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"Industries of a Feather"
Part One: Naval Stores, Cotton, & Agriculture

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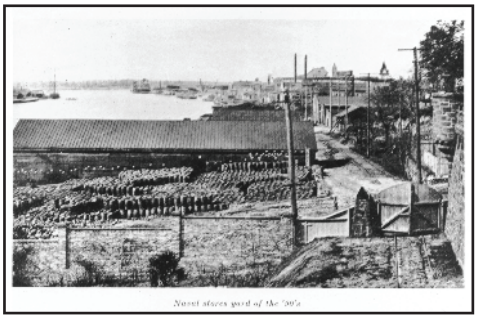
Adjacent to Wilmington, North Carolina, on the west bank of the Cape Fear River, rests a 3,220 acre island which is the home of the Battleship *North Carolina* museum, but was once a significant hub of maritime trade and home to a variety of industries since the 1700s. These industries, generally concentrated on the shore opposite Wilmington as recently as a century ago, have since faded from the landscape, but each remains part of Wilmington's past. The purpose of this article is to narrate the rise and fall of naval stores, cotton compresses, rice fields, shipyards, and the contemporary industries, and to explain their relationship to both Wilmington and Eagles Island. These businesses were selected because they represent the economically significant industries of the region. Naval stores represent the time in North Carolina's history when the state was the largest producer of tar, pitch, and turpentine in the world. The cotton industry on Eagles Island was significant because during the Civil War, the steam presses operated night and day and cotton was the city's chief export. Wilmington's financial situation would have been disastrous if it were not for the presses; cotton was purchased at six cents per pound in the South and was sold for ten times that amount in England, bringing much-needed funds to the blockaded city. The rice fields of Eagles Island represent one of the most successful forms of agriculture in the state and enabled the preservation of the unique Gullah Geechee culture that arose from the isolated plantations on which the rice farmers lived and worked. The shipyards of Eagles Island were significant to the region because the ships produced on the island brought prosperity to merchants and contributed to the Confederate war effort. Now land preservation coalitions, a radio tower, an Army Corps of Engineers base, a power substation, towing businesses, and a tourist destination occupy the landscape, but most of the island remains unused. Through a further understanding of the island's significant historic industries, researchers will be better able to understand the complex nature of the symbiotic relationship between Eagles Island and Wilmington.

Naval Stores

Wilmington was founded with the naval stores industry in the economic forefront. Naval stores are the South's oldest industry and North Carolina had the colonies' most profitable naval stores businesses. North Carolina was well suited for naval stores production because it had "few other staple crops" while other southern states could produce more lucrative cash crops, such as cotton or tobacco. North Carolina achieved naval stores dominance in the 1720s and retained its title as America's most prolific naval stores producer for nearly 200 years.[1]



Naval stores yard at the foot of Nun Street, c. 1890-1900.[3]

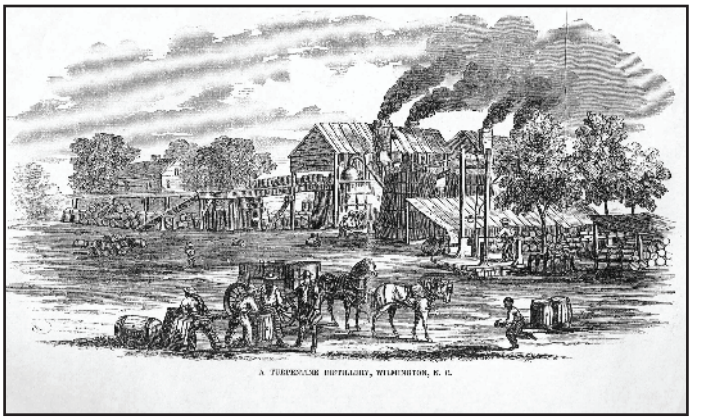
At the time of the founding of Wilmington, naval stores were broadly defined as "all materials used in ship construction and maintenance." Seventy years later, by 1800, the definition was refined to include only "tar, raw turpentine and their derivatives."[2] Tar, made by firing pine in kilns, was applied to the rigging of ships to prolong their lifespan by reducing the rate at which rigging decayed. Pitch, the product of boiling tar, was coated on the hulls of ships to prevent leaking. Turpentine production was a year-round process, characterized by the process of cutting a box into the base of the tree so sap may slowly pour into the collector. Turpentine was initially used as a waterproofing agent, but after 1800 its uses grew to include it as a solvent for the rubber industry, an essential

ingredient in lamp oils, adhesives, pharmaceuticals, disinfectants, and shoe polish. Rosin, the remaining residue after turpentine finished distilling, had few uses before 1800, but like turpentine, became an important ingredient in several industrial products. The new applications for turpentine and rosin contributed greatly to the 19th century naval stores economic boom in the south.[4]

