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07-May-07 **Odyssey Marine Exploration** 09:18:27

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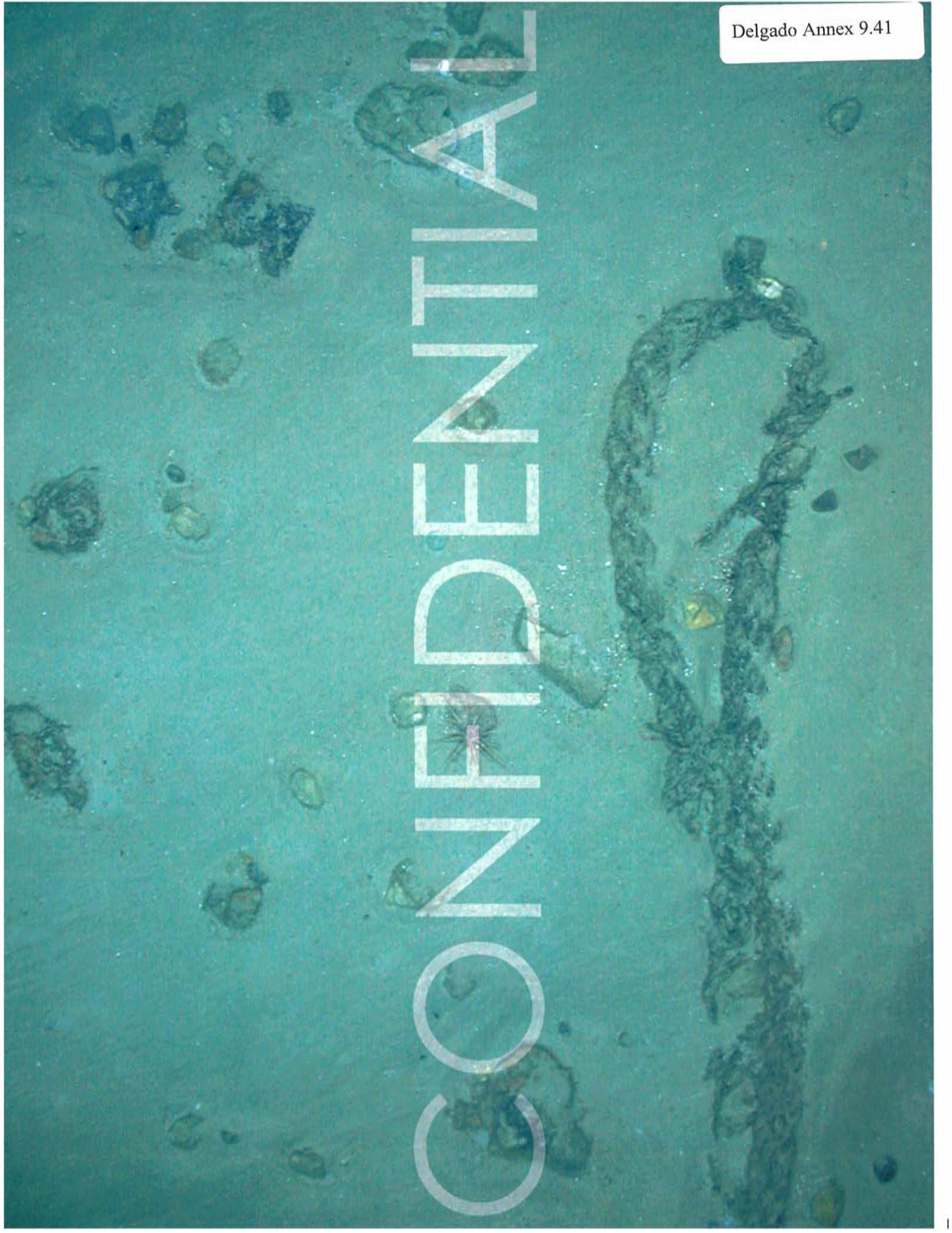
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3-Apr-07 **Odyssey Marine Exploration** 12:41:46

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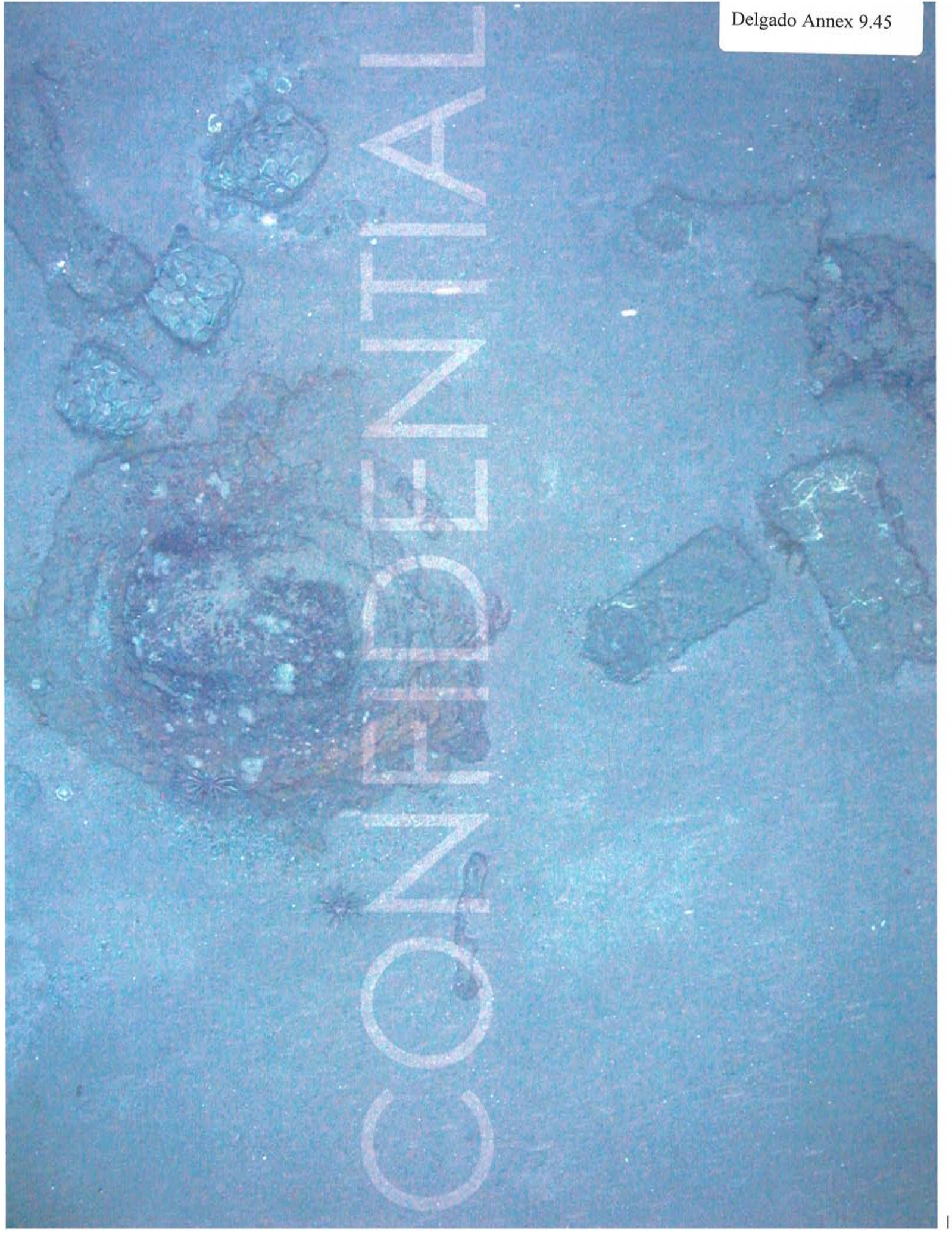
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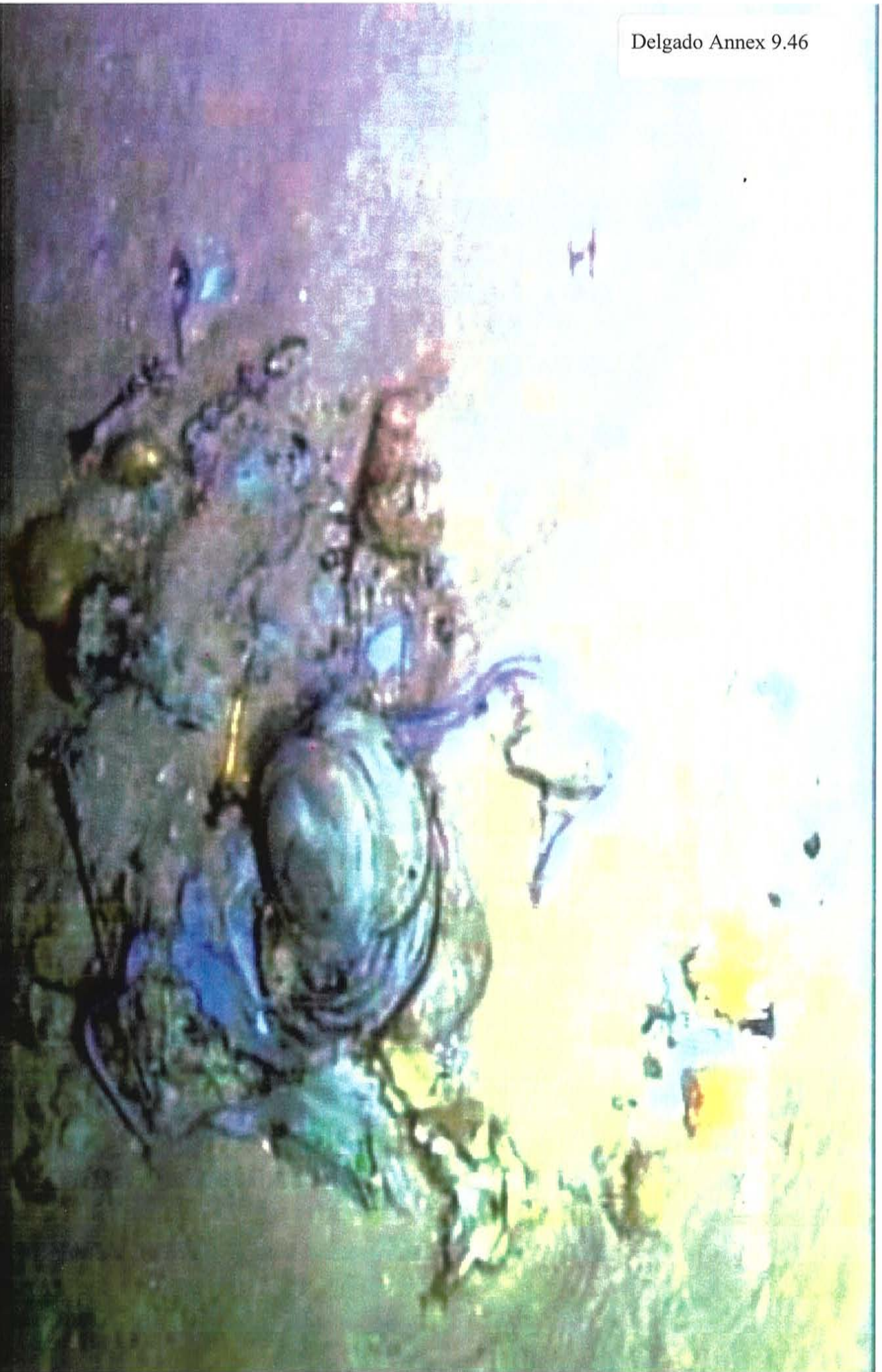


