

EXHIBIT A-6

DR. SEAN A. KINGSLEY

PART 6

ANNEXES 12 TO 13.1

ANNEX 12

TO

EXHIBIT A

Select images of supposed wooden hull structure from Delgado annex 9 to exhibit D.

DR. SEAN A. KINGSLEY

ANNEX 9
TO EXHIBIT D
(Delgado Declaration)

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Delgado Annex 9.12

Annex 12

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20-Apr-07

Odyssey Marine Exploration

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Delgado Annex 9.14



ANNEX 13

TO

EXHIBIT A

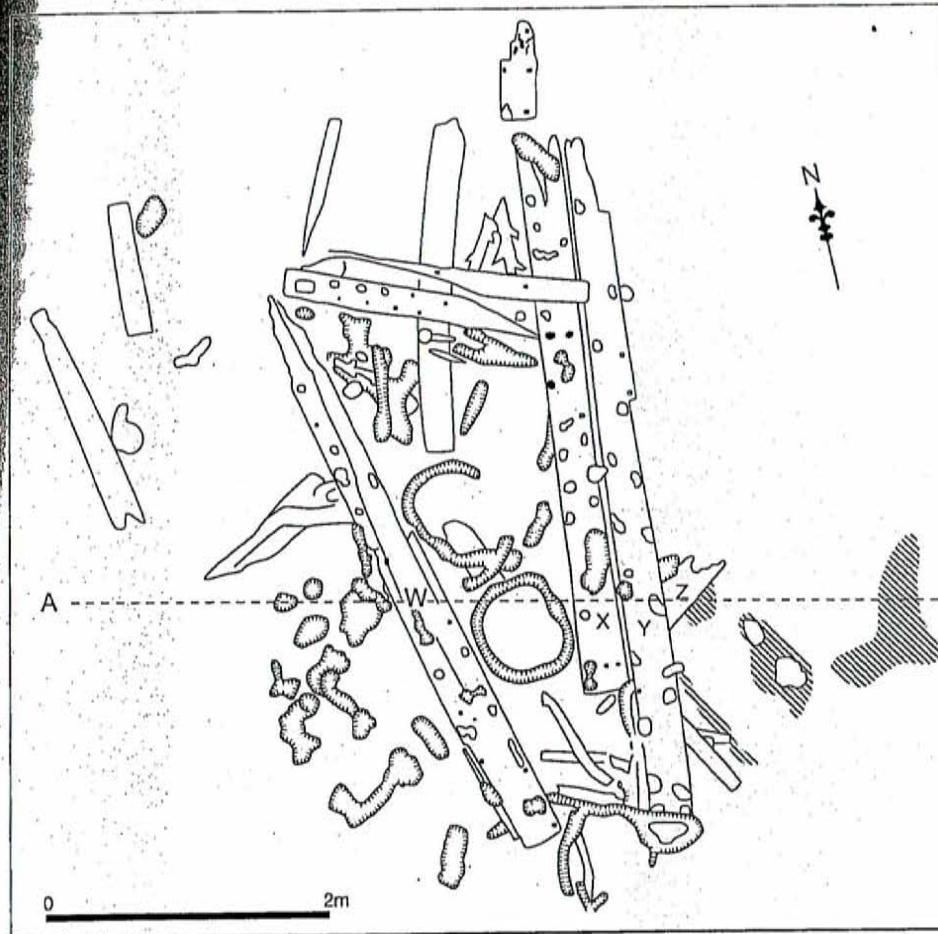
- 13.1. Wooden hull remains of Spanish shipwrecks off Ireland, 1588, and pewter wares: *La Trinidad Valencera* and *Santa Maria de la Rosa*: Breen, C. and Forsythe, *Boats and Shipwrecks of Ireland* (Tempus, 2004), figs. 53. 55; Martin, C., *Full Fathom Five. Wrecks of the Spanish Armada* (Chatto & Windus, London, 1975), figs. 7b, 8, 9; Martin, C.J.M., 'La Trinidad Valencera: an Armada Invasion Transport Lost off Donegal. Interim Site Report, 1971-76', *International Journal of Nautical Archaeology* 8.1 (1979), figs. 11, 13, 15.

BOATS & SHIPWRECKS OF IRELAND

COLIN BREEN
AND WES FORSYTHE

TEMPUS

Annex 13.1



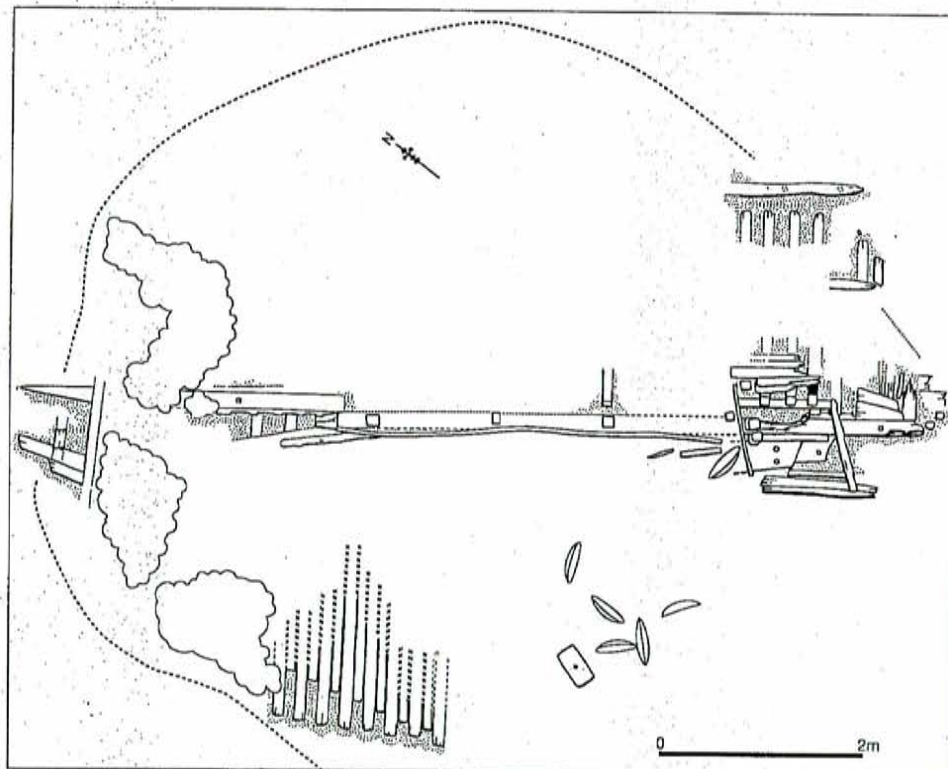
55 Site plan of *La Trinidad Valencera*, Co. Kerry. After Martin, 1979

Spanish forces landed at Kinsale, Co. Cork, captured the town and then waited for the Irish from the north to join them. However, before help arrived they were besieged by English forces.

