

# **EXHIBIT A-7**

**DR. SEAN A. KINGSLEY**

**PART 7**

**ANNEXES 13.2 TO 13.3**

## **ANNEX 13 (Continued)**

### **TO**

### **EXHIBIT A**

- 13.2. Wooden hull remains and anchors from the *Atocha*, Florida, 1622: Mathewson, R.D. *Treasure of the Atocha* (Key Largo, 1986).
- 13.3. Wooden hull remains, logwood cargo, concretions and iron gudgeon from the *El Nuevo Constante*, Louisiana, 1766: Pearson, C.E. and Hoffman, P.E. *The Last Voyage of El Nuevo Constante. The Wreck and Recovery of an Eighteenth-Century Spanish Ship off the Louisiana Coast* (Louisiana State University, 1995).

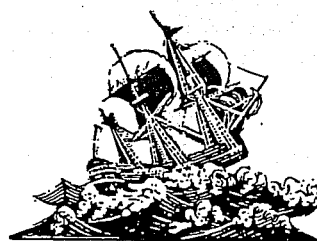
**DR. SEAN A. KINGSLEY**

# Treasure of the Atocha

by R. Duncan Mathewson III,  
Archaeological Director of the  
Search for the Nuestra Señora de Atocha

Foreword by Mel Fisher

With Photographs by Don Kincaid and Pat Clyne

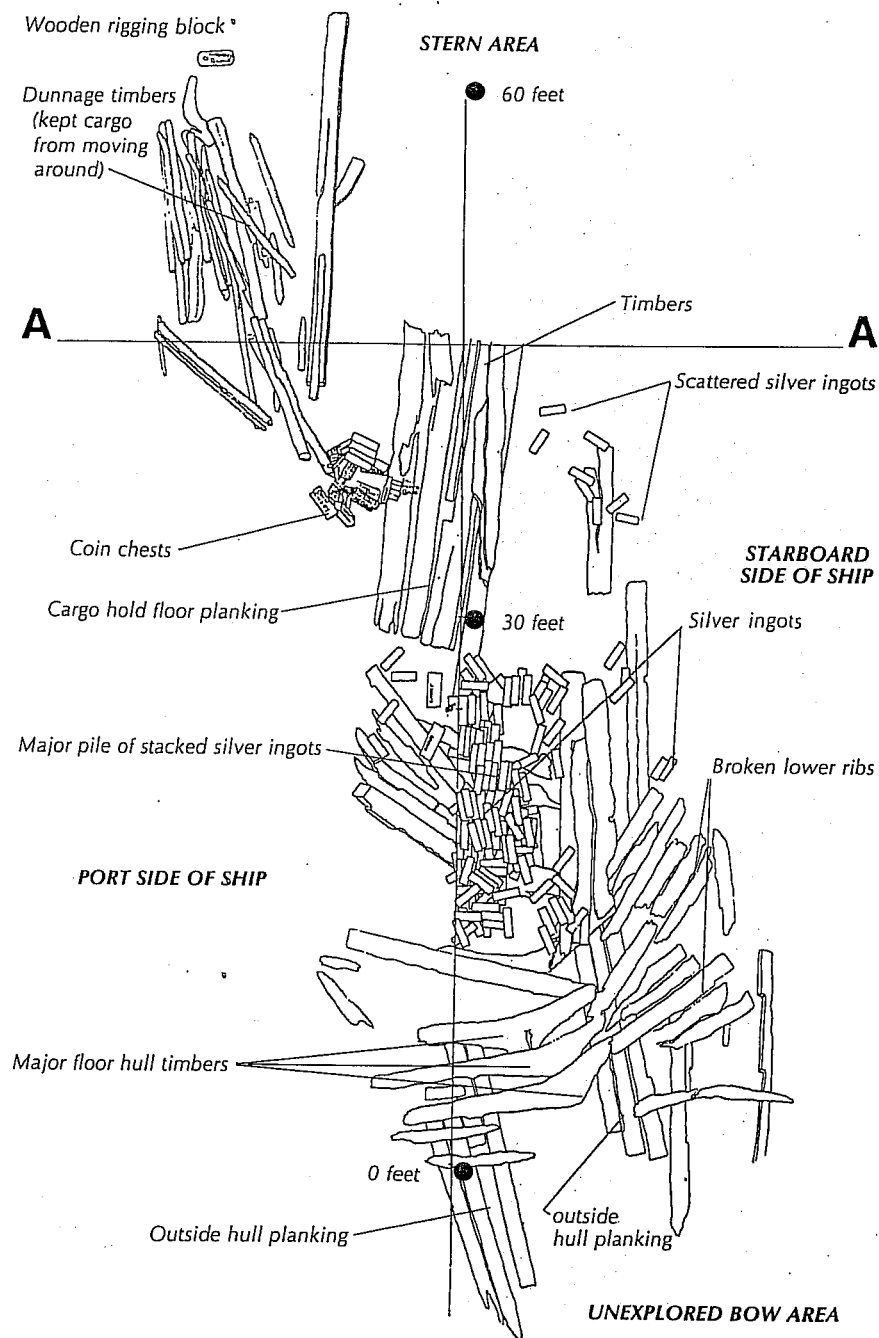


Published by

National Center for Shipwreck Research Ltd.  
(NCSR)

