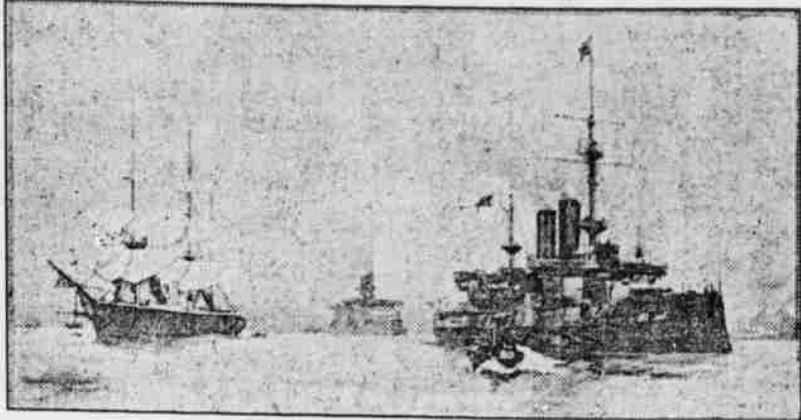


EVOLUTION OF THE IRONCLAD.



THE war between England and Russia in the early 50's was the beginning of the development of the ironclad—or, as we now call it, the armored—though not to either of the combatants in that passage at arms can the credit be given for the introduction of the first vessel to carry armor. Up to the bombardment of Sebastopol, writes John G. Davis, in Pennsylvania Grit, ships that were practically those of the previous two centuries were in use. Naval development was practically unknown, and it was not until the shell was invented that the necessity of a change was made manifest. The English ships at Sebastopol were of the old two and three-decker broadside variety, the flagship of the squadron, the Royal Albert, being a vessel of 3,100 tons burden carrying 121 guns. In those days the ship with the largest number of guns was "the best fellow," practically regardless of any other consideration. A few of the Royal Albert's guns were shell guns, but nearly all of them were the long 32-pounders, exactly like those with which the Victor, the flagship of the famous Nelson, was armed seventy years earlier. In nearly three-quarters of a century, therefore, there had been little or no real progress in the matter of cannon. And beyond the introduction of steam as a motive power, there was very little development in the ships. As said before, they were the same old two and

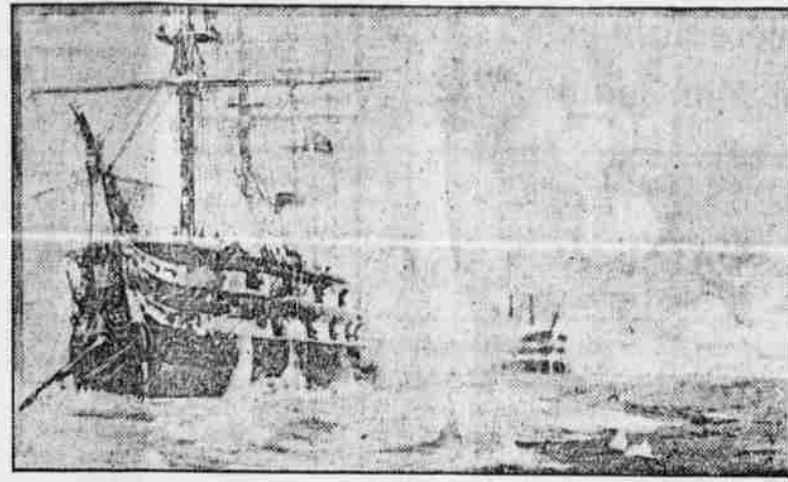
lead of the United States, and at once began the construction of several vessels of the same type. By 1859, when the first ironclad war vessel ever built was launched, the renovation of the navies of Europe was well under way, and the screw was in almost exclusive use.