As early as 1704, England created incentives for colonists to produce and sell naval stores because the English had exhausted their native resources after several centuries of intense ship construction and maintenance. The 1704 incentive program was successful in fostering naval stores production in the Americas, but not in the region it was intended to stimulate. The act was aimed at the New England colonies so they would cease wool production, which competed directly with English wool. Ideally, the English wanted to buy New England naval stores so New Englanders could purchase English wool. Instead, naval stores production flourished in the south for two reasons. First, because longleaf pine is the best tree for naval stores production, and it was the dominant pine stretching from Norfolk, VA to the southern parts of Alabama and Mississippi, a 1,200-mile swath of land. Second, slaves became the typical naval stores laborers because of the difficult working conditions and general lack of desire among whites to work in a low wage position.[5] These factors created a strong foundation for the successful southern industry to be built upon.

Early Colonial American naval stores exports were disreputable among English captains due to their low quality. Tar was often cut with twigs and trash, and pitch frequently contained rocks and dirt to increase the weight of the barrels in which it was sold. The low quality naval stores were attributed to three main causes. The first was that abundant resources, coupled with scarce labor, demanded producers receive a quick return on their land. To do this, slaves collected dead trees and branches instead of felling live trees, which produced better naval stores. Collecting dead wood proved to be a much faster method of accruing materials to create naval stores, thus allowing land owners to receive the quick returns they needed. Secondly, dead wood was collected from unclaimed lands so trees owned by the producers would stay alive to be harvested later. Finally, colonial producers did not always know the best techniques of extracting tar and turpentine from pine trees. English colonists were unfamiliar with the trade because the naval stores industry had been dead for decades in England, and African slaves had no knowledge of the process.[6]

Naval stores workers were known for being dirty. Their skin and clothes were covered with dirt, tar, and sap, and the lodging provided for these workers matched their outward appearance. Naval stores housing was meant to be temporary, the buildings were essentially glorified sheds. This flimsy and transient type of housing remained commonplace well into the early-20th century; these huts had neither floors, doors, nor windows. Small-scale producers often had small farms for the slaves and their families, which mainly produced corn and hogs. The typical naval store distillery was a two-story structure with a furnace on the ground level and the still on the second floor. The ideal location for a distillery was near a flowing body of water to cool the condensing tubes involved in the distillation process.[7]



A turpentine distillery in Wilmington, North Carolina.[8]

The typical North Carolina naval stores producer worked a small-scale operation because the region "lacked the capital resources to invest in large slave labor forces and huge timber tracts."[9] This was likely not the case for the Wilmington naval stores businesses because the area possessed the capital and the large plantations that the rest of North Carolina did not have. In fact, Wilmington was literally inundated with unsold naval stores. As early as 1752, only 12 years after the city's incorporation, laws were created to deal with the excessive amounts of naval stores goods within city limits. The first law, created on April 14, 1752, demanded that no naval stores products be left on a wharf for over forty-eight hours. As the industry slowly grew, the town council realized that naval stores fires could easily spread out of control, so they isolated the boiling of naval stores products to the wharves of Wilmington. This law was expanded upon on May 24, 1758, to have naval stores fires completely banned on the flammable docks. It stated, "that any Person or Persons for the future shall presume to heat or boil any Pitch, Tarr [sic], Turpentine, or Rossum [sic] upon any wharf or Street in this Town they will incur the penalty of 40/Proc. for every such offence."[10] Naval stores merchants and producers saw this law as prohibitive to their trade and rallied against it, leading to the compromise that fires on the docks could only be lit during daylight hours.[11] Two years later, on October 3, 1760, another law was passed pertaining to the cluttering of wharves and streets with naval stores products:

> Ordered also that if any Person or Persons Shall Incumber any of the Public Wharfs or Streets with naval stores lumber or anything whatsoever such Person or Persons shall be obliged to remove such Incumbrances with 24 hours under the Penalty of forty schillings.[12]

