

Tidal Rice Cultivation and the Problem of Slavery in South Carolina and Georgia,

1760–1815

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THE lack of revolutionary change in black slavery during the era of the American Revolution was nowhere more apparent than in South Carolina and Georgia. Among the states that retained slavery after 1783, these two seemed to have the least apologetic slaveholders, who were most determined to maintain continuity with the past despite the ideological challenges of the Revolutionary era.¹ Planters in the coastal lowcountry of both states manumitted few slaves and not only continued to use slave labor to grow their staple crop of rice on their distinctively swampy properties but also discovered new uses for it. They successfully experimented with tidal irrigation, a new method of cultivating rice, dramatically transforming the physical landscape of their region—literally digging slavery deeper into the lowcountry as slaves themselves

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¹ On both the political concept and economic form of slavery and the Revolution see Bernard Bailyn, *The Ideological Origins of the American Revolution* (Cambridge, Mass., 1967), 55–93, 232–246, Donald L. Robinson, *Slavery in the Structure of American Politics, 1765–1820* (New York, 1971), David Brion Davis, *The Problem of Slavery in the Age of Revolution, 1770–1823* (Ithaca, N. Y., 1975), esp. 255–284, Edmund S. Morgan, “Slavery and Freedom: The American Paradox,” *Journal of American History*, LIX (1972), 5–29, and John Phillip Reid, *The Concept of Liberty in the Age of the American Revolution* (Chicago, 1988), 47–54, 91–97. On this problem in the lower south see Jack P. Greene, “‘Slavery or Independence’: Some Reflections on the Relationship among Liberty, Black Bondage, and Equality in Revolutionary South Carolina,” *South Carolina Historical Magazine*, LXXX (1979), 193–214, Russell R. Menard, “Slavery, Economic Growth, and Revolutionary Ideology in the South Carolina Lowcountry,” in Ronald Hoffman et al., eds., *The Economy of Early America: The Revolutionary Period, 1763–1790* (Charlottesville, Va., 1988), 244–274, and Harvey H. Jackson, “‘American Slavery, American Freedom’ and the Revolution in the Lower South: The Case of Lachlan McIntosh,” *Southern Studies*, XIX (1980), 81–93.

dug new irrigation canals. The hubris of slaveholders' actions—entrenching slavery in the very era when it first came under sustained public attack—reached its logical culmination when rice planter Charles Cotesworth Pinckney defied the federal proposal to end the African slave trade: "whilst there remained one acre of swamp-land in South Carolina he should raise his voice against restricting the importation of negroes."²

The region's stance against challenges to slavery has received a good deal of scholarly attention, although study of variations that took place in slavery and plantation agriculture during the Revolutionary era has lagged. Such changes were significant because planters were privately willing to consider relinquishing some power over slaves in order to remain, formally, their masters.³ The years from the 1760s to 1810s encompass this *sic et non* response to social change in the coastal lower south, and the shift toward tidal cultivation provides a physical map for the extent of actual alteration. The introduction of tidal irrigation has never been explained fully, although economic historians have pointed out that it was at the heart of turn-of-the-century adaptations in society and economy.⁴ In part, tidal irrigation simply represented culmination of long-term trends in the lowcountry: rice cultivation, black slavery, the creation of a planter elite. But it also represented, paradoxically, both an acceleration of these trends and a new sense among planters that the final product was not entirely under their own control.

Though planters strove to keep Revolutionary politics away from their now peculiar institution, the disorders of war and the reordering of the physical environment brought unintended alterations to their plantations. As more planters switched to tidal irrigation, they created an increasingly artificial landscape (that is, one significantly altered by humans); two alterations, in particular, belie the seeming lack of change in the lowcountry. Tidal plantations bore the marks of struggles between slaves and masters during the war years and reflected a final, formal recognition of a carefully demarcated autonomy in the slave community. And planters began to wonder whether they were injuring nature and human nature in

² *Debates in the Several State Conventions, on the Adoption of the Federal Constitution . . .*, ed. Jonathan Elliot (Philadelphia, 1876), IV, 273. See also Paul Finkelman, "Slavery and the Constitutional Convention: Making a Covenant with Death," in Richard Beeman et al., eds., *Beyond Confederation: Origins of the Constitution and American National Identity* (Chapel Hill, N. C., 1987), 188–225.

³ On slaves' challenge to slavery during the Revolution see Philip D. Morgan, "Black Society in the Lowcountry, 1760–1810," in Ira Berlin and Ronald Hoffman, eds., *Slavery and Freedom in the Age of the American Revolution* (Charlottesville, Va., 1983), 109–112, Robert A. O'Neil, "'Domestick Enemies': Slavery and Political Independence in South Carolina, May 1775–March 1776," *Journal of Southern History*, LV (1989), 21–48, and Joyce E. Chaplin, "Creating a Cotton South in Georgia and South Carolina, 1760–1815," *ibid.*, LVII (1991), 171–200.

⁴ For an overview of the history of rice planting see David O. Whitten, "American Rice Cultivation, 1680–1980: A Tercentenary Critique," *Southern Studies*, XXI (1982), 17–19. On economic development in the lowcountry see John J. McCusker and Russell R. Menard, *The Economy of British America, 1607–1789* (Chapel Hill, N. C., 1985), 168, 176–178.

the persons of their slaves as they used slave labor to impose an artificial order on the natural environment. One traveler called tidal cultivation an "unusual manner of natural irrigation."⁵ Residents began to worry that it was more unusual than natural; their subdued musing over the violation of nature provides a counterpoint to their public blustering over the inercancy of their social customs.

White settlers of the coastal lowcountry had long regarded the natural world as a source for personal wealth. Plantation agriculture had been a success in the lowcountry since the 1720s, by which time settlers had learned to exploit their region's semitropical climate and swampy lands by growing rice. Irrigated rice was, there, what sugar was to the West Indies—a lucrative staple whose profits enabled planters to construct a wealthy and leisured provincial culture. These developments occurred rapidly, though unevenly, through the colonial era. In the early eighteenth century, South Carolinians had cultivated rice on dry upland soil, using rainfall to water their crop.⁶ They next discovered that irrigating rice yielded larger crops; by mid-century they had shifted most rice production to marshy areas along the coast. These inland-swamp rice planters depended on ponds or reservoirs of fresh water to irrigate their crops (see Figure 1). They drained swampland, divided it into squares separated by ditches, and surrounded it with banks to prevent reinundation. Slaves who had experience growing rice in West Africa were instrumental in the creation of these early plantations. The efforts of blacks and whites, over the course of the eighteenth century, began to alter the natural landscape, turning it into one in which humans controlled water to make the land more productive. This pattern extended southward into Georgia by the 1750s. But while reservoir cultivation worked most of the time, planters suffered considerable crop losses when sudden rains swelled irrigation systems and flooded fields or when drought dried up reservoirs.⁷ Planters especially dreaded flooding. Peter Manigault reported in 1766 that South

⁵ Luigi Castiglioni, *Viaggio: Travels in the United States of North America, 1785–87*, trans. and ed. Antonio Pace (Syracuse, N. Y., 1983), 121.

⁶ Lewis Cecil Gray, *A History of Agriculture in the Southern United States to 1860*, 2 vols. (Washington, D. C., 1933), I, 279; Converse D. Clowse, *Economic Beginnings in Colonial South Carolina* (Columbia, S. C., 1971), 122, 126–127.

⁷ *Ibid.*, 123; Sam B. Hilliard, "Antebellum Tidewater Rice Culture in South Carolina and Georgia," in James R. Gibson, ed., *European Settlement and Development in North America: Essays on Geographical Change in Honour and Memory of Andrew Hill Clark* (Toronto, 1978), 97–98; David Le Roy Coon, "The Development of Market Agriculture in South Carolina, 1670–1785" (Ph.D. diss., University of Illinois-Urbana/Champaign, 1972), 178–185; Daniel C. Littlefield, *Rice and Slaves: Ethnicity and the Slave Trade in Colonial South Carolina* (Baton Rouge, La., 1981), passim; Peter H. Wood, *Black Majority: Negroes in Colonial South Carolina from 1670 through the Stono Rebellion* (New York, 1974), 35–62; David Doar, *Rice and Rice Planting in the South Carolina Low Country*, Contributions from the Charleston Museum, No. 8 (Charleston, S. C., 1936), 7–41.

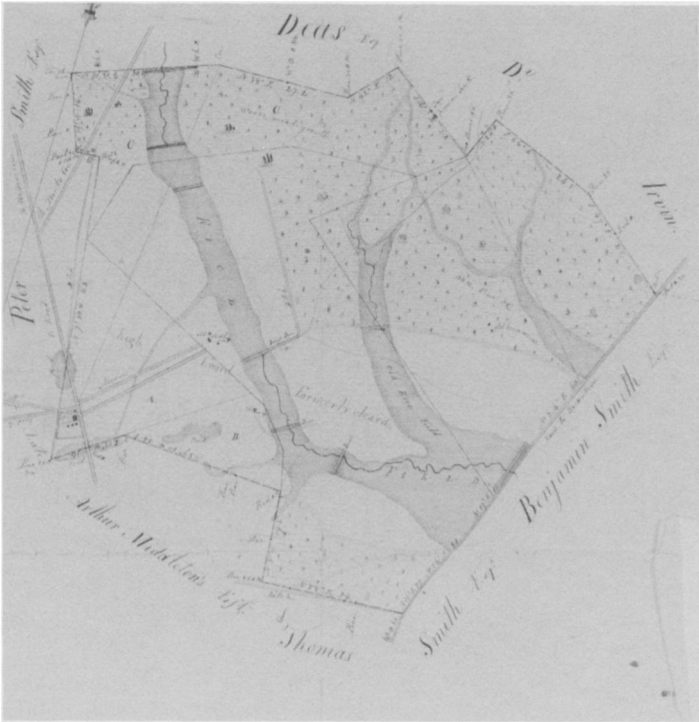


FIGURE I. This estate plan for a plantation near Charleston shows both old and new methods of rice cultivation. The “Old Rice Fields” are in the shadowed portion of the plat; they follow the natural swamp along the waterways. The irrigation system is taking shape at the left; lines mark canals and dams. Plantation of William Loughton Smith, March 1805. From the Collections of the South Carolina Historical Society, Charleston.

Carolina had had “such incipient Rains that all the Rice Lands are under Water and numbers of people will not be able to plant this year.”⁸

Inland-swamp cultivation also posed problems for planters because of its high demand for labor (about thirty working slaves per plantation)—the famously high demand that had created a black majority in the coastline’s

⁸ Manigault to Thomas Gadsden, May 14, 1766, Peter Manigault Letterbook, Ser. 11–493, South Carolina Historical Society, Charleston. See also David Ramsay, *History of South-Carolina, From its First Settlement in 1670, to the Year 1808*, 2 vols. (Charleston, S. C., 1809), II, 511; on how freshets “totally rotted the Rice” on several estates see Charles Cotesworth Pinckney to Thomas Pinckney, Sept. 13, 1794, Pinckney Family Papers, Ser. 1, Box 4, Library of Congress, and Petitions to the General Assembly, 1795, no. 108, South Carolina Department of Archives and History, Columbia (in which petitioners along the Santee River complain of freshet damage and want to use dams and canals to improve tidelands).

population. Rice needed much labor because it required much weeding. The irrigation water that nourished rice also encouraged growth of weeds; by late spring, all manner of opportunistic plants had sprouted in the thick mud of the fields. Rather than face the grinding months of toil with a hoe, ankle- or even knee-deep in muck, slaves tended to abscond, persistently eroding whites' authority over their labor. Josiah Smith, for example, fearing his slaves would run away when the weeds were thickest in the spring of 1774, hoped his overseer's moderate treatment of them, plus supplemental rations of beef and rum, would keep them at their tasks. One foreign observer noted that South Carolinians had a revealing local expression for bad plantation managers: they were always "*in the grass*," not having enough labor (or enough willing labor) to keep their fields clean of weeds.⁹

Struggle over specific terms of work therefore characterized rice planting. Planters had, indeed, already conceded some direct authority over work. On rice plantations, individual slaves performed tasks or units of labor rather than working together as a gang. This system afforded them greater control over their work (when they performed their tasks; what they did on their own time) than their counterparts had in plantation economies that relied on gang labor. Planters and slaves disputed the fairness and uniformity of taskable units, and planters recognized slaves' power in redefining terms of labor. When Richard Hutson confronted some runaway slaves during the growing season in 1767, for example, he conceded that they had just cause to protest "a great difference in Tasks" and "unreasonable" working conditions, and he resolved to reform his system of labor.¹⁰

Inland-swamp irrigation had thus increased rice planters' profits, but neither predictably nor invariably, and it was as much a source of frustration over mobilizing labor as it was of increased income.¹¹ Some planters feared that the system might eventually yield diminishing returns and looked for an alternative way to irrigate their rice crops. The diurnal rising and falling of coastal rivers, caused by the flow and ebb of ocean tides, seemed a likely source of water. Water level changes in coastal estuaries were quite striking. Levels rose six to eight inches at neap tides and eight

⁹ Smith to George Austin, Apr. 22, 1774, Josiah Smith Letterbook, Southern Historical Collection, Chapel Hill, N. C.; Harry J. Carman, ed., *American Husbandry* (New York, 1939), 276.