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20-Apr-07 **Odyssey Marine Exploration** 23:07:57



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20-Apr-07 Odyssey Marine Exploration 23:09:00



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ANNEX 10
TO EXHIBIT D
(Delgado Declaration)

A
NEW UNIVERSAL DICTIONARY
OF THE
MARINE;

BEING, A COPIOUS
EXPLANATION OF THE TECHNICAL TERMS AND PHRASES
USUALLY EMPLOYED IN THE
CONSTRUCTION, EQUIPMENT, MACHINERY, MOVEMENTS, AND MILITARY,
AS WELL AS NAVAL, OPERATIONS OF SHIPS:

WITH SUCH PARTS OF ASTRONOMY, AND NAVIGATION, AS WILL BE FOUND USEFUL TO
PRACTICAL NAVIGATORS.

Illustrated with a Variety of Modern Designs of Shipping, &c.

TOGETHER WITH SEPARATE VIEWS OF THE
MASTS, YARDS, SAILS, AND RIGGING.

TO WHICH IS ANNEXED,
A VOCABULARY
OF
FRENCH SEA-PHRASES AND TERMS OF ART,
COLLECTED FROM THE BEST AUTHORITIES.

ORIGINALLY COMPILED BY WILLIAM FALCONER,
AUTHOR OF THE SHIPWRECK, &c.

NOW MODERNIZED AND MUCH ENLARGED,
BY WILLIAM BURNEY, LL. D.
MASTER OF THE NAVAL ACADEMY, GOSPORT.

LONDON:
PRINTED FOR T. CADELL AND W. DAVIES, IN THE STRAND; AND J. MURRAY,
BOOKSELLER TO THE ADMIRALTY, 50, ALBEMARLE-STREET.

1815.

A pair of back-stays is usually formed of one rope, which is doubled in the middle, and fastened there so as to form an eye, which passes over the mast-head, from whence the two ends hang down, and are stretched to the channels, by dead-eyes and lanyards. See the article DEAD-EYES, &c.

BACK-STAY STROOL, a short piece of plank, fitted for the security of the dead-eyes, and chains for the back-stays, though sometimes the channels are left long enough at the after end, for the back-stays to be fitted thereto.

BADGE, (*bouteille, fausse galerie, Fr.*) in naval architecture, is a sort of ornament, placed on the outside of small ships, very near the stern, containing either a window, for the convenience of the cabin, or the representation of it: it is commonly decorated with marine figures, martial instruments, or such like emblems. See the article QUARTER.

BAFFLING, or BAFFLING-WINDS, (*brises folles, Fr.*) are those winds that wave and frequently shift from one point to another.

To BAGPIPE the mizen, (*border l'artimon au vent, Fr.*) is to lay it *aback*, by bringing the sheet to the mizen shrouds.

BAG-REEF, (*bas ris, Fr.*) a fourth or lower-reef, sometimes used in the royal navy.

To BALANCE, (*balancer, Fr.*) to contract a sail into a narrower compass, by retrenching or folding up a part of it at one corner. It is peculiar to the mizen of a ship, and the main-sail of those vessels, wherein it is extended by a boom. See the article BOOM.

The operation of balancing the mizen is performed by lowering the mizen-yard, or gaff, a little, then rolling up a small portion of the sail at the *peek*, or upper corner, and lashing it about one fifth down towards the mast. See the article MIZEN.

A boom-mainsail is balanced, after all its reefs are taken in, by rolling up a portion of the clew, or lower aftmost corner, and fastening it strongly to the boom. It is requisite, in both cases, to wrap a piece of old canvas round the sail, under the lashing, to prevent its being fretted by the latter.

BALANCE-REEF, (*ruban qui sert à étrangler la voile, Fr.*) a reef-band, that crosses a sail diagonally, and is used to contract it in a storm.

BALCONY, (*galerie de poupe, Fr.*) the projecting gallery in the stern of old large ships, either for ornament or convenience of the captain's cabin. In modern built ships it is always thrown into the cabin.

BALK, (*balk, Dut. and Germ. fourans ou épon-tilles de sapin, Fr.*) a piece of short fir timber; also a beam, such as is used in ship-building.