In addition to the fire hazards, burning pitch created thick, lingering smoke over Wilmington, which was unpopular with the inhabitants.[13] The ordinances against distilling and cluttering naval stores within city limits likely contributed to the need for a ferry to Eagles Island and a causeway across it to provide an alternative location for distilleries and merchants to sell their goods, therefore stimulating the naval stores industry in Wilmington. Small-scale longleaf pine farmers did not have the capacity to distill their own sap, therefore they sold their goods to distillery owners who would extract the tar and turpentine and then sell the finished product. Eagles Island was an ideal location for such activities for several reasons. First, it was far enough away that the smoke created by the process would bother the citizens of Wilmington far less than if the distilleries operated within city limits. Secondly, accidental fires on Eagles Island would be more acceptable to the townsfolk than accidental fires within the city. Also, the wharves on Eagles Island would have been suitable for pine farmers and merchant ships to upload their cargo. Should sea-faring vessels have difficulty docking at Eagles Island, lighters would have been employed to transport the barrels to the awaiting ship. Lighters are small craft used to unload large ships that cannot dock at the wharf for reasons such as the cargo ship having too great a draft or overcrowding at the wharf. Finally, the distillation process was difficult to master, but due to Eagles Island's proximity to Wilmington, it would have attracted knowledgeable distillers with the ability to create a quality product and the most recent technology involved in the process. Interestingly, Eagles Island did not fall under the jurisdiction of Wilmington's naval stores inspectors because the eastern bank of the island was not part of New Hanover County until 1847 when parts of Eagles Island were incorporated into the city limits of Wilmington, making the island entirely part of Brunswick County until the mid-19th century.[14] Due to the alleged inconvenience for the Inspector of Brunswick County to reach Eagles Island from his residence, a law enacted in 1766 enabled a naval stores inspector to have jurisdiction solely on Eagles Island.[15] It is for these reasons that Eagles Island proved to be a successful home to many naval stores businesses.

As the 19th century progressed, a general boom in the naval stores industry characterized the 1830s through 1850s; however, problems existed close to the surface. North Carolina was slow to create standards for naval stores weights and consistency of products, which occurred late in the antebellum period. However, Wilmington established standards sooner than the rest of the state in the year 1847. A concerned group of prominent naval stores merchants realized that creating standard weights and ingredients for their products "in accordance with the customs of other markets" would prove profitable and beneficial for the local businesses, but this standardization occurred late in the life of the industry.[16] Additionally, and much worse to the industry, was the looming diminishment of the longleaf pine. By the 1840s, the pines around Wilmington had vanished and a second generation of longleaf never took root. Instead, oaks grew in their place, characterized by their small stature and flimsy trunks.[17]

Naval stores workers on Eagles Island prior to 1892. [18]

There were four additional factors that hurt the naval stores industry that were beyond the control of naval stores producers. First, the French developed a better method of producing naval stores. Second, the advent of heavy machinery elicited better means of producing turpentine. Third, shifting markets and increased competition led to the eventual decline in profitability. Finally, the factorage system tightened its grasp on the naval stores industry, which increased the roles of intermediaries, and cut into the profits of farmers and distillers. The factorage system is characterized by producers selling their goods in bulk to an intermediary (a factor), who act as wholesalers for those product. Subsequently it is of little surprise that the 1850s saw the beginning of the transition from naval stores to cotton being the chief export of North Carolina.

The election of Abraham Lincoln resulted in instability in southern states, which contributed to a sharp drop of naval stores prices. Once war broke out, the already low prices sunk even further. An Englishman traveling in the south noted that thousands of unclaimed and unwanted barrels of naval stores were

piling up across wharves and piers in many port cities. Production and shipment were halted for several years because the Confederate Army seized copper stills and the railroads that previously transported naval stores were either destroyed by the north or in poor condition from constant use with no maintenance.[19]

