel K. Legge took possession of his share, consisting of the 1119.04 acre Tea Farm tract, shown as Tract 1 on Figure 1).

The 1920 and 1944 Ravenels topographic sheets (Figure 3) reveal little activity on the

parcel. The structures originally constructed by the American Tea Growing Company about 1901 continue to be shown and, interestingly, the area of Hugh Rutledge's plantation in the late eighteenth century is shown as the "Tyler Tea Farm." This may be a dated reference to the American Tea Growing Company (since the major stockholders were Tyler and his family). Alternatively, it may be that Tyler continued his efforts in tea production after the demise of the American Tea Growing Company.

In 1950 Legge sold his tract to Robert L. McLeod, Jr. of Missouri (Charleston County RMC DB Q-51, p. 399). In 1972 McLeod sold the tract to Donald T. Rutledge (Charleston County RMC DB L-100, p. 186), who held the tract until its 1985 sale to the Charleston County Park and Recreation District (Charleston County RMC DB B-147, p. 632).

The History of Tea

Tea has a very long history. It was known in ancient China where it was first used as a medicine. By the fifth century A.D., drinking tea had evolved into a social custom. The China tea plants have narrow leaves and are typically hardy in cold weather. Another type consists of the large-leaved Indian teas, which likely had a separate origin from those plants in China. Today, however, both are recognized as *Camellia sinensis*. In the early 1600s tea was introduced the England, where it was quickly accepted. In fact, the English developed an elaborate "tea ceremony," which served to reinforce class distinctions. This tea ceremony was brought into the North American colonies.

Tea production in South Carolina dates back to the late 1700s and early 1800s when Andre Michaux planted tea on his Ashley River plantation, apparently as ornamentals, rather than as an economic venture. The descendants of Michaux's tea plants were still alive as late as the early 1980s. In the mid-1800s there was an attempt to encourage tea production by the U.S. Patent Office although this effort was even less successful than Michaux's. The work, however, did succeed to some extent because tea plants were distributed to thousands of Southern plantation owners and farmers. These tea plants thrived although few were incorporated into a commercial effort to market tea. The one exception was the 1848 efforts of Junius Smith at Golden Grove Tea Plantation in Greenville, South Carolina. His leaves were the first to enter the commercial market, although it is unclear how profitable the venture was. Regardless, Smith's death in 1852 cut short these efforts.

Curiously, the results of the various experiments were always positive. That is, the tea plants thrived in the South, producing marketable (and sometime even very fine) tea. For example, one grower in Georgia claimed to have raised 441 pounds of tea from a single acre and sold the lot for 50¢ a pound -- about 15 times more than the profit from cotton. Yet each time the single major stumbling block was labor. Even using slave labor, planters found that they could not compete with oriental production.

The newly created U.S. Department of Agriculture took up after the Civil War where the Patent Office had left off only a few years earlier. In 1880 the Commissioner of Agriculture, William G. LeDuc, visited a site in Summerville, South Carolina, recommended as the location of a new government experimental facility for tea production. In 1881 Congress appropriated $10,000 to establish an experimental tea farm, and LeDuc was able to negotiate a 20 year lease with the property owner, William A. Middleton, for $1. The operator of the plantation, John Jackson, began the process of clearing and planting 40 acres. Three years later only 15 acres had been cultivated. LeDuc's successor canceled the project as unprofitable and released Jackson in 1883. The operations at the Summerville tea farm, however, continued until the plantation was closed in

1887.

Alexius M. Forster's efforts at Friendfield Plantation in Georgetown, South Carolina during the late 1870s offer another view of tea experimentation. Searching for a replacement for rice cultivation, Forster spent considerable energy perfecting tea planting, coming remarkably close to success just prior to his death in 1879. His widow, however, had no faith in tea and continued in the vain hope of restoring the economic profitability of rice. Eventually she gave up her struggle and sold the plantation to a northern investor. Forster's tea plants spread so successfully on his plantation that they became a nuisance and were weeded out in the 1930s.