KINSALE 1601

In December 1601 a fleet of six Spanish vessels under the command of Don Pedro de Zubiaur (Vice-Admiral de Zubiaur, commonly known as Seriago) attempted to reach Kinsale to support the besieged Spanish garrison. De Zubiaur's ships had tried to reach Ireland with the main invasion force in September, but they were separated from the fleet and eventually returned to Spain. The missing ships had been carrying important supplies, ordnance and ammunition that were desperately needed. The second attempt by De Zubiaur

the seabed in 1968 was a large, tightly-packed ballast mound of limestone blocks, 33m in length and 40m wide running on a north-south axis. The mound lay in 40m of water on a flat, shingle bottom and survived to a height of just under 1m.⁸⁸ The site produced structural elements from the lowermost part of the hull (53). A section of the scarf-jointed keelson was uncovered as well as portions of a number of stanchions, which would have supported the orlop beams. A complex mast step with a surrounding wooden box survived on the keelson, which was excavated during the course of the project. The structure showed signs of being hurriedly put together and may represent the step repaired at Corunna prior to departure. A series of ground timbers and an assortment of artefacts also survived beneath the mound. Lead ingots, shot, guns including arquebuses and muskets, as well as the fragmentary skeletal remains of a mariner were recovered during the course of the excavation. Two of the pewter plates recovered confirmed the identity of the ship. Both were engraved with the name 'Matute' and belonged to Francisco Ruiz Matute, an infantry captain who was among those on-board. Martin interpreted this section of the remains as being from the bow end of the ship on the basis of the position of ballast in ships of that period and on the position of the mast step.⁸⁹



53 Site plan, showing the timbers of the *Santa Maria de la Rosa*. After Wignall, 1982

Full Fathom Five

WRECKS OF
THE SPANISH ARMADA

By
COLIN MARTIN

With Appendices by
SYDNEY WIGNALL



1975

CHATTO & WINDUS
LONDON

CAPTAIN MATUTE'S PLATES

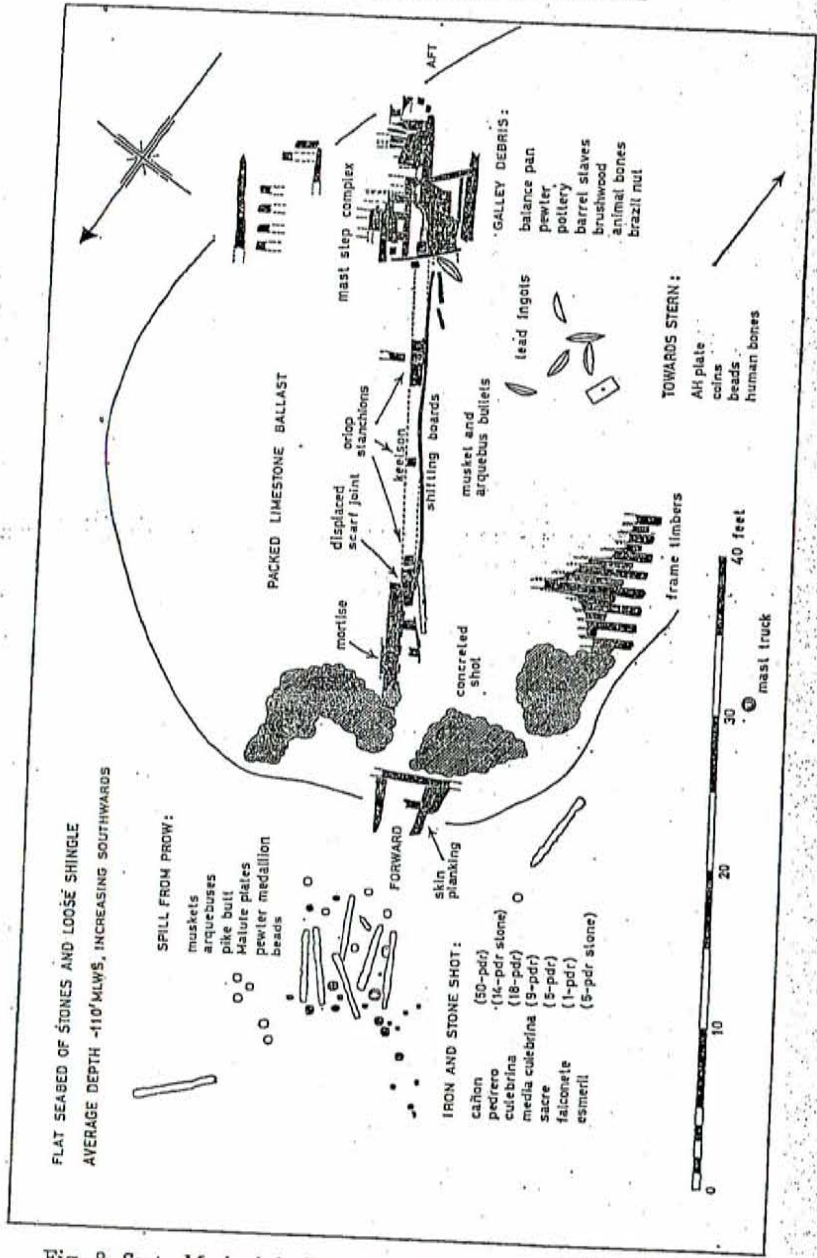


Fig. 8. Santa Maria de la Rosa: plan of wreck site after excavation

FULL FATHOM FIVE I • *Santa Maria de la Rosa*

more recent parallels, that the keelson was always made thicker at this point to bear the heavy weight of the mast. The keelson inside the box, furthermore, was massively torn and splintered, as though by the ripping out of a heavy structure which had once been bolted to it. We next uncovered three strong timbers running athwartships from the starboard side of the well. Their inboard ends were neatly squared off and bevelled, as if they had been intended to butt into and support some component no longer in place.

