

Harry Pecorelli III. ARCHAEOLOGICAL INVESTIGATION OF THE *B&B* WRECK (38BK1672) AN EIGHTEENTH-CENTURY PLANTATION-BUILT VESSEL CHARLESTON, SOUTH CAROLINA. (Under the direction of Dr. Lawrence E. Babits) Department of History, April 2003.

This thesis documents the remains of an eighteenth-century wooden vessel found in Quinby Creek, South Carolina, by Doug Boehme and Robert Bush, in October 1993. Phase II pre-disturbance archaeological investigations conducted on the *B&B* Wreck (38BK1672) during two field schools and one field season provided sufficient information to address the construction location, vessel type, vessel use, and reasons for 38BK1672's demise.

Structural remains at 38BK1672 consist of a keel with a keel shoe, an intact but eroded sternpost, a disarticulated stem assembly, intact floors and futtocks, portions of an eroded keelson, and outer hull planking. All timbers are oak except for non-garboard hull planks, trenails, and the keel shoe, which are of pine. Other exposed diagnostic features include wrought iron fasteners and the fastening patterns, repairs, and hardware.

This document also draws upon the historical and geographical context of 38BK1672. The site is part of a much larger picture depicting Charleston and its hinterland maritime commerce, the driving force behind Charleston's development. Plantation owners built shallow-draft, riverine vessels to transport raw materials to Charleston warehouses. Raw materials were then transshipped to larger ocean-going vessels, on which they were carried to Europe. Manufactured goods entered Charleston from other countries and were shipped to upriver plantations.

Non-typical shipbuilding techniques, most notably by the way the builder prepared the keel, suggest 38BK1672 was built on a plantation. It can be inferred that

plantation carpenters, building a vessel without shipwright's training, approached certain construction problems differently than a shipwright apprenticed in Europe. When compared to other regional eighteenth-century vessels archaeologically investigated, a new vessel type emerges, the Lowcountry plantation-built vessel. While these plantation-built vessels, including Brown's Ferry vessel, Mepkin Abbey wreck, Ingram vessel, Clydesdale Plantation sloop, Malcolm boat, and 38BK1672, all draw upon the European shipbuilding tradition, these vessels have unique construction variants, and do not appear to have been constructed in a shipyard. Although construction techniques differ between these vessels they are similar in that they all appear to use economical forms of construction.

Vessel dimensions and construction leave little doubt that 38BK1672 is anything but a sloop or schooner, most likely the latter. The proximity to numerous plantations and a hull design maximizing cargo-carrying capacity while maintaining shallow draft, suggests that 38BK1672 was used to haul cargo. The presence of wear damage, including repairs, teredo worm holes, wear from shifting cargo, and 38BK1672's location in Quinby Creek suggests abandonment following a lengthy career. The presence of another sunken vessel almost beneath 38BK1672's stem suggests that this section of Quinby Creek is a ship graveyard.

ARCHAEOLOGICAL INVESTIGATION OF THE *B&B* WRECK (38BK1672)

AN EIGHTEENTH-CENTURY PLANTATION-BUILT VESSEL

CHARLESTON, SOUTH CAROLINA

A Thesis

Presented to

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By

Harry Pecorelli III

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DEDICATION

To

Bruce G. Harvey

for without whose help this paper would not exist

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CHAPTER I

INTRODUCTION

In October 1993, South Carolina hobby divers Doug Boehme and Robert Bush located the remains of a wooden vessel while diving for artifacts in Quinby Creek.¹ Boehme and Bush recognized the wooden remains as an old shipwreck and reported their find to the South Carolina Institute of Archaeology and Anthropology (SCIAA). SCIAA conducted preliminary on-site investigations and designated the site the *B&B Wreck* (38BK1672) in November 1993. They determined that the ship was relatively intact and worth additional research.

This thesis reports archaeological findings and presents interpretations relating to 38BK1672, an eighteenth-century, plantation-built vessel. 38BK1672, when examined in comparison to other southern lowcountry wrecks, represents a previously unidentified type of vessel. To build a plantation vessel, plantation craftsmen used available resources and labor to create vernacular adaptations on formal shipbuilding traditions. This new type was a vernacular form of the English shipbuilding tradition, adapted for use in the specific geography of the southern riverine plantation environment. Such vessels provided a crucial link between the regional ocean port and the widely dispersed plantations, and were constructed specifically to navigate the shallow tidal rivers of the southern lowcountry.

¹ Under South Carolina law, divers holding a valid hobby license issued by the state may collect artifacts and fossils from beneath state waters for recreational purposes.

38BK1672 is located in Quinby Creek, a tributary of the East Branch of the Cooper River, in Berkeley County, South Carolina. The site is adjacent to the northern boundary of Quinby Plantation, thirty-nine river miles from Charleston (Figures 1 and 2). Beginning as a land grant in 1681, Quinby Plantation passed through numerous merchant families. The plantation appears in the historical record as Quenby,² Queenbie,³ Queen Bee,⁴ Queenbee,⁵ Quinby,⁶ Quimby,⁷ and Shubricks.⁸ Archaeological investigation of 38BK1672 enabled researchers to theorize about construction, vessel type, vessel function, date, and reason for its eventual sinking in Quinby Creek. Studied carefully and in its historic context, 38BK1672 can tell us a great deal about Charleston's maritime history.

On-site investigation of 38BK1672 began in May 1994. SCIAA requested that this be a pre-disturbance Phase II study, no excavation be conducted beyond removing river debris; limiting investigation to exposed portions only.⁹ Archaeological field investigations included recording 38BK1672's dimensions, exposed structural elements, and diagnostic features. 38BK1672 has a keel length of 51 feet and an approximate beam

² Henry A. M. Smith, "The Baronies of South Carolina," *South Carolina Historical and Genealogical Magazine* 18, no.1 (January 1917): 6.

³ Charleston County Deed Book, Bk. F, no. 6, 535.

⁴ John B. Irving, *A Day on Cooper River* (Columbia, South Carolina: The R. L. Bryan Company, 1969), 165.

⁵ Michael Stevens and Christine Allen, ed., *Journals of the House of Representatives 1787-1788* (Columbia, South Carolina: University of South Carolina Press, 1981), 103.

⁶ Charleston County Deed Book, Bk. O8:144.

⁷ William D. James, *A Sketch of the Life of Brigadier General Francis Marion and A History of His Brigade, From Its Rise in June 1780 until Disbanded in December 1782* (Marietta, Georgia: Continental Book Company, 1948), 125.

⁸ "Charlestown, July 25, By Authority," *The Royal Gazette*. 21 to 25 July 1781, p. 3, column 1; Irving, 165.

⁹ Christopher Amer, personal communication, 13 September 1994.

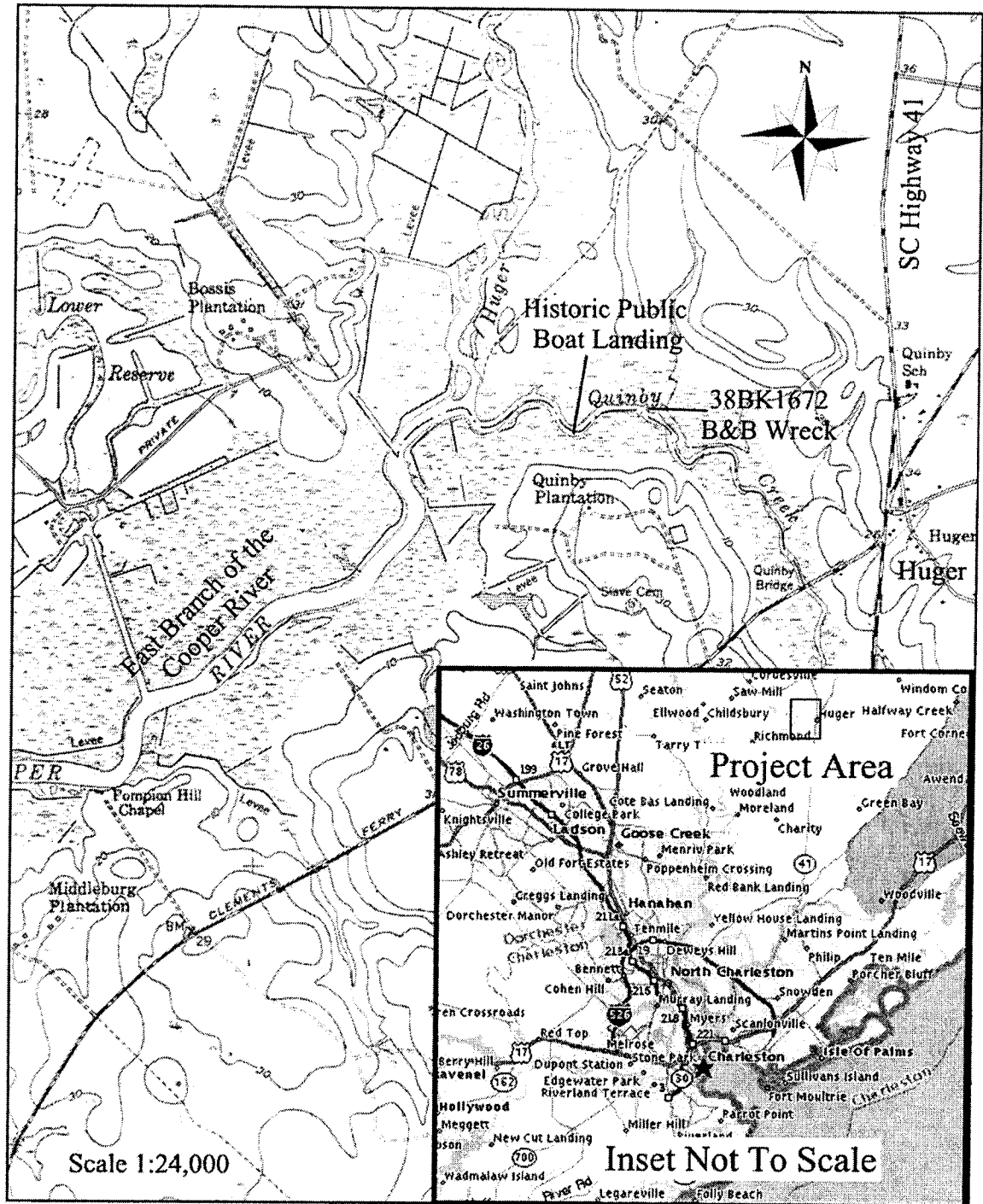


Figure 1. Location of the vessel remains (38BK1672) in Quinby Creek, Berkeley County, South Carolina.¹⁰

¹⁰ United States Geological Survey, Huger, 7.5-minute quadrangle, South Carolina, 1971.

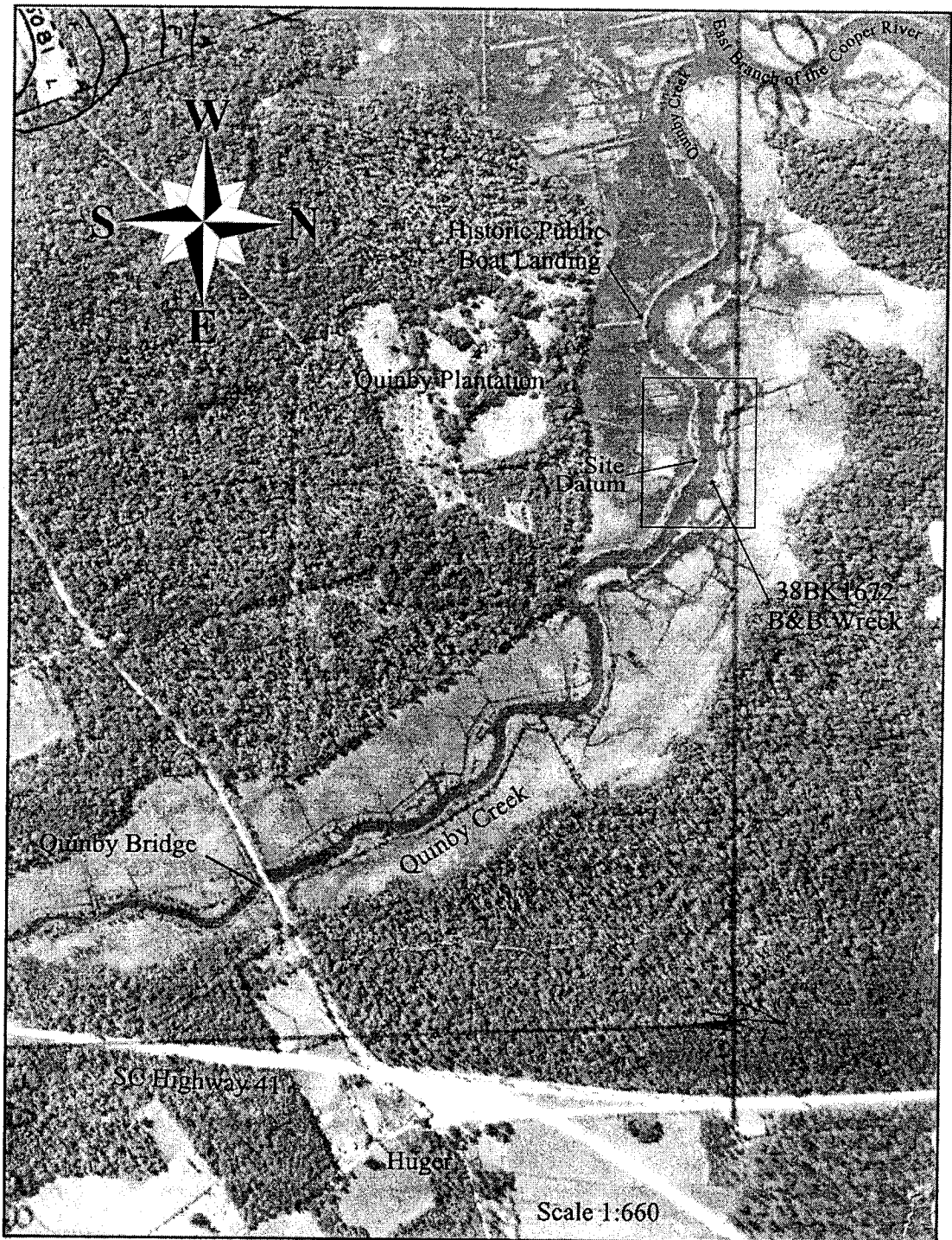


Figure 2. Location of 38BK1672 in Quinby Creek, Berkeley County, South Carolina.¹¹

¹¹ This aerial photo chosen over more recent photos because the historic landing and creek bank features are more clearly visible; (United States Department of Agriculture, Soil Conservation Service Aerial Photo, flown 11/3/1941, archived at the Berkeley County Conservation District, Charleston, South Carolina, BQN-3A-108).

of 16 feet. Exposed structural elements include a keel, an intact but eroded sternpost assembly, a disarticulated stem assembly, intact disarticulated floors and futtocks, portions of an eroded keelson, and hull planking (Appendix A). Other exposed diagnostic features include fasteners and the fastening patterns, repairs, and hardware.

The information presented in this thesis was collected during two field schools and one field season conducted by the author. The author instructed volunteer divers in underwater archaeological techniques and conducted the investigations within the guidelines of a Phase II pre-disturbance archaeological study. Divers cleared river debris and collected enough information to produce a site plan illustrating spatial relationships between 38BK1672 and the shoreline. In addition, the author collected samples from structural elements to identify wood species (Appendix B).

Site 38BK1672 must be understood in its historical and geographical context. The site is part of a much larger picture depicting Charleston and its hinterland maritime commerce, the driving force behind Charleston's development. 38BK1672 represents one aspect of Charleston's trade.

Charleston's unique climate presented great opportunities, including two growing seasons, ample waterpower, and an abundance of timber.¹² The challenges facing settlers were primarily geographical. The distinctive landscape, a maze of rivers and creeks dividing higher, well-drained lands; created difficulties in moving products to Charleston

¹² James Glen and George Milligen-Johnston, *Colonial South Carolina, Two Contemporary Descriptions*, ed. Chapman J. Milling (Columbia, South Carolina: University of South Carolina Press, 1951), 18.

and the world beyond. As cartographer Robert Mills stated, "there is no viable agricultural enterprise that is further than five miles from a navigable waterway."¹³ Basic business practices of profit maximization and efficient use of resources required utilizing the cheapest means available for getting products to market. In the Charleston area, this meant using rivers and their tributaries, but deep-draft, ocean-going ships could not navigate the shallow rivers and tributaries above Charleston to the inland plantations.

In the late-eighteenth and early-nineteenth centuries Charleston was a bustling, thriving community. Charleston's livelihood was dependent on its relationship between inland resources and a demand for those resources by other colonies and nations. Inland plantations harvested the resources and shipped them through Charleston. Manufactured goods entered Charleston from other countries and were shipped upriver to the plantations. This symbiotic relationship depended on water-born transport.

Plantation owners built small, shallow-draft, riverine vessels to transport raw materials downstream to Charleston's warehouses. The raw materials were then transshipped to larger ocean-going vessels for transport to European manufactures. Riverine vessels would then return to the upriver plantations laden with needed manufactured goods from other countries. Humble boats such as 38BK1672 represent the link between remote plantations and international commerce.

¹³ Robert Mills, *Statistics of South Carolina: including a view of its natural, civil, and military history, general and particular* (1826; reprint, Spartanburg, South Carolina: Reprint Company, 1972), 25.

CHAPTER II

CHARLESTON'S MARITIME HISTORY IN THE SOUTH CAROLINA

RIVERINE SYSTEM

Spanish exploration of the South Carolina coast began in 1520, when a landing party went ashore near the Port Royal vicinity at Santa Elena.¹ Port Royal was of great interest to both the Spanish and the French, but Santa Elena was not a permanent settlement. The first Spanish attempt at a permanent settlement on the South Carolina coast was San Miguel de Gualdape in 1526, in Winyah Bay near Georgetown.² The French, under Jean Ribault, made an unsuccessful attempt to establish a settlement called Charlesfort on Parris Island in 1562.

Settlers in the Carolina lowcountry were caught up in wide-ranging rivalries among the English, Spanish, Native Americans, and Africans. The disputes and rivalries encompassed nearly all the lowcountry, an area that spanned hundreds of miles from South Carolina to northern Florida. The Spanish drove the French from East Florida in 1565, and established a settlement at what is now St. Augustine. The Spanish presence was, and remained, a continual threat to English settlers; particularly after 1680, when Spain learned of the Charles Town settlement.³

¹ Paul E. Hoffman, "Legend, Religious Idealism, and Colonies: The Point of Santa Elena in History, 1552-1556," *The South Carolina Historical Magazine* 84, no. 2 (April 1983): 59-71; Lawrence S. Rowland, "Alone on the River: The Rise and Fall of the Savannah River Rice Plantations of St. Peter's Parish, South Carolina," *The South Carolina Historical Magazine* 88, no.3 (July 1987): 1.

² Paul Quattlebaum, *The Land Called Chicora, the Carolinas under Spanish Rule with French Intrusions, 1520-1670* (Gainesville, Florida: University of Florida Press, 1956), 17.

³ Charles Town was incorporated in 1783 when the name was officially changed to Charleston.

England's King Charles II was more than willing to grant large tracts of land to planters and traders eager to settle the new colony. John Colleton, a leading Barbadian planter, went to England in 1660 to pursue a land grant. The English king ignored Spain's claim to the region and granted Carolina to the Lords Proprietors in 1663. Their charter granted the Lords Proprietors ownership of a vast territory between 31 and 36 degrees north latitude between the two oceans in return for an annual payment of twenty marks and one fourth of all gold and silver that might be found.⁴ The original land grant corresponded to today's North Carolina and South Carolina and extended west across North America to the Pacific Ocean.

The Lords Proprietors secured a second charter in June 1665. The new charter extended boundaries to latitude 36 degrees 30 minutes N on the north and 29 degrees N on the south (Figure 3). The second charter included all of Virginia, and extended south to a point sixty-five miles below St. Augustine, Florida. The southern border intruded upon territory settled by Spain a century earlier and naturally increased the hostility Spain felt toward any nearby English settlement.

The next year, 1666, Barbados planters hired William Hilton to explore the land grant. He spent over a month in the waters around Port Royal and St. Ellens, leaving with a high opinion of the area's potential as a colony. Prompted by the account of tall pines and good soils, the Lords Proprietors directed William Sayle to establish a

⁴ David D. Wallace, *South Carolina: A Short History 1520-1948* (Chapel Hill, North Carolina: University of North Carolina Press, 1951), 24.

settlement at Port Royal. Sayle and a number of colonists reached Port Royal and began constructing

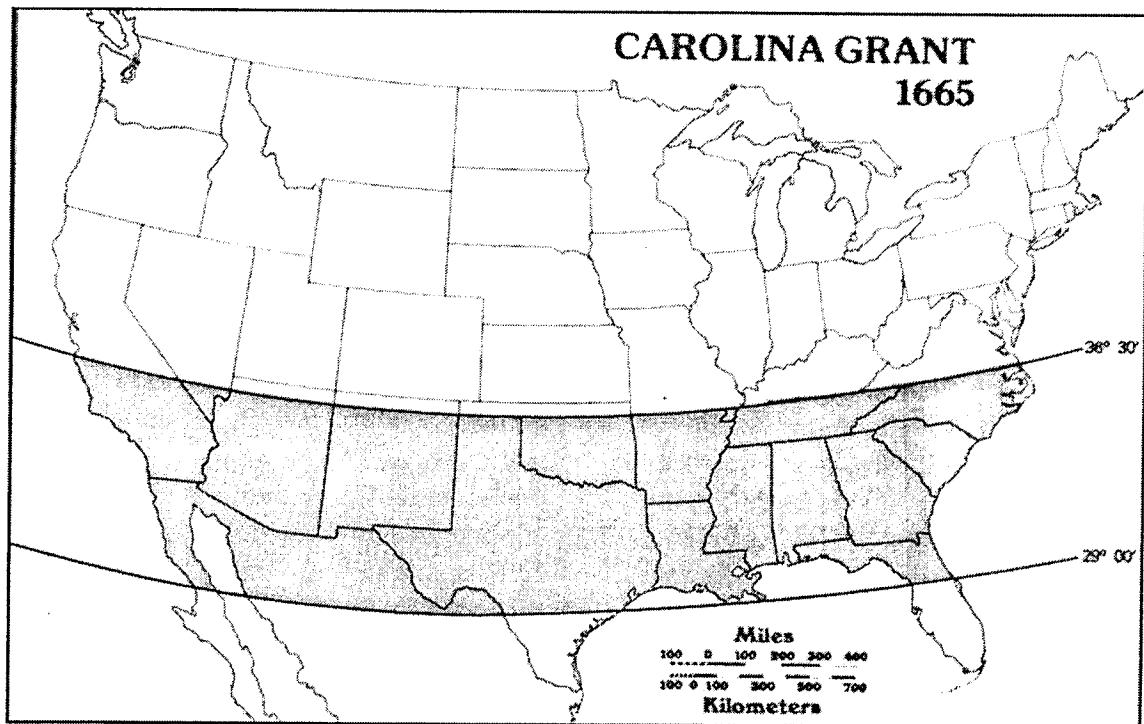


Figure 3. The Lords Proprietors land grant corresponding to the area south of latitude 36 degrees 30 minutes and north of latitude 29 degrees.⁵

a town in 1670. Hostile tribes convinced them to move farther north. They abandoned the Port Royal site after a few months because it was too close to Spanish settlements and too difficult to defend with its unrestricted ocean access. The colony moved to the Ashley River's western bank and settled Charles Town (Figure 4). It is interesting to note Barbados' influence on South Carolina. Of the eleven parish names in Barbados, nine appear as South Carolina parishes (Figure 5).

⁵ Charles F. Kovacik and John J. Winberry, *South Carolina: A Geography* (Boulder, Colorado: Westview Press, 1987), 3.

Seventeenth-century European markets were eager for New World furs and raw materials. England was especially eager to establish trading posts and seaports. The Crown was anxious to claim the region so they could enrich the English coffers. A first

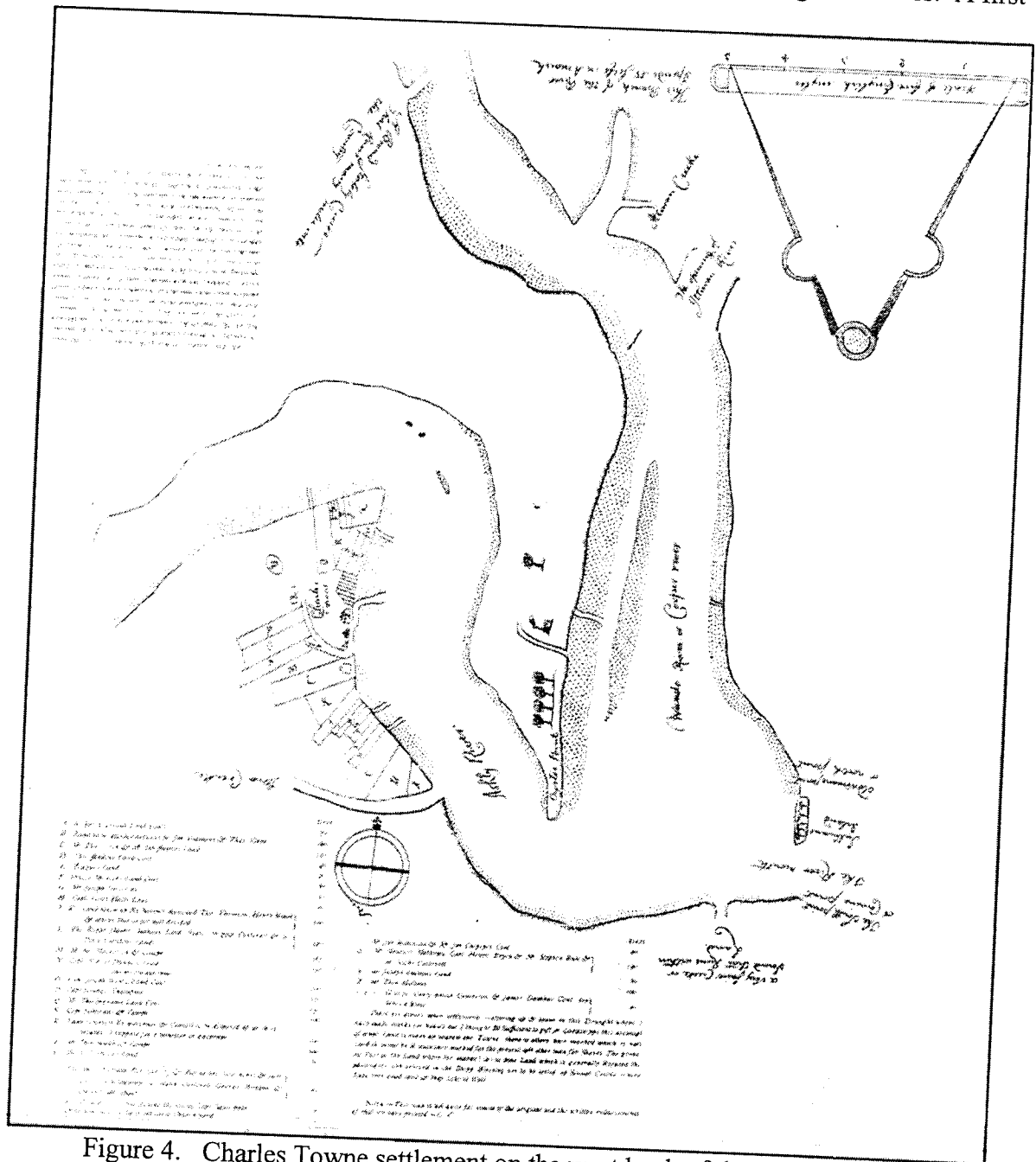


Figure 4. Charles Towne settlement on the west bank of the Ashley River.⁶

⁶ John Culpeper, "Map of Charles Towne settlement on the west bank of the Ashley River," 1671.

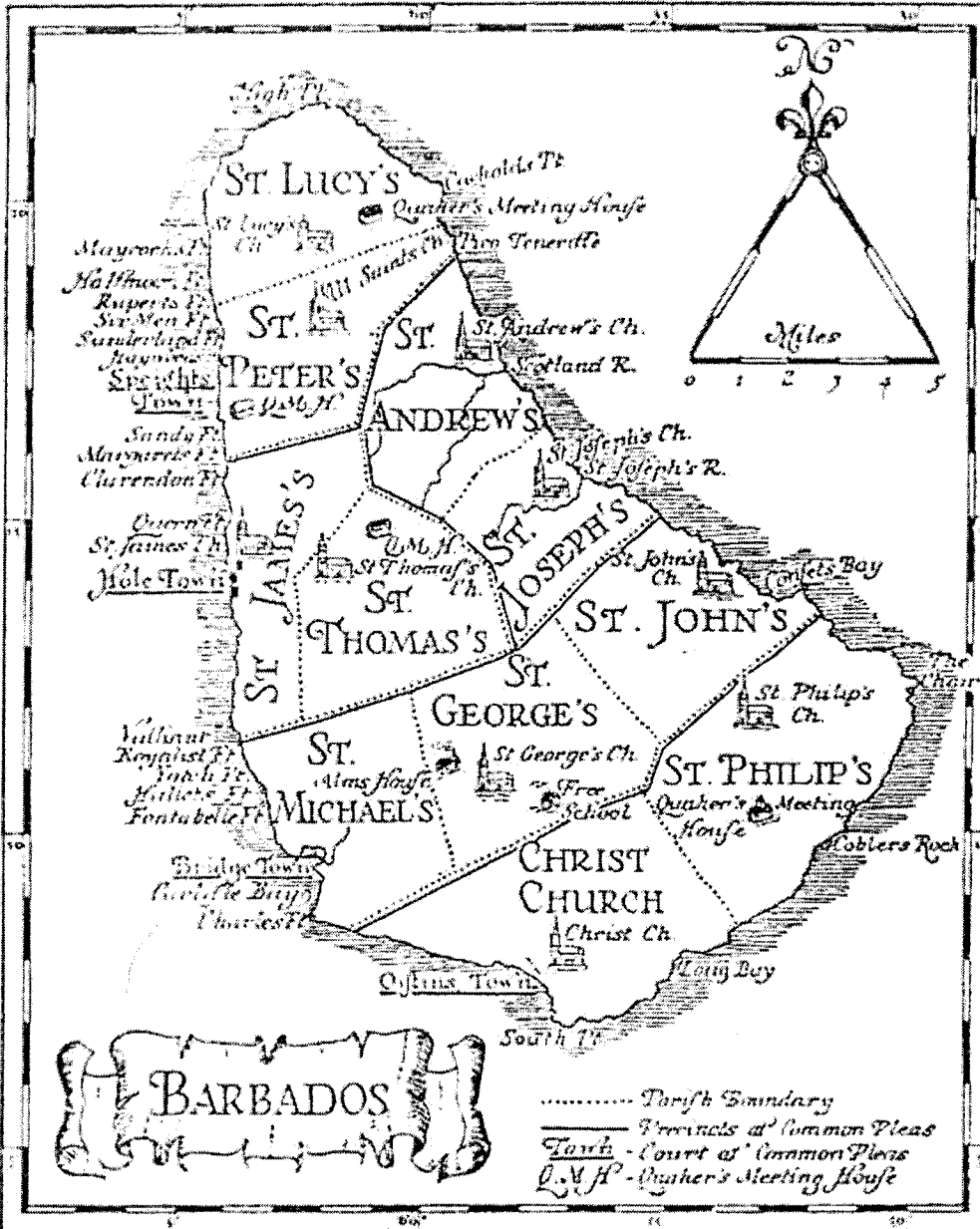


Figure 5. Barbados, nine parish names later used in South Carolina.⁷

⁷ Vincent T. Harlow, *A History of Barbados, 1625-1685* (1926. Reprint, New York: Negro Universities Press, 1969), 335.

order of business was initiating trade with native tribes as a way of ensuring both economic and physical survival.⁸

Before settlements could be established and opened for settlement, the eight Lords Proprietors adopted a set of favorable laws to govern the new territory. These laws were outlined in the "Fundamental Constitution" drafted by philosopher John Locke.⁹ The Fundamental Constitution divided the whole province into counties. Counties were further divided into forty, twelve thousand acre parcels; eight of which were seigniories, eight were baronies, and twenty-four were colonies (Figure 6).¹⁰ The seigniories were reserved for the Lords Proprietors; the baronies were reserved for Landgraves and Caciques (hereditary nobility of the province), while colonies were reserved for common people.

The terms Landgrave and Cacique were chosen because the South Carolina Constitution required that the provincial terms of nobility be different from the terms used in England.¹¹ There was one Landgrave and two Caciques per county.¹² Each Landgrave was entitled to four baronies (48,000 acres) and each Cacique was entitled to two baronies (24,000 acres) totaling six baronies per county.¹³ Baronies would later form many early plantations.

