African origins of rice
cultivation in the Black Atlantic

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Abstract: The African diaspora was one of plants as well as people. Rice (*Oryza glaberrima*) led the diffusion of African plants and agricultural systems that shaped environment, food preferences, economies and cultural identity during the era of plantation slavery. By the eighteenth century the cereal was widely established from South Carolina to Brazil in the Americas. Grown by slaves as well as maroons, on plantations for subsistence as well as for export, rice cultivation accompanied African settlement of the Americas. This article reviews the indigenous knowledge systems that informed the cultivation of rice along the African as well as American Atlantic. With identical methods and practices, slaves from West Africa adapted a favored dietary staple to new conditions in the Americas, thereby ensuring the cereal’s enduring significance in Diaspora cuisines. In illuminating the African origins of Carolina rice beginnings, this paper aims to recover a significant narrative of the Atlantic slave trade.

Keywords: African rice, slavery, Black Atlantic, African diaspora, knowledge systems.

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INTRODUCTION

The African-American spiritual, “Wade in the Water,” recalls the passage to freedom that the parting of the Red Sea gave Moses and the enslaved Israelites. It also provides a powerful metaphor for examining rice cultivation and its origins in the Americas. Unlike the spiritual, the children of Africa were led through troubled waters of Atlantic slavery into bondage. Enslaved West Africans brought an indigenous knowledge system that would establish rice as a subsistence and plantation crop over a broad region from South Carolina to tropical South America. Rice is the only cereal that demands copious amounts of water. Its caretakers wade through fields of water for its cultivation. Water is additionally essential for preparing the cereal for consumption. Rice arrived in the Americas in the holds of slave ships, crossing over the ocean grave of the Middle Passage as provisions for its survivors. The cultivation, processing, and preparation of rice represent a significant form of knowledge established by the enslaved in the Americas. The importance of rice cuisine to the African diaspora serves even to this day as recipes of memory and cultural identity throughout the Black Atlantic.

The African diaspora was one of plants as well as people. Rice led the diffusion of African plants and agricultural systems that shaped environment, food preferences, economies, resistance, and cultural identity over the era of plantation slavery. During the eighteenth century, rice produced by enslaved labor made colonial South Carolina the wealthiest plantation economy in North America. The foundation for this economic prominence rested with West Africans who were skilled in growing the crop in diverse agroenvironments. In illuminating the African origins of Carolina rice beginnings within the first decades of the colony’s settlement in 1670, this paper brings a political-ecological analysis to rice history in the Americas. It links regional landscape transformation to indigenous knowledge systems, power relations, struggles over the work process, resistance, and negotiation. While Carolina planters appropriated the knowledge of rice growing and processing of those familiar with its cultivation, the expertise of the enslaved enabled them to negotiate a substantially different labor process on rice plantations than was typical generally of plantation slavery. The emergence of the task labor system in colonial South Carolina provides indirect supporting evidence for African agency in establishing rice in the western Atlantic region.
OF RICE AND SLAVES

Most Americans are unaware that the most lucrative plantation system in North America was not based on the crops we typically associate with slavery (cotton and sugar) but rather on rice, for which there was an explosive demand in eighteenth-century Europe. The cereal was used for brewing beer, making paper, and increasingly favored among the middle class in Catholic Europe to accompany fish on meatless Fridays and during Lent.1 Slaves already familiar with rice cultivation in West Africa accompanied the first planters arriving in South Carolina in 1670. Rice cultivation was well underway in the colony by the 1690s, with the cereal’s transition to a plantation crop completed by the early eighteenth century.

It was the rice plantation system that created the princely wealth that enabled antebellum South Carolina to spearhead the Confederacy’s secession from the Union. Prior to the Civil War, rice was grown within forty miles of the Atlantic Coast along the floodplains of 16 tidal rivers, from the North Carolina-South Carolina border to the St. Mary’s River, which demarcated Florida from Georgia.2 On the eve of the Civil War nearly 100,000 slaves were cultivating some 70,000 acres of tidal floodplain swamps, on about 500 rice plantations.3

Until the 1970s the historiography of the rice economy in the U.S. routinely attributed the origins of the cereal to the agency of planters. Accounts of Carolina rice history praised the early planters for discovering how to grow a tropical crop not cultivated in their countries and for developing an ingenious cultivation system so eminently suited to the Carolina swamps.4 This view came under serious scrutiny in 1974, with publication of Black Majority by historian Peter Wood. Wood argued that Carolina’s planters, who were of English and

2 Clifton, op. cit., p. 266-83.
French Huguenot origin, had no previous experience growing rice. They were unlikely to have independently developed the sophisticated techniques involved with cultivating a cereal in standing water. At the end of the seventeenth century when South Carolina was made a colony, detailed knowledge of Asian rice systems was not available. The only settlers in the colony experienced in rice farming were the enslaved who originated in the rice cultivation area of West Africa’s Upper Guinea Coast. It was among Carolina’s slaves, Wood argued, where rice origins lay for they alone possessed the requisite knowledge, experience and skills with the cereal’s cultivation. In developing an original thesis, Wood confronted a sparse historical record for the early colonial period in general and rice beginnings specifically. While he could document references to slaves growing rice as a preferred food staple in their subsistence gardens during the early colonial period, the written record did not attribute slaves with a tutorial role in rice establishment. But then slavery as a system did not acknowledge the contributions of its victims.