¹⁰ Philip D. Morgan, "Work and Culture: The Task System and the World of Lowcountry Blacks, 1700 to 1880," *William and Mary Quarterly*, 3d Ser., XXXIX (1982), 569-570; Richard Hutson to "Mr. Croll," Aug. 22, 1767, Charles Woodward Hutson Papers, So. Hist. Coll.

¹¹ Per capita output followed fluctuations in price and population, rather than resulting from continued improvement in technique. In South Carolina the amount produced (per capita) reached about 563 pounds by the early 1730s, but this fell during the 1740s and 1750s and did not recover until just before the Revolution, probably because the price of rice had only then recovered, causing more land to be taken up for commercial cultivation. See Peter A. Coclanis, *The Shadow of a Dream: Economic Life and Death in the South Carolina Low Country, 1670-1920* (New York, 1989), 82.

to ten inches during the strongest spring tides; the currents created by tides could ascend rivers for a distance of thirty to thirty-five miles.¹² As early as the 1730s, planters noted tidal flow in rivers and, gingerly, began to flood estuarial water over their fields. In a 1741 edition of the *South-Carolina Gazette*, for example, Joshua Sanders offered for sale 1,400 acres of land on the Combahee River that he described as “in a good Tide’s way.” During the next few decades, increasing numbers of cultivators would turn to tidal flooding for irrigation. James Habersham described to Henry Laurens in 1771 the welcome prospect of Georgia land “fully in the Tides way, and free from any Damage by Freshes.”¹³

That more planters were scrutinizing estuarial flooding indicated they had confidence in their ability to observe and utilize the natural world—a characteristic of the eighteenth-century age of “improvement” that influenced both the British and their American cousins. At this time, as well, wealthier planters foraged for information that would improve rice cultivation, focusing on Asian rice cultivation and on European hydraulic engineering. They acquired such material through a “global network of communication . . . in the technology-intensive maritime society emanating from western Europe.”¹⁴ To gain access to this network, planters often supplied information about their region’s natural phenomena to men of science and to British officials. They participated in an exchange with the Old World that capitalized on their own semitropical natural world and on their recently acquired status as members of a gentry, albeit a provincial one. They packed off pieces of their exotic environment (parakeets, pickled snakes, flower seed for London gardens, lists of Cherokee herbal remedies) to gain recognition from agencies such as the Royal Society and individuals such as Sir Joseph Banks.¹⁵

¹² John Drayton, *A View of South-Carolina as Respects her Natural and Civil Concerns* (Charleston, S. C., 1802), 36; Ramsay, *History of S.-C.*, II, 166.

¹³ *South-Carolina Gazette*, Jan. 22, 1741; Coon, “Market Agriculture,” 178–181; James M. Clifton, “The Rice Industry in Colonial America,” *Agricultural History*, LV (1981), 275; “Letters of James Habersham,” *Collections of the Georgia Historical Society*, VI (1904), 133. Planters also realized that a good, quick flood of water could kill pests and that a large water supply could guarantee the ability to flood at will. See Smith to Austin, July 30, 1772, Josiah Smith Letterbook.

¹⁴ A. Hunter Dupree, “The National Pattern of American Learned Societies, 1769–1863,” in Alexandra Oleson and Sanborn C. Brown, eds., *The Pursuit of Knowledge in the Early American Republic: American Scientific and Learned Societies from Colonial Times to the Civil War* (Baltimore, 1976), 23. See also Margaret W. Rossiter, “The Organization of Agricultural Improvement in the United States, 1785 to 1865,” *ibid.*, 279–298, and Ralph Jack Kloppenburg, *First the Seed: The Political Economy of Plant Biotechnology, 1492–2000* (Cambridge, 1988), 9–11, 14–15.

¹⁵ For overviews of this pattern see Sarah P. Stetson, “The Traffic in Seeds and Plants from England’s Colonies in North America,” *Agri. Hist.*, XXIII (1949), 45–56, Raymond Phineas Stearns, *Science in the British Colonies of America* (Urbana, Ill., 1970), 593–619, Brooke Hindle, *The Pursuit of Science in Revolutionary America, 1753–1789* (Chapel Hill, N. C., 1956), chaps. 10, 16, John C. Greene, *American Science in the Age of Jefferson* (Ames, Iowa, 1984), chap. 5, Joseph Kastner, *A Species of Eternity* (New York, 1977), 68–78, Richard Beale Davis, *Intellectual*

Whites in the lower south seemed to regard nature as a warehouse of commodities; it not only provided them with lucrative commercial crops but also gave them things that could be bartered for status or for information about methods of increasing their riches. Seeds and cuttings were introductions to a scientific circle that, in return, supplied descriptions of Chinese farming and models of irrigation pumps. Sometimes these exchanges were explicitly negotiated. When Thomas Jefferson sent John Milledge, recently governor of Georgia, samples of seed rice from France's national garden, he asked for seeds from local cotton (obtained "through your kind instrumentality") to send back. Such trading could acquire a personal dimension. Manigault, who asked his father to supply him with South Carolina laurel seeds for a gentleman in Paris, admitted that this was because he owed the man (perhaps a patron) a favor—one that could be repaid with a rather obscure commodity.¹⁶

When planters distributed samples of local specialties like cotton and laurel, they wanted to get back information on ways to make their fields more productive. This was why Milledge swapped cotton for rice. He knew that Asian rice competed in European markets with his own grain and wanted to improve the quality and amount of his staple to maintain a competitive edge. John Drayton read accounts of China before he wrote his *View of South-Carolina, as Respects her Natural and Civil Concerns* (1802); a foldout table in his work compares methods of cultivating rice in South Carolina, China, Egypt, Sumatra, and Spain. When Thomas Pinckney wrote a description of local rice cultivation in 1810, he assured his readers in the South Carolina Agricultural Society that he had obtained "correct information concerning the production of this grain, in countries where, in consequence of its long establishment and extensive use, I was induced to believe that experience must have suggested the most advantageous mode of culture."¹⁷

Planters were also eager to get European mechanisms to control irrigation water: their vision of improvement lay somewhere between the exotic Eastern paddy and the efficient European factory. Nicholas Langford, for one, advertised in the August 9, 1768, *South-Carolina Gazette; And Country Journal* that he had imported an English pump, "extremely useful to this province, particularly for the draining of swamps." While touring

Life in the Colonial South, 1585-1763, 3 vols. (Knoxville, Tenn., 1978), II, 845-849, and Lucile H. Brockway, *Science and Colonial Expansion: The Role of the British Royal Botanic Gardens* (New York, 1979), 13-34.

¹⁶ Jefferson to Milledge, Oct. 10, 1809, John Milledge Papers, Georgia Historical Society, Savannah; Peter to Gabriel Manigault, Aug. 21, 1753, Manigault Papers, Ser. 11-275-11.

¹⁷ Drayton, *View of S.-C.*, 121n cites two works on China; *Report of the Committee Appointed by the South Carolina Agricultural Society . . . to Which is Added General Thomas Pinckney's Letter on the Water Culture of Rice* (Charleston, S. C., 1823), Pinckney Family Papers, Ser. 37-60, S. C. Hist. Soc. (The letter was written on Dec. 12, 1810.) On the ever-present threat of Asian competition, especially from Bengal see Coclanis, *Shadow of a Dream*, 135. On influences that shaped tidal cultivation see also Coon, "Market Agriculture," 181-182.

Europe, Robert Mackay of Georgia bought a "Model of a Water Pump" along with several other devices (including an orrery, camera obscura, and pedometer).¹⁸ Planters particularly looked to Dutch expertise in the handling of water. The Society of Sciences at Haarlem sent information that helped Hugh Williamson design the Santee Cooper Canal in South Carolina. Thomas Pinckney put together a collection of drawings on Dutch agricultural machinery—including pumps and waterwheels—perhaps provided by William Vans Murray, United States minister at the Hague in the late 1790s.¹⁹

Collecting such information was, obviously, a gentleman's diversion, and improvement of rice cultivation required sizable amounts of money, labor, and skill. This was apparent when a few planters, drawing on knowledge of paddy cultivation and Dutch draining, began to use tidal estuaries to grow rice. A suitable estuary was only the beginning. Planters needed tremendous structures to control tidal flooding. They had first to build a permanent embankment about five feet high, three feet wide at the top, and twelve to fifteen feet wide at the bottom, its sides carefully pitched to prevent erosion. A ditch ran along the inner wall of this bank. The outer wall of the bank was pierced by trunks or gates that let water into the ditch, and the inner wall had drains that prevented the water from rising too high. Smaller banks divided the field into sections, each watered by a system of internal ditches (see Figure II).²⁰ Each square of the plantation had to be enclosed by banks and each half acre subdivided into 100–125 trenches for sowing. This complicated contrivance required care and time, both for its initial creation and its subsequent maintenance. On one estate, the male slaves spent thirty-three days in early spring 1792 reinforcing dams and banks and leveling rice fields, slightly more than the twenty-nine days that the women and men spent actually planting the crop.²¹

Because tidal irrigation of rice fields required significantly greater input of labor and capital than settlement of inland swamp, it was not widespread before the Revolution. George Milligen-Johnston pointed out that "the great Expence of damming out the Salt-water" prevented many landown-

¹⁸ *South-Carolina Gazette; And Country Journal*, Aug. 9, 1768 (see also the advertisement of Henry Rugeley and Co., Dec. 10, 1771); Robert Mackay, travel diary, 1802–1804, Mackay-Stiles Papers, Box 2, vol. 22, So. Hist. Coll.

¹⁹ Hindle, *Pursuit of Science*, 372; Pinckney's portfolio of drawings, Harriott Horry Ravenel Collection, Ser. 11–332A-22 and Ser. 11–223A-20, S. C. Hist. Soc. On Dutch techniques of irrigating and draining and their influence (via England) on S. C. agriculture see Coon, "Market Agriculture," 11–29.

²⁰ Hilliard, "Tidewater Rice Culture," 105–109.

²¹ Entries for spring, plantation journal for 1792, Allard Belin journals, Ser. 34–178–1, S. C. Hist. Soc. See also memoranda for 1794, John Ewing Colhoun Papers, Folder 3, So. Hist. Coll.: these list several other tasks (carpentry, ditching, raising dams) necessary for renovation. On the division of labor among men and women see entries for Apr. 28, June 1–7, 1792, Allard Belin journals, and entries for Mar. 1, 1775 (spades given only to men) and Mar. 20, 1784 (only one woman received a spade; no women received axes), Fairfield Plantation book, Pinckney Family Papers, Ser. 37–60, S. C. Hist. Soc.