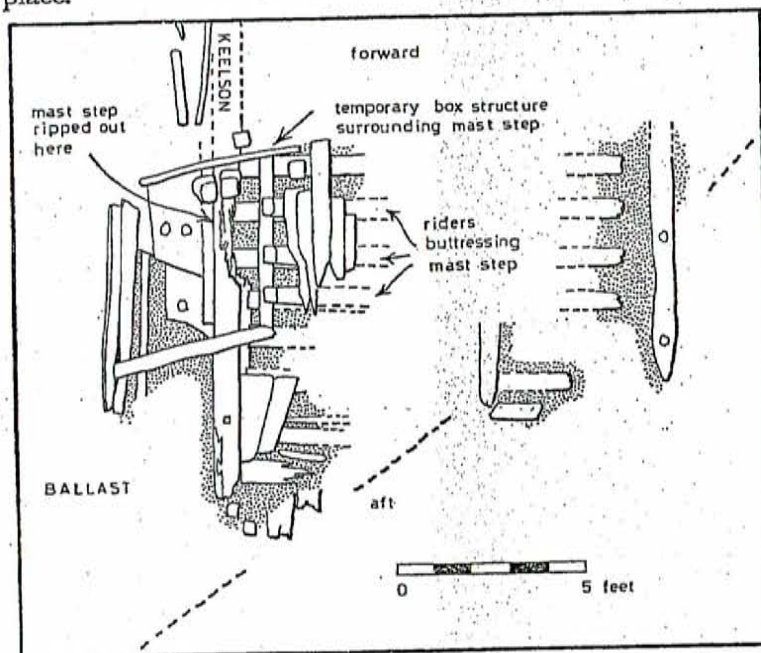
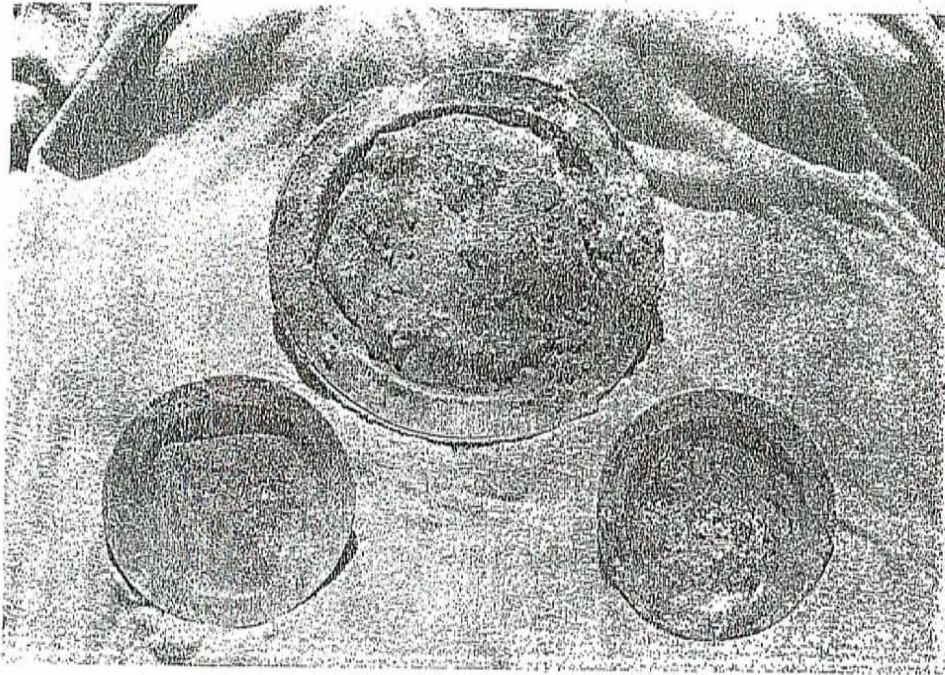


Fig. 9. *Santa Maria de la Rosa*: mast step

It took us more than 6 weeks to excavate and survey this interesting structure but the results, when we had analysed them, told us a great deal about the ship and about the wrecking. We were able to deduce that the mast had been stepped in a recessed wooden block bolted to the keelson, which had been specially reinforced to bear its weight, and was buttressed athwartships by three large riding timbers on each side. On close examination the rectangular box which surrounded the step proved to be a makeshift and evidently temporary structure, its flimsy rough-



7 (a) Pewter plates; the lower pair are the Matute plates



7 (b) The Matute inscription

***La Trinidad Valencera*: an Armada invasion transport lost off Donegal**

Interim site report, 1971-76

Colin J. M. Martin

*Institute of Maritime Archaeology, University of St Andrews, Fife, Scotland
(in conjunction with the City of Derry Sub-Aqua Club)*

Introduction

The wreck of *La Trinidad Valencera*, a large Venetian merchantman requisitioned by Spain for the 1588 Armada and lost in Kinnagoe Bay, County Donegal, was discovered in February 1971 by members of the City of Derry Sub-Aqua Club after two years of search. Since then four seasons of work have been completed on the site by the Club in conjunction with the Institute of Maritime Archaeology from the University of St Andrews and Magee University College of the New University of Ulster. The project has been helped financially, and greatly assisted in other ways, through the joint production by BBC *Chronicle* and *Radio Telefis Eireann* of a television documentary film.

The wrecks of the Spanish Armada provide an unparalleled opportunity for studying a wide range of naval, military, maritime and social affairs in late 16th century Europe. Philip II's 'Enterprise of England', as he termed it, was for its time a gigantic logistical achievement, organized by a ponderous administration whose voluminous and meticulous paperwork survives almost intact in the Simancas archives. Thus the physical evidence from the wrecks can be studied against an unusually full documentary background, the one source complementing and illuminating the other.

This relationship is made the more significant by the cosmopolitan nature of the fleet, whose 130 ships were drawn from sources throughout Europe. The five wrecks so far investigated emphasize the variety of ship-types and the geographical breadth involved (Fig. 1).