While Wood’s (1974) research resulted in a revised view of the African role in shaping wetland landscapes planted to rice, questions still remained over whether planters recruited slaves from West Africa’s rice region to help them develop a crop whose potential planters independently recognized or whether African-born slaves initiated rice cultivation in South Carolina through their efforts to grow a dietary staple favored for subsistence. A political-ecological approach focused on agroenvironments and power relations provides a way to engage anew this vexing question. It involves reconsidering the way that historians have viewed rice. Instead of regarding the cereal as solely a commodity consumed and traded, rice is examined as an indigenous knowledge system whose expression in different environments across geographic space was mediated by power relations. Shifting the analytical framework on rice from commodity to knowledge system illuminates the land use practices informing its cultivation during the era of transatlantic slavery while facilitating recovery of the crop’s cultural origins in South Carolina.

The paper’s discussion rests upon three forms of investigation: fieldwork on traditional West African rice systems; a review of historical and archival materials pertaining to rice history; and an interdisciplinary examination of research in botany, archaeology, and historical linguistics on the antiquity of African rice. Fieldwork on the soil and water management principles underlying
African rice systems reveals the social and ecological considerations that have long shaped rice culture in the region. Archival and historical materials establish the presence of rice culture prior to European maritime voyages as well as the agroenvironments planted in South Carolina’s early colonial period. A comparison of rice systems of the African and American Atlantic reveals the significance of power relations for shaping the cereal’s diffusion, the pattern of rice culture in the Carolina colony, and the plantation labor process.

**Historical accounts of rice systems in the African Atlantic**

While rice is grown in some 20 different micro-environments in West Africa, a focus on the type of water regime that influences cultivation reveals three broad rice agroenvironments: rainfed, inland swamp, and tidal river floodplain. The rainfed system refers to rice cultivated strictly with rainfall, generally in areas where precipitation exceeds 1000 mm per annum. Rice seed is planted directly in the ground. Cattle grazing forms an important rotational sequence in rainfed rice farming; once the crop is harvested, cattle graze the stubble, their manure fertilizing the soil. The inland swamp system refers to rice cultivation in areas that receive supplemental water, either from planting rice in lowland swamps or in environments that benefit from subterranean reserves such as high water tables or underground streams. Plots may be directly seeded or transplanted. The third system, floodplain rice, receives water from tidal flow while the annual deposition of alluvium increases productivity. Along freshwater rivers, the floodplain is directly seeded; however, estuarine floodplains near the coast may be transplanted if salinity is a problem. In many areas of West Africa these three rice systems occur along a landscape gradient which accesses different regimes of water availability. Planting rice in such a manner reduces subsistence risk while spreading out labor bottlenecks that would result if only one system of production prevailed.

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5 This involved dissertation research over a fifteen-month period from 1983-1984 and annual or semi-annual research trips of three to four weeks from 1987-1996.

Historical accounts affirm the antiquity of these systems in West Africa while revealing the longstanding social and ecological aspects of African rice cultivation. By 1460 the Portuguese had completed reconnaissance of the Upper Guinea Coast, the densely populated region from Senegal to Liberia that would serve as a major focus for the Atlantic slave trade. Over the next centuries European mariners would call this region the Grain or Rice Coast after its specialized production of cereals, such as millet, sorghum, and rice. Following the lead of the Portuguese, other European nations also depended upon African surplus grain production to restock provisions. For ships voyaging along the West African coast, passage south beyond the Senegal River brought them to a region abundant in cereals. East of Liberia, grain cultivation gradually gave way to root crops like yams. Low in protein and perishable on long voyages, these crops proved far less significant as food staples on slave ships than cereals. While reference to the Upper Guinea Coast conjures up images of the Atlantic slave trade, the term “Grain or Rice Coast” does not. Yet West African farming systems delivered cereal surpluses that nurtured the dense populations from Senegal to Liberia that Europeans subsequently enslaved. These surpluses, in turn, routinely provisioned the slave ships across the Atlantic Ocean to the Americas.

Portuguese caravels voyaging south of the Senegal River initiated commentaries on rice that also drew the attention of subsequent European mariners. In 1446, decades before ships would reach India, Stevam Alfonso reached the mouth of a large river – possibly the Gambia – where he encountered the cultivation of tidal rice in lowland swamps: “They met with a river which was of good width, and into it they entered with their caravels (...) they found much of the land sown, and many fields sown with rice.” Alvise da Cadamosto, who reached the Gambia River in 1455 and 1456, noted the cereal’s importance in the regional diet. Portuguese commentaries over the remainder of the fifteenth century mention rice purchases and the

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cereal’s subsequent cultivation with the settlement of the Cape Verde Islands, some 500 miles off the coast of Senegal.  