BALL, (*balle, Fr.*) in the military art, comprehends all sorts of bullets for fire-arms, from the cannon to the pistol; also a composition of divers ingredients, generally of the combustible kinds, serving to burn, give light, smoke, stench or the like; as fire-balls, light-balls, smoke-balls, stink-balls, land-balls, &c. Cannon-balls are made of iron, musket-balls, pistol-balls, &c. are of lead. The experiment has been tried of iron balls for pistols and fuses, but they are justly rejected, not only on account of their lightness, which prevents them from flying straight, but because they are apt to furrow the barrel of the pistol, &c.

Cannon-balls are always distinguished by their respective calibres: thus,

For a	}	42	pound ball the diameter is	6.68
		32		6.10
		24		5.54
		18		5.04
		12		4.40
		9		4.00
		6		3.49
		3		2.77
		2		2.42
		1		1.92

A new description of inflammable balls, applicable for besieging a town, and peculiar for its small weight, by which means it may be thrown to a great distance, and takes fire on a very curious plan, has lately been invented by Captain Thomas Dundas, of the royal navy. It spreads a flame in three distinct openings, which is so strong that the fire extends a full yard in length from the ball itself, and is so powerful that any thing under, over, or near, cannot escape its effects. See the article SHOT.

BALL and Socket, an instrument made of brass, with a perpetual screw, so as to move horizontally, vertically, and obliquely; and is generally used for the managing of surveying and astronomical instruments.

BALLAST, (*lest, Fr. ballaste, Dut. ballastro. Span.*) a certain portion of stone, iron, gravel, or such like materials, deposited in a ship's hold, when she has either no cargo, or too little to bring her sufficiently low in the water. It is used to counter-balance the effort of the wind upon the masts, and give the ship a proper stability, that she may be enabled to carry sail without danger of upsetting.

There is often great difference in the proportion of ballast required to prepare ships of equal burden for a voyage; the quantity being always more or less, according to the sharpness or flatness of the ship's bottom, which seamen call the *floor*.

The knowledge of ballasting a ship with propriety is certainly an article that deserves the attention of the skilful mariner; for, although it is known that ships in general will not carry a sufficient quantity of sail, till they are laden so deep that the surface of the water will nearly glance on the extreme breadth amidships, yet there is more than this general knowledge required; since, if she has a great weight of heavy ballast, as lead, iron, &c. in the bottom, it will place the centre of gravity too low in the hold; and, although this will enable her to carry a great sail, she will nevertheless sail very heavily, and run the risk of being dismasted by her violent rolling.

To ballast a ship, therefore, is the art of disposing those materials, so that she may be duly poised, and maintain a proper equilibrium on the water, so as neither to be too *stiff*, nor too *crank*, qualities equally pernicious: as in the first, although the ship may be fitted to carry a great sail, yet her velocity will not be proportionably increased; whilst her masts are more endangered by her sudden jerks and excessive labouring: and, in the last, she will be incapable of carrying sail without the risk of upsetting.

Stiffness in ballasting is occasioned by disposing a great quantity of heavy ballast, as lead, iron, &c. in

the bottom, which naturally places the centre of gravity very near the keel; and that being the centre about which the vibrations are made, the lower it is placed, the more violent will be the motion of rolling.

Crankness, on the other hand, is occasioned by having too little ballast, or by disposing the ship's lading so as to raise the centre of gravity too high, which also endangers the mast in carrying sail when it blows hard: for when the masts lose their perpendicular height, they strain on the shrouds in the nature of a lever, which increases as the sine of their obliquity; and a ship that loses her masts is in great danger of being lost.

The whole art of ballasting, therefore, consists in placing the centre of gravity to correspond with the trim and shape of the vessel, so as neither to be too high, nor too low, too far forward, nor too far aft; and to lade the ship so deep, that the surface of the water may nearly rise to the extreme breadth amidships; and thus she will be enabled to carry a good sail, incline but little, and ply well to the windward.

In the royal navy, the iron ballast is first stowed fore and aft, from bulkhead to bulkhead in the main hold, next to fir cants nailed on the limber-strakes on each side the kelson, five or more inches clear of the limber-boards; and is winged up three or more pigs above the floor-heads in the midships, or bearing part of the ship, and there are two tiers or pigs in the wake of the main hatchway and well-wings. Ships built with a very clear run aft, seldom have any iron ballast stowed abaft the pump-well or after-hold. Ships that have floor and futtock riders, have the iron ballast stowed either lengthways or athwart ships, agreeable to the length of the chambers, which are the clear spaces between the riders.

The shingle ballast is next spread and levelled over the iron ballast, on which is stowed the ground tier of water, bung up and bilge free from the sides, either ohine and chine, or bouge and chine, beginning at the coal-room bulkhead, that being the foremost, and making the breakage, if any, at the main hatch. The midship tiers, fore and aft, are the first laid down, and the casks are sunk about one quarter of their diameter into the shingle; the sides are filled in with wingers of small casks, as half-hogsheads, gang casks, or breakers; observing not to raise the wingers above the level of the tier, to cause a breakage in the next tier above, which is stowed in the cuntline of the ground tier, bung up and bilge free, and so on, for as many tiers as can be stowed sufficiently clear of the beams.

In the after-hold, between the aft side of the pump-well and fish-room bulkhead, are stowed the provision, above the ground tier; between the casks, billet, or other wood, and shingle ballast.

In the fish room are stowed some of the spirits, or wine, and sometimes coals; and in the spirit-room are stowed the wine and spirits for the ship's use.

In the merchant-service, the stowage consists, besides the ballast, of casks, cases, bales, boxes, &c. which are all carefully wedged off from the bottom, sides, pump-well, &c. and great attention paid that the most weighty materials are stowed nearest to the centre of gravity, or bearing of the ship; and higher or lower in the hold agreeable to the form of the vessel. A full low-built vessel requires them to be

stowed high up, that the centre of gravity may be raised, to keep her from rolling away her masts, and from being too stiff and laboursome; as, on the contrary, a narrow high built vessel requires the most weighty materials to be stowed low down, nearest the kelson, that the centre of gravity may be kept low, to enable her to carry sail, and to prevent her upsetting. See the article TRIM.

Ships are said to be in ballast when they have no other loading. Masters of vessels are obliged to declare the quantity of ballast they bear, and to unload it at certain places. They are prohibited unloading their ballast in havens, roads, &c. the neglect of which prohibition has ruined many excellent ports.

All ships and vessels taking in ballast on the river Thames, are bound to pay the corporation of the Trinity-house, for every ton carried to any ship in the coal trade, 1s. and for every other British ship 1s. 3d. for every ton carried to any foreign ship, 1s. 7d.

The Trinity-house employ men for that purpose, and regulate them; and their lighters are all marked.

Ballast allowed to the following Ships.

Guns.	Tonnage	Iron Tons.	Shingle Tons.	Guns.	Tonnage.	Iron Tons.	Shingle Tons.
110	2290	180	370	38	930	70	170
100	2090	180	370	36	870	65	160
98	2110	160	350	32	700	65	140
90	1870	160	350	23	600	60	100
80	1620	140	300	21	500	50	80
74	1700	80	270	22	450	50	70
64	1370	70	260	20	400	50	60
50	1100	65	170	Sloop	300	50	40
44	900	65	160	Brig	160	30	15

BALLAST, pea, (lest en gravier, Fr.) is a peculiar kind of fresh water sand, dried by the sun, and used by the ships from China, for stowing their teas with.

BALLAST, shingle, (lest de pierre, Fr.) implies coarse gravel.

BALLATOONS, are large heavy barks, or luggage-boats, used for carrying wood, by the river, from Astracan, and the Caspian sea, to Muscow; They are of an extraordinary length and breadth, their prows and sterns rounding alike to a point; and they carry from 150 to 200 ton, and from 150 to 200 men, to row and tow them along the rivers.

BALUSTERS, (balustres, Fr.) small columns, or turned pillars of wood, placed round the balcony in the stern, and likewise in the quarter-gallery of large ships.

BAMBOO HABIT, a Chinese contrivance, by which a person, who does not know how to swim, may easily keep himself above water. It is thus constructed: four bamboos, two before, and two behind, their bodies, are placed horizontally, and project about twenty-eight inches. They are crossed on each side by two others, and the whole properly secured, leaving a space for their body; it is put over their heads, may be tied securely in two minutes, packed up in a small compass, and put into a chest.