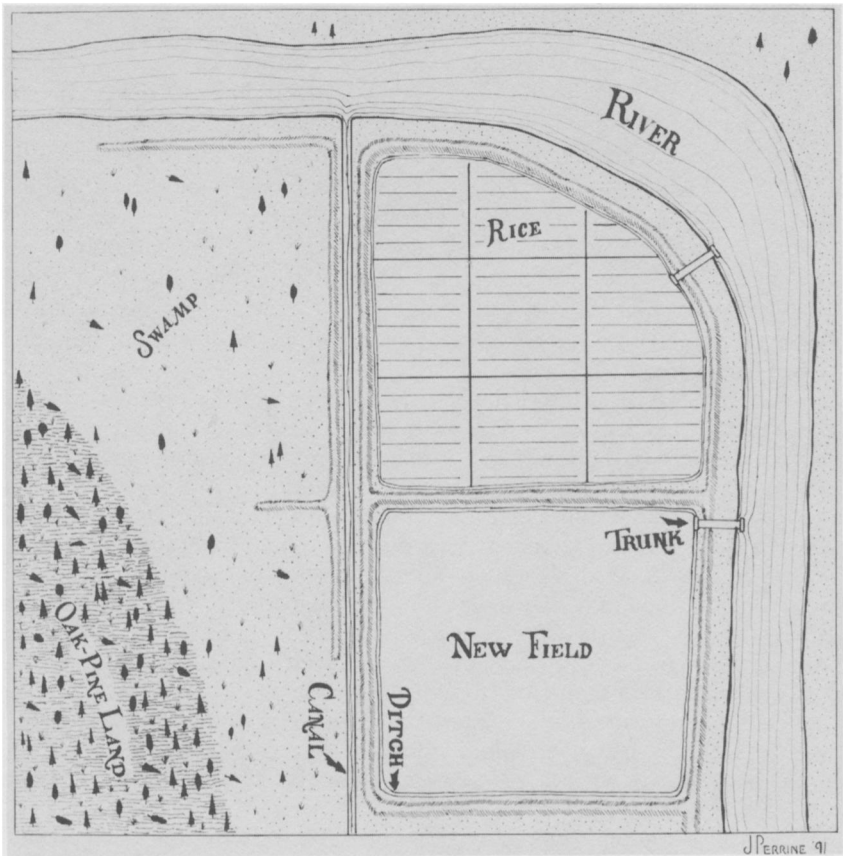


FIGURE II. Hypothetical development of tidal rice fields. A finished section of the field ("Rice") is at the bend in the river; below is an area newly cleared. Both sections have trunks to bring in water. The canal to the left could be used to transport goods and workers or to bring in water should the planter wish to create more fields away from the river.

ers from cultivating salt marsh on the banks of estuaries.²² Planters were wary of expanding rice production at such cost. The American Revolution, in any case, temporarily ended the genteel exchange of information with European luminaries and postponed the daunting task of applying new information on renovated rice plantations.

During the War for Independence, plantations were scenes of anarchy.

²² George Milligen-Johnston, M. D., *Short Description of the Province of South Carolina, . . . Written in the Year 1763* (London, 1770), 9, in Chapman J. Milling, ed., *Colonial South Carolina, Two Contemporary Descriptions* (Columbia, S. C., 1951), 119.

Whites were drawn into the conflict, while blacks seized the opportunity to flee or rebel against planters' authority. Authority was sometimes entirely lacking: Ralph Izard, busy in the Revolutionary cause, saw five of his six overseers enlist in the Continental Army in the first year of the war. The situation worsened as the war ground on and as British invasion increased opportunities for slaves to defy planters and overseers. Eliza Lucas Pinckney complained that her 1780 rice crop would be small as a result of "the desertion of the negroes in planting and hoeing time."²³ Planters also lost workers because slaves served, albeit unwillingly, in the war effort. Black men were commandeered as common laborers or skilled artificers who worked with army engineers to build military fortifications; some slaves stayed away for several years before returning to their masters' plantations.²⁴

Even more devastating than the loss of crops was the property damage that resulted from lack of workers to make repairs. Wartime damage was more extensive in the lower south than in any other region of the nation, owing partly to the virulence of battle there and partly to the nature of its landed property. When a rice dam broke or a ditch became clogged, it needed to be mended at once so that the water did not harm the rest of the irrigation system. With slaves, enemies, refugees, and water flowing in and out of plantations in a chaotic fashion, damage spread. In 1779, Thomas Pinckney worried that his overseer would be unable to "keep the remaining Property in some Order" on his shattered estate. Josiah Smith described a desperate scene at his Georgia plantation in 1780. His rice dams had broken and were bound to remain unrepaired; some of his slaves had vanished, others had been taken away by the tory overseer, and the rest could do little to put the property to rights because most of them had smallpox.²⁵

The end of war and the restoration of civilian government brought only a small measure of order to the lowcountry. Destruction of property had been extensive; when the British took Charleston in 1780, losses of property in and around the city were already estimated at £4,000 sterling. After the final peace in 1783, many planters had to wait to accumulate new laborers and funds before restoring their deteriorated properties. Henry Laurens even agreed to let an expatriated East Floridian settle on one of his Georgia plantations for a token rent. Short-term profit was not his

²³ Henry Laurens to John Laurens, Mar. 26, 1776, in David R. Chesnutt et al., eds., *The Papers of Henry Laurens*, vol. XI: Jan. 5, 1776–Nov. 1, 1777 (Columbia, S. C., 1988), 191; Pinckney to [?], Sept. 25, 1780, Pinckney Family Papers, Ser. 1, Box 5, Lib. Cong.

²⁴ On acts regulating impressment of slaves see William Edwin Hemphill et al., eds., *The State Records of South Carolina: Journals of the General Assembly and House of Representatives, 1776–1780* (Columbia, S. C., 1970), 114, 197, 254. Men served as laborers, drivers, and artificers; women, as nurses. This was true in the British forces as well. See *Royal Gazette* (Charleston), Mar. 10, 1781.

²⁵ Pinckney to Eliza Lucas Pinckney, May 17, 1779, Pinckney Family Papers, Ser. 38–3–5, S. C. Hist. Soc.; Smith to George Appleby, Dec. 2, 1780, Josiah Smith Letterbook.

motive: Laurens wished the property maintained so that it would not lose its value. "Keeping up the foundations of Banks etc. which I had laid," he explained, "will be a sufficient compensation to me." Georgian John Habersham also recommended this strategy to Nathanael Greene, because it would be so difficult to plant again on a completely "neglected" estate where the fields and banks had fallen into disrepair. Georgia authorities appointed overseers to some abandoned estates until ownership could be proven or reinstated, so that a distant heir would not stand to inherit a property eroded and pillaged beyond redemption.²⁶

Wartime catastrophe thus frustrated planters' intentions of improving rice cultivation and was a grave reminder of slaves' continuing defiance. Planters' swampy lands—their admirable source of riches—lay in partial ruin. A 1784 poem in Savannah's *Gazette of the State of Georgia* summed up the irony of the era in an image which mixed Asiatic luxuriance with American hardship. The poem proudly claimed that the Altamaha delta was "Another Nile, remote in Southern climes" although its "fertile soil" was, woefully, "reserv'd for better times." But as in other areas of America, the Revolution acted as a creative disruption of economic patterns. The devastation meant that plantations already needed to be rebuilt. As long as they had to start from the ground up, planters were more willing to look for ways to improve their crops. Georgian George Baillie made this clear in 1783: "the resettling of plantations that are so intirely gone to ruin, must be attended with nearly as much expence and difficulty, as the first settling of them."²⁷

The 1780s therefore formed a watershed in the development of tidal planting. Innovators had earlier built up a crucial reserve of knowledge about techniques for exploiting tidal lands, and a large group of planters now had incentive to shift to new methods of cultivation. That tidal planting took off within this decade is evidenced by how individuals began to claim they had invented specific techniques for planting tidelands. Most of these assertions are dubious—methods of using tidal flow had been known for several decades and were not of a patentable nature—but reveal that the rush to utilize tidal fields did not antedate the Revolution and that the war itself perhaps stimulated a desire to adopt new techniques.²⁸

Driven by the hope that a new method of cultivation would create "better times," would-be tidal planters struggled to master their tricky water supply. Tidal irrigation demanded a balancing act between the threat

²⁶ Henry Laurens to Joseph Clay, Aug. 16, 1783, Laurens Papers Project, University of South Carolina, Columbia; Habersham to Nathanael Greene, Nov. 1, 1782, Nathanael Greene Papers, William R. Perkins Library, Duke University, Durham, N. C. For estimates of property damage in Charleston and the use of overseers in Georgia see Gray, *Agriculture in the Southern U. S.*, II, 595–596.

²⁷ *The Gazette of the State of Georgia*, June 3, 1784; Baillie to John McIntosh, Sept. 7, 1783, John McIntosh, Jr., Papers, Ga. Hist. Soc.

²⁸ Gideon F. Dupont claimed to have invented "water culture" and reported its methods to the South Carolina legislature in 1783. He petitioned for remuneration; Petitions to General Assembly, 1810, no. 119, S. C. Arch. & Hist.

of salinity and the necessity for an adequate flow of water. Nathaniel Pendleton explained that tide swamp proper for rice cultivation ran the length of a river "From the place where the salt water ceases to flow, to the place where the tide itself ceases," a place where the water moved with the tide but was itself sweet rather than saline—"the proper pitch of the Tide."²⁹ Strict control of water was the key, so planters resumed the research on hydraulic technology that had been interrupted by the Revolution. The *Columbian Herald*, for instance, advertised in 1788 the sale of "Belidor's Hydraulic Architecture, or the art of conducting, elevating and managing water" to planters who might wish to study this art.³⁰

Planters thumbed through such texts to discover methods and mechanisms to irrigate their land without giving it a sharp dose of saltwater. They needed to drain brackish water off their fields, then bring in fresh water while keeping the treacherous ocean water at bay. Imported pumps, like Charles Cotesworth Pinckney's English "Machine for throwing Water out of the Ditches," performed the first task. Local artisans also developed pumps, staving off costly and unpatriotic dependence on English technology. The South Carolina legislature granted a patent in 1786 on Peter Belin's "Water Machines" that drained and desalinated salt marshes.³¹ To get fresh water back onto the fields, planters turned from European technicians to local engineers and artisans, who developed floodgates suited to local conditions.³² These were large structures: one planter claimed that each of his could water twenty square acres. Each trunk had an outer and inner gate; the outer gate opened into the estuary, the inner toward the fields (see Figure III). When workers pulled the outer gate up and locked it open, tidal water pushed open the unlatched inner gate and poured into the ditches. When the tide ebbed, the inner gate shut, retaining water. If a planter wanted the fields drained at low tide, the inner gate would be opened, and water would flow out through the unlatched outer gate. If a planter used an estuary where the saltwater flow was unpredictable, he installed gates that had to be raised and lowered manually, like watery guillotines.³³

²⁹ [Pendleton], "Short Account of the Sea Coast of Georgia in Respect to Agriculture, Ship-Building, Navigation, and the Timber Trade," ed. Theodore Thayer, *Georgia Historical Quarterly*, XLI (1957), 76. Second quotation from John Wreath to William Bingham, Sept. 22, 1782, Felix Hargrett Collection, Box 3, MSS, University of Georgia Libraries, Athens—Wreath's phrase is found throughout tidal planters' writings.

³⁰ *Columbian Herald* (Charleston), Aug. 14, 1788.

³¹ Charles Cotesworth to Thomas Pinckney, May 1792, Pinckney Family Papers, Ser. 1, Box 4, Lib. Cong.; Thomas Cooper and David J. McCord, eds., *Statutes at Large of South Carolina*, 10 vols. (Columbia, S. C., 1836-1841), IV, 755-756.

³² See Plowden Weston to millwright Jonathan Lucas, Aug. 17, 1792, Lucas Family Papers, Ser. 11-270, Folder 66-5-13, S. C. Hist. Soc.