The government's interest in tea production, however, continued and in 1889 the work in Summerville was revived, this time under the leadership of Dr. Charles U. Shepard. Shepard purchased 543 acres of the old Middleton plantation, called Newington, in 1888/1889 and created the Pinehurst Tea Farm. Additional small tracts increased his holdings to about 600 acres, and he also purchased the nursery plants previously established by the government. Shepard created an extensively landscaped holding at Pinehurst, developing a residence, tea factory, drives, establishing ornamental gardens, and planting fruit trees. The tea plantings including an acre called the Rose Tea Garden, the South Fraiser tea field, and the Gant field (which was along the Summerville City Line Canal).

Shepard found that labor continued to be a problem. To solve this problem, he created a free school for African Americans, at which children were taught traditional reading and writing, as well as how to pick tea. Students were required to pick tea, earning from 30¢ to 50¢ a day. One article remarked that offering the school was "an inducement to the better class of negroes to secure work for their children on the tea plantation, and help of a superior grade comes and stays" (True 1906:330).

In 1892 the production of dry tea was just under 100 pounds. In 1899 it increased to 3500 pounds, in 1905 over 8000 pounds was produced, and by 1907 production was up to 12,000 pounds. Pinehurst tea was marketed throughout the eastern seaboard and the American tea received considerable attention. The motto was, "From Bush to Cup, Quality, Purity and Economy."

It seems likely that the success of Shepard sparked the interest of others in the area, including the American Tea Growing Company. But the lessons were hard learned. For tea production to be profitable required cheap, dependable labor; irrigation; and extensive mechanization. These all required large outlays of capital, an investment prior to any return. Consequently, few enterprises succeeded.

With Shepard's death in 1915, the tea plantation was quickly abandoned, in spite of its profit. Shepard's heirs had no interest in tea and found they could make easier money by subdividing the plantation and selling it as lots for the rapidly expanding town of Summerville. As late as 1977, tea plants were still found in Summerville's Tea Farm subdivision. A small portion of Shepard's tea farm found its way to the Thomas J. Lipton Company in the late 1950s. Lipton also purchased 147 acres on Wadmalaw Island where his company continued to experiment with tea production. In 1987 when Lipton closed the Wadmalaw site, called the Charleston Tea Farm, the property was purchased by William Hall and Mack Fleming, founders of the American Classic Tea Company. Today the plantation is successfully producing the only American-grown tea and selling it in 22 states.

Cultivating and Producing Tea

Grown from seed, a tea plant requires about three years to become established. Typically the tea plant will not grow well in hot, humid locations or where there is frost. The plant also requires around 60 to 80 inches of rainfall, evenly spread throughout the year, although tea will not tolerate poorly drained soils. The heavy rainfall tends to leach nutrients from the soil, so that fertilizing is frequently essential. Traditionally tea has been grown in hilly, tropical areas or at lower elevations in the subtropics. Consequently, well irrigated sandy coastal plain soils are well suited for tea production.

Tea leaves are produced in "flushes," and by the third year the flush of young leaves and stem tip or bud are picked. In South Carolina the harvest period lasts from May to October. For the best quality teas, only the terminal bud and the first two leaves of the young shoot are picked. For less quality teas, as many as four leaves may be used. The removal of the terminal bud stimulates new growth, and additional picking is often possible in as few as 10 days (although in South Carolina the harvests typically occur about 18 days apart). After a number of flushes, the bush will be pruned back to a manageable size (usually about 3 or 4 feet tall). After about 10 years the entire plant may be pruned to the ground, allowing sucker shoots to produce new, vigorous growth.

Black tea requires fermentation, during which the caffeine is liberated from the tannins. This process typically involves first reducing the moisture content of the leaves by allowing them to "wither" in a trough. During this process, air is frequently passed over the leaves to prevent them from spoiling. The leaves are next ground and then spread on a cloth to ferment. The fermentation process changes the color of the ground leaf from green to coppery orange. Next, the grated leaves are dried at about 270°F for a short period. This process reduces the moisture of the leaves and is supposed to seal in the tea juices. It is at this point that the tea turns its characteristic black color. Finally, the tea granules are separated from the stems prior to packaging.