BANDS, (bandes, Fr.) slips of canvas strongly sewed across a sail, to strengthen it, as the reef-bands, &c.

a considerable distance from the shore, insomuch that the line which divides the two colours, may be perceived distinctly for a great length along the coast.

FRIGATE, (*frégate*, Fr.) in the navy, a light nimble ship, built for the purpose of sailing swiftly. These vessels mount from 20 to 50 guns, and are esteemed excellent cruisers.

FRIGATE-Built, (*frégaté—construit à la manière des frégates*, Fr.) implies the disposition of the decks of such merchant-ships as have a descent of four or five steps from the *quarter-deck* and *forecastle* into the *waist*, in contra-distinction to those whose decks are on a continued line for the whole length of the ship, which are called *galley-built*. See the article **DECKS**.

Formerly, the name of frigate was only known in the Mediterranean, and applied to a kind of long vessel, navigated in that sea with sails and oars. The English were the first who appeared on the ocean with those ships, and equipped them for war as well as for commerce.

FROST, (*gelée*, Fr.) such a state of the atmosphere as causes the congelation or freezing of water, or other fluids, into ice. In the more northern parts of the world even solid bodies are affected by frost, though this is only or chiefly in consequence of the moisture they contain, which being frozen into ice, and so expanding, as water is known to do when frozen, it bursts and rends any thing in which it is contained, as plants, trees, stones, and large rocks. Many fluids expand by frost, as water, which expands about the one tenth part, for which reason ice floats in water; but others again contract, as quicksilver, and thence frozen quicksilver sinks in the fluid metal.

Frost, being derived from the atmosphere, naturally proceeds from the upper parts of bodies downwards, as the water and the earth: so, the longer a frost is continued, the thicker the ice becomes upon the water in ponds, and the deeper in the earth the ground is frozen. In about 16 or 17 days frost, Mr. Boyle found it had penetrated 14 inches deep into the ground.

At Moscow, in a hard season, the frost will penetrate two feet in the ground; and Captain James found it penetrate 10 feet deep in Charlton Island; and the water in the same island was frozen to the depth of six feet. Sheffer assures us, that in Sweden the frost pierces two cubits, or Swedish ells, into the earth, and turns what moisture is found there into a whitish substance, like ice; and standing water, to three ells or more. The same author also mentions sudden cracks or rifts in the ice of the lakes of Sweden nine or ten feet deep, and many leagues long; the rupture being made with a noise not less loud than if many guns were discharged together. By such means, however, the fishes are furnished with air; so that they are rarely found dead.

The close of the year 1708, and the beginning of 1709, were remarkable, throughout the greatest part of Europe, for a severe frost. Dr. Derham says it was the greatest in degree, if not the most universal, in the memory of man; extending through most parts of Europe, though scarcely felt in Scotland or Ireland. In 1788, we had a severe frost for many weeks, insomuch that the Thames were frozen below the bridges, and booths built thereon.

FULL AND BY, (*près et plein*, Fr.) a term used by seamen, implying the situation of a ship with regard to the wind, when she is close-hauled, and sailing in such a manner as neither to steer too nigh the direction of the wind, nor to deviate to leeward; both of which movements are unfavourable to her course, as in the former her sails will shiver, and render the effort of the wind precarious and ineffectual; and, in the latter, she will advance in a direction widely distant from her real course. Hence, keep her full! (*plein la voile!* Fr.) is the order from the pilot, or other officer, to the helmsman, not to incline too much to windward, and thereby shake the sails so as to retard the ship's velocity.

To **FUMIGATE**, to medicate or heal by vapours; to clear or purify the air of any infected place, by smoke, &c.

The frequent fumigation of ships is highly necessary, in order to prevent diseases produced by confined or infected air. The materials may be brimstone with saw-dust, or brimstone thrown over hot coals.

Nitre, to which a little vitriolic acid is added; or common salt, with the same addition of vitriolic acid. Gunpowder wetted, or the heated loggerhead in a pitch-pot. The operation should always be performed under the eye of a medical officer, to prevent an improper expenditure of the respective articles applied.

FUMIGATION LAMPS, a recent invention for the purpose of expelling foul air from the holds and other confined places of ships, and particularly useful for cleansing and keeping sweet and wholesome all receptacles for the sick.

Where many persons breathe in a confined place, the air is deprived of its oxygen, or animating principle. And as this destructive effect is still more increased by flame, used to illumine the darkness of places where persons are necessarily confined, these lamps are provided with bevel tubes, to prevent this inconvenience to those persons who are on the orlop-deck, which is nearly dark and beneath the surface of the water. And to prevent the necessity of a number of lights, which would thus still more deprive the air of its oxygen, or vital principle, Sir Jerome Fitzpatrick has introduced reflectors into the lamps, by which means, the light is only considerably increased with the respirable air being diminished. And by well placing the lamp flame over the pan, containing oil of vitriol and nitre, a proportion of oxygen is thus produced, sufficient to supply what the air loses, by the forementioned spoliation, and corrective of its malignant principle. The utility and convenience of these lamps, must, where light and salubrious air are so essential as in hospital ships, be incalculable.

The lamps, it must be observed, are so contrived as to prevent the men from endangering the ship by lighting their pipes clandestinely.

A very ingenious engineer having lately contrived the following method of supplying deep mines with fresh air, and extracting the foul by means of fire, the principle might be usefully applied on board our ships of war, by means of a furnace in the galley, and fresh air supplied with facility to the remotest corner of a ship.

they are stouter and longer than those used with a mallet.

Gouge-Bit, a bit smaller than a centre-bit, with a hollow edge at its end like a *gouge*.

Plate XI.
Fig. 1.

GRAFTING A ROPE, the act of unlaying the two ends of it, placing the strands one within the other, as for splicing, plate XI. fig. 1, and stopping them at the joining. The yarns are then opened out, split, and made into knittles for pointing.

GRAPE-SHOT, (*charge en grappe*, Fr.) a combination of small shot, enclosed in a thick canvas bag, and corded strongly together, in a cylindrical form, equal in diameter to that of a ball adapted to a cannon. The bag is made exactly to hold a bottom which is put into it; as many shot are then thrown in as the grape is to contain. The whole is next quilted over with strong pack-thread, to keep the shot from moving. When finished, the bags are put into boxes for the purpose of being conveniently carried.

The number of shot in a grape varies according to the size of the guns; in sea service nine is always the number; but for land it is increased to any number or size, from an ounce and a quarter in weight to four pounds. It forms the thickest fire that can be produced in the same space; and can be exceeded in effect only by the **CASE-SHOT**, which article see.

The following statement exhibits the number and sorts of shot contained in the grape, for guns of different species:—

Guns.	Species of Shot in the Grape.	Number in each.	Number in each Box.
42 pounders	4 lb.	9	4
32 ———	3 ———	9	4
24 ———	2 ———	9	6
18 ———	1½ ———	9	8
12 ———	1 ———	9	10
9 ———	13 oz.	9	12
6 ———	8 ———	9	20
4 ———	6 ———	9	20

Fig. 2.

GRAPLING, or **GRAPNEL**, (*grapin*, Fr.) a sort of small anchor, fitted with four or five flocks or claws, plate XI. fig. 2, and commonly used to fasten boats or other small vessels.

Fire-GRAPLING, (*grapin d'abordage*, Fr.) an instrument nearly resembling the former, but differing in the construction of its flocks, which are furnished with strong barbs on their points, fig. 10, plate X. These machines are usually fixed by a chain on the yard-arms of a ship, in order to grapple any adversary whom she intends to board: they are particularly useful in *fire-ships*.

GRATINGS, (*caillebotis*, Fr.) a sort of open covers, for the hatches, resembling lattice-work, serving to give light to the lower apartments, and to permit a circulation of air; both of which are particularly necessary, when, from the turbulence of the sea, the ports between decks are obliged to be shut. In very bad weather the *gratings* are covered with tarpaulings, to prevent the water from washing down the hatchways.