³³ On the twenty-acre trunk see plantation book, 1814-1847, Mackay-Stiles Papers, So. Hist. Coll. Trunks were about 4 ft. tall. See Eliza Brewton Pinckney to Thomas Pinckney, Apr. 17, 1789, Harriott Horry Ravenel Papers, Ser. 11-332-20, and Albert Virgil House, ed., *Planter Management and Capitalism in Ante-*

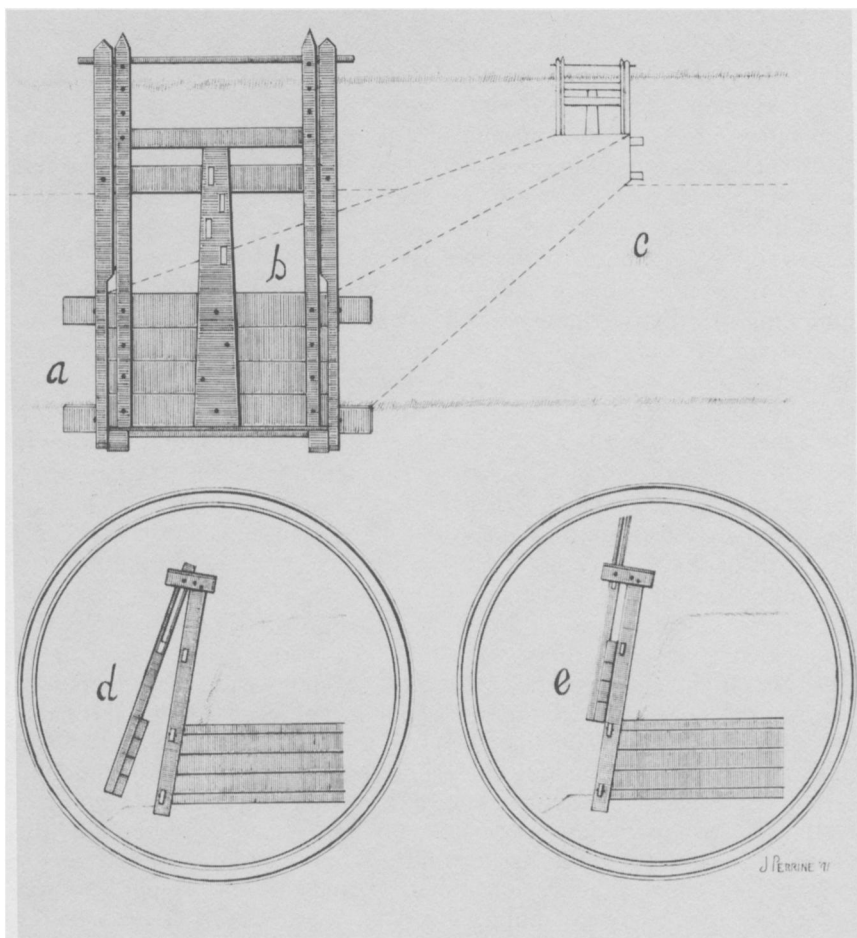


FIGURE III. Cross-section of a trunk and detail of gates. The trunk “b” runs through the earthen bank “c” (transparent in this image—its height is indicated by a grassy fringe at top and bottom) and has gates at either end. Gate “a” is closed. A worker could unlatch it, as in “d,” for automatic operation. Another design, “e,” could be lifted and locked open.

Through experience, lowcountry residents learned to judge when to open their floodgates to fresh water and when to slam them against briny influxes. John Ewing Colhoun’s overseer explained in 1792 that because

Bellum Georgia: The Journal of Hugh Fraser Grant, Ricegrower (New York, 1954), 26. On the development of irrigation mechanisms see also Hilliard, “Tidewater Rice Culture,” 108.

"the River has been perfectly fresh For sometime . . . I have given [the field] plenty of water always changing it once a week." In 1802 Nathaniel Heyward recommended that both doors of the trunks should be slightly propped open when the river was sweet to allow constant freshening of the water in the ditches. During a storm this was also the safer strategy, since the damage resulting from temporary flooding of the crop was less than that which could occur to the irrigation system if the closed flood-gates burst under pressure.³⁴

As they experimented with their new pumps and trunks, planters also made discoveries about which estuaries were suitable to rice irrigation. One kind of estuary contained brackish water, a vertically homogeneous mixture of salt and fresh water. A second type—good for irrigation—had a sheet of fresh water overlying a moving wedge of saltwater. The saltwater pushed upstream with the tide and propelled the upper, fresh-water layer toward the river banks. Even estuaries of this second type varied in value for rice cultivation. The Ashley-Cooper region around Charleston, for example, lost ground in rice production compared to areas around Georgetown, Savannah, and the Altamaha. The Altamaha was especially rich: half of the total Georgia acreage suited to tidal cultivation (15,000 acres) lay entwined in its delta.³⁵

Observers began to detail the subtle variation among estuaries. Johann Bolzius believed that there was "only salt water in the rivers" near Beaufort; John Lambert noticed that most Savannah River rice plantations were on the right side of the river (as an observer faced upriver), probably because the other side contained brackish water due to some peculiarity in tidal flow. Only after making some mistakes in planting were landholders—possibly cursing well-meaning but short-sighted ancestors who had endowed them with less-than-prime holdings—able to determine the value of various estuarial swamplands. Ralph Izard concluded that a swamp, if unable to produce at least a barrel and a half of rice per acre, was not worth the trouble of improving. Luigi Castiglioni related how the unlucky John Drayton had to build banks around his plantation on the Ashley River to protect it from the river's salinity and then irrigate his crops from a reservoir; he was surrounded by water, but the wrong kind!³⁶

³⁴ Archibald McK[?], to Colhoun, Aug. 16, 1792, John Ewing Colhoun Papers, Folder 2; Nathaniel Heyward manuscript, 1802, So. Hist. Coll.; House, ed., *Planter Management*, 25–26.

³⁵ The beneficial type of river included the Santee, Ashley, Cooper, Edisto, Ashepoo, Combahee, and estuaries around Winyah Bay in South Carolina and the Savannah, Ogeechee, and Altamaha rivers in Georgia. See Hilliard, "Tidewater Rice Culture," 100–104, and House, ed., *Planter Management*, 22–23. On the Altamaha region see E. Merton Coulter, *Thomas Spalding of Sapelo* ([Baton Rouge, La.], 1940), 76, and Malcolm Bell, Jr., *Major Butler's Legacy: Five Generations of a Slaveholding Family* (Athens, Ga., 1987), esp. chaps. 7, 8.

³⁶ George Fenwick Jones, trans. and ed., "John Martin Boltzius' Trip to Charleston, October 1742," *S. C. Hist. Mag.*, LXXXII (1981), 95; Lambert, *Travels through Lower Canada and the United States of North America in the years 1806, 1807 and 1808*, 3 vols. (London, 1810), III, 53; Izard to James Mills, Aug. 10,

Many other planters continued to use reservoirs either as their only source of water or along with tidal irrigation. One man advertised his Ponpon River estate of "prime tide land" in the June 18, 1787 *Columbian Herald* but added that the plantation also had forty-six acres watered by a reservoir. On such estates, planters called inland swamp "old fields" and still received smaller yields from them, though developments in tidal irrigation possibly helped improve methods of reservoir irrigation as well. Tidal irrigation did not, therefore, entirely replace other forms of rice cultivation. In parts of the lowcountry, tidal plantations either spread quite slowly—in a process not fully complete even by the Civil War—or remained outnumbered by inland-swamp plantations. But in other areas the shift was dramatic: St. Paul's Parish, South Carolina, had 128 settled inland-swamp plantations at the time of the Revolution, but only eight in the antebellum period after tidal plantations took up most of the land.³⁷

As planters surveyed the landscape with an eye to gradations in its value, their efforts to transform estuarial swamp threw social relations into a vigorous competition for resources. This contest revealed an increasingly rigid line dividing the rice-planting elite from other whites. Land prices began to indicate this division. The best tidal swamp was worth at least twice as much as inland swamp—up to four times as much if improved.³⁸ People blessed with such holdings were determined to get the most out of them, and their determination often translated into conflict, particularly during the early years of tidal cultivation when planters were not always sure whether they had suitable swamp or how best to irrigate it. The ill-effects of their uncertainty were exacerbated by their use of rivers; rather than drawing on private reservoirs, they competed with their neighbors for fresh water along public waterways.

Legislators had long recognized the potential for competition and had prohibited inventive but unneighborly strategies like venting excess water onto another planter's fields or diverting water from him.³⁹ Georgia legislators, for instance, enacted a law in 1763 to protect properties from "Damages which may Arise from Dams or Banks for reserving or Stopping of Water," and a law of 1773 specified that erring planters would have to pay damages to neighbors. South Carolina had similar laws.⁴⁰ Tidal irrigation worsened this problem. Planters more than ever needed a predict-

1794, Ralph Izard Papers, legal-sized documents, Folder 5, South Caroliniana Library, Columbia; Castiglioni, *Viaggio*, 122.

³⁷ William B. Lees, "The Historical Development of Limerick Plantation, a Tidewater Rice Plantation in Berkeley County, South Carolina, 1683-1945," *S. C. Hist. Mag.*, LXXXII (1981), 51-53. On St. Paul's Parish see David Duncan Wallace, *The History of South Carolina* (New York, 1934), II, 379.

³⁸ Drayton, *View of S.-C.*, 116-117.

³⁹ See, for instance, a law of 1744 in Cooper and McCord, eds., *Statutes of S. C.*, III, 609-610.

⁴⁰ Allen D. Candler, comp., *The Colonial Records of the State of Georgia*, 26 vols. (Atlanta, 1904-1916), XVIII, Act of Apr. 7, 1763, XIX, Pt. 1, Act of Sept. 29, 1773; Cooper and McCord, eds., *Statutes of S. C.*, III, 609-610, IV, 722-725.

able supply of water and had to protect their irrigation systems (which represented considerable investment) from destructive flooding. Also, the way an individual planter directed the flow of an estuary might permanently alter the waterway, with resulting damage to the interests of other landholders. Disputes erupted between competing rice planters and, revealingly, between planters and poorer whites who tried to protect their lands from the errors and encroachments of unskilled or unscrupulous rice growers.

In response to the new demands of tidal irrigation, laws regulating dams became stricter and more detailed. A 1786 South Carolina statute required rice-field dams to be opened by March 10 each year in order to prevent any dangerous buildup of water. The statute levied a £100 (currency) penalty on anyone who had not opened his gates by this date; Georgia passed a similar law in 1787.⁴¹ Such measures were particularly directed at planters with large and elaborate irrigation systems, as a South Carolina petition of 1799 (with sixty-seven names) pointed out. The signers complained that planters who shut their floodgates after harvest made water back up over the properties of those who had swamps not protected by high banks. Such flooding made it impossible for the latter "to improve & put in order their Lands . . . & that at the only time of the year which is best suited for improving them." For similar reasons, when several large planters in St. James's Parish, Goose Creek, petitioned the South Carolina assembly for permission to create a canal that would help them cultivate crops and ship produce to Charleston, they met with protest. Two other residents sent a counterpetition arguing that the canal would ruin 600 acres of pasture and asking that their interests not be sacrificed to those of rice planters. Petition again met counterpetition when landowners on Santee River wanted the waterway widened, but others nearer the mouth of the river feared that this would flood their lands with saltwater.⁴²

Squabbles naturally occurred between planters who lived next to each other. Just after the war, Henry Laurens (a Revolutionary moderate) and Christopher Gadsden (his radical critic) were forced to cooperate in repairing a rice dam. Gadsden acidly suggested that Laurens hurry with his share of the labor because the inner dam was "*all mine and done totally at my Expense,*" yet it sheltered Laurens's property "*as a common boundary to us both.*" In 1789, South Carolinian Robert Clark complained that Elias Ball's neighboring irrigation system flooded his land whenever the river was high; Clark claimed that this happened because Ball refused to open his floodgates to relieve pressure along the waterway. Isaac Parker pleaded with John Coming Ball to *close* his gates because when open they released water that then surged toward Parker's property. In 1808, witnesses

⁴¹ Cooper and McCord, eds., *Statutes of S. C.*, IV, 722-725; Robert and George Watkins, eds., *A Digest of the Laws of the State of Georgia* (Philadelphia, 1800), 348-350.