Key Largo, Florida

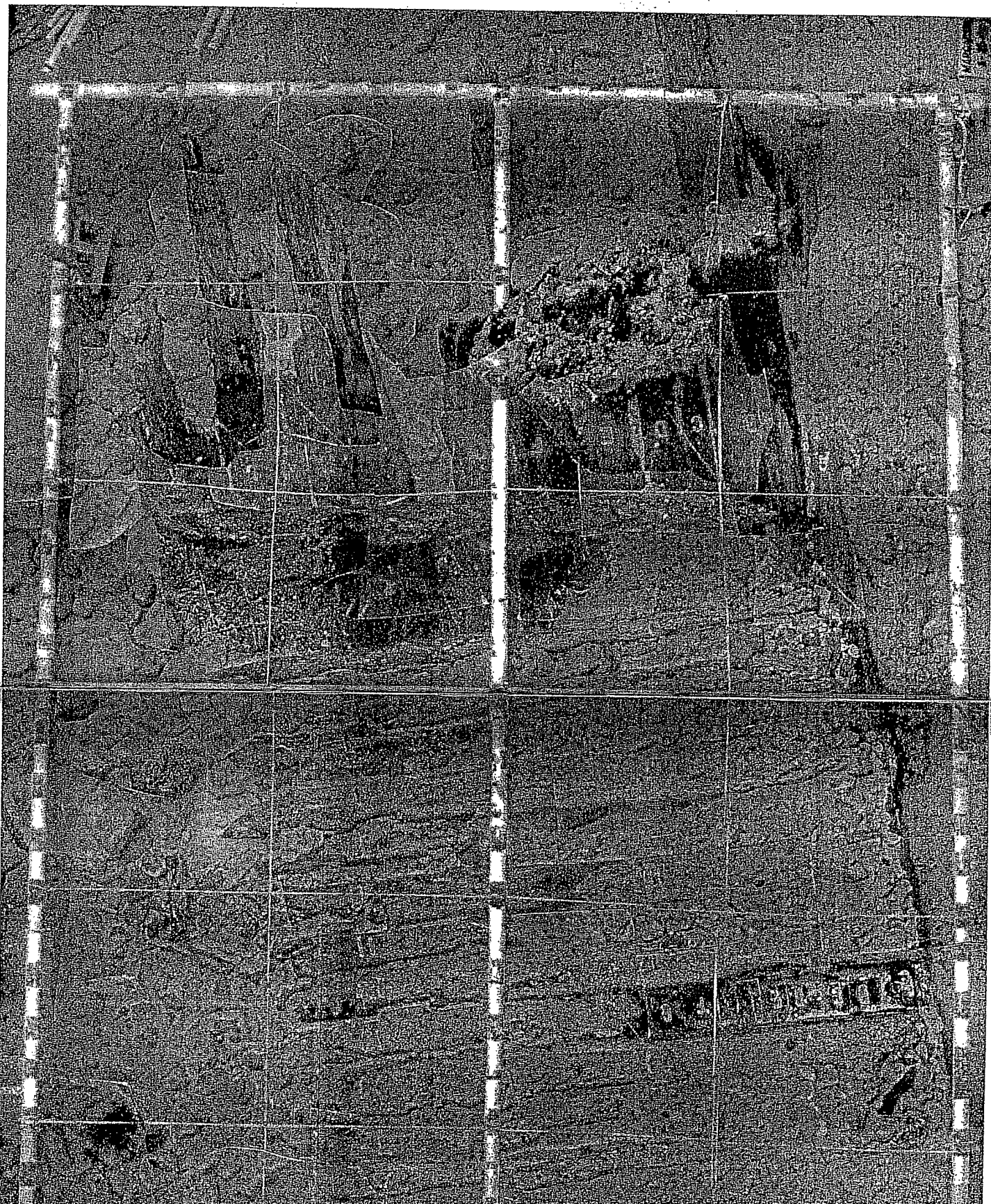
# Atocha Hull



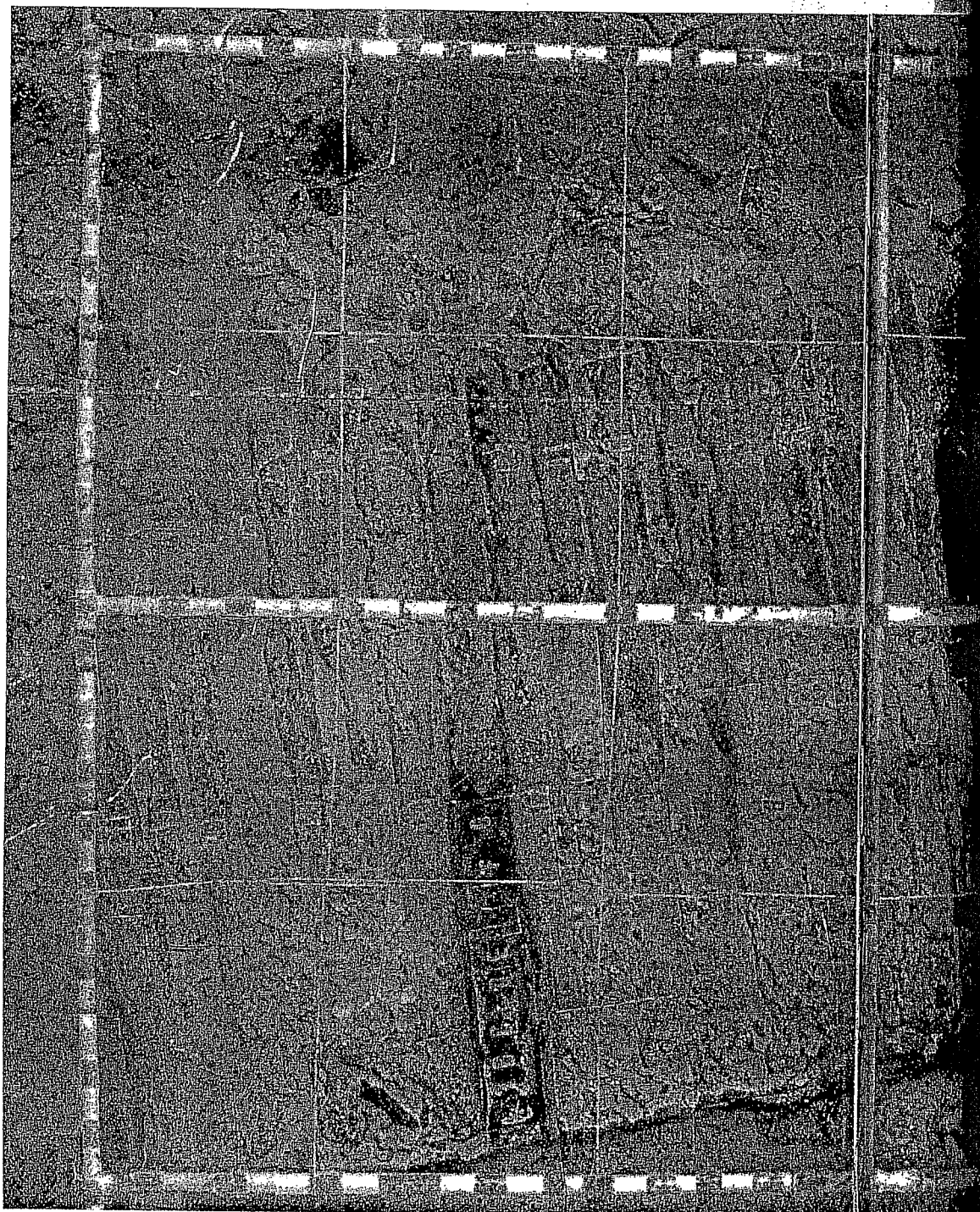
The site plan of the Atocha motherlode shows the scattered condition of the lower hull. About 30 feet of the lower hull have been uncovered to date. The hull planking and main lower frame element are in relatively good condition but clearly reflect the tremendous impact of the Atocha on the Outer Reef reported by survivors.