The Cape Verdes emerged a crucial trading entrepôt for the transatlantic expansion of Portuguese commerce. Outbound ships on Atlantic voyages headed there in the fall and winter with the prevailing northeast winds and then followed the southward flow of the Canary Current before continuing on to Brazil, West Africa, or India. By the early 1500s rice cultivation was underway on Santiago, the island of the archipelago chain most favorable for agriculture, as were other African plant domesticates such as sorghum, millet, and yams. African agricultural staples provided subsistence to the enslaved who grew them as well as surpluses purchased by Portuguese ships. Rice appeared on the cargo lists of ships bound for Portuguese America in 1514 while one record from 1530 notes the deliberate export of rice seed from Santiago to Brazil. References to rice purchases increase over the final decades of the sixteenth century with the arrival of ships from other European nations to the Upper Guinea Coast and the increasing momentum of transatlantic slavery.

Because of their proximity to navigation routes, the first African rice systems mentioned in Portuguese accounts were the tidal ones located along the river floodplains of the Upper Guinea Coast. One tidal system in parti-

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12 BROOKS, o. cit., p. 149.


cicular, practiced within reach of marine tides along coastal estuaries in Gambia, Guinea-Bissau, and Guinea, received repeated attention. It became known as mangrove rice, after the vegetation that was cleared to make the agricultural perimeter. This was the most productive of all African rice systems – its only drawback the potential intrusion of marine water, which would deposit an undesirable layer of salt on the cultivated field. In order to limit that possibility mangrove rice farmers devised an elaborate system of water management. They enclosed the mangrove swamp with embankments to impede the overflow of marine tides. The construction of canals, sluices, and dikes permitted water management while rainfall was used to desalinate the soil. The sophisticated transformation wrought upon the landscape elicited considerable European commentary, even when cycles of poor rainfall resulted in soil too saline for cultivation and temporary abandonment of mangrove rice paddies.\footnote{For example, when a prolonged cycle of drought suspended mangrove rice cultivation north of the Gambia River in the fifteenth century, land use shifted to collecting the accumulated salt deposits. See comments by Portuguese captain Diogo Gomes (c. 1456) in Th. Monod, R. Mauny, and G. Duval. De la première découverte de la Guinée. Récit par Diogo Gomes (Fin XV siècle). Bissau: Centro de Estudos da Guiné Portuguesa, 1959, p. 42, 66. On the arid climatic cycle that prevailed in the region over the period c. 1100 A.D. to c. 1500 A.D., see BROOKS, op. cit., p. 7.}

Precipitation cycles also influenced whether the mangrove rice fields would be directly seeded as customary or transplanted. In years when the onset of the rainy season was delayed, seedlings were established first in inland swamps to begin their growth cycle prior to subsequent relocation in the mangrove perimeter with the seasonal return of the rains. In 1594, more than a century before a similar system would shape the rice plantation economy of South Carolina, the Luso-African trader, André Alvares de Almada, noted that mangrove rice farmers “were growing their crops on the riverain deposits, and by a system of dikes had harnessed the tides to their own advantage.”\footnote{Quoted from RODNEY, op. cit., p. 20-21.} De Almada’s description and the commentaries of other European observers leaves no doubt about West African skills in growing irrigated rice. They had developed and were practicing a wet-rice culture as fully evolved as any found in Asia during the same period.

As the Atlantic commerce in human beings deepened, mariner accounts reveal European awareness of the ethnic groups that formed the mangrove rice
societies of the Upper Guinea Coast. The Baga system was sketched and described for posterity by Samuel Gamble, who slaved off the coast of Guinea Conakry around 1793.

The Bagos are very expert in Cultivating rice and in quite a Different manner to any of the Nations on the Windward Coast [Sierra Leone]. The country they inhabit is chiefly loam and swampy. The rice they first sew [sic] on their dunghills and rising spots about their towns; when 8 or 10 Inches high [they] transplant it into Lugars [places/fields] made for that purpose which are flat low swamps, at one side... they have a reservoir that they can let in what water they please, [on the] other side (...) is a drain out so they can let off what they please.  

Gamble’s comparison of mangrove rice with other types planted in Sierra Leone also reveals broader European awareness that the rice they sought for purchase was grown in diverse environments, often along a landscape gradient. This was already evident at a much earlier period in the comments of Amsterdam geographer, Olfert Dapper. Relying upon information supplied by Dutch merchants operating along the Windward Coast in the region between Sierra Leone and Liberia, circa 1640 Dapper provided a clear exposition of all three African rice systems. His account drew attention to the pattern of planting rice along a landscape gradient where freshwater tidal production transitioned into rice cultivation in inland swamps and rainfed uplands:

Those who are hard-working can cultivate three rice-fields in one summer; they sow the first rice on low ground, the second a little higher and the third (...) on the high ground, each a month after the previous one, in order not to have all the rice ripe at the same time; this would bring them into difficulty with regard to cutting the rice, since it is cut ear by ear or stalk by stalk – a very wearisome task. This is the commonest practice throughout the country (...) The first or early rice, sown in low and damp areas (...) the second, sown on somewhat higher ground (...) the third, sown on the high ground (...).

