have entirely disappeared. When the final adoption of iron led to the remodelling of the details of construction by Sir E. J. Reed, the new system of construction was applied to the cruisers of the day, but no attempt was made till much later to give these cruisers any protection, nor was the question of their armament given the importance which it afterwards came to have.

Lord Armstrong was one of the first to recognize the import­ance of developing this class of vessel. He considered the essential features of a cruiser to be high speed, protection without the use of side armour, a powerful armament and minimum size and cost; and his views were adopted by the Elswick firm in a large number of cruisers built for foreign Powers down to the intro- duction of high explosives, when side armour was advocated in place of, or in addition to, the armour deck. The cruisers built for the British navy prior to 1880—of which the principal types were such vessels as the “Inconstant,” of 5780 tons (1866); the “Active,” of 3080 tons (1867); the “Raleigh,” of 5200 tons (1871); and the faster despatch vessels “Iris” and “ Mercury,” of 3730 tons (1875)—had been almost entirely unprotected; and although the “ Comus ” and “Leander” classes had been given a partial protective deck, the Elswick- built “ Esmeralda ” (1883) (fig. 82, Plate XXIII.) may be quoted as the first vessel in which the important features of a complete protective deck and good protection to the guns were combined with high speed and a powerful armament. On the other hand, the “ Impérieuse ” and “ Warspite,” completed in 1881, of much greater displacement than the “ Esmeralda,” were provided with a partial belt of 10-in. compound armour in combination with a protective deck. Thus the necessity for protecting cruisers led to the introduction of two types—the “ protected ” cruiser, of which the “ Esmeralda ” may be taken as the pioneer, and the “ armoured ” cruiser, of which the “Impérieuse” and “Warspite” are early representatives; but while in the British navy the “ protected ” cruiser type was repeated and developed, the “ armoured ’’ type wâs discontinued, and with the exception of the “ Orlando ” class, built shortly afterwards, the whole of the cruisers built for the British navy for another fifteen years were of the “ protected ” type. In France and Russia, however, the armoured cruiser continued in favour, the “ Dupuy de Lôme ” of 1890, for the former, and the “ Rurik ” of 1892, for the latter, being vessels of this type.

The reintroduction of side armour in British-built cruisers came about when the improvement of armour by the develop­ment of the Harvey and Krupp processes of manufacture enabled more efficient protection to be provided with a much thinner belt than had previously been possible. The Elswick cruiser “ Esmeralda ’’ (second), built for Chile in 1895, was one of the first in which the use of side armour was revived. She was followed by other vessels of the armoured type built by the same firm for the Chilean and Japanese navies. In 1898 the “ Cressy ” class (fig. 83, Plate XXI.) was begun for the British navy, and since this date all cruisers of 9000 tons and above for the British navy have been provided with side armour.

In the United States the adoption of armour belts of the new material for cruisers came somewhat earlier than it did in the British navy, the “ Brooklyn ” (fig. 84, Plate XXII.), built in 1895, being so protected; and the development of the type has been very marked in recent years, the tendency being to go to larger displacements, in order to provide greater protection and heavier armaments, with each new class of vessel. Indeed, the first-class armoured cruiser of 1910 might be very well described as a high-speed battleship.

In the British navy, as might be expected, the demand for vessels to meet the varied and diverse re­quirements that necessarily arise in a fleet of such magnitude has led to the production of a number of types, each ad­apted to its own special duties. They may be classified as (1) unprotected cruisers; (2) pro­tected cruisers of first, second and third classes; and (3) armoured cruisers. Unpro­tected cruisers have neither side armour nor other protection against loss of buoyancy from injury by shot and shell. Protected cruisers have no side or vertical armour, but they have horizontal armour decks with strong sloping sides in the vicinity of the water-line, upon which coal is carried in minutely divided bunker compartments. Armoured cruisers have side or vertical armour in addition to protective decks. Each of these classes includes a number of groups of sister ships, but we shall confine ourselves to describing the main features of a representative ship in a few of the most important groups.

The protected cruiser of medium displacement affords a convenient starting-point, as the latest vessels of this type in 1910 were of about the same displacement as the largest first- class cruisers of thirty years before, and a comparison of representative ships of these classes illustrates the great advances made in thirty years in ships *of* approximately the same size; while a further comparison of these second-class cruisers (as the vessels of medium displacement are styled) with the first-class protected cruisers and the armoured cruisers of the present day shows the growth in size and power of the largest units of the cruiser type during the same period. It should, however, be noted that while some second-class cruisers reached such a displacement (5600 tons) as to allow of this comparison being made, the great bulk of the vessels of this class were smaller. The “Mersey” is an early example of a vessel of this class which has seen considerable service. Begun in 1883, her principal dimensions are: length 300 ft., beam 46 ft., mean draught about 20 ft., and displacement 4050 tons. Protection to the vitals of the ship is provided for by means of a protective deck a little above the level of the water-line, 2 to 3 in. in