were lofty vessels, and carried a good armament of two 8∙2-in., eight 5∙9-in. and ten 3∙4-in. guns, as well as other smaller guns and three submerged torpedo tubes; they were 344 ft. long, 56 ft. to 58 ft. beam, 21 to 22 ft. mean draught, 5575 to 5790 tons displacement; they had a protective deck 1∙6 to 3·9 in. in thickness, and 3∙9 in. gun houses. Fig. 100 (Plate XXII.) shows the “ Victoria Luise,” the second vessel of the class.

The older German cruisers, “ Fürst Bismarck ” and “ Prinz Heinrich,” laid down in 1896-1898, were armed with 9∙4-in. and 5∙9-in. guns, and had speeds of 19-20 knots. The “ Prinz Adalbert ” and "Friedrich Karl,” laid down in 1901, and "Yorck" and “ Roon,” laid down in 1902-1903, were of 8850 to 9350 tons displacement and 21 knots speed, carrying four 8∙2-in., ten 5∙9-in., twelve 3∙4-in. guns and four submerged torpedo tubes. The 8∙2-in. guns were carried in enclosed 6-in. shields forward and aft ; and the other guns were mostly in a very short citadel amidships, protected by 4-in. armour; the water-line being completely protected by 4-in. to 3-in. armour. The latest vessels of this type, the “ Gneisenau ’’ and “ Scharnhorst,” were laid down in 1905-1906 of 11,420 tons displacement and *22}* knots speed.

In 1907 Germany commenced a new series of large and powerful cruisers, the “ Blücher” (fig. 101, Plate XXIl.), the first of the series, being of 15,550 tons displacement, an increase of more than 4000 tons beyond that of the preceding German vessels. She carries twelve 8∙2-in., eight 5∙9-in., sixteen smaller guns and four submerged torpedo tubes, and is protected by 7-in. armour. Engines of 32,000 l.H.P. were provided, and the maximum speed on trial exceeded 25 knots. In the second vessel, the “ Von der Tann ” (fig. 102, Plate XXII.), the main armament was increased to eight 11-in. guns; she is 560 ft. in length, 85 ft. beam, 27 ft. draught and 18,700 tons displacement; Parsons turbines of 45,000 H.P. were provided for

25 knots speed, and both power and speed were exceeded on trial. The third vessel, the “ Moltke," is of 23,000 tons displacement, of

26 knots speed, and is armed with 12-inch in place of 11-inch guns,

and cost £2,200,000.

*France.—*In France the line of development of the cruiser has been similar to that in Great Britain. In 1887 four third-class cruisers were built, of which the “ Forbin ” may be taken as a type; she was 312 ft. long, 30½ ft. beam, 16 ft. draught, 1935 tons displacement, 5800 LH.P. and 20 knots speed, protected by a 1½-in. deck and a belt of cellulose, and armed with four 5½-in. and eight 3-pdr. guns and five torpedo tubes. These were followed by “ Linois,” “ Galilee,” “ Lavoisier,” of about 2300 tons in 1893, and the “d’Estrées ” and “ Internet ” in 1897. The latter were 312 ft. long, 39 ft. beam, 17 ft. 9 in. draught and 2420 tons displacement, sheathed and coppered, protected by a 1½-in. deck and armed with two 5∙5-in., four 3∙9-in. and eight 3-ρdr. guns and three torpedo tubes; 8500 I.H.P. was provided for 21 knots speed.

The French second-class cruisers may be said to have commenced with the “ Davout,” of 3027 tons, 9000 LH.P. and 20½ knots, and the “ Alger " and “ Isly,” of 4350 tons, 8000 LH.P. and 19 knots, in 1887. They were followed by two of the “ Friant ” class in 1891, two of the “ Pascal ” class and three of the “ Cassard ” class in 1893, and the sheathed vessels, “ Catinat ” and “ Protêt,” in 1894 and 1895. These vessels were from 3700 to 4050 tons displacement, and 19½ to 20 knots speed, protected by decks 1¼ in. to 3 in. in thickness, and armed with four to six 6∙5-1n. guns, four to ten 3∙9-in. guns, as well as smaller guns and torpedo tubes. The last of this series, the “ Protêt,” was laid down in 1895.