⁴² Petitions to General Assembly: 1799, no. 62; 1786, nos. 36 and 37; 1799, no. 115, S. C. Arch. & Hist.

deposed that Alexander R. Chisolm had prevented mill owner William Loper "from having a sufficient reservoir of water to work his said mill" by draining off all the water to irrigate his, Chisolm's, rice fields.⁴³

Rice planters also quarreled over the borders of their land. Boundary disputes and a flurry of resurveying accompanied the shift to tidal irrigation, as new methods of cultivation raised questions about old landholdings. Planters were exploiting, sometimes for the first time, river swamp they had once assumed was of limited use, and they wanted to determine the extent of these holdings. Moreover, their new irrigation systems could alter the flow of water and erode land, so that property boundaries would change and could be challenged by a neighbor. This difficulty struck at the foundation of a society based on individual ownership and exploitation of land. Local law specified that in cases of disputed land, a committee of surveyors made a decision after studying old plats and traipsing out to see how the land lay.⁴⁴ Rivals Parker and Ball resorted to this strategy after a year of wrangling. Ball wanted it done in a hurry—"for I hear Mr. I. Parker is a Making all the interest he can against me" in the neighborhood. Arnoldus Vander Horst II and John Shoolbred, disputing over a piece of riverbank, had two court-appointed surveyors sent out to investigate and keep peace among the neighbors.⁴⁵ In the meantime, the two men continued quarreling and made those around them (like it or not) share in their contention. When some of Vander Horst's slaves were discovered oystering on the controversial piece of ground in July 1810, for example, Shoolbred stormed down to the river and cast loose their boats, leaving the scapegoated slaves stranded.⁴⁶

The worst hazard of tidal irrigation—a risk that made planters take a hard look at what their neighbors were up to—was salinization of waters and lands, which could thus be rendered useless. A 1796 petition from South Carolinian Charles Brown, who claimed he owned 10,000 acres that were flooded by saltwater, asked the state assembly for permission to block off the creek that brought in "the Salts with the Freshes." Before allowing Brown to do so, a commission investigated whether his dam would shunt the saltwater toward an unsuspecting planter somewhere else along the creek. In another instance, a group of planters unwisely con-

⁴³ Richard Walsh, ed., *The Writings of Christopher Gadsden, 1746-1805* (Columbia, S. C., 1966), 199; Robert Clark's complaint, July 18, 1789, Ball Family Papers, Folder 6, unnumbered box, S. C. Lib.; Parker to Ball, July 25, 1789, *ibid.*, Folder 5, Box 1; depositions, June 16, 1808, Lewis Malone Ayer Papers, Letter-sized documents, Folder 11, S. C. Lib.

⁴⁴ Cooper and McCord, eds., *Statutes of S. C.*, VII, 171, 177.

⁴⁵ Ball to Jonathan Pringle, Feb. 22, 1790, Legal-sized documents, Folder 6, Ball Family Papers. This folder also contains a subpoena (Jan. 4, 1791) for witnesses in *Parker v. Ball*. See also Thomas Parker to Ball, Jan. 8, 1790, and Ball to Parker, Jan. 17, 1790, Letter-sized documents, Folder 6, Box 1. For the dispute between Vander Horst and Shoolbred see Vander Horst to Joseph Purcell, Dec. 21, 1801, John Hardwick to Vander Horst, Jan. 11, 1802, and Vander Horst to Purcell, Mar. 9, 1802, Vander Horst Papers, Ser. 12-194, S. C. Hist. Soc.

⁴⁶ Vander Horst to [?], July 10, 1801, *ibid.*, Ser. 12-197.

structed a canal to connect Back River with Cooper River. The canal introduced saltwater into the rivers, rice yields dropped, and the price of some lands decreased to only a tenth of their original value.⁴⁷

Such dismaying episodes as these were related to a telling development in the lowcountry: increased stratification within the white population. Access to labor and to credit—both necessary for reclaiming tidal land or rebuilding any sort of property—was at the heart of this trend. The postwar era, when tidal cultivation was spreading, was a time of financial hardship, debate over debtor legislation, and struggle to obtain loans from wary European creditors. Planters were involved in these difficulties, but they had larger assets with which to start over, compared to small farmers. Planters (especially in South Carolina) gained time for spreading out their financial obligations and recovering lost sources of income, mostly because they could borrow funds against the slaves who remained with them after the war. Costs were high. By the early nineteenth century, for example, Georgia planter Thomas Spalding owed a staggering \$100,000 for rebuilding and expanding his Sapelo Island estate; clearly, creditors thought Spalding a good risk. Poorer agriculturalists had less collateral and less time in which to pay. They were severely hampered by lack of workers and a concomitant shortage of funds. This meant that only the rich could take up the task of tidal irrigation. In 1796, Pendleton estimated that a new tidal-rice plantation on Georgia's coast—with 200 cultivated acres, 400 acres of timber, and fifty slaves (forty of whom worked in the fields)—would cost \$10,670, well beyond the reach of the ordinary investor.⁴⁸

Tidal cultivation was thus a class-based innovation: only established planters (or the rare well-heeled newcomer) could afford to expand production. In their contests over prime swampland, competitors made statements that indicate how socioeconomic conditions influenced the early history of tidal planting. Opponents—convinced they were gentlemen worthy of special respect—became incensed whenever they believed they were relegated to the status of hired overseers, mere actors in, rather than controllers of, the watery landscape. Parker, when he stated that Ball's "overseer (contrary to our positive agreement,) refuses to let the flood gate be shut & threatens to resist any person who will attempt to do it," delicately reminded his adversary of their shared rank: "I call upon you as a gentleman & Man of your word, (of which I have not the least doubt,) to give him such directions."⁴⁹ A neighbor of one of the Georgia Habershams complained of a similar breach of class etiquette. The man had

⁴⁷ Petitions to General Assembly, 1796, no. 83, *S. C. Arch. & Hist.*; Hateley to Ball, Aug. 6, 1792, Ball Family Papers, Box 1, Folder 10.

⁴⁸ Jerome Nadelhaft, "Ending South Carolina's War: Two 1782 Agreements Favoring the Planters," *S. C. Hist. Mag.*, LXXX (1979), 50–64; Coulter, *Thomas Spalding*, 41; [Pendleton], "Account of the Sea Coast of Georgia," 80.

⁴⁹ Clark's complaint, July 18, 1789, Ball Family Papers; Parker to Ball, July 25, 1789, *ibid.*, Folder 5. See also Benjamin Mazyck to Ball, June 20, 1791, *ibid.*, Folder 7, unnumbered box.

neglected to cut open his dam but claimed that he "never mean'd to prejudice you [Habersham] or any other Neighbour with Water" and exploded with rage when Habersham dispatched his overseer to issue a curt order to the neighbor's overseer, rather than paying a courteous call himself. "I am not to be threatened by Overseers of any person else," he objected. "I was the proper person to have been appli'd to, and not the Overseer."⁵⁰

These heated interchanges only indirectly suggest that tidal irrigation exacerbated economic inequality among whites. More conclusive evidence that postwar expansion of rice cultivation reshaped class relations appears in its material results. Tidal irrigation, supported by seed selection,⁵¹ made productivity soar and enriched planters who successfully adopted the method. In 1793, James Heyward (who with his brother Nathaniel made early experiments with tidelands) boasted to Thomas Pinckney that their innovative "use of water" more than doubled their output and that they had the last laugh on those who had once seen fit to "laugh at our Dams."⁵² The Heywards' laughter was full of money. Inland swamps had produced 600–1,000 pounds of rice per acre; by the 1790s tide-swamp planters could raise 1,200–1,500 pounds per acre.⁵³ A slave could cultivate five or six times as much rice on a postwar tidal estate as a slave had done on a pre-Revolutionary inland-swamp plantation.⁵⁴ Coastal land values also rose. While improved inland swamp was worth only \$20–50 an acre, improved tide swamp sold for \$70–90—another indication that rice planting was no longer a prospect for men with modest resources.⁵⁵

Productivity further improved as the method of irrigation evolved through two early phases. Tidal planters first used "flow culture." They drained and sowed their fields toward the end of March, then reflowed them to germinate the seed rice embedded in the trenches. During the late

⁵⁰ [Anonymus] to "Mr. Habersham," c. 1800, Habersham Family Papers, Folder 1, Perkins Library.

⁵¹ By the end of the 18th century, planters preferred what they called gold rice, a superior variety of white rice. See the advertisements in the *Georgia Gazette*, Jan. 20, 1791, for gold rice and in the *Southern Patriot and Commercial Advertiser*, Feb. 19, 1807, for seed rice "entirely free from red grains," a pesky, volunteer rice that planters were eager to avoid.

⁵² Heyward to Pinckney, Apr. 22, 1793, Pinckney Family Papers, Ser. 3, Box 4, Lib. Cong.

⁵³ For pre-Revolutionary rice yields see Carman, ed., *American Husbandry*, 278. For postwar increases see Henry C. Dethloff, "The Colonial Rice Trade," *Agri. Hist.*, LVI (1982), 238–239. Lachlan McIntosh calculated (note c. 1806, McIntosh Papers, Folder 5, Keith Read Collection, University of Ga.) that a tidal swamp would produce 1,650 pounds per acre—that is, over 7,000 pounds per slave (35 slaves to 150 acres), which is a bit too high. Charles Cotesworth Pinckney estimated between 600 and 1,200 pounds per acre. For other estimates of production per slave and per acre see Coclanis, *Shadow of a Dream*, 97.

⁵⁴ Whitten, "American Rice Cultivation," 15. These figures represent the high end; the average worker produced between 3,000 and 3,600 pounds each year by the end of the century.

⁵⁵ Lambert, *Travels*, III, 446.

spring and summer they allowed successive flows to drown weeds and pests while nourishing the young plants; all told, they might use four to five major flows, or even more when weeds, insects, or lack of rain required them. Between flows, they drained the fields so slaves could loosen the soil around the growing plants, reinforce banks, repair floodgates, and remove the most stubborn weeds.⁵⁶ The methodical cycle of draining and flowing kept the crop nourished and killed most weeds, so slaves were freed from the endless hoeing necessary on inland-swamp plantations, though they had still to mend the irrigation system frequently and had to make major repairs at the start of the growing season or after a hurricane.

Planters next refined flow culture into "water culture." Fields cultivated by this method were kept flooded; workers simply raised the level of the water to keep pace with the rice as it grew taller until the crop had shoots with three leaves (about twenty days after planting). The fields were then drained for about three weeks while slaves hoed the crop and inspected the irrigation system. Slaves reflooded the fields and drained them again only at harvest. Thomas Pinckney reported that, in experiments he performed in 1810, water culture yielded 1,069 bushels of rice on twenty-two acres, whereas flow culture yielded only 990 bushels on the same amount of land.⁵⁷ William Butler, who pioneered water culture on the Santee River in 1786, maintained that it was superior to "the slovenly method of flowing fields, & hoeing or chopping [weeds] thro' the water." Drayton also praised water culture because it required only one hoeing between planting and harvest, so each worker could manage more acres.⁵⁸

Water culture was most similar to Asiatic rice cultivation. The fields resembled Eastern paddies, constantly covered, as they were, with a silvery sheet of water through which the green shoots of rice shot up, leaved, and ripened. Water-culture planters also imitated painstaking Asian methods of hand transplanting and cultivation. Low spots where seedling rice had drowned needed to be transplanted by hand, and at the midpoint of the season, when the fields were drained for hoeing, slaves had to pass through the fields and gently raise fallen stalks, "running their fingers under them in the manner of combing." Charles Cotesworth Pinckney used transplanting for large sections of his crop. So did Henry Laurens, who consciously modeled his method of transplanting on that of China and estimated that it increased his yield from 1,500 to 2,000 pounds per acre. Water culture was therefore the final attempt to perfect rice

⁵⁶ For descriptions of flow culture see Heyward manuscript, 1802, and Drayton, *View of S.-C.*, 119-120.

⁵⁷ . . . Pinckney's *Letter on the Water Culture of Rice*. A bushel of "rough," i.e., partly processed, rice weighed approximately 65 lb.; Carman, ed., *American Husbandry*, 278.