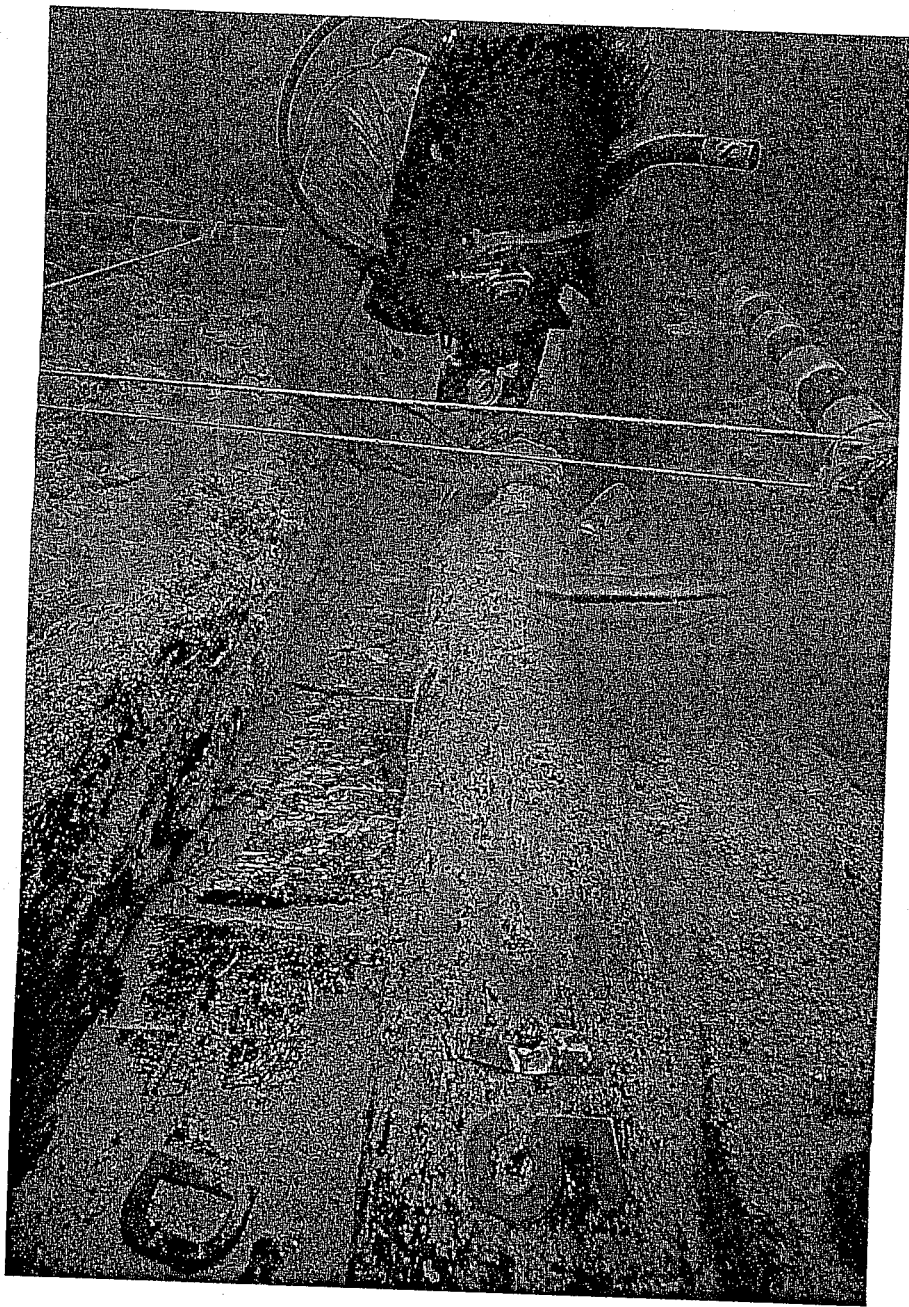


A cross-section of the wreck site showing the hull structure and the impact of the Atocha on the Outer Reef.



