barbette to the stem, with a maximum thickness of 12 in., tapering to 6 in. at the bow; there is no side armour above this belt. The main armament consists of four 9∙4-in. guns, placed in pairs in barbettes, one forward and one aft, protected by 10-in. armour. On the main deck they have four 5∙9-in. Q.F. guns in 6-in. armoured casemates, two on each side; and on the upper deck they have eight similar guns, protected in like manner, and six others in turrets— three each side; in all, eighteen 5∙9-in. guns, besides twelve 3∙5-in. and smaller guns. There are five vessels of the “ Wittelsbach ” class, a development of the “Kaiser Friedrich III.”; they are 700 tons more displacement, 15 ft. longer and 1½ ft. more beam, but are of shallower draught. They have engines of 15,000 H.P. and a speed of 19 knots, or a knot more than their predecessors. Their armament is the same, but the 9∙4-in. guns are better protected. The main armour belt is somewhat longer, but in other respects the thicknesses and general disposition of the protection are similar to the “ Kaiser Friedrich III.” class.

In the next five vessels, the “ Braunschweig" class, laid down in 1901-1902, the 9∙4-in. guns were replaced by 11-in. guns for the main armament; and the eighteen 5∙9-in. guns were replaced by fourteen 6∙7-in. guns for the secondary armament. The displacement was increased to 12,988 tons, the speed of 18 knots was main­tained, and the armour protection practically as in the preceding vessels. Five vessels of the new “ Deutschland ” class which followed in 1903-1905 were very similar to the “ Braunschweig ” class.

The “ Nassau,” the first of the German “ Dreadnoughts ” laid down in 1907, was 455 ft. in length and of 18,200 tons displace­ment, and carried an armament of twelve 11-in., twelve 5∙9-in. and sixteen 3∙4-in. guns, had an armour belt of Krupp steel 11 in. to 4 in. in thickness, I.H.P. 22,000 for 19 knots and speed on trial 20∙7 knots. The “ Posen" (fig. 71, Plate XVII.), “ Rheinland ” and “ Westfalen ” of the same type were also laid down in 1907 and were built and completed for sea with extraordinary rapidity. The “ Westfalen ” attained 20∙25 knots on trial with 26,792 H.P. The next three vessels, "Thüringen,” "Helgoland ” and “ Ostfriesland,” laid down in 1908, are provided with twelve 12-in. guns arranged as in H.M.S. “ Neptune"; they are of 22,150 tons displacement and 25,000 I.H.P. for 19·5 knots speed (probably at continuous sea speed ; a measured-mile speed of about 2 knots more would doubtless be expected); they are protected by 12-in. Krupp steel armour; their dimensions are: length 489 ft., beam 98 ft., draught 27 ft. 6 in. The vessels laid down in 1910 were said to be still larger.

*France.—*For many years the French designers favoured the placing of the four heavy guns of their battleships in separate barbettes—a 12-in. gun at each end and a 10∙8-in. gun on each side of the vessel amidships, intermediate positions being arranged for the smaller guns. Such vessels as the “ Carnot,” "Charles Martel,” " Jaureguiberry,” “ Masséna,” "Bouvet ” approximating to 12,000 tons displacement, and built in the ’nineties, were so arranged. These were followed by a series of vessels in which the 12-in. gun alone was accepted for the main armament, and two pairs were fitted, one forward and one aft as in British vessels; the “Gaulois,” “ Charlemagne,” “ St Louis ” and “ Suffren ” were so arranged. The “ Suffren," commenced in 1899 (displacement 12,728 tons, length 410 ft., beam 70 ft. and draught 27 ft. 6 in.), had a com­plete water-line belt of Harveyized steel armour *of* 11¾ in. maximum thickness, and above this, up to the main deck, similar armour, 5 in. thick, extending from the after turret to the bow; she had also a short armoured battery on the main deck which enclosed the funnel uptakes. There were eight turrets on her upper deck—one forward and one aft, each carrying two 12-in. guns, and six arranged three on each broadside, each carrying a 6∙4-in. gun. The armour of the larger turrets was of the same thickness as the armour belt, namely, 11¾ in., and that of the smaller turrets 5 in. She mounted eight 3∙9-in. guns on the superstructure, and also had twenty-two smaller guns and four torpedo tubes, of which two were submerged. She had triple screws, engines of 16,000 LH.P. and a speed of 18 knots. The "République,” laid down in 1901, and the “ Patrie,” laid down in 1902, were superior in speed and armament to any British battle- ships then building. They had a displacement of 14,865 tons, and were of 439 ft. length, 79 ft. 6 in. beam and 27 ft. 6 in. extreme draught. They had three screws, and a nominal LH.P. of 17,500 for a speed of 18 knots; but on trial these were considerably ex­ceeded, the "Patrie ” reporting 19,000 I.H.P. and 19∙47 knots. They carried four 12-in. B.L. guns in pairs in turrets on the middle line, as in the British ships, twelve 6∙4-in. Q.F. guns in pairs in turrets on the upper deck, six additional 6∙4-in. Q.F. guns in casemates on the main deck, twenty-six 3-pdrs., three above-water and two sub­merged torpedo tubes. There was a complete water-line belt of a maximum thickness of 12 in., the bow was protected by 4-in. armour and there was a partial 4-in. belt above the 12-in. belt. The protective deck was 4 in. thick on the slopes, and the armour of the main turrets 12½ in., the whole armour being of Harvey quality.

