

OUR MINIATURE NAVY.

BY WHITMAN OSGOOD AND GEORGE P. CONN.

THE Miniature Navy of the United States has been ordered to France. It will proceed direct from Washington to Paris in the year 1900. There is no occasion for alarm, however, as there is no likelihood of a conflict between the great power of the West and her friend of ancient days and Revolutionary times.

The wonderful little fleet of war-ships is to go to the Paris Exposition of 1900. They will prove one of the most attractive and interesting of the exhibits offered by the government of the United States.

There are twenty-three in all; but Admiral Hichborn, the "Father of the Miniature Navy" and also its commander, has determined to send only the "Olympia," the "New York," the "Oregon," the "Iowa," the "Massachusetts," the "Columbia," the "Texas," the "Boston," the "Baltimore," the "Miantonomoh," and the ill-fated "Maine."

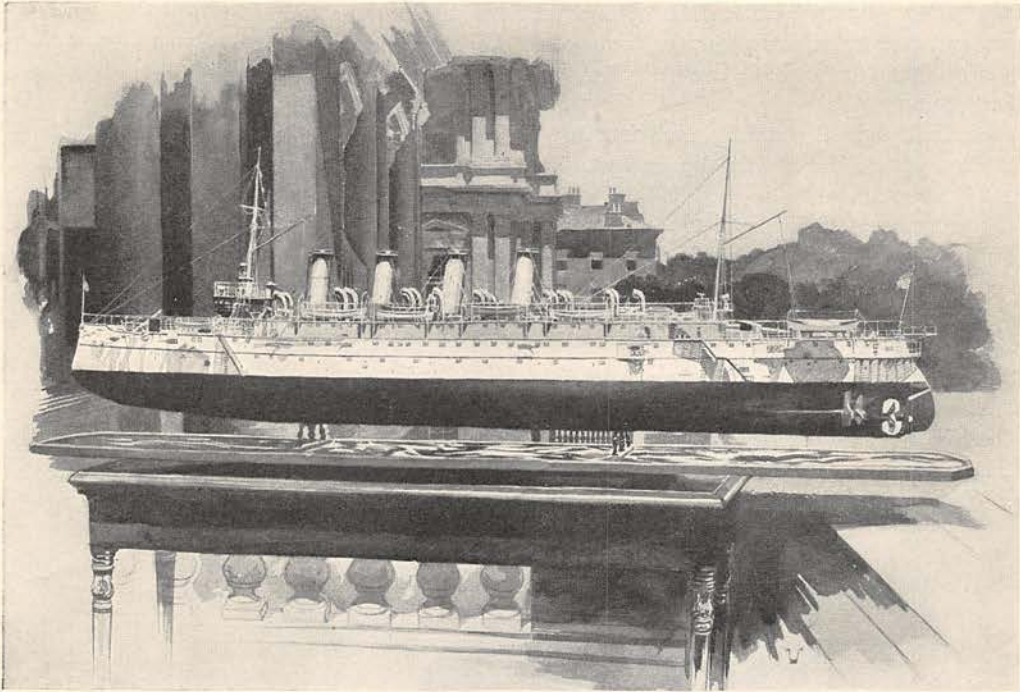
A pity it is that the war-worn "fighting-machines" of which these Lilliputians are models cannot be sent, with their illustrious commanders, Dewey, Sampson, Schley, Sigsbee, Evans, Philip, and other sailors of undying renown. However, the sight of these grim toys, and the realization that they are exact duplicates in minute form of war-ships of our navy, will excite the admiration and respect, surely, of any who believe that bison yet roam the streets of Buffalo, and that Boston is only a few hours' ride from California.

Never in United States naval history have there been assembled real war-vessels having an equal tonnage or one tenth of the gun-power represented by these unique models. They are the finest specimens to be made by modern ship-builders' science; and the ones named are, as a matter of course, the cream of the Miniature Navy, just as their originals are the foremost of America's fighters. Each is built to a scale of a quarter of an inch for every foot of

the real vessel. This exact relation is kept throughout all of the models, even to the rigging and loose lines. Their origin and history are most interesting, and admirably prove the genius and persistence of Admiral Hichborn, to whose sterling qualities and patriotic devotion they owe their existence. He is officially called the Chief of the Bureau of Construction and Repair, and he has obligingly furnished the facts upon which this article is based. He was born in Massachusetts, in 1839, and in his veins lingers the blood of Paul Revere, from whom he is descended. At twenty-one he entered the navy, and was sent to the Mare Island Navy-Yard, in California. During all the long years since he has been actively engaged in the building of naval vessels.