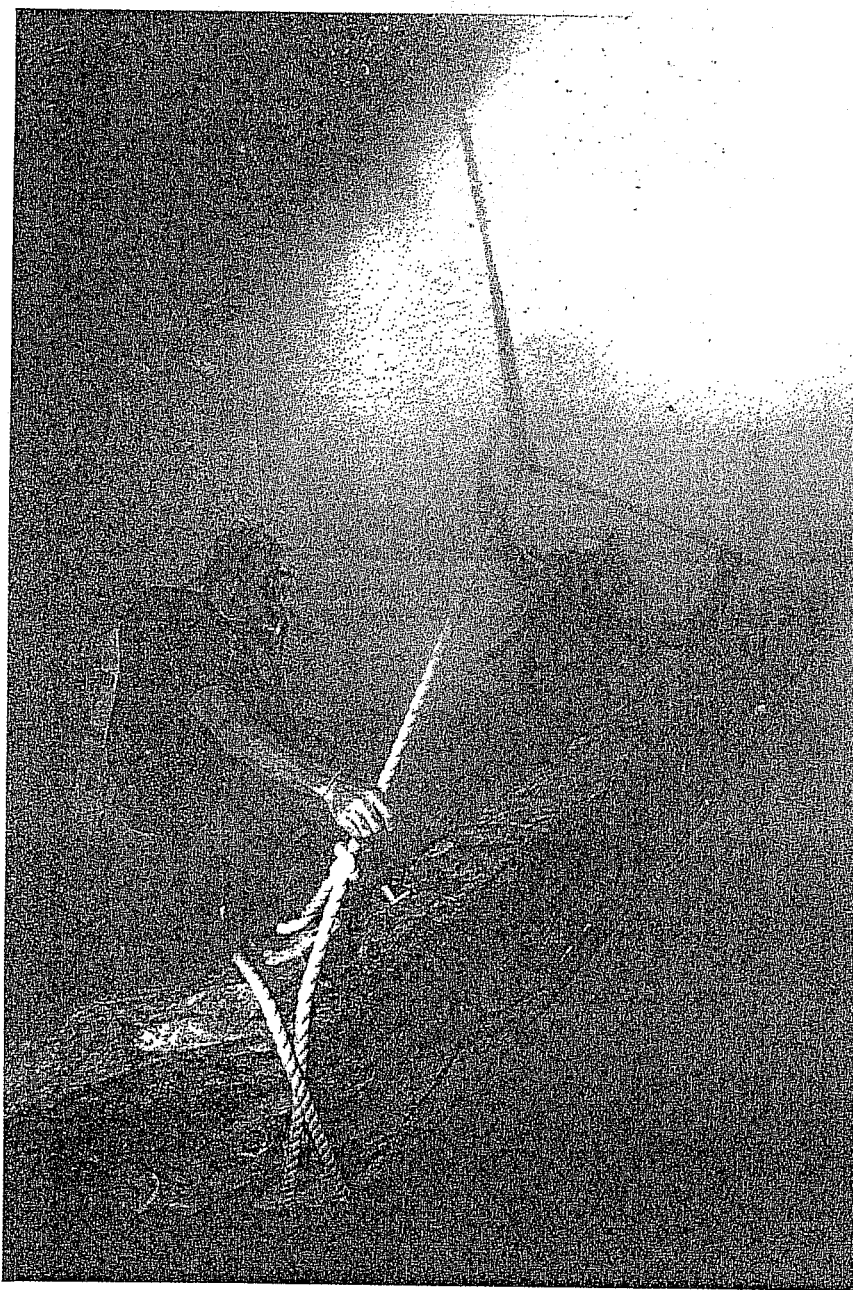






*The Margarita hull timbers must have been covered by sand, protecting them from the wood-eating teredo worms. Also, the ballast was clean, free of barnacles and other growth, suggesting that the whole site had been buried. A PVC mapping grid was laid over the timbers and a baseline established through the middle. This allowed the timbers to be measured very precisely for accurate drawings and studies.*

Ship  
C-56  
C-56  
C-56  
C-56  
C-56



*Study of the ribs and outside planking (strakes) have helped clarify certain passages in the construction contract of the Atocha. These articulated timbers are providing details about a number of unique architectural features including scarf joints, fastening procedures, and framing techniques. Plans are being considered to recover and chemically treat the hull structure so it can be exhibited in a major museum display.*



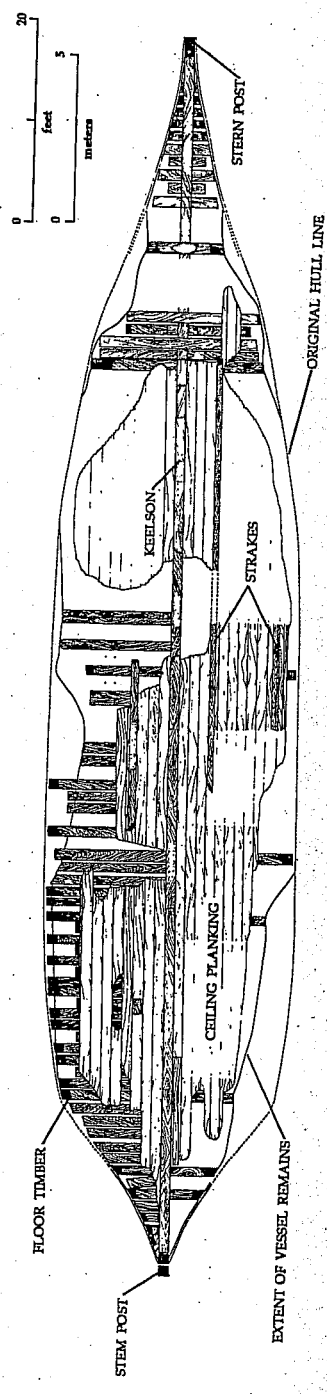
THE LAST VOYAGE OF  
*El Nuevo Constante*

THE WRECK AND RECOVERY OF AN  
EIGHTEENTH-CENTURY SPANISH SHIP  
OFF THE LOUISIANA COAST

CHARLES E. PEARSON  
AND  
PAUL E. HOFFMAN

LOUISIANA STATE UNIVERSITY PRESS  
BATON ROUGE AND LONDON

# PLAN



# SECTION

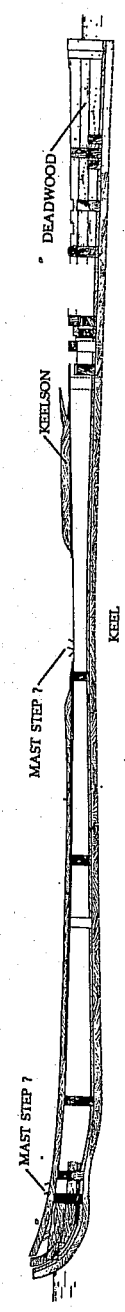


FIGURE 20. Plan and section of the intact portion of *El Nuevo Constante*.  
Courtesy State of Louisiana.

