

## America's First Thirty-Five Knot Battle-Cruiser

COMMON sense teaches everyone that speed, range, striking power and adequate armor protection, are essential in a fighting vessel and the ship in which these are combined to a pre-eminent degree most fully meets the ideal. But it is no easy matter to unite all these attributes in a single craft of a given tonnage. If a battleship is excessively armored, weight must be saved elsewhere—in guns, engines, etc. And so it happens that every fighting ship is more or less a compromise effected by the advocate of speed with the advocate of heavy guns and thick armor.

Although the developments in battleship construction have been exceedingly rapid, the greatest impetus was given about ten years ago when Great Britain came to the fore with the Dreadnought, a ship which mounted only big guns, namely ten twelve-inch rifles. She was fast too, for her speed was twenty-one and one-half knots, something unprecedented in battleships.

Soon the superdreadnought appeared, a vessel still faster, mounting still bigger guns, and still more heavily armored. Then came the battle cruiser, a formidable craft with a speed of twenty-eight knots—a type also first introduced by Great Britain.

These battle cruisers—vessels which mount somewhat fewer heavy guns than the superdreadnought, but of the same caliber, and which have somewhat lighter armor and the greatest speed that can be given to a warship are at last to be introduced in our own navy. If we were to engage now in a naval war with a foreign power, we would be hopelessly at a disadvantage, not only because of the fewness of our superdreadnoughts, but because we utterly lack battle cruisers.

While no official announcement has been made of the principal features of these new ships, the POPULAR SCIENCE MONTHLY is in a position to present details which may be accepted as accurate.

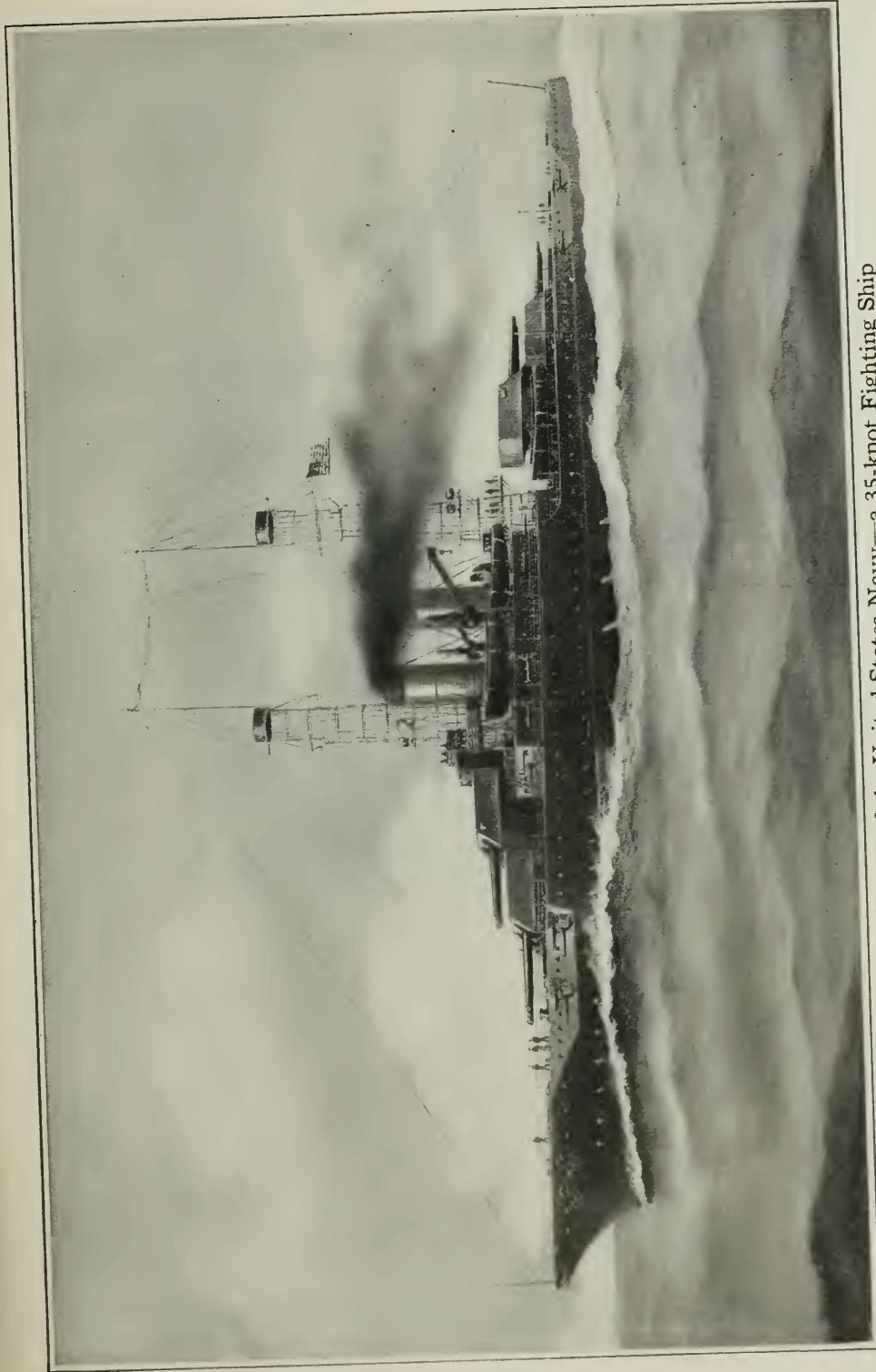
Profiting by the lessons taught by the engagements fought off the Falkland Islands and in the North Sea, this new

battle cruiser of ours is to have a speed somewhere between thirty-two and thirty-five knots. Obviously engines of enormous power are required to attain that speed, and so we may expect that one hundred thousand horsepower must be generated. Every additional knot means an inordinate increase in engine capacity.

Our unbuilt and unnamed battle cruiser will have eight fourteen-inch guns and twenty five-inch guns. At first blush it would seem as if the *Queen Elizabeth's* fifteen-inch guns must carry the day if these two ships were ever opposed. But our ordnance officers have made the statement that the new fourteen-inch guns which they have developed are the superior of the fifteen-inch guns at present used in the British navy—or statements to that effect.

The armor protection of the new United States battle cruiser is to be twelve inches amidships and four inches at the ends. The *Queen Elizabeth* has thirteen and one-half inches of steel on the waterline, ten inches above that and a top layer of eight and one-quarter inches. It is here probably that we had to make our sacrifice in order to gain the engine power and, therefore, speed. But if speed will enable our ship to pick out her own position and our guns have the greater range, the loss in armor protection is more than compensated for.

The *Lion* and *Tiger* are battle cruisers in the true sense of the word. Our ship will easily outdistance them. In tonnage there is not much to choose, for they displace thirty thousand tons as against the thirty-one thousand tons of our vessel. In armament we will be far superior. The *Lion* and the *Tiger* each mount eight fourteen-inch guns which are probably inferior in range to the guns of equivalent caliber on the proposed American ship. The *Tiger* has twelve six-inch guns and the *Lion* sixteen four-inch guns; but weapons of such small character play no part in a long range engagement and are serviceable chiefly for the repulsion of torpedo boats.



**The First Battle Cruiser of the United States Navy—a 35-knot Fighting Ship**  
Length, overall, 730 feet; beam, 88 feet; maximum draft, 30 feet; displacement, about 31,000 tons; horsepower, 100,000; speed, 32-35 knots; armor, amidships 12 inches, ends 4 inches; main battery eight 14-inch rifles, secondary battery twenty 5-inch rifles; drive, turbine-electric