In 1894 France laid down a first-class protected cruiser, the “ d’Entrecasteaux,” of 8000 tons, carrying two 9∙4-in., twelve 5∙5-in., twelve 3-pdr. guns and six torpedo tubes, with a speed of 19⅜ knots, and then by three very remarkable vessels lightly built and armed, but of very high speed, viz. the “ Jurien de la Gravière,” of 5600 tons and 23 knots, the “ Guichen,” of 8150 tons and 23 knots and the “ Chateaurenault,” of 7900 tons and 24 knots.

A new departure was made in 1890 in laying down the armoured cruiser “ Dupuy de Lome,” of 6300 tons, 14,000 I.H.P. and 20 knots speed, carrying two 7∙6-in., six 6∙4-in. and several smaller guns; a protective deck 1½ in. thick was fitted, and the whole side of the ship was armoured, the thickness at the water-line amidships being 4∙7 in., tapering gradually towards the extremities. This type has, however, not been repeated.

The “ Jeanne d’Arc,’’ launched in 1899 at Toulon, is 11,100 tons displacement, 477 ft. in length, 63 ft. 8 in. beam and 24 ft. 8 in. mean draught, has engines of 33,000 indicated horse-power and a speed of 21∙8 knots. She has a complete water-line armour belt of Harveyized steel, having a maximum thickness of 6 in., and the bow is also protected as far aft as the bow guns with 1½ in. steel to the upper deck. Her armament consists of two 7\*6-in. guns, fourteen 5·5-in. Q.F., twenty-two smaller guns and two submerged torpedo tubes. Of more recent date than the “ Jeanne d’Arc,” but smaller in size, is the “ Montcalm ” (fig. 103, Plate XXIII.), an armoured cruiser launched in 1900, of 9367 tons displacement, 453 ft. length, 63 ft. 8 in. beam and 24 ft. 6 in. draught. She carries an armament of two 7∙6-in. guns in separate turrets of Harveyized steel 6 in. thick forward and aft, eight 6∙5-in. Q.F. guns in casemates on the broadsides, four 3∙9-in. Q.F. guns in shields on the broadsides, twenty-two smaller guns and two submerged torpedo tubes. She is protected by a water-line belt 6½ ft. deep, which extends from the bow to within 30 ft. of the stem, where it is terminated by a transverse bulkhead 4 in. thick; amidship this belt is 6 in. thick at its upper edge, diminishing to 2 in. at its lower edge, where it meets the 2-in. protective deck, but the maximum thickness tapers to 3 in. at the forward and after ends. Above this main belt is a thinner one extending over the same length, but only 3¾ in. maximum thickness and of about 4 ft. depth. The “ Montcalm ” has 20 water-tube boilers of the Normand-Sigaudy type, and engines of

19,600 H.P., giving her a speed of 21 knots. She carries 1000 tons of coal and some oil fuel. Her engine-rooms are placed between the two sets of boiler-rooms, instead of abaft them, as is usual in British vessels, the peculiar appearance of many French vessels, with two pairs of funnels widely separated, being thus accounted for.

Three vessels of the “ Montcalm ” class were ordered, and then three smaller vessels of “ Kleber ” type, of 7578 tons only, and four larger vessels of improved “ Montcalm ” type. The latter were very similar to “ Montcalm,” with improved armour protection and of 500 tons greater displacement. They were followed by three larger vessels, the “Léon Gambetta” (fig. 104, Plate XXIII.), “Jules Ferry ” and “ Victor Hugo.” These vessels are armoured cruisers of about 12,400 tons displacement, length 480 ft., beam 70 ft. 3 in., draught 26 ft. 3 in., with an indicated horse-power of 28,500 and speeds of 22½ to 23 knots.

ln 1904 the “ Jules Michelet ” (fig. 105, Plate XXIV.), of 12,370 tons, was laid down, of 30,000 l.H.P. and 23 knots speed. The “ Ernest Renan ” followed in 1903, the l.H.P. being 36,000 for 23½ knots.