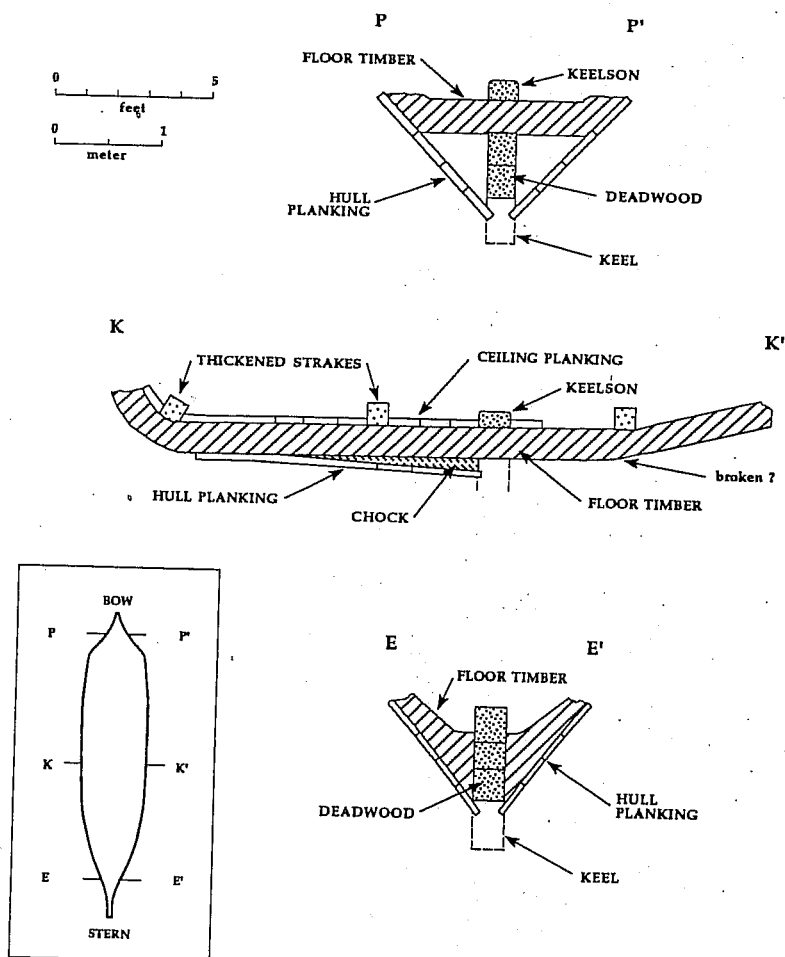


FIGURE 24. Three cross sections of the hull of *El Nuevo Constante*.  
Courtesy State of Louisiana.

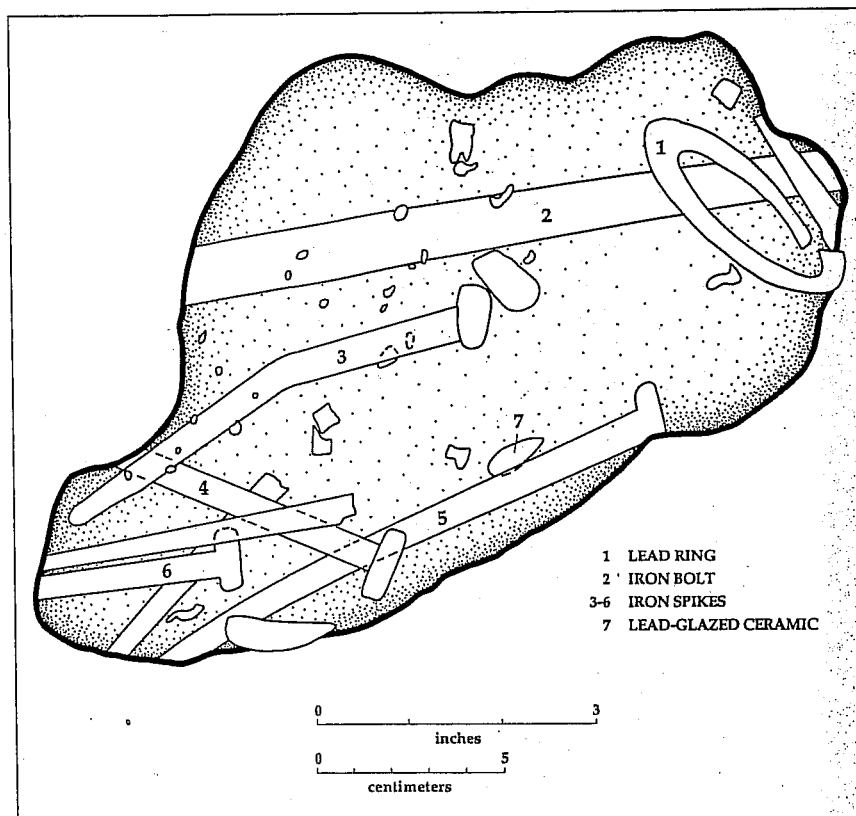
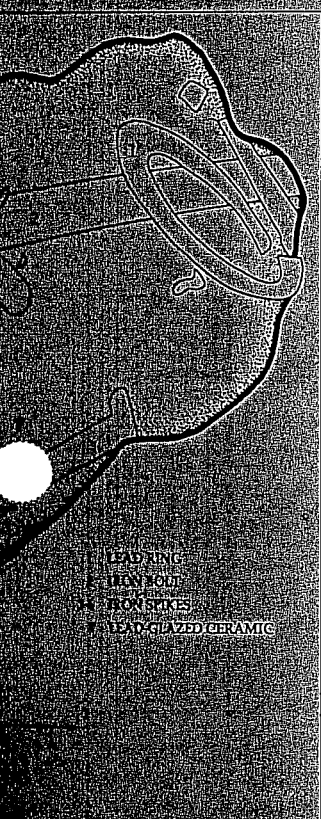


FIGURE 31. Conglomerate Number 592.

of these smaller bolts are not true drift bolts but are portions of the shanks of pins for eyebolts or ringbolts.

Smaller iron fasteners all appear to have square shanks. The larger of these can probably be described as spikes and the smaller as nails. One of the most common spikes was also the largest. The shank on this type of spike was approximately 0.5 inches across, and complete specimens are 5 to 7 inches long. The heads on these spikes are squarish and about 1 inch to 1.25 inches across. Spikes of this size were used with wooden trunnels to attach the hull planking, and apparently they also were used extensively elsewhere in the ship. Examples





## THE ARTIFACTS

of several types of spikes and nails recovered from the *Nuevo Constante* are shown in figure 30.

Many of the conglomerates examined contained large numbers of whole and partial nails, spikes, and bolts cemented together. Generally the iron objects were heavily corroded and often they were entirely deteriorated, leaving only a corrosion-filled cavity behind. A typical small conglomerate is shown as figure 31. This conglomerate contained several square-shanked spikes and a portion of a round bolt, in addition to one piece of lead-glazed pottery and a lead ring of unknown function. Some of the larger conglomerates examined contained the remains of hundreds of nails and spikes.

### Fittings

Iron fittings in the collection include several partial and fragmentary wrought iron eyebolts, ringbolts, or eyebolts with rings through them, portions of several preventer plates, one with a piece of iron chain attached, other pieces of chain, and two gudgeons for rudder braces.