To Admiral Dahlgren of the United States navy must be given the credit of making the shell what it is. He carried the application of this new missile to great perfection in the United States frigates of 1854. The Merrimack, one of these—the same Merrimack which finally was compelled to acknowledge the superiority of the armored Monitor—was taken to Europe in 1854, startling naval administrations with the enormous shell power of her battery. In the few years intervening between this time and the Civil War, navies were in a practically experimental stage. Some means, it was acknowledged, must be devised for protection against the new and terrible shells, which could tear a ship to pieces with ease, but what it was going to be was problematical. Armor had been suggested as early as 1812, when John Stevens of Hoboken, N. J., broached the idea. Nothing came of it, however, perhaps because the extreme necessity of it was not apparent, and it was not until 1843 that anything definite was accomplished. In that year the Secretary of War was authorized by Congress to enter into

struction of existing fleets was a necessity, and the French led the way. The Gloire was a wooden ship 250 feet in length, plated entirely with iron 4.5 inches in thickness to six feet below the water line. She had a ram bow and could steam about 13 knots. Trials alongside the fastest wooden ships of the French navy demonstrated the Gloire to be superior to them all in every way. The English then began to hurry work on ironclads, and in 1861 launched the Warrior. She was larger than the Gloire, but she was armored only for two-thirds of her length, bow and stern being unprotected. These vessels were of course of the broadside type, the turret coming only in our own Monitor, which revolutionized naval construction, or perhaps it would better be said, started it in the right direction.

On March 9, 1862, there was fought in Hampton Roads the first battle between armored ships, when the Monitor and the Merrimack engaged in their famous clash. It is not necessary to tell how the Merrimack, a 60-gun frigate under repair at the Norfolk dockyards, was set afire to prevent her falling into the hands of the Confederates when the place was evacuated; how

proving totally deficient in the very first test. The Ironsides did better. She was covered with 4½-inch solid plates backed with 21 inches of oak. During a period of six months she was struck 193 times and was never once forced to go to a port for repairs. The Monitor, built and designed by Captain Ericsson, was derisively called by the Confederates "a cheesebox on a raft." She had a very low freeboard, there being but about two feet of her sides out of water. Her deck and sides were plated, and her armament consisted of but two 150-pounder Dahlgrens. But she had one point of superiority to anything that had ever been placed upon the seas in the turret which protected her guns and which could be made to revolve, thus permitting the guns to be fired at whatever angle in which the ship itself might be. Nothing else showed above the deck but her funnel and armored pilot house. The manner in which she fought the Merrimack, compelling the latter to withdraw and eventually go out of service, created positive consternation on the other side of the water, and there was an immediate demand for the conversion of English vessels into turret ships. Work



OLD TYPE THREE-DECKER, HELPLESS UNDER FIRE.

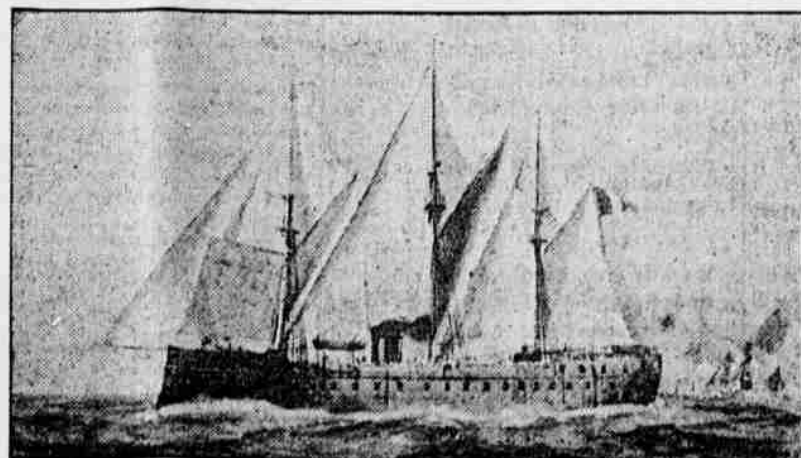
she but partly burned, and how she was repaired by the Confederates, who cut her down to the waterline and applied a sloping protection of railroad iron to her battery; how she destroyed some of the best ships in the Federal navy and became the terror of the Atlantic coast and the hope of the Confederates; nor how the Monitor finally