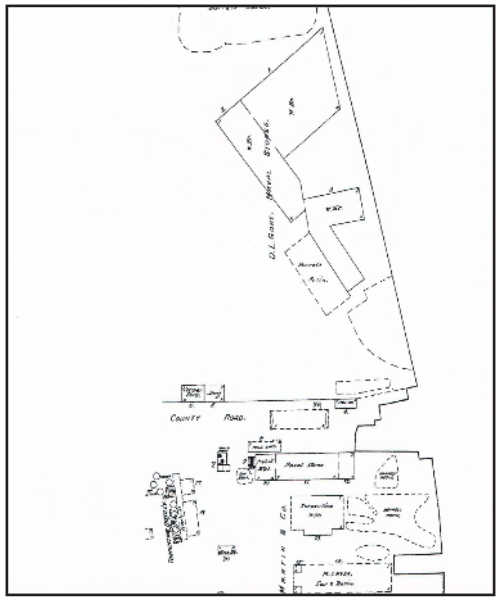
Interestingly, the decade following the Civil War is characterized as a revival for southern naval stores, but in regions previously alien to the industry. Pine was shipped to Wilmington from South Carolina, Georgia, and the northern part of Florida on new railroad tracks. The demand for tar, rosin and turpentine in the north caused naval stores prices to climb to record highs. The deforestation of longleaf pine was still a large problem in North Carolina but the reconstruction of railroads served as a respirator for North Carolina naval stores producers, keeping the industry alive in Wilmington past its days of high demand.[20]

As the latter half of the 19th century progressed, the factorage system became a permanent fixture of naval stores culture. Producers and agents realized their symbiotic relationship and attempted to reach terms of business that would prove mutually beneficial, but this did not always happen. In the years immediately following the Civil War, the naval stores market was stagnant, due in large part to lack of supply. Naval stores factors required advances for their wares, which buyers refused to pay.[21] Turpentine producers met in Florence, South Carolina in 1874 to repair their relationship with their factors so a united business plan could be created to mitigate the effects of the recent depression. The meeting identified the problems of the industry; that the world's supply of turpentine was priced too high, and the cost of marketing through factors and transporting goods via train or ship was too great.[22]

At the end of the 19th century, Wilmington's dominance of the naval stores industry ended, surpassed by Savannah in 1897 because of the city's direct access to long-leaf pine. In 1893, only 55,870 acres of longleaf pine remained in North Carolina, less than 10% of what it was prior to the turpentine boom of the 1840s. Another trend among large-scale naval stores producers of this period was to integrate their businesses vertically, to purchase cooperage companies to create large quantities of barrels at low cost. Additional threats to small-scale naval stores producers came from Michigan, where in 1907 a chemist named Homer T. Yaryan created an elaborate system to collect tar and rosin from pine stumps. This opposed the traditional method of extracting gum from live pines. Yaryan's method allowed the naval stores industry to expand into areas where it was previously unfeasible for them to prosper.[23]

The early 20th century provides ample evidence of a declining naval stores trade. Competition from new markets and high supply of product coupled with low demand were key factors in the demise of Wilmington's naval stores industry. Indicative of this trend, in 1908, the U.S. Forest Service announced that for the first time, rosin replaced turpentine as the most valued naval stores commodity. Rosin was an ingredient in soaps and plastic while turpentine was in less demand due to the slow demise of wooden ship manufacturing.[24] Fortunately for Wilmington and Eagles Island, the long transition out of the naval stores industry created a vacuum that other entrepreneurs filled, and merchants associated with the naval stores industry on Eagles Island often branched into other commercial endeavors.

The postbellum naval stores businesses on Eagles Island were more than tar and turpentine merchants; these business owners were wholesalers of a wide variety of goods. An ad for D.L. Gore, one such merchant, expressed his notion of wholesale in broad but succinct terms: "We want to buy what you sell, and sell what you buy."[25] Other self-proclaimed "commission merchants" were more specific in their ads. Worth & Worth, active on Eagles Island as early as 1878, advertised the following goods for sale: flour, molasses, syrup, coffee, sugar, glue, hoop iron, hay, tobacco, soap, lye, candy, cheese, spirit barrels, lard, nails, and cotton gins.[26] The Worth's were respected commission merchants in Wilmington's community, earning esteem for their wholesale business prowess and their success as agents for the Cape Fear Steamboat Company.[27] Matt J. Heyer, a wholesale merchant active on Eagles Island as early as 1887 (and perhaps a decade earlier) sold goods ranging from groceries, provisions, planting and distilling supplies, cotton, naval stores, salt, molasses, to hay.[28] Similarly, Martin & Hallett, commission merchants with a warehouse on Eagles Island ranging roughly from 1865 to 1873, advertised merchandise such as lard, tallow, and oil in addition to their stock of naval stores.[29] Despite the successes of these merchants, wholesale businesses faded from Eagles Island during the first quarter of the 20th century, coinciding with the death of the naval stores industry in the south.