In contrast, green tea is made from leaves that are not fermented, but only steamed, rolled, dried, and then packed.

Tea from different producers, different harvests, or different types of plants are frequently "blended" together before final packaging for the consumer. This process ensures a consistent product will be marketed and also allows the producer to cater to different local tastes.

Additional Sources

Hamrick, Tom
1971 Looking at the Tea Leaves One Wonders What the Future Holds. *Sandlapper* July/August: 26-32.

McClain, James W.
1983 The Garden That (Almost) Changed the South. *Garden* July/August:24-27.

True, Rodney H.
1906 Tea Culture in the United States. In *Review of Reviews*, U.S. Department of Agriculture, Washington, D.C.

Economics After the Civil War

Getting Started	Lesson Objectives	Instructional Approach
Time Needed • 1 - 2 hours for tour of Tea Farm • Two 45-55 minute class periods (teacher may choose to expand time spent in class or tour)	*First Session - tour of Tea Farm* A. The student will be introduced to the cultivation of tea. B. The student will be exposed to the types of labor necessary to cultivate tea.	**Exploration** Whole Class (visiting site & discussion)
Lesson Materials Provided by Tea Farm: • Guided or self-guided tour of Tea Farm • Tea Farm Curricula Plan, including lesson plans and activity sheets for teachers to use on site and in classroom.	C. The student will understand how the heritage and history of South Carolina has been affected by the cultivation of tea. D. The student will understand how tea is important in South Carolina's economy today.	**Development** Whole Class (discussion)
	Remaining Class Sessions- conducted by teacher E. The student will explore how different types of crops produced in South Carolina affect (or are affected by) the economy or environment.	**Application** Whole Class (discussion &/or writing project)

"Full Circle" Questions

(Questions which help relate the past to the lives of students today)

1. How do you use tea in your home? What could be used to replace tea if it were no longer available?

2. Would tea be grown in your neighborhood? Why or why not?

Economics After the Civil War

Lesson Procedures

1. The tour of Tea Farm will explain the seasonality and environmental requirements of the tea plants.

2. The tour of Tea Farm will include the various labor aspects of tea production, from sowing and seedlings to maturation and harvesting.

3. The tour will explain the acreage necessary for tea production and the economic advantages of cultivating this crop.

4. Encourage students to discuss how freedom from slavery may have caused South Carolina plantations to change their crops.

5. Encourage students to discuss the importance of tea plantations in South Carolina history.

6. Encourage the students to discuss how tea production in South Carolina today affects the nation's/state's/community's economy.

6. The teacher will assign students to research the availability/importance of certain crops in South Carolina. How may new inventions change what types of crops will be grown in the future?

"Full Circle" Questions (continued)

