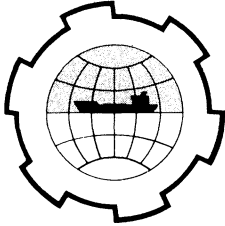


PORT AND OCEAN ENGINEERING UNDER ARCTIC CONDITIONS
TECHNICAL UNIVERSITY OF NORWAY



GEOLOGY OF COASTAL AND NORTHERN NORWAY.

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Norway consists nearly exclusively of what is "basement" to the oil geologist and what are "crystalline rocks" to the construction engineer. Metamorphic rocks of all types are found, but gneisses predominate. Igneous plutonic rocks are subordinate. Two third of the present surface is made up by rocks from the Precambrian. The rest is nearly exclusively from the Cambrian, Ordovician and Silurian periods in the beginning of the Paleozoic, 600-400 mill. years of age. Structurally Norway is divided into two clearly different parts: The one third, most Precambrian rocks, which was not touched upon by the formation of the Caledonian mountain chain system in the end of the Silurian, 400 mill. years back, and the two third of the country more or less strongly hit by the Caledonian orogenesis.

Rocks influenced by the Caledonides occur along the Norwegian coast from Stavanger and northwards past North Cape to Varangerfjord in the extreme northeast. These coastal waters show a very complex geologic pattern. Precambrian gneisses, metamorphosed and folded in the Silurian are mixed with mica shists, greenstones and other metamorphic rocks mostly of Cambrian and Ordovician age. Scattered bodies of plutonic rocks both from the Precambrian and from the Cambro-Silurian are found along the coast in Nordland and Troms. In Finnmark slightly metamorphosed sandstones from the transition Precambrian/Cambrian dominate completely.

Most likely the Caledonian mountain chain eroded down to a peneplain during the Devonian and Carboniferous. Tertiary tilting of the Scandinavian peninsula produced high mountains along the coast, with intense erosion. The glaciers of the ice ages continued the sculpturing of the mountains and fjords.