Four later vessels of the class, “J ustice,” “ Démocratie,” “ Liberté ” and “ Vérité,” were given a still more powerful second­ary armament of 7∙6-in. guns— six placed in well-protected turrets at a great height above water, and four in casemates be­tween decks. Six vessels, the “ Condorcet,” “Danton” (fig.72), ,, Diderot,” “ Mirabeau,” "Vergniaud” and “Voltaire," were laid down in 1907. All had Parsons turbines of 22,500 H.P. for a speed of 19∙25 knots, and their main armament consisted of four 12-in. and twelve 9∙4-in. guns, as shown in fig. 72. The later French ships “ Courbet ” and "Jean Bart” carry twelve 12- in. guns in six pairs, two forward and two aft on the middle line, one palr training over the other, and one pair on each side amidships as in “ Dreadnought.” They are of 23,000 tons displace­ment and 20 knots speed, and have an anti-torpedo boat armament of twenty-two 5∙5-in. guns, all in casemates of 7-in. armour.

*Japan,—*Previous to the Russo-Japanese War Japan had provided herself with a number of excellent battleships built in Great Britain, such as the “ Fuji ” of 12,450 tons, laid down at the Thames Ironworks in 1894, the “ Hatsuse,” built at Elswick, the "Asahi,” built at Clydebank, and the “ Shikishima,” built at the Thames Ironworks, all of about 15,000 tons displacement and laid down in 1897-1898. The dimensions of these vessels were: length 400 ft., beam 75 ft. 6 in., mean draught 27 ft. The l.H.P. was 15,000, giving a speed of 18 knots. The armour-belt extended the full length of the ship at the water-line, and had a maximum thickness of 9 in.; be­tween the top of this belt and the main deck, for a length of some 220 ft., was an upper belt 6 in. thick, which was continued by oblique bulkheads to the sides of the heavy-gun barbettes. The barbettes themselves, which were two in number, one forward and one aft, had armour 14 in. thick, and the conning-tower also was 14 in. thick. The armament consisted of four 12-in. 49-ton B.L. guns, two mounted in each barbette and loading in any position of training; fourteen 6-in. Q.F. guns, all in 6-in. casemates, eight on the main deck and six on the upper deck; and twenty 12- pdrs., besides smaller guns and four submerged torpedo tubes. The “Mikasa,” laid down at Barrow in 1899, was a slight modification of the “ Hatsuse ” class design, being 200 tons heavier and 6 in. more in draught. The principal difference was that the eight 6-in. Q.F. guns on the main deck were increased to ten in number, and instead of being in separate casemates were in a 6-in. armoured central battery, with 2-in. divisional screen bulkheads.

The "Hatsuse ” was destroyed in the war by a mine explosion; and the "Mikasa ” was seriously damaged by mines. After the war she was accidentally sunk on the 10th of September 1905; she was, however, refloated on the 8th of August 1906, re­paired and recommissioned. The Japanese fleet in 1910 contained