3. Has anyone in your family ever worked on a farm? If so, what did they do?

4. How do you think South Carolina would change if more tea were grown?

Historic Quotes

On the English Method of Making Tea

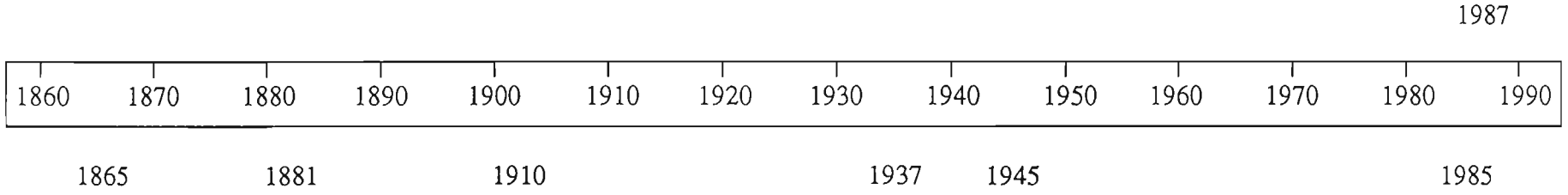
To make the infusion properly, it is essential that the water, when applied to the tea, should be boiling hot, and, that it should be so, some water is always poured into the tea-pot first, to warm it, and thus prevent it from abstracting heat from the water which is poured upon the tea, and lessening its effect. It is for the same reason that the water should be cooled as little as possible, that a small quantity is first poured upon the tea, and more added afterward for the first infusion. It is well known that the first infusion is the best, containing the chief part of the aroma, and that the second infusion, by adding some more water, is less agreeable. . . . Dr. Trusler's method was to make a very strong infusion by pouring boiling water upon the tea, and let it stand twenty minutes, putting into each cup no more than is necessary to fill it about one third full; then each cup was filled with hot water, from an urn or kettle; thus the tea will be always hot and equally strong to the end; and one tea-spoonful will be found enough for three cups for each person; whereas, according to the present mode of making it, a much greater quantity is used (*An Encyclopaedia of Domestic Economy*, 1847).

A Recipe for Tea Cream

Put one ounce of the best tea in a pitcher, pour on it a table-spoon of water, and let it stand an hour to soften the leaves; then put to it a quart of boiling cream, cover it close, and in half an hour strain it; add four teaspoonful of a strong infusion of rennet [the inner membrane of a cow stomach, used for curdling milk] in water, stir it and set it on some hot ashes and cover it; when you find, by cooking a little of it, that it will jelly, pour it into glasses, and garnish with thin bits of preserved fruit (*The Virginia Housewife*, 1824).

TEA FARM TIME LINE

Study the time line. Then decide in which year each of the events took place.
Write each year in the blank space.



1865 1881 1910 1937 1945 1985

_____ 1. The American Tea Growing Company began at Tea Farm.

_____ 2. The American Classic Tea Company began on Wadmalaw Island.

_____ 3. The Civil War ends.

_____ 4. Charleston County Park & Recreation District purchases Tea Farm.

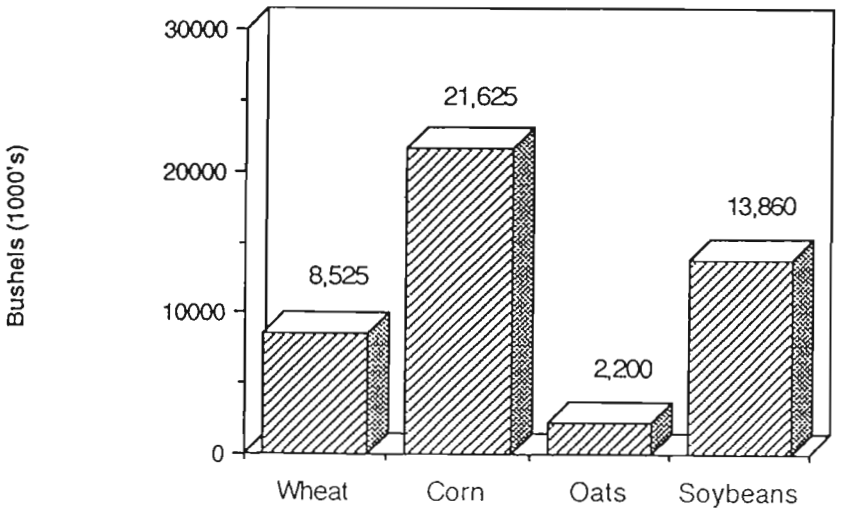
_____ 5. The U.S government begins an experimental tea farm in South Carolina.

_____ 6. The Tea Farm area is sold to a timber harvesting company.

_____ 7. World War II ends.

SOUTH CAROLINA CROP PRODUCTION

Study the graph below. Then fill in the blanks to complete each sentence.



1. The crop with the smallest production is _____.

2. _____ bushels of wheat were grown in South Carolina.

3. More _____ was produced than any other crop.

4. 13,860,000 bushels of _____ were grown.