The most powerful French cruisers built or building in 1910 were the “ Edgar Quinet,” laid down in 1905, and “ Waldeck Rousseau,” laid down in 1906, of 13,780 tons displacement, armed with four­teen 7∙6-in. guns, eight being fitted in pairs in turrets and four in separate casemates, together with fourteen 6-pdr. and eight 3-ρdr. guns and two submerged torpedo tubes; 36,000 LH.P. is provided for a designed speed of 24 knots.

*Japan.*—Japan possesses a great variety of cruisers, many of which were built at Elswick, others were captured during the war with Russia, and refitted or reconstructed; the latter including the “ Aso ” (ex-“Bayan”), the “Tsugaru” (ex-"Pallada"), the "Soya” (ex-“ Varyag ”) and "Sudzua ” (ex-“ Novik ”). In addition, large and small cruisers were built in America, Germany and France, but the finest were built in Japan.

As examples of the Japanese cruisers laid down towards the end of the 19th century may be mentioned the second-class cruisers “ Kasagi ” and “Chitose,” of 4800 and 4900 tons displacement, 15,500 I.H.P. and 22¾ knots speed, built in America and armed with two 8-in. and ten 4∙7-in. guns, and the third-class cruisers “ Suma ” and “ Akashi,” of 2657 tons displacement and 19½ knots speed, built in Japan and armed with two 6-in., six 4∙7-in. and ten 3-pdr. Q.F. guns.

In 1902 Japan launched the protected cruisers “ Tsushima ” and “ Niitaka, of 3365 tons displacement, 9400 l.H.P. and 20 knots speed, armed with six 6-in. and fourteen smaller guns; in 1903 the “ Otowa,” of 3082 tons, 10,000 I.H.P. and 21 knots carrying two 6-in., six 4∙7-in. and six smaller guns; and in 1907 the “ Tone,” of 4100 tons displacement, 15,000 I.H.P. and 23 knots speed, armed with two 6 in., ten 4·7 in. and three smaller guns and three torpedo tubes. All of these vessels are fitted with reciprocating machinery. The “ Yahagi,” “ Chikuma ” and “Hirato,” laid down later, have turbine machinery of 22,500 H.P. to give 26 knots speed, two 6-in. and ten 4∙7-in. guns and two torpedo tubes. They are 440 ft. long, 52 ft. beam and 5000 tons displacement.

Of first-class protected cruisers Japan possessed in 1910 only- two, the “ Tsugaru ” fex-“ Pallada ”) and “ Soya ” (ex-“ Varyag ”). The “ Tsugaru ” was built at St Petersburg in 1899, is of 6630 tons,

11,600 I.H.P., 20 knots speed, armed with eight 6-in., twenty-two 12-pdr. and several smaller guns, and protected by an armour deck 1½ to 2½ in. in thickness. The “ Soya ” was built at Philadelphia in 1899, is of 6500 tons, 20,000 l.H.P., 23 knots speed, armed with twelve 6-in., twelve 12-pdr. and smaller guns, and protected by a 1½ to 3-in. deck. The “ Sudzua ” (ex-“ Novik ”) is a lighter and faster vessel, of 3oco tons displacement, 25 knots speed, armed with two 6-in., four 4\*7-in. and several smaller guns, and protected by a 1∙2 to 2-in. deck.

Of armoured cruisers she possessed in 1910 a relatively large number. In 1897 Japan ordered the “ Yakumo,” of 9850 tons displacement, from Germany, and in 1899 the “ Adzuma,” of 9436 tons displacement, from France ; both vessels have a speed of 21 knots, and cany an armament of four 8-in. guns mounted in pairs in two turrets, and twelve 6-1n. guns in 6-in. casemates, and are protected by a complete belt of Krupp steel 7 in. to 3½ in. in thickness. They are somewhat similar to the “ Iwate ” and “ Idzumo ” (fig. 99, Plate XXIII), built at Elswick, but with slightly less gun power and speed. The “ Aso ” (ex-“ Bayan ”), built in France in 1900, is 7700 tons displacement, 17,000 I.H.P., 21 knots, carrying two 8-ip., eight 6-in. and a number of smaller guns, and protected by 8-in. armour.

In 1905 a very important advance was made. Early in that year Japan laid down the “ lkoma ” and “ Tskuba,” 440 ft. in length, 13,750 tons displacement, 23,000 I.H.P. and of 21 knots speed.