was at once begun, and the result is seen to-day in the great fighting ships possessed by all the navies of the world. Progress was exceedingly rapid, though our own part in advancing naval construction did not begin until a number of years after the close of the war. When at last we did enter upon a period of naval activity, there were few navies which were not superior to ours. We had not seen the need of an extended naval program, and, besides, we were too much engaged in reconstruction of the nation to be able to go to any great expense. So it was that all the nations of Europe took our ideas and developed them. It was in 1883 that we began modern construction, in building the cruisers Chicago, Boston and Atlanta and the dispatch boat Dolphin. In 1895 the United States took fifth rank among naval nations. We are now third (some claim we are stronger than France, which has held second place for a good many years) and England is first. England may always hold the lead, for the naval program of Great Britain is so extensive that to keep pace with it would be useless expense.

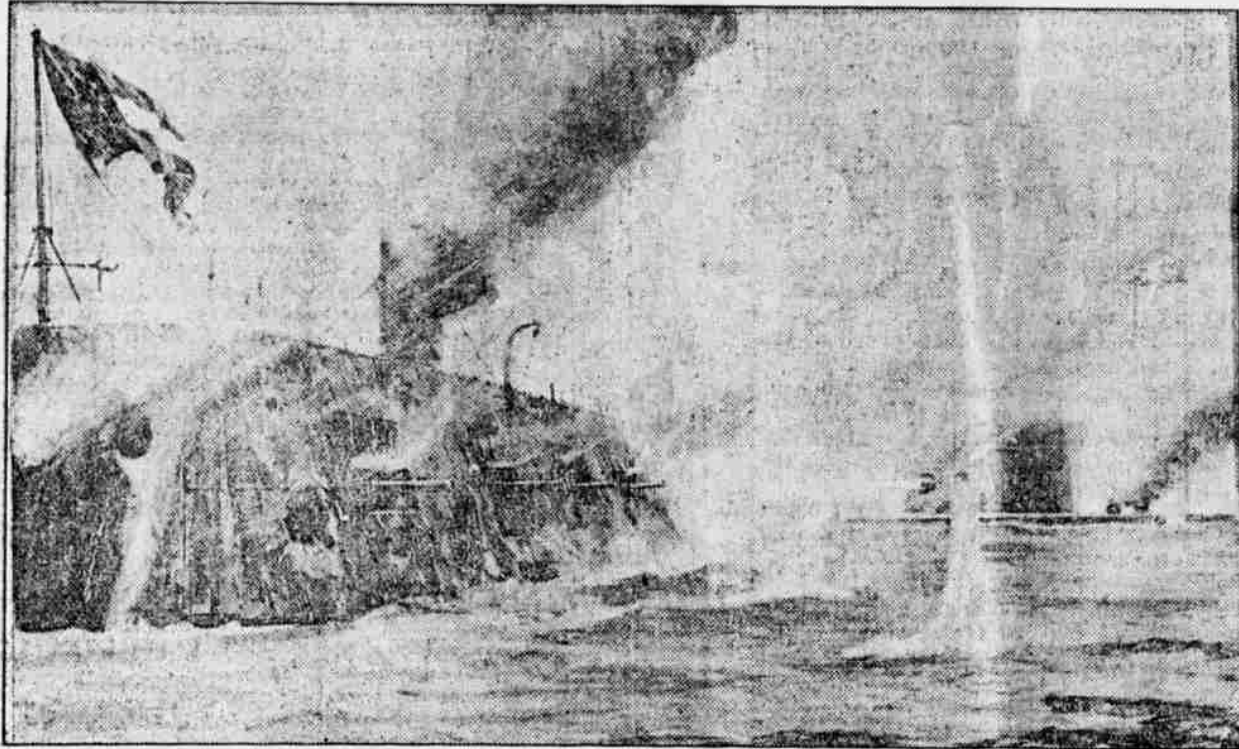
Late history of naval development is familiar to every person who reads. The Spanish-American war gave an impetus to naval construction which has resulted in the addition of a large number of the finest fighting machines in the world to our navy, including all the approved types of vessels from the monster battleship of the States group, like the Kentucky, the Indiana, the Iowa, the Oregon, the Alabama, the Maine and the Massachusetts; the cruisers with the New York, Brooklyn, and others; second class battleships and cruisers, gunboats, torpedo boats and destroyers; dispatch boats, fast converted cruisers and transports; colliers, repair ships and ammunition carriers, with all the new things which have been proved of value or which may be useful, including sub-marines. The iron plates of two or three inches thickness have long been displaced with hardened 17-inch steel armor, and marvelous turrets, holding wonderful guns have developed from the primitive "cheese box" from which Lieutenant Worden directed the fight of the Monitor against the Merrimack.