⁸ James W. Covington, "Stuart's Town - The Yemassee Indians and Spanish Florida," *The Florida Anthropologist* 21, no. 1 (March 1968): 9.

⁹ The Fundamental Constitutions of Carolina, Drawn up by John Locke; March 1st, 1669 can be found in Thomas Cooper, ed., *The Statutes at Large of South Carolina*, vol. 1 (Columbia, South Carolina: A.S. Johnston, 1836), 43-56.

¹⁰ Edward McCrady, *The History of South Carolina Under the Proprietary Government 1670-1719* (New York: Russell and Russell, 1969), 94.

¹¹ *Ibid*, 97.

¹² *Ibid*, 97.

¹³ *Ibid*, 97.

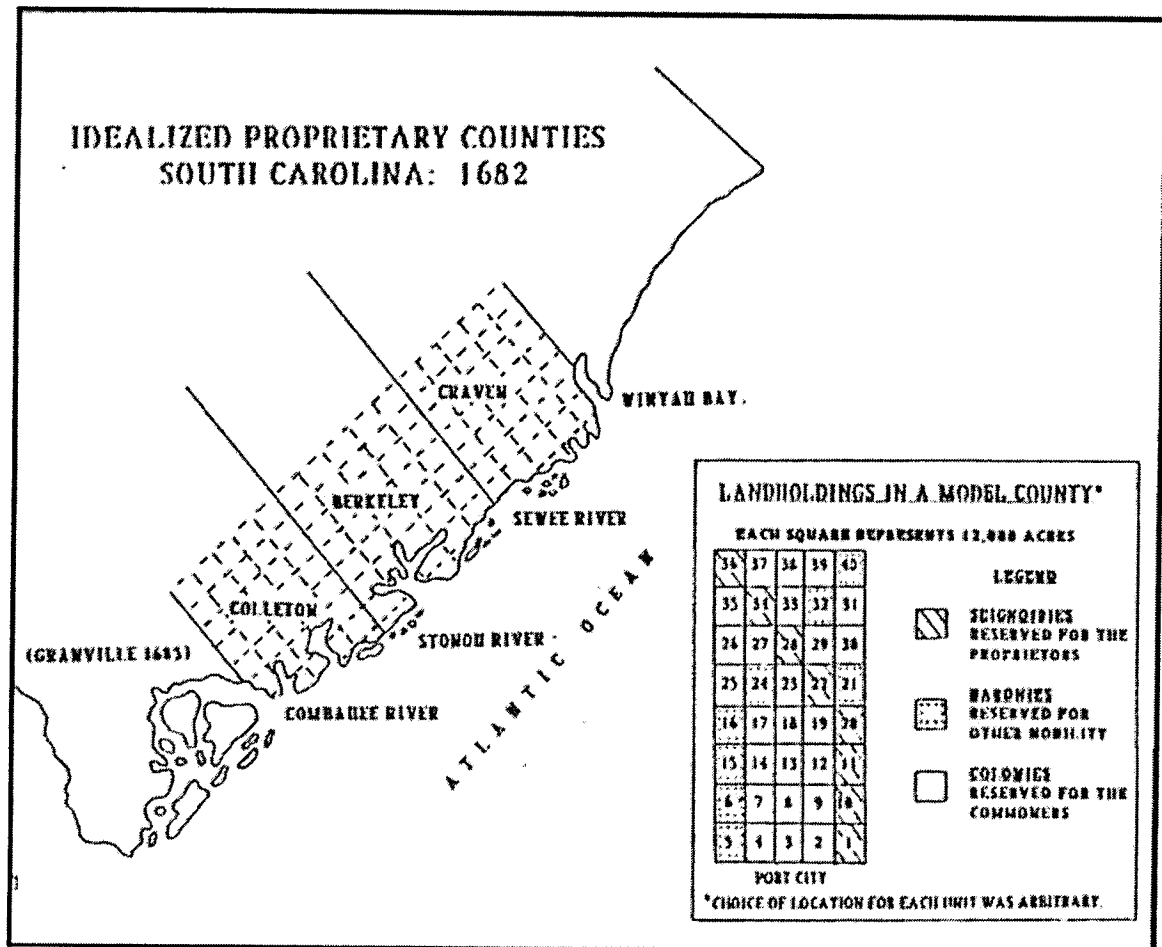


Figure 6. Lords Proprietors divided land grants into square 12,000 acre counties known as baronies.¹⁴

The Lords Proprietors intended the Carolinas as a province of planters, much as in Barbados and other Caribbean islands. Unfavorable conditions in Barbados during the late-seventeenth-century prompted many Barbadians to seek their fortunes elsewhere. John Colleton, once a Barbadian planter, encouraged Barbadians to settle the Carolinas. Second sons and other planters who wished to enlarge their holdings were eager to explore South Carolina.

¹⁴ Linda Marie Pett-Conklin, *Cadastral Surveying in Colonial South Carolina: A Historical Geography* (Ph.D. Thesis 1986, Louisiana State University and Agricultural and Mechanical College. Ann Arbor, Michigan: University Microfilms Dissertation Services, 1993), 24.

Many settlers attracted to the colony were not planters. They found it more profitable to collect and export natural resources. England's demand for naval stores made harvesting forest products profitable.¹⁵ The many creeks and rivers made it easier and more profitable for early settlers to ship turpentine, tar, pitch, and lumber by water to Charles Town. The river craft used to transport raw materials to Charles Town took many shapes. Out of necessity, the river craft were shallow draft vessels designed to navigate the tidewater river and creek tributaries.

Charles Town, although founded in 1670 and moved to its present location in 1680, did not begin to grow until the 1730s. Charles Town, lying between the Ashley and the Cooper Rivers, two estuarial rivers flowing out of black-water swamps, had better riverine connections with the interior than either Georgetown or Beaufort. It was situated to profit as soon as the surrounding country produced commodities for export. Charles Town's early exports consisted chiefly of hemp, tar, pitch, turpentine, staves, furs, skins, and lumber.¹⁶

Many early South Carolina plantations were on land adjacent to the Cooper and Wando Rivers (Figure 7). Riverside plantations were ideally sited for transporting

¹⁵ Peter H. Wood, *Black Majority: Negroes in Colonial South Carolina from 1670 through the Stono Rebellion* (New York: W.W. Norton and Company, 1974), 110.

¹⁶ *Year Book - 1880* (Charleston, South Carolina: The News and Courier Book Presses, 1880), 243.

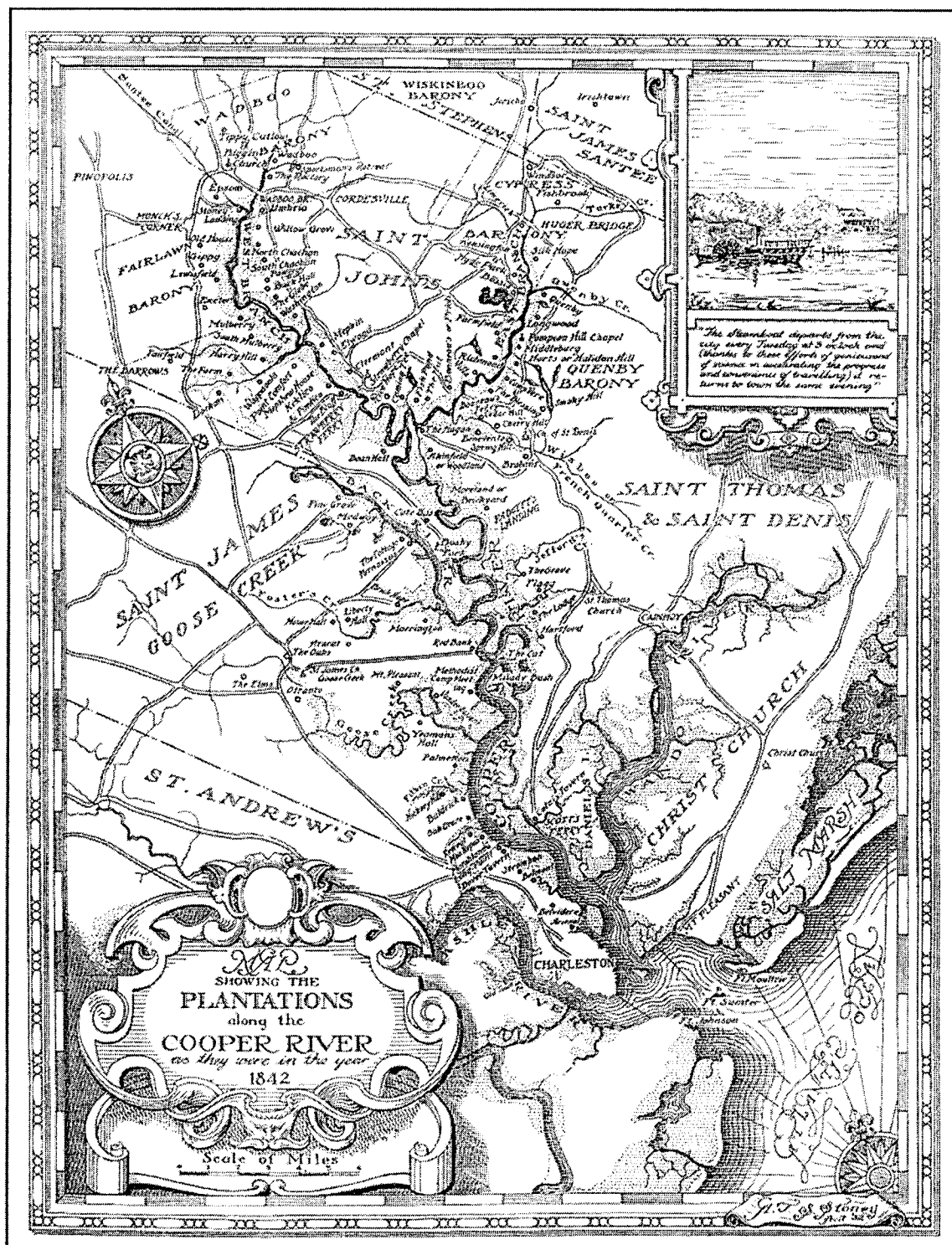


Figure 7. Map showing Cooper River Plantations in 1842.¹⁷

¹⁷ John B. Irving, *A Day on Cooper River* (Columbia, South Carolina: The R. L. Bryan Company, 1969), 4.

agricultural products and produce to Charles Town.¹⁸ The waterways allowed settlers access to the local Indian fur and hide trade. Charles Town alone exported more than 50,000 deerskins in 1699.¹⁹

While the date of introduction of rice cultivation is disputed, Charles Town began exporting rice around 1700.²⁰ Rice cultivation was particularly well suited for coastal plantations because production was suitable to otherwise unusable low-lying swampland. Plantation slave labor transformed existing cypress swamp forest into productive rice fields by constructing elaborate dams and using the river's tidal fluctuation for irrigation.²¹ Rice became the leading export by 1720.²²

The other cash crop of Charles Town was indigo. Indigo was first planted in South Carolina sometime between 1741 and 1742.²³ South Carolina began producing significant quantities of indigo by 1747.²⁴

The region's low-lying wetlands and waterways made travel slow and expensive. Merchants found it more economical to use a small coasting vessel with a four-man crew than ten large wagons to carry the same cargo.²⁵ In "An Attempt Towards an Estimate of

¹⁸ Stanley A. South and Michael O. Hartley, "Deep Water and High Ground: Seventeenth Century Low Country Settlement," *Research Manuscript Series* 166 (Columbia, South Carolina: South Carolina Institute of Archaeology and Anthropology, University of South Carolina, 1980), 4.

¹⁹ George C. Rogers, *Charleston in the Age of the Pinckneys* (Columbia, South Carolina: University of South Carolina Press, 1980), 8.

²⁰ *Ibid.*, 243.

²¹ For a good contemporary source of rice cultivation see David Doar, *Rice and Rice Planting in the South Carolina Low Country*, edited by Milby Burton (Charleston, South Carolina: The Charleston Museum, 1970).

²² *Year Book - 1880*, 243.

²³ *Ibid.*, 253.

²⁴ Converse D. Clowse, *Measuring Charleston's Overseas Commerce, 1717-1767: Statistics from the Port's Naval Lists* (Washington, D.C.: University Press of America, 1981), 70.

²⁵ Joseph A. Goldenberg, *Shipbuilding in Colonial America* (Newport News, Virginia: University Press of Virginia, 1976), 3.

Gulf Stream and sailed north as far as Cape Hatteras. Hugging the American coast, vessels continued north to Philadelphia, New York, and New England before veering off to England and northern Europe. It was a great circle, and Charles Town was on its western edge (Figure 9).²⁹

²⁹ Rogers, 4; W. M. Pine, "History Rides the Winds to Colonial Charleston," *The South Carolina Historical Magazine* 87, no. 3 (July 1986):162-175.

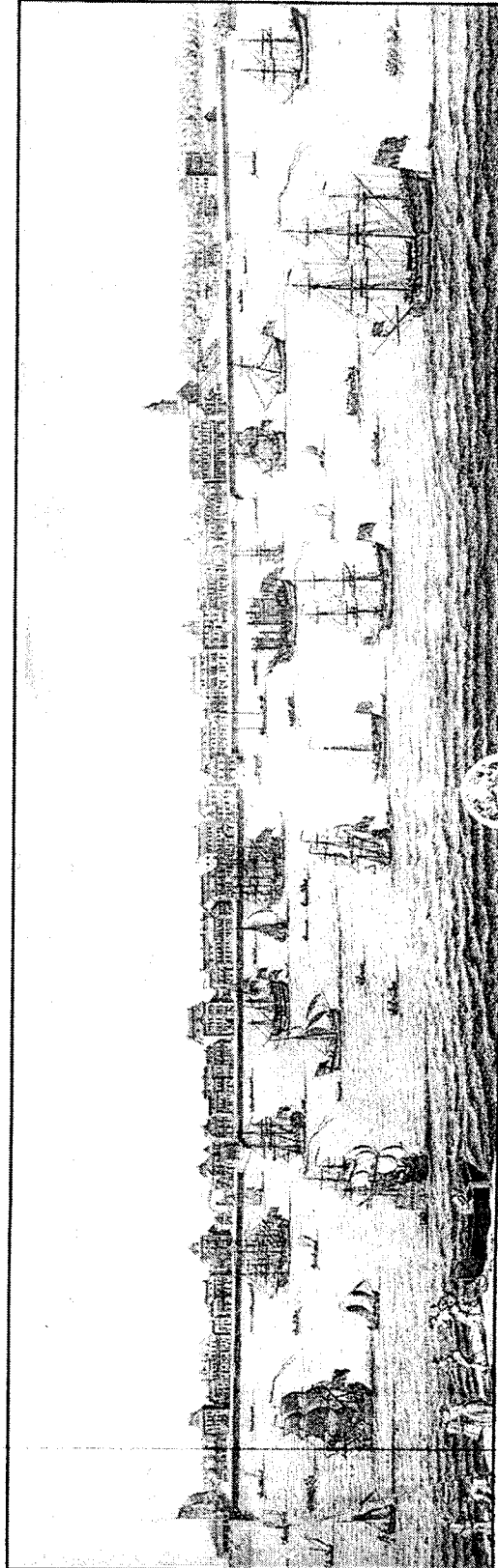


Figure 8. A 1730s painting of Charles Towne's Cooper River waterfront.³⁰

³⁰ P.C. Coker, *Charleston's Maritime Heritage, 1670-1865* (Charleston, South Carolina: Cokercraft Press, 1987), 27.

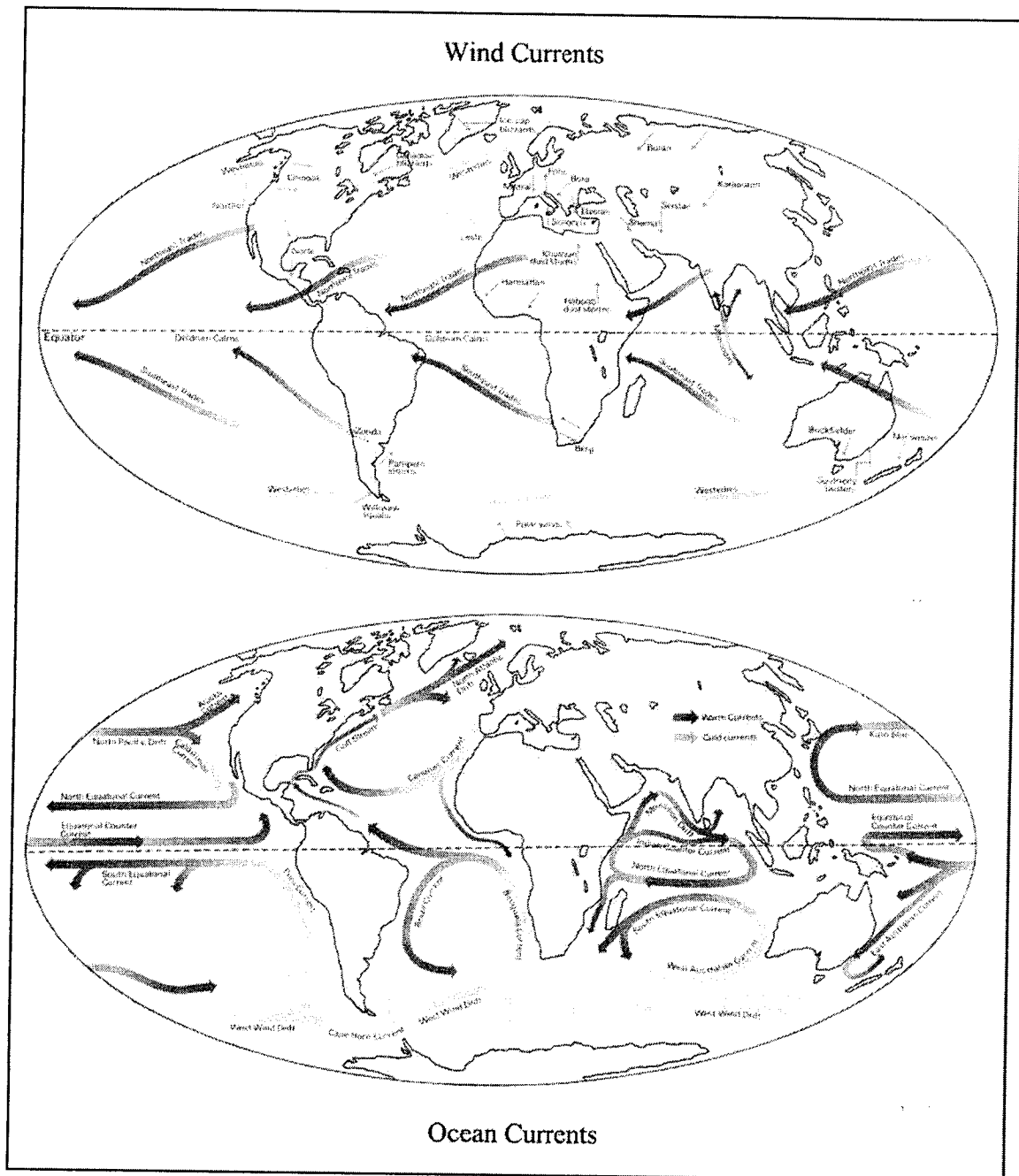


Figure 9. Great circle trade route from Europe to Caribbean to Cape Hatteras to New England and then back to Europe.³¹

³¹ Nigel Calder, *The Weather Book* (London, England: Michael Joseph, 1982), 28-29.

CHAPTER III

HISTORICAL OVERVIEW OF QUINBY PLANTATION

The Native Americans called the area Yadhaw.¹ Quinby Plantation began as a land grant from the Lords Proprietors to John Ashby, Sr., on April 25, 1681. The grant was for "the southernmost side of the eastern branch of the Cooper River"² (Figures 10 and 11). John Ashby eventually sent his son, John Jr., "to collect debts due to him in Bermuda and Carolina."³ John Jr. arrived in the province sometime between 1693 and 1695 and claimed several tracts of land in his father's name.⁴ When John Ashby, Sr., died in 1699, he left his estate to John Jr. Two tracts, one of 250 acres and one of 490 acres, were combined into a single plantation named Quenby after Ashby's English ancestral home, "Quenby Hall."⁵ Quinby Plantation was bounded by Quinby, previously known as Ashby's, Creek, and the east branch of the Cooper River (Figures 1 and 2).⁶ Quinby Plantation was located between Silk Hope Plantation to the north, Bossis Plantation to the west, and Longwood Plantation to the south (Figure 7).

John Ashby, Jr., lived at Quinby Plantation, married Constantia Broughton, had five children,⁷ and died there in 1716; leaving Quinby Plantation to his oldest son John

¹ Maxwell C. Orvin, *Historic Berkeley County, South Carolina, 1671-1900* (Columbia, South Carolina: University of South Carolina Press, 1973), 25.

² Lydia C. Ball, "Old Quinby Plantation, Part of the Ashby Grant," *The [Charleston] News and Courier*, 7 April 1929, sec. B, p. 9, column 2.

³ Henry A. M. Smith, "The Baronies of South Carolina," *South Carolina Historical and Genealogical Magazine* 18, no.1 (January 1917): 5; Ball, "Old Quinby."

⁴ Orvin, 25.

⁵ Ball, "Old Quinby."

⁶ Smith, 9.

⁷ Smith, 7; Ball, "Old Quinby."

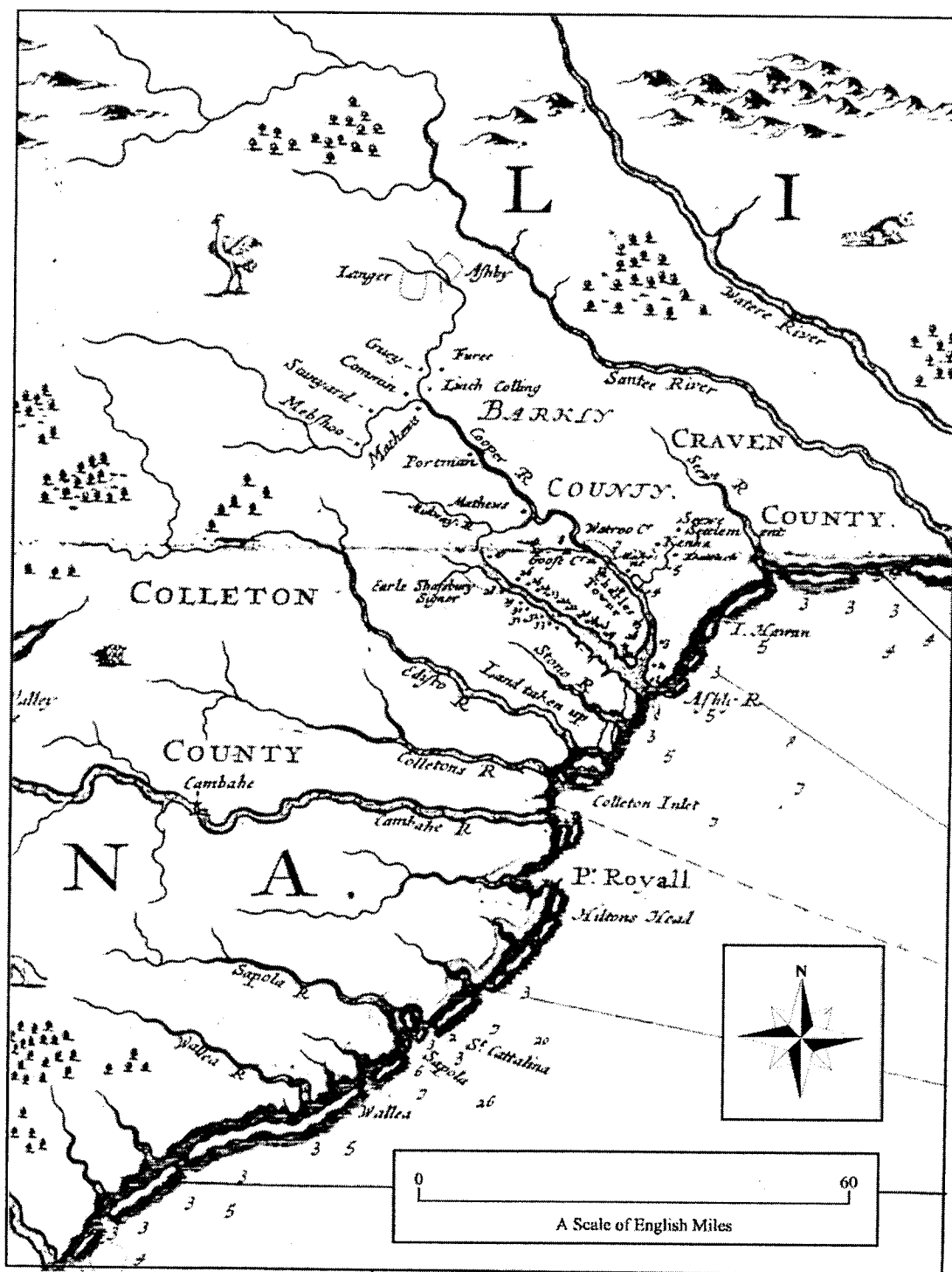


Figure 10. A New Map of Carolina.⁸

⁸ John Thornton, *A New Map of Carolina*, 1684; collections of the Charleston County Public Library, South Carolina Room, drawer 3, map 11.

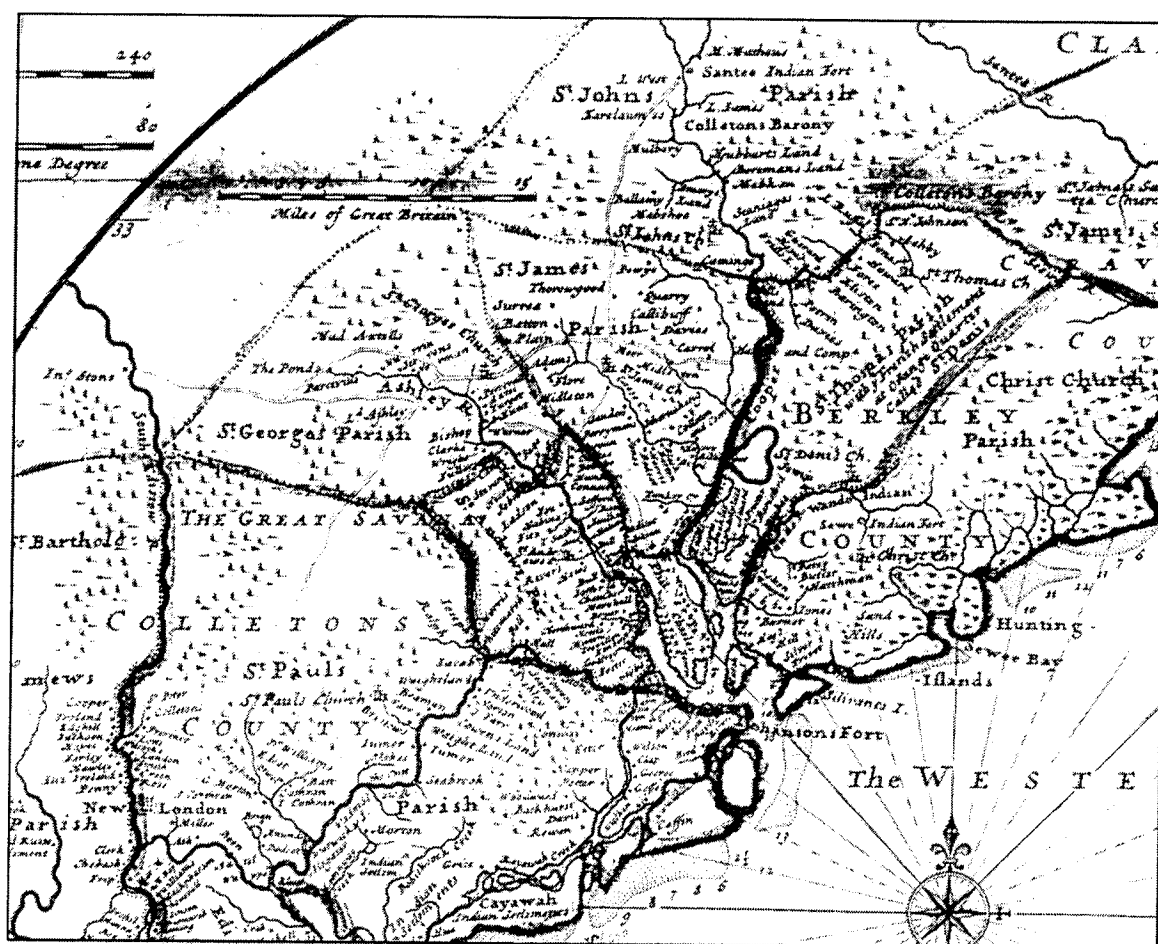


Figure 11. 1715 Map of the Improved Part of Carolina with the Settlements.⁹

Ashby III.¹⁰ John Ashby III, married Elizabeth Ball, daughter of Elias Ball, on November 8, 1726.¹¹ John Ashby III died in March 1729, leaving “ . . . all that Plantation or Tract of Seven hundred and fforty [sic] Acres of Land on which I now live Scituate lying & being

⁹ Herman Moll, John Bowles, and Thomas Bowles, *A New And Exact Map Of The Dominions Of The King Of Great Britain On Ye Continent Of North America, Containing Newfoundland, New Scotland, New England, New York, New Jersey, Pensilvania, Maryland, Virginia And Carolina*, [inset] --A Map Of The Improved Part Of Carolina With The Settlements &C. London: T. Bowles, J. Bowles, and I. King, 1715; collections of the South Caroliniana Library, University of South Carolina, Columbia.

¹⁰ Orvin, 25.

¹¹ Robert F. Clute, ed., *The Annals and Parish Register of St. Thomas and St. Denis Parish, in South Carolina, from 1680 to 1884* (Baltimore, Maryland: Genealogical Publishing Company, 1974), 7.

on Cooper River [Quinby Plantation]" to his wife Elizabeth.¹² On February 10, 1730 Elizabeth married Charles Town merchant John Vicaridge.¹³

After the death of John Vicaridge, Elizabeth married another Charles-Town merchant, Captain Richard Shubrick, in 1740.¹⁴ Richard and his brother Thomas were members of the firm of Nickleson, Shubrick & Company (1739-1749).¹⁵ During the 1750s, the two brothers, now wealthy Carolina traders, operated as Shubricks & Company.¹⁶ Both firms had ties to the slave and fur trades but dealt primarily with agricultural and forest products.¹⁷

Richard was in possession of Quinby when Elizabeth Shubrick died in September 1746, at the age of thirty-five.³⁴ Her tombstone, reading "A Woman of Rare Economy," is just opposite the south gate of the St. Phillip's Church Cemetery, Charleston, South Carolina.¹⁹ Following Elizabeth's death, Richard and his son Richard Shubrick, Jr., returned to England. At some point, Thomas Shubrick, Jr., Richard's nephew, obtained Quinby Plantation, though how and when he did so is unclear. Neither deed nor will is

¹² Smith, 8; Charleston Wills, Inventories, and Misc. Records, Charleston County, vol. 76B:753-756.

¹³ A. S. Salley, Jr., *Register of St. Philip's Parish, Charles Town, South Carolina 1720-1758* (Columbia, South Carolina: University of South Carolina Press, 1971), 160.

¹⁴ Orvin, 25; Jeanne Calhoun *et al*, "The Geographic Spread of Charleston's Mercantile Community, 1732-1767," *South Carolina Historical and Genealogical Magazine* 86, no. 1, (January 1985):193. For the period 1732-1737 Richard Shubrick is listed as a Charleston merchant with an office "On the bay."

¹⁵ Walter B. Edgar and N. Louise Bailey, ed., *Biographical Directory of the South Carolina House of Representatives*, Vol. 2, (Columbia, South Carolina: University of South Carolina Press, 1977), 609; Calhoun, 196. For the period 1738-1743, Nicholson, Shubrick & Co. is listed as a Charleston "dry goods" merchant with an office "On the bay."

¹⁶ Edgar and Bailey, 609; Calhoun, 202, for the period 1750-1761, Shubrick & Co. is listed as a Charleston merchant with no office location.

¹⁷ Edgar and Bailey, 609.

¹⁸ Smith, 8.

¹⁹ Ball, "Old Quinby."

extant. It is possible that Richard Shubrick, Jr., conveyed the property to his uncle Thomas Shubrick who, in turn, sold or gave the property to his son Thomas Shubrick, Jr.²⁰ By 1781, Quinby was known as Shubrick's Plantation.²¹

By purchasing adjoining tracks of land, the Shubricks increased Quinby's acreage from 740 to 1,203.²² The Shubrick family owned Quinby Plantation until July 27, 1792, when it was conveyed to Roger Pinckney for 2,500 pounds sterling.²³ Roger Pinckney conveyed Quinby Plantation to Isaac Ball in March 1816 to pay creditors.²⁴ Isaac Ball, in turn, gave Quinby Plantation to his daughter Jane and son-in-law John G. Shoolbred as a wedding present.²⁵ The Shoolbreds continued farming the land, shipping goods to Charleston by way of Quinby Creek and the Cooper River. Jane outlived her husband and their son, John G. Shoolbred, and upon her death left Quinby Plantation to six nieces: Eliza C. Ball, Louisa Ball, Marry H. Ball, Lydia C. Ball, Eleanor Ball, and Jane Ball Foster.²⁶ It remained in the Ball family until November 22, 1950, when it was conveyed to Whitener Lumber Company, Inc.²⁷

²⁰ Smith, 9.