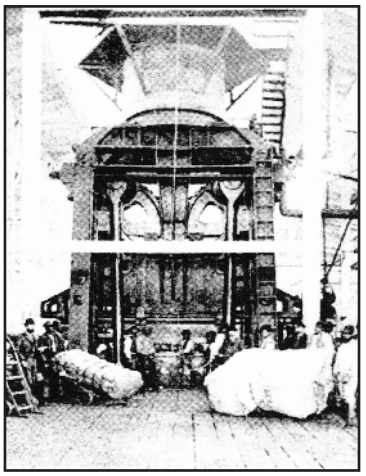
Map of businesses located on Northeast corner of Eagles Island, 1889.[30]

Cotton

Despite the dominance of the naval stores industry in 18th century, North Carolina farmers never ceased toying with the idea of growing cotton. The cotton experiment began in the 1820s, where oddly, mill construction coincided with depressions. In the late 1820s and early 1830s, when cotton prices fell below 10 cents per pound, twenty cotton mills were erected. The trend continued during the Panic of 1837 when cotton prices fell again. The industry had grown to a large enough size to warrant the first cotton manufacturers' convention in 1850. By 1860, there were 39 operational mills in North Carolina that employed 1,764 workers operating 761 looms that produced 41,384 spindles of cotton. The number of functional mills dropped to 33 by 1870 due to the destruction caused by the Civil War, but rebounded to 49 by 1880.[31] As the 19th century progressed, the New South initiative fostered the expansion of textile production. Mill communities were created so families "would remain under the paternal and watchful eye of the owner."[32] The 1890s were a boom period for the cotton industry in North Carolina, but the presses on Eagles Island closed sometime between 1894 and 1910, thus putting an end to the history of cotton as it pertains to the island.[33]

The 1850s are characterized as the beginning of the rise of cotton exports from Wilmington. Cotton's significance to the local economy was demonstrated during the Civil War when naval stores exports ceased while the profitability of cotton exports soared. Merchants in Wilmington could purchase cotton at six cents a pound and sell it in England for ten times that, only if the blockade runner successfully snuck past the awaiting Union ships. The process began at Eagles Island, across from Market Street where the presses were located. The plants operated day and night to quickly pack the profitable commodity aboard every available nook on the blockade runner. Once full, the runner would sail downriver and exit the Cape Fear through the least-guarded inlet at that moment.[34]

The cotton industry on Eagles Island, like the naval stores industry, switched from production to storage shortly after the Civil War. Currently, no known records mention cotton production on the island after the war, and it is likely that the presses were in poor condition from constant use and dearth of materials for repair. The year 1893 serves as the bookend for cotton production because, according to the Sanborn Fire Insurance map of that year, the Champion Compress & Warehouse Company owned buildings on the island that only served as storage for guano, naval stores, or glue.[36] The company's buildings likely served as storage well before 1893, but the Sanborn map provides the first mention that the buildings were definitively used only as warehouses and listed the goods stored in them. This is further evidence of the trend that warehouses once devoted to one industry, in this case cotton, diversified to store products from other industries.



Steam compress at Champion Cotton Compress Warehouse Company. [35]

Agriculture

Historically, the predominant crop produced within the vicinity of Wilmington has been rice.[37] The laborers most associated with the Lower Cape Fear region's rice culture are the Gullah Geechee people. The word "Gullah" refers to slaves inhabiting coastal South Carolina, with their presence in Wilmington being the northern-most point of habitation, while "Geechee" refers to plantation slaves found in Georgia and Florida. There are two types of Geechee culture, freshwater Geechee, referring to mainlanders, and saltwater Geechee, slaves living on island plantations. In informal speech, Geechee may also be used as a blanket statement referring to Low County inhabitants.[38]

A key feature of Gullah Geechee culture is isolation from mainland societies, allowing the slaves to create their own language and religion, resulting from an amalgamation of English and various West African influences. Prior to their arrival in America, the Gullah Geechee labored in wet, humid, semi-tropical environments in West Africa, similar to places like Eagles Island in the Americas. The Gullah Geechee arrived with resistances to disease-carrying mosquitoes that infested the swamp lands of Eagles Island, making them better suited to work rice plantations than the white landowners. In the spring and summer months during the height of mosquito season, the landowners would abdicate their rice plantations in favor of Wilmington or other nearby cities, leaving the Gullah Geechee slaves to work the fields in isolation.[39]

Rice field workers at Orton Plantation.[40]