Not the Same Girl Now.

"She used to be such a sweet girl!" "Yes, but she fermented about five years ago."—Town Topics.



FIRST SEA-GOING IRONCLAD, THE GLOIRE.



MONITOR AND MERRIMACK—FIRST BATTLE BETWEEN IRONCLADS.

three deckers so familiar in the preceding century.

The Russians were the first to use shell in warfare, and it was immediately owing to the battle of Sinope, Nov. 30, 1853, in which a Turkish fleet was annihilated by a Russian fleet having shell guns that there came suddenly a demand for protection for ships. The change was radical, but it was necessary, the effectiveness of the shell against unarmored vessels having been demonstrated to the satisfaction and alarm of all governments. Nevertheless, to the United States, Great Britain and France the world owes most of the ideas of naval construction which have to-day apparently come near perfection. The United States began the change by applying the screw as a means of propulsion in place of the old side paddle wheel. The American ship Princeton, 1842-1843, was the first war vessel in the world to have the screw. Though our own naval authorities saw at once the superiority of this type over the old, Europeans took up the idea with the greatest reluctance, probably because of the then belief that nothing good could come out of the United States. Nevertheless, it became evident after a time that the improvement must be adopted if peace were to be kept, and in 1853 the French built the screw battleship Napoleon. The English had opportunity to see that this was the coming method of propulsion and as the French themselves were so pleased with the new ship that they immediately began the construction of others. Great Britain realized that a mistake had been made in not following the

contract with Robert L. Stevens, son of the man who originally proposed armor, for the construction of a "war steamer for harbor defense, shot and shell proof, to be built principally of iron." The length of this vessel was to have been 415 feet, and its protection was to have been a belt or armor of iron 6¾ inches in thickness. Work was not begun until 11 years after the contract was authorized, and when the ship was about half completed Congress refused further appropriations. Owing to this fact, the honor of placing the first armored war ship on the seas belongs to France, the French ironclad frigate Gloire taking the ways in 1859, though previously to this the French had placed in service several floating iron batteries which demonstrated their power in the battle of Kinburn, a Russian port on the Black Sea, in 1854. These batteries were peculiar things, about half ship and half fort. They had engines and they could steam four or five knots, but they were upon flat keels and therefore totally unseaworthy except in the smoothest of water. Nevertheless, they were exceedingly effective, and in his reports of the first battle in which they were engaged, the admiral of the French fleet said they had demonstrated themselves to be everything that was hoped for them. Anchored some 800 yards from the Russian forts, they pounded away until the works were reduced, and not one of them was injured, though each was struck 60 or 70 times by the solid shot hurled from the Russian guns.

This engagement showed that recon-



Teacher—Who was Joan of Arc? Pupil—Why—er—Noah's wife.—Princeton Tiger.

Dyer—How do you know he is honest? Duell—He declined a position in the Postoffice Department.—Life.