5. More wheat was grown than _____.

6. More _____ was produced than soybeans.

ANSWER SHEET

Activity Sheet #1

WUNLOREFS = SUNFLOWER

CESMANIDU = MUSCADINE

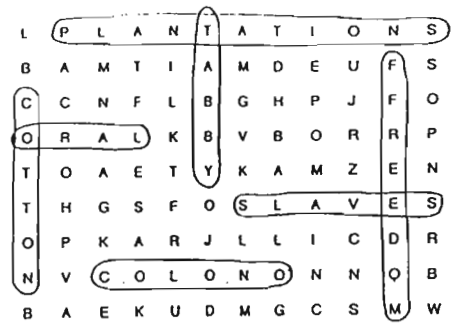
ANUPOY LOHYL = YAUPON HOLLY

KLYBRACERB = BLACKBERRY

HENDIPOMOCU = CHENOPODIUM

Activity Sheet #3

1. plantations
2. cotton
3. slaves
4. colono
5. tabby
6. oral
7. freedom

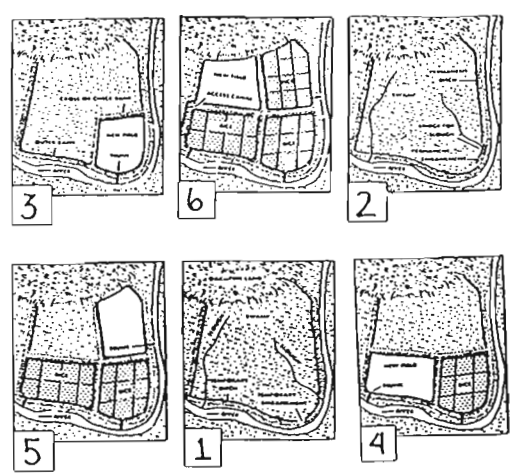


Activity Sheet # 2

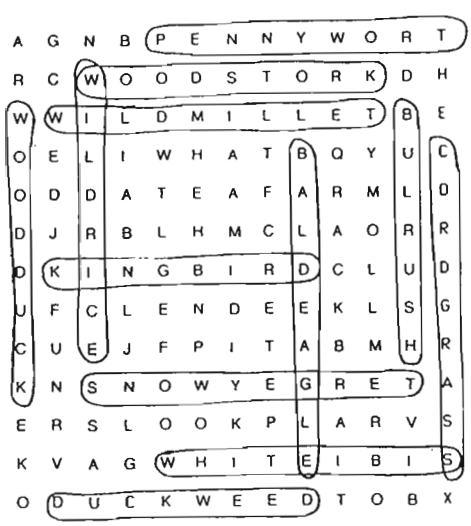
Activity Sheet #4

1. False
2. True
3. False
4. True
5. True
6. False

Activity Sheet #5



Activity Sheet #6



Activity Sheet #7

1. 1901
2. 1987
3. 1865
4. 1985
5. 1881
6. 1937
7. 1945

Activity Sheet #8

1. oats
2. 8,525,000
3. corn
4. soybeans
5. oats
6. corn

Additional On-Line Sources

Caw Caw Interpretative Center (Tea Farm Park today)

Carolina Gold Rice Foundation (everything from research to history to recipes to where you can purchase Carolina Gold)

Tea

Tea Production in South Carolina

More on SC Tea

Charleston Tea Company (on Wadmalaw Island today) Another link that is a little more commercial, but up to date.

Rice, Slavery, etc.

Rice and Slavery

Rice and Slavery in America

Rice and South Carolina

Photo of Georgetown rice mill

Ca. 1925 workers' houses

Rice field photos (1) (2)

Remains of rice barge

SC Rice Mills and Plantations on the National Register (1) (2) (3) (4) (5) (6)

Abandoned Rice Field Ecology

ACE Basin

South Carolina's Wetlands (a pdf document)

Archaeological Investigations

Historical Research

Preservation

Education

Interpretation

Heritage Marketing

Museum Support Programs

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