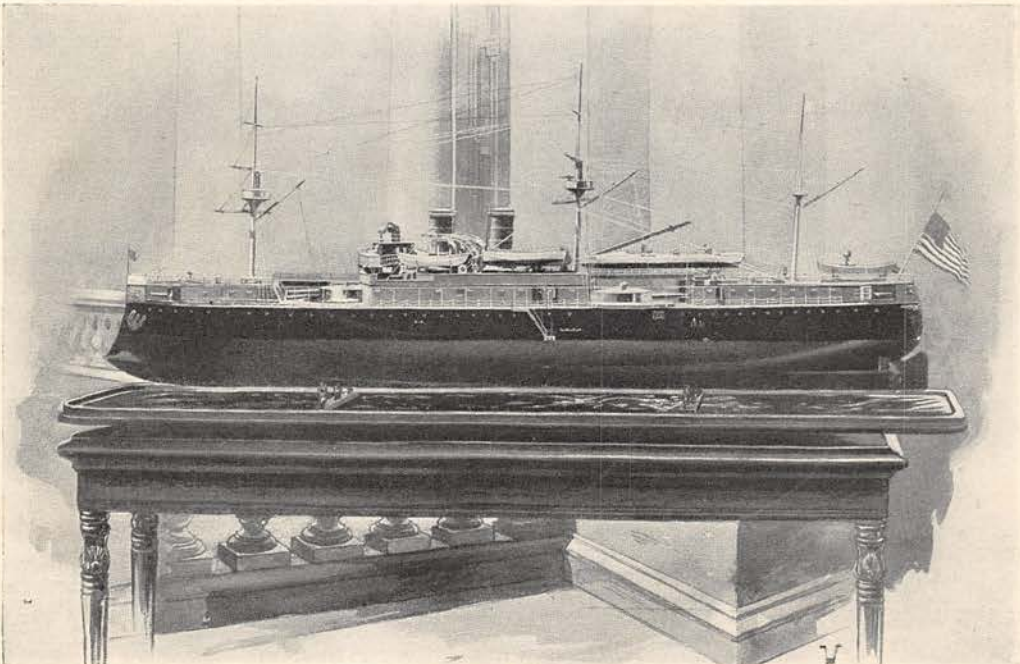
In 1885 he was sent abroad to make a study of European dockyards, and it was on that trip that he was impressed with the idea that much could be learned from models of war-ships showing in small detail all the features of the originals. Several of the European powers were about that time entering upon the same kind of work, but Admiral Hichborn returned to his native land with the profound conviction that America could excel all her rivals. With great difficulty he induced Secretary Whitney to permit him to undertake it. The model of the "Charleston" was built first, and its flimsy structure is in marked and unfavorable contrast with the shipshape and stanch craft that now are turned out from the model-shop to swell the ranks of the "Junior Navy."

Admiral Hichborn delightedly chuckles as he tells of the influence that was brought to bear on Congress to prevent "this useless waste of money" when he first made effort to obtain the necessary authority and money. There was too, at that time, an entire absence of either material or labor capable of fashioning



THE "COLUMBIA."

the marvelous little sea toys. He relates an incident showing, also, the reluctance of workmen to undertake what was then considered frivolous labor. One of the navy's metal-workers, who had been operating a large lathe, was, after all his objections had been



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swept aside, provided with a set of jewelers' tools and put to making certain parts of a model. One morning he rushed into the office, crying:

"Mr. Hichborn, I want my discharge!"

"Why, what's the trouble, Marcery?" asked Mr. Hichborn.

The man excitedly replied:

"I've been working here for a week, and this morning some one opened the window, and my whole week's work *has been blown away*, and I can't find it."

He was induced to go back to his bench, and soon became one of the most expert model-makers in the government's employ.

The building of the Junior Navy is done at the Washington Navy-Yard, the greater part

he employs the only men in this country who have the necessary training and experience for producing these wonderful little masterpieces of minute work.

The cost of each one of the miniature fighters runs from one thousand to five thousand dollars, and the process of construction is most interesting. The order for the model is accompanied by the drawings of the big vessel, which are redrawn to the required small scale. Edward Marcery, who is in charge of the woodwork, then cuts on half-inch plank, with a circular saw, the rough outlines of the vessel at its various elevations. These "lifts" are placed in a hydraulic press and glued together. Next the wood is gradually cut away until the pencil outline, which is drawn on the top of each

plank, is visible. The block is shaped and measured with the greatest care, until the perfect hull lines stand forth. The hull is then hollowed out to reduce the weight of the finished vessel. While this woodwork is progressing, Joseph Evans has had a force of from six to eight metalworkers deftly molding and making chains, anchors, masts, propellers, and, in fact, the entire upper works of the little ship.