Dapper’s remarks in the seventeenth century reveal a comprehensive understanding of the major agroenvironments planted to rice in West Africa. Early European commentaries on rice, made from shipboard or brief sojourns on the mainland, typically described just the lowland portion of this rice gradient, the section within easy sight of mariners such as the tidal floodplain or mangrove systems. But as Europeans set up forts and entrepôts along the Upper Guinea Coast during the seventeenth century, they came into contact with other production systems that delivered rice surpluses for sale.

Additional features of West African rice culture that drew attention included the agropastoral land-use system and the crop’s social organization of production. Francis Moore, who worked along the Gambia River during the 1730s as a factor for an English trading company, remarked upon the seasonal shift in land use between farmers and pastoralists on the river’s floodplains, noting that the rice land in the dry season shifted to cattle pasture. After harvest cattle grazed the rice stubble, their manure enhancing soil fertility with the field again reverting to rice cultivation during the rainy season.

From an early period European accounts mention the gendered aspects of traditional West African rice culture, especially women’s role in the crop’s cultivation and processing. While discussing food purchases by Dutch traders at Cape Mount near the Liberian border with Sierra Leone in 1624, Samuel Brun noted “for the rice they wanted only glass corals for their wives, because rice is the ware of women.” Within the same decade along the Gambia River, Richard Jobson provided a detailed description of the female role in rice milling: “I am sure there is no woman can be under more servitude, with such great staves wee call Coole-Staves [pestles], beate and cleanse both Rice, all manner of other graine they eate, which is only womens worke, and very painfull.” Writing about Sierra Leone in 1680, Jean Barbot observed: “The land abounds in millet or white maize [sorghum] and in rice which they have as their main

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19 Moore, op. cit., p. 37.
20 The importance of cattle in traditional West African land use rotation, however, did not extend to the use of draft animal traction in rice fields.
21 Quoted in Brooks, op. cit., p. 318.
22 Jobson, op. cit., p.68
food. The women pound the rice in slightly hollowed tree-trunks…”23 A half century later, Moore observed that rice was solely a woman’s crop: “For every Town almost having 2 common Fields of cleared Ground, one for their Corn [millet and sorghum], and the other for the Rice…The Men work the Corn Ground and Women and Girls the Rice Ground.”24 Mangrove rice cultivation, however, often involved a gender division of labor, with male work concentrated in land clearance and females responsible for hoeing, weeding, and transplanting the crop.25

These accounts reveal that rice cultivation was pervasive along the Upper Guinea Coast when the Portuguese arrived in the mid-fifteenth century. The Portuguese did not introduce rice cultivation there from their voyages to Asia, as later historians would uncritically claim.26 The three principal forms of rice cultivation in West Africa – rainfed, inland swamps, and tidal – long antedated their arrival.

ANTIQUITY OF AFRICAN RICE DEVELOPMENT

It was along the inland delta of the middle Niger River in Mali that speakers of Mande languages made a significant contribution to African prehistory by domesticaing African rice (Oryza glaberrima).27 Only in the twentieth century was this hypothesis developed and subsequently, proved. Early Portuguese accounts showing that rice cultivation was already established along the West African coast upon their arrival in the mid-fifteenth century had faded from memory over the four centuries of Atlantic slavery. At the onset of European colonialism from the end of the nineteenth century, scholars

24 MOORE, op. cit., p. 127.
25 LITTLEFIELD, op. cit.; GOLBERYS, M.X. Travels in Africa, performed during the years 1785, 1786 and 1787, in the Western countries of this continent. Translated by William Mudford. London: R. Bent, and J. Mudie, 180, 2v.
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routinely attributed the presence of rice in West Africa to introduction from Asia by the Portuguese. These views were reassessed when French botanists, working in the western Sahel where *glaberrima* originated, observed unusual characteristics of the cereal that suggested it was a separate species. Reexamination of botanical collections taken from the Upper Guinea Coast during the nineteenth century showed that those rice specimens also shared the red color and specific features. Broader scientific consensus for *glaberrima* rice as a separate species, independently domesticated in West Africa, was finally established by the second half of the twentieth century.

As a consequence of the tardy recognition that rice was also indigenous to West Africa, research languished on efforts to estimate the period of rice domestication. During the 1970s French botanist Roland Portères made the first attempt to date the antiquity of African rice cultivation. On the basis of preliminary radiocarbon dates of megalithic stone sites located along relict floodplains of former river courses, he attributed the domestication of *glaberrima* to a period about 3,500 years ago. Recent archaeological research by Susan and Roderick McIntosh establishes the presence of *glaberrima* cultivation between 300 B.C. and 300 A.D in the inland delta of the Niger River in Mali. No other archaeological research has yet been conducted in West Africa’s rice region, which extends from Senegal to Liberia and inland more than a thousand miles to Lake Chad in the modern country by that name. The development of iron making in the region during the first millennium A.D. undoubtedly promoted the diffusion of African rice over such a vast area of West Africa. Durable agricultural implements, made from iron, facilitated forest clearance, thereby enabling the cereal’s diffusion to highland deciduous forests and coastal mangrove estuaries, located south and southwest of the middle

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28 Ribeiro, op. cit.
Niger River. Recent research by historical linguist Christopher Ehret places African rice domestication between 4000 and 4500 years ago.  