The eyebolts were rove into the wood of the ship and used primarily as points for securing lines and as tie downs. Ringbolts had similar uses and also were used to secure the guns. The shanks of the eyebolts and ringbolts in the collection are round and about one inch in diameter. Several contain in-place forelock keys (fig. 30a). The eye is formed by bending the bolt and lap welding the tip back onto the shank. On the ringbolts, the typical ring was 4.75 inches across and formed of a ring of iron about 0.75 inch thick (fig. 30b).

### Rudder Fittings

Two wrought iron gudgeons were found during the excavations (fig. 32a). The gudgeons were attached at the sternpost of the ship and provided the sockets into which the rudder was hung. The pintles that fit into the gudgeon sockets were attached to the rudder (fig. 32b). David Steel notes that a vessel the size of the *Nuevo Con-*

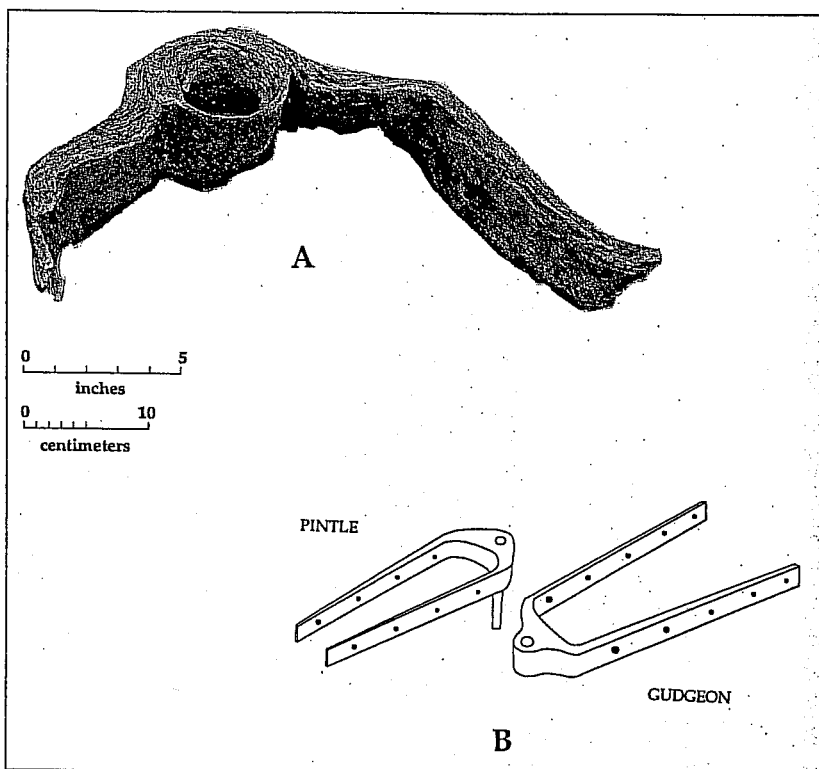


FIGURE 32. Rudder fittings. A, wrought iron rudder gudgeon from *El Nuevo Constante*; B, drawing of a pintle and gudgeon or brace.

*stante* would have had five gudgeons.<sup>23</sup> The gudgeons originally had arms or straps several feet long to attach them to the hull of the vessel, but these were missing on both specimens. Pieces of flattened iron that may be portions of gudgeon or pintle straps were found.

#### Rigging

Portions of the *Nuevo Constante's* chains, including pieces of at least four preventer plates, were recovered. The chains consisted of the

23. *Ibid.*, Plate 52.

## THE ARTIFACTS

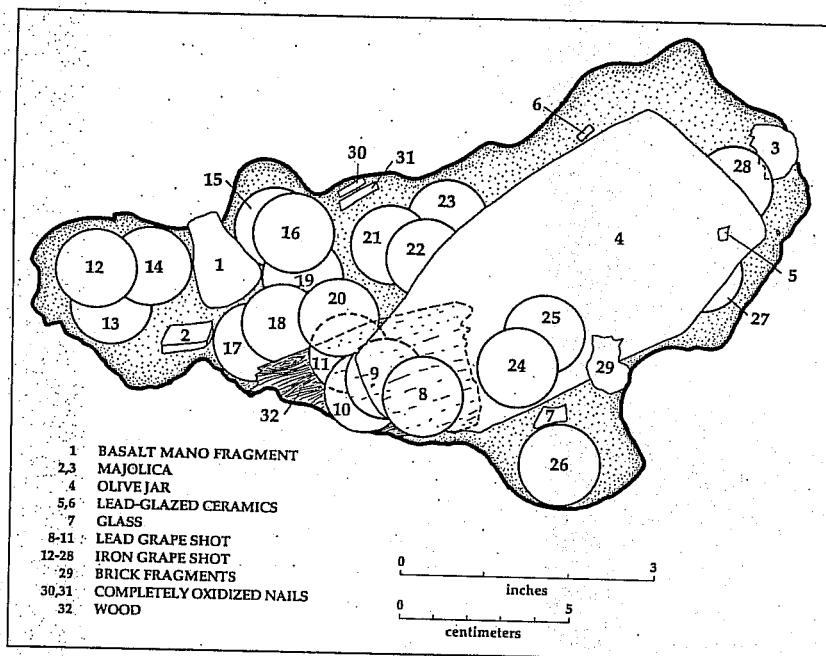


FIGURE 44. Conglomerate Number 586.

Grape shot generally consisted of a cluster of balls tied or wrapped with canvas in a bundle. Canister shot were small shot enclosed in a wooden or metal canister that burst open upon firing.<sup>33</sup> Cord or wire marks impressed into many of the lead shot suggest that they were bound together, although, supposedly, lead was primarily used as canister shot while iron was used as grape shot. Both canister and grape shot could have been fired from the nine-pounders recovered from the wreck. The collection contains 106 iron and 53 lead grape shot. The average diameter of the iron shot is 1.4 inches while that of the lead shot is 1.3 inches.

Many of the conglomerates examined consisted primarily of groups of these shot cemented together. A typical example of one of these conglomerates is shown in figure 44. In addition to lead and iron shot, this conglomerate contains a variety of other artifacts, in-

33. Manucy, *Artillery Through the Ages*.

cluding a piece of an olive jar (a ceramic container), pieces of majolica (tin-glazed pottery) and lead-glazed pottery, a piece of glass, and a portion of a basalt *mano* or hand-held grinding stone. In most of the others examined lead shot were commonly intermingled with iron ones, suggesting that none came from a single canister or bag of grape shot. Many uncounted grape shot remain in the unexamined concretions:

A fourth type of ammunition is represented by six iron shot with diameters of 1.8 to 2.0 inches (fig. 43b). These specimens are larger than the other iron grape shot and may have been used in a weapon of small caliber. The historic documents describing the weapons on the *Nuevo Constante* indicate that there were four-pounder guns on the ship, but these should have fired a ball of about 3 inches in diameter, too large for the 2-inch shot recovered. These shot are equivalent in size to the one-pound shot of the mid-eighteenth century, which measured 1.9 inches in diameter, but how they were used on the *Nuevo Constante* is not known.