The Tobermory wreck, now unarguably identified as that of the *San Juan de Sicilia* of the Levant squadron, came from Ragusa (Hardie, 1912; de Courcy Ireland, 1966). The galleass *Girona*, whose scattered remains were found off the Antrim coast in 1967 (Sténuit, 1972), had been based at Naples. The *Santa Maria de la*

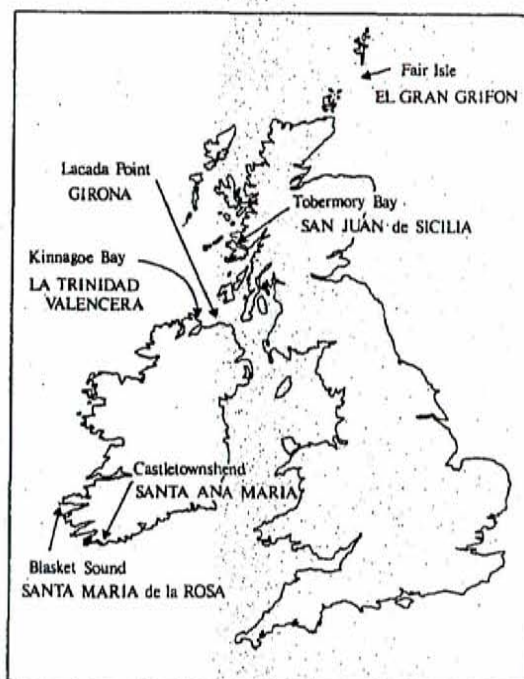


Figure 1. Spanish wreck sites in the British Isles. All belong to the 1588 Armada except the *Santa Ana Maria* (1627), which has produced comparative material relevant to the present study.

excavation in 1973. The target proved to be a complex of iron concretions, which lay on a hard grey shingle substratum between 1 ft (0.25 m) and 18 in (0.38 m) below the surface. The concretions were tagged *in situ* and lifted for reassembly against a corresponding grid on land. They were then excavated with hand tools, and their contents plotted to a scale of 1 : 6. This method had been used successfully by

Bass at Cape Gelidonya (Bass, 1967), where the concretions had contained solid bronze objects: in the present instance, however, almost all of the metal had migrated, leaving only hollow casts within the concretion, and while it was possible to record a general statement of the contents (Fig. 8) this method involved the destruction of the matrix and hence of the primary evidence. The deposit appears to derive

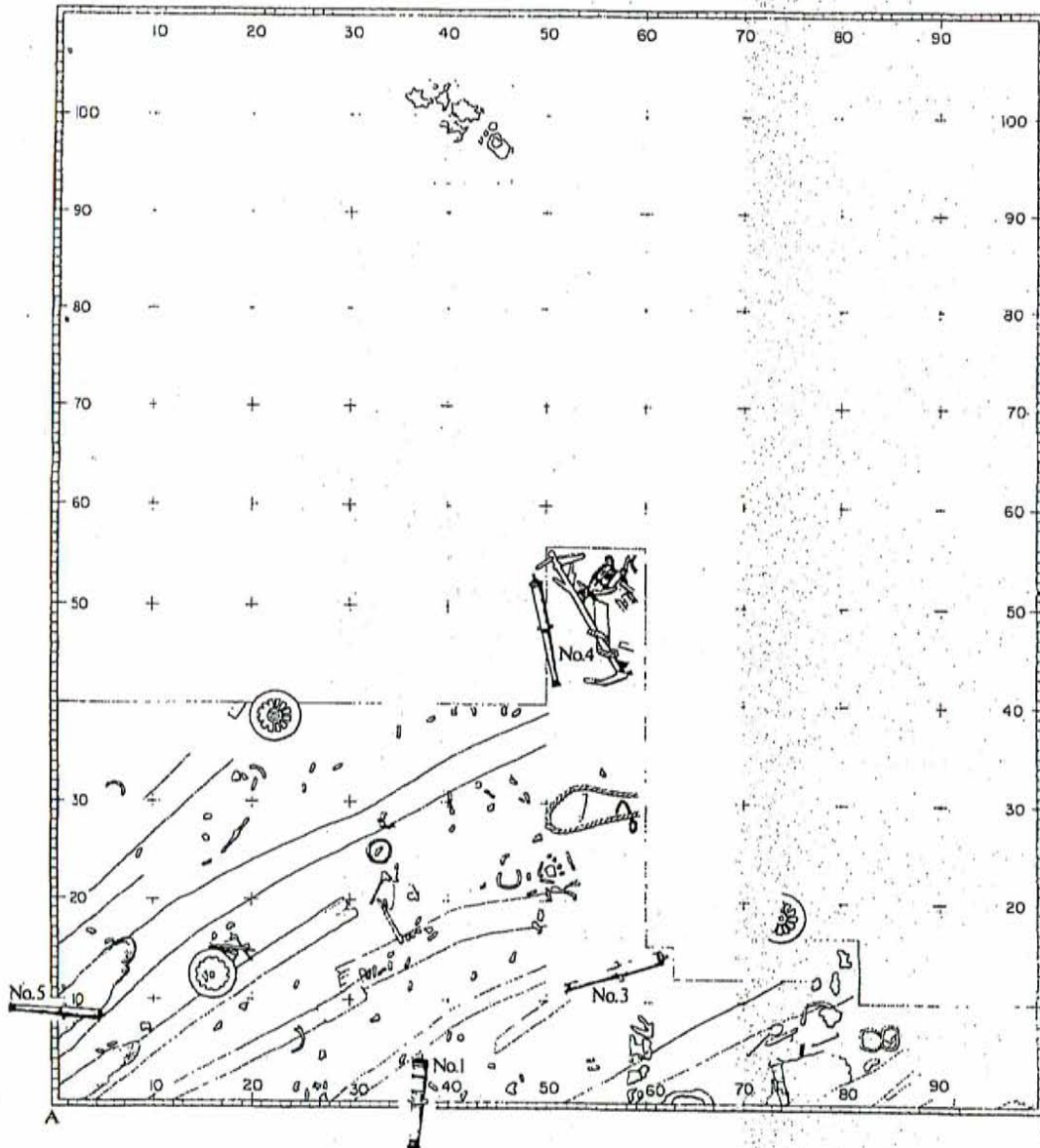


Figure 6. South sector of grid. Grid scale in feet.