**RICE HISTORY IN SOUTH CAROLINA**

Nowhere in the Americas did rice play such an important economic role as in South Carolina. Rice cultivation by slaves for subsistence was underway within a decade of settlement of the Carolina colony in 1670. By the 1690s the cereal was being cultivated for export. On the eve of the American Revolution, annual exports from South Carolina exceeded sixty-six million, making rice the first cereal globally traded.

About a hundred African slaves accompanied the first Europeans arriving in South Carolina from Barbados in 1670. Within two years the enslaved formed one-fourth of the colony’s population; by 1708 the black population exceeded the number of whites. From that period on South Carolina became a colony with a black majority. While slaves cultivated the colony’s rice and indigo exports, they also grew the subsistence crops consumed by both blacks and whites. In a pattern similar to the Cape Verde Islands, slaves from West Africa’s rice region planted a preferred food staple in the earliest settlement period of South Carolina.

Archival records indicate multiple introductions of rice seed to the colony between 1685 and the early 1690s, both deliberate and casual. Among the early types grown in South Carolina was one red in color, “one called Red Rice in Contradistinction to the White, from the Redness of the inner Husk or Rind [bran] of this Sort, tho’ they both clean and become white alike.” The red color broadly distinguishes *glaberrima* from Asian *sativa* rice. It is quite

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36 Salley, op. cit., p. 11.

37 It should be noted, however, that while *glaberrima* rice is always red in color, some *sativa* rice varieties also share this trait.
probable that African rice entered the colony on slave ships in the early settlement period of South Carolina. Writing in the early twentieth century, when scholars believed rice originated solely in Asia, Southern historian A.S. Salley linked the earliest types grown to ship captains who carried the seed to the colony from their voyages to Asia. On what brought their ships halfway around the world to South Carolina, the type of cargo they were carrying, and where they stopped en route from Asia, his commentary is silent. The cereal’s appearance is presented merely as deliberate seed exchanges between well-traveled gentlemen.

One surviving record from the early settlement period suggests yet another mechanism for rice introduction to the colony, one that likely established *glaberrima*. Rice entered the colony as leftover provision on slave ships:

A Portuguese vessel arrived, with slaves from the east, with a considerable quantity of rice, being the ship’s provision: this rice the Carolinians gladly took in exchange for a supply of their own produce. —This unexpected cargo was distributed, which gave new spirit to the undertaking, but was not sufficient to supply the demand of all those that would have procured it to plant.38

Mention of the abundance of rice as the slave ship’s provision makes it quite unlikely that its source was anywhere but West Africa. This rice was certainly the indigenous African *glaberrima* and likely the source of the red type mentioned among those cultivated in the 1690s. African rice figured among the earliest types cultivated and likely pioneered, under slave tutelage, the cereal’s establishment in the colony, first for subsistence and then, for commerce.

The rice aboard slave ships served as seed since it appears to have been purchased by slavers along the West African coast as paddy (with hulls attached). Available archival evidence, while scant, suggests that the cereal was then milled for consumption by enslaved females. One journal entry aboard the slave ship Mary, outbound from Senegal and dated Monday, June 19, 1796 notes: “Men [crew] Emp[loye]d tending Slaves and Sundry Necessaries Jobs about the Ship… The Women Cleaning Rice and Grinding Corn for corn cakes.”39 Slave ships apparently depended upon the processing skills of


enslaved females to mill rice and prepare food across the Middle Passage. Henry Smeathman, an observer of the slave trade in Sierra Leone during the early 1770s, provides a harrowing account of role of female slaves in milling rice aboard slave ships:

Alas! What a scene of misery and distress is a full slaved ship in the rains. The clanking of chains, the groans of the sick and the stench of the whole is scarce supportable…two or three slaves thrown overboard every other day dying of fever, flux, measles, worms all together. All the day the chains rattling or the sound of the armourer rivetting some poor devil just arrived in galling heavy irons. The women slaves in one part beating rice in mortars to cleanse it for cooking.”

While Carolina slaves continued planting “Guinea rice” in their food gardens into the early nineteenth century, the Carolina export economy had long before shifted to Asian rice. Sativa is higher yielding than the African rice but significantly, does not break as readily as glaberrima with mechanical milling. Only processing by hand with a mortar and pestle, in the way African women have long milled the crop, minimizes the breakage problem with glaberrima. The cereal’s emergence as an export crop depended on learning how to hand mill rice with a mortar and pestle, a skill introduced to the colony by enslaved females. The introduction of mechanical devices from the mid-eighteenth century to improve slave labor productivity ensured the dominance of Asian rice in export markets.

AFRICAN TECHNOLOGY TRANSFER IN SOUTH CAROLINA RICE CULTURE

A reexamination of secondary and archival records reveals numerous African antecedents to Carolina rice production. There is startling

40 Henry Smeathman to Drury, Sierra Leone, 10 July 1773. MS D.26 Uppsala University. My appreciation to Ph.D. student, Starr Douglas, at Royal Holloway, University of London for providing this citation.
correspondence between land-use systems. Identical cultivation, processing, and cooking methods emerged in the colony which relied upon similar implements and devices in rice culture. Even the labor system that appeared on Carolina plantations, discussed in the next section, suggests African agency in the crop’s development. Despite the fragmentary nature of early rice history in the Carolina colony, all three African rice systems are evident by the 1730s.

