

# SCIENTIFIC AMERICAN

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## THE U. S. BATTLE SHIP MAINE.

This vessel, now having her preliminary trials in Long Island Sound, is greatly more formidable for war purposes than the cruisers which have been heretofore added to our new navy, on account of her strong defensive armor and the heavy guns she will carry. She was designed by the Navy Department and built at the Brooklyn yard, under an act of Congress approved August 3, 1886. Her armor was made by the Bethlehem Steel Works, and the long time taken in the construction is partly attributed to delay in receiving the armor plates. The vessel was launched November 18, 1890, and illustrations of the event were then published in the SCIENTIFIC AMERICAN.

The Maine is built of steel throughout. Length over all, 324 feet 4½ inches; on load water line, 318 feet 3 inches; extreme beam, 57 feet; mean draught, 21 feet 6 inches; displacement, 6,682 tons. She has a protective belt of nickel-steel armor, 12 inches thick, for a distance of 180 feet of her length on each side, covering her machinery and vital parts. The bottom is double, with numerous watertight subdivisions, and she has a protective deck of steel, 2 inches thick amidships and 4 inches thick on the sloping parts. She is designed to have a speed of 17 knots, and her coal-carrying capacity is rated as sufficient for 7,000 knots steaming. The engines were built by Messrs. N. F. Palmer, Jr. & Co., New York City, and are of the vertical, inverted cylinder, triple-expansion type, the cylinders being 35½, 57, and 88 inches in diameter, and the stroke, common, 36 inches. There are two engines actuating twin three-bladed screws, of a diameter of 15 feet each. At 132

revolutions the engines are designed to give about 9,000 indicated horse power. There are eight steel boilers, 14 feet 8 inches by 10 feet, designed to work at a pressure of 135 pounds. The pumps are of the Blake type, and they will supply hydraulic power for a variety of uses.

The battery of the Maine is to consist of four 10 inch rifled guns mounted in two turrets, one forward on the starboard side and one aft on the port side. These guns will be protected by the 12 inch armor of the turrets and by 8 inch shields. They each throw a projectile weighing 500 pounds. An auxiliary battery consists of ten 6-inch rifles on the battery deck, protected by 2 inch shields, and there is a secondary battery including four 6-pounder, eight 3-pounder, and two 1-pounder rapid-firing guns, with four revolving cannon and four Gatling guns. There will also be seven torpedo tubes, with range round the entire horizon. She will have a crew of about 350 officers and men, and her cost is placed at \$2,500,000.

## A New Alloy.

This alloy has the appearance of silver, receives and retains a high polish, does not tarnish, can be rolled into sheets or drawn into wire, and is cheap to manufacture. It is composed of copper, nickel, spelter, antimony, tin, and lead, and is prepared as follows:

Mixture number one is first prepared by melting 78 pounds of copper and adding first 20 pounds of nickel and then 12 pounds of spelter, 1 pound of antimony, and 1 pound of tin. Sixty-four pounds of this mixture is then melted and 32 pounds of spelter, 2 pounds of

tin, and 8 pounds of lead are added, thus forming the improved alloy.