²¹ "Charlestown, By Authority," Irving, 18; Warren Ripley, *Battleground, South Carolina in the Revolution* (Charleston, South Carolina: The News & Courier and The Evening Post, 1983), 190.

²² Smith, 9.

²³ Ball, "Old Quinby."

²⁴ Charleston County Deed Book, Bk. O8:144.

²⁵ Charleston County Deed Book, Bk. N11:350.

²⁶ Ball, "Old Quinby."

²⁷ Charleston County Deed Book, Bk. C47:142.

CHAPTER IV

METHODOLOGY

Research Design

Underwater archaeological work differs significantly from terrestrial investigations. Underwater archaeologists must carry their own life support systems, variable visibility dictates which methods can be used to record sites, and photography, in some cases, is impossible. In many situations, the current makes it difficult to get accurate measurements. A cold-water environment also places time restraints on investigations.

The first step in any archaeological investigation is archival and background research, the purpose being to supplement the existing information. This research includes court records (deeds, mortgages, etc.), real property records, wills and probate inventories, and plat maps. Related archaeological investigations also provide valuable comparative information.

The accurate documentation of a site requires that all measurements, both vertical and horizontal, be referenced to a fixed permanent datum.¹ An accurately documented site optimized research potential. The culmination of the mapping procedure should

¹ Good sources for information concerning the documentation of submerged cultural material are Jeremy Green, *Maritime Archaeology: A Technical Handbook* (New York: Academic Press, 1990); Keith Muckleroy, *Maritime Archaeology* (New York: Cambridge University Press, 1978); Richard Steffy, *Wooden Ship Building and the Interpretation of Shipwrecks* (College Station, Texas: Texas A&M University Press, 1994).

include an accurate site map or maps depicting the site and its surrounding geographic and cultural features. To ensure that data is not rendered useless by the accidental removal or destruction of the datum, two datums should be established. Datum location should be within clear view of the site and out of harm's way. For example a datum should not be placed in a plowed field or on the edge of an eroding river bank.

At the request of SCIAA, the author conducted the documentation of 38BK1672 within the guidelines of a Phase II pre-disturbance archaeological study. A Phase II study restricts the documentation of a site to exposed portions only, without excavation or artifact collection. Since approximately 60 percent of 38BK1672 was exposed, sufficient documentation could be obtained within the Phase II restrictions. If divers discovered a diagnostic artifact, SCIAA would grant permission, on a case by case basis, for its recovery.

Objectives of the field investigation include defining the extents, condition, and diagnostic features of 38BK1672. Areas of focus include construction, design, technology, cargo and artifacts, economics, and people. This information will place 38BK1672 in a geographic and historic context.

When conducting scientific study, one must avoid the pitfall of focusing on one specific interpretation or explanation and trying to prove its validity. Such an approach blinds researchers to evidence that does not support the specific interpretation and eliminates objectivity. For this reason, the author used multiple working hypotheses to

guide and provide boundaries for the investigation.² Multiple working hypotheses involve developing numerous hypotheses prior to data analysis. The hypotheses are expectations. What is found will validate or refute as many hypotheses as possible. Those hypotheses not refuted suggest the most probable interpretations. In many cases, the event, such as a vessel's demise, is the result of several causes and the method of multiple working hypotheses makes it more likely that the interaction of those causes will be identified. The following hypotheses address the construction location, vessel type, vessel use, and reasons for 38BK1672's demise.

There are three sub-hypothesis dealing with construction location.

H1₁ European shipyard - The first construction hypothesis is that 38BK1672 was built in a European shipyard. Supporting evidence would include the use of European timber and European shipbuilding techniques. A European-built vessel would have to be capable of crossing the Atlantic Ocean. Floor size and distribution would have to be adequate to endure the rigors of open ocean travel.

One diagnostic construction feature of European built vessels prior to 1750 is the practice of ending the keelson short of the sternpost.³

Another construction feature documented in William Falconer's 1790 marine dictionary is the process of notching a keelson to fit over the floors:

² T. C. Chamberlin, "The Method of Multiple Working Hypothesis," *Science* 148, no. 1 (7 May 1965): 754-759.

³ Peter Goodwin, *The Construction and Fitting of the English Man of War 1650-1850* (Annapolis, Maryland: Naval Institute Press, 1987), 28.

In order to fit with more security upon the floor-timbers and crotches, it [the keelson] is notched about an inch and a half deep, opposite to each of those pieces, and thereby firmly scored down upon them to that depth, where it is secured by spike. . . .⁴

Other construction features noted on European-built vessels include fillets to aid seating hull planking, reverse fillets to level ceiling, floor scarf chocks, cant frames, riders, and intricately scarfed stem and sternposts (Figure 12).

- H1₂ American shipyard** - The second construction hypothesis is that 38BK1672 was built in an American shipyard. Supporting evidence would include the use of American timber with European shipbuilding techniques. A hull design unsuited for open ocean travel could suggest an American-built vessel. A vessel employed in the coastal and/or inland river trade would utilize smaller floor timbers spaced less frequently than a vessel built for open ocean travel.
- H1₃ Plantation** - The third construction hypothesis is that 38BK1672 was built on a plantation. Supporting evidence would include southeastern, lowcountry timber and shipbuilding techniques and features not found in typical shipyard-built vessels. Unique features would include modifications to accommodate specific tasks, such as sistering floors to strengthen a cargo

⁴ William Falconer, *William Falconer's Dictionary Of The Marine, An Universal Dictionary Of The Marine: Or, A Copious Explanation Of The Technical Terms And Phrases Employed In The Construction, Equipment, Furniture, Machinery, Movements, And Military Operations Of A Ship* (1780, reprint, New York: Augustus M. Kelley, 1970), 762.

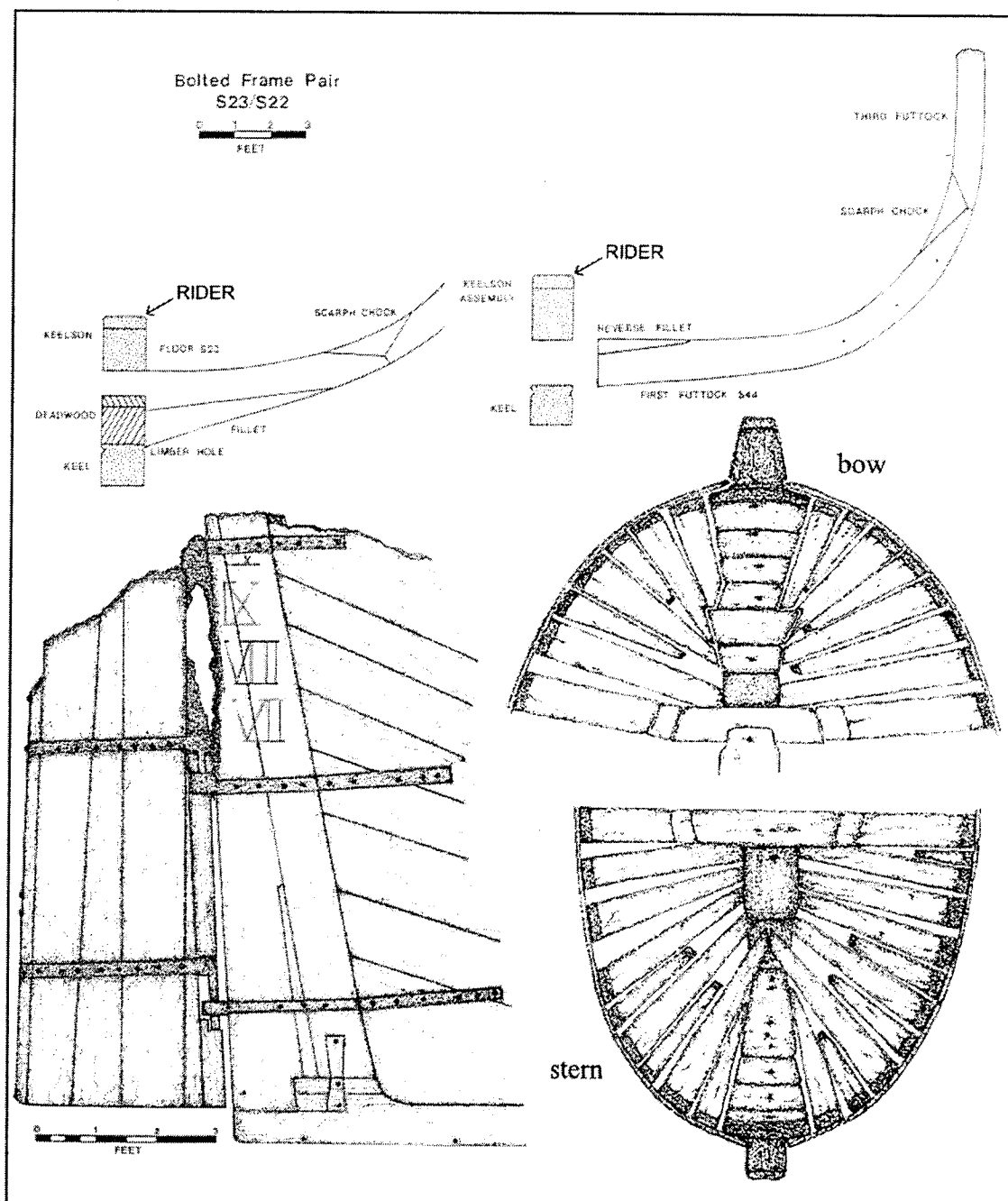


Figure 12. Yorktown wreck (44YO88): European-built construction features.⁵

⁵ John W. Morris III, Site 44YO88 The Archaeological Assessment of the Hull Remains at Yorktown, Virginia (Master's thesis, East Carolina University, Greenville, North Carolina, 1991), 96, 98, 100).

area. It is assumed that plantation carpenters, building a vessel without shipwright's training, approached certain construction problems differently than a shipwright apprenticed in Europe. A plantation carpenter, lacking shipyard standards, might not put as much emphasis on esthetics as on function. Evidence of this would include crudely hewn timbers and bark. A vessel employed in the coastal and/or inland river trade would utilize smaller dimensioned floor timbers spaced less frequently than a vessel built for coastal trade.

There are six sub-hypothesis dealing with vessel type.

H2₁ Null - The first, or null, hypothesis, is that 38BK1672 does not represent the remains of a vessel. It may be that the wooden remains found in Quinby Creek are the remains of a building, rice gate, or wharf. 38BK1672's timbers, construction techniques, and features will define 38BK1672's function.

H2₂ Barge/Flat - The hypothesis is that 38BK1672 is a barge/flat. A barge/flat is a flat-bottomed, bulk cargo-carrying vessel.⁶ Barge/flats were also used as ferries.⁷ Propulsion came from oars, poles, or towing. Basic barge/flat design utilized two construction methods, one with chine-girder sides and

⁶ William Fleetwood, *Tidecraft, the Boats of South Carolina, Georgia and Northeastern Florida - 1550-1950* (Tybee Island, Georgia: WBG Marine Press, 1995), 91, 311.

⁷ Christopher Amer et. al., "The Malcolm Boat (38CH803): Discovery, Stabilization, Excavation, and Preservation of an Historic Sea Going Small Craft in the Ashley River, Charleston County, South Carolina," *Research Manuscript Series 217* (Columbia, South Carolina: South Carolina Institute of Anthropology and Archaeology, University of South Carolina, 1993), 18.

the other with planked sides (Figure 13). Both methods incorporated a transverse planked bottom.⁸

H2₃ Ship - The hypothesis is that 38BK1672 is a ship. A ship has as many as three masts with square sails on all masts (Figure 14).⁹ A ship is a deep draft cargo-carrying vessel capable of trans-Atlantic travel.

H2₄ Brigantine - The hypothesis is that 38BK1672 is a brigantine. A brigantine is a variation of a brig in that it had square sails only on the foremast. A brig has two masts (fore and main) with square sails on both masts (Figure 14).¹⁰ A brigantine is a deep draft cargo-carrying vessel capable of trans-Atlantic travel.

H2₅ Sloop - The hypothesis is that 38BK1672 is a sloop. A sloop is a single-masted vessel with either square or fore and aft sails including a large-gaff rigged spanker and often a jibboom on a fixed bowsprit (Figure 14).¹¹ The sloop is a shallow draft vessel used for both river transport and coastal trading. Diagnostic construction features include a single mast step and a single set of mast rigging chain plates. Any blocks or tackle would be more substantial than on a similar sized vessel with a divided sail plan due to heavier stresses created by a single main sail. Access to the cargo hold areas forward and aft of the mast would be

⁸ *Ibid*, 18.

⁹ P.C. Coker, *Charleston's Maritime Heritage, 1670-1865* (Charleston, South Carolina: Cokercraft Press, 1987), xii.

¹⁰ *Ibid*, xiii.

¹¹ *Ibid*, xiv.

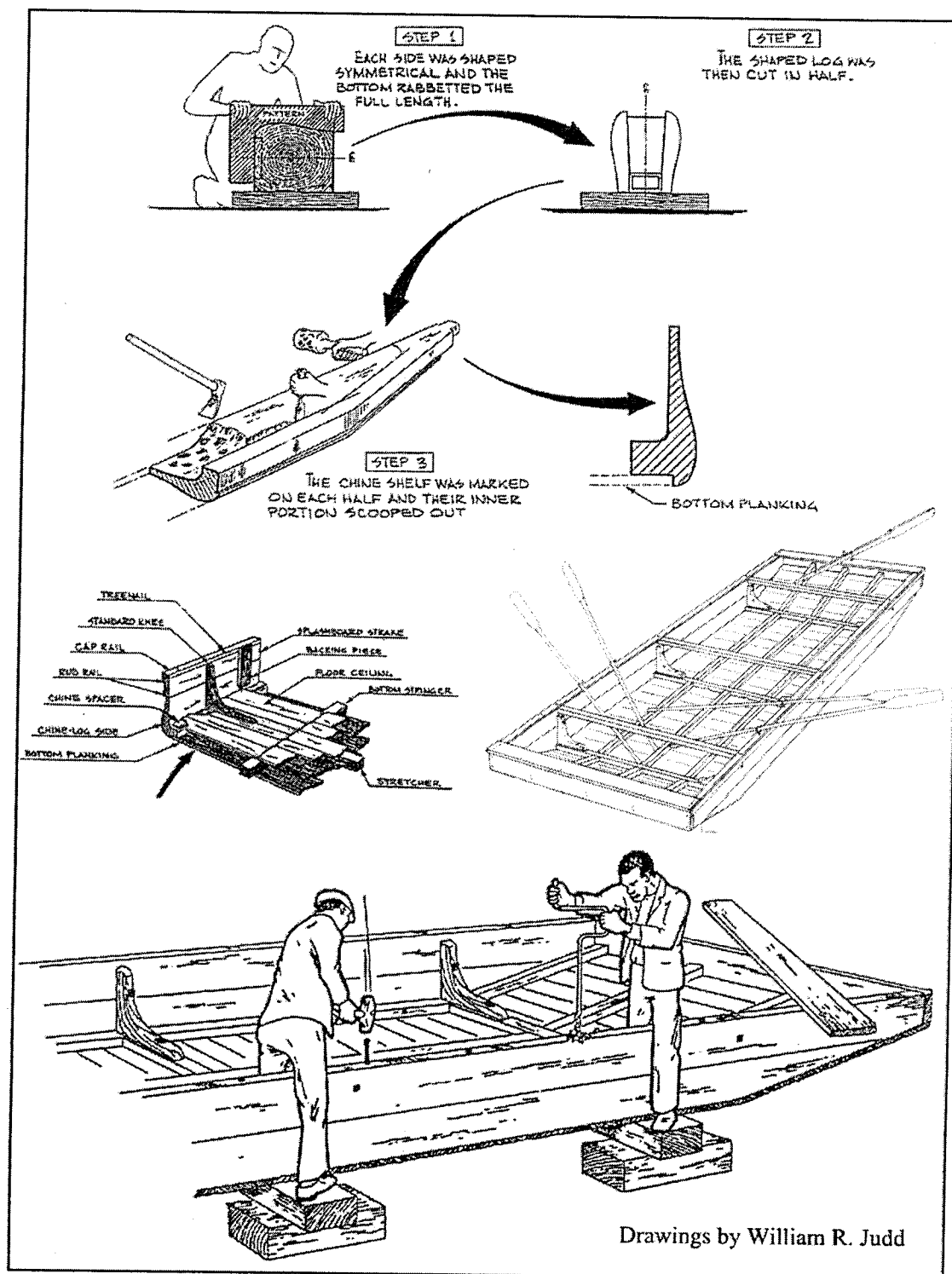


Figure 13. Two barge construction methods, chine-girder and planked.¹²

¹² Fleetwood, 312-314.

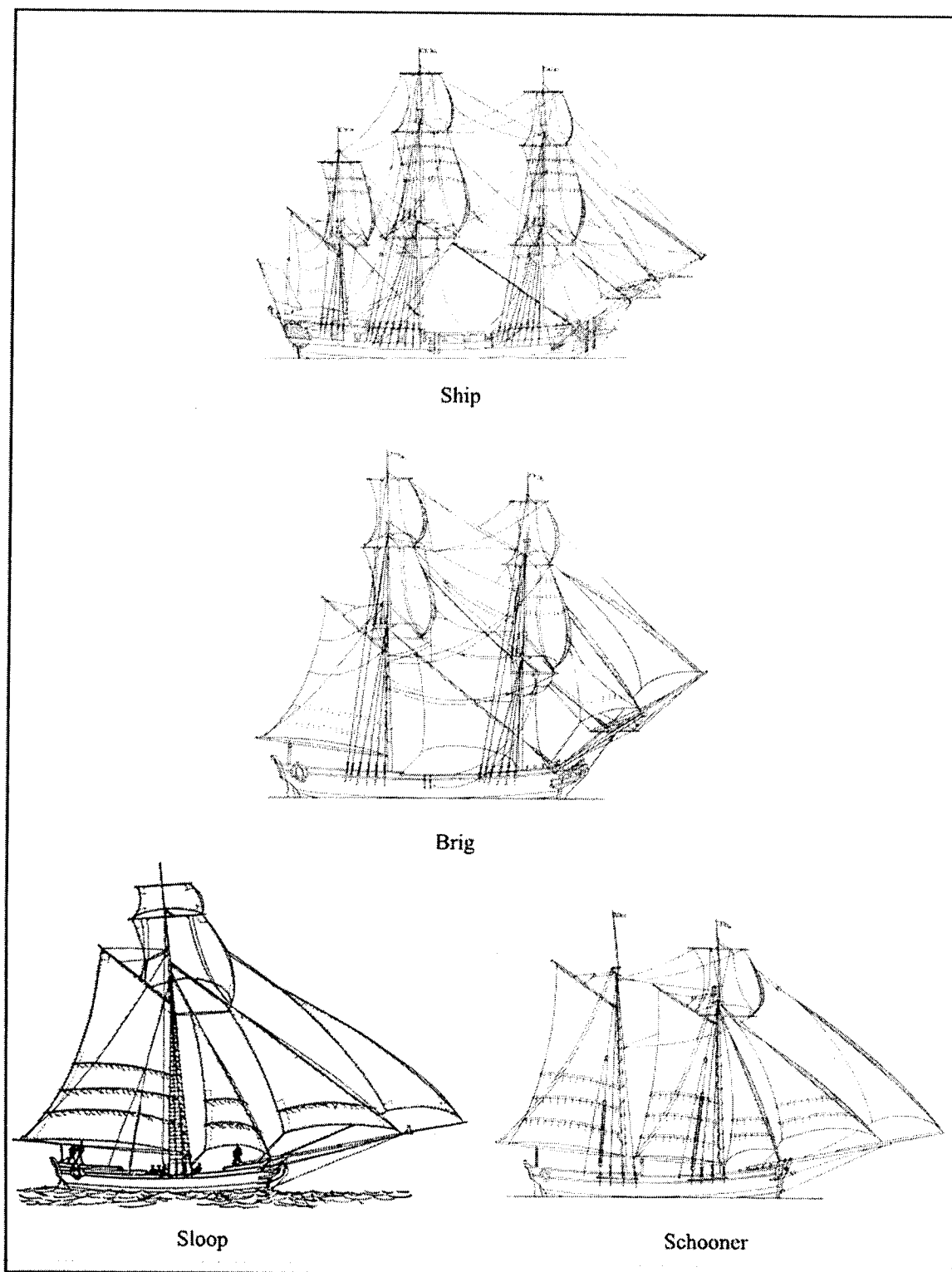


Figure 14. Vessel types: ship, brig, sloop, and schooner.¹³

¹³ Coker, top xii, middle xiii, bottom left xiv, bottom right xiii.

reflected in deck beam configurations. Deck configuration would also have only a single set of mast partners.

H2₆ Schooner - The hypothesis is that 38BK1672 is a schooner. A schooner is a two-masted vessel with fore and aft sails.¹⁴ The schooner is a shallow draft vessel used for both river transport and coastal trading. Some vessels carrying additional small square sails on the foremast were called "topsail schooners" (Figure 14).¹⁵ The divided sail plan allowed a reduced mast height compared to the single masted sloop. A shorter sail rig and reduced heeling force was advantageous on the shallow draft, narrow hulls favored for the upriver trade.¹⁶ Diagnostic construction features include two mast steps and/or accompanying chain plate mast rigging. Any masts, blocks, or tackle would be smaller than those used on a similar sized sloop. The deck beam configuration would show that the central cargo hold area was located between the two masts. Deck configuration could also have two mast partners.

There are two sub-hypothesis dealing with vessel use.

H3₁ Military - The hypothesis is that 38BK1672 was built as a military vessel. Supporting evidence could include European shipbuilding techniques, the presence of munitions or ordinance, and structural reinforcing. A hull design favoring speed and maneuverability over cargo-carrying capacity

¹⁴ Fleetwood, 49.

¹⁵ Coker, xiii.

might suggest a military purpose. Diagnostic construction features might include strengthened deck members to support guns.

H3₂ Cargo - The hypothesis is that 38BK1672 was built as a cargo vessel.

Supporting evidence would include a hull designed to maximize cargo-carrying capacity while still maintaining a shallow draft. Diagnostic features might include ceiling, cargo, and/or damage associated with shifting cargo.

There are three sub-hypothesis dealing with site formation process.

H4_{1a} Intentional Sinking - The hypothesis is that 38BK1672 was sunk to destroy it. Raiders might burn all vessels they encountered at a landing. A vessel on fire would burn to the waterline, and then sink. Evidence supporting this hypothesis includes charring on surviving timbers, burned cargo or rigging remnants, and charcoal debris in the bilge.¹⁷ The lack of old age damage such as patches, teredo worm holes, or wear from shifting cargo, might also support this hypothesis.

H4_{1b} Intentional Sinking - The hypothesis is that 38BK1672 was sunk to block access to an area. A vessel sunk to block access to an area such as a landing or bridge or to force all traffic to one side of the waterway, might have localized damage to ceiling or hull planks.

¹⁶ Fleetwood, 51.

¹⁷ Bradley A. Rodgers and Annalies Corbin, "Shipwreck in a Swamp: the Burroughs Site at Edenton, North Carolina," *The International Journal of Nautical Archaeology* 31, No. 2 (2002): 231.

H4₂ Accidental Sinking - The hypothesis is that 38BK1672 sank by accident.

Causes of accidental sinking include equipment failure, pilot error, weather, or a combination of all three. Numerous hurricanes struck Charleston during the late-eighteenth and early-nineteenth centuries. Accidentally sunken vessels often lack signs of aging, such as patches, teredo worm damage, or cargo wear, and in some cases, still contain cargo. The location of a sunken vessel in the channel might also indicate accidental sinking.

H4₃ Abandonment - The hypothesis is that it was no longer profitable to keep

38BK1672 afloat. Based on unpublished compilations derived from Charleston naval records, Converse Clowse concluded that the mean vessel age during the late eighteenth-century was 5 to 6 years with very few surviving as long as ten years, twenty-year-old vessels were a rarity.¹⁸

One indication that a vessel sank at the end of its useful life is the presence of old age damage such as repairs, teredo worm holes, and wear from shifting cargo. In some instances, numerous vessels that outlived their usefulness were dragged to the same section of river and abandoned. Such areas are known as ship graveyards.¹⁹ The presence of other sunken vessels nearby might indicate that an area was a ship graveyard.

¹⁸ Converse Clowse, "Shipwrecking and Shipbuilding in Colonial South Carolina: An Overview," *The American Neptune* 44, no. 4 (Fall 1984): 243.

¹⁹ Lawrence E. Babits, Jeff Morris, and Annalies C. Kjorness, "A Survey of the North Shore Pamlico River: Bath Creek to Wade's Point," report on file, East Carolina University, Maritime History Department, Greenville, North Carolina, 1995: 107; Lawrence E. Babits and Annalies C. Kjorness, "Final

Field Methods

Before fieldwork began, the author conducted a thorough archival and background literary search to identify the available research material and how best to apply it to the research project. The search included published archaeological investigations of eighteenth-century lowcountry vessels for comparison and to aid in identifying diagnostic features. In addition, the author and the Berkeley Museum drafted an artifact management plan, in the event that divers encountered exposed diagnostic artifacts and SCIAA authorized their removal (Appendix C). No exposed artifacts were noted. While there was abundant intrusive modern debris, none was collected.

Report on an Archaeological Survey of the Western Shore of the Pungo River from Wades Point to Woodstock Point," report on file, East Carolina University, Maritime History Department, Greenville, North Carolina, 1995: 1, 33, 75-78;

Wes Hall, "Archaeological Data Recovery Area 3, Fig Island Channel Site, Savannah Harbor, Savannah, Georgia," prepared by Mid Atlantic Technology for the U.S. Army Corps of Engineers, Savannah District, Savannah, Georgia (Contract No. DACW21-92-D-0013, Project No.22303337, 1995), 1;

Wes Hall, "Archaeological Data Recovery Area 4, Fig Island Channel Site, Savannah Harbor, Savannah, Georgia," prepared by Mid Atlantic Technology for the U.S. Army Corps of Engineers, Savannah District, Savannah, Georgia (Contract No. DACW21-92-D-0013, Project No.22303348, 1995), 1;

Gordon P. Watts, "Archaeological Data Recovery Area 1, Fig Island Channel Site, Savannah Harbor, Georgia," prepared by Gulf Engineers & Consultants and Tidewater Atlantic Research, Inc. for the U.S. Army Corps of Engineers, Savannah District, Savannah, Georgia (Contract No. DACW21-92-D-0013, Project No. 22303342, 1996), 1;

Gordon P. Watts, "Phase II Archaeological Data Recovery Area 1, Fig Island Channel Site, Savannah Harbor, Georgia," prepared by Gulf Engineers & Consultants and Tidewater Atlantic Research, Inc. for the U.S. Army Corps of Engineers, Savannah District, Savannah, Georgia (Contract No. DACW21-92-D-0013, Project No. 22303357, 1996), 1;

Gordon P. Watts, "Phase II Archaeological Data Recovery Area 5, Fig Island Channel Site, Savannah Harbor, Georgia," prepared by Gulf Engineers & Consultants and Tidewater Atlantic Research, Inc. for the U.S. Army Corps of Engineers, Savannah District, Savannah, Georgia (Contract No. DACW21-92-D-0013, Project No. 22303358, 1996), 1;

Gordon P. Watts, "Phase III Archaeological Data Recovery Area 1, Fig Island Channel Site, Savannah Harbor, Georgia," prepared by Gulf Engineers & Consultants and Tidewater Atlantic Research, Inc. for the U.S. Army Corps of Engineers, Savannah District, Savannah, Georgia (Contract No. DACW21-92-D-0013, Project No. 22303361, 1996), 1.

The 38BK1672 field investigations began with a series of weekend field schools. Volunteer divers had previously undergone SCIAA's underwater archaeological field school and were certified to assist the project. Specific training began with a pre-dive orientation meeting that included emergency procedures, basic site safety, project goals, volunteer roles, and a historical overview surrounding 38BK1672. Since visibility at 38BK1672 ranges from 1 to 3 feet, full-scale chalk drawings were drawn in a parking lot familiarized divers with various wreck components. The drawings aided crew instruction and improved their understanding of specific tasks such as setting up the base line, triangulation, and profile measurements.

The wreck was first cleared of debris. Using only their hands, divers removed tires, tree snags, and alligator grass. Numerous disarticulated floor timbers were scattered around the wreck. To simplify site interpretation, disarticulated timbers were left in place but not mapped. The documentation process provided insights about construction techniques, material utilization, and structural elements. Understanding the vessel's construction details is vital for determining the vessel's construction location, type, function, date, and demise. This information, in turn, allows us to better understand and define an eighteenth century lowcountry plantation-built vessel.

Determining construction techniques and positions of structural elements required an accurate scale drawing (Figure 15). To relate all underwater elements to a common point, divers established a baseline, running from a 0.5-inch iron rebar datum established by SCIAA during their 1993 site visit. The datum is located 1.6 feet abaft the sternpost. A 100-foot, flexible fiberglass tape measure was attached to the datum, then extended

along the keelson and keel to a point beyond the bow. The baseline provided overall site orientation and spatial control.

To facilitate the mapping process the keelson/keel was tagged at 1 meter intervals along the baseline with 2-inch by 3-inch by 0.25-inch white plastic tags. The tags were secured with 1-inch long galvanized eight penny nails and labeled K1 through K15 with K1 closest to the stern datum. The tags were labeled with a black ink marker.

Articulated floors were tagged in the same manner starting with the first floor in the stern. On the starboard side both whole and half floors were tagged near the keelson, F1 closest to the stern datum, forward to F26. On the port side only the half floors were tagged beginning with F27 in the stern, forward to F42 (Figure 15).

Using triangulation, six pairs of wooden poles were positioned perpendicular to the baseline on either side of the wreck (Figure 15). Triangulation is basically finding a position or location by means of bearings or distances from two fixed points a known distance apart. Since it is difficult to accurately measure angles underwater, distances are preferred. For example, if you wish to place a wooden pole four meters along the baseline from the datum and three meters off to the port side how do you insure that your three meter offset is truly perpendicular (Figure 16). With the baseline distance and the offset distance you have now defined two sides of a right triangle. Using Pythagorean's Theorem $a^2 + b^2 = c^2$ we can calculate the distance of the third leg of the triangle, the distance from the datum to the wooden pole. With $a=4$ (the distance along the baseline from the datum), and $b=3$ (the perpendicular distance off to the port side of the baseline), the equation now looks like $4^2 + 3^2 = c^2$ or $16 + 9 = c^2$ or $25 = c^2$ or $\sqrt{25} = c$ or $c=5$. Now, if we

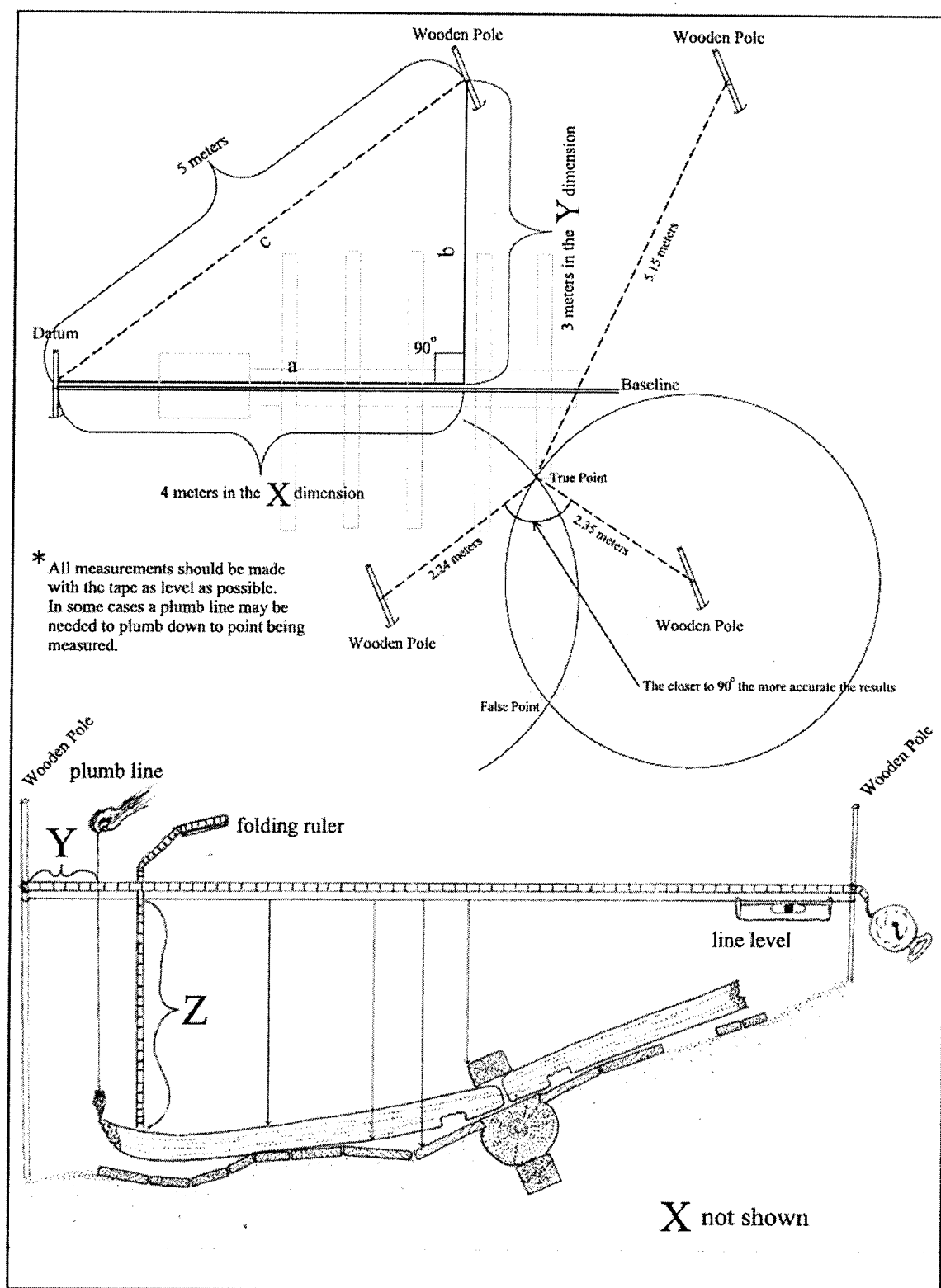


Figure 16. Methods used to map 38BK1672 and obtain profile data.

pull a tape measure from the four meter mark on the baseline out three meters and a second tape measure from the datum out five meters, where the two tapes intersect is the correct location for the wooden pole. The wooden pole is now exactly 90° off the four meter mark on the baseline. Triangulation from these poles provided additional port-to-starboard and bow-to-stern spatial control.