⁵⁸ This was the technique Heyward recommended when he advised planters to prop open their floodgates to allow continual recirculation of water. See Heyward manuscript, 1802, Butler, "Observations on the Culture of Rice," Ser. 36-1786, S. C. Hist. Soc., Drayton, *View of S.-C.*, 120, and House, ed., *Planter Management*, 32-33.

cultivation on tide swamp, though it had limited impact. Planters could only undertake water cultivation if they had very level fields and if the nearby estuary was never subject to saltwater tides that could seep onto the fields and stunt or kill the rice.⁵⁹

A more common development on tidal estates was the use of tide-powered mills for cleaning rice. Since the start of the 1700s, slaves had processed rice by grinding it in upright wooden mortars—devices clearly derived from West African prototypes. By mid-century, planters learned to power rice mills by using a row of mortars with pestles attached to a central machine operated by horses, oxen, or water. Tidal rice plantations grew more rice than even these mills could handle, but the estates had systems of irrigation dams, ditches, and floodgates that could be modified to channel tidal force onto waterwheels as well as through irrigation ditches. This innovation was underway at the end of the colonial era, although it, along with tidal irrigation, proliferated only after the Revolution. By the 1790s, the technology for using tidal water for rice mills proved a success. Planters were especially pleased that tidal mills could use estuarial flows not suitable for irrigation. John Ball, Sr., for example, remarked in 1802 that the river alongside his plantation was “brackish as high as the tide flows—but my Mill works away brisker than ever in consequence of getting in more tide water by the new flood gate.”⁶⁰

Heartened by their achievements, engineers and planters next sought to automate as many steps in milling as possible, using Oliver Evans’s famous design for processing wheat flour developed in the mid-Atlantic region in 1784. An automated or “artificial” mill, as the Scot J. B. Dunlop described a Georgia machine in 1811, performed everything by “Mechanical power, and so much labour does it save that it is only necessary to deposit the Rough Rice in one apartment from whence it is carried off, by magic as it were, and produced in the appropriate part of the house fit for the market, and falling into the Cask in which they mean to convey it.” A more important point (perhaps too obvious for Dunlop to mention) was that tidal mills speeded up processing of planters’ increased crops. Tide milling represented another way in which lowcountry planters used force and technology to transform natural resources into profit.⁶¹

Struggles with earth, water, and machinery—not to mention neighbors—paid off for the gentlemen planters who emerged triumphant. Compared with inland-swamp estates, their plantations had larger rice crops, lower day-to-day demands for slave labor, and more certain har-

⁵⁹ The quotation is from the Heyward manuscript, 1802. For references to transplanting see entry for June 13, 1790, Fairfield Plantation book, Pinckney Family Papers, Ser. 37–60, S. C. Hist. Soc., and Henry Laurens to Edward Bridgen, Feb. 13, 1786, Laurens Papers Project.

⁶⁰ John Ball, Sr., to John, Jr., Jan. 12, 1802, Ball Family Papers, Ser. 516–14.

⁶¹ “A Scotsman Visits Georgia in 1811,” ed. Raymond A. Mohl, *GHQ*, LV (1971), 263. For a full discussion of the transformation of milling see Chaplin, *An Anxious Pursuit: Innovation in Commercial Agriculture in South Carolina, Georgia, and British East Florida, 1730–1815* (forthcoming), chap. 7, and Drayton, *View of S.-C.*, 123–124.

vests. Only a hurricane or a severe flood of saltwater could reduce their output.⁶² Pendleton concluded that “when a *tide swamp* plantation is properly banked and ditched, the crop will never, it cannot fail.” Drayton wrote, more modestly, that with tidal cultivation “the crop is more certain, and the work of the negroes less toilsome” during the growing season. Drayton also observed how tidal irrigation fertilized rice, because the “inundations, and flowings of tides, bear to it, and precipitate thereon, the finest and most subtle particles of manure.”⁶³ Rice planters thus had reason to compare their lands with those along the Nile—their waterways brought the floods of water and silt that had made lands in the Middle East bloom for centuries.

Each tidal plantation made a permanent alteration in the landscape: symbol of wealth, distant landmark along a river, ambitious attempt to control natural phenomena. Rice growers had scraped flat their sections of the coastal plain, heaved up great earthen structures, forever altered waterways, and etched rectilinear structures onto their fields (see Figure IV). They changed a peculiar natural environment into one that had artificial peculiarities, wonders to impress visitors. Even today, tourists visiting Middleton Plantation on the Ashley River marvel at the landscaped view between the river and the house, where terraces gently descend from the house to a pair of ornamental ponds. Beyond are the now-unused rice fields, which, when planted, had integrated the entire vista—an agricultural landscape joining an aesthetic one to emphasize how humans had carved, mounded, and flooded a natural terrain for the wealth and glory of a very few of its residents. Whites recognized their ability to reorder nature as a visible expression of their standing as members of a racial and economic elite. One man even interpreted this power in terms of individual, masculine personality when he teased a lovesick friend about having “fallen upon a new plan of planting his Rice & instead of making Straight lines as here to for, he has whole Squares wrote in Poetry in praise of a favorite Lady.”⁶⁴

A system of internal navigation was the final stage in this creation of an artificial landscape, and a step that most explicitly showed rice planters' power over their environment and in the political arena.⁶⁵ Planters,

⁶² On this unwelcome prospect see Samuel DuBose, Jr., to William DuBose, Sept. 23, 1804, Samuel DuBose, Jr., Letters, So. Hist. Coll., and Jacob Read to Charles Ludlow, Nov. 6, 1804, Read Family Papers, Box 1, Folder 14, So. C. Lib. DuBose expected winter freshets to leach the salt from his soil.

⁶³ [Pendleton], “Account of the Sea Coast of Georgia,” 77; Drayton, *View of S.-C.*, 116, 8. Because rice absorbs most of its nutrients through its stalk rather than its roots, the slow redepositing of silt from estuaries prevents loss of nutrients. See D. H. Grist, *Rice*, 2d ed. (London, 1955), chap. 16, and House, ed., *Planter Management*, 24.

⁶⁴ J. Hill to Robert Mackay, Apr. 26, 1806, Folder 374, Keith Read Papers, Ga. Hist. Soc.

⁶⁵ In this stage of its development, the lowcountry briefly resembled the classic “hydraulic societies,” supposedly shaped by “Oriental despotism,” described by Karl A. Wittfogel in *Oriental Despotism: A Comparative Study of Total Power* (New

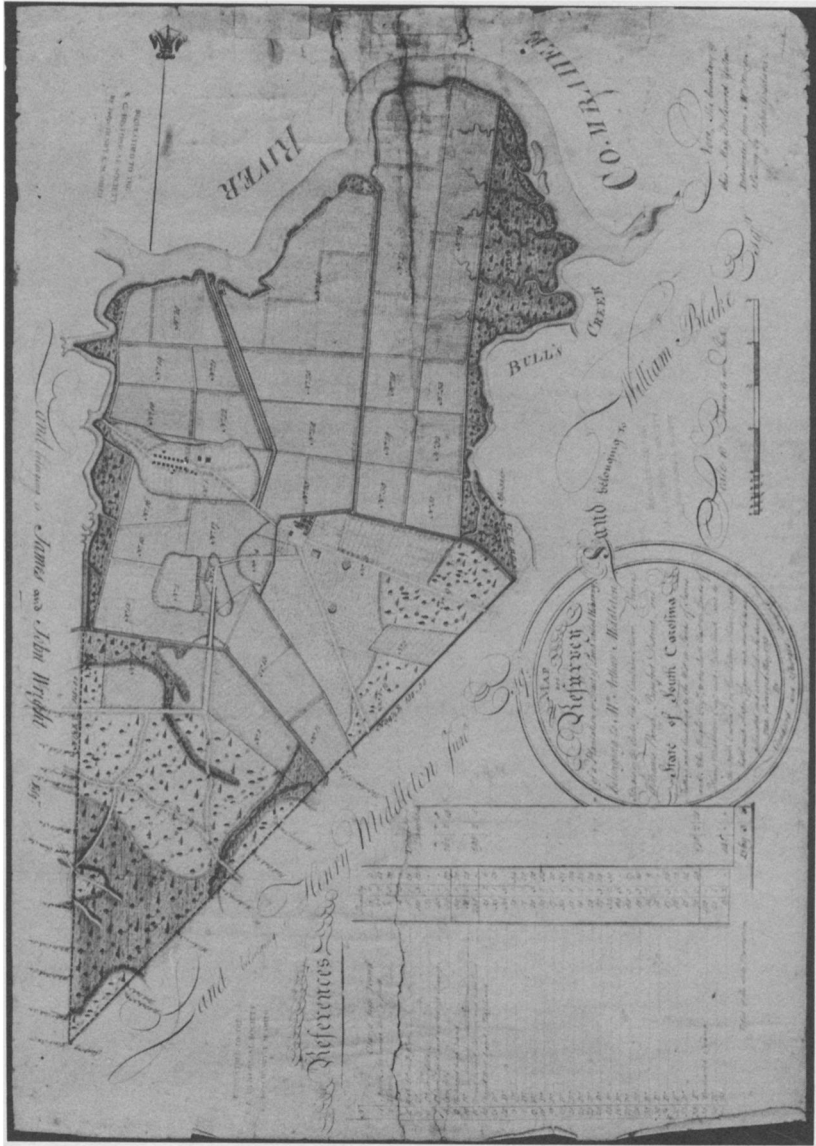


FIGURE IV. This tidal plantation on the Combahee River shows the extensive system of canals and dams that controlled a natural waterway, as well as the grid of rice fields (each section numbered) carved into the land. Compare with the curvilinear rice fields in Figure I. Hobonny Plantation belonging to "Mrs. Arthur Middleton," 1795. From the Collections of the South Carolina Historical Society.

especially in South Carolina, sought to improve their ability to get their increased crops to market and solicited government support of this goal. The Santee Cooper Canal Company (the first successful canal-building venture) was incorporated by the state legislature to create such a public waterway. It used *corvée* workers—slaves drafted to supply labor as a tax on the planters who stood to benefit from the completed canal.⁶⁶ The network of canals that spread between the 1790s and 1810s gave the antebellum lowcountry its final built form. The Santee Cooper Canal, which widened and connected existing waterways, allowed planters upriver to ship their crops to Charleston. It was a public structure that connected private estates to the market—all of them marked out in rectilinear form on a landscape that had once been covered with swamp and naturally flowing waterways. All landscapes show the influence of the human hand; this was a landscape where hands had been very busy shifting earth and water to create a system of permanent control over natural resources.

The wealthy, proud, elite planters who now ruled the coastline would remain in place until 1861. Their accomplishments rendered the lowcountry a distinctive region: marked by an unusual crop and unique method of irrigation, it seemed set apart, culturally and geographically, from the rest of the slaveholding South. The increased wealth of tidal plantations, and their owners' touchiness and determination to dominate resources, was already evident during the shift to tidal cultivation; the decades from the 1760s to the 1790s constituted a crucial era in the formation of this insular class—nascent in the 1720s, infamous by the 1860s. But while tidal planting became the preserve of wealthy slaveholders, they were not willingly served in this enterprise by their slaves. Indeed, the very shape of planters' newly reshaped estates revealed how

Haven, Conn., 1957). Wittfogel drew a family resemblance among agricultural societies in which the state had totalitarian control of water and waterways; these states accumulated power to such an extent that they nearly erased individual ability to control labor, property, and wealth. Given the liberal tradition in North America, such a culture would have been impossible, but lowcountry planters did bash great dents in this tradition. South Carolina would be alone among the states, for instance, in not providing compensation to citizens whose property was taken for public projects like canals. See Morton J. Horwitz, *The Transformation of American Law, 1780–1860* (Cambridge, Mass., 1977), 64. *Corvée* was also a feature of hydraulic societies that the lowcountry adopted. While these parallels are intriguing, true hydraulic societies can exist only in arid regions where control of water is a formidable power; the lowcountry was far from arid, and centralized control of waterways was impossible there. The lowcountry more nearly resembled the subinfeudated Asian societies described by revisionists of the theory of oriental despotism. See E. R. Leach, "Hydraulic Society in Ceylon," *Past & Present*, No. 15 (1959), 2–26. Wittfogel's premise—that Asian societies tend toward despotism—is questionable in any case.