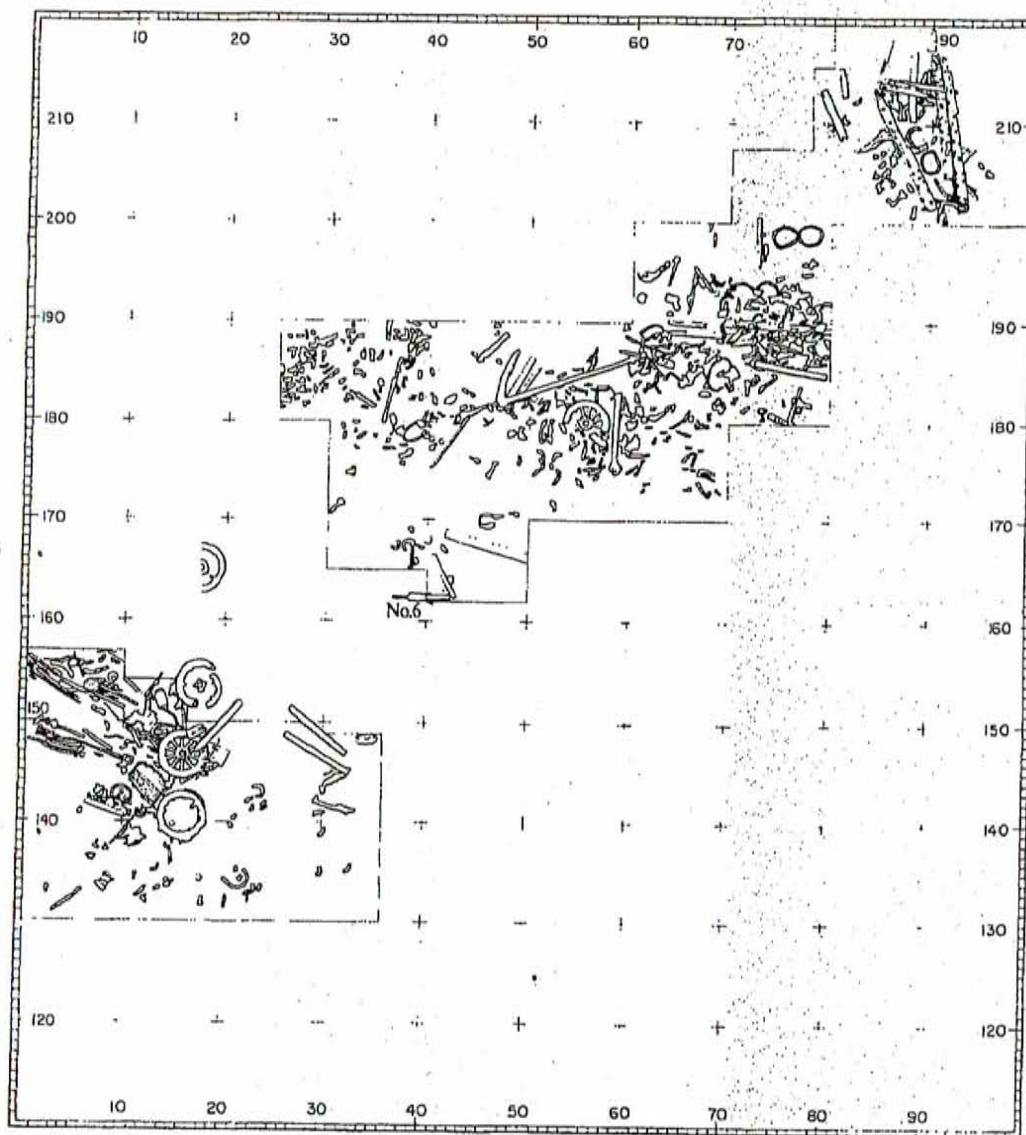


Figure 7. North sector of grid. Grid scale in feet.

from a spill of nails and other ironwork, perhaps once contained in the barrel represented by the two hoops at the right.

Area 2

In 1974 the airlift was used to excavate this area to bedrock, which lay between 3 and 6 ft (0.76 m and 1.52 m) below the sea-bed. The finds, which had stabilized within the first 3 ft

(0.76 m) of the deposit, were sparse and fairly scattered, though in places grouping was evident and distributions became more concentrated towards the east. At the eastern edge of this area organic discoveries, including a 22 ft (6.7 m) length of 5 in (0.13 m) diameter hemp cable, were made.

The area also contained two guns and two guncarriage wheels.