Another method of mapping used on 38BK1672 involved pulling tape measures from two fixed positions such as the wooden poles and recording the distances (Figure 16). When plotting the feature on the site plan you simply draw circles around the wooden poles with radiuses equal to the tape's measurements. It is important for accurate results that the angle formed by the two tape measures is as close to 90° as possible, avoiding angles that are too obtuse (greater than 90° but less than 180°) or too acute (less than 90°). Another important thing to remember when using this method and measuring from only two fixed positions, the circles intersect in two places producing a true point and a false point. It is important to note which side of the fixed points the true point is located. Sketches prove invaluable when trying to plot numerous features. The use of a third fixed point eliminates the false point problem since there is only one place where all three circles intersect.

Level lines strung across the site from pole to pole facilitated vertical measurements (Figure 16). Divers recorded the stern to bow dimension (X) from the baseline. Divers recorded the side-to-side (Y) dimensions by securing a fiberglass tape measure along the level line and then extending a plumb line down to the timber being

recorded. The Y dimension was recorded from the tape measure. By placing the end of a vertical folding ruler on the feature being recorded, the Z dimension could be determined. Divers mapped all timbers using these methods (Figure 17).

A, 0.3 centimeter galvanized pipe on Quinby Creek's southern bank provided an offsite vertical datum (Figure 2). The datum was 10 feet above mean sea level. A transit with electronic distance measuring equipment was set up over this datum (Figures 18 and 19). With two people in a boat (one rowing to keep the boat in position and the other holding the survey rod and reflector prism plumb) and a diver holding the point of the rod on the desired submerged feature, the transit operator collected vertical and spatial information regarding the shipwreck and its surroundings. The transit survey included a depth contour map of Quinby Creek (recorded at high tide), elevations along 38BK1672's keel and keelson, and wreck orientation in relation to surrounding rice banks. The profile information discussed in the previous paragraph was combined with the transit data to determine the stern to bow slope of the keel and keelson.

Twelve wood samples, each approximately 4-inches by 2-inches were taken from the keel, keel shoe, keelson, sternpost, stem, floors, first futtocks, garboard strake, and planking using a small handsaw, hammer and chisel. The samples were cut with clean edges and a plastic tag secured to the sampled area with a 1-inch long galvanized eight penny nail. Samples were placed in plastic bags with water and sent to Dr. Thomas Wooton, Department of Forestry, Clemson University, for species analysis.

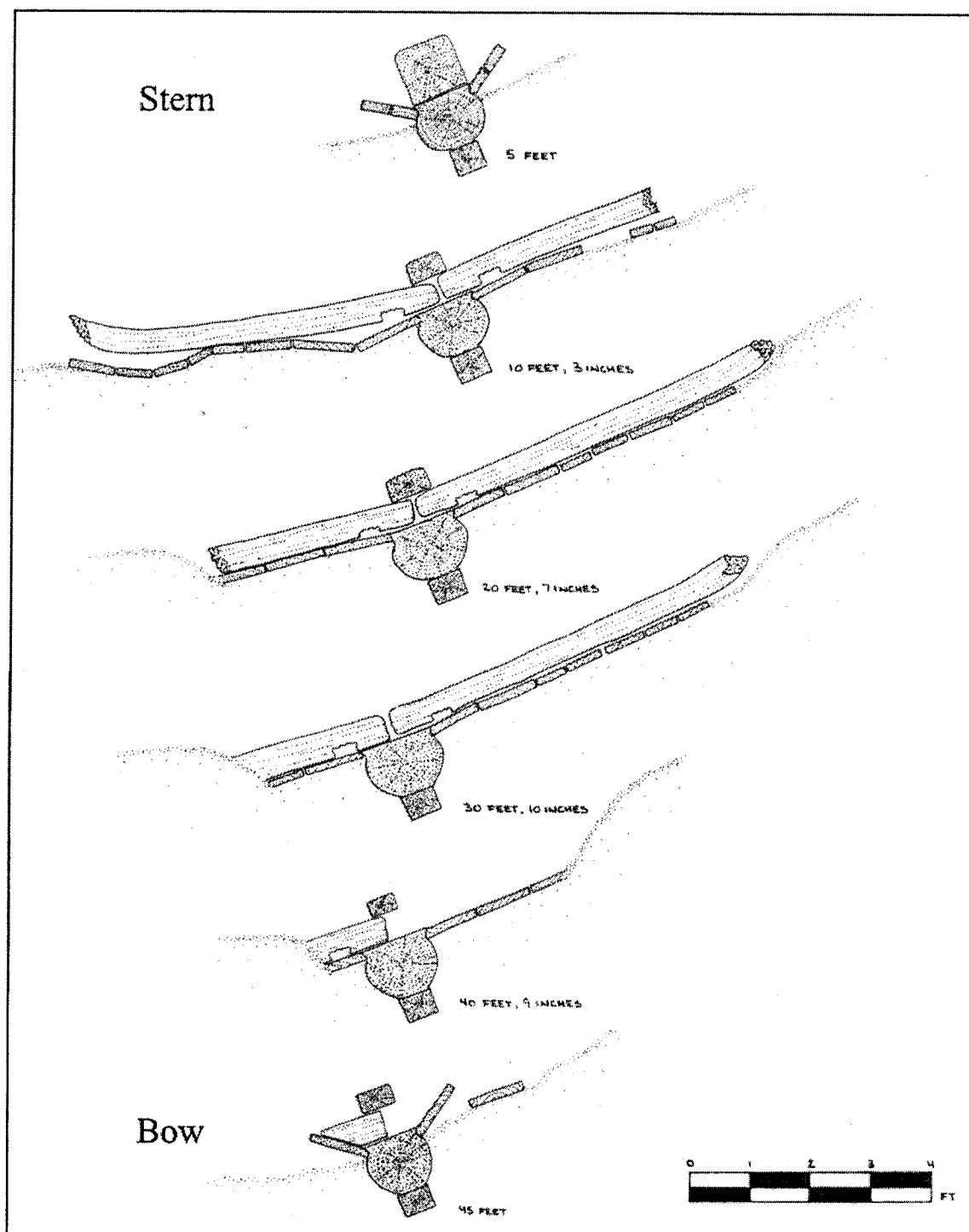


Figure 17. 38BK1672 profiles at selected intervals.

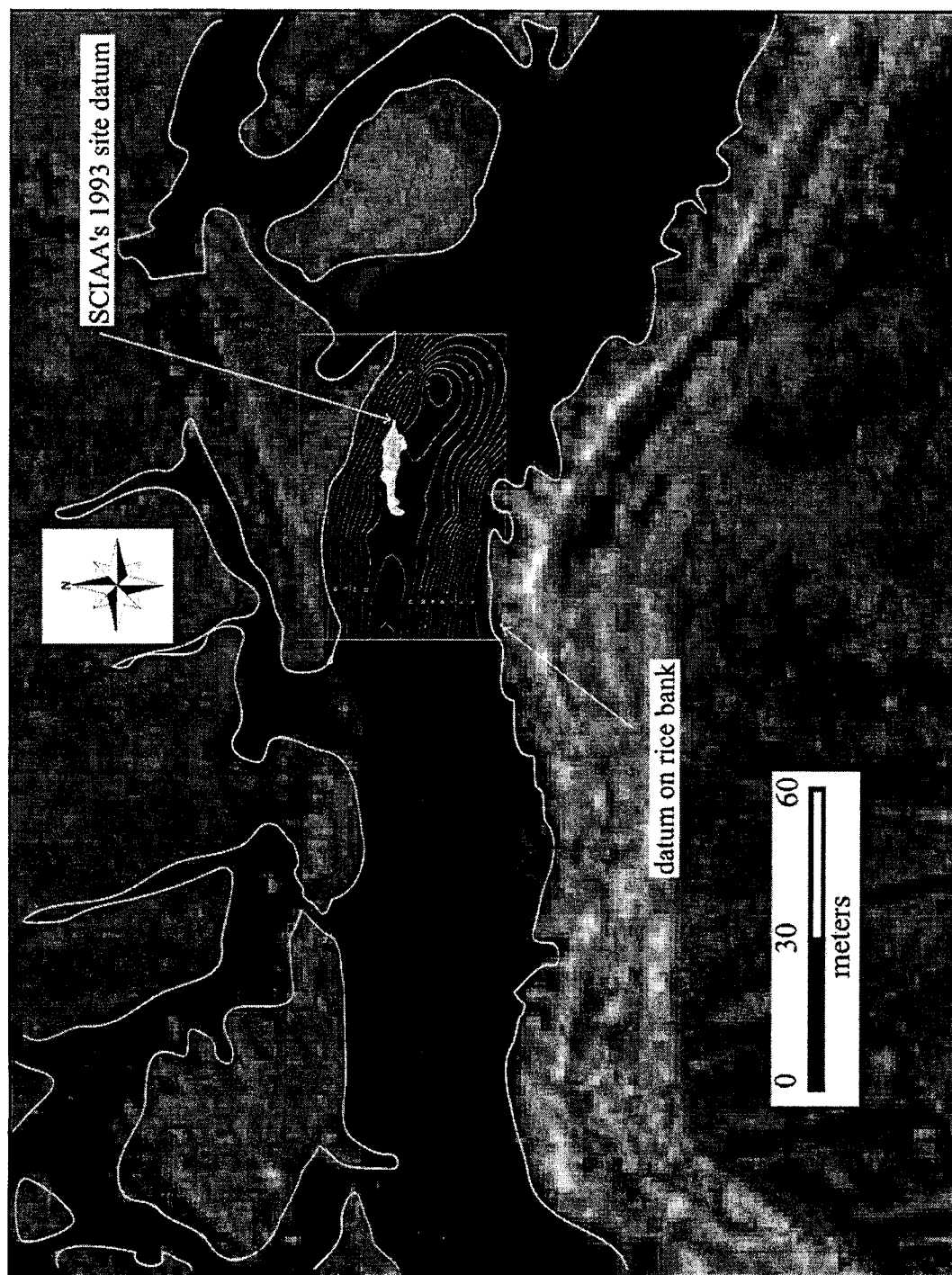


Figure 18. 38BK1672 with Quinby Creek depth contours, overlaid on aerial view.



Figure 19. Close-up of 38BK1672 with Quinby Creek depth contours, overlaid on aerial view.

CHAPTER V

ARCHAEOLOGICAL FINDINGS

Site Description

38BK1672 is located approximately 1.6 miles west of the Quinby Creek Bridge toward the east branch of the Cooper River, adjacent to Quinby Plantation (Figure 1). The closest community is Huger. Quinby Creek is tidal, with a water level change of as much as three feet draining Hellhole Swamp and emptying into the Eastern Branch of the Cooper River. Quinby Creek contains high concentrations of tannin that give the water a dark tea-like color. For this reason, similar streams of this type are described as "black water."

Archaeological Findings

Structural remains at 38BK1672 consist of a keel with a keel shoe, an intact but eroded sternpost assembly, a disarticulated bow assembly, intact floors, disarticulated floors and futtocks, portions of an eroded keelson, and hull planking (Figure 15).¹ All timbers are oak except for non-garboard hull planks, trenails, and the keel shoe.² 38BK1672 has a keel length of 51 feet and an approximate beam of 16 feet. No intact ceiling was located in the exposed portion of 38BK1672, although ceiling fasteners were detected on several floors. The vessel is listing approximately 23° to port due to the slope of the creek bottom (Figure 17). Without excavation, description of the vessel's turn of

¹ Appendix A, Hull Scantlings.

the bilge was not possible. While divers found no exposed evidence of wales or deck knees, they might exist, buried in the sand.

Partially exposed timbers slightly forward of the bow assembly initially thought to be a disarticulated portion of 38BK1672 have since been determined to be remains of another vessel (Figure 15). The timbers differ from 38BK1672 in timber dimension, room and space, and construction.

Keel. The oak keel measures 51 feet from the sternpost scarf to the stem scarf. Since the hull planking was intact, it was not possible to determine whether the keel was made from a single timber or scarfed together. Divers examined the entire keel surface between floors, and found no evidence of a scarf. A wood sample collected from the garboard strake 33 feet, 7 inches forward of the datum, allowed researchers to document the keel's shape and molded dimension. The keel is log-shaped with a molded dimension of 11 inches.

The keel is unique in two ways. First, its sided dimension tapers on either end. Ten feet from the datum, the keel is 10.5 inches wide. Twenty feet from the datum, the keel is 12.5 inches wide. Thirty feet from the datum, the keel is 14.5 inches wide. Fifty feet from the datum the keel is 11 inches wide (Figure 15).

The other unique feature is the garboard strake rabbet. The top of the keel is flush with the upper surface of the garboard strake. Floors are not notched over the keel but lie flush on top of the keel and garboard strakes (Figure 20). A wood sample recovered

² Appendix B, Wood Sample Analysis, Dr. Thomas Wooton, Department of Forestry, Clemson University.

from the starboard side of the keel revealed that the keel is round with only the top and bottom surfaces shaped (Figure 21).

Keel shoe. The southern yellow pine keel shoe measures six inches square. It was not possible to determine the extent of wear. It appears that no effort was made to fasten it seamlessly to the keel as the shoe's top surface extends slightly beyond the squared-off keel bottom (Figure 20).

Stern assembly. The oak sternpost is attached to the keel with a series of 1.12 inch diameter hand wrought iron bolts.³ *Builders used bolts to fasten timbers together.* Eighteenth-century bolts, unlike their modern counterparts, had no threads and more closely resembled large nails or drifts, round-sectioned rods driven into predrilled holes.⁴ The 45 inch eroded remains of the sternpost assembly are raked aft at a 30° angle (Figure 22). Due to the overburden and degraded condition of the keel's end, it is difficult to tell with certainty, but the sternpost may have been partially mortised into the keel. A section of deadwood measuring 50 inches long by 10.5 inches molded secures the sternpost to the keel. The deadwood's sided dimension tapers from 7 inches sided in the stern to 12

³ "Bolt, is generally a cylindrical pin of iron, of which there are various sorts, used for sundry occasions in shipbuilding. The bolts are principally employed either to unite several members of a ship's frame into one solid piece, or to fasten any moveable body on a particular occasion. Those which are calculated for the former purpose have commonly small round heads, somewhat platted, on the contrary, the bolts which are intended for the latter use, have either a large round head, as those of the chains, . . . The bolts are short or long, according to the thickness of the timber wherein they are to be lodged: they penetrate either quite through the pieces into which they are driven, or to a certain determinate depth. The last of these, called a rag-bolt, is retained in it's situation by means of several barbs . . . which, fastening into the timbers, prevent the bolts from loosening from it's station by working of the ship. . . ." William Falconer, *William Falconer's Dictionary Of The Marine* (1780, reprint, New York: Augustus M. Kelley, 1970), 42.

⁴ Mike McCarthy, "Ship's Fastenings: A preliminary Study Revisited," *The International Journal of Nautical Archaeology* 25, no. 3 (1996): 191.

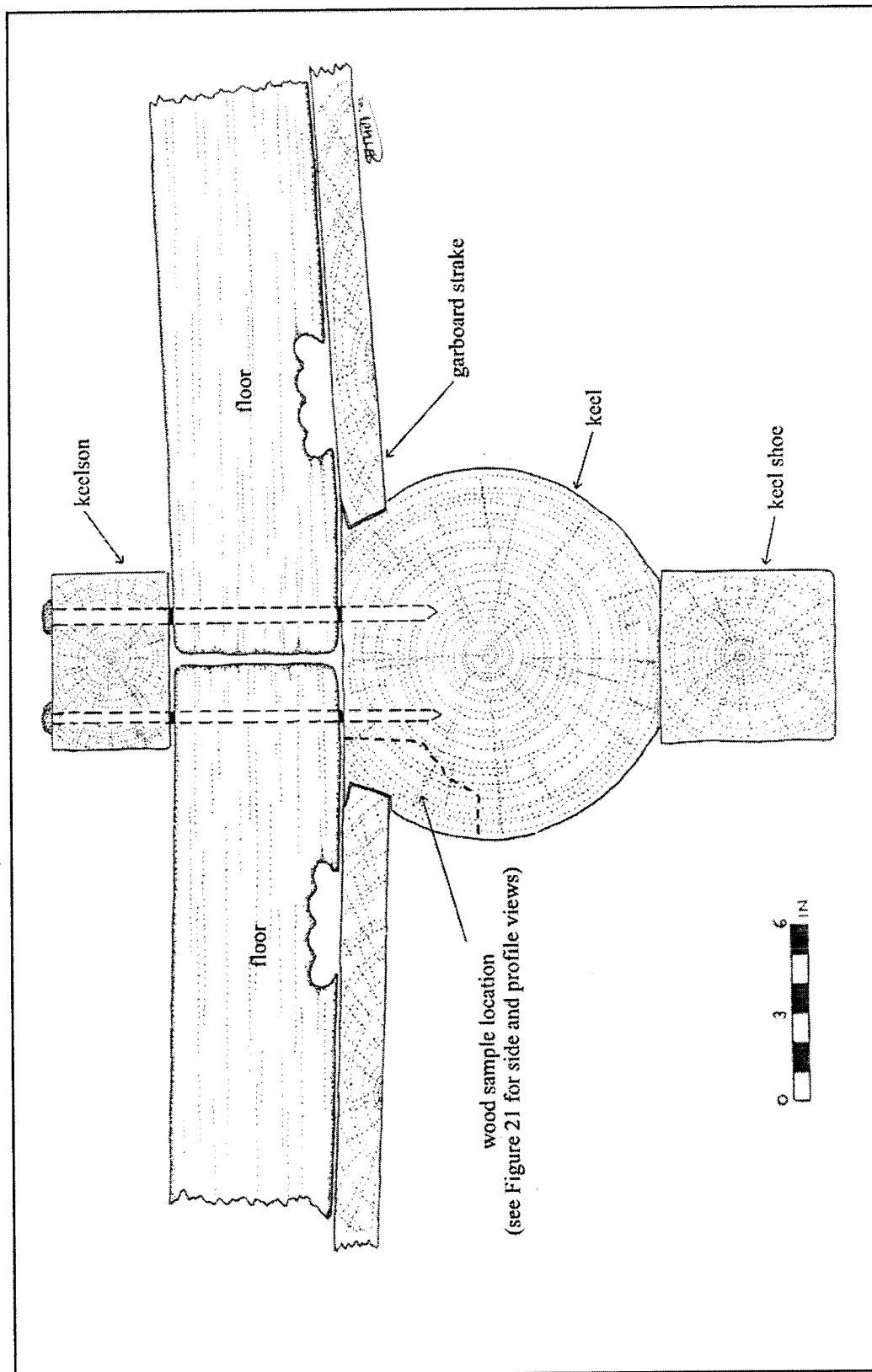


Figure 20. Cross-section of 38BK1672's keel shoe, keel, garboard strakes, floors, limber holes, and keelson.

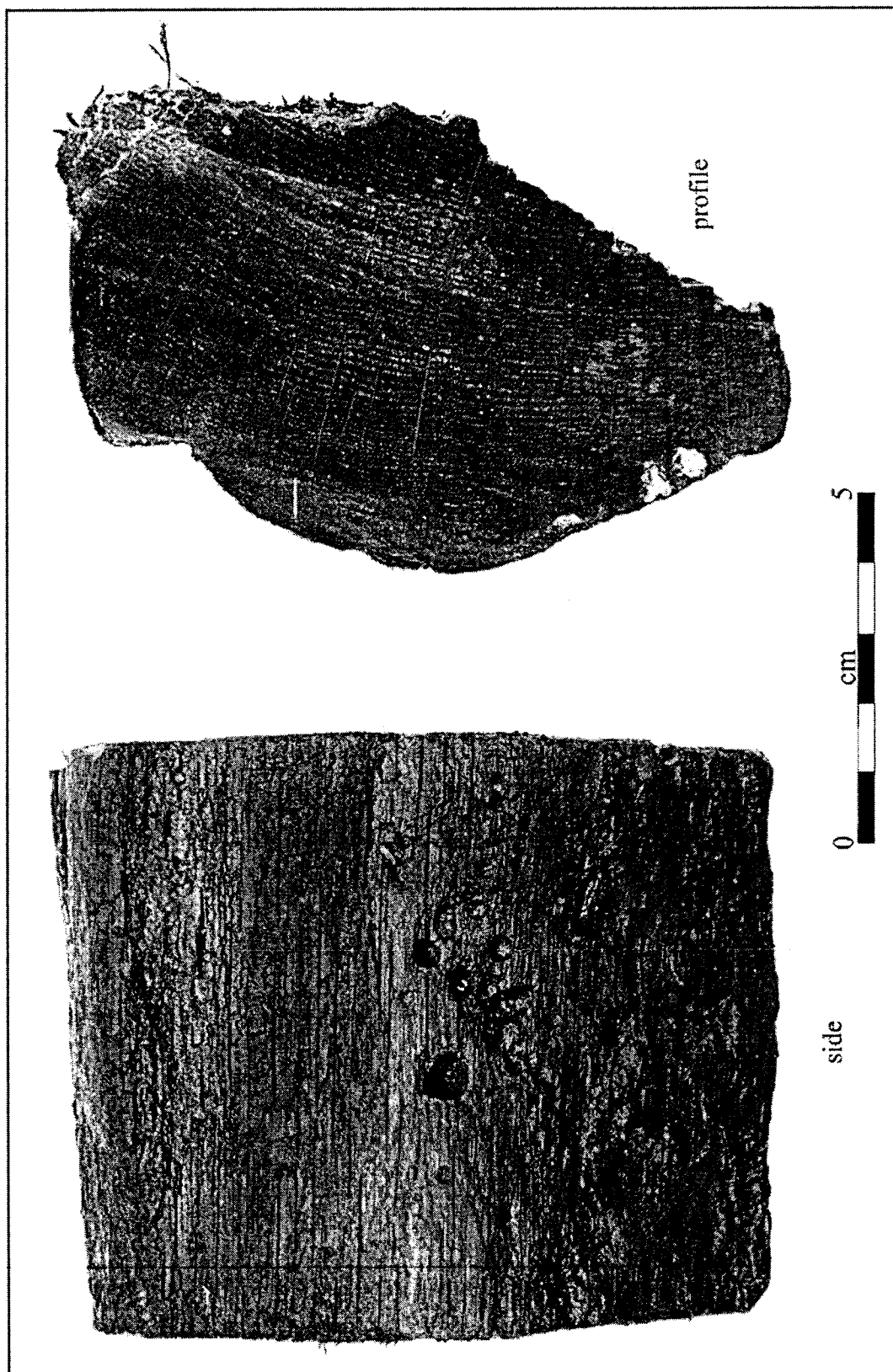


Figure 21. Side and profile photos of keel wood sample from starboard side.

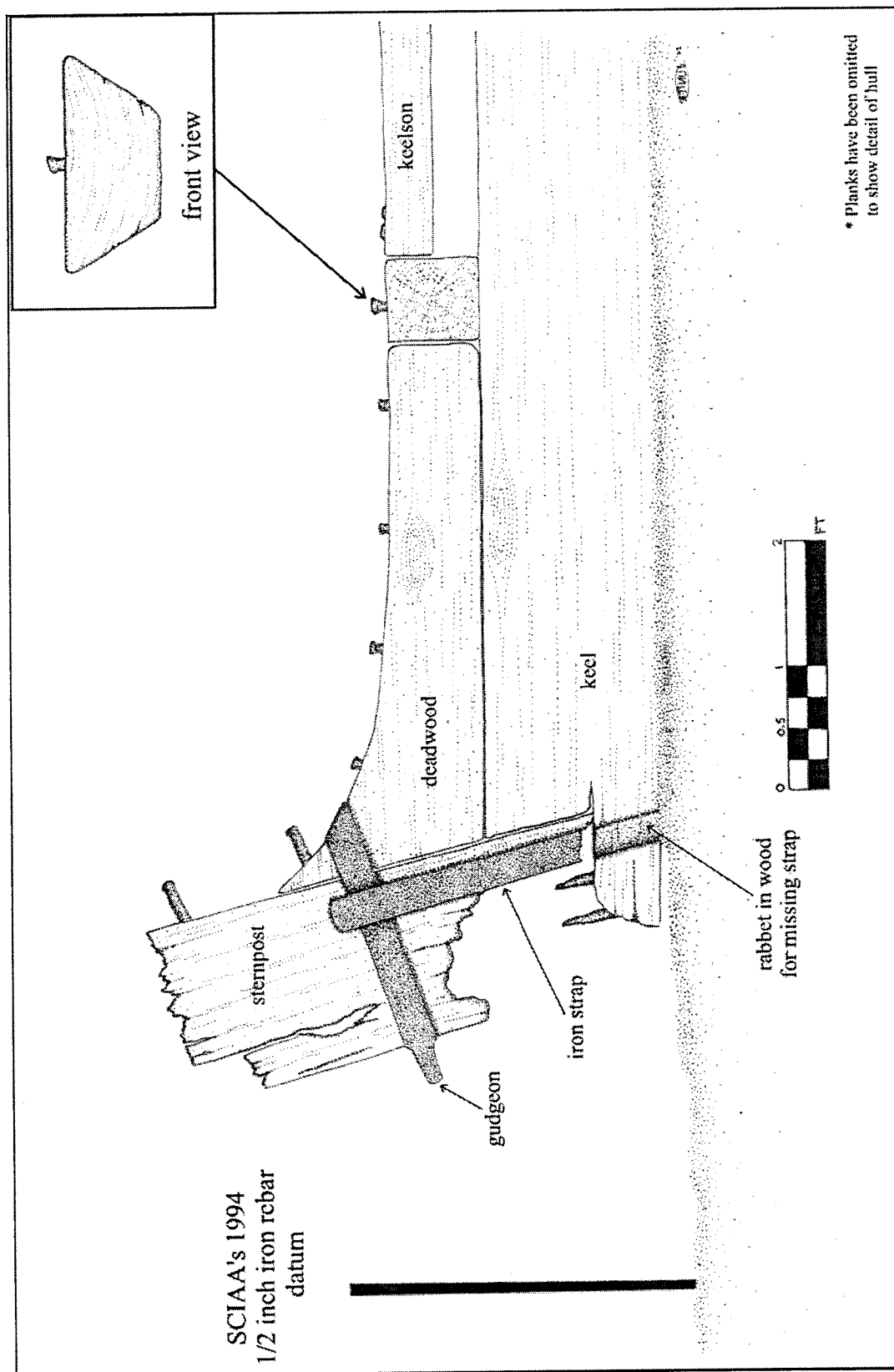


Figure 22. Detail of 38BK1672's stern assembly.

inches sided at the first floor (Figure 15). The deadwood is fastened to the keel and sternpost with 1 inch diameter hand wrought iron bolts. Two bolts in the sternpost assembly are not flush, but rather project 4 inches above the existing wood surface (Figure 22). These two bolts suggest that a, now missing, knee secured the stern post/deadwood joint. One bolt secures the sternpost's uppermost portion while the other bolt is driven through the deadwood into the sternpost at an angle.

A single 22 inch long, 2.5 inches wide, and 0.25 inch thick iron gudgeon remains fastened to the sternpost assembly. The gudgeon ring protrudes 2 inches abaft the stern post. The gudgeon extends diagonally across the stern post and onto the deadwood (Figure 22). The gudgeon is overlapped by a 1 foot, 11 inch long by 3 inch wide, 0.25 inch thick, iron reinforcing strap. Similar to a fish plate, this strap is placed vertically to secure the sternpost to the keel. A vertical rabbet in the keel's bottom suggest that this strap probably continued around the keel (Figure 22). Due to their corroded condition, it could not be determined how the straps were fastened to the sternpost assembly.

Stem assembly. The stem assembly is detached from the keel and lying off to the port side (Figure 23). A large portion of the stem assembly remains buried in the sand. Excavation will be required to obtain precise dimensions. The stem appears to be fashioned from a single piece of oak scarfed into the keel. The cutwater, a piece of timber extending up the front of the stem, appears to butt into the keel shoe (Figure 24).

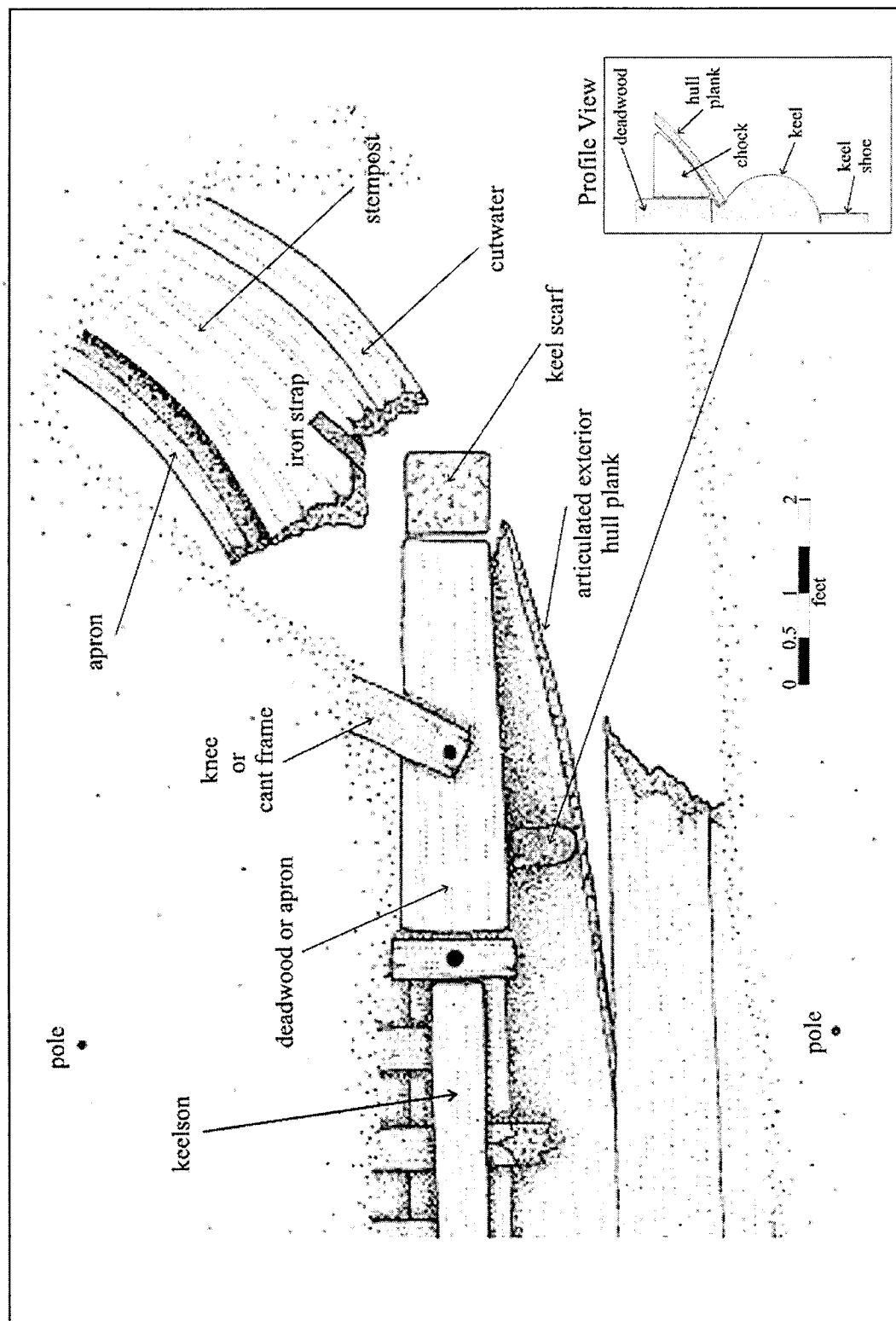


Figure 23. Plan view of 38BK1672's stem assembly.