The initial cultivation of rice as a subsistence crop focused on its complementarity with cattle rearing. Rainfed rice, grown in cleared forests, was common into the early 1700s. Slaves performed the labor of felling pine trees for fuelwood and extracting the pitch, tar, and resin sold for boat caulking. Beef also entered the export trade as salted meat for transoceanic voyages in the age of sail. Following the African pattern, the rainfed system developed as part of a rotational land use with cattle. Some of the slaves entering South Carolina undoubtedly possessed knowledge of both rice farming and cattle rearing, since herding was widespread along the Upper Guinea Coast and South Carolina has been posited as a possible source for the North American ranching tradition.

The dramatic increase of slaves in the first decades of the eighteenth century – from three thousand in 1703 to twenty-nine thousand in 1739 – gave planters the labor force to clear swamps and move a burgeoning export economy to rice cultivation in higher-yielding inland swamps. Rice cultivation in inland swamps involved impounding water from rainfall for soil saturation in tandem with sources derived from subterranean springs, high water tables, or creeks. This system of rice farming conferred control over flooding and drainage at critical stages of the cropping cycle, the objective being to drown unwanted

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weeds and thereby reduce the labor spent weeding.\textsuperscript{47} An identical rationale and system characterized African rice cultivation in inland swamps.

One of the earliest references to the significant land-use shift underway in Carolina rice production appeared in 1738. Notice of a land sale by William Swinton of Winyah Bay, South Carolina reveals the growing emphasis on tidal rice: “(...) each [field] contains as much River Swamp, as will make two Fields for 20 Negroes, which is overflow’d with fresh Water, every high Tide, and of Consequence not subject to the Droughts.”\textsuperscript{48} This shift to the fertile tidal river floodplains (known as tidewater rice) remained the basis for the region’s economic prominence until the demise of rice cultivation after the Civil War.\textsuperscript{49} Even though the creation of a tidal plantation required enormous inputs of labor, once in operation the time spent weeding was greatly reduced over previous systems, due to controlled river flooding. A slave was consequently able to manage five acres instead of the two typically planted to inland rice cultivation.\textsuperscript{50}

Planters knew that many of their slaves had grown rice prior to enslavement; they also were aware of which African ethnic groups specialized in its cultivation. This knowledge came from their sustained contact with slaves in shaping the Carolina frontier and dependence on them to grow food staples for mutual survival. Newspaper advertisements reveal this awareness, in notices of impending sales of slaves skilled in rice culture. One Charleston newspaper advertized the sale of 250 slaves “from the Windward and Rice Coast, valued for their knowledge of rice culture.” Another on July 11, 1785 announced the

\textsuperscript{47} HEYWARD, Duncan. \textit{Seed from Madagascar}. Chapel Hill: University of North Carolina Press, 1937


\textsuperscript{49} Clifton, op. cit., p. 275-276, observes notices of tidal swamps for sale first appearing during the 1730s in the \textit{South Carolina Gazette}.

arrival of a Danish ship with “a choice cargo of windward and gold coast negroes, who have been accustomed to the planting of rice.”\footnote{Sources for newspaper advertisements appear in \textit{Clifton}, op. cit., p. 273; \textit{Wood}, Peter H. 'It was a Negro Taught them': A new look at African labor in early South Carolina. \textit{Journal of Asian and African Studies}, 9: 160-179, esp. pp. 170-171, 1974b.} Such prior awareness illuminates the stated preference of Carolina planters for slaves from Gambia and the Windward Coast (Sierra Leone) – two significant rice areas of the Upper Guinea coast during the crucial period of eighteenth-century tidal rice development.\footnote{\textit{Littlefield}, op. cit.}

As its prototype (the mangrove rice system), one Carolina planter observed that a tidewater plantation was a “huge hydraulic machine” that rested on an “apparatus of levels, floodgates, trunks, canals, banks, and ditches requiring skill and unity of purpose to keep in order.”\footnote{Quotation from an unnamed rice planter by \textit{Doar}, op. cit., p. 8.} Slaves from the West African rice area possessing this engineering knowledge became the preferred work force for transforming floodplain swamps into productive rice fields.

Preparation of a tidal floodplain for rice cultivation followed principles remarkably similar to those of the mangrove rice system.\footnote{This discussion is drawn from Clifton, Doar, Heywood, etc.} There is the sequence of activities in the conversion of a floodplain to tidewater plantation. First, slaves constructed embankments around rectangular-shaped plots on the mudflats. The rice field was embanked at sufficient height to prevent tidal spillover. Earth removed in the process resulted in an adjacent canal, while sluices built into the embankment and field sections operated as valves for flooding and drainage. When opened at high tide, water entered to flood the field. Closed at low tide, the water remained on the crop. Opened again on the ebb tide, excess water drained out of the plot. River water was delivered through secondary ditches. The system functioned in the precise same manner as that of mangrove rice in Africa.