GRATUITY, in the royal navy, is a recompense or royal bounty made by his Majesty to the widows, orphans, and mothers of sea and marine officers slain in fight with the enemy.

The gratuities in compassion to the distressed condition of the relations of officers, &c. slain in fight, are as follow:—

1. The allowance to the widow is a full year's pay, according to the post her husband served in at the time of his death. Widows of pilots have the same allowance as the widows of warrant officers under the like circumstances.

2. Orphans, each one third, in proportion to the allowance to the widow; and posthumous children are esteemed orphans.

3. Orphans married are not entitled to the bounty.

4. If there be no widow, a mother (if a widow and above fifty years of age) is entitled to a widow's share.

5. The relations of officers of fire-ships are entitled to the same bounty as those officers of like rank, slain in ships of the fourth rate.

6. Captains of his Majesty's ships are to set down the names of the slain at the end of the muster-books, and on what occasion; the omission of which will be made an objection to the captain's receiving his pay.

7. This bounty extends to those who are slain in tenders, in boats, or on shore, as well as to those slain on board the ships; also to those who are slain in fight with pirates, or in any encounter with the ships of friends by mistake; also those who die of their wounds after battle, are all esteemed as persons slain.

Gratuities to Officers wounded in Fight with the Enemy, and to Seamen hurt in the Service.

1. If any commission, marine, or warrant officer, serving in the navy, receives a wound that shall occasion the loss of an eye or a limb, or the total loss of the use of a limb, or that (upon certificate from the Master, Wardens, and Assistants of the Royal College of Surgeons in London) shall, in effect be of equal prejudice to the habit of the body with the loss of a limb, he shall receive one full year's pay, and shall be allowed such expenses relating to the cure (if it is not performed at his Majesty's expense) as shall be certified reasonable by the said college; he shall also continue in pay during the time of his cure.

2. With respect to the year's gratuity, ships under the third rate are to be esteemed as such.

3. Volunteers are also entitled to the same bounty as lieutenants.

4. If the wounds received do not amount to the loss of a limb, nor are of equal prejudice to the body, the charges of cure are only allowed, but the continuance of pay is not to extend beyond eighteen months from the time the party was wounded.

5. Under the term "Wounded in Fight with the Enemy," is comprehended all the several cases relating to those slain in fight; and those so wounded are paid the gratuities and charges allowed them, on application to the Navy Board.

6. Inferior officers or seamen hurt, maimed, or disabled in the service, by certificate signed by the captain, lieutenant, master, surgeon, and one or more warrant officers of the ship, expressing the nature of the hurt, &c. are entitled to the benefit of the Chest at Greenwich, according to the rules and constitutions thereof. See the articles **CHEST AT GREENWICH**, and **PENSIONS** to superannuated officers.

To **GRAVE**, (*suiver, ou espalmer un bâtiment*, Fr.) to clean a ship's bottom, when she is laid aground during the recess of the tide. See the article **BREAMING**.

The short-allowance money is to be paid every three months, if abroad; and where there is no agent victualler, the purser, by warrant of the captain, may take up money to discharge the same upon the best exchange, and draw bills upon the Victualling Board for that purpose.

If the ship is alone, the captain is directed to act as a commander in chief, or senior captain.

The purser, by the first opportunity after payment, is to send one list to the commissioners of the victualling, and another by the next safe conveyance.

The ship's company is to be paid for their short allowance in sterling value, and to have the benefit of the exchange. See the NAVAL INSTRUCTIONS.

From the difficulty that has been experienced of late years, in procuring change of monies to pay each man separately, by reason of its scarcity, several commanders have had recourse to the method prescribed for the payment of savings of provisions, substituting only, on the headings, the words "Provisions short allowed," instead of savings, &c. still adhering in every other particular to that form.

It may be necessary here to point out the facility with which the payments are made by the adoption of this method, which is as follows:

From 6 to 12 men are paid at a time, *as its rear*, except in the small ships or vessels wherein a less number of men than six are messed: each mess in a body, is called in turn before the purser, or his steward, some time previous to the payment, when one person from each mess is appointed to receive for the whole, whose name is inserted in the list made out in a column appropriated for that purpose, which prevents the probability of any dispute arising thereafter.

But should any of the mess, previous to the payment, have been detached from the ship on public leave or service, who were entitled to the whole or any part of money due for provisions short allowed, not then returned, the amount due to them is withheld, and paid into their hands on joining their ship; yet, in the event of their discharge by order to another ship, during such absence, a ticket of their servitude is made out and forwarded to them, stating on the face of it the sum due for the provisions short allowed. This money is received either when the ship, which they are then in and belonging to, is paid, or, if discharged from the service before, by reason of infirmity, it is then paid to them. The vouchers made out, and the disposal of them, are similar to those for SAVINGS OF PROVISIONS, which article see.

The buying of short-allowance money, directly or indirectly, is strictly forbidden; and the parties themselves are to be paid, without any regard to notes, or any other obligation whatever.

SHORT-Hauls, in rope-making, are hauls of yarn short of the common length.

SHORT-Laid, in rope-making, implies short-twisted.

To SHORTEN, (*ruccourcir*, &c. Fr.) when expressed of a ship's sails, is used in opposition to MAKE. See that article, also SAIL.

SHORTS, in rope-making, the toppings and tail-

ings of hemp, which are dressed for bolt-ropes and whale-lines.

SHORTS also imply the distinction between the long hemp used in making staple-ropes, and inferior hemp.

SHOT, (*boulet, et en général toutes sortes de charges pour les canons*, Fr.) a name given to all sorts of balls used for artillery and fire-arms, from the pistol to the cannon: those for cannon and caronades being of iron, and those for small-arms of lead.

Cannon shot is distinguished by the nature of the ordnance for which it is intended; as, 42, 32, 24, 18, 12, 9-pounders, &c. and those for small-arms by the names of the pieces; as musket, carbine, pistol, &c.

Shot that is globular is frequently called BALL, which article see.

The shot now used in the royal navy is principally confined to three sorts, namely, round, grape, and case or canister.

Round-SHOT, (*boulet rond*, Fr.) is the most simple, and composed of a ball or globe of cast-iron, whose weight is in proportion to the size of the cannon, or to the diameter of its bore.

Grape-SHOT, (*charge à la suédoise, ou charge en grappe*, Fr.) is a combination of balls, fig. 6. plate V. put into a canvas bag, and corded strongly together, so as to form a sort of cylinder, whose diameter is equal to that of the ball which is adapted to the cannon.

Case or Canister-SHOT, (*charge à mitraille*, Fr.) fig. 7, is formed by putting a quantity of small shot into a case or canister.

The tin case is cylindrical, in diameter a little less than the calibre of the gun or howitzer. It is filled with lead balls, so as to make up the weight of the shot. These balls are seldom less than $1\frac{1}{4}$ oz. in weight. But little effect is to be expected from firing case-shot beyond 300 yards, from the very great divergency of the balls.

The proportions of shot for the royal navy are,

Round for Ships	} Lower-Deck . . .	{ 60 round each gun for Chan. Serv.	{ 80 do. for Foreign do.
	Quartern-Deck, .	100 do. for Foreign do.	
Ditto for Sloops	60 do. for Chan. do.	80 do. for Foreign do.

Grape and case-shot are supplied each in the proportion of from 5 to 12 rounds for every gun, as the nature of the service may require.

There are other sorts of shot formerly used, such as the chain, cross-bar, langrel, &c. but these are now nearly discontinued in the British navy.

Chain-SHOT, (*boulets enchaînés*, Fr.) fig. 8, consists of two balls linked together, being principally designed to destroy the masts and rigging, which they are better fitted to perform than the single bullets.

Double-headed or Bar-SHOT, (*boulet ramé, ou boulet à deux têtes*, Fr.) fig. 9, is a ball cut into two equal parts, and joined together by a bar of iron. In the French service the middle is sometimes filled with a composition, and the whole covered with linen dipped in brimstone; the cannon in firing also inflames the combustibles or composition of this ball, which sets fire to the sails of the

sails are extended by stays, lateen, or lug-sail yards; or by booms and gaffs; the usual situation of which is nearly in a plane with the keel.