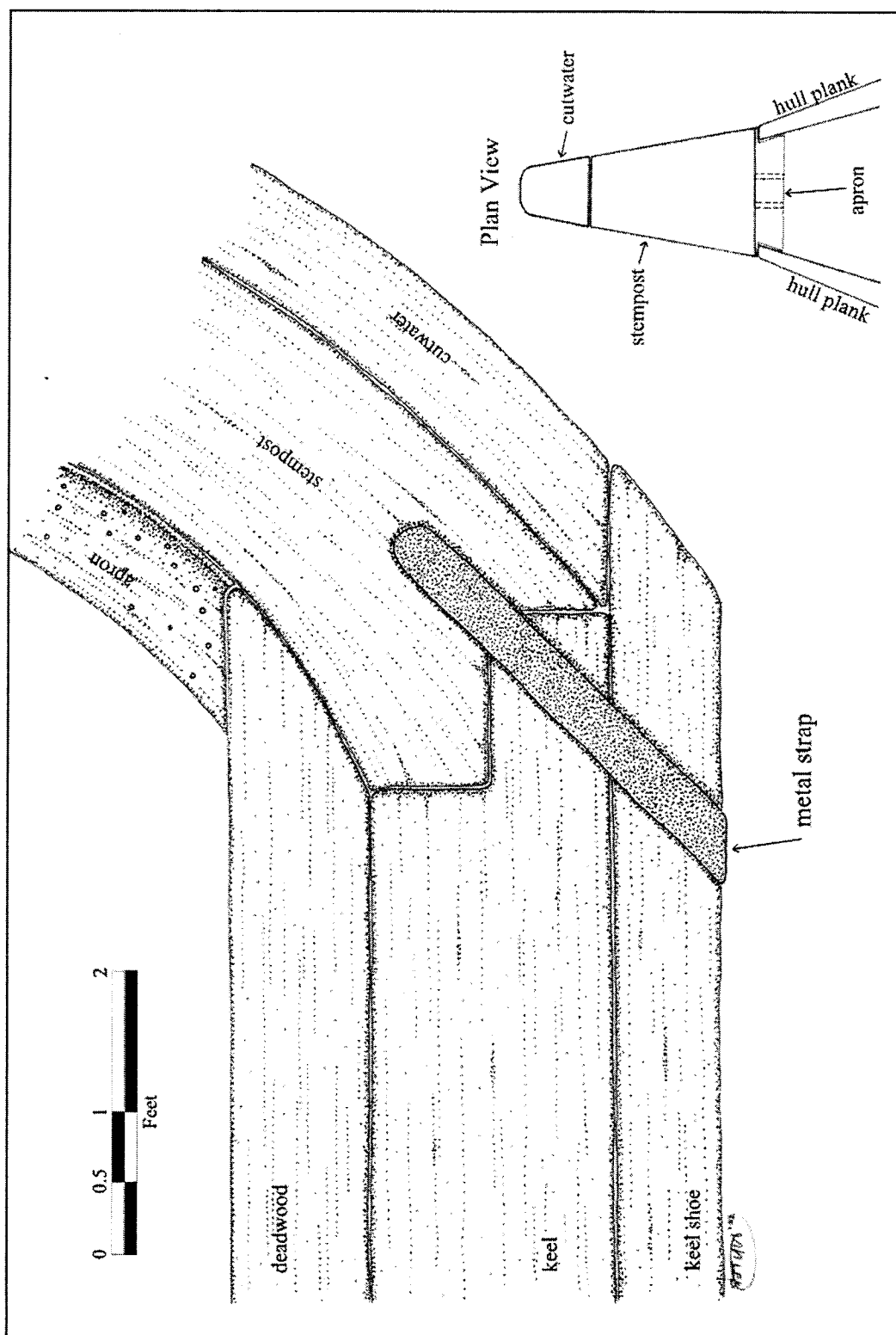


Figure 24. Reconstruction of 38BK1672's stem assembly.

The keelson ends 45 feet, 6 inches from the datum at the last floor (Figure 15). A piece of deadwood 13 inches sided by 12 inches molded and 48 inches long overlaps the keel/stem scarf and is secured with 1.12 inch hand wrought iron bolts. The oak apron is scarfed into the end of the deadwood and presumably extended to the top of the stem. Since the apron is narrower than the stem, a recessed area, similar to a rabbet is formed to accept the hood ends of the strakes. Numerous hand wrought iron nails are protruding from the apron's side.

A timber is fastened to the deadwood with a 1 inch diameter iron bolt (Figure 23). At first, the timber was believed to be a cant frame, but the lack of additional cant frames and the method in which the timber is secured to the top of the deadwood suggest another purpose. The timber may be a dislocated knee that secured the deadwood/apron scarf, but neither the dimensions nor the fastening seem substantial enough. The timber may also be the remains of a breast hook that was broken at its center fastener.

Keelson. The oak keelson measures 7 inches sided by 4 inches molded and begins just forward of the stern deadwood, 6 feet, 5 inches forward of the aft most point on the stern assembly. It continues forward 13 feet, 10 inches to where it has been torn away (Figure 15). The remaining portion of the 6 inch sided by 3 inch molded keelson begins 36 feet, 9 inches forward of the aft most point on the stern assembly, and continues forward 7 feet, 7 inches where it joins the stem assembly. The forward keelson remnants are heavily eroded. Both keelson breaks are very jagged, as if torn away, and appear to have occurred at or near where the keelson is double-bolted (Figure 15).

Neither breaks show evidence of being part of a scarf joint. The keelson is not notched over the floors and is fastened through the floors, to the keel, with a series of 1 inch diameter, hand wrought iron bolts (Figure 25).

Floors. The oak floors average 5 inches sided by 6 inches molded. The floors are positioned on top of the keel on 1 foot centers (average). The floors are not notched to accept the keel; instead the keel top has been hewn flush with the garboard strake (Figure 20). The floors alternate along the vessel's length between full floors extending across the keel, and half floors that meet on top of the keel (Figure 15). The vessel originally had twenty full floors and thirty-six half floors. One full floor and eleven half floors are missing. The floors have very little deadrise until the first futtock where they turn up sharply at the turn of the bilge (Figure 15). A disarticulated floor was recovered from the stern starboard quarter and photographed (Figure 26). The floor was never completely debarked and shows signs of shaping (Figure 27). Tool marks found on the floor resemble those made by an adz with an approximate blade width of 2.5 to 3 inches and very little curvature. Based on the general area where the floor was recovered, the curved nature of the floor, the treenail through its center, and the relatively few disarticulated floors, this floor probably came from the stern (Figure 15).⁵

⁵ "Tree-nails, certain long cylindrical wooden pins, employed to connect the planks of a ship's side and bottom to the corresponding timbers. The tree-nails are justly esteemed superior to spike-nails or bolts, which are liable to rust, and loosen, as well as to rot the timber; but it is necessary that the oak of which they are formed should be solid, close, and replete with gum, to prevent them from breaking and rotting in the ship's frame. They ought also to be well dried, so as to fill their holes when they are swelled with moisture. They have usually one inch in thickness to 100 feet in the vessel's length; so that the tree-nails of a ship of 100 feet long, are one inch in diameter; and one inch and a half for a ship of 150 feet . . . (Falconer, 298).

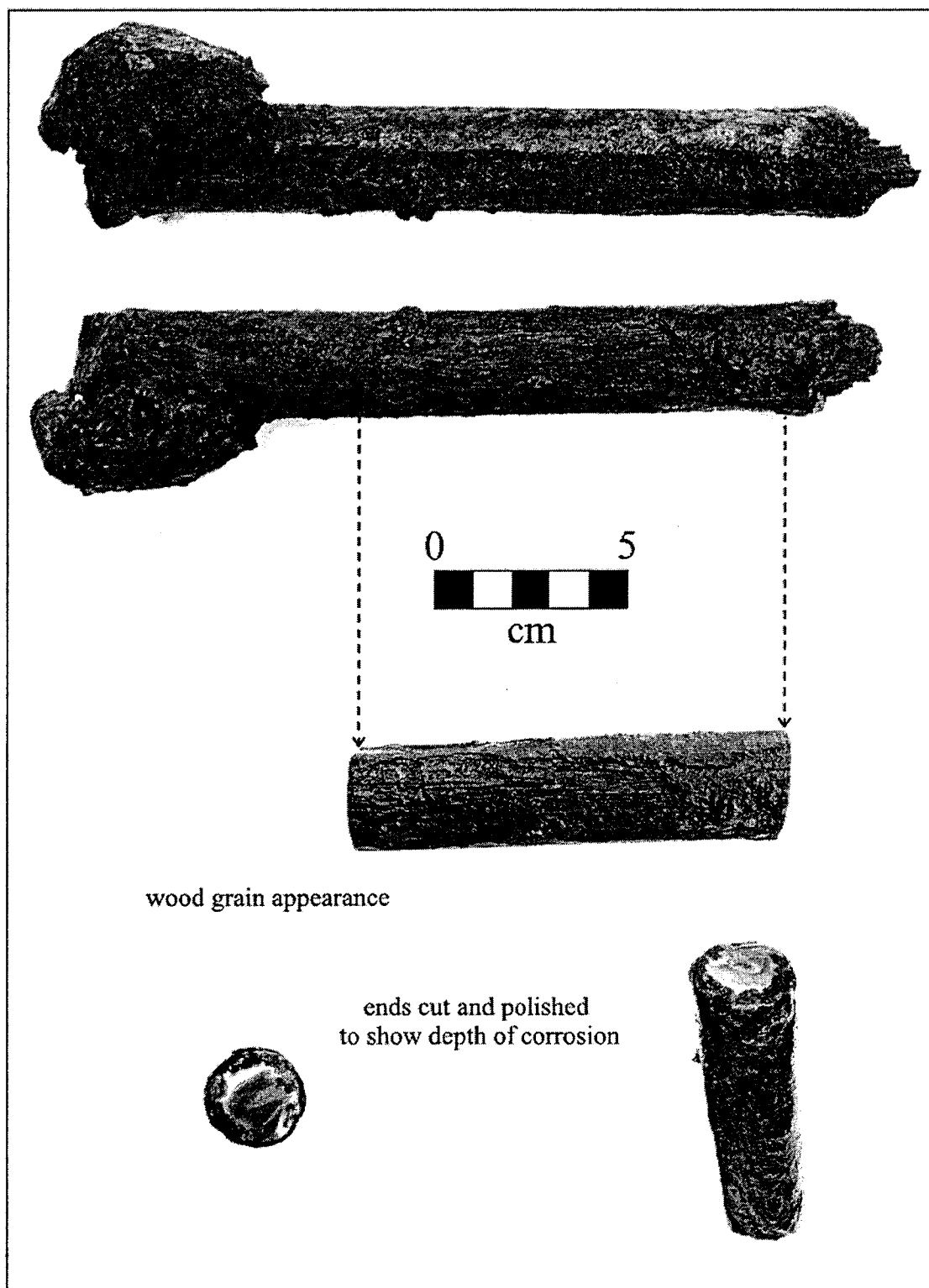


Figure 25. 38BK1672's one-inch diameter hand-wrought fastener recovered from keelson.

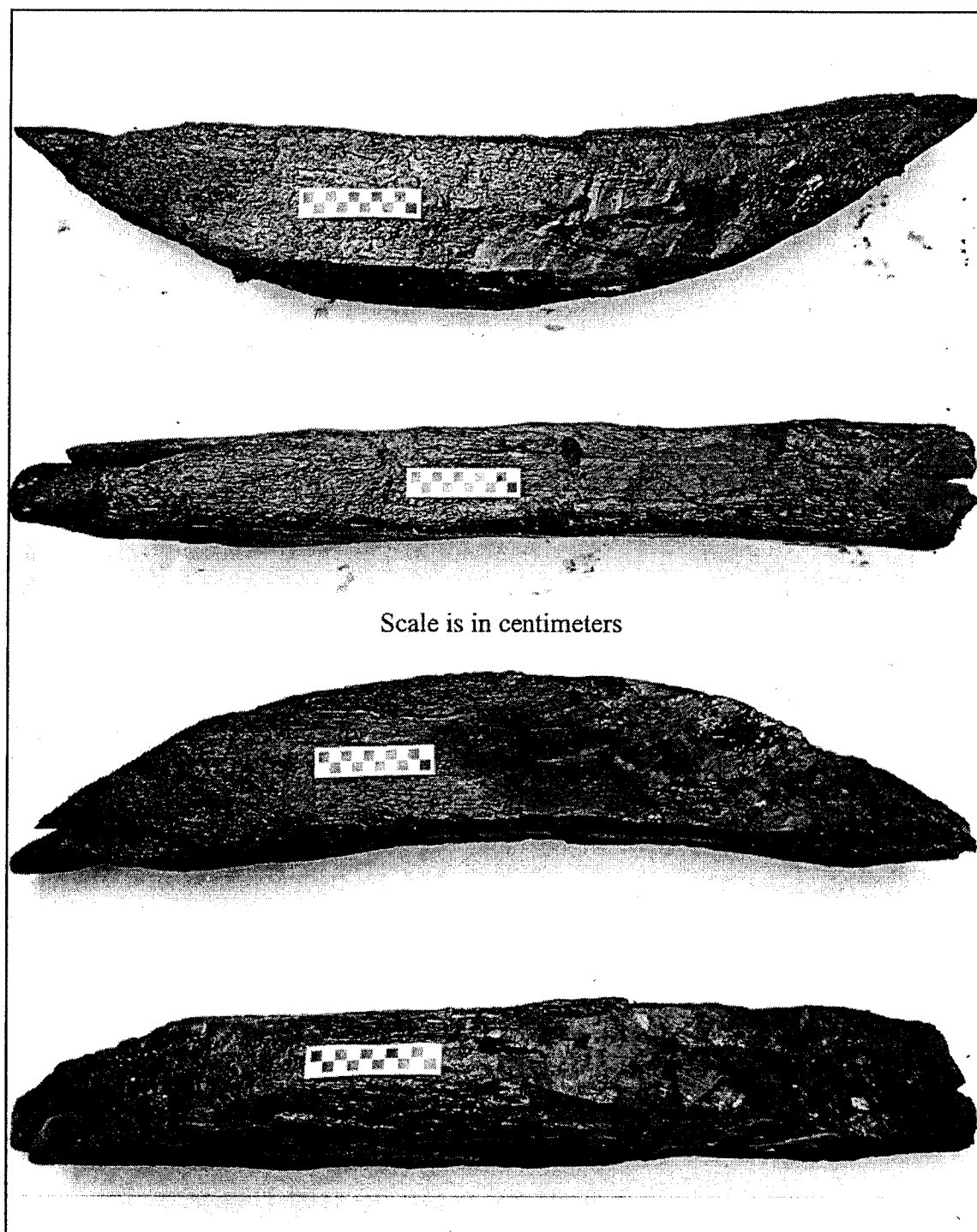


Figure 26. Photographs of 38BK1672 disarticulated floor recovered.

Room and space is the distance from one side of a floor, or its aft molded surface, to the corresponding side of the next floor; room being the width of a floor and space the open distance between two floors.⁶ Room and space measurements are taken next to the keelson. 38BK1672 has an average room and space measurement of 12 inches; 5 to 6 inches of room and 6 to 7 inches of space.

Beginning approximately 5 inches from the keel, on both port and starboard sides, builders fashioned a single 4 inch wide by 1.75 inch deep limber hole into the bottom of each floor and half floor (Figure 20). The builders augured four, 1.5 inch adjacent holes and chiseled out the remaining wood. Limber holes facilitated clearing bilge water by allowing it to run the length of the vessel uninterrupted and pool in the lowest portion of the boat. From there it could be pumped or bailed overboard.

Futtocks. No exposed evidence of first futtocks was detected on the starboard side of the wreck. The eroded ends of intact oak futtocks were seen protruding from the sand on the wreck's port side (Figure 15). First futtocks completely fill the space between two adjacent floors producing an uninterrupted band of wood along the turn of the bilge. Without excavation, it was not possible to determine how futtocks were fastened to floors. A disarticulated oak futtock, shaped from compass timber, was recovered from the starboard midship and photographed (Figure 28).⁷

⁶ Falconer defines room and space as "the distance betwixt the moulding edges of two adjoining timbers, which must always contain the breadth of two timbers," 1363.

⁷ Virginia Steele Wood, *Live Oaking, Southern Timber for Tall Ships* (Boston, Massachusetts: Northeastern University Press, 1981), 11-12.

Strakes. 38BK1672 is carvel-planked. The oak garboard strake was 1 inch thick and 14 inches wide amidships. The remaining strakes were southern yellow pine, 0.63 inch thick and from 7 to 13 inches wide. No evidence of saw or adze marks was detected on any planks. Some planks near the stern were thinned to facilitate bending to the more complex stern shape. Strakes were fastened to frames with treenails and nails (Figure 29). Three, 1 inch diameter southern yellow pine treenails were recovered. No treenails showed evidence of wedging. The plank butt joints were secured to frames using 0.38 inch and 0.19 inch, hand wrought iron nails (Figure 29). No caulking was detected in any exposed hull planking seams.

Ceiling. No intact ceiling remains on the exposed portion of 38BK1672. Close examination of the floors' upper sides revealed single 0.19 inch square iron nail holes in an alternating pattern from floor to floor, except for the limber plank next to the keel. The limber plank was not secured to facilitate access for clearing fouled limber holes. The pattern indicates ceiling were approximately 10 inches wide. Treenails visible on the tops of floors are flush. Treenails were used to fasten planking to the floors but do not appear to have been used to fasten ceiling.

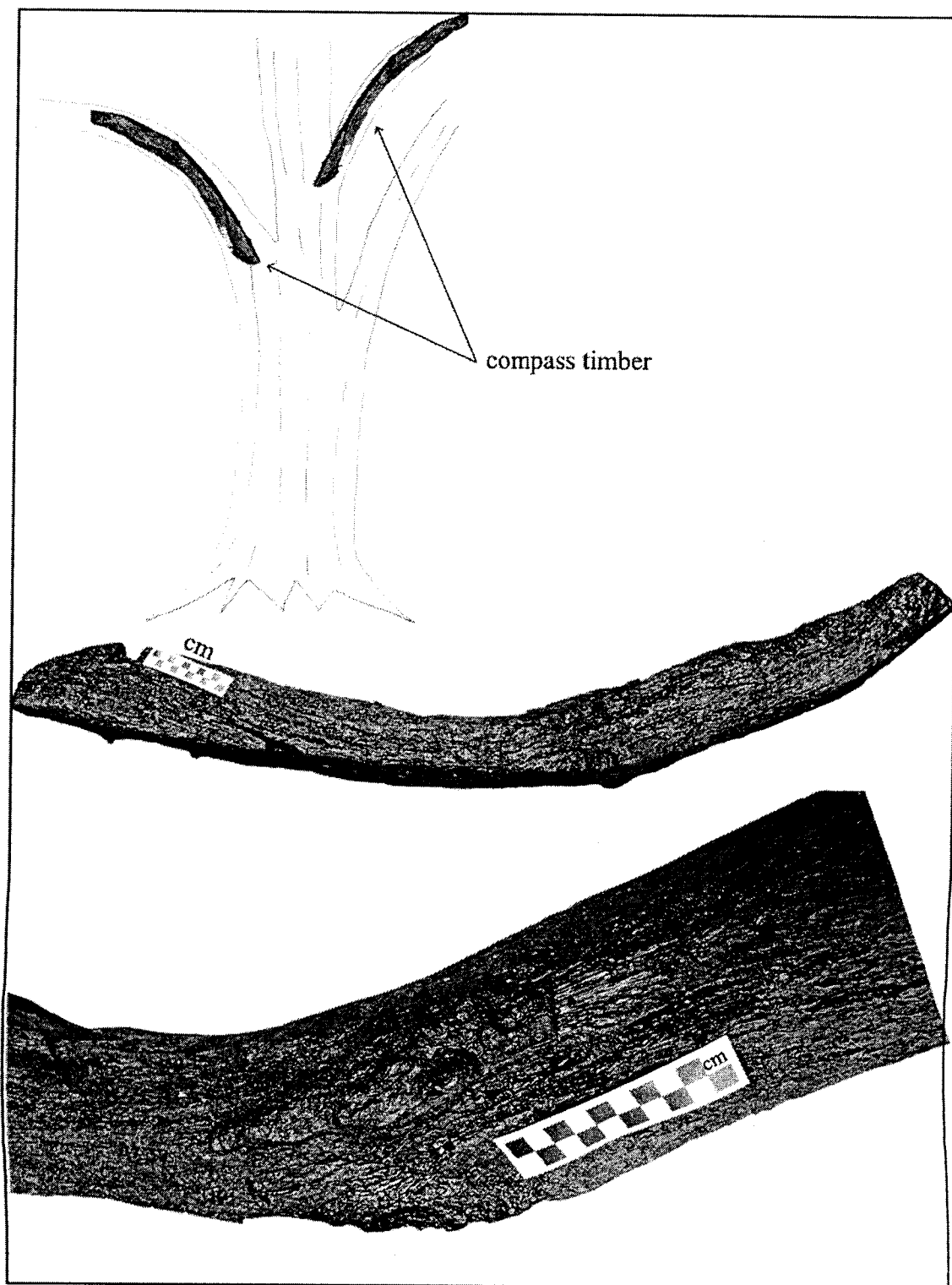


Figure 28. 38BK1672 first futtock showing use of compass timber.

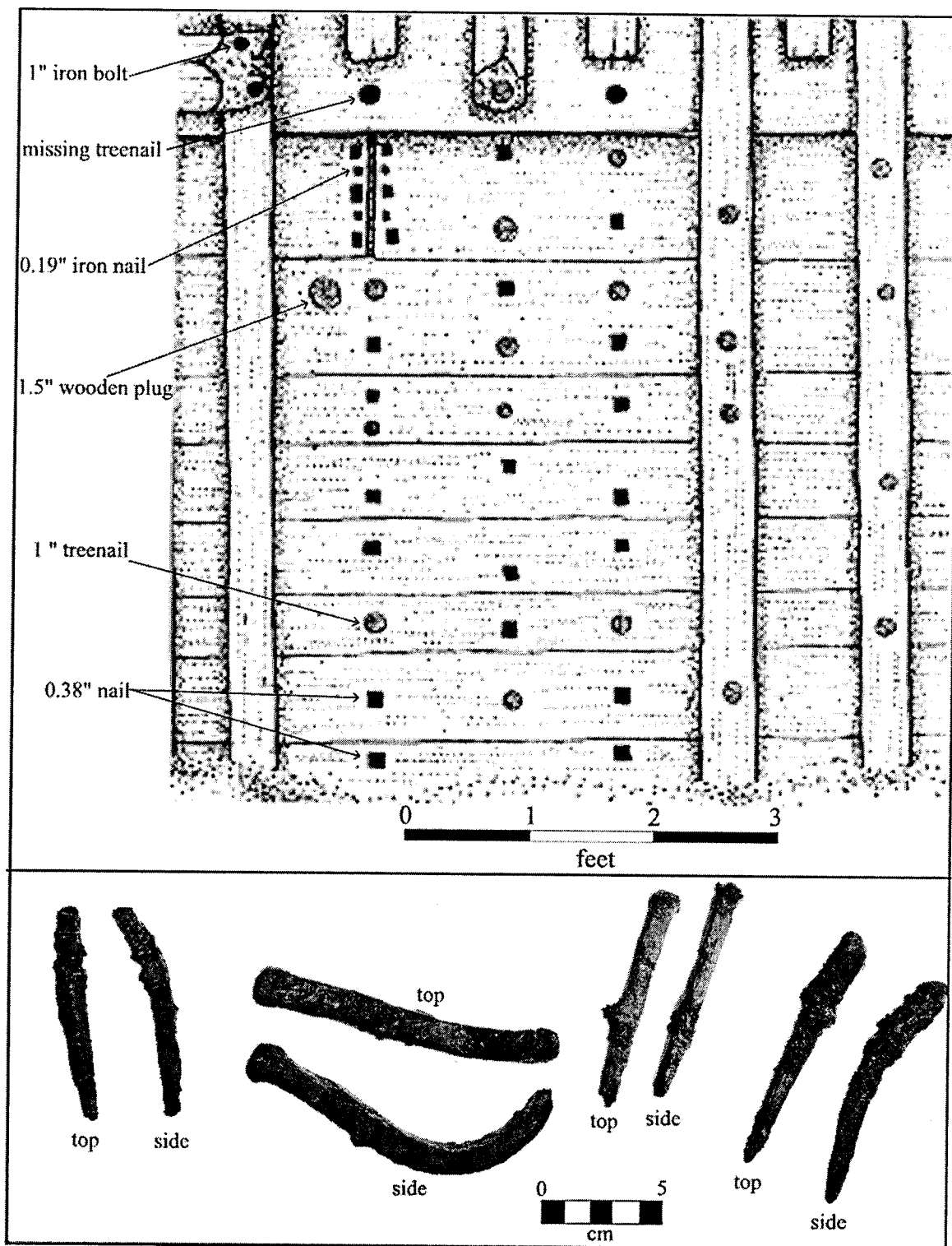


Figure 29. 38BK1672's framing patterns and fastener locations (top); top and side views of 38BK1672 iron fasteners (bottom).

CHAPTER VI

INTERPRETATION

Construction Location

European shipyard. In the eighteenth-century European shipbuilding tradition, timber was pit or mill sawn into a square or rectangular shape, and then laid on blocks to form the keel.¹ After the stem assembly and sternpost were fastened to the ends of the keel, the floors were notched to fit on top of the keel.² Next, a rabbet was fashioned into the keel's side to receive the edge of the first hull plank, the garboard strake. Following the garboard, additional planks, or strakes, were then fastened to the floors (Figure 30). The keelson was notched and fit over the floors, locking them in place.³

Timber species alone can not distinguish European from American construction. During the eighteenth-century, many European-built vessels were constructed using American timber. European-built vessels, operating in America, had to be capable of crossing the Atlantic Ocean. Open ocean vessel construction included the use of heavier more densely distributed floor timbers.

¹ Peter Goodwin, *The Construction and Fitting of the English Man of War 1650-1850* (Annapolis, Maryland: Naval Institute Press, 1987), 5; W.H. Curtis, *The Elements of Wood Ship Construction* (New York: McGraw-Hill Book Company, Inc., 1919), 1.

² Goodwin, 16, fig. 1/9; Richard Steffy, *Wooden Ship Building and the Interpretation of Shipwrecks* (College Station, Texas: Texas A&M University Press, 1994), 182, fig. 5-62b.

³ William Falconer, *William Falconer's Dictionary Of The Marine, An Universal Dictionary Of The Marine: Or, A Copious Explanation Of The Technical Terms And Phrases Employed In The Construction, Equipment, Furniture, Machinery, Movements, And Military Operations Of A Ship* (1780, reprint, New York: Augustus M. Kelley, 1970), 762.

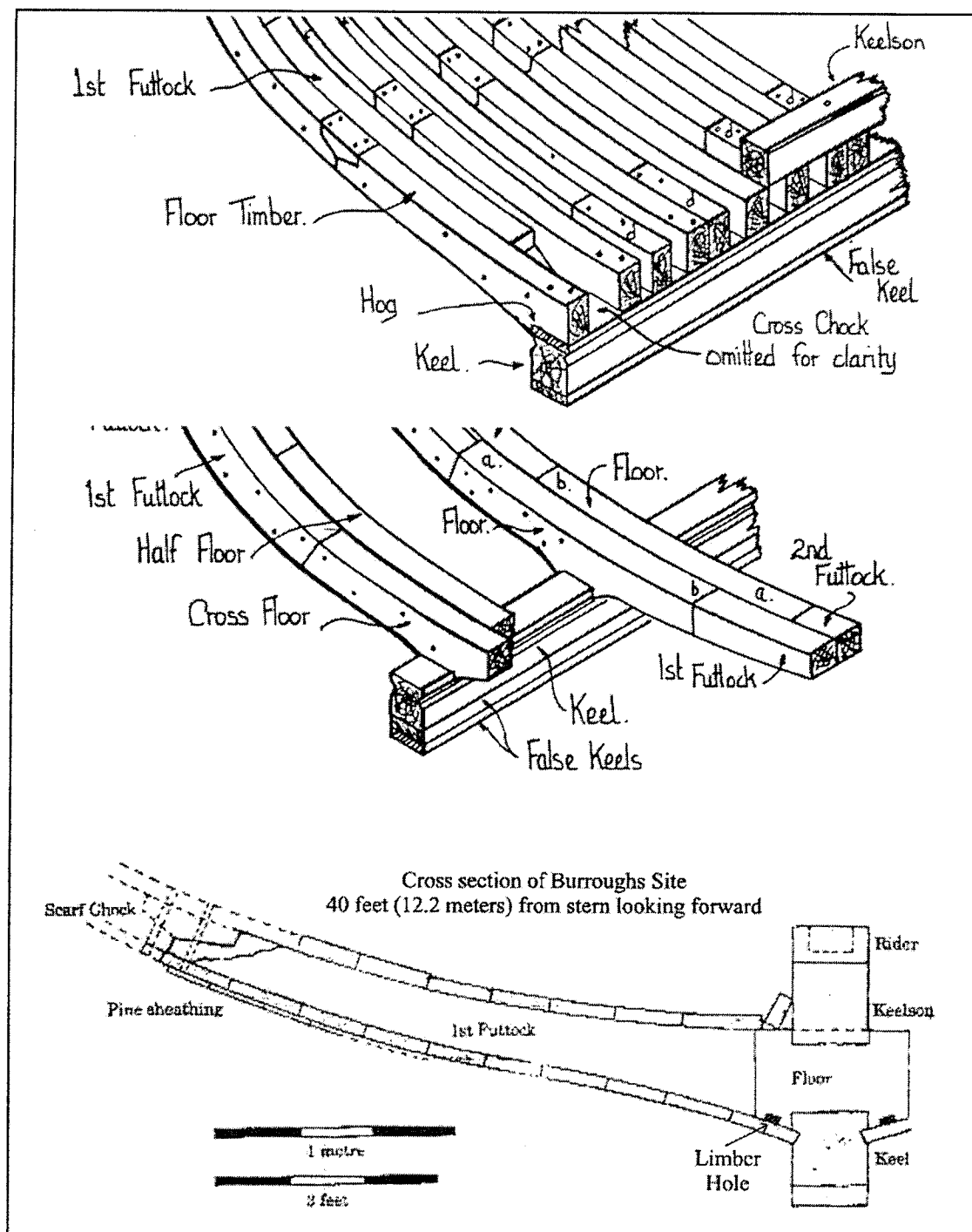


Figure 30. Eighteenth and early nineteenth century European shipbuilding tradition of notching floors over keel.⁴

⁴ Goodwin, 16 (top); Goodwin, 18 (middle); Bradley A. Rodgers and Annalies Corbin, "Shipwreck in a Swamp: the Burroughs Site at Edenton, North Carolina," *The International Journal of Nautical Archaeology* 31, No. 2 (2002): 233 (bottom).

The Yorktown wreck (44YO88) is a good example of an eighteenth-century, British-built, ocean vessel. In 1781, during Yorktown, Virginia, campaign, General Cornwallis scuttled a number of ships including a British-built collier brig to form a defensive line. The Yorktown wreck excavation began in 1983.⁵ The vessel is 73 feet long and has a 23 foot, 7.25 inch beam. Bow and stern construction features illustrate the complexity and tightly spaced framing of an eighteenth-century ocean going merchant vessel (Figure 12). The Yorktown wreck has a room and space measurement of 2 feet, 6 inches with an average frame sided dimension of 13 inches.⁶

Another example of an American vessel built in the European tradition was documented during the Little Landing Survey in South Carolina. Little Landing is a one-thousand-acre section of the Fairlawn Barony on the west branch of the Cooper River, South Carolina. In 1985, sport divers located the burnt remains of vessel LL1 off Little Landing. LL1 has floors notched over the keel, stern cant frames, and a keelson that stops short of the sternpost. Figure 31 shows construction details of LL1 including the notched floors.⁷ Vessel LL1 is believed to be a single-masted, double ended, British

⁵ John William Morris III, *Site 44YO88 The Archaeological Assessment of the Hull Remains at Yorktown, Virginia* (Master's thesis, East Carolina University, 1991), 44.

