Europe and Asia. This Shelf develops its maximum width on the 80th meridian of west longitude where it extends from the south of James Bay to the north coast of Ellesmere Island, a distance of over 2,000 miles.

The floor topography of this continental margin is largely unexplored but sufficient has been charted to indicate an abrupt break at the northern oceanward edge. This steep continental terrace borders the whole western side of the Canadian Archipelago and constitutes one of the most striking and significant features of the Polar regions. From this declivity, deep well-developed troughs cut by glaciers enter between the western group of islands. A ridge across Davis Strait on which the depth is about 200 fathoms separates this basin from the open Atlantic.

Hudson Bay and Hudson Strait bite deeply into the Continent. Hudson Bay is an inland sea 250,000 sq. miles in area having an average depth of about 70 fathoms; the greatest charted depth in the centre of the Bay is 141 fathoms.

Hudson Strait separates Baffin Island from the continental coast and connects Hudson Bay with the Atlantic Ocean. It is 430 miles long and from 37 to 120 miles wide and its greatest charted depth of 481 fathoms is close inside the Atlantic entrance. Great irregularities of the sea floor are indicated but, except in inshore waters, few navigation hazards have been located.

That part of the Continental Shelf bordering the Arctic Ocean at the northwest edge of the Queen Elizabeth Islands is currently the subject of extensive study. In 1959, a party based at the joint Canadian–United States weather station at Isachsen on Ellef Ringnes Island made a reconnaissance survey of the oceanography, hydrography, submarine geology, gravity and magnetic features of the Shelf area, together with physiographic, hydrological and glaciological studies of the adjacent and intervening islands. These studies were carried out in preparation for an intensive program of survey and research started in 1960, which should ultimately yield detailed and accurate information on the physical and chemical composition and dynamic characteristics of the Arctic oceanic waters; the extent, topography and structure of the Shelf and the nature of its sediments, its underlying rocks and its possible mineral resources; the factors controlling the development of the Arctic landscape and the evolution of the islands; and the behaviour of sea level, glaciers, sea ice and climate in the recent geological past. Detailed studies are being carried out first on that part of the Continental Shelf lying out to sea from, and between, Meighen Island and Borden Island, with a reconnaissance to the southwest. The work will continue until all of the Canadian sector of the Polar Continental Shelf has been investigated.

Pacific.—The marginal sea of the Pacific differs strikingly from the other marine zones of Canada. The hydrography of British Columbia is characterized by bold, abrupt relief—a repetition of the mountainous landscape. Numerous inlets penetrate the mountainous coast for distances of 50 to 75 miles. They are usually a mile or two in width and of considerable depth, with steep canyon-like sides. From the islet-strewn coast, 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 Island and the Queen Charlotte Islands lying only four miles and one mile, respectively, from the edge of the declivity. These great detached land masses are the dominant features of the Pacific marginal sea. As is to be expected in a region so irregular in hydrographic relief, shoals and pinnacle rocks are numerous, necessitating cautious navigation. A grave menace to coastal shipping plying the Seymour Narrows between Vancouver Island and the mainland was eliminated on Apr. 5, 1958 when the twin peaks were blasted off Ripple Rock in one of the largest non-atomic explosions created by man. The peaks had reached to within 9 feet and 21 feet of the surface during low water, and had been responsible for the sinking and damaging of some 114 vessels during the preceding 80 years. Their presence caused treacherous disturbances and whirlpools to form as the ocean tides rushed through the Narrows, and only the most highly powered vessel would attempt to navigate the channel during any period other than the 20 to 40 minutes of slack water between tides. The blast increased the clearance to 47 feet and 69 feet at low water and the channel is now navigable at all times.