⁶⁶ See Rachel N. Klein, *Unification of a Slave State: The Rise of the Planter Class in the South Carolina Backcountry, 1760–1808* (Chapel Hill, N. C., 1990), 244–246.

slaves had managed to achieve a formal degree of independence from whites during the same era they helped create a new form of plantation agriculture.

Slave resistance to white authority had deep roots in the lowcountry. Like every slaveholding community in the New World, the region had a history of slave defiance, which included passive resistance like noncooperation with or theft from slaveholders, individual acts of resistance like running away or wrangling with whites, collective attempts to create communities and cultural practices separate from those of whites, and organized rebellion. By the second decade of the eighteenth century, the rice-planting coastline had a black population that outnumbered the white population. The black majority also received constant infusions of African languages and cultures from the continuing importation of slaves. The lowcountry stood out among the other regions of early America because of its culturally distinct and more Africanized black population, whose members sometimes took up arms to defy white power. Insurrection was a perennial threat to whites.⁶⁷

Slaves' ability to use active resistance to win freedom, or at least some demonstrable measure of autonomy for their community or themselves as individuals, is nevertheless debatable. Compared to other unfree peoples (serfs, peasants, slaves in the Caribbean and Latin America), lowcountry slaves did not win significant autonomy. They could not completely remove themselves from white authority, as did maroons in Jamaica or Surinam; they did not maintain the communal independence enjoyed by serfs or peasants, who used collective action and internal leadership to distance themselves from the power of landlords; they could not wring important concessions from masters as slaves on sugar plantations occasionally did. As scholars have recently pointed out, the slave population in North America was too unsettled and fragmented to achieve community stability, let alone autonomy. Pursuit of profit and desire to squelch slave contentiousness could motivate whites to sell slaves, thereby breaking up families and plantations and disrupting customs and lines of solidarity. Divisions among the slaves themselves could also erode a solid front against whites' power. The desire of an individual to gain some advantage for self or for kin group could counteract attempts by other slaves to make larger gains.⁶⁸

⁶⁷ On slave culture and resistance in the region see Wood, *Black Majority*, 285–326, Charles Joyner, *Down by the Riverside: A South Carolina Slave Community* (Urbana, Ill., 1984), and Jane Landers, "Gracia Real de Santa Teresa de Mose: A Free Black Town in Spanish Colonial Florida," *American Historical Review*, XCIV (1990), 9–30.

⁶⁸ For examples of community strength among other groups held in bondage see James C. Scott, *Weapons of the Weak: Everyday Forms of Peasant Resistance* (New Haven, Conn., 1985), Stuart B. Schwartz, *Sugar Plantations in the Formation of Brazilian Society: Bahia, 1550–1835* (Cambridge, 1985), esp. 154–159 and chap. 14, Michael Craton, *Testing the Chains: Resistance to Slavery in the British West Indies* (Ithaca, N. Y., 1982), Richard Price, *First Time: The Historical Vision of an Afro-American People* (Baltimore, 1983), David Barry Gaspar, *Bondmen and Rebels:*

But compared to slaves who lived in regions where whites were in the majority (as in the mid-Atlantic or Chesapeake areas), lowcountry slaves do appear to have been remarkably powerful. Organized resistance, such as South Carolina's 1739 Stono Rebellion, did arise, and short-lived maroon communities did emerge. More often, slaves removed themselves from day-to-day white interference. They defined physical space to achieve this, designating their living area—the "quarter" or "street" where they had their dwellings—as an area where whites ventured only when they had imperative cause. Slaves used distinctive dialects—Gullah in South Carolina, Geechee in Georgia—that most whites did not fully understand. They used folklore and song to express parables whites could not comprehend. Space, language, and custom could, over time and through the actions of many individuals, establish a barrier against certain kinds of white intervention; they could also demystify white hegemony by making planters seem a remote, alien, or even foolish group. Even though slaves were legally property that increased their owners' wealth, they might always modify if not defy this status.⁶⁹

Overt resistance to white authority became especially prevalent during the War for Independence, when a slave was more likely to be a runaway, a rebel, or a commandeered worker than a laborer for his or her master. Because the war reversed the expectation that slaves worked for the profit of their owners, planters had difficulty persuading slaves (who had glimpsed some avenues of escape) to return to the old way of life. Even after the war, slaves were able to stage small-scale rebellions that revealed the battered condition of lowcountry plantations and the weakened authority of planters. In 1786, Georgian Lachlan McIntosh recorded how "all my working Negroes left me last Night," possibly because of "the short prospect of provision." Continued threat of rebellious desertion reminded planters of their tentative control over blacks.⁷⁰

In their struggle to avoid enslavement on the old terms, blacks could not only desert but also proffer skills as a way of getting whites to make concessions. African slaves had earlier contributed knowledge of Old World rice cultivation to the lowcountry; their progeny's new skills reflected the creolization of the rural black population, whose members had

A Study of Master-Slave Relations in Antigua, with Implications for Colonial British America (Baltimore, 1985), and Peter Kolchin, *Unfree Labor: American Slavery and Russian Serfdom* (Cambridge, Mass., 1987), chaps. 5, 6. For pessimistic assessments of the ability of North American slaves to achieve such autonomy see Jean Butenhoff Lee, "The Problem of Slave Community in the Eighteenth-Century Chesapeake," *WMQ*, 3d Ser., XLIII (1986), 333–361, and Kolchin, *Unfree Labor*, esp. 233–239.

⁶⁹ On day-to-day resistance see Scott, *Weapons of the Weak*, 39–43. On slaves' distinctive culture in the lowcountry see Joyner, *Down by the Riverside*, and Wood, *Black Majority*.

⁷⁰ Lilla M. Hawes, ed., "The Papers of Lachlan McIntosh, 1774–1799," Part VIII, *GHQ*, XL (1956), 157. On instability during the Revolutionary era see Nadelhaft, *The Disorders of War: The Revolution in South Carolina* (Orono, Me., 1981), 129, and Philip Morgan, "Black Society," 138–139, n. 90.

gained knowledge of the land and water on which they were born and lived. Their wisdom helped reshape the environment. Native-born blacks, unlike absentee planters or transient overseers, were permanent residents of the coastal landscape and vital to its exploitation. Whites even recognized that slaves were sometimes more familiar with their property than they themselves were. When Elias Ball's father died, for instance, no one in his footloose family could determine how a certain portion of the estate was to be parceled out because no one knew the land. One cousin who was familiar with it lived abroad; he had no intention of returning, but he helpfully wrote that others could solve the problem: "your Fellow Peter[,] Old Tom[,] Frank & many other of your Negroes knows [sic] the Spott" and could identify it to the family.⁷¹

Slaves also had skills specific to the construction of tidal plantations. Planters probably received assistance in designing irrigation systems from slaves who had been taught by military engineers to construct fortifications during the war. Engineering was still a military science only occasionally adapted to civil problems (like defenses against water—a natural rather than human enemy in, for example, the Netherlands). Observers likened the ditches and dams of rice plantations to military fortifications; short of a tour of Holland and its famous dikes, as Izard noted, knowledge of military engineering was the best education a tidal plantation builder could receive. Some male slaves continued to acquire such an education because they were drafted to construct canals, working with engineers for long stretches of time. Men belonging to the Ravenel family, for instance, labored for three years on the Santee Canal during the 1790s.⁷²

While sporadic resistance and acquisition of some engineering skills were poor substitutes for their wartime ability to flout white authority, slaves were able to use these limited strengths to create a formally recognized area of independence as a community with leaders drawn from within. The authority of the black driver is one important example of this post-Revolutionary trend. In the 1780s and 1790s, as tidal cultivation spread, so too did the tendency for lowcountry plantations to have drivers. In this era, drivers appeared more frequently in estate inventories than they had in colonial times, and whites were increasingly willing to commend their expertise with rice planting.⁷³ One South Carolinian boasted that his slave Jonathan was "without exception one of the best drivers in this state; and there are few White Men, who have a more general or better knowledge of planting." Another planter advertised for sale his "valuable Driver (many years experienced in the management of a tide swamp plantation)." Charles Cotesworth Pinckney pointed out that among

⁷¹ Elias Ball (of Bristol) to Elias Ball (of Charleston), Aug. 27, 1786, Ball Family Papers, Ser. 516–8.

⁷² See Izard's statement about military engineering in his letter to Thomas Pinckney, Aug. 12, 1793, Pinckney Family Papers, Ser. 3, Box 4, Lib. Cong. On the Ravenel slaves see entry for Jan. 1, 1796, diary of René Ravenel and Henry Ravenel, Ser. 12–313, Thomas Porcher Ravenel Collection, S. C. Hist. Soc.

⁷³ Philip Morgan, "Black Society," 118.

Ralph Izard's plantations, the one "where you make most to the hand & really a good Crop, there is no overseer but only a Black Driver." (This was partly because drivers were more honest than overseers, who were light-fingered with the salable rice left in their care.)⁷⁴

Other planters also implied that they trusted drivers more than overseers. When Laurens's overseer refused to take advice from the driver Cuffy (as well as others on the estate), Laurens fired the white man. Another rice planter who advertised for a white overseer assured applicants that, rather incredibly, they would have time to carry on a trade if they had one, as the actual "business of the plantation is conducted by a black man." So much did Thomas Spalding rely on the know-how and diligence of his slaves that, after his first few years of planting, he never again bothered to hire white overseers.⁷⁵

A second indication of how slaves enlarged a sphere of independent activity lay in the lowcountry's task system, long a source of contention between planters and slaves. Around the turn of the century, rice-field tasks took on firm and predictable characteristics, shedding the troublesome haphazardness of the colonial era. This was especially common on tidal plantations, because the irrigation system imposed an orderly grid on the landscape. Small ditches in the fields that directed water from the main irrigation system also marked out quarter-acre units of work; each square contained trenches that could also be counted off into a task, seventy-eight at a time. There could be little confusion or debate over a slave's task, since all units could be measured by a 105-foot surveyor's chain: a square to be hoed, seventy-eight trenches to be dug, and so on.⁷⁶ In addition, planters were careful never to make an individual slave complete an especially onerous task. If one square was slightly higher than the rest of the field, water there was shallower and weeds thicker; other workers were rotated in to help on such units, preventing one person from becoming too fatigued or discontented.⁷⁷

The authority of the driver and the codified task both evidenced whites' relinquishment of some control over planting. Each gridlike tidal plantation became a chessboard carved out from the natural landscape, a visible demonstration of how white and black players had faced off during the tumultuous years of the war, played a strategic game of defiance and

⁷⁴ *Columbian Herald*, Jan. 13, 1794; *Gazette of the State of South Carolina*, Dec. 20, 1784; Charles Cotesworth Pinckney to Izard, Dec. 26, 1794, Manigault Family Papers, Ser. 11-276-80.

⁷⁵ George C. Rogers et al., eds., *The Papers of Henry Laurens*, vol. 6: Aug. 1, 1768-July 31, 1769 (Columbia, S. C., 1978), 444-447; (Charleston) *City Gazette*, Mar. 12, 1800, cited in Philip Morgan, "Black Society," 119; Coulter, *Thomas Spalding*, 85.

⁷⁶ On measurement of tasks see plantation book, 1814-1847, Mackay-Stiles Papers, but see also a 1772 reference to the similar use of measurement in Rogers et al., eds., *The Papers of Henry Laurens*, vol. 8: Oct. 10, 1771-April 19, 1773 (Columbia, S. C., 1980), 291.

⁷⁷ For examples of this policy see entries for June 6 and 27, 1814, plantation book, 1814-1847, Mackay-Stiles Papers, and Heyward manuscript, 1802.

concession, then agreed on rules for a continuing (though implicit) contest. This result is perhaps the best characterization of how slaves in this portion of the New World managed to preserve their own and their community's integrity. They did not, like persistently rebellious Caribbean slaves or autonomous serfs, emerge as clear victors from a certain number of matches. But unlike counterparts elsewhere in the South, they remained constantly active in what whites recognized as an ongoing struggle between the races.