SQUARE-Root, a number considered as the root of a second power or square number: or a number which multiplied by itself, produces the given number; as, the square root of 25 is 5, and that of 9 is 3.

SQUARE-Sail, (*voile de fortune, ou de tréou, dans une goëlette ou autre bâtiment latin, Fr.*) is any sail extended to a yard, which hangs parallel to the horizon, as distinguished from the other sails which are extended obliquely.

SQUARE-Sail, (*voile quarrée, Fr.*) is also the name of a sloop's or cutter's sail which hauls out to the lower yard called the square-sail-yard. This sail is only used in fair winds, or to scud in a tempest. In the former case, it is furnished with a large additional part called the bonnet, which is then attached to its bottom, and removed when it is necessary to scud.

SQUARE-Sail-Boom (*vergue de tréou, ou vergue de fortune, Fr.*) a boom lashed across the deck of a vessel with one mast, and used to spread the foot of the square-sail.

SQUARE-Sterned, (*vaisseau à poupe quarrée, comme celle des vaisseaux de guerre, Fr.*) implies a stern like a British-built ship of war, in opposition to the Dutch and other northern nations, who build their vessels with round sterns.

SQUARE-Tuck. See the article TUCK.

SQUARING, in mast-making, the act of making one or more sides from the plumb sides, which may be performed by a plumb or square, the tongue of which is a perpendicular to its stock or base.

STABBER, in sail-making, an instrument, similar to a pricker, only it is triangular instead of square.

STABILITY OF BODIES, (*stabilitas Lat.*) is their firmness and strength to resist any substance that may come in contact with them.

The stability or firmness of bodies, in contradistinction to fluidity, consists in this, that the particles which compose them do so rest, or are entangled, that there is among them a mutual cohesion.

For a series of experiments lately made by Colonel M. Beaufoy, of Hackney Wick, for the purpose of ascertaining the stability of bodies floating on the surface of the water; and Captain Burney's experiments on bodies floating in a stream, see the article **FLOATING BODIES**. Also the article **RESISTANCE OF FLUIDS**.

STAFF, BACK, CROSS, FORE. See these articles.

STAFF, (*bâton, Fr.*) a light pole erected in different parts of a ship, whereon to hoist and display the colours.

Ensign-STAFF, (*bâton de pavillon, Fr.*) a staff reared immediately over the stern of a ship to display the ensign. See the article **ENSIGN**.

Flag-STAFF, (*bâton d'enseigne, ou de commandement, Fr.*) is that erected at each of the mast-heads, or formed by their upper ends to support the flag or pendant of the respective squadron or division to which the ship belongs.

Jack-STAFF, (*bâton de pavillon de beaupré, Fr.*) is that fixed at the end of the bowsprit, to extend the jack. See the article **JACK**.

STAFF for the Nipper, in rope-making, is a piece

of oak timber, seven feet long, and four inches square; one end is fixed in an iron strap on the upper plate of the nipper; and on the other end a weight is suspended sufficient to press the tar out of the yarn.

STAFFS, in mast-making, are short pieces by which the sets are made; also long narrow pieces, with divisions of ten or twenty feet marked thereon, and again divided into halves: they are used to set off long lengths.

STAFFS for Tops, in rope-making, are round, from six to eight feet long, and from two and an half to five inches diameter, which go through a hole in the top, or are confined under it by a bolt and nail; they run on a truck-wheel at the lower-end, as the rope closes.

STAGE, (*échaffaud, Fr.*) a machine composed of plank, let over the sides of a ship, by ropes, whereon the people may stand when repairing, calking, or paying the sides, wales, &c.

A Floating STAGE, (*ras de carène, Fr.*) is one which needs not the support of ropes, being sufficiently large and firm to bear upon the water.

STAKE-HEADS, in rope-making, are about four feet long, and four by three inches square, with four wooden pins to keep the strand asunder, for lines they are about two feet long, and three by two inches square, and have six pins.

STAKE-POSTS, in rope-making are pieces of oak, about four feet high, and twelve inches diameter, with a mortise hole in each for the stake heads to go in and out, to keep the rope from the ground, they are placed about ten yards distant from each other along the whole length of the walk.

STANCHION, (*épontille, Fr.*) a sort of small pillar of wood or iron used for various purposes in a ship: as to support the deck, the quarter-rails, the nettings, the awnings, &c.

STANCHIONS, (*épontilles fixes, Fr.*) a name also given to the upright pieces of timber in a bulk-head, breast-work, &c. of a ship.

STANCHIONS, that ship and unship, (*épontilles volantes, Fr.*) are made of iron, and placed on the bow, quarter, and waist for stowing the hammocks on; those on the latter being much larger than the others.

STANCHIONS of the Awning, (*montans de tente, Fr.*) are pieces of fir timber placed perpendicular on the upper decks of ships in ordinary, for the purpose of supporting the awning.

STANCHIONS of the Nettings, (*chandeliers, &c. Fr.*) are either slender bars of iron, whose lower ends are fixed in iron sockets at proper distances; or square wooden pillars let into the upper part of the ship's sides. See the article **QUARTER-NETTING**.

To **STAND**, (*faire route vers un objet, en parlant d'un bâtiment à la voile, Fr.*) when expressed of a ship, implies the movement by which she advances towards a certain object, or departs from it; as, "the enemy stands in-shore," "the English fleet is standing off." "At day-break we discovered three sail standing to the northward, &c."

To **STAND by a Rope**, &c. (*veiller à une manœuvre, &c. Fr.*) is to attend to it; as, "Stand by the top-sail-halyards!"

To **STAND On**, (*continuer sa route, Fr.*) is to continue the course on which a ship sails.

ANNEX 11
TO EXHIBIT D
(Delgado Declaration)

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

Delgado Annex 11

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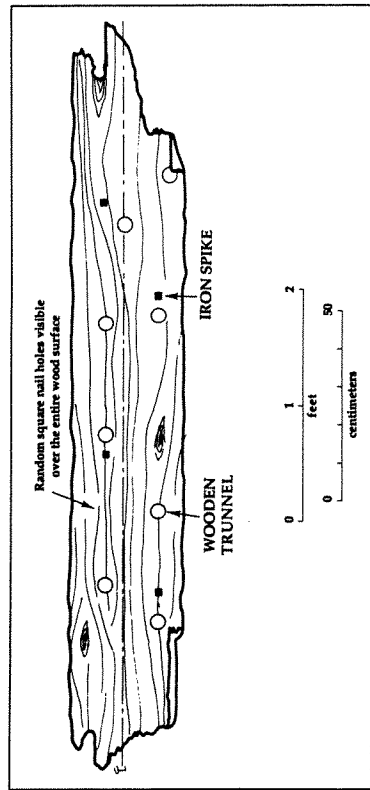


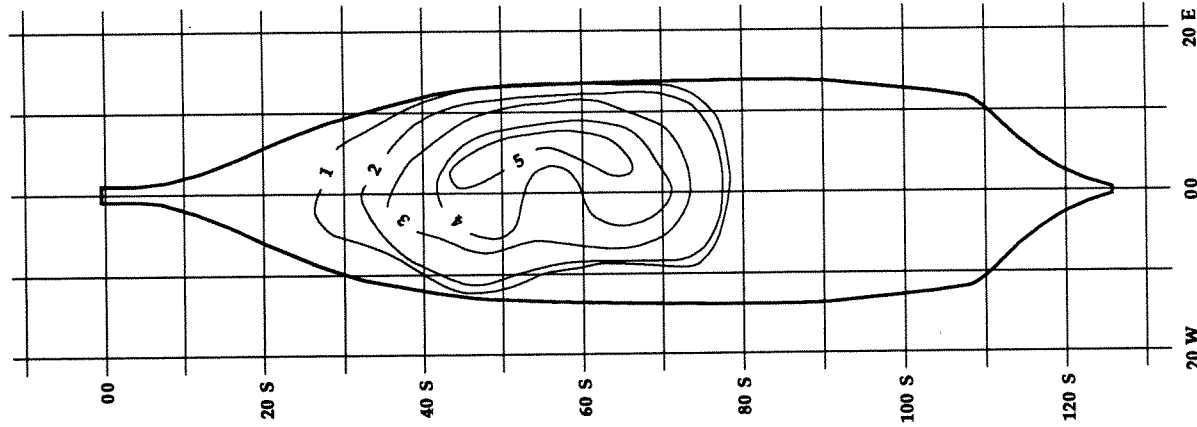
FIGURE 25. A piece of the white oak hull planking.