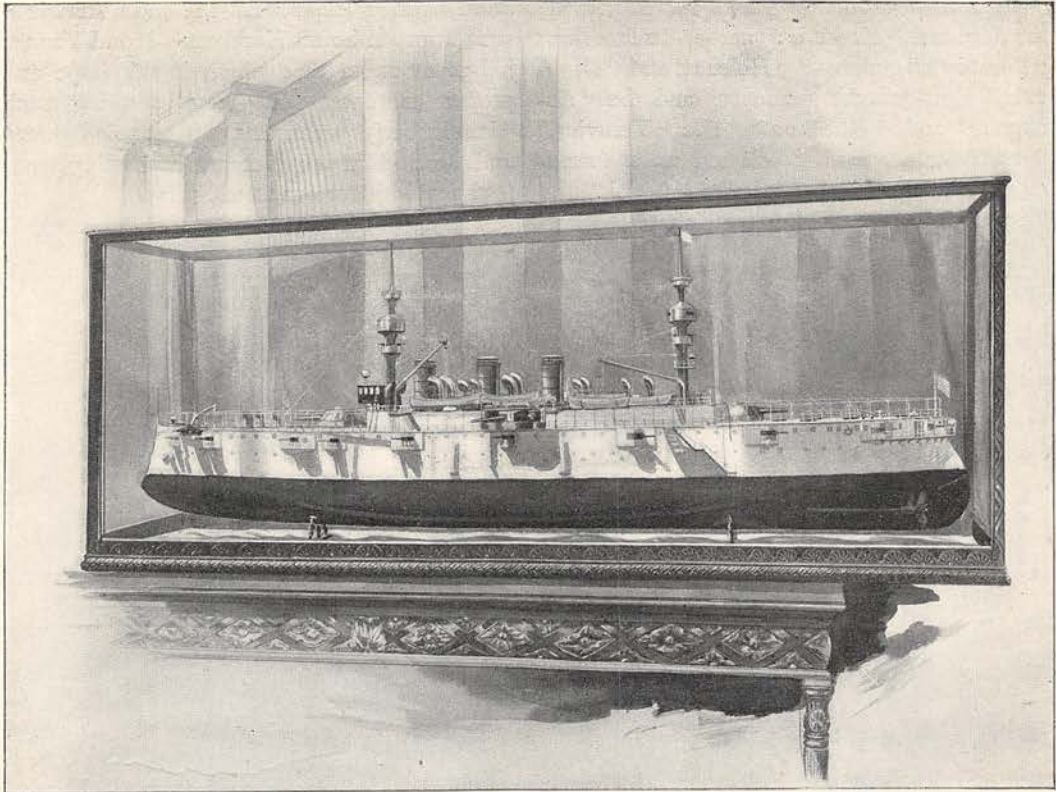
One can imagine with small effort how the sight of such perfect little articles appeals to children. A great deal of the work is so small and delicate that fine jewelers' tools



THE "ILLINOIS" IN THE HANDS OF HER BUILDER.

of the great ship-house, where in years gone by the formidable monitors were put together, being given over to this work. Fifteen men are constantly employed, as every piece entering into a model has to be worked up from the raw material. The admiral proudly asserts that

have to be used in handling the parts. The putting together is done by the painter, John Windsor, as the admiral has found no one else who can do this so satisfactorily. Charles Chamberlin builds the glass cases that are necessary to protect the completed models, and



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has complete charge of the handling and mounting of the perfected models.

The model of the "Illinois," recently overhauled at the Washington yard, represents the most modern type of battle-ship, and weighs just thirty-nine pounds. Her length is more than $7\frac{1}{2}$ feet, her breadth $1\frac{1}{2}$ feet; she just floats in $\frac{1}{2}$ foot of water, displaces a little over $\frac{1}{10}$ of a ton, and her gross tonnage is $\frac{79}{100}$ tons, $\frac{46}{100}$ being the net tonnage.

On her decks, in her top, piercing her turrets, or poking their noses through the thimble-like port-holes, are the cute little guns, that show so simply but eloquently the caliber of the weapons in front of "the men behind the guns." There is represented the "main battery," consisting of 4 thirteen-inch breech-loading rifles and 14 six-inch rapid-fire guns. The "secondary battery" consists of 16 six-pounder rapid-fire guns, 6 one-pounder rapid-fire guns, 4 Colt's rapid-fire guns, 2 three-inch rapid-fire field-guns, and 4 long "Whitehead" torpedoes. This

model has been used to illustrate the docking of a ship, and it was necessary to place 140 pounds of lead in her hold to sink her to the water-line.

