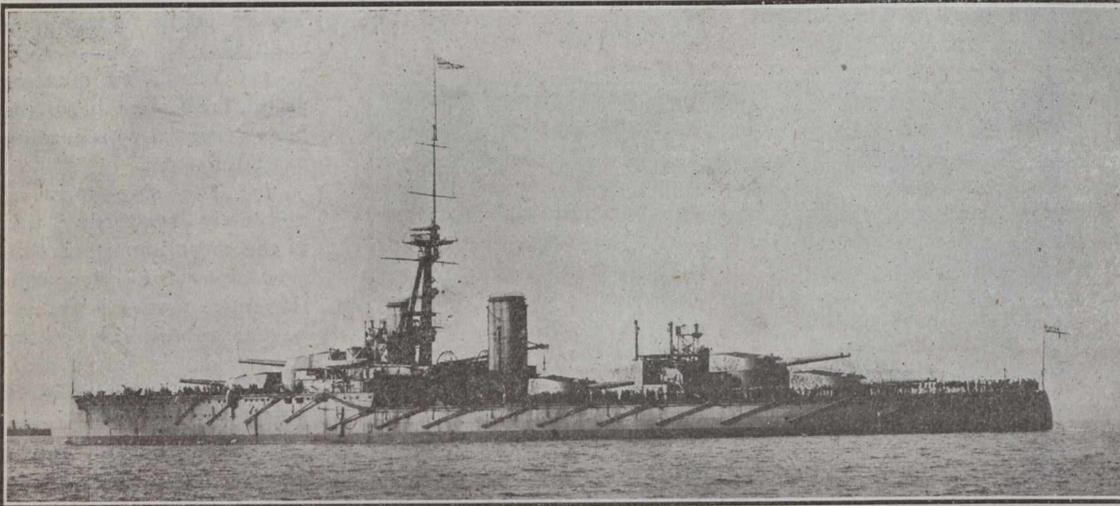


The battleships of the "Admiral" class which were much in vogue during the early eighties, were a type of ship that the admiralty hoped could be developed by enlargement in every detail as time and other conditions warranted; consequently this development continued until guns of 16¼-inch bore were mounted. It has been suggested that the corresponding increase in hull design was not thoroughly understood for of the three ships mounting these ponderous weapons, only one is on the sea to-day; this is the "Benbow." The fate of the "Victoria" is known to history, and the other member, the "Sans Pariel," is on the scrap heap. It was readily seen that development along this line was not practical, for the guns had a weight of 110 tons each, and this, added to their mountings, made the ship top-heavy, and then, again, this gun only possessed a muzzle energy equal to 2,087 foot-tons. The introduction of improved explosives and gun manufacture, which followed soon after the completion of these ships, resulted in an increase of efficiency



H.M.S. "Orion,"

one of the most powerful battleships afloat.

of smaller guns, and in this manner the gun weight was reduced almost 50 per cent., with an increase of "smashing power."

The British warship differs from all other type of fighting ship in the degree of all-round fighting qualities. It is not so fast as a cruiser, and does not need speed; the object of a British warship is to get at the enemy, and not to run away.

Some few years ago, there was not such a marked line of separation between the battleship and the cruisers as now exists between the ships of the Dreadnought type and the modern cruiser. H.M.S. "King Edward VII." is probably the foremost example of a pre-dreadnought type of British warship, and yet the original "Dreadnought," though only 1,550 tons larger than the "King Edward VII.," has about 60 per cent. more smashing power and 33 per cent. more capacity of resistance, while several of the latest Dreadnought types could double these rates of increase.

With this rapid increase of power comes the rapid increase in the process of obsolescence, and twenty years is now regarded as the extreme maximum period of usefulness of a modern battleship; this short expanse of time is a marked contrast to the days of Nelson and his old wooden ships, for the "Victory" was fifty years of age when she entered the battle of Trafalgar, in 1805, and still floats in Portsmouth harbor, doing formal duty as the flag ship of the commander-in-chief of Portsmouth.

The primary business of the battleship is clearly indicated by the design, and the title and the work expected from

a battleship squadron does not differ to any great extent, excepting the increased strength of the compound over the unit. It is a well understood axiom of modern sea warfare that however the course of the campaign may be influenced by brilliant desultory tactics, such as the guerilla attacks of cruisers and destroyers and such like, the great final issue may only be decided by the battle squadrons alone, and so long as they continue to float upon the sea the nation whose flag they bear is not beaten; when the battle squadrons are crushed the sea power of that nation is hopelessly broken.

Battleships form the first fighting line of all sea power. It is their duty to meet and engage, and all sea strategy is shaped to bring about this result on the most favorable terms. A meeting of hostile battleships may not of necessity be decisive, but when it is decisive and one side has no more effective battleships left, then the sea power of that nation is like the broken reed referred to in ancient history. The cruisers of a battleshipless nation may still manage to

keep the sea and inflict serious damage to the commerce of the conqueror; and destroyers may make an occasional swoop with serious consequence, but the fact remains that without battleships organized sea warfare is at an end.

The power of the battleship then, depends upon its degree of gun fire and its resistance to hostile shells, and to maintain the latter condition the ship is armored; armor being a generic term

embracing all the protective features of the ship. The principal heads under which the armor of a battleship may be classified are: (1) broadside protection; (2) armored bulkheads dividing the ship into watertight compartments; (3) protection of gun positions and all fighting stations, and (4) the protective deck.

The broadside armor is by far the most important feature in the defensive arrangements of any warship. It means the protection of engines, boilers and magazines against the direct impact of projectiles delivered broadside which, of course, presents the largest area of target to the guns of an enemy. In the modern designs the armor is carried from end to end and the greatest thickness is maintained along the central section which encloses the magazines and propulsion mechanism, the extremities are fairly thin. In a ship of the Dreadnought type this belt of armor is composed of a strip of Krupp steel, 11 inches in the thickest part and tapering to 6 inches at the forward end and 4 inches thick at the stern. A very much wider area of armor plate is always disposed below the water line than above; the belt being carried downwards to a depth of ten feet. Experience has shown that the high velocity projectile of a modern naval rifle, on being fired at a sufficient angle of depression to strike a ship well below the surface, either rebounds or becomes acutely deflected on touching the water. If the protective belt is carried to a depth of ten feet from the displacement line the chances of a ship being pierced from below are negligible.

The rapid improvement of naval guns rendered it im-