to the outside of the hull near the vessel's stern. Sheathing of this sort was often used to reduce teredo worm damage to the hull planking itself. Commonly a mixture of tar, often with other compounds such as animal hair, was spread on the hull and then covered with the wooden sheathing. Originally, all of the lower part of the *Nuevo Constante's* hull probably was similarly sheathed, although sheathing was found still attached at only a few places. A sample of the sheathing has been identified as a species of spruce (*Picea* sp.), probably derived from the Baltic region of northern Europe or Britain's American colonies, both important sources of timber for British ships in the mid-eighteenth century.¹⁶

BALLAST

Ballast stones covered much of the wreck and, according to the finders, at the time of discovery in some places were up to five feet thick. Interviews with the salvagers enabled us to make a map of the approximate distribution of ballast on the wreck when first found. Although the accuracy of this map is open to question, the general configuration of the ballast is presumed to be reliable. As shown in figure 26, the forward third of the wreck was largely free of ballast

16. Marcus, *Heart of Oak*, 11-17.



CONTOUR INTERVALS
IN FEET

FIGURE 26. Contour map of the pile of ballast stones that covered the wreck at the time of discovery.

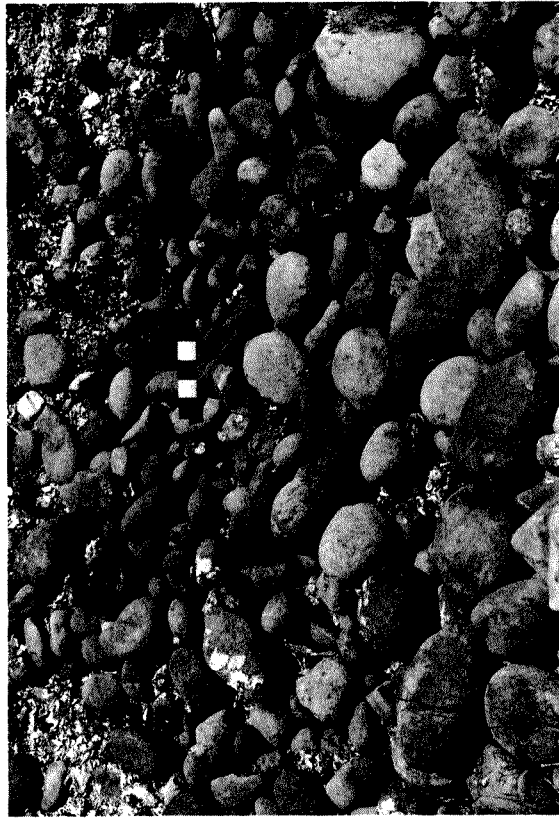


FIGURE 27. Some of the river cobble ballast from the wreck.

and the stones were concentrated in the center and also distributed toward the stern of the vessel.

The ballast consists of water-rounded cobbles, ranging from four to twenty-four inches in diameter. The majority are from eight to ten inches in diameter (fig. 27). An examination of several specimens of ballast indicated that most are serpentine and basalt. Serpentine is a common metamorphosed igneous rock, which, when freshly broken, exhibits a blackish-green color and contains small white veinlets of calcium carbonate. Most of the basalt stones are gray in color, are very dense, and contain very small vesicles or air bubbles. Others contain larger vesicles and can be classified as scoria or vesicular basalt. These latter stones are porous and relatively light and were probably least desirable as ballast. Some of the ballast rocks are quartzite, although these are in the minority.

All of the ballast stones are river cobbles of types common throughout the world. They are dense and heavy and relatively large, suggesting that they were deposited and subsequently collected near their source, probably a mountain range, but their specific origin is not known. This same type of river cobble ballast was found on the shipwrecks of the New Spain fleets that sank off the coast of Florida in 1715 and 1733 and was reported from other Spanish shipwrecks in the Caribbean region.¹⁷

Probably half of the ballast was brought up by the salvagers during their dredging. What remained on the hull was raised by hand during the excavations. No effort was made to quantify the ballast stone, but about nine cubic yards by volume were brought up during excavations. Only the ballast from on and immediately adjacent to the hull was removed. A considerable quantity is still scattered in the mud around the wreck.

SHIP'S HARDWARE

Excavation of the *Nuevo Constante* raised a tremendous quantity of material. In addition to the ballast stone, approximately 3,330 pounds (1,510 kilograms) of items were recovered during the excavations (This total does not include the weight of the artifacts raised by the salvagers, which was as much or more than was collected in the controlled excavations, nor does it include the two iron cannons raised at the end of the excavations.) Most of the items recovered consisted of relatively small (two to four inches in diameter) amorphous-shaped objects covered with layers of calcium carbonate, iron corrosion sand, clay, and shell. These objects, or concretions or conglomerates as they are called, were weighed and identified to the extent possible from visual examination. Most were then broken open with a hammer and chisel to identify the contents. The vast majority contained no identifiable complete artifacts but consisted of shell, mud, bits of wood, and oxidized iron cemented together by the action of seawater.

17. Clausen, "A 1715 Spanish Treasure Ship"; Roger C. Smith and James S. Durbar, "An Underwater Archaeological Survey of Eight Spanish Merchant Naos of the 1733 New Spain Fleet," unpublished manuscript, Underwater Archaeological Research Section, Florida Division of Archives, History and Records Management, 1977.

the passengers (fig. 53a). Crewmen normally used wooden bowls or ate from a common bowl. Silver service, if used, was reserved for dignitaries and the highest-ranking officers. A faint touchmark within a subrectangular cartouche is stamped on the back of the pewter plate. The lettering in the touchmark is indecipherable except for what appears to be a portion of the word "LONDON." The word *London* was commonly used on British pewter to denote provenience of manufacture, but provincial British pewterers often illegally stamped "LONDON" on their wares, in part to increase salability.⁵⁴ Although the mark may not provide proof of London manufacture, it does indicate a British origin. This pewter plate possibly was part of the ship's wares when it was sold by its British owners in 1764.

Several small fragments of hand-painted blue and white Oriental porcelain were found. None of these were large enough to determine the precise shape or type of vessel they came from, but some appear to be from small bowls or cups. These conceivably could have been export items that had arrived in Mexico by way of the Manila galleon. The manifest of the *Nuevo Constance*, however, mentions no porcelain as part of the cargo, and its occurrence on the ship is attributed to its use as table service.

The stems of two broken wine glasses exhibit characteristics typical of stemmed wares of the second quarter of the eighteenth century. Each has a plain, drawn stem encompassing a single large tear (fig. 53b). The knob of a third wine glass has a simple air twist, a form first manufactured in about 1735 (fig. 53c).⁵⁵ Air-twisted stems are recorded as having been 25 percent more expensive than plain stems so this artifact was probably used by some of the more affluent of the *Nuevo Constance's* passengers or its officers.⁵⁶

Basal portions of two clear, blown soda glass tumblers were found. One tumbler has vertical flutes made in a pattern mold, a popular glassmaking technique during the first half of the eighteenth century in Europe. Hollow rod pontil scars are present on both tumbler bases.

54. Howard Herschel Cotterell, *Old Pewter, Its Makers and Marks in England, Scotland and Ireland: An Account of the Old Pewterer and His Craft* (Rutland, Vt., 1963), 50-53.