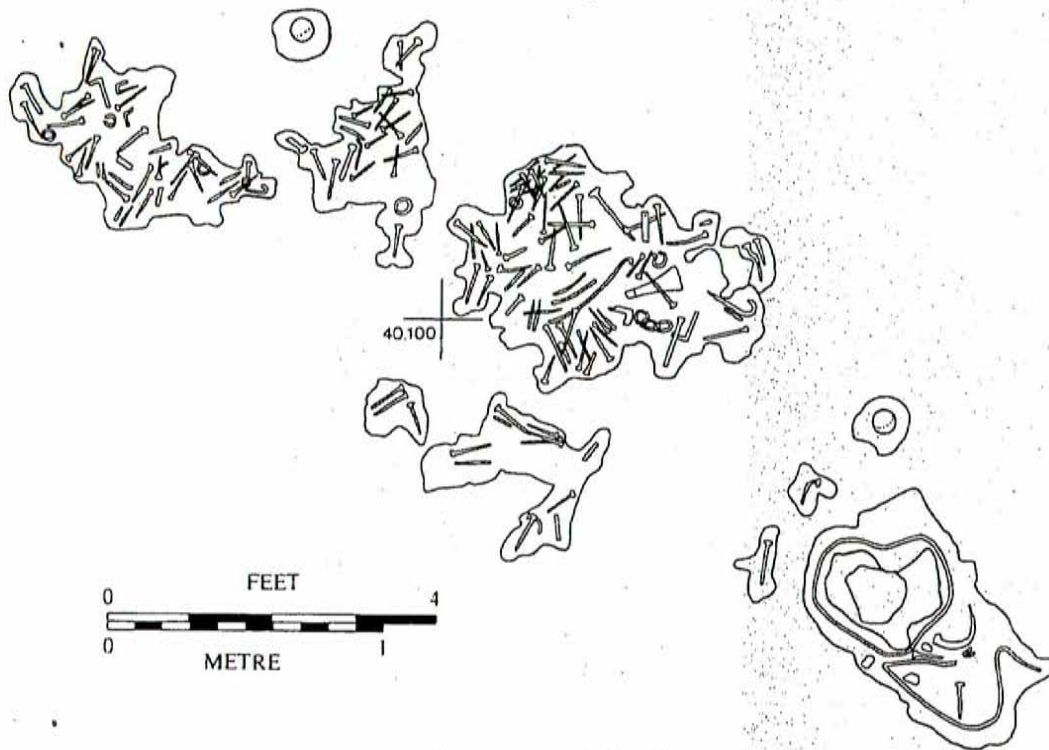


Figure 8. Concretions in Area 1.

Area 3

This area was excavated in 1974. Its southern and eastern parts yielded a scatter of concretions all of which, as in Area 2, had stabilized within the first 3 ft (0.91 m) of the deposit. Excavation below this depth revealed strata of grey-stained sand, shingle and shells, which showed no evidence of wreck penetration. Running through the centre of this area were three guncarriage wheels, to the west of which an extensive layer of organic material was encountered. This deposit, which lay within 1 ft (0.3 m) of the surface, was characterized by its extremely good condition: objects such as wooden bowls, a pair of bellows, musket and arquebus stocks, handspikes, scaling poles, a heavy wooden swingletree, and leather and hemp-soled shoes showed little sign of surface wear, while the mat of splinters, cordage and fabrics associated with them showed no obvious evidence of wear or breakage subsequent to deposition. The stability of the deposit was further emphasized by the condition of the two wooden barrels which lay on their sides at Grids 13.143 and 15.152. These barrels had evidently settled in the sand

with rather more than half their circumferences rising above the sea-bed: the exposed parts rapidly disintegrated but the lower sections survived to a level only 6 in (0.15 m) below the

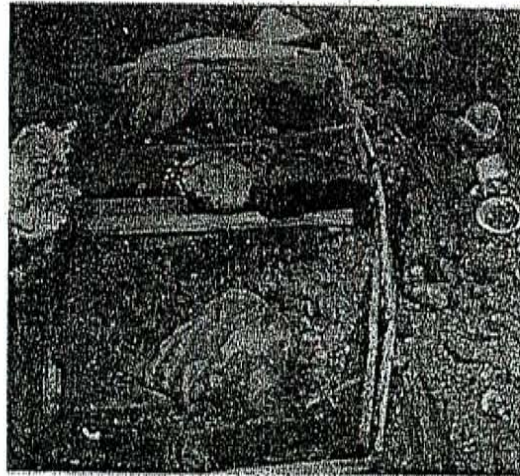


Figure 9. Wooden barrel at Grid 15.152 during excavation. Splints and bandages hold the pieces together, while a weighted polythene insert secures the remains of the gunpowder contents.

encountered only in the immediate vicinity of the swivel gun, around the arm and fluke of the anchor, and at the boundary with Area 4.

A great many concretions were found. All

have been recorded but only a few have been raised: the remainder, where possible, have been left *in situ*. Where it has been necessary to move pieces in order to continue the excavation these