It takes from four to six months to complete each small ship, and the cost of making the model is included in the estimates for making each class of real vessels. The appropriation bill always provides for "the construction of the ship, with necessary models, drawings, etc."

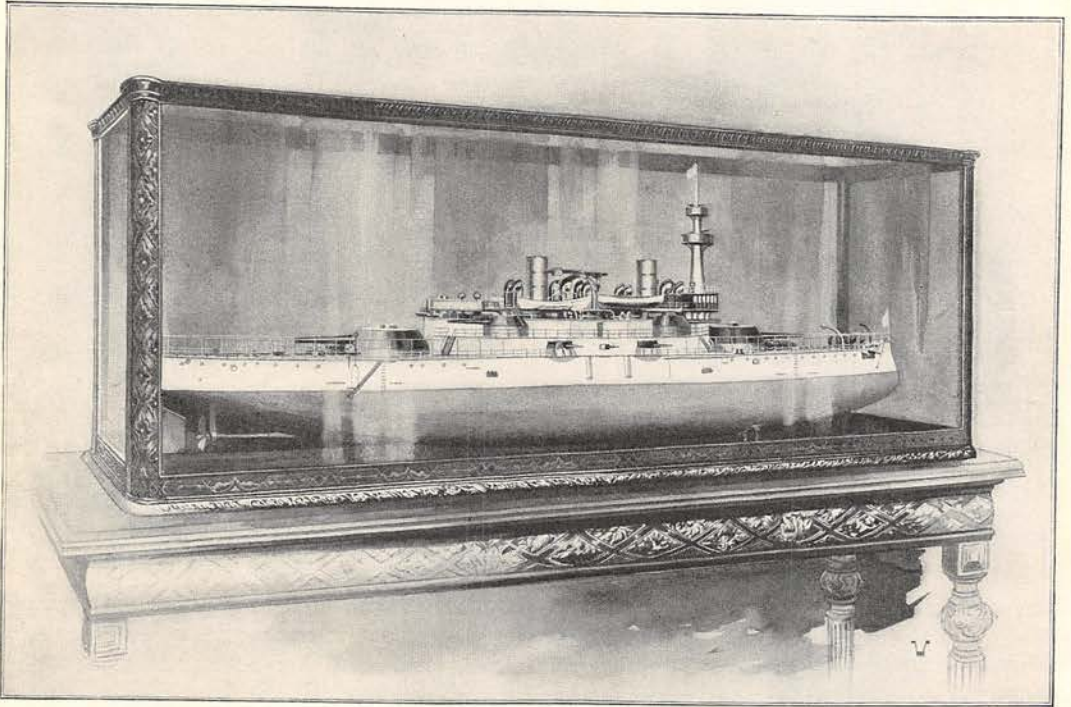
The models are of great value in the practical work of the Bureau of Construction and Repair, as looking at one of them will often save a long and expensive journey to some distant yard, which would be necessary to see the vessel itself.

The fleet at present consists of the first-rate battle-ships Iowa and Massachusetts (of which the Oregon and "Indiana" are duplicates) and Illinois, the Maine and Texas, and the Columbia, a protected cruiser; the second-rate vessels Baltimore, "Newark," Charleston and

"Atlanta," "Monterey" and Miantonomoh; the third-rate, "Katahdin," harbor-defense ram; "Yorktown," gunboat; "Helena" and "Nashville," light-draught gunboats; and the "Annapolis" and "Wheeling." The "Vesuvius," dynamite-gun vessel, is classed as a fourth-rater, as also are the gunboats "Petrel" and "Bancroft." The old steam-frigate "Kear-

same fighting class with the little American squadron. Admiral Hichborn's sound Yankee judgment as to that which is shipshape and proper prevented him from allowing such "landlubberly" treatment of his mimic fighters, and he finds much pleasure in making comparisons with foreign fleets.

The recent Navy Personnel Bill conferred



THE "OREGON."

sarge" completes the Junior Fleet, to which has been recently added the Olympia. The new "Kentucky" is now under construction at the yard. The "Brooklyn's" keel will next be laid down.

Aside from our own Miniature Navy, probably the best is that belonging to France; but as the vessels of the latter have gold-plated anchors and chains, they are very evidently not in the

upon the Chief of the Bureau of Construction and Repair the title of Admiral, and Admiral Hichborn is placed on an equal footing with the chief constructors of other nations. It is not to be wondered at that his heart is with his little boats, for they are ever under his command; while the monsters, like grown-up children, leave him, only to return when some adverse happening drives them home for repairs.