⁶ *Ibid*, 96, 98, 100.

⁷ Bruce Thompson, Little Landing Survey, in *Underwater Archaeology Proceedings from the Society for Historical Archaeology Conference*, edited by John Broadwater (Richmond, Virginia: The Society for Historical Archaeology, 1991), 125.

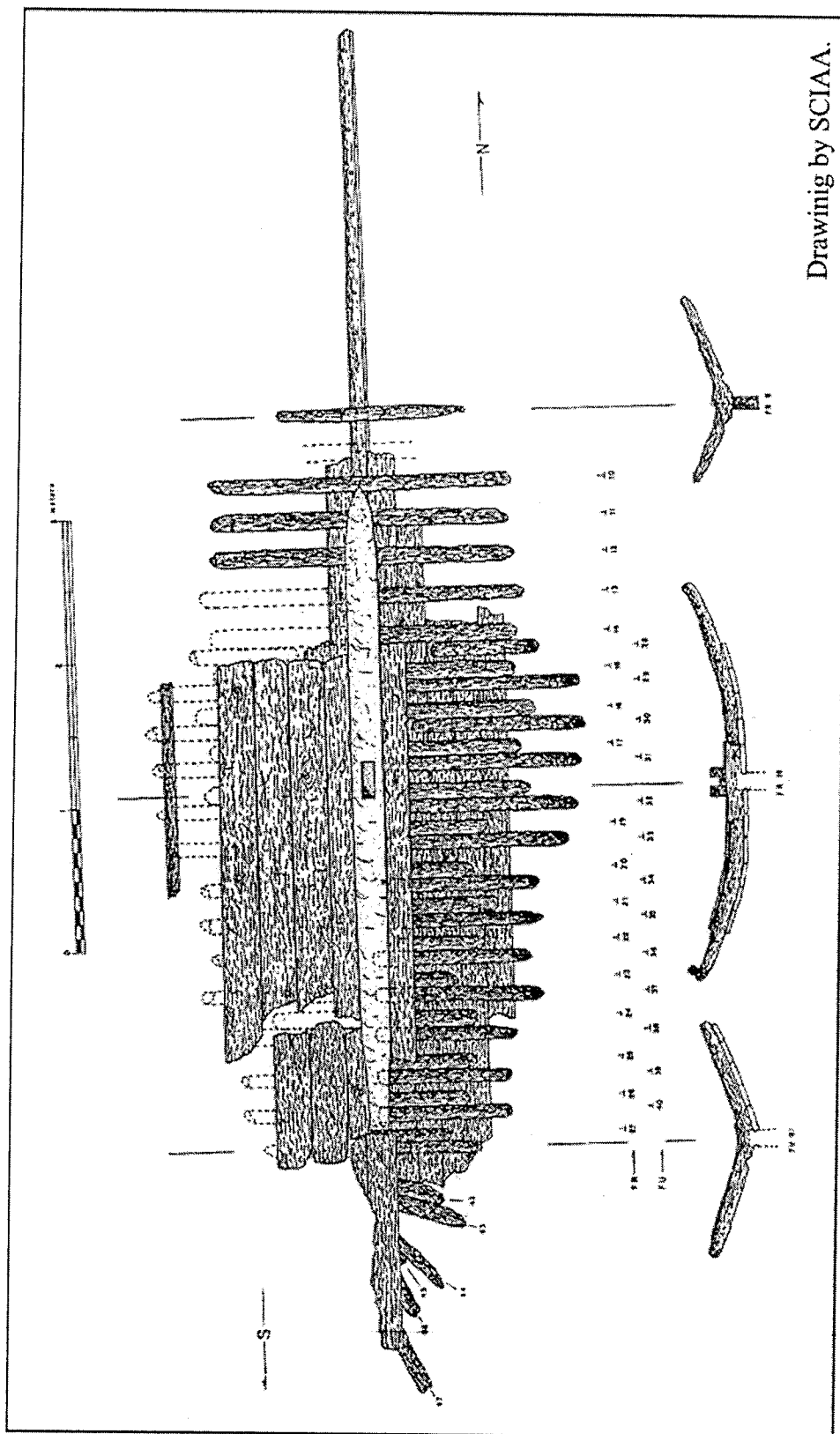


Figure 31. Preliminary wreck plan of LL1 hull remains.⁸

⁸ *Ibid.*, 128.

military vessel from the Revolutionary War period. This interpretation is supported by the presence of two cannon and a swivel gun.

Another example of a vessel built in the European tradition was discovered in Pembroke Creek, Edenton, North Carolina. The Burroughs wreck is a seagoing vessel constructed of white oak with an overall length of 96 feet and a beam of 23 to 25 feet.⁹ Shipwrights constructed the Burroughs wreck in the European shipbuilding tradition (Figure 32). Diagnostic features include a rectangular keel, notched floors, floor scarf chocks, rider, and pine sacrificial hull sheathing. Floors were 8.4 inches square with floor and futtock pairs measuring 16.8 inches sided. At the keelson, room equaled space at 8.4 inches, sturdier than 38BK1672. Archaeological investigation discovered that the Burroughs wreck had burned. Not only were the ends of frames charred but the dredge spoil contained heavy concentrations of charred wood.¹⁰

American shipyard. American-built vessels were constructed of American timber and often incorporated local variations.¹¹ In a letter attempting to estimate the value of South Carolina to the Lords Commissioners for Trade, Governor James Glen writes:

[March 1751] But though we are not owners of many ships we have built several good ones for sale, such as surprised good judges, who pronounced them inferior to none that have ever been built in this part of the world. We have here in plenty a sort of wood called the live oak for timbers, which seem admirably adapted to that use. Builders prefer it even to the

⁹ Rodgers and Corbin, 236; The Burroughs wreck is the topic of Katherine Goodall's Masters thesis at East Carolina University.

¹⁰ *Ibid*, 231.

¹¹ Amy Mitchell, *A Comparison of Wood Use in Eighteenth-Century Vessels* (Master's thesis, East Carolina University, 1994).

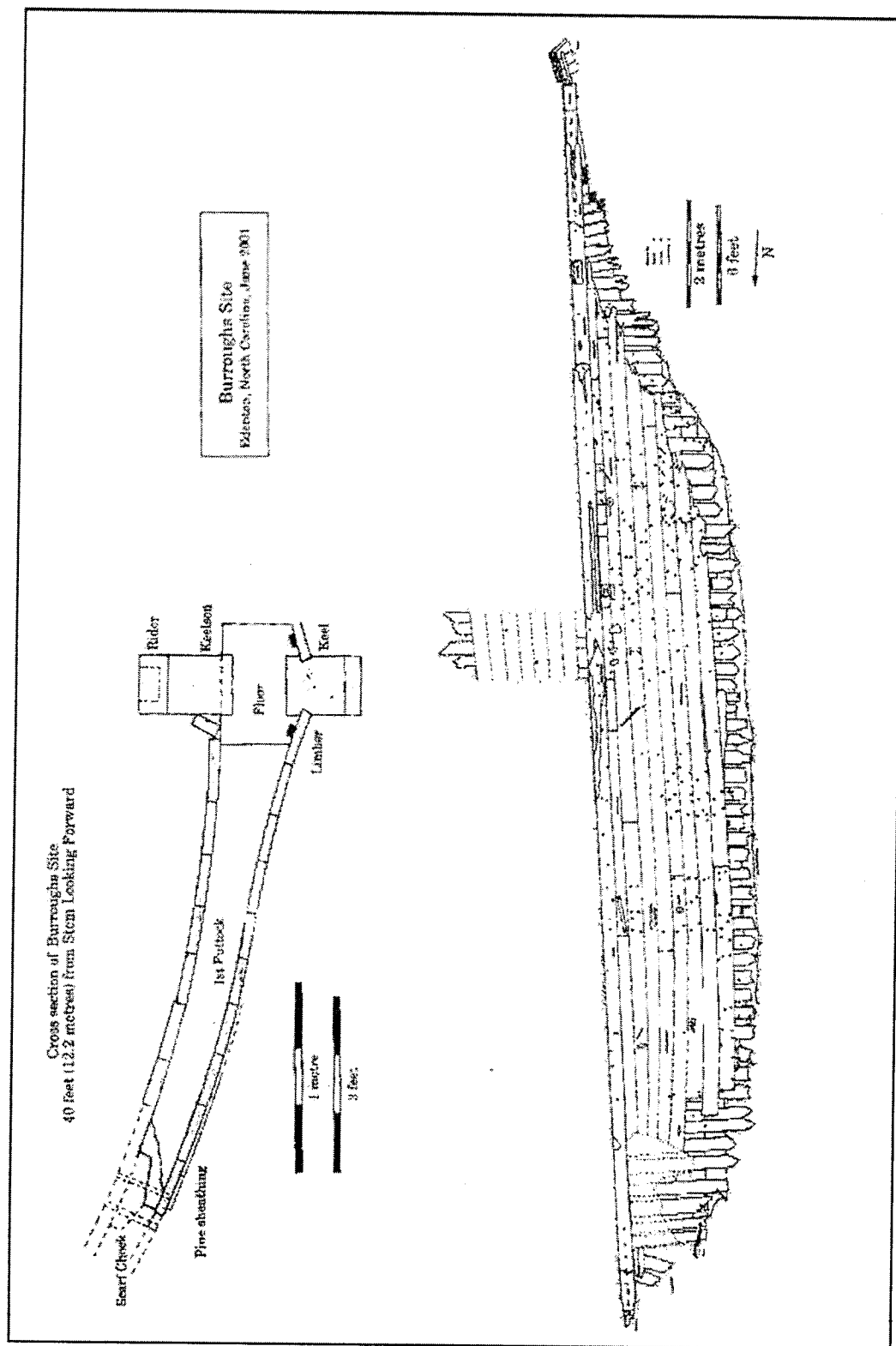


Figure 32. Plan and cross section of the Burroughs wreck.¹²

¹² Rodgers and Corbin, 232-233.

best oak that can be met with in the yards in England, and we have great quantities of yellow pine for planking, nor are we wanting in plenty of masts or naval stores.¹³

Wood species analysis of 38BK1672 showed that all timbers are oak and all planking is southern yellow pine; except the oak garboard strake (Appendix B).

Some argue that eighteenth-century American shipbuilding was simply an extension of European shipbuilding because European shipwrights came to America to take advantage of the plentiful and inexpensive labor and timber.¹⁴ One eighteenth-century South Carolina statute assigned a percentage of South Carolina taxes to lure European shipwrights:

... part of the net sum arising by the said tax, shall be and is hereby applied ... as an encouragement to ship-wrights and caulkers to become settlers in this Province. ...¹⁵

As a result, techniques used in American shipyards were very similar to European shipyards. Notching the keelson to fit over the floors and terminating the keelson in the stern deadwood, short of the sternpost are two diagnostic European shipbuilding techniques.¹⁶

While examining the MacKnight's shipyard, the North Carolina Underwater Archaeology Unit discovered the remains of a late-eighteenth-century vessel. The

¹³ Merrens, 181; Governor James Glen to Lords Commissioners for Trade.

¹⁴ William Fleetwood, *Tidecraft, the Boats of South Carolina, Georgia and Northeastern Florida - 1550-1950* (Tybee Island, Georgia: WBG Marine Press, 1995), 46, 51; Joseph A. Goldenberg, *Shipbuilding in Colonial America* (Newport News, Virginia: University Press of Virginia, 1976), 121-122.

¹⁵ Thomas Cooper, ed., *The Statutes at Large of South Carolina*, containing the acts from 1716, exclusive to 1752, inclusive, vol. 3 (Columbia, South Carolina: A.S. Johnson, 1838), 742; Thomas Cooper, ed., *The Statutes at Large of South Carolina*, containing the acts from 1752, exclusive to 1786, inclusive, vol. 4 (Columbia, South Carolina: A.S. Johnson, 1838), 11; Goodwin, 28.

¹⁶ Falconer, 762; see Chapter IV, page 20 for quote.

MacKnight Shipyard wreck (0001NCR) has an overall length of 44 feet, 4 inches and a beam of 13 feet, 10 inches.¹⁷ Archaeological investigations suggest that the MacKnight Shipyard wreck is a locally built, late-eighteenth-century sloop. Floors on the MacKnight Shipyard wreck are red cedar and measure 7 inches sided and 6 inches molded on 18 inch centers.¹⁸ Floors were notched to fit over the keel and the keelson was notched to fit over the floors. The builder of the MacKnight Shipyard wreck terminated the keelson short of the sternpost. Wood species analysis showed that the stem, hull planking, ceiling, and multi-sided unwedged treenails were oak.¹⁹

Plantation. Although the remains of few eighteenth-century vessels have been located in North Carolina, South Carolina, or Georgia, variations in construction techniques suggest that many Lowcountry vessels were not built in strict accordance with European shipbuilding tradition. In many cases plantation carpenters built these vessels differently than vessels built under the guidance of an experienced shipwright working in a shipyard. While these carpenters were skilled in working local species of lumber, and even possibly employed for some time in a shipyard, they were usually not apprenticed in the European shipbuilding tradition. Variations in construction technique is expected on plantation-built vessels.

¹⁷ Sheridan R. Jones, *The Historical and Archaeological Investigation of the MacKnight Shipyard Wreck (0001NCR)* (Master's thesis, East Carolina University, 1996), 49; author cites Mark U. Wilde-Ramsing, "Underwater Archaeological Examination of North River, Currituck and Camden Counties," on file with the Underwater Archaeology Unit, Kure Beach, North Carolina, 1992.

¹⁸ *Ibid*, 57.

¹⁹ *Ibid*, 54, 59.

Several eighteenth-century vessels have been discovered in the South Carolina lowcountry. The Brown's Ferry Vessel,²⁰ Mepkin Abbey Wreck,²¹ Ingram Vessel,²² Clydesdale Plantation sloop,²³ and the Malcolm Boat²⁴ resemble 38BK1672 in that none are capable of trans-Atlantic voyages. While they all draw upon the European shipbuilding tradition, these vessels have unique construction variants, and do not appear to have been constructed in a shipyard. Although construction techniques differ between these vessels they are similar in that they all appear to use economical forms of construction.

In 1971, Hampton Shuping discovered the Brown's Ferry vessel (38GE57) in the Black River above Georgetown, South Carolina.²⁵ As with 38BK1672, the Brown's Ferry vessel was a small eighteenth-century, carvel-planked, "flat-bottomed coaster," built entirely from local timber species.²⁶ The Brown's Ferry vessel had two masts and a

²⁰ Richard Steffy, "Construction Details of the Brown's Ferry Ship," *Beneath the Waters of Time: The Proceedings of the Ninth Conference on Underwater Archaeology*, ed. J. Barto Arnold III, (Austin Texas: Texas Antiquities Committee, Publication No. 6, 1978), 55-61.

²¹ Ralph Wilbanks, "A Preliminary Report on the Mepkin Abbey Wreck [38BK48], Cooper River, South Carolina: An Early 19th-Century River Trading Vessel," *Underwater Archaeology: The Challenge Before Us, the Proceedings of the Twelfth Conference on Underwater Archaeology*, ed. Gordon Watts, Jr. (San Marino, California: Fathom Eight Special Publication No. 2, 1981), 151-157; Lynn Harris, with contributions by Sue Vezeau, "The Mepkin Shipwreck (38BK48)," *Research Manuscript Series* (in print), (Columbia, South Carolina: South Carolina Institute of Anthropology and Archaeology, University of South Carolina, 2001).

²² Christopher Amer et al., "The Ingram Vessel 38CT204: Intensive Survey & Excavation of an Upland Rivercraft at Cheraw, South Carolina" *Research Manuscript Series* 220. Columbia, South Carolina: Institute of Anthropology and Archaeology, University of South Carolina, 1995.

²³ Fleetwood, 299.

²⁴ Amer, et al., "The Malcolm Boat."

²⁵ Frederick M. Hocker, "The Brown's Ferry Vessel: An Interim Hull Report," *Underwater Archaeology Proceedings from the Society for Historical Archaeology Conference*, ed. Donald H. Keith and Toni L. Carrell (1992): 20.

²⁶ Steffy, "Brown's Ferry Ship," 55, 57.

water line length of 51 feet with a 14 foot beam.²⁷ 38BK1672 had a keel length of 51 feet and an approximate beam of 16 feet. Floor dimensions on the Brown's Ferry vessel were 4 to 6.5 inches sided and 4.5 inches molded, distributed on 2 foot centers.²⁸ Floors on 38BK1672 were 5 inches sided by 6 inches molded, distributed on 1 foot centers, a stronger configuration. The keelson adhered to the eighteenth-century European tradition of stopping at the stern deadwood, short of the sternpost, similar to 38BK1672.

The Brown's Ferry vessel was built without a keel, an indication that it may be a plantation-built vessel (Figure 33). The builder laid three bottom planks side by side, the middle one more than 1.5 feet sided, and fastened them together with treenails.²⁹ Once the planks were fastened together, the builder cut the composite plank to a shape that would form the rest of the hull.³⁰ The Brown's Ferry vessel appeared to illustrate a building technology where the bottom, rather than the skeletal frame, was the primary design influence. This variation may be the product of a European bottom-based building tradition, or it may represent a plantation carpenter's solution to a complex construction problem.³¹

In 1970, Bob Densler discovered a wreck (38BK48) in the Cooper River in front of Mepkin Abbey, South Carolina.³² The Mepkin Abbey wreck was 48 feet long and has an 11 foot beam, proportions similar to 38BK1672 (Figure 34).³³ Both the Mepkin

²⁷ *Ibid*, 57.

²⁸ Hocker, 22; Steffy, "Brown's Ferry Ship," 57.

²⁹ Steffy, "Brown's Ferry Ship," 57.

³⁰ Hocker, 23.

³¹ *Ibid*, 20-25.

³² Wilbanks, 151-157.

³³ *Ibid*, 151.

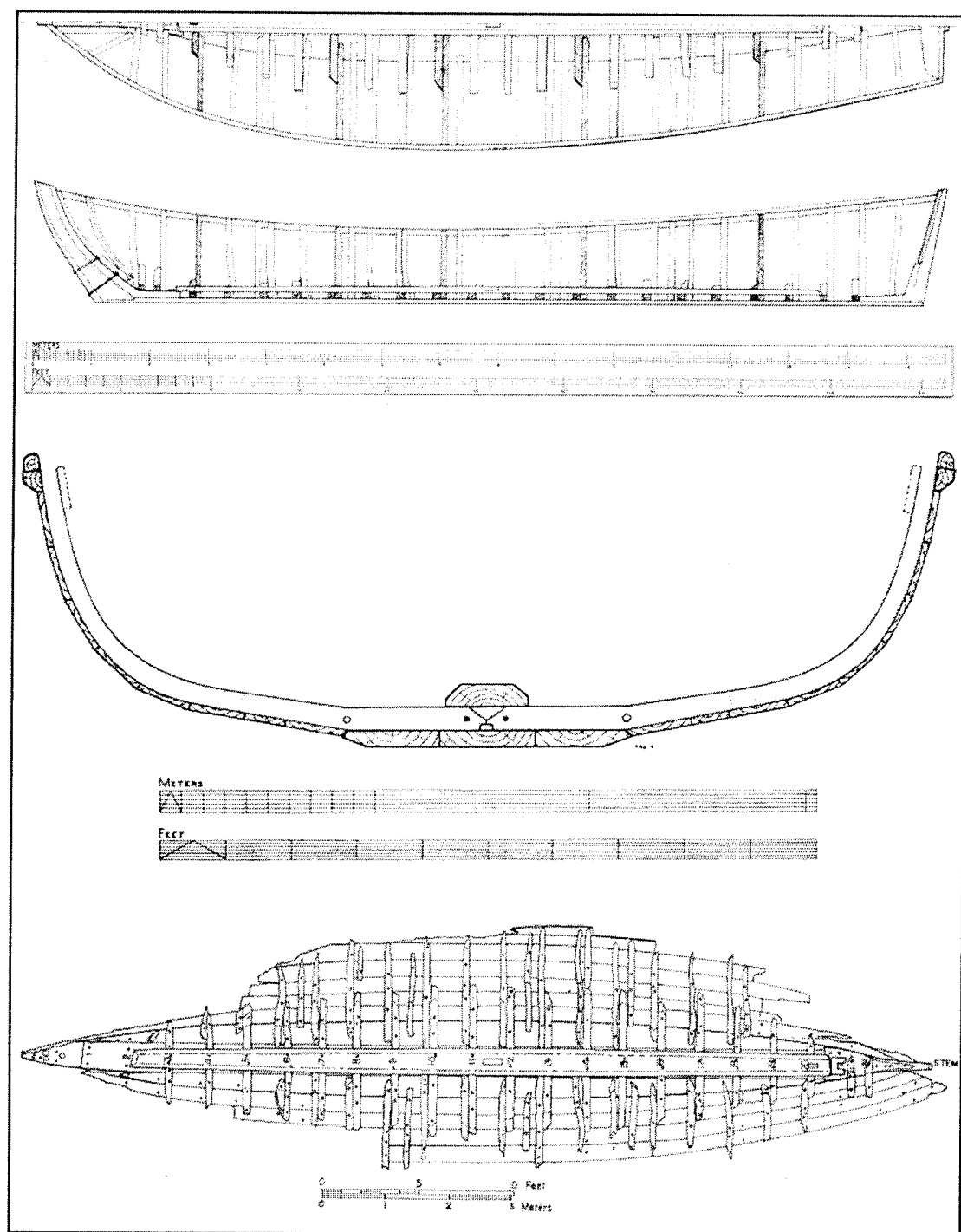


Figure 33. Brown's Ferry vessel, construction details, sectional view amidships, and excavation drawing of intact timbers.³⁴

³⁴ Steffy, 163-165.

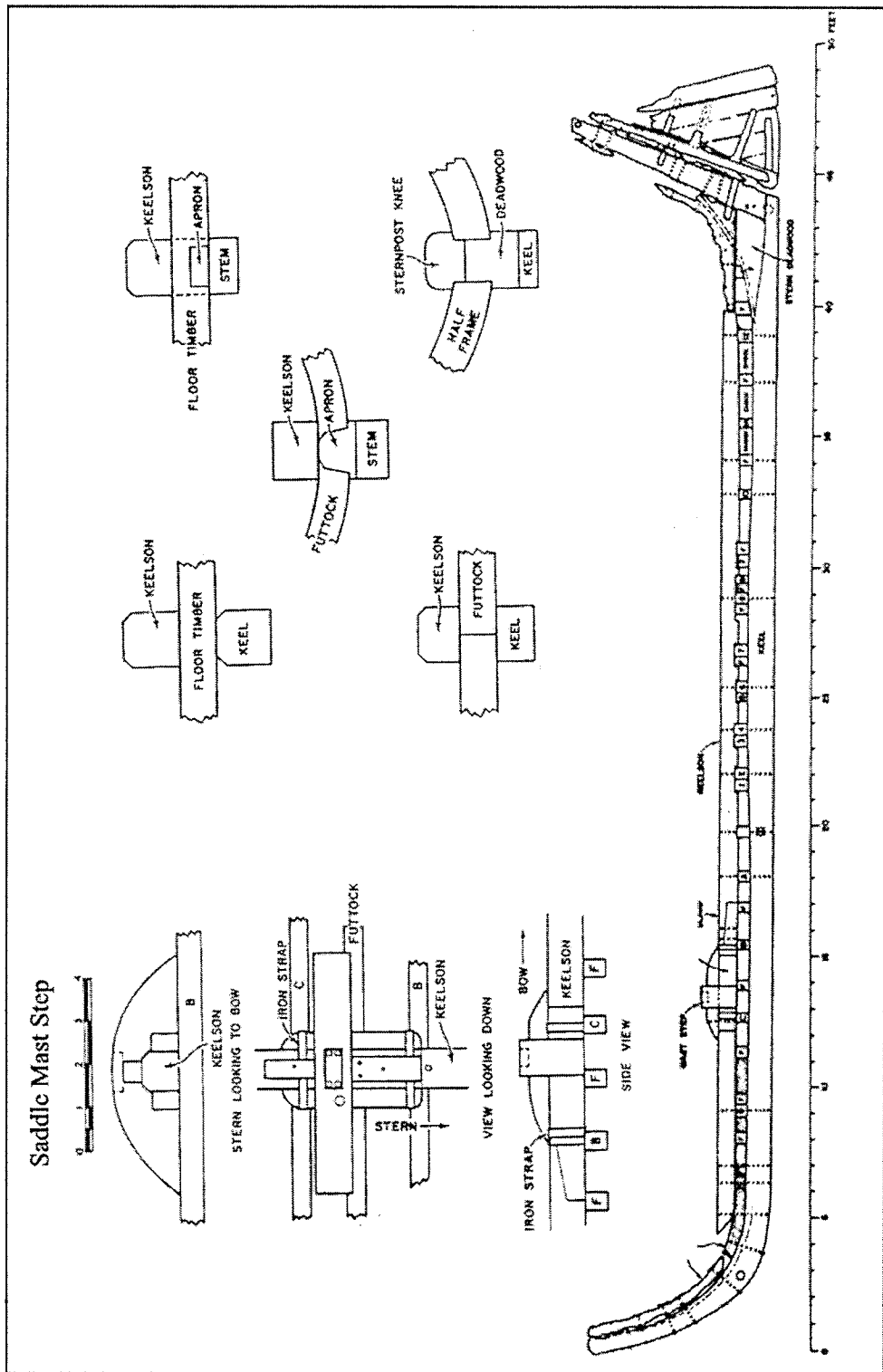


Figure 34. Wreck plan of the Mepkin Abbey Wreck (38BK48).³⁵

³⁵ Wilbanks, 151-152.

Abbey wreck and 38BK1672 were carvel-planked. The Mepkin Abbey wreck was described as a locally built, early nineteenth-century flat bottom, double-ended, shoal draft merchant vessel. The builder of the Mepkin Abbey wreck terminated the keelson short of the sternpost.

As with the Brown's Ferry vessel; the Mepkin Abbey wreck had a unique keel, 6 inches sided at the stern, expanding to 12 inches sided amidships and tapering down to 6 inches sided at the stem.³⁶ 38BK1672 keel's sided dimension also tapered; 10 inches sided at the stern, widening to 14.5 inches amidships and slimming down to 10 inches at the stem assembly, with its widest dimension amidships (Figure 15). Floor dimensions on Mepkin Abbey wreck were 5 inches sided and 6 inches molded, identical to 38BK1672.³⁷ Mepkin Abbey's floors and futtocks were on 1.5 foot centers alternating along the length of the keel (Figure 34).³⁸ Futtocks met atop the keel and extend out to either side in one piece through the turn of the bilge.³⁹ 38BK1672's floors were spaced on 1 foot centers and alternate between solid floors and half floors (floors that met on top of the keel) (Figure 15). Excavation of 38BK1672 may show that the half floors were futtocks extending out to either side of the keel in one piece through the turn of the bilge.

While there were similarities in construction techniques between the Mepkin Abbey wreck and 38BK1672, there were also numerous differences. The Mepkin Abbey wreck's keelson was notched to fit over the floors, effectively locking them in place.

³⁶ *Ibid*, 151.

³⁷ *Ibid*, 153.

³⁸ *Ibid*, Figure 1.

³⁹ *Ibid*, 153.

38BK1672's keelson was not notched. Amidships, the Mepkin Abbey wreck builder sistered seven floors, possibly to reinforce a cargo area.⁴⁰ 38BK1672 had no doubled floors.

In 1990, a hobby diver named Miller Ingram located the inverted remains of what appeared to be a late-eighteenth-century vessel in the Great Pee Dee River near Cheraw, South Carolina.⁴¹ Archaeological investigations by SCIAA determined that the Ingram vessel (38CT204) is approximately 50 feet, 10 inches long with a maximum beam measurement of 15 feet, 1 inch, very similar to 38BK1672 (Figure 35).⁴² Preliminary archaeological investigation determined that the keelson was not notched, but SCIAA archaeologists were unable to determine where it ended. The builder of the Ingram vessel, like 38BK1672, chose not to use a rectangular keel timber. Although less pronounced than 38BK1672's round keel, the Ingram vessel had a chamfered keel tapered at either end (Figure 35).⁴³ The Ingram vessel had a plank-like keelson fitted flat on top of the frames, similar to 38BK1672.⁴⁴ The Ingram vessel's floors were not notched and sat flush atop the keel and the garboard strake's upper surface, similar to 38BK1672 (Figure 35).

The Ingram vessel differed from 38BK1672 in that the keel does not have a rabbet to accept the garboard strake. The Ingram vessel was built entirely of pine while

⁴⁰ *Ibid*, 154.

⁴¹ Amer, *et al.*, "The Ingram Vessel," 8.

⁴² *Ibid*, ii.

⁴³ *Ibid*, 16, 37.

⁴⁴ *Ibid*, 21.

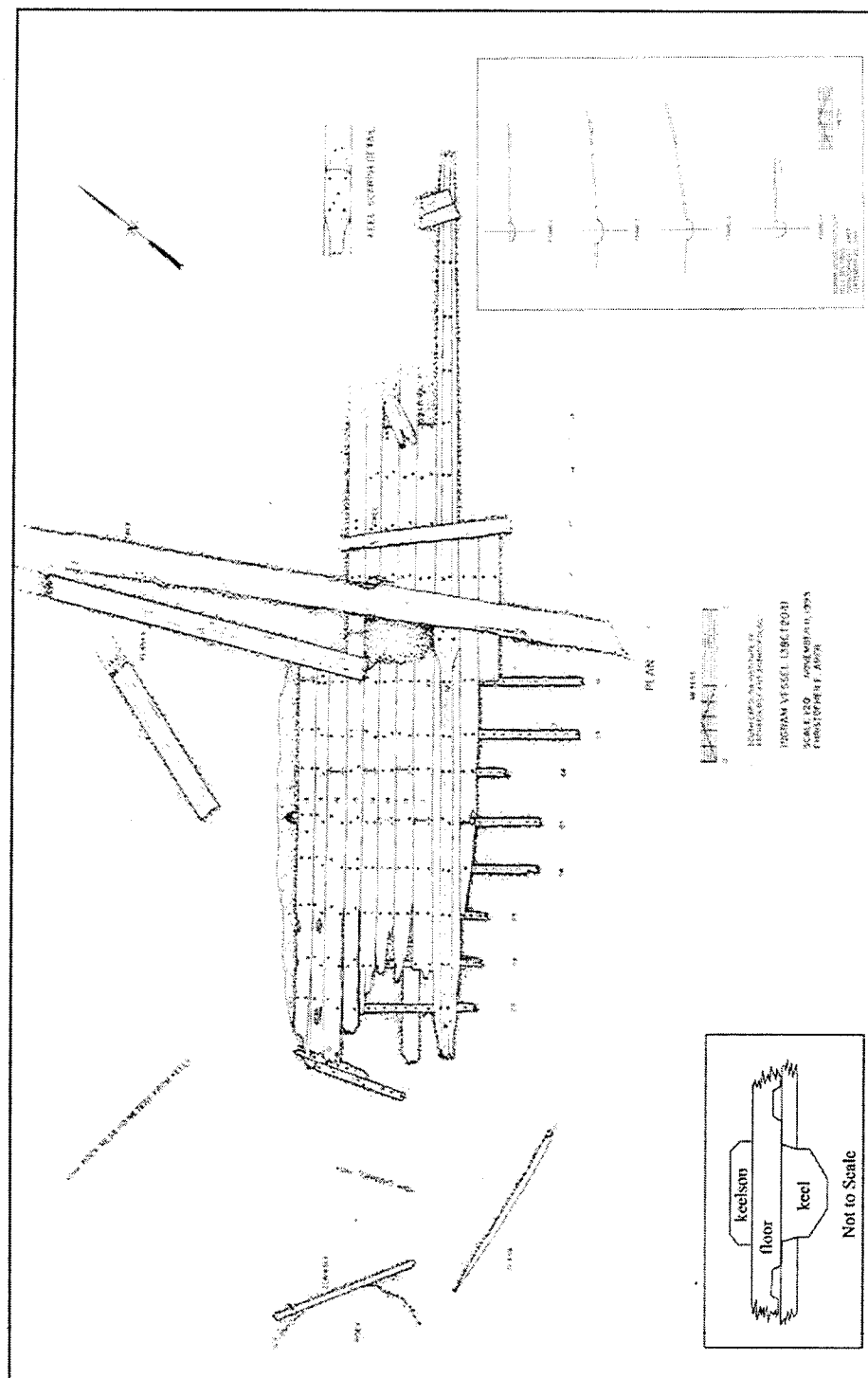


Figure 35. Plan view of Ingram Vessel (38CT204), showing hull cross sections and construction detail of keelson, floor, and keel.⁴⁵

⁴⁵ *Ibid*, "The Ingram Vessel," 37.

