usually a mile or two in width, have steep, almost canyon-like sides, and are attributed to glacial origin. Many have been only sketchily surveyed, but in some which have been sounded, depths of well over 100 fathoms are indicated. True to their fiordal character, depths inside the inlets are considerably greater than those in the entrances and the immediate approaches are often strewn with islets and sunken rocks.

Along the whole stretch of coast continuous navigation is afforded in an "Inside Passage", sheltered from the sea by a protective barrier of islands. As is to be expected in a region so irregular in hydrographic relief, shoals and pinnacle rocks are numerous, necessitating great caution in navigation. Fortunately, kelp grows on nearly every danger having a rocky bottom and can be seen on the surface during the summer months especially in those channels where the water is in constant motion. During the winter and spring, however, this useful plant is not always visible and in harbours where there is little water movement it is often absent.

"Ripple Rock", the worst danger on the coast, lies in the main ship passage between Vancouver Island and the mainland. This formidable menace rises suddenly from depths of 200 and 300 feet in the fairways on either side. During low water of spring tides the two heads on the rock are only 9 and 21 feet below the surface. The tide race, here, attains velocities up to 14 knots, creates great turbulence and whirlpools, and renders the passage unnavigable to all but the highest-powered vessels, except during the brief period of slack water.

From the islet-strewn coast of British Columbia the Continental Shelf extends from 50 to 100 sea-miles to its oceanward limit where depths of about 200 fathoms are found. There the sea-floor drops rapidly to the Pacific Deeps, parts of the western slopes of Vancouver and Queen Charlotte Islands lying only 4 miles and one mile, respectively, from the edge of this steep declivity. These high islands are partially submerged mountain ridges, their slopes broken by numerous sea-inundated valleys. An outstanding feature of the marginal sea-belt off the British Columbia coast is the submerged ridge which joins the Queen Charlottes to the chain of smaller islands fringing the mainland. This body of water, Hecate Strait, connects the two much deeper arms of the sea—Queen Charlotte Sound on the south and Dixon Entrance on the north. Widths of Hecate Strait vary from 80 to 30 miles, and depths on it decrease from over 100 fathoms in the southern part to from 4 to 20 fathoms in the northern portion. Characteristic of the sea-floor of the whole Pacific Coast, the submerged shelf here is furrowed and deeply ravined.

Extensive areas lying off British Columbia have, as yet, been only partially charted and, in consequence, much of the intricate submarine relief has not been developed. Owing to the great depths encountered, sounding by lead and line was a slow process, but with the advent of automatic echo-sounding, progress of hydrographic work has received great impetus. As charting progresses along the coast, unexpected submarine features come to light, new rocks are located and safe passages which clear them are found, prospective fishing banks are delineated and new navigation charts are produced. For detailed hydrographic information on specific localities, the reader is referred to these and related nautical publications.*

* The publications of the Hydrographic Service, Department of Mines and Resources, are listed in Chapter XXXII.