In addition to this ammunition for large weapons, two lead musket balls were found. Both were located within a conglomerate that was recovered from Unit 20-30N, 0-10W, an area well inshore of the sternpost of the shipwreck. A number of iron and lead grape shot and miscellaneous items were also in this conglomerate. These musket balls measure 0.72 inches in diameter, which is approximately the size of shot used in many muskets of the day, including the standard British military musket, the "Brown Bess." These shot would have probably been used in the thirty-six *fusiles*, or muskets, known to have been carried on the vessel. Two gunflints, which may have been for the muskets, were also recovered. One of these is a blade gunflint made of brown or honey-colored chert. This flint measures 1.4 inches in length and 1.15 inches in width and appears to have been unused. The other gunflint is made of dark gray or black flint and is only partially intact, having been heavily battered or used. This latter flint is unprovenienced while the brown gunflint was recovered from within a conglomerate (Number 1326) recovered from Unit 0-10S, 0-10E at the stern of the vessel. This conglomerate also contained many nails, spikes, and bolts as well as pieces of ceramics and glass (fig. 45).

The majority of the ammunition for which provenience is available



FIGURE 45. Conglomerate



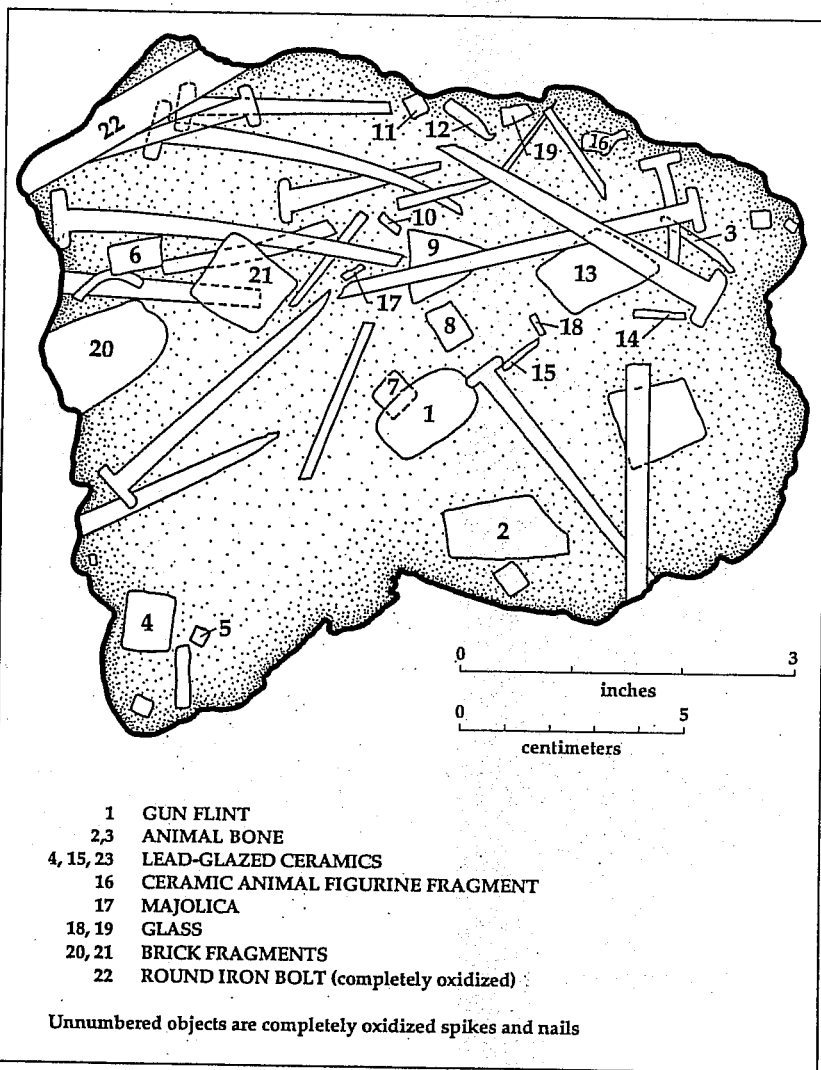
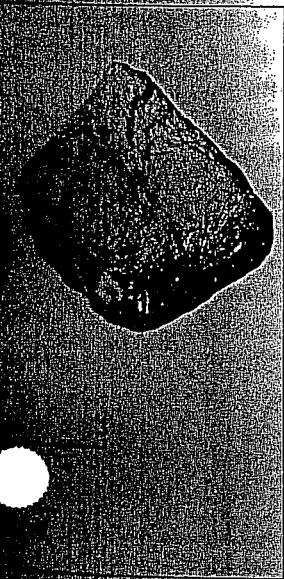


FIGURE 45. Conglomerate Number 1326.



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### *Indigo*

Only one small piece of indigo was recovered, and it came from Unit 60-70S, 0-10W. Most of the approximately twenty-eight hundred pounds of indigo lost with the ship probably disintegrated and dissolved.

### *Logwood*

Seventy-six complete or nearly complete pieces of logwood or dye-wood were found in addition to many fragments and splinters. Referred to as *palo de tinte* in the manifest, these pieces represent some of the 1,032 varas, or "sticks," of logwood being carried by the *Nuevo Constante*, all of it belonging to the Spanish crown. The complete pieces of logwood recovered are in the form of short logs ranging in length from 27 to 64 inches and averaging 50 inches long (fig. 65a). The diameters of these pieces range from 2 to 12 inches and average 5.3 inches. Most of the logs are of a size and weight convenient both for handling by one man and for packing on a mule, the manner in which they were probably transported to Veracruz. Several of the larger pieces, however, are probably too heavy to have been easily carried single-handed. Two of the largest pieces have small holes cut through one end, obviously to provide a handhold or an eye for attaching a rope to help in lifting the heavy piece (fig. 65b). All of the logwood pieces are cut from single limbs or trunks; none are split. Cut marks from machetes or axes are found along their lengths and at their ends from having been trimmed and cut into convenient lengths. No saw marks were found on any of the logwood.

