

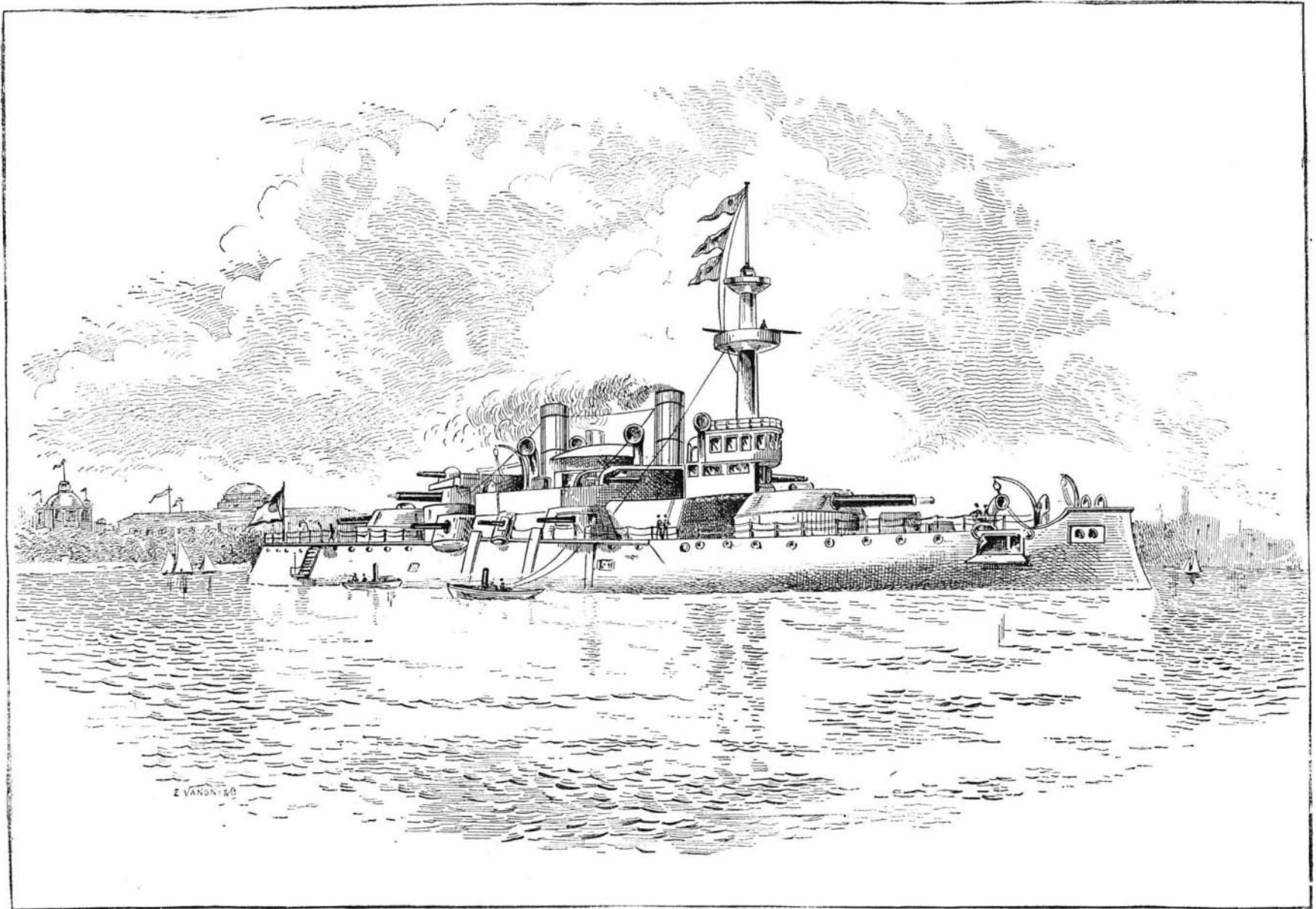
slightly bitter. The Galapagos tortoise appears to be quite deaf, and gives but few audible indications of life. These are limited to the deep hiss it emits when disturbed, as it withdraws its head within its hard integument, and the roar given by the male in the breeding season. The female deposits its eggs in the sand and covers them up, but in rocky places drops them "indiscriminately in any hole." The eggs are white and spherical and are found 7 inches in circumference.

The young become the prey of the flesh-eating buzzards, while those who escape and reach maturity die from accidents, as a natural death from disease or age seems almost unknown. They can be handled with impunity, but from their enormous size they frequently require the united efforts of five or seven men to lift them. They feed upon cactus or the leaves of various trees. They appear to be aboriginal inhabitants of these islands, and, therefore, have an almost exciting interest to naturalists; but they are also representatives of a wider distribution, for allied forms and even fossil remains of congeneric species are found in Mauritius and its neighboring islands. They may be remnants of a tribe which over a broad Pacific continent has had an extreme easterly and westerly dis-

ly to have expert janitors and showmen for the valuable public property. It is expected, however, to give certain drills—especially boat, torpedo, and gun drills—as in a vessel of war.