## Antiquity of the Human Race.

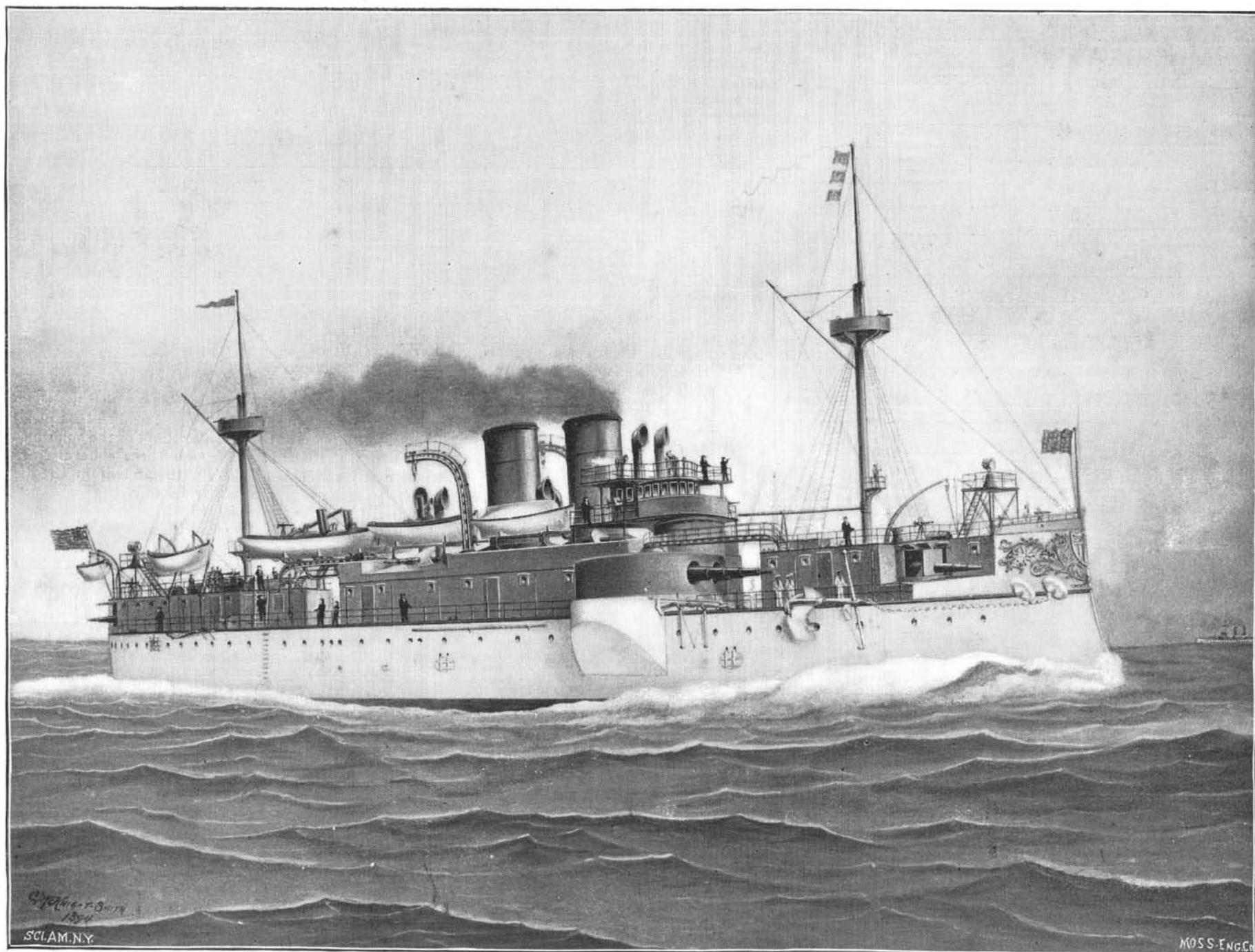
The Department of State, Washington, has received a dispatch from Minister Terrell, at Constantinople, announcing the results of American explorations now being conducted at the ruins of Niffer, near ancient Babylon. The expenses of the work are defrayed by an association of Philadelphia gentlemen formed under the name of the "Babylonian Exploration Fund."

The work began in 1886, and, except at occasional intervals, has been actively conducted. Dr. Peters and Prof. Heilprich, of the University of Pennsylvania, began the work, and it is still continued by Dr. Peters. From 150 to 250 Arabs have been constantly employed.

In the number of tablets, bricks, inscribed vases, and in the value of cuneiform texts found, this American enterprise rivals, if it does not excel, in the opinion of the minister, the explorations of Layard at Nineveh and Rassam's excavations at Abu-Hatba.

Prof. Heilprich remains at the museum in Constantinople, at the request of the Turkish government, translating inscriptions and arranging tablets, bowls, and vases used from 1,000 to 4,000 years before Christ.

Many tons of tablets, etc., have already been procured, and the enterprise has revealed an antiquity for the human race nearly ten centuries older than had before been acknowledged by Biblical students. The report of the minister is very long and full of details of interest to archæologists.



THE UNITED STATES BATTLE SHIP MAINE.