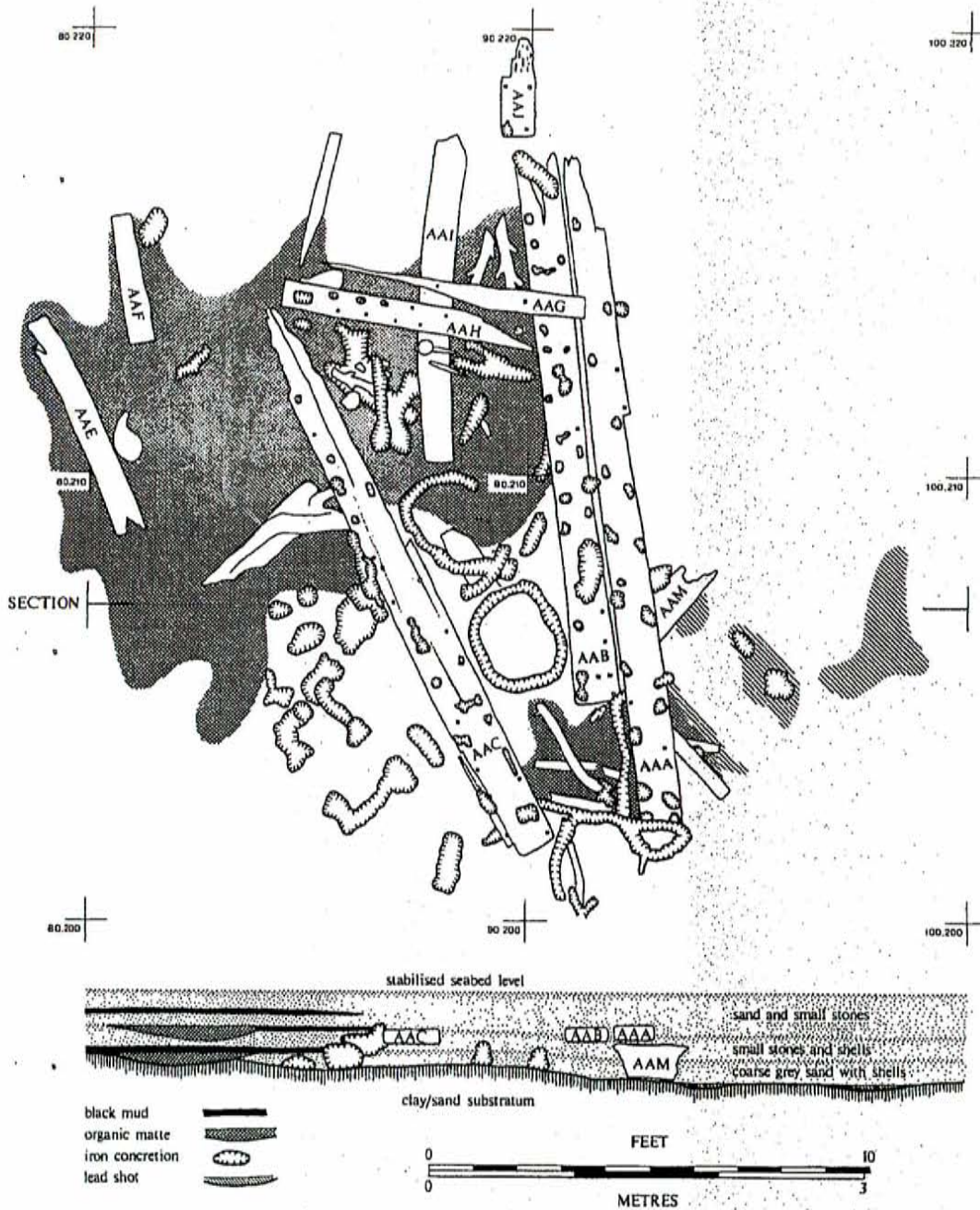


Figure 11. Ship timbers, concretions, and organic matte in Area 4.



Figure 13. Organic deposit at Grid 88.213. Scale 1 ft.

surviving length of 12 ft 6 in (3.81 m). One end is intact, showing a simple squared butt. Half-inch (0.013 m) iron fastenings had been used throughout, though in all cases these had completely corroded away, leaving only the concretion casts. On what is presumably the outer side of the plank the bolt heads, which were 1 in (0.025 m) in diameter, had been countersunk flush with the timber surface, no doubt so as to ensure a smooth underwater skin. The fastening holes are set in pairs which are set on average 8 in (0.20 m) apart. Except for the holes next to the butt, which are squarely opposite one another, the pairs are set obliquely, so that they would clamp the frame behind fore and aft.

The pattern of the fastenings is extremely regular in appearance, in contrast to the apparently haphazard patterning of fastenings more normal on wooden hulls of the early modern period. As observed in the case of the *Dartmouth* (Martin, 1978: 48), such irregularity was clearly intentional, so as to avoid as

far as possible setting up weaknesses along the line of the grain. No such attempt has been made in placing the *Valencera's* fastenings, and the weakness thus occasioned is evident in the lines of split and breakage which have in fact occurred. The impression is one of routine mass-production rather than the intuitive work of a skilled shipwright.

A series of deep gouges running across the plank suggests damage caused by scraping a rough bottom, possibly at the time of wrecking.

AAH carries much the same pattern of fastenings as AAC, though it is considerably narrower and thicker [7 in and 5.5 in (0.18 m and 0.14 m)]. The countersunk bolt heads suggest an outside surface, and the piece may well be part of a strengthening wale. One squared end is evident.

AAE and AAI appear to be sections of framing. Both are some 8 in (0.20 m) wide, which accords with the spacings indicated by the plank fastenings and suggests that the hull was solid framed (cf. the *Santa Maria de la*

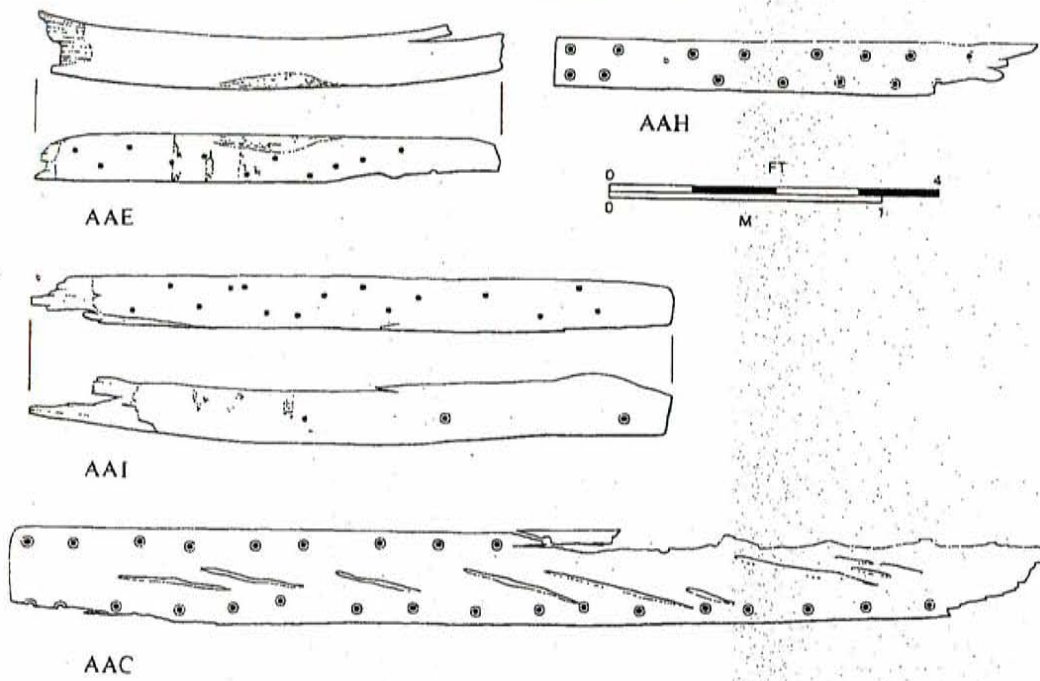


Figure 14. Hull timbers.