38BK1672 was built almost entirely of oak.⁴⁶ All Ingram vessel treenails were wedged while no observed treenails were wedged on 38BK1672.⁴⁷ Floors on the Ingram vessel were 3.38 inches sided, much narrower than 38BK1762, and spaced on 23.5 inch centers, much wider than 38BK1672, a structurally weaker construction.⁴⁸

In 1991, during a low water survey of the Savannah River, Georgia, Tidewater Atlantic Research Inc. discovered the remains of an eighteenth-century vessel. The Clydesdale Plantation vessel was 43 feet, 9 inches long with a 15 feet, 5 inch beam (Figure 36).⁴⁹ The large keel, keelson, and garboards are fashioned from pine. The remaining timbers were live oak.⁵⁰ The framing pattern made this vessel unique. Evenly spaced floors alternated between whole and half floors throughout the vessel. Half floors extended from the garboard, through the turn of the bilge to the deck line. Futtocks butted to the heads of the floors and extended through the turn of the bilge to the deck. None of these timbers were fastened to each other. The evenly spaced floors and half floors were similar to 38BK1672. Excavation of 38BK1672 may reveal that some futtocks butted to the heads of the floors, however, the few futtocks encountered appeared to be side fastened.

In 1985, James Malcolm located the remains of a vessel in the Ashley River, South Carolina (Figure 37).⁵¹ SCIAA investigated the Malcolm Boat (38CH803) later

⁴⁶ *Ibid*, 47.

⁴⁷ *Ibid*, 34.

⁴⁸ *Ibid*, 17.

⁴⁹ Fleetwood, 303, note 6.

⁵⁰ *Ibid*, 299.

⁵¹ Amer, et al., "The Malcolm Boat," 1.

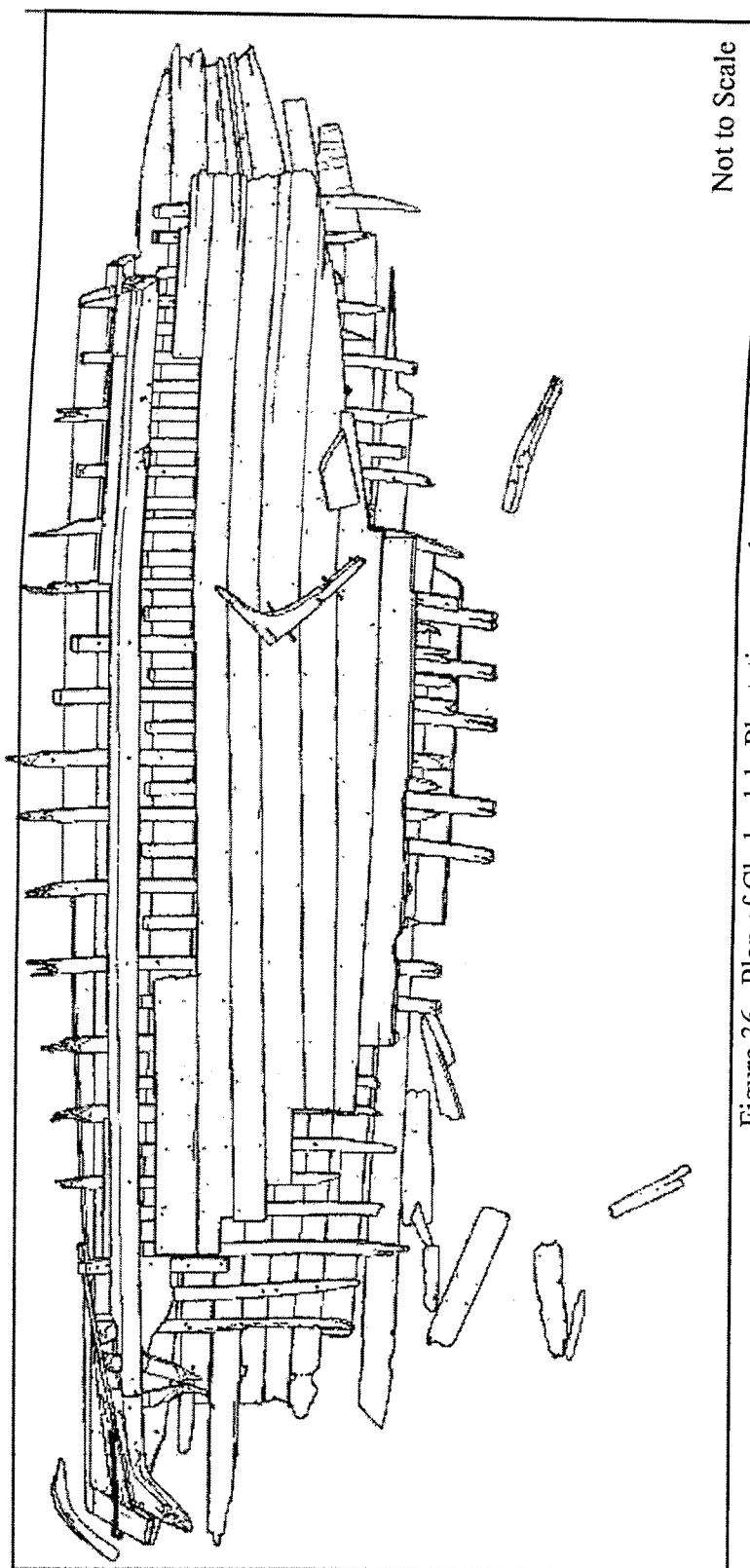


Figure 36. Plan of Clydesdale Plantation vessel (38JA201).⁵²

⁵² *Ibid.*, 299.

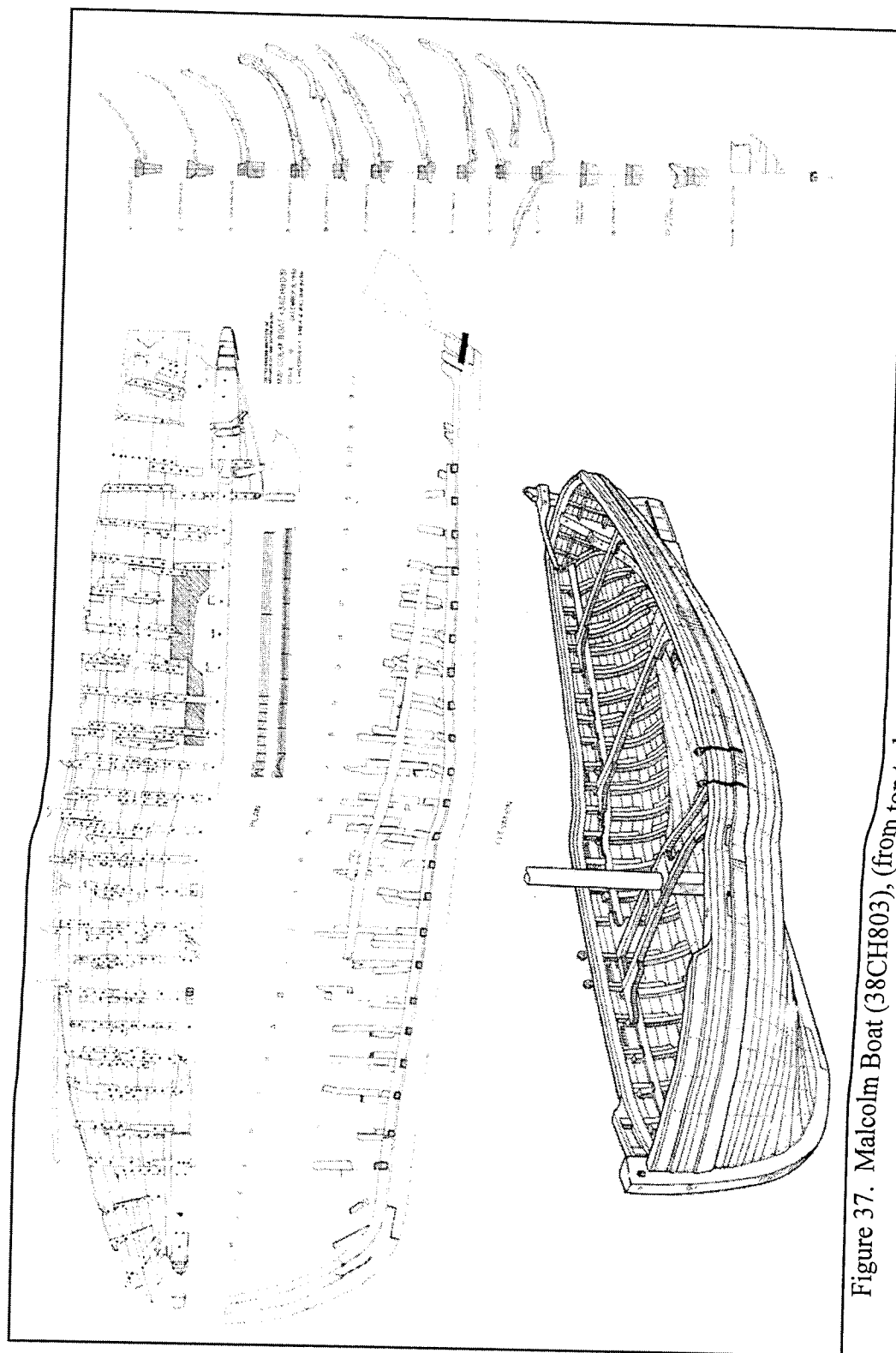


Figure 37. Malcolm Boat (38CH803), (from top to bottom) plan and elevation views, profiles, and reconstruction.⁵³

⁵³ Amer, et al., "The Malcolm Boat," 88, 91, 105.

that year and determined the remains to be a late-eighteenth/early-nineteenth-century coasting vessel. The Malcolm Boat was 41 feet, 10 inches long with a beam of 11 feet, 10 inches.⁵⁴ The Malcolm Boat's 9 inch square keel and notched keelson were southern yellow pine with live oak scantlings.⁵⁵ Floors on the Malcolm Boat were 3.5 inches sided by 3 inches molded with a spacing of 1 foot, 3 .75 inches on center.⁵⁶ The floors appeared small when compared to similar length vessels, possibly indicating light duty or the builder's wish to make a lighter, or cheaper, vessel.

The Malcolm Boat had cypress garboards and southern yellow pine strakes.⁵⁷ 38BK1672 has oak garboards and southern yellow pine planks. An advertisement in the South Carolina Gazette, November 20, 1753, offered for sale a Georgetown Boat,

*Just launched, 95-100 barrels of rice, extraordinarily well built of live oak and red cedar timbers with 2 streaks of white oak plank under her bends, the rest yellow pine, draws but little water and would make a good coaster.*⁵⁸

It may be that the builders choose to use a more durable wood such as oak or cypress for the garboard strakes instead of pine because the garboard strake had more twist and bend, was subjected to more wear, and was more difficult to replace than the other hull planks.⁵⁹

Differences in construction techniques suggest that Brown's Ferry Vessel, Mepkin Abbey Wreck, Ingram Vessel, and the Malcolm Boat were not built according to formal

⁵⁴ *Ibid*, 61.

⁵⁵ *Ibid*, 126.

⁵⁶ *Ibid*, 50.

⁵⁷ *Ibid*, 126.

⁵⁸ Fleetwood, 46.

⁵⁹ Michael Alford, personal communication, 12 May 2003.

plans or drawings. Instead, the builder had an idea of how the vessel should be built according to its function. The difference in details illustrated the diversity and ingenuity of plantation craftsmen throughout colonial South Carolina. Faced with building boats to perform a variety of functions in riverine and coastal environments, they used available resources and labor to create vernacular adaptations on formal shipbuilding traditions. In a letter dated 1809, Pierce Butler gave a detailed account of his operation on the Altamaha Delta in Georgia.

Of my working Negroes I keep from 40 to 50 male slaves out of the field, to wit, about 14 house carpenters, 2 mechanics, 6 ship carpenters, 12 to 15 Ditchers, 4 Tanners, Curriers and Shoemakers. I turn my own leather, make my own shoes and those of my Neighbors - my own harness, etc. 4 Blacksmiths, three masons, 2 brick makers, two painters who are also sail makers. . . . My carpenters require no White man to enable them to erect as good a House as I would desire to occupy. They glaze also. My ship carpenters have built me two Sea Vessels without any white person directing them. I make all my Cotton machinery - We never Ginn by hand.⁶⁰

Close examination of 38BK1672's construction details illustrated that the craft was not built wholly in the eighteenth-century European shipbuilding tradition. The builder opted to use a round keel instead of a traditional square or rectangular timber. In addition, 38BK1672's keel was shaped so that the top of the keel was flush with the garboard strake's upper surface (Figure 20). This method eliminated the need to notch floors, but left a fragile garboard rabbet. It is impossible to imagine a carpenter carving a delicate rabbet into the top edge of the keel without the top edge of the rabbet breaking

⁶⁰ Malcolm Bell, Jr., *Major Butler's Legacy: Five Generations of a Slave Holding Family* (Athens, Georgia: University of Georgia Press, 1987), 116-117, quoted in Fleetwood, 107.

off. A "sliver" at the top of the rabbet would never survive the shaping process without having wood above it.

Michael Alford, former curator of the North Carolina Maritime Museum, reviewed the description of 38BK1672's keel and postulated a method of construction.⁶¹ The keel, Alford explained, was fashioned from single live oak log (Figure 38).

- Step 1 - the log was debarked.
- Step 2 - one side of the log was squared off with an adze and the log was rolled over onto the flat side. The flat side gave the log stability to facilitate work and was eventually fitted with a keel shoe.
- Step 3 - a lengthwise rabbet to receive the garboard was chopped out with an axe.
- Step 4 - the builder fitted the garboard into the rabbet.
- Step 5 - the builder used an adze to remove the upper keel flush to the top of the garboard. To do this, the builder made crosscuts, or kerfs, with an axe or saw to the desired depth and then removed wood between the cuts with an adze. The surface was finished with a smoothing adze.

This procedure might leave a little "sliver" at the top of the rabbet. Alford theorized that the builder might have even used the upper rabbet "sliver" as a gauge to determine how close he was to the garboard rabbet's top edge. The closer the builder

⁶¹ Alford's postulated method of construction is based on his studies and observations of numerous hulls and fragments during his twenty years of research into boat and shipbuilding in the Carolinas; for additional information see Michael B. Alford, "Tracing Colonial Carolina Boats to their European Roots," Seventh International Symposium on Boat and Ship Archaeology, Musee Ile Tatihou, July 1994. Construction navale maritime et fluviale, *Archaeonautica*, no. 14 (1998), CNRS Universite di Provence, Aix en Provence 1999: 273-80; Michael B. Alford, "French Sources of Vernacular Boatbuilding Practices in the Carolinas." Underwater Archaeology Proceedings from the Society for Historical Archaeology Conference, Kansas City. January 1993. Sheli O. Smith, Editor. Society for Historical Archaeology, Kansas City, Missouri. 1993: 43-48; Michael B. Alford, "French Boatbuilding in the Carolina Colonies." The European Origins of the Small Watercraft of the United States and Canada. Joseph T. Butler, Editor. Nicholls State University, 9 October 1992. Thibodeaux: Center for Traditional Louisiana Boatbuilding and the Museum Small Craft Association, 1992: 20-25; Michael B. Alford, "The Ferry from Trent: Researching Colonial River Ferries." *Tributaries* 1, no. 1 (1991), North Carolina Maritime History Council, 1991: 10-16.

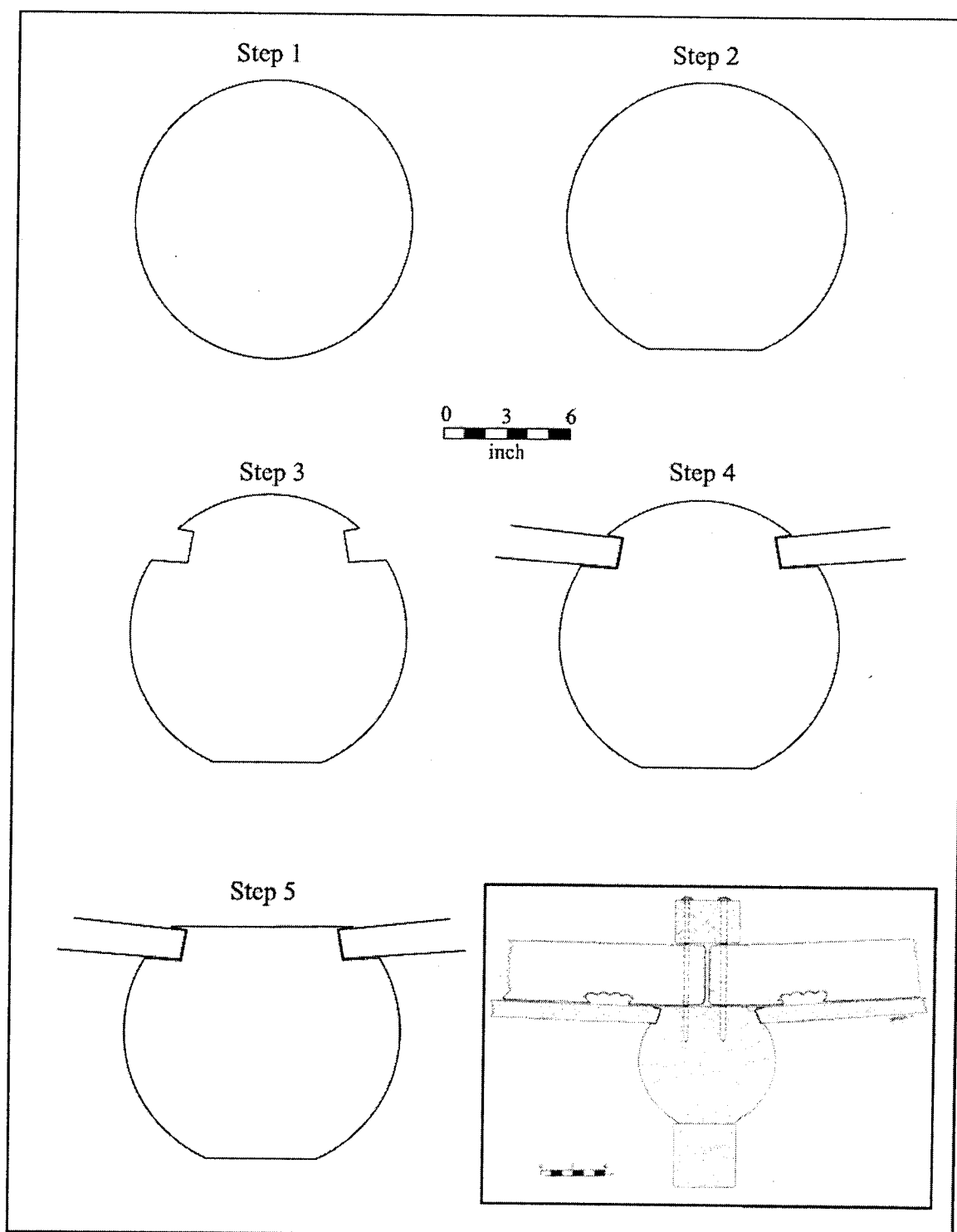


Figure 38. Proposed 38BK1672 keel construction sequence.⁶²

⁶² Michael Alford, personal communication, 29 June 1999.

was, the easier it was to fit floors over the keel.⁶³ No gauging marks were detected anywhere along the keel's upper surface.

38BK1672's builder may have overlooked the shipbuilding tradition of notching floors over the keel or simply felt that it was not worth the effort. Not wanting to expend any more energy than necessary may also explain why the keel timber was not squared off or why the keel shoe was poorly fitted to the keel (Figure 20). A plantation carpenter would most likely build a vessel with more emphasis on function than looks. One 38BK1672 futtock was little more than a tree branch (Figure 28). One 38BK1672 floor still had bark on it (Figure 39). Looking at the top view, starboard end, the axe cut that severed the limb from the tree can be seen.

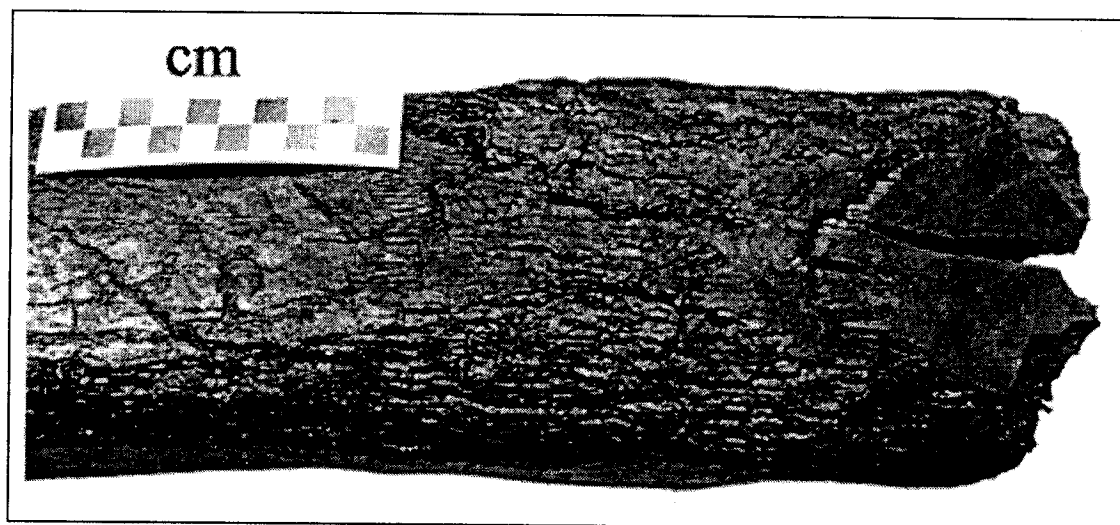


Figure 39. 38BK1672 floor timber showing intact bark and axe cuts.

⁶³ Michael Alford, personal communication, 26 June 1999.

Vessel Type

There is no doubt that 38BK1672 was a sailing vessel. Evidence to support this can be found throughout the site including the stem, sternpost, gudgeons, and numerous floors. While the midship floors and first futtocks suggest a very flat, barge-like vessel, the intact bow and stern planks show that the vessel entered the water sharply at both ends (Figure 17).

Eighteenth-century vessels include, ships, brigantines, sloops, schooners, and barges. Whereas seventeenth-century vessels were categorized by hull type, eighteenth-century vessel classification depended more on sail plan. A vessel's tonnage, or more accurately, a vessel's internal cargo carrying capacity, varied greatly within any classification.⁶⁴ Lloyds Register presents a clear example of similar vessel categories with differing capacities. The average tonnages for eighteenth-century Pennsylvania-built brigantines, snows, and ships were 140.4, 156.7, and 235.8 tons respectively. For the same period, average tonnages for Philadelphia-built brigantines, snows, and ships were 66.2, 83.3, and 145.9 tons respectively.⁶⁵ This illustrates that there were cargo-carrying ships and brigantines with lengths similar to 38BK1672.

An eighteenth-century ship had square sails on the fore and main masts and a lateen-rigged mizzen mast (Figure 14).⁶⁶ Ships ranged from 40 to 400 tons. Eighteenth-century brigantines replaced seventeenth-century barks and had two or more square sails

⁶⁴ Fleetwood, 60.

⁶⁵ Goldenberg, 81.

⁶⁶ *Ibid*, 5.

on the fore mast and a fore-and-aft sail on the main mast (Figure 14). The main mast often carried a square topsail.⁶⁷ Brigantines typically carried twice the tonnage of coasting sloops or schooners.⁶⁸ Eighteenth-century sloops had a single mast with a fore-and-aft rig (Figure 14).⁶⁹ Early in the eighteenth-century, ship owners and merchants discovered that splitting the sloop's sail plan saved them money because the smaller sails required smaller crews, lighter spars, and lighter rigging.⁷⁰

The eighteenth-century schooner descended from the seventeenth-century ketch.⁷¹ The term "schooner" first appeared in Charleston records in 1717.⁷² Like the ketch it had two masts, rigged fore-and-aft (Figure 14). The more modern sail plan had gaffs instead of sprits, one or more head sails on a bowsprit, and sail area divided into smaller units.⁷³

38BK1672 has a keel length of 51 feet and an approximate beam of 16 feet.

Using the eighteenth-century method of determining tonnage:⁷⁴

$$\frac{\left(length - \frac{3}{5} beam \right) \times beam \times \left(\frac{1}{2} beam \right)}{94}$$

⁶⁷ *Ibid*, 79.

⁶⁸ *Ibid*, 79.

⁶⁹ *Ibid*, 77.

⁷⁰ *Ibid*, 78.

⁷¹ *Ibid*, 78.

⁷² Fleetwood, 49.

⁷³ Goldenberg, 78.

⁷⁴ "The length shall be taken on a straight line along the rabbet of the keel, from the back of the main stern-post to a perpendicular line from the fore part of the main stem under the bowsprit; from which, subtracting three-fifths of the breadth, the remainder must be esteemed the just length of the keel to find the tonnage; and the breadth shall be taken from the outside plank in the broadest place in the ship, be it either above or below the main wales, exclusive of all manner of doubling planks that may be wrought upon the sides of the ship; then, multiplying the length of the keel by the breadth so taken, and that product by half the breadth, and dividing the whole by 94, the quotient will be deemed the true contents of the tonnage" David Steel, Sr., *The Shipwright's Vade-Mecum* (London: Printed for P[enelope]. Steel, at the Navigation-Warehouse, Little Tower Hill, 1805), 249-251.

38BK1672 had a working capacity of approximately 56 tons. This is small compared to a ships or brigantines that usually had a much higher rated tonnage. The deep draft and restricted maneuverability kept large cargo-carrying vessels such as ships and brigantines from navigating narrow winding tidal rivers. A vessel traveling from Charleston to Quinby Plantation navigated 37 serpentine miles of the Cooper River, negotiating sand bars at almost every turn. The last two miles up shallow Quinby Creek required the captain to stay within a channel twice the length of 38BK1672.

The most common vessel with 38BK1672's dimensions for river-based transportation was a schooner. A survey of *South Carolina Gazette* advertisements between 1753 and 1763 found the average schooner had a keel length of 40 to 45 feet and a beam 25 to 30 percent of the keel length. These vessels had a draft of 5 to 6 feet and averaged between 20 to 25 tons burthen.⁷⁵ 38BK1672, with a keel length of 51 feet and an approximate beam of 16 feet fits into these projected measurements with a beam 31 percent of the keel length. For comparison, the Clydesdale Plantation sloop had a keel length of 43 feet, 9 inches and a beam of 15 feet, 5 inches, producing a beam 36 percent of its keel length.⁷⁶

Approximately 76 percent of vessels registered as South Carolina-built between 1735 and 1771 were schooners averaging less than 20 tons.⁷⁷ Fleetwood notes that locally built schooners tended to increase in size toward the end of the eighteenth-century,

⁷⁵ Fleetwood, 51.

⁷⁶ *Ibid.*, 299.

⁷⁷ *Ibid.*, 49; Clowse, "Shipowning and Shipbuilding," 240.

so the following advertisement in the *South Carolina Gazette*, December 11, 1753 would be considered average:

large new schooner . . . now at Winyaw, extremely well built. 50 feet keel, 18 feet beam, 7 ½ feet in hold, with masts, booms, gaffs, & bowsprit.⁷⁸

The late development of a South Carolina shipbuilding industry was responsible for the dominance of schooners over sloops in South Carolina. Prior to 1735, the sloop dominated east coast shipbuilding. Because there was little shipbuilding in South Carolina before 1735, shipwrights were not attached to the sloop form.⁷⁹ South Carolina shipwrights, after 1735, built schooners almost exclusively; between 1760 and 1774 schooners outnumbered sloops one-hundred to one.⁸⁰ Plantation journal entries and letters, however, suggest that not all sloops were accurately represented in the registries and port records.⁸¹ It may be that locally built sloops were too small to be recorded or only involved with transportation within the colony.

There is little doubt that 38BK1672 was a sloop or schooner, most likely the latter. Historically, nearby plantations relied on sloops and schooners to transport their raw materials to Charleston and to return with supplies and manufactured goods. Charles Graves' journal noted a unique glimpse of the vessel activity on Brick Hope Plantation for December 1854. Brick Hope plantation was located on the Cooper River in what is now North Charleston, South Carolina.

December 11 – "Hands cutting wood and cleaning round both cases to get

⁷⁸ Fleetwood, 51.

⁷⁹ Goldenberg, 79.

⁸⁰ *Ibid*, 79.

⁸¹ Fleetwood, 61.

bats for Mrs. Bell's Schooner to take down to fill up her wharf."
 December 14 – "hauling trash cutting wood loaded the Sloop at Mr.
 Traxler landing this makes three loads from Traxler's this week."
 December 15 – "unloaded sloop with wood and load her with Bricks for
 town hauling trash cutting and cleaning road plastering the Negro
 houses. Sloop went to town to night with a load of gray bricks."
 December 20 – "unloaded Mrs. Bell's schooner with straw and loaded the
 sloop with gray bricks and Mrs. Bell's schooner with brick bats for
 her wharf. Cutting wood at Mr. Traxler's."⁸²

Upriver, swift currents and narrow creeks favored the narrower schooner.⁸³ With two masts, a schooner's split sail plan reduced the height of the rig compared to a single mast, sloop-rigged vessel, thus reducing the heeling leverage exerted on a narrow hull.⁸⁴ Smaller sails meant lighter, less expensive masts, lighter, less expensive rigging, and smaller crews. These factors added up to substantial savings for plantation owners over the single-masted sloop. In addition, the split sail plan with two masts fore and aft of the amidships left the central cargo-carrying compartment free of obstructions.⁸⁵ 38BK1672 lacked any indication of the mast or rigging arrangement. No mast step(s) was/were located. A sizable portion of the keelson's midsection appeared torn away, approximately 16 feet aft of the stem to approximately 27 feet aft of the stem (Figure 15). The Mepkin Abby wreck's keelson had a scarf located 16 feet aft of the stem (Figure 34). Although no evidence was detected to support it, 38BK1672's keelson may have parted at a scarf.

Presumably, evidence of 38BK1672's amidships mast step would have been on the missing section of keelson. The builder of 38BK1672 may have used a saddle step to

⁸² Charles Graves *Plantation Journal, 1853-1855*. MS on file at the [Charleston] South Carolina Historical Society.

⁸³ Fleetwood, 51.

⁸⁴ *Ibid*, 51.

⁸⁵ *Ibid*, 51.

secure the mast(s) as was the case on the Mepkin Abby wreck⁸⁶ and the MacKnight Shipyard wreck (Figure 34).⁸⁷ Although a saddle step such as the one on the Mepkin Abby wreck could be removed without leaving obvious evidence there should still be fastening evidence such as checks or impressions in timbers or timber staining. Divers detected no evidence of a mast step on the forward intact portion of 38BK1672's keelson.

Vessel Use

Without totally excavating 38BK1672, it is impossible to determine how it was used. No munitions or ordinance were detected to suggest a military function. 38BK1672's flat rectangular hull shape, however, was not built for speed or open water navigation, but to maximize cargo carrying capacity while minimizing draft. This shallow draft vessel is perfectly suited for transporting cargo between plantation wharfs and Charleston.

Unique Characteristics

Many of 38BK1672's intact floors had a slight trapezoidal shape. Initially, this was seen as an intentional building characteristic, but it is now believed due to the timbers used by the builder. When a floor is fashioned from a piece of wood not much larger than the floor, soft outer layers are exposed on the corners. Wear from cargo

⁸⁶ Wilbanks, 151.

⁸⁷ Jones, 66-69, 82.

during the vessel's operation, and from water-borne sediments after the vessel's sinking, stripped away this soft wood at the upper corners (Figure 40).⁸⁸

As mentioned earlier, 38BK1672's floors alternated between full floors and half floors (Figure 15). It may be that these half floors extended out to either side of the keel through the turn of the bilge. Excavation of 38BK1672 may show that the half floors were futtocks extending out to either side of the keel in one piece through the turn of the bilge. Limber holes were watercourses cut into floors near the keel to enable water to flow to the lowest place where a pump was usually installed.⁸⁹ Limber holes on 38BK1672 appear to have been augured through each floor and then chiseled out (Figure 20). No marks were detected on the exposed portion of the hull planking suggesting that the limber holes were cut prior to planking. The limited space between the floors would also hinder the placement of limber holes after planking.⁹⁰

Site Formation Process

There are numerous reasons why vessels end up as a submerged resource, including intentional scuttling, accidental sinking, and abandonment. Intentional scuttling is where a vessel is sunk to destroy it or purposely block access to an area.

⁸⁸ Michael Alford, personal communication, 29 June 1999.

⁸⁹ Falconer, 813; A good comprehensive source on the subject is Thomas Oertling, *The History and Development of Ships' Bilge Pumps, 1500-1840*, Master's thesis, Texas A&M University, 1984; Thomas Oertling, *Ships' Bilge Pumps: A History of Their Development, 1500-1900 (Studies in Nautical Archaeology, No. 2)* (College Station, Texas: Texas A&M University Press, 1996).