On Carolina plantations the sluices were called “trunks” after the colony’s initial reliance on the African method for circulating water in the rice perimeter. They were constructed from hollowed tree trunks with a stopper at one end before being replaced by vertical hanging gates later in the colonial period.\footnote{\textit{Hilliard}, op. cit.}
This is the exact water management system still used in mangrove rice production in West Africa.

Other devices also illuminate African antecedents. The hoe is the primary agricultural implement used throughout the entire West African rice region. Indispensable to women’s work in African rice culture is a long- and short-handled version, the former used for field preparation and the latter for detailed work and weeding. Several colonial-period engravings and paintings of American rice plantations depict slaves, often females, carrying or working with the long-handled hoe. Written accounts of Carolina rice culture also mention the use of short-handled hoes, four and eight inches in length, for detailed plot work.

Three cultivation techniques on Carolina plantations also reveal African antecedents. Women sow rice throughout West Africa. This was also female work on rice plantations. Sowing usually involved dropping seeds onto the trenched ground and using the foot to cover them. An African origin is also evident in a second, although less common, sowing method, which involved enveloping seeds in clay before planting. The technique is similar to one long practiced in West Africa, where women wrap seeds in cattle dung and/or mud to protect them against birds, insects, and microbial parasites. A third African cultivation practice was adopted on Carolina plantations. Rice was directly sown on freshwater river floodplains, rather than transplanted.

Another group of techniques that underscore the significance of female expertise in Carolina rice history is the manner of milling and cooking rice. For most of the colonial period, rice was milled with a wooden mortar and pestle

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59 The documentary, *Family across the sea*, which profiled many of the similarities in rice cultivation between South Carolina and Sierra Leone, filmed African women dropping the encased seeds in the soil for cultivation.

African origins of rice cultivation in the Black Atlantic

and winnowed with hand-held baskets. Until the advent of water-driven mechanical devices during the second half of the eighteenth century, rice milling was performed in the African manner with an upright wooden mortar and pestle, the way women have traditionally processed food throughout the continent. Rice processing also involves the removal of the indigestible hulls or chaff, a process known as winnowing. In Africa’s rice region, winnowing involves placing hand-milled rice, a mixture of grains and empty hulls, in circular and shallow straw baskets. The grains and hulls are rotated inside and repeatedly tossed in the air, which leaves the heavier husked grains inside the basket. South Carolina’s rice economy followed the same method.

Even the weaving style of Carolina winnowing (faner) baskets displayed an African origin, as Dale Rosengarten has established. In a comparative analysis of African and Native American basket-weaving traditions, Rosengarten links fanner baskets to a tradition derived from West Africa. As the baskets of Southeast Indians employed a plaited or twilled design, origins lay elsewhere. Fanner baskets, in contrast, were always coiled. Through an analysis of African weaving styles in museum basketry collections in Europe and North America, Rosengarten locates the fanner-basket prototype within Africa to the Senegambian region, which abounded in European commentaries on rice culture from the fifteenth century.61

Methods of cooking rice reveal additional linkages to Africa. The Carolina plantation kitchen favored grain separation, the way African rice dishes are typically cooked. Rice dishes similarly were cooked with beans (Hoppin’ John, based on black-eyed peas, an African domesticate) and often featured okra, another plant native to Africa.62 African women also developed the cooking method of parboiled rice, another name for converted rice, marketed in the contemporary period under the brand name “Uncle Ben’s Converted Rice.”63

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63 Parboiling, which also developed in India, is also used to cook newly harvested rice in former maroon communities (quilombos) in Maranhão, Brazil. Carney fieldwork, August 2002.
This review of cultivation and processing methods, implements, and practices reveals the transfer of an entire system of rice culture from West Africa to the colony of South Carolina from the end of the seventeenth century. Through ethnic groups specialized in rice growing and specialized female knowledge, rice took root on the western rim of the Atlantic Ocean. The significance of gendered knowledge in its diffusion is a stark reminder of how enslavement broke apart an African system of cultivation to serve the needs of the export plantation economy. In African systems, the cultivation of rice in diverse agroenvironments ensured food security while reducing labor bottlenecks. Carolina’s rice history reveals how land use shifted in response to export market demand and the availability of slave labor. While relying upon female knowledge systems, a review of Carolina rice culture shows that the gender division of labor typifying African production similarly changed with enslavement as boys were taught the skilled cultivation and processing techniques traditionally learned by girls. More than the cultivation of rice took root in the Americas. An indigenous African knowledge system that spanned field and kitchen established rice cultivation in the Americas and a cereal that remains central to cultural identity among the descendants of enslaved rice growers.

RICE PLANTATIONS AND TASK LABOR

In trying to establish a preferred dietary staple in suitable swamps, slaves taught planters how to cultivate and mill rice and how to put into place the complicated system of water control that represented massive landscape transformation. But by assigning agency to African slaves, a significant question remains. Why would slaves transfer a knowledge system of a crop whose cultivation would place them five months a year in malarial swamps and harness them to endless hours of toil hand milling the crop for export? The answer likely lies with the labor system that characterized rice plantations.