The structure will, therefore, serve the double purpose of housing the naval exhibit and illustrating the manner in which the men of the United States navy live. The dimensions of the structure will be those of the actual battleship, to wit: Length, 348 feet, and width amidships, 69 feet 3 inches. From the water line to the top of the main deck, 12 feet, on top and in the central position of which is a superstructure 8 feet high, with a hammock berthing resting on the same, 7 feet high, and above these will be the bridge, chart house, and the boats. At the forward end of the superstructure there will be a cone-shaped tower, called the military mast, near the top of which will be placed two circular tops as receptacles for sharpshooters, and rapid-firing guns will be mounted in each of these tops. The height from the water line to the summit of this military mast will be 76 feet, and above it will be placed a flag staff for signaling; the staff will be 24 feet long. The battery, mounted, will be four 13 inch breech-loading rifle guns, eight 8

coated with cement. The ends are to be shaped with iron plates. On the inside of the walls, and over the concrete on the berth deck, there will be a coating of cement, thus making the structure fireproof and free from moisture. Along the top and bottom, and taking the shape of the superstructure, are heavy angle irons, to which vertical T-irons are fastened, spaced about 4 feet apart, and braced diagonally. The walls, outside and inside, are to have a thick coat of cement on metal lathing, well secured to the vertical framing. The main and superstructure decks will have a rise of 6 inches in 69 feet. The deck plank will be yellow pine 6 inches wide and 2 inches thick, the seams of which will be caulked. The main deck beams will be steel, T-bulb pattern, 7 feet by 5 feet, and 26 pounds per foot, the ends turned down and fastened to bearing plates on brick piers in the sides of the hull. The superstructure deck beams will be steel, T-bulb, 7 pounds by 5 pounds and 10 pounds per foot, the ends fastened to the top angles at the sides of the superstructure. Iron tube pillars are to be used further to support the beams. Gutters of galvanized iron are carried around the waterways, rolling over and forming a bead finished on the outside, from which numerous conductors carry the water



MODEL BATTLESHIP, WORLD'S COLUMBIAN EXPOSITION, CHICAGO, 1893.

persion, and now separated from their western allies have, in conjunction with these latter, undergone varietal changes which have become inherited, and established separate generic groups. L. P. G.

MODEL BATTLESHIP AT THE WORLD'S COLUMBIAN EXPOSITION.

A model man-of-war is to be exhibited by the United States government. This, to all appearance, will be a faithful full-sized model of one of the new coast line battleships designed by the Bureau of Construction and Repair of the Navy Department, and now being built at a cost of about \$3,000,000 each, by Cramp & Son, Philadelphia, and the Union Ironworks, San Francisco. This imitation battleship of 1893 will be erected on piling on the lake front in the northeast corner of Jackson Park, at the pier which forms the prolongation of Fifty-ninth Street. It will thus be surrounded by water, and will have the appearance of being moored to a wharf. The structure is to have all the fittings that belong to the actual ship, such as guns, turrets, torpedo tubes, torpedo nets and booms with boats, anchors, chain cables, davits, awnings, deck fittings, etc., together with all the appliances for working the same. Officers, seamen, mechanics, and marines will be detailed by the Navy Department during the Exposition, and the discipline and mode of life on board naval vessels will be completely shown. The detail of men will not, however, be so great as the complement of the actual ship, the object being main-

inch breech-loading rifle guns, four 6 inch breech-loading rifle guns, twenty 6-pounder rapid-firing guns, six 1-pounder rapid-firing guns, two Gatling guns, and six torpedo tubes or torpedo guns.

The 13 inch guns are to be placed at each end of the superstructure, six feet above the main deck, mounted in pairs within a circular turret that revolves within redoubts 36 feet 7 inches in diameter; the redoubts extend below through the main deck, and rest on the berth deck. The 8 inch guns rest upon the superstructure deck, and are also mounted in pairs within turrets and redoubts, from which large circular ammunition tubes pass down to the berth deck. The 6 inch guns are on the main deck, within the superstructure, and have ports cut through the sides of the same, with automatic shutters. The 6-pounders are placed along the sides, on top of the bridge and hammock berthings. The 1-pounders are on the forward and after ends of the berth deck, and in the "lower top" of the military mast. The Gatling guns are in the "upper top" of the mast, and the torpedo tubes are on the berth deck—two on each side amidships and one at each end of the vessel, with ports cut through the sides and ends for the torpedoes.

The structure will, as stated before, rest on piles as a foundation. The berth deck will be composed of thick plank laid upon the foundation, on top of which there is to be a substantial layer of brick concrete. The sides of the hull are to be of brick, stepped to give contour, over which there will be a filling of concrete, thickly

that may fall on the deck down the scuppers close to the water line. The turrets and redoubts for the 8 inch and 13 inch guns are to be made up of cement on metal lathing fastened to a wood framing, and are to have all the appliances for operating them. A 13 inch gun is 44 feet long, and weighs with its carriage 115½ tons. The transportation and placing of so much weight upon a structure such as is described being impracticable, the difficulty of showing what the real battleship carries has been overcome by building the gun of cement over a wooden tube, to be rifled, and fitted with a breech plug complete, the finish of the cement being such as to give it the appearance of an actual gun.

The military mast and conning tower are to be framed with gas tubing, to which will be secured a metal lathing, with a coat of cement on the outside. The tops of the military masts are to be made of iron, securely fastened to the framing of the mast. The exterior of the entire structure will be tinted in accordance with the navy regulations, so as to give it the exact appearance of a vessel of war.

Beneath the berth deck, and directly below the turrets of the 13 inch guns, are to be the magazines, showing the stowage, lighting, and flooding, according to the navy regulations. The superstructure will show the cabins, state rooms, lavatories, mess rooms, galley and fittings, mess table for crew, lockers, berthings, etc., also the methods in which officers and enlisted men live, according to the rules of the navy.