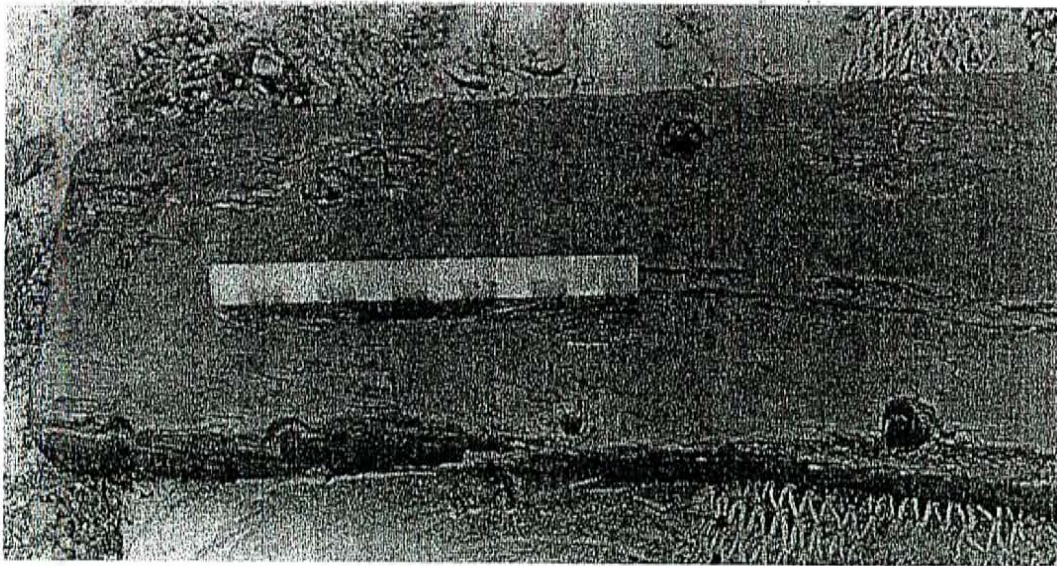


Figure 15. Butt end of AAC. Note the countersunk bolt holes and the deep gouge running from beneath the scale rod. Scale 1 ft.

Rosa, Martin, 1973: 447). On both these frame sections the inner (i.e. concave) faces show traces of pitch caulking apparently brushed on before the ceiling planking was placed. AAI has a butt end and three lateral fixing holes.

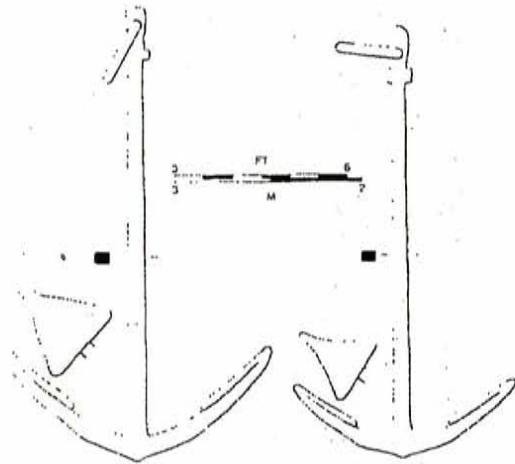


Figure 16. The iron anchors: a provisional drawing. The northern anchor (left) is the larger.

Ship's equipment

Two wrought-iron anchors have been recorded *in situ* at Grids 54.49 and 54.185. Figure 16 is a provisional drawing of them in which due allowance has been made for concretion growth, and with the missing fluke of the northern anchor restored. They are 15 ft and 15 ft 9 in (4.57 m and 4.80 m) long respectively, with spans of 8 ft and 9 ft (2.44 m and 2.74 m) and rings 2 ft 6 in (0.76 m) in diameter. The sizes are closely comparable with the anchor discovered near the wreck of the *Santa Maria de la Rosa* (Wignall, 1973: 469), which was 15 ft 6 in (4.72 m) long and spanned 8 ft (2.44 m), and rather larger than the 14 ft x 7 ft 3 in (4.15 x 2.20 m) anchor found close to the *Gran Grifón* wreck site (Brooks and Muckelroy, 1975). During the 17th century three anchors measuring 18 ft, 15 ft, and 10 ft (5.48 m, 4.57 m, and 3.05 m) were recovered from the wreck of the *San Juan de Sicilia* in Tobermory Bay (Miller, 1683).

It is not known whether these anchors are Venetian originals or Spanish replacements. The

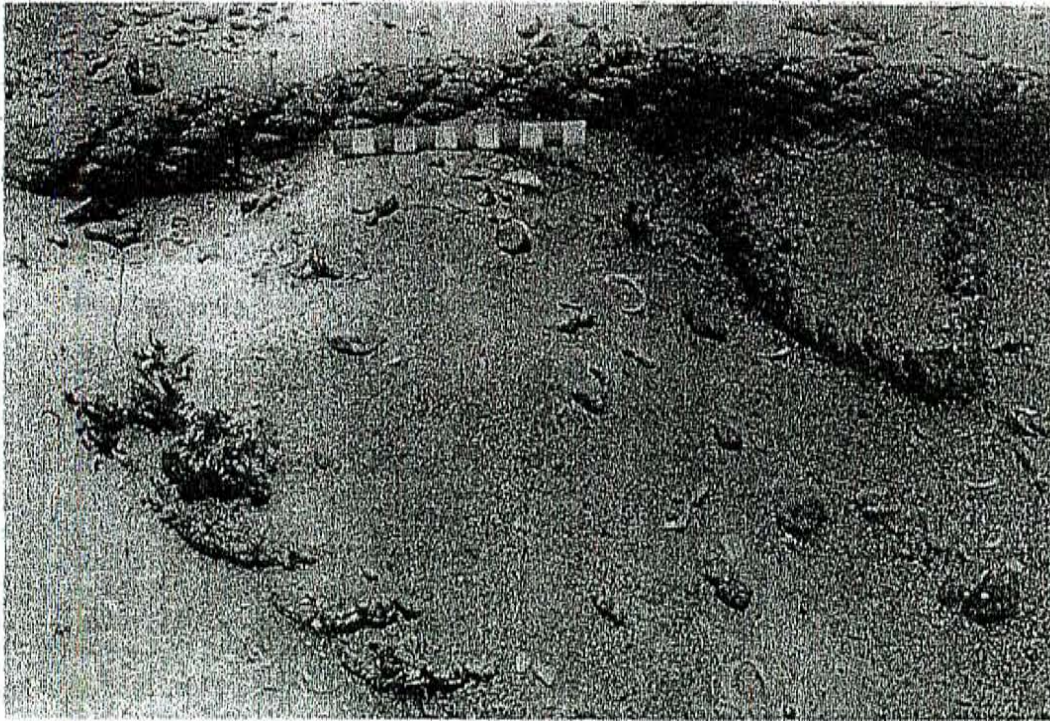


Figure 17. A length of anchor cable *in situ* at 59.29, overlying a rope strop. Scale 1 ft.