⁹⁰ It may be suggested that a single limber hole per side, located near the keel, indicated the hull had some degree of deadrise. The presence of more than one limber hole per side may indicate a lack of deadrise. Wilbanks - During Wilbanks' investigation of the Mepkin Abbey Wreck, he discovered four limber holes per floor. Two limber holes were neatly sawn into the floor while the other two were crudely chiseled out as if they were an afterthought or found necessary after the vessel was loaded, 153.

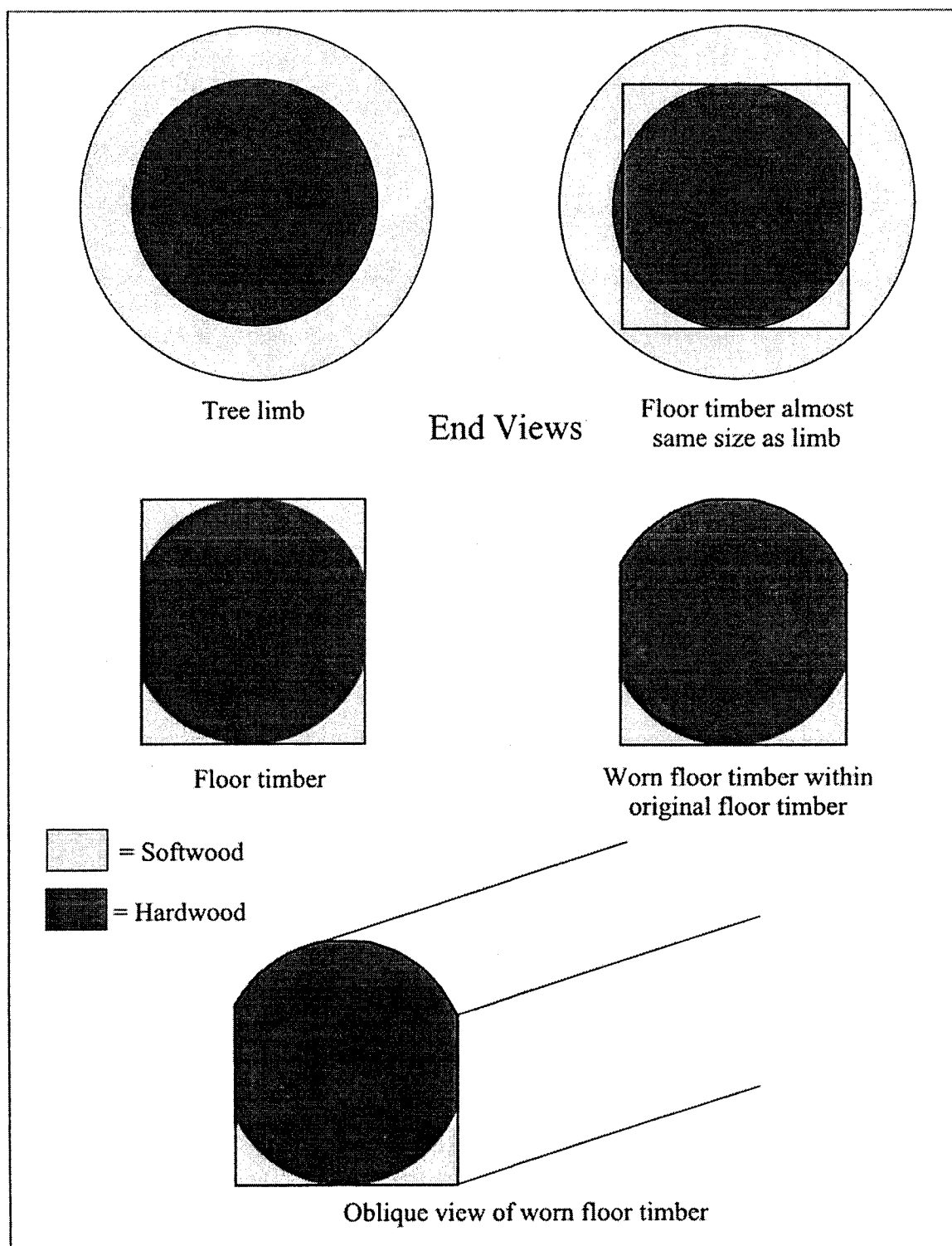


Figure 40. 38BK1672 wear producing trapezoidal shaped floor timbers.⁹¹

⁹¹ Michael Alford, personal communication, 29 June 1999.

Accidental sinking includes loss due to equipment failure, pilot error, weather, or a combination of the three. Abandonment occurs when it is no longer profitable to keep the vessel afloat.

38BK1672 may have been intentionally scuttled during the American Revolution.

When British commander Lt. Colonel John Coates came to Shubrick's (Quinby) Plantation during his retreat from Biggin Church, he destroyed vessels at public landings.⁹² In a letter to the Marquis de Lafayette, 24 July 1781, Nathanael Greene wrote:

The enemy formed in a range of houses in Shubricks plantation. General Sumter came up and made an attack, but the enemy for want of artillery which had been left behind maintained their post until our people spent all their ammunition and was obliged to retire. . . . We destroyed four Vessel loads of Stores upwards of 70 hogsheads of rum and many other Stores. . . .⁹³

While no evidence of burning was detected on 38BK1672, the vessel was not excavated. Vessels would only burn to the waterline and then sink, but the interior would be filled with burnt debris. Excavation might reveal evidence such as charred timbers or burned cargo.

38BK1672 and the neighboring vessel may have sunk accidentally. Numerous hurricanes struck Charleston during the late-eighteenth and early-nineteenth-centuries. In 1764, a "great whirlwind, inflicting great damage to shipping, bared the channel of

⁹² Edward McCrady, *The History of South Carolina in the Revolution, 1780-1783* (New York: Russell and Russell, 1969), 342.

⁹³ Dennis M. Conrad, ed., *The Papers of General Nathanael Greene*. Vol. IX, 11 July 1781-2 December 1781 (Chapel Hill, North Carolina: The University of North Carolina Press, 1997), 72; It is unclear if Greene destroyed the vessels at Quinby plantation or if he is summing up the results of whole expedition.

Ashley River, and injured all slate and tiled roofs.”⁹⁴ In 1797, Charleston was struck by “a gale with evident agitations in the tides.”⁹⁵ Charleston suffered a hurricane in 1800, and another violent hurricane in 1804.⁹⁶ Nine years later, Charleston endured a “hurricane and gale from the Northeast, lasting twenty hours.”⁹⁷ Hurricanes are accompanied by tidal surges, sometimes exceeding 20 feet above mean sea level, which can drive vessels miles upriver. Although many vessels were eventually recovered, some were damaged beyond repair.

Accidentally sunken vessels often lack signs of aging such as patches, teredo damage, or wear due to usage. One indication that a vessel sank accidentally is the presence of cargo. The Brown’s Ferry vessel was found with a 25-ton cargo of bricks.⁹⁸ If a vessel sank for any other reason, other than an act of war, the owners would have first removed the cargo.

38BK1672 may have been allowed to sink because it was not worth keeping afloat. One indication that a vessel sank at the end of its useful life is the presence of damage and repairs. 38BK1672 exhibits both teredo damage to the hull’s exterior and evidence of possible repairs. One wood sample from the keel shows heavy teredo damage (Figure 21). In some places, divers noted that teredo damage extended almost through an entire strake. While documenting the framing pattern, divers recorded a 1.5 inch southern yellow pine plug in an amidships hull plank 14 inches starboard of the keel

⁹⁴ *Year Book – 1880* (Charleston, South Carolina: The News and Courier Book Presses, 1880), 313.

⁹⁵ *Ibid*, 313.

⁹⁶ *Ibid*, 314.

⁹⁷ *Ibid*, 314.

⁹⁸ Steffy, “Brown’s Ferry Ship,” 55.

(Figure 29). This may indicate where a teredo-damaged area was removed and repaired with plug or where a knot in the hull planking became loose. It might also simply be a drain plug to let water in or out of the vessel.

Thirteen feet along the keel from the datum and six feet to starboard, divers located a 3 foot plank below the turn of the bilge. The builder probably did not waste time inserting a plank that spanned only three floors. This 3 foot plank also created two additional joints below the water line, increasing the potential for leaks. Because this plank is located near the vessel's stern it might be a stealer, a tapered plank used to fill in between two converging planks as the shape of the hull sharpens near the stern and bow.⁹⁹ This plank is not tapered and may have replaced a damaged plank. A damaged plank would have been cut at the nearest floors and a small repair plank inserted. The 3 foot plank was held in place with iron nails, without treenails. It was not standard practice to fasten planks below the waterline solely with nails. Once a nail rusted, the plank could easily become dislodged.¹⁰⁰

Additional dilapidated vessels located nearby are another indication that a vessel was intentionally abandoned.¹⁰¹ In some instances, vessels that outlived their usefulness were dragged to the same out-of-the-way section of river and allowed to sink. These areas of abandonment are known as shipwreck graveyards.¹⁰² During the archaeological

⁹⁹ Steel, plate III.

¹⁰⁰ "Tree-nails, certain long cylindrical wooden pins, employed to connect the planks of a ship's side and bottom to the corresponding timbers. The tree-nails are justly esteemed superior to spike-nails or bolts, which are liable to rust, and loosen, as well as to rot the timber. . . ." (Falconer, 298).

¹⁰¹ See Chap. IV, n. 19.

¹⁰² *Ibid.*

investigation of 38BK1672, another vessel was found almost directly beneath 38CH1672's bow (Figure 15). Although no archaeological investigations were conducted, the presence of this other vessel suggest that this section of Quinby Creek may have been used to dispose of derelict vessels. 38BK1672 is located 180 meters above Quinby Plantation's landing (Figure 2). Since no vessel could continue up Quinby Creek beyond Quinby Bridge, the section of the creek above the boat landing is a perfect place for a shipwreck graveyard.

Summary

The Brown's Ferry Vessel,¹⁰³ Mepkin Abbey Wreck,¹⁰⁴ Ingram Vessel,¹⁰⁵ and the Malcolm Boat¹⁰⁶ resemble 38BK1672 in one very distinct way. All, to some degree, exhibit vernacular adaptations expected from plantation-built vessels. While construction techniques differ between these vessels, size and construction techniques make them similar. Differences illustrate the builder's diversity and ingenuity, using resources and labor available. In this sense, 38BK1672 illustrates a plantation's self-sufficiency. In addition to agricultural laborers, plantations had a skilled workforce, including bricklayers, coopers, and carpenters. While it is not possible to say whether slaves built 38BK1672, it is clearly a plantation-built vessel.

¹⁰³ Steffy, "Brown's Ferry Ship."

¹⁰⁴ Wilbanks.

¹⁰⁵ Amer, et. al., "Ingram Vessel."

¹⁰⁶ Amer, et. al., "The Malcolm Boat."

38BK1672 represents one aspect of late-eighteenth-century South Carolina daily life and the seasonal rhythms of the lowcountry. 38BK1672's construction, use, and even demise, were tied to the successful adaptations of the lowcountry folk. South Carolina's wealth was directly linked to the land.¹⁰⁷ Water-born transportation was the best option to successfully exploit the region's inland resources. Plantation owners built small, shallow-draft, riverine vessels to transport raw materials to Charleston warehouses. Raw materials were then transshipped to larger ocean-going vessels, on which they were carried to Europe. Manufactured goods entered Charleston from other countries and were shipped to upriver plantations via riverine vessels including Lowcountry plantation-built vessels. This symbiotic relationship depended on water-born transport. Because they provided a vital transportation link connecting the production of South Carolina plantations with the world's market, vessels such as 38BK1672 contributed to the Lowcountry's economic viability.

¹⁰⁷ State Ports Authority, *History of the South Carolina State Ports Authority* (Charleston, South Carolina: South Carolina State Ports Authority, 1991), 4.

CHAPTER VII

CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE STUDY

Construction Location

38BK1672 lies at the bottom of Quinby Creek, South Carolina, across the creek from Quinby Plantation. 38BK1672's small size and shallow draft were not favorable for transatlantic voyages. Compared to similar length, eighteenth-century, ocean going vessels, 38BK1672's floor timber size and distribution appear inadequate for open ocean travel. 38BK1672 was well suited for transporting bulk cargoes between the upriver plantations and Charleston. When compared with eighteenth-century, ocean-going vessels of similar length, 38BK1672's floor timbers are smaller and more widely spaced. Given that 38BK1672 was constructed entirely of American timber and was not designed to cross the ocean, it is highly unlikely that it was built in Europe.

38BK1672 may be the product of an American shipyard. American-built vessels typically reflected European shipbuilding tradition where many American shipwrights received their training. Other evidence of American construction includes American timber and hull construction not suitable for open ocean travel. A vessel employed in the coastal and/or inland river trade could utilize smaller floor timbers spaced more widely than a vessel built for open-ocean travel. 38BK1672's floor timbers seem small and more widely spaced than eighteenth-century, ocean-going vessels.

38BK1672 has many of the typical features found on a vessel constructed under the European shipbuilding tradition: a keel, sternpost, stem, floors, futtocks, keelson, and strakes. One diagnostic eighteenth-century European shipbuilding technique not found on 38BK1672 involved notching the keelson to fit over and secure the floors. Terminating the keelson short of the sternpost is another eighteenth-century tradition shared by 38BK1672 (Figure 12).¹

The ability to assemble such a complex craft suggests the builder of 38BK1672 had a good knowledge of woodworking as well as ship construction. This knowledge probably did not come from a traditional shipwright apprenticeship. Many highly skilled plantation carpenters were called upon to construct vessels. Drawing upon their skill and any acquired ship construction knowledge, they fashioned plantation vessels from local lowcountry timber available to them. It can be inferred that plantation carpenters, lacking formal shipyard training, approached the complex construction problems differently from a European-trained shipwright. To the casual observer, a plantation-built vessel might look like any other wooden vessel, but closer examination should reveal evidence of the builder's lack of formal training and his unique solutions.

38BK1672 displays evidence of being plantation-built, most notably by the way the builder prepared the keel. In eighteenth-century Europe, a log was pit or mill sawn to a square or rectangular shape to form the keel. Floors were then fashioned and notched to fit over the keel. A rabbet was cut into the sides of the keel to receive the garboard, or

¹ See chap. VI for references to these European shipbuilding techniques.

first plank (Figure 30). It appears that the builder of 38BK1672 squared off the bottom of the log leaving the sides round. He then cut a rabbet into the round sides to receive the garboard. With the garboard in place, the builder adzed the log to the upper surface of the garboard eliminating the need to notch the floors (Figure 20).² This unique construction technique may illustrate a plantation carpenter's unique solution to a complex shipbuilding problem.

Crudely hewn or unfinished timbers are another indication that plantation carpenters constructed this vessel. A plantation carpenter, lacking formal shipyard standards might not put much emphasis on esthetics. Close examination of 38BK1672's frames reveal the builder's lack of concern with exterior finish. Some floors were not debarked and the axe cut that severed the limb from the tree is still visible (Figure 27 and 39). In at least one instance, the builder of 38BK1672 used little more than a tree branch as a futtock (Figure 28).

Vessel Type

Hull remains clearly indicate that the 38BK1672 site was a vessel and not a wharf or rice gate. While hull remains suggest a very flat bottom amidships, 38BK1672 was not a barge or flat. The hull remains indicate that 38BK1672 was not an ocean-going cargo vessel such as a ship or brigantine. 38BK1672's geographic context and hull construction

² See Chap. VI for a complete description of this process.

suggest a vessel designed to transport bulk cargoes between the upriver plantations and Charleston.

There is little doubt that 38BK1672 was anything but a sloop or schooner, most likely the latter. Plantations such as Quinby relied on sloops and schooners to transport their raw materials to Charleston and to return with supplies and manufactured goods. Although 38BK1672 lacked evidence of mast(s) or rigging, in the eighteenth-century, schooners were the most common South Carolina vessel.³

Vessel Use

There were no artifacts visible on 38BK1672, such as cannon, to indicate a military function. 38BK1672 does not appear to have been a fast and maneuverable vessel, as might be favored for military service. It's hull design, maximizing cargo-carrying capacity while maintaining shallow draft, suggests that it was built as a cargo vessel. Divers located evidence of ceiling used to keep cargo dry and out of the bilge. Divers also noted damage to the floors associated with shifting cargo.

Site Formation Process

There are many reasons why vessels end up as submerged resources including intentional scuttling, accidental sinking, and abandonment. Intentional scuttling includes both intentionally compromising the hull and burning. Vessels accidentally sink due to

³ See chap. VI.

unforeseen circumstances such as equipment failure, pilot error, and weather.

Abandonment usually occurs at the end of a vessel's working life, when it is no longer profitable to keep a vessel afloat. 38BK1672 lacks evidence of intentional scuttling.

There was no obvious damage or evidence of burning. It is highly unlikely that 38BK1672's demise was the result of an accident. It is hard to imagine a vessel accidentally sinking and not being raised in a waterway as shallow and narrow as Quinby Creek, which has a maximum depth of 12 feet at mean low water.

Archaeological investigation of 38BK1672 suggests abandonment following a lengthy career. Evidence of advanced age includes repairs, teredo worm holes, and wear from shifting cargo. 38BK1672's location in Quinby Creek suggests abandonment (Figures 1 and 2). Supporting evidence is the presence of another sunken vessel in the same vicinity. 38BK1672's stem almost rests on top of another vessel (Figure 12), suggesting that section of Quinby Creek is a ship graveyard.

Recommendations for Future Study

To date, as few as six late-eighteenth-century vessels have been located in the Charleston area. Given the large number of vessels registered and the relatively short working life of a wooden vessel, there are still many undiscovered vessels. Of the few vessels discovered, only the Malcolm boat and the Brown's Ferry vessel have been fully documented archaeologically.

There has been an insufficient number of American-built eighteenth-century vessels investigated in the southeastern lowcountry to truly compare their similarities and

differences. 38BK1672 shows similarities and differences with many vessels that have been discovered. The principal detail connecting each vessel is that they were built in the southeastern lowcountry of North Carolina, South Carolina, and Georgia. Preliminary information suggests there may be more specific, regional differences within this vessel group. Additional archaeological and historical research may lead to a clearer distinction between vessels built in Charleston's shipyards or on Charleston's plantations.

The eighteenth-century saw the emergence of an American boat building tradition based more on rack of eye and function than plans, tradition, and templates.⁴ While physical evidence suggests the presence of plantation-built vessels, the historical record contains only scattered information. Sources of historical information include journal entries, receipts, port records, newspaper advertisements, letters, and personal diaries. The probability of using slave labor in ship construction is very high, but very little information from the historical record notes slave carpenters as ship builders.⁵ Slave boat builders deserve greater attention; the research may define the basis of a specific boat building tradition. From where did plantation carpenters gain their knowledge about

⁴ Technique of building boats without using drawn plans; William Fleetwood, *Tidecraft, the Boats of South Carolina, Georgia and Northeastern Florida – 1550-1950* (Tybee Island, Georgia: WBG Marine Press, 1995), 53; Kevin Foster, "Southern Maritime Culture, Inland Vessels in North East North Carolina" (paper presented at the North Carolina Maritime History Conference, North Carolina Maritime Museum, Beaufort, North Carolina, 23 October 1998).

⁵ For a good overview of the subject, see Peter H. Wood, *Black Majority: Negroes in Colonial South Carolina from 1670 through the Stono Rebellion* (New York, New York: Knopf, 1974); Joyce E. Chaplin, *An Anxious Pursuit: Agricultural Innovation and Modernity in the Lower South, 1730-1815* (Chapel Hill, North Carolina: University of North Carolina Press, 1993); Philip D. Morgan, *Slave Counterpoint: Black Culture in the Eighteenth-Century Chesapeake & Lowcountry* (Chapel Hill, North Carolina: University of North Carolina Press, 1998); David S. Cecelski, *The Waterman's Song: Slavery and Freedom in Maritime North Carolina* (Chapel Hill, North Carolina: University of North Carolina Press, 2001).

building boats? Were they apprenticed to skilled individuals to acquire experience, or might some have boat building experience before they were enslaved?

The computer provides an opportunity to assimilate vastly diverse information into a powerful analytical tool. A comprehensive database of transcribed information would enable researchers to ask and answer complex questions. For example, a simple journal entry stating that Mr. Edward's schooner off-loaded rice flour on a particular date might lead researchers to query the database about all Charleston port records within a certain date range listing a vessel being loaded with rice flour. A mention of "The schooner Lydia, owned by Mr. Edward, cleared port for upriver . . ." would lead researchers to query the database to learn about the schooner Lydia. Daily activities, combined with regional information, could shape our understanding of this emerging boat building tradition.

A comprehensive database would allow researchers to evaluate construction trends. For example, documented vessels could be organized by specific construction features. Results could then be viewed against regional and temporal information. Trends might emerge suggesting that construction differences were regional, temporal, or a combination of the two.

Future study should include a thorough examination of North Carolina, South Carolina, and Georgia's submerged cultural site files to identify eighteenth-century vessel documentation. This information should include descriptive information and geographic/spatial information. Information should be entered into a geographical information system (GIS) spatial database as it is collected. Using a GIS database, sites

can be overlaid onto eighteenth-century maps showing landings, wharfs, and plantations. Spatial, cultural, and regional relationships and patterns could be more easily interpreted.

Many state agencies already use a form of GIS database to manage their cultural resources. It would be beneficial to all agencies, as well as researchers, to develop a standard database for managing submerged cultural resources. The cost of developing this product could be secured with grant funding and professional contributions.

Organizations such as the National Science Foundation,⁶ the National Oceanic and Atmospheric Administration,⁷ and the U.S. Naval Historical Center⁸ offer grant funding to projects that further the understanding of submerged cultural resources.

By stating a rigid comprehensive data entry criteria in advance of the data collection, the database should have a consistent level of documentation regardless of the person entering the data. This method of data entry would enable a wider variety of individuals, such as college interns, to be able to collect information. The system would also quickly identify vessels requiring additional investigation.

While there is no one contemporary source of information dealing with eighteenth-century vessels, a diligent researcher can locate a great deal of information in state and federal records, obscure journal entries, letters, and advertisements. It is difficult for researchers to access this information because it is housed in numerous repositories, both public and private. The collective written documents of many

⁶ www.nsf.gov

⁷ www.noaa.gov

⁸ www.history.navy.mil

Charleston plantations lie in the hands of today's property owners. These private collections have been handed down from property owner to property owner. The collections often include such resources as journals, drawings, and production records. Identifying and documenting these resources would be an invaluable resource for further study of plantation vessels.

A monumental undertaking such as this would require much forethought, planning, and substantial funding. Organizations such as the South Carolina Department of Archives and History⁹ and the South Carolina Historical Society¹⁰ would mutually benefit from this research and are possible avenues for grant funding. These two organizations could play an influential role in developing methods for locating and documenting private collections.

In addition, the remains at 38BK1672 merit additional study. Approximately 40 percent of the vessel's hull remains buried under sand and mud. Exposing a greater portion of the hull would enable researchers to better document construction techniques and timber dimensions. Missing timbers such as ceiling, futtocks, wales, and deck timbers may be preserved beneath the surface. The presence of a deck to protect the cargo during offshore transport would support 38BK1672 being a coastal trading vessel.

38BK1672's stem assembly ought to be completely exposed and documented as it defines the vessel's forward shape. Certain features such as cant frames may help

⁹ www.state.sc.us/scdah/homepage.htm

¹⁰ www.schistory.org

establish chronology.¹¹ Using knowledge of the earliest known construction date of vessels built with cant frames, we can infer the earliest possible date of construction of 38BK1672.

Although no sacrificial planking or protective hull sheathing was noted during 38BK1672's investigation, a thorough examination of the hull planking should be attempted. Either sacrificial planking or protective hull sheathing would support the view that 38BK1672 was a coastal trading vessel that spent considerable time in salt water where the added protection from wood boring worms was necessary. Even though 38BK1672 exhibits evidence of teredo damage, the absence of either sacrificial planking or protective hull sheathing would suggest 38BK1672 was an inland plantation vessel, involved in coastal trade but spending most of its time plying fresh water rivers. Although no artifacts were noted during the investigation, there may be artifacts below the mud surface. An intact artifact assemblage might reveal spatial relationships such as an onboard hearth, storage, or personal use areas. It might also narrow the date of vessel use, and clarify the vessel's function.

Future investigation should include sampling major timbers for dendrochronology (tree-ring dating).¹² For the entire period of a tree's life, a year-by-year record or ring

¹¹ John W. Morris III, Gordon P. Watts, and Marianne Franklin, "The Comparative Analysis of 18th Century Vessel Remains in the Archaeological Record: A Synthesized Theory of Framing Evolution," edited by Paul F. Johnston, *Underwater Archaeology Proceedings: Society for Historical Archaeology Conference, Washington*. (Ann Arbor, Michigan: The Society for Historical Archaeology, 1995):125-133.

¹² <http://web.utk.edu/~grissino> The Ultimate Tree-Ring web site, designed to be the ultimate source for information on the science of Dendrochronology. The author's goal is to make available as much information about dendrochronology as he can possibly find on the Internet, from the basics of tree-ring dating, to reference and bibliographic information, to products and supplies, to books, and more! His mission was born from an overwhelming need among dendrochronologists for a permanent repository of information that was free to the public, easily understandable, and as comprehensive as humanly possible.

pattern is formed reflecting the climatic conditions in which the tree grew. These patterns can be compared and matched with trees growing in the same geographical zone under similar climatic conditions. Following tree-ring patterns from living trees back through time, matching ring patterns, one can determine when the tree was cut. Additional samples taken at the ends of the keel and keelson may help determine if they are constructed of one timber or scarfed.

The second vessel discovered slightly forward of 38BK1672 should be documented. Collecting both, a diagnostic artifact assemblage and wood samples for species analysis and dendrochronology, will aid researchers in interpreting this second vessel. This second vessel might also be plantation-built.

Documenting this second vessel will further our understanding and interpretation of South Carolina's historic vessels and it might clarify its association with 38BK1672. For example, if excavation of the two vessels shows evidence of burning, this damage might suggest that these were two of the four vessels burnt by British commander Lt. Colonel John Coates during his 1781 retreat from Biggin Church to Charleston.¹³

During three field seasons on 38BK1672, the author noted additional damage to the site. Disarticulated timbers disappeared and some articulated floors worked loose. 38BK1672 became more exposed each season. Wave action from increased boat traffic may be responsible for the damage. The Quinby Bridge public boat landing allows

¹³ Dennis M. Conrad, ed., *The Papers of General Nathanael Greene*. Vol. IX, 11 July 1781-2 December 1781 (Chapel Hill, North Carolina: The University of North Carolina Press, 1997), 72; Edward McCrady, *The History of South Carolina in the Revolution, 1780-1783* (New York: Russell and Russell, 1969), 342.

boaters access to the upper reaches of the East Branch of the Cooper River. Numerous small fishing boats run down Quinby Creek to access the Cooper River. These boats produce a wake, which at low tide, washes against 38BK1672 and the second vessel. As the local community expands and small boat traffic increases, the need to document and/or stabilize 38BK1672 and the second vessel becomes ever more urgent.

There are very few archaeologically recorded examples of eighteenth-century vessels. This fact elevates the importance of 38BK1672 as a cultural resource. With so few examples available, 38BK1672 lends key insights into how plantation owners dealt with their riverine environment and interacted with Charleston. Preserved within this vessel is a partial record of how these plantation vessels were constructed and a clear illustration of the diversity and ingenuity employed by plantation carpenters.

Although this investigation raises more questions than answers, it demonstrates the need for additional documentation of these submerged cultural resources. The need for documentation is amplified as submerged cultural resources such as 38BK1672 slowly succumb to environmental and manmade pressures.

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APPENDIX A: B&B WRECK (38BK1672) HULL SCANTLINGS

APPENDIX A.**B&B WRECK (38BK1672) HULL SCANTLINGS****Keel**

Preserved Overall Length: 51 feet

Molded: 11 inches

Sided (minimum): 10.5 inches

Sided (maximum): 14.5 inches

Keel Shoe

Preserved Overall Length: 51 feet

Molded: 6 inches

Sided: 6 inches

Keelson

Preserved Length (forward portion): 7 feet, 7 inches

Preserved Length (aft portion): 13 feet, 10 inches

Molded: 4 inches

Sided: 7 inches

Deadwood (forward)

Preserved Overall Length: 48 inches

Molded: 12 inches

Sided: 13 inches

Deadwood (aft)

Overall Length: 50 inches

Molded: 10.5 inches

Sided (minimum): 7 inches

Sided (maximum): 12 inches

Stern Post

Preserved Length: 45 inches

Molded: 1 foot, 5 inches

Sided: 4 inches

Stem Post

Exposed Length: 3 feet, 6 inches

Molded: 1 foot, 7 inches

Sided: Not Available

APPENDIX A. (CONTINUED)**B&B WRECK (38BK1672) HULL SCANTLINGS****Apron**

Exposed Length: 2 feet, 6 inches

Molded: 8.5 inches

Sided: Not Available

Cutwater

Exposed Length: 3 feet, 3 inches

Molded: 9 inches

Sided: Not Available

Floors

Molded (average): 6 inches

Sided (average): 5 inches

Center-to-center spacing (average): 1 foot

Garboard

Preserved Length: Not Available

Width: 14 inches

Thickness: 1 inch

Hull Planking

Preserved Length: Not Available

Width: 7 to 13 inches

Thickness: 0.63 inch

APPENDIX B: WOOD SAMPLE ANALYSIS

Letter from Thomas E. Wooton

Professor

Forest Resources

Clemson University

22 September 1999

CLEMSON

UNIVERSITY

September 22, 1999

MEMO TO: Mr Harry Pecorelli

FROM: Thomas E. Wooten, Professor, Forest Resources, Clemson University

SUBJECT: Sample Identification - B & B Shipwreck

The samples I received in the mail - marked B & B Shipwreck - are identified as follows:

| | |
|-------------------------|----------------------|
| Stern Post | Oak |
| Apron | Oak |
| 1 st Futtock | Oak |
| Garboard Strake | Oak |
| Floor Timber | Oak |
| Keelson | Oak |
| Keel | Oak |
| Stem Post | Oak |
| Keel Shoe | Southern Yellow Pine |
| Tree Nail | Southern Yellow Pine |
| Tree Nail | Southern Yellow Pine |
| Plug | Southern Yellow Pine |

A smooth cut was made on each sample. The identification was made for each using a 10X lens. The characteristics that were used in identification are described in TEXTBOOK OF WOOD TECHNOLOGY, VOLUME I (any edition).

If you have questions please contact me. I still have the samples. If you would like me to return then please let me know.

*****The outer hull plank analysis was accidentally not included in this letter. Outer Hull Plank is Southern Yellow Pine (via personal communication).**



DEPARTMENT OF FOREST RESOURCES

College of Agriculture, Forestry & Life Sciences, School of Natural Resources, 261 Lehotsky Hall, Box 342311, Clemson, SC 29634-2311
864.656.3162 FAX 864.656.3364

**APPENDIX C: BERKELEY MUSEUM AND B&B ARCHAEOLOGICAL
PROJECT AGREEMENT**

Letter from Mark A. Butler

Executive Director

Berkeley Museum

28 September 1994



BERKELEY MUSEUM

"Interpreting over 12,000 years of Lowcountry History"

AGREEMENT

Berkeley Museum and B & B Archaeological Project

By this document an agreement is entered into by the Berkeley Museum with the B & B Archaeological Project participants. This agreement concerns the disposition of artifacts recovered from the ship/barge and its immediate surroundings, located in the Cooper River. All artifacts and items discovered, recovered, and collected during the said project will be donated to the Berkeley Museum.

All artifact collection will be conducted with the full knowledge of, and within the guidelines established by the South Carolina Institute of Archaeology and Anthropology. A copy of the report generated through this project will be supplied by the project participants to the Berkeley Museum and the S.C.I.A.A. upon completion.

The conservation of all artifacts collected during the project will be the responsibility of the B & B project participants. Artifacts which are deemed impractical to conserve and/or not desired by the Museum for its collections may be reinterred with the vessel at the conclusion of the project.

The Berkeley Museum reserves the right to refuse any artifacts it judges to be inappropriate for its collections or exhibits. These artifacts may then be offered to other institutions or will be reinterred with the vessel. It is understood by both parties that the type and quantity of artifacts which may be recovered during the project is unknown at this time.

This agreement is entered into by the undersigned parties September 28, 1994.

Mark A. Butler

Mark A. Butler
Executive Director
Berkeley Museum

Douglas Boehme

Douglas Boehme
102 Iron Ct.
Summerville, SC 29483

Harry Pecorelli III

Harry Pecorelli III
409 Woodland Shores Rd.
Charleston, SC 29412

950 Stony Landing Road, Moncks Corner, SC 29461 (803) 899-5101

A facility of the Berkeley County Historical Society