

wards. The ribs are now shaped and fitted and their ends inserted in the upper side-pieces and secured with wooden pins. The ribs are usually from two to six inches apart. The other longitudinal strips are then attached to the sides, with a similar piece along the middle of the bottom, which, like the other canoes described, is destitute of a keel.

The sealskin covering is sewn together and applied to the framework wet, so that it stretches tightly as it dries. The sewing, as in the case of the Algonkian canoe, is done by several women working together in order to complete the job at one sitting. A double waterproof stitching renders the seams water-tight.

of Yukon Territory and Alaska possesses features which give it an intermediate position between the umiak and the canoe of the region to the south and east. A canoe-like feature is the wedge-shaped bow and stern. A pointed or leaf-shaped paddle is used.

The umiak is said to have been entirely abandoned on the east coast of Labrador.⁷ In parts of the latter region and in Alaska it is used largely by the men for whale and walrus hunting as well as for general purposes. Lengthy journeys or migrations are often undertaken in it and its capacity is said to be remarkable.

The bow and stern of the Labrador umiak are



DISTRIBUTION MAP, the dotted portion showing the Eskimo kayak and umiak region, and the part covered by oblique lines, the birch-bark canoe region.

According to E. W. Hawkes, from whose memoir on the Labrador Eskimo the foregoing description is taken, "Great speed is maintained by the Eskimo in their frail kayaks. It is said that a single Eskimo in a kayak will propel it as fast as two white men will a canoe. The Eskimo ventures out in a sea that an Indian would not dare attempt. . . ."

The umiak, an open craft, also used by the Eskimo, presents a somewhat different appearance from the kayak due partly to its not being decked over and partly to its being rather deeper and clumsier in form. In other respects it does not differ materially, a fact which would suggest it as the form from which the kayak was derived.

An open skin-covered boat used by the Kutchin

wider than those of the Alaskan, which gives it a clumsier appearance. It is usually about twenty-five feet long and is steered with a rudder, quite likely an Asiatic borrowing, as are also the oars, rowlocks and sails. In Alaska the umiak is propelled by the more aboriginal paddle, the steering being done with an extra long and heavy one.

SAILS.

Sails were nowhere used as an integral feature of navigation except along the North Pacific Coast, where there is also a suspicion of Russian or other Asiatic influence.

The light and rather easily upset birch-bark canoe was evidently unsuited for propulsion by such a contrivance, except in very light breezes, or when

⁶Hawkes, E. W., "The Labrador Eskimo," Memoir 91, Geol. Survey, Ottawa, p. 72.

⁷Ibid., p. 68.