An odd notice has been seen over a shop in Cairo: "I speak English and understand American."—Exchange.

"Would you rather be right than be President?" "No, but I'd rather be wrong than be Vice President."—Puck.

Just Help Himself: He—If I tried to kiss you would you call for help? She—Would you need it?—Smart Set.

The Fly—The moth seems very grouchy. The Roach—Yes; he's been chewing the rag all day.—Princeton Tiger.

Naturally: "So you reached the town just after the cyclone?" "Yes." "How did things look?" "Rather blew."—Exchange.

"Has your father a bad cold?" "No, indeed. He is merely reading the Russian-Japanese war news aloud."—Washington Star.

Reporter—Senator Bilkins has absolutely nothing to say. Editor—Well, tell it down. We are terribly crowded to-night.—Puck.

Mr. Sipp—Young man, how dare you swear before my wife? Boy—How did I know your wife wanted to swear first?—Chicago Daily News.

Barker—This is an age of high civilization. Parker—Oh, I don't know; nearly everybody is discussing how much good the Russo-Japanese war will do us.—Detroit Free Press.

Practical Aunt—Do you think you are qualified to become the wife of a poor man. Sweet Girl—Oh, yes; it's all fixed. We are to live in a cottage, and I know how to make cottage pudding.

"A great actor is usually wedded to his art, is he not?" "Yes," answered Mr. Stormington Barnes; "many of them are wedded. But there is a great deal of incompatibility."—Washington Star.

Tramp—I'd like to borrow a medical almanac, mum. Housekeeper—What for? Tramp—I wanta ter see wot th' doctors recommend for an empty feelin' in th' stummick.—New York Weekly.

Employer—And now that we are engaged to be married, I suppose I shall have to hire a new typewriter. Typewriter—Not at all, dear. I shall attend to the hiring of your typewriters after this.—Exchange.

Toogood—Jack, have you that two pounds I lent you the other day? Hardpush—Not all of it, old chap, but what I have left will do me a day or two longer. Very kind and thoughtful of you to inquire, though.

Going the Rounds: Miranda—I accepted Mr. Mashleigh last night, and he is going to get the engagement ring to-day. Muriel—Oh, he already has it. I returned to him this morning the one he gave me.—Exchange.

A Remedy: Grinder—What! asleep at your desk, and work so pressing? Meekly—Excuse me, sir, baby kept me awake all night. Grinder—Then you should have brought it with you to the office.—Town and Country.

Just a Hint: She—Mamma is awfully thoughtful. He—Indeed? She—Yes, indeed. Why, for instance, she would never think of coming into the parlor when I have a caller without first coughing.—Minneapolis Journal.

The Doctor's Successor.—"What profession do you follow?" asked attorney for plaintiff. "The medical profession," the witness answered. "Are you a practicing physician?" "No, sir." "Then what do you mean by saying you follow the medical profession?" "I am an undertaker, sir."—Brooklyn Eagle.

"Mister Jedge," called out the colored witness, after he had been on the stand a full hour, "kin I say one word, suh?" "Yes," replied the judge; "what is it?" "Hit's des dis, suh; ef you'll des make de lawyers set down en keep still two minutes, en gimme a livin' chance, I'll whirl in en tell de truth."—Atlanta Constitution.

Played on the Piano.—Mother (returning from a shopping tour)—For goodness sake! What's the matter with little Willie? New Nurse—'Tis a bad boomp he got, ma'am. Ye know, ye told me Ol was to let him play on the planny, an' onct whin he was sildin' on the top of it, he sild too far, Ma'am.—Philadelphia Press.

"Your children are so well behaved," said Mrs. Blundad to Mrs. Noah, after the Nonh family had established itself on the slopes of Ararat. "How do you compel them to act so nicely?" "Well," smiled Mrs. Noah, "ever since we made that trip in the ark, all their papa had to do is to threaten to take them to the next circus that comes along if they are not good."—Life.