55. Margaret K. Brown, "Glass from Fort Michilimackinac: A Classification for Eighteenth Century Glass," *The Michigan Archaeologist*, XVII (1971), 120.

56. E. M. Elville, *English Tableglass* (London, 1951), 151.

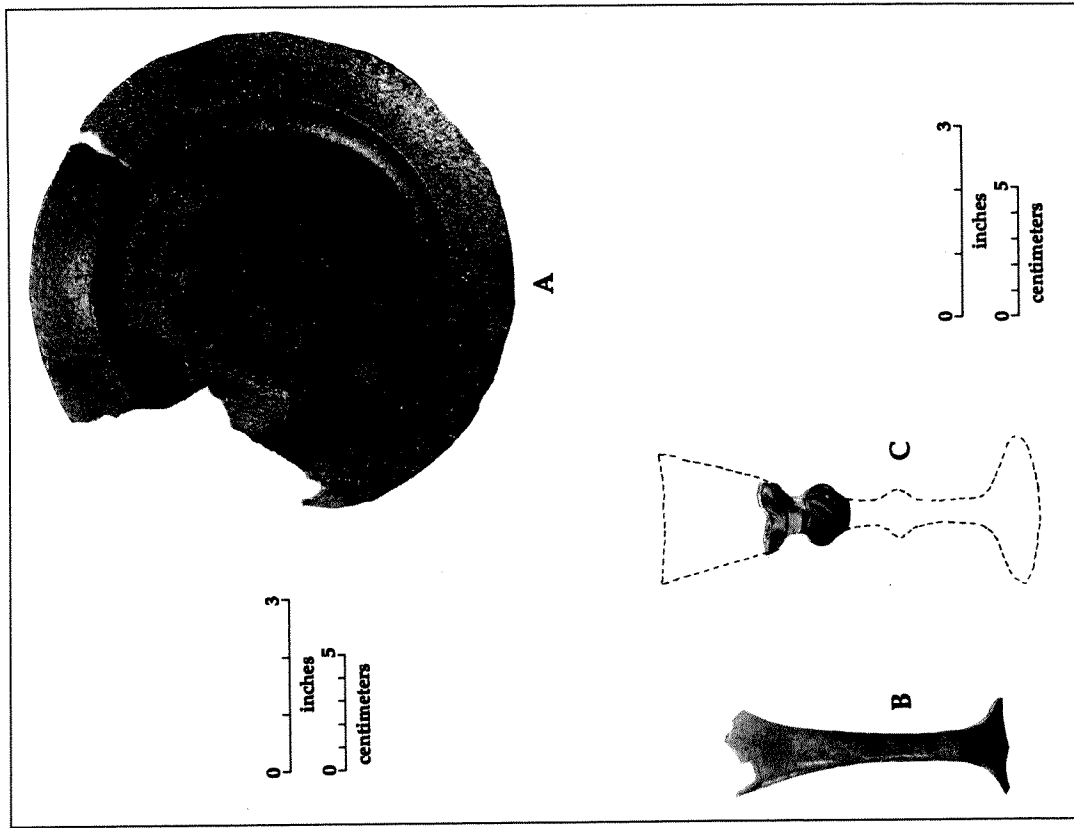


FIGURE 53. Tableware from *El Nuevo Constance*. A, pewter plate or trencher; B, drawn wine glass stem; C, knob from the stem of a wine glass with a spiral air twist. Courtesy State of Louisiana.

of the majolica found in archaeological contexts consists of *entrefino* grade wares. Pueblo Blue on White *entrefino* is commonly decorated with a wide variety of design motifs, including florals, dots, lobes, and lines. By at least 1730 animals and birds were frequently included as motifs in the center of vessels.⁶⁰ The central design element in the larger plate fragment shown in figure 54 may be a portion of an animal.

Why such a small amount of majolica was found on the *Nuevo Constante* is not known. Possibly, because it was used mainly as tableware, there was an opportunity to save or salvage most of what was on board. Originally, it was thought that majolica might have formed part of the ship's cargo. The *Nuevo Constante's* manifest notes that there were seven boxes of *losa de Guadalaajara* on board, of which only one was salvaged. *Losa* is a term used for any kind of tableware, although it often specifically refers to majolica. Majolica was reportedly manufactured in Guadalaajara, although little is known about the industry there.⁶¹ If the shipment of *losa* actually refers to majolica produced in Guadalaajara, none has been identified in the archaeological collection from the *Nuevo Constante*.

PERSONAL POSSESSIONS

Only a very few artifacts associated with dress or items of similarly personal nature were recovered, which indicates that the passengers and crew were able to remove most of their personal possessions after the vessel grounded. Among the items found are two pewter buckle frames, a single-toothed chape from a pewter buckle, a small brass buckle, a small brass hinge or clasp, half of a snap, a metal button, a leather shoe heel, some fabric, and part of a white clay pipestem.

Their sizes and designs indicate that two of the three pewter buckle frames are from shoes (fig. 55a, b). Both show evidence of having once had a central bar dividing the width of the buckle. Shoe buckles reached their peak in popularity in Europe and her colonies as ornaments of high fashion during the eighteenth century. By the

60. *Ibid.*, 78, 84.

61. Goggin, *Spanish Majolica*, 8.

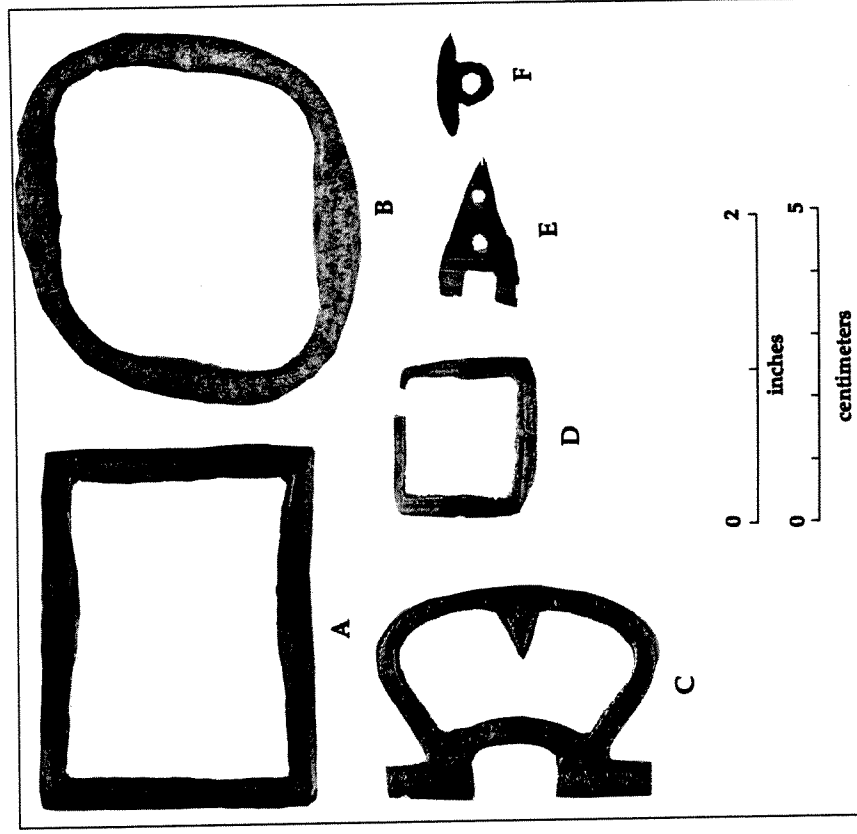


FIGURE 55. Personal possessions from *El Nuevo Constante*. A, B, C, pewter shoe buckle parts; D, brass hat or stock buckle; E, brass hinge or clasp; F, metal button.

Courtesy State of Louisiana.

early part of the nineteenth century, they had mostly given way to laces. The elaboration in design, the quality of workmanship, and the material of the shoe buckle bespoke the wealth of the wearer. The shoe buckles found on the *Nuevo Constante* were made of pewter and were simple in design and so may have belonged to one of the less wealthy passengers or lesser officers or crew members on the vessel.

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