The Lower Cape Fear was an excellent location for rice plantations because Gullah Geechee slaves were able to build networks of canals to harness tidal waters. Rice production figures vary greatly, but according to *Wilmington Morning Star*,[41] the Lower Cape Fear region produced 200,000 bushels of rice in 1842, and 500,000 bushels in 1857, while another source claims that 20 planters working 28 plantations produced 9,000,000 pounds of rice in 1859.[42] After the Civil War, rice production waned and never reached the heights achieved during the antebellum years for three reasons. There was insufficient labor (likely caused by the emancipation of slaves), damage caused to the fields during the Civil War, and cotton was more profitable. In 1871, there were at most two functional rice plantations capable of producing a total of 10,000 bushels of rice per year.[43] According to James Sprunt of the Navassa Guano Company, only three rice plantations operated in Wilmington by 1884, further demonstrating the decline of rice plantations after the Civil War.[44]

Rice fields at Kendal Plantation, outside Wilmington, 1890s.[45]

Three plantations existed on Eagles Island during the second half of the 19th century: Bleak House, Osawatomie, and Hallett.[46] However, little is known of these plantations. Bleak House was owned by H.U. Butters until October 1902 when it and Osawatomie were leased by the Cape Fear Rice Company. Both plantations employed convict labor to harvest the rice, and according to the foreman, Bleak House was able to produce 40-50 bushels per acre. Hallett, the oldest of the three, was functional for two decades following the Civil War until B.F. Hallett placed it for rent in 1884.[47]

Plantations on Eagles Island would often sprawl across the Cape Fear or Brunswick Rivers to include tracts of land surrounding the island. Daniel L. Russell was one such landowner. Russell, a former Governor of North Carolina, purchased Belleville Plantation from the Waddell family in the 1890s. The majority of the plantation was on the west side of the Brunswick River, but the land included sizeable tracts on Eagles Island as well. In 1897, a group of black farmers leasing Russell's land on Eagles Island reported a worm infestation that crippled rice production that year.[48] Similarly, sometime during the last quarter of the 19th century, the Navassa Guano Company purchased 400 acres of land for the purpose of rice culture, much of it on the north-west corner of Eagles Island.[49] Navassa purchased the land from John Taylor, W.M. Wright, and George Rountree, with Taylor and Wright being prominent landowners on Eagles Island.

Rice farmers, facing employment, pest, and market problems, faded from the Lower Cape Fear region by the early 20th century. The vacant fields of Eagles Island still grow rice, reminding locals of the once-important agricultural product that was known for its esteemed quality as far away as China. Accounts of other forms of agriculture on Eagles Island are scarce, but Eagles Island was home to a dairy farm in the 1870s and a federally sponsored pig farm relief project in 1932. The land used for the pig farm was donated by Mr. Woodward, a citizen of Richmond, on the conditions that no trees were to be cut and "the level of the land be not changed."[51] The project recruited a dozen men to build a fence for the pigs and a shack for volunteers to sleep in to keep constant watch over the herd. Farming operations went smoothly until the summer of 1934 when dredging operations in the Cape Fear, presumably by the Army Corps of Engineers, began dumping fill within the borders of the fence. This caused two problems; the fill created mounds that pigs were able to use to escape from the pasture, and the fill broke Mr. Woodward's request that the level of the land remain unchanged. These problems compounded in the fall of 1934 when several volunteers quit in order to find better work, resulting in the relocation of the pig farm from Eagles Island to a private residence a mile from Wilmington.[52] Agriculture on Eagles Island probably ended after the relocation of the pig farm.

Old floodgates, such as this one, still exist along the Cape Fear River, marking the site of the once thriving rice plantations in the area.[50]

"Industries of a Feather" will continue with Part II: Shipbuilding and Modern Industries of Eagles Island, in the January Bulletin.

Sources for this portion of the article follow on page seven.

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50. Rice field floodgate at Orton, photographic print, HSLCF Archives.
51. Jane Dalziel Wood, "Local Relief Project," Lower Cape Fear Historical Society XLV, no. 4 (2001): 3.
52. "The Champion Cow," *The Wilmington Star*, January 6, 1872: 1; "Lost from the West Side of the River," *The Wilmington Star*, April 19, 1936: 5A; "The Rice Industry," *The Wilmington Morning Star*, September 10, 1911: 4; "An Intriguing Idea for Convention Center," *Wilmington Morning Star*, March 18, 2000: 3D; Wood, "Local Relief Project," 1-6.

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