An unusual labor system, not characteristic of other American plantation systems, emerged in the rice cultivation areas of South Carolina and Georgia. It became known as “task” labor to distinguish it from the more pervasive “gang” labor system of slavery. In gang labor the enslaved were forced to work from dawn to dusk. The task labor system on rice plantations, however, assigned each slave a task in rice fields. Without underestimating the real labor demands
of the task system, for the physically robust, healthy and young, task labor meant that when the work or task was completed, the time remaining each day was the slave’s own. Completion of the task meant the opportunity to devote a portion of each day towards activities that improved dietary subsistence like planting dooryard gardens, fishing and trapping. By contributing to overall nutrition, such activities could crucially improve the subsistence, nutrition, and survival of the enslaved. The task labor system is documented as already in existence by 1730 in South Carolina, early in the colonial period and at a time when the labor demanding tidal plantations were being developed.64

The emergence then of a distinct labor system not typical of plantation slavery in the Americas on the rice plantations of South Carolina early in the colonial period adds indirect evidence for an important African role in developing rice cultivation there. Knowledge of rice cultivation, an indigenous West African agricultural system, known to some of those enslaved in South Carolina, accorded slaves the ability to negotiate the terms of their labor in bondage. In this sense then the task labor system may be viewed as enabling partial resistance to daily demands in slavery during the colonial period when labor relations between the enslaved and those who enslaved them had not yet consolidated. The frontier was still open and flight as maroons or to Indian communities remained quite real.

However, as slavery consolidated after the American Revolution and the closing of the frontier blocked avenues of escape to Spanish Florida, the task too increased, which undermined the gains achieved with negotiation in the early colonial period. Task labor, then in the final decades of rice slavery looked little different from the gang labor system on other Southern plantations.

CONCLUSION

South Carolina and Georgia are not the only documented examples of tidewater cultivation outside West Africa, The crop was also raised on plantations during the mid-eighteenth century in Maranhão, Brazil with slaves

imported directly from the rice region of Guinea-Bissau.\textsuperscript{65} While the plantations failed to compete with Carolina production, the African role in transferring rice cultivation to the New World extended beyond the export system. Slaves in the French West Indies frequently cultivated rice in provision gardens attached to coffee and sugar plantations.\textsuperscript{66} As early as 1579, a Spanish land grantee in Tabasco, Mexico commented on rice cultivation in an area where Africans were enslaved for tobacco production.\textsuperscript{67} Fugitive slaves in Surinam sustained their maroon communities by growing rice in inland swamps established outside the sugar plantation zone – a region similar to the low-lying depressions along Mexico’s Gulf Coast that were planted to rice by runaways.\textsuperscript{68} Under enslavement and maroonage West Africans brought their culture of rice cultivation to swamps throughout tropical America.

Rice culture represents an indigenous African knowledge system that accompanied slavery throughout the Americas, on plantations of South Carolina, as a preferred provision crop in the U.S. South, Caribbean, Brazil, Cuba; as a food staple for run-away slaves (maroons) in the Guianas, Brazil, Mexico, Central America, and the Caribbean. And rice endures as a dietary staple in many of these areas today among peasant farmers of mixed African decent. Rice forms a crucial part of many culinary dishes associated with the African diaspora: the rice-based Hoppin’ John of the Carolina kitchen, the Louisiana gumbo, moros y cristianos (rice and beans) of Cuba, and Nicaragua’s gallo pinto. Central to cultural identity in the Black Atlantic, rice represents an important West African legacy in the Americas. Its history in the western Atlantic reveals that African plants figured significantly in the African diaspora as provisions aboard slave ships and through informal networks of seed exchanges that enabled the enslaved to establish them for subsistence. It represents a remarkable form of technology transfer, under conditions of forced labor difficult

\textsuperscript{65} CARREIRA, António. \textit{As companhias pombalinas de Grão-Pará e Maranhão e Pernambuco e Paraíba}. Porto: Editorial Presença, 1983.


\textsuperscript{67} “Relaciones de Yucatan,” 1898, vol. 1 (\textit{Colleción de Documentos Inéditos de Ultramar}), 2a serie, tomo num. 11, Madrid: Impresores de la Real Casa.

to imagine. In the shared history of enslavement, the African diaspora began. We have just begun to explore the plants and knowledge systems that accompanied this forced migration.

**Resumo:** A diáspora africana era tanto de plantas como de pessoas. O arroz (*Oryza Glaberrima*) permitiu a difusão de plantas e sistemas agrícolas africanos que amoldaram o ambiente, preferências de comida, economias e identidade cultural durante a era de escravidão. No século XVIII o cereal era largamente cultivado, da Carolina do Sul, ao Brasil. Cultivado por escravos como também pelos “marrons”, tanto em plantações para subsistência como para exportação, o cultivo de arroz acompanhou o estabelecimento africano nas Américas. Este artigo revisa os sistemas de conhecimento indígenas africano e americanos (América atlântica). Com métodos e práticas idênticos, escravos da África ocidental adaptaram o cultivo às condições novas nas Américas. Enfocando a origem Africana do cultivo do arroz na Carolina do Sul, este trabalho busca recuperar uma narrativa significante do tráfico atlântico de escravos.

**Palavras-chave:** cultura de arroz africano, escravidão, diáspora atlântica, Atlântico negro, sistemas de conhecimento.