In general, the logwood is in excellent condition. One piece was sawn open so as to examine the interior, which was found still to be resinous and apparently had not been penetrated by seawater. A sample of logwood was treated in the traditional manner (chipped and fermented in water) to determine its dyeing potential. It was found that even after two hundred years underwater the logwood had maintained its ability to dye, producing a colorfast dark blue to black color.

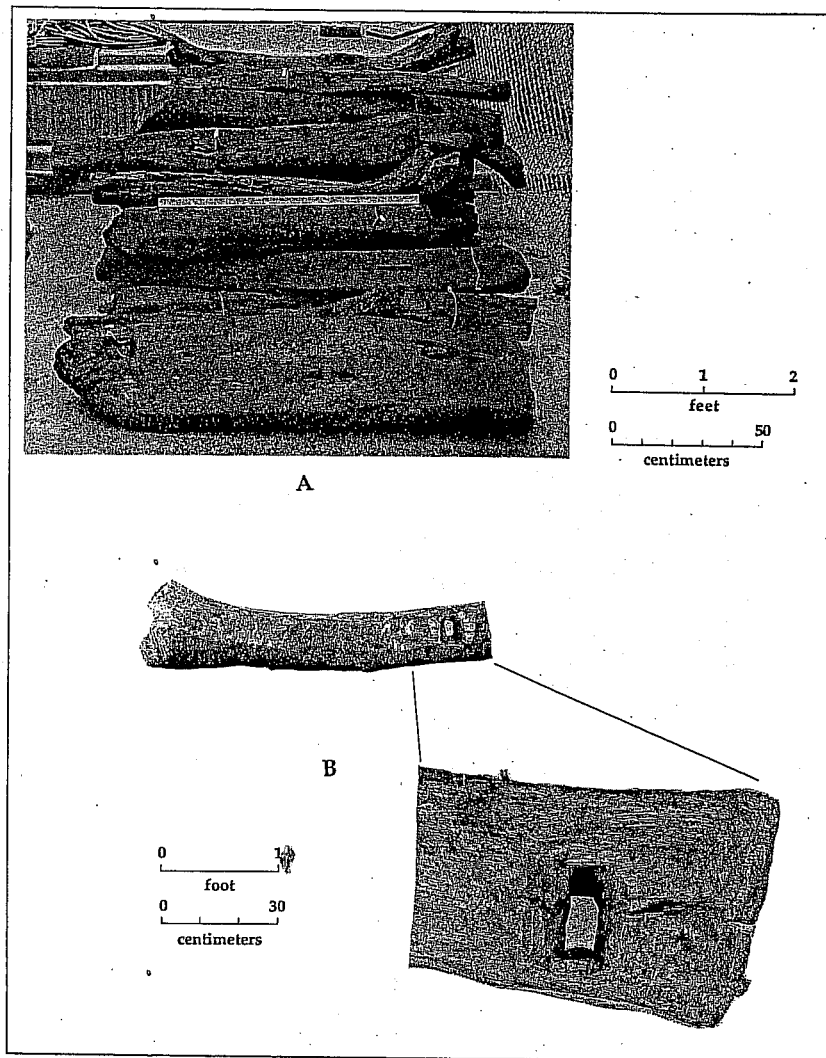


FIGURE 65. Logwood or *palo de tinte* recovered from *El Nuevo Constante*.  
 A, typical pieces (varas) of logwood; B, piece of logwood with cutout handle.  
 B, Courtesy State of Louisiana.

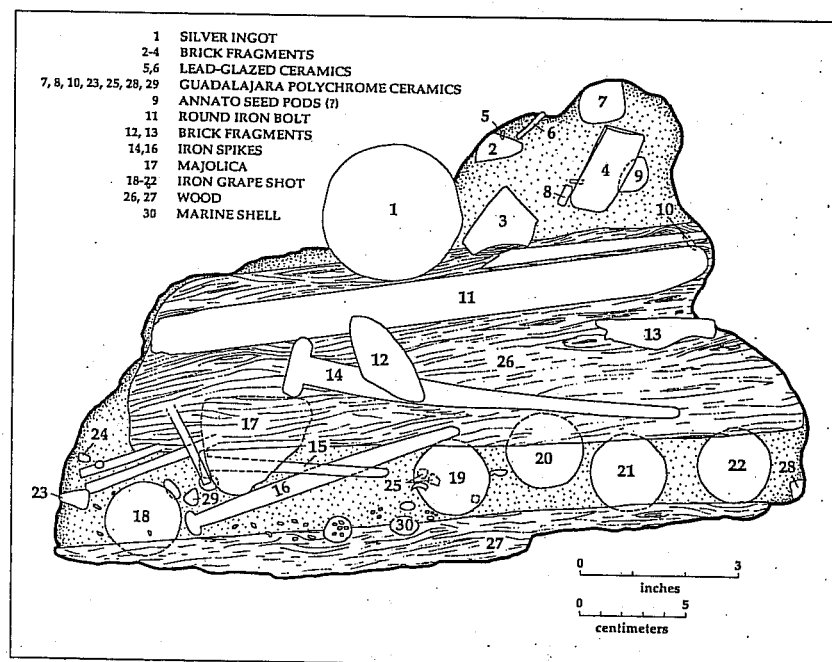


FIGURE 74. Conglomerate Number 1124.

and examples are shown in figure 73b and c. One of the *piñas* in the collection has a flattened top rather than the typical rounded or pointed one (fig. 73d). This ingot was found cemented within a conglomerate that also contained grape shot; pieces of majolica, Guadalajara Polychrome, and lead-glazed ware; nails, spikes, and bolts; molds of anatto seeds; brick fragments; and pieces of wood (fig. 74).

The ship's manifest states that silver was carried by the *Nuevo Constante*, but it was in coin form, the 22,000 pesos for the crew's salary. All of this coin was salvaged by the Spanish authorities (see table 5, entry 30). None of the silver ingots recovered bear any tax stamps indicating that the royal tax had been paid. Nor were they marked with owner's, mine, tally, or karat marks commonly found on bullion. A tax stamp was placed on bullion when it was assayed by a royal treasury official to indicate that the appropriate tax had been collected. This stamp or some other official mark was, with few excep-

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