DRIFTWOOD ON THE MACKENZIE RIVER NEAR OLD FORT GOOD HOPE.

On Canada's Northern Boundary the derelict logs of Siberia, Norway and the St. Lawrence River find a common meeting place.

Mackenzie River Driftwood

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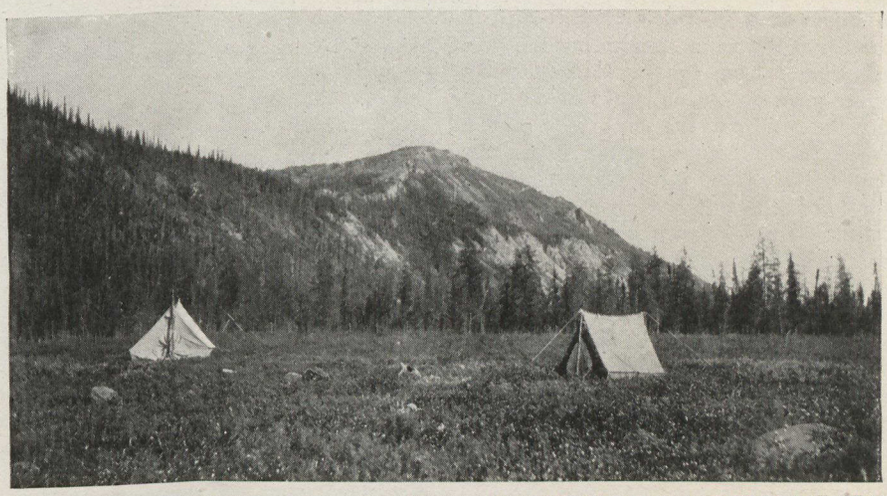

AREA KEPT FREE OF FOREST BY ICE ACTION. NORTHERN BANK OF THE GREAT BEAR RIVER ABOVE MT. CHARLES.

All explorers who have an acquaintance with the Arctic coasts of America are familiar with the driftwood which in many places encumbers the shore line. Along many parts of the Arctic coast of Alaska and Canada vast quantities of forest debris consisting largely of good-sized logs and trees are piled up on the beach where the adjacent land affords nothing in the shape of timber larger than the Arctic willow, which seldom grows higher than a man's head.

The "Fram" expedition collected 40 samples of the drift logs from the coasts of the Arctic Archipelago, and these have been determined by Dr. Ingvarson who recognizes three main sources for the wood. The first is the Yenisei and Lena Rivers of Siberia, the second is the St. Lawrence, and the third is the coast of Norway. The Mackenzie River is not mentioned. In the writer's opinion it is second only to the Siberian rivers as a source of Arctic coast driftwood, and he here records his own observations concerning it.

Driftwood on the Mackenzie

One might easily spend a single season on the Mackenzie, as the writer did in 1917, without learning that it furnished a very large amount of driftwood to the Arctic coast. During that season the driftwood seen consisted of occasional floating trees or widely deployed trains of forest debris. The "voyageur" sometimes utilizes one of the larger trees which still retains the branches, to make progress against an upriver wind. The deeply submerged branches cause the strong subsurface current to bear such a tree and any canoe which may be attached to it into the teeth of an upriver breeze as effectively as the underwater sail expedient, which is often resorted to when a floating tree is not available. Even in fair weather the floating tree is often made use of to save time for the "voyageur" on the Mackenzie. By lashing to a suitable tree he can cook his meals while proceeding on his way. If for any reason night travel seems desirable, the canoe may be secured to an Arctic-bound tree at bedtime and an undisturbed sleep obtained.

The relatively small amount of driftwood seen on the Mackenzie in 1917 is due to the fact that flood conditions did not occur on any of its tributaries that year, and though a great carrier of driftwood the Mackenzie is not itself a great producer. The writer has elsewhere remarked that the vast quantity of driftwood carried by the Slave and its tributaries ends its northward journey in Great Slave Lake. In the same place he has pointed out some of the contrasting features between the Mackenzie and such streams as the Peace and Athabasca Rivers which materially affect the relative amounts of driftwood produced by them. Because of the comparatively straight course and the frequency of boulder-paving the Mackenzie — except in the delta — takes from its own banks a relatively small toll of trees. By far the greater part of the driftwood which it bears to the Arctic Ocean comes from its western tributaries. Great Bear River, the only large eastern tributary, receives its crystal clear and very cold water from Great Bear Lake, which retains the driftwood as well as the silt which enters its basin.

Driftwood on the Great Bear

Like other subarctic streams the Great Bear River contributes from its own banks a small amount of driftwood during the spring break-up, as a result of the destructive grinding and uprooting power of the great volume of moving ice which is brought to bear locally on the river bank forests by ice jams. Immediately above Mt. Charles on the northern bank of the Great Bear is an area large enough for the maneuvering of an army which ice action keeps permanently free of forest growth. It is the result of rather special conditions. The channel is here relatively narrow and the water swift. Ice forms to a great depth on and near the banks because the river repeatedly breaks