Drivers were sometimes the decisive weight in the balance between black independence and white authority. They kept slaves working and minimally content with everyday conditions, and they were buffers between whites and the black labor force. Drivers rarely ran away and seemed to take seriously their privileged yet burdened role as the men between. Their delicate position might also explain why, as Charles Cotesworth Pinckney had noted, drivers were more honest than overseers. If an overseer was caught pilfering rice, he and his family might suffer from a planter's wrath; if a driver was thus detected, the entire work force (numbering in the hundreds) might be punished or be put under direct white authority for a time. But because drivers were important in keeping up production, planters recognized how black leadership could skew the careful arrangement of racial power. In cases of rebellion or rumored rebellion, drivers (along with other skilled slaves) were automatically suspected as organizers. Robert Mackay and other Georgia planters detected one such scheme in 1806, around Christmas, when slaves had more free time than at any other season. Mackay claimed that the plot was led by "drivers & leading Negroes" who made an ominously successful appeal to "all the Sensible Drivers on the River."⁷⁸ The drivers' part thus indicates whites' uneasy yet undeniable realization that their slaves formed a separate community with its own leaders.

Students of slavery recognize that slaves were able to find spaces for themselves within a society dominated by slaveowners. In the lowcountry, slaves not only carved out small places *within* rice plantations, but also carved out these plantations *as* places for themselves. A map of an estate in South Carolina (see Figure V) indicates how slaves created this new landscape. The strongest evidence for white dominance appears around the estate, especially with the repetition of the word "belonging" in reference to neighbors' landholdings. Inside, the plantation's physical features (the spread of rice fields, the extensive irrigation system) asserted the racial and economic power of the planting elite but also revealed an internal, meaningful world for slaves. Slaves lived in two separate settlements—one shown in the upper left corner and the other toward the

⁷⁸ On the scarcity of drivers among runaways and drivers as community leaders see Philip Morgan, "Black Society," 119–120. See also Clifton, "The Rice Driver: His Role in Slave Management," *S. C. Hist. Mag.*, LXXXII (1981), 331–353. But see Kolchin, *Unfree Labor*, 95–97, 196–207, on how drivers' authority paled in comparison with that of serf leaders—and that of planters themselves. Quotation from Robert Mackay to Eliza Mackay, Dec. 29, 1806, Mackay-Stiles Papers.

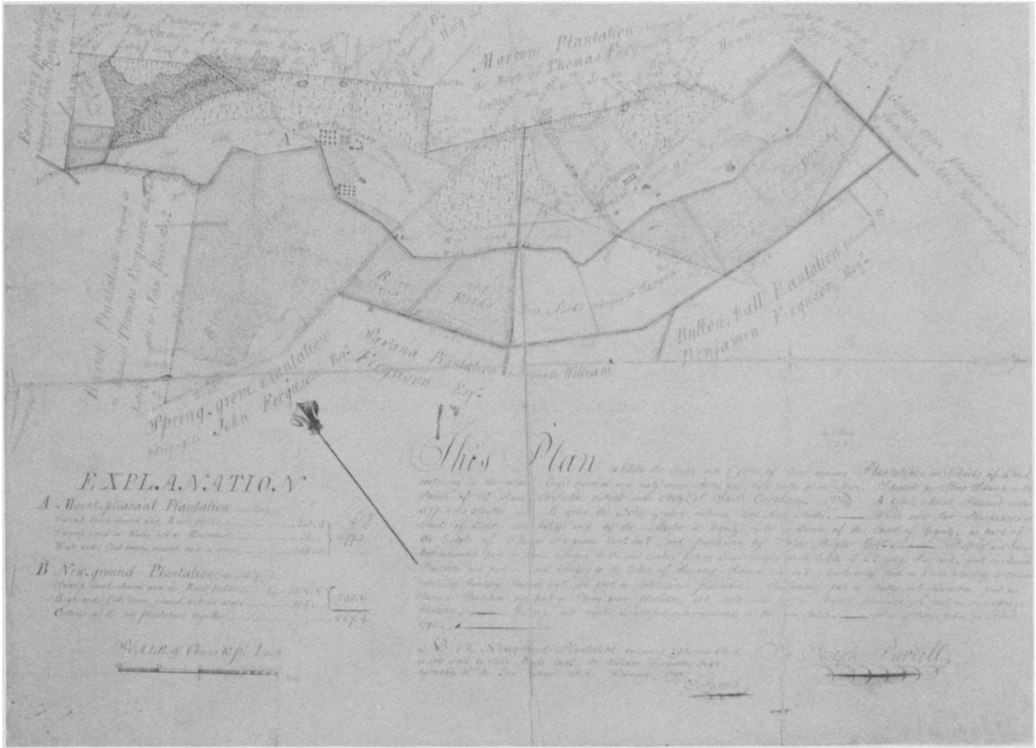


FIGURE V. This plantation map gives a good sense of how slaves created an internal world for themselves on rice plantations. The roads and canals (marked in double lines) acted as conduits for movement around and off the plantation. There are two settlements (indicated by groups of black squares), “Mount Pleasant” on the left and “New Ground” at the center. Two cemeteries are to the right of the latter; they appear as dark ovals, one above the road, one below. Plantation of John Boyle, Charleston District, April 1793. From the Collections of the South Carolina Historical Society.

middle—connected by roads. Roads and canals also acted as conduits to neighboring plantations. These features indicate a fairly large black community yet one whose varied members had access to each other, on and off the plantation. To be sure, a planter armed with such a map could use it for surveillance; he would know where his slaves lived and how easily they could get off the plantation.

The map also shows two cemeteries, both to the left of the central settlement—one reserved, perhaps, for the white family. Their inclusion indicates how whites themselves were aware that the estates “belonging” to them might have communal meaning to their slaves, who had places of remembrance and honor for ancestors. To include settlements and cem-

eteries on such a map showed whites' recognition that slaves had stronger connections to certain portions of their land than they themselves had. The nonproductive landscape provided social meaning for its black residents, just as the productive landscape marked out negotiated terms of labor for them. This sense of place survived emancipation. When a freed slave named Morris learned that his new landlord was going to remove him from the Waccamaw River plantation on which he had been born, he confronted the white man: "I was born on dis place before Freedom," he objected. "My Mammy and Daddy worked de rice fields. Dey's buried here. De fust ting I remember are dose rice banks. I growed up in dem from dat high." Slaves' assertion of attachment to a rice plantation—from the orderly form it gave their work to the rootedness it gave them through the generations—reminded whites that the world they had made on the basis of slavery also provided a separate world for the slaves themselves.⁷⁹

The new, irrigated landscape along the coast thus revealed uneasy compromises among the blacks and whites who lived through the Revolutionary era. It also disclosed an emerging sense of doubt among planters about how their efforts to entrench plantation slavery by improving their plantations were perhaps damaging the environment around them and the humanity of their slaves. Their unusual natural world had long been a point of pride because it had drawn the flattering attentions of an international scientific community; gentlemen planters had, often enough, swapped pieces of this natural world for information about agriculture in other regions. But when whites ordered slaves to dig up the land and redirect the flow of water, they changed an environment that had once supplied prize specimens to the likes of Linnaeus.

Tidal planters began to find themselves caught in a cycle of improvement and degeneration created by the less-than-predictable flow of water through their lands. Residents on the Santee River, for instance, cultivated tidal lands for several years, then ruefully discovered that their efforts had exacerbated the dangers of flooding. They wanted to clear the now more turbulent river and cut more canals to drain off its increased water, transforming the river along their properties into a sort of canal, an artificially controlled waterway that needed constant tending.⁸⁰ As planters intensified their use of estuaries in this manner, expansion of river traffic had other unwelcome consequences. Planters blamed slaves and their boats for this, conveniently forgetting that boatmen (black or white) were often doing work or errands for them. A Charleston engineer warned one planter, who wanted to add a navigable canal to his plantation, that this alteration might irrevocably disrupt the natural order. He pointed to slaves who had widened the Ogeechee River in Georgia for easier navigation: they had cleared the river so well that saltwater rushed three miles farther up river than before, spoiling rice fields well above the point

⁷⁹ Quoted in Joyner, *Down by the Riverside*, 42–43. For the communal significance of slave burials see Eugene D. Genovese, *Roll, Jordan, Roll: The World the Slaves Made* (New York, 1972), 194–202.

⁸⁰ Petitions to General Assembly, 1795, no. 108, S. C. Arch. & Hist.

of navigation. The engineer cautioned rice planters that their actions "may be attended with ruinous effects, which may not be foreseen" until it was too late. He warned that "Nature in the formation of her works has acted for the general welfare of man. It therefore behoves us to consider well the consequences before we deviate from, or counteract her ways." His was a skeptical realization of how humans could perform damaging actions, and this sentiment began to filter through the planter elite.⁸¹

David Ramsay, more of an optimist, conjectured that injury due to human cultivation was undeniable but temporary. He noted, for instance, that the expansion of rice planting had increased the prevalence of malaria but believed this would pass away. "These exciting causes of disease lie dormant in the native state of new countries, while they are undisturbed by cultivation," he postulated, "but when the ground is cleared and its surface broken they are put into immediate activity." Ramsay concluded that when "the original mephitic effluvia are exhausted and cultivation has improved the face of the earth, it again becomes healthy." He drew an intriguing parallel with Britain: fen ridden when invaded by the Romans; perfectly dry by the modern age. But his conceit was certainly little reassurance, because the analogy raised the possibility that several centuries could pass before damage and disease would subside.⁸²

These warnings about rice planting and nature paralleled statements whites began to make about slavery and human nature. Even before the Revolution, whites who were influenced by Enlightenment thought on human nature had begun to concede that slaves, like themselves, were endowed with an essential humanity, that they had a human nature requiring some measure of respect. Laurens observed that his workers, "tho' Slaves[,] are still human creatures" and had a right to humane treatment from him. Georgian John Channing likewise believed that because his slaves were, like whites, "reasonable creatures," they should be treated "with humanity and kindness." During the Revolution, John Laurens drew the logical conclusion (unwelcome to whites) that slaveholders had "sunk the Africans & their descendants below the Standard of Humanity."⁸³

While whites' emerging uncertainty over the rectitude of slavery never developed into actual reform of the institution, their doubts do reveal important changes in the lowcountry. The skeptical view of how humans damage their world and each other raised questions about the character of a society that depended on an artificial ordering of natural phenomena created by unfree labor. Planters enjoyed the increased wealth that their

⁸¹ Charles Hateley to John Coming Ball, Aug. 6, 1792, Ball Family Papers, Box 1, Folder 10, So. C. Lib.

⁸² Ramsay, *History of S.-C.*, II, 36, 39n.

⁸³ Rogers et al., eds., *The Papers of Henry Laurens*, vol. 4: *Sept. 1, 1763–Aug. 31, 1765* (Columbia, S. C., 1974), 596; John Channing to Edward Telfair, Aug. 10, 1786, Folder 3, Box 3, Edward Telfair Papers, Perkins Library; John Laurens to Henry Laurens, *Laurens Papers*, XI, 277. On this topic see Chaplin, "Slavery and the Principle of Humanity: A Modern Idea in the Early Lower South," *J. Soc. Hist.*, XXIV (1990), 299–316.

new-built environment gave them but worried over the latent costs of the innovations that promoted their success. Their emerging lament over the ill consequences of human endeavor expressed a paradox. Rice planters had maintained slavery in their region yet conceded more than ever to their slaves' dissenting vision of themselves as a semiautonomous people; they were inspired by a rationalist spirit of improvement to reshape their region yet felt the early pangs of romantic melancholy over the loss of an untouched, natural order.⁸⁴ The landscape that planters constructed around themselves provided, quite literally, a map of their haphazard route among conflicting desires for change and for continuity.

⁸⁴ On romanticism, melancholy, and the sense of (ruined) place see Michael O'Brien, *Rethinking the South: Essays in Intellectual History* (Baltimore, 1988), 50–51, 83. On degeneration of nature in the southern colonies see Timothy Silver, *A New Face on the Countryside: Indians, Colonists, and Slaves in South Atlantic Forests, 1500–1800* (Cambridge, 1990), esp. 139–185. On late 18th-century perceptions that the southern landscape was changing for the worse see *ibid.*, 112–115, and Bruce Silver, "William Bartram's and Other Eighteenth-Century Accounts of Nature," *Journal of the History of Ideas*, XXXIX (1978), 598–603.