

and are said to have had their ends slightly elevated and pointed.

Among the northern Ojibwa, Cree and Algonquin tribes generally, the dugout is conspicuous by its absence. The same remark holds good for the Plains tribes and for the Eskimo.

The Iroquois method of making a dugout is probably typical for the whole eastern region in which it is used.

A tree of suitable material and size was first cut down—in former times by burning, the fire being localized by applying some damp material above the point where the tree was to be burned through. The log was cut to length in the same way. The next step was to build a number of small fires at intervals on top of the log, then hack away the charred part with adzes. The fires were rebuilt and the work continued in this way until a suitable hollow was obtained. The ends were shaped in a similar way. The same method of hollowing-out dugouts and large wooden bowls is practised by the present-day Iroquois.

Among the Déné, the adoption of the dugout is considered by Morice to be of fairly recent origin, dugouts of balsam poplar having, in his opinion, replaced the original spruce-bark canoe. These dugouts are sometimes thirty feet in length by not more than three in the middle and are said to possess no elegance or design of beauty.

Along the Pacific Coast the dugout is the characteristic craft and is here elaborated into an article possessing graceful lines and considerable beauty of workmanship. Its development, both in the matter of size and finish, was no doubt due at least partly to the size and workability of the coniferous trees of the coast region, as well as to the decreased demand for portability. A factor which must have greatly improved the product of the last century or two is the introduction of modern tools. Huge sea-faring dugouts were, and are still occasionally, made by the Haida and neighboring tribes of the northern Pacific Coast.

An interesting feature of construction is the retention of the simple or primitive method of alternate charring and hacking in hollowing-out the interior. The final adzing imparts a fine scale-like appearance. When the adzing has been completed the canoes are given additional beam by filling with water, which is heated with stones, after which the sides are forced apart by means of thwarts.

British Columbian dugouts in general bear a degree of interresemblance in outline and structure that suggests a common cultural or intercultural origin. A groove inside the stern provides a rest for the whaling and sealing harpoon.

The eastern dugouts, already described, though possessing some broad features of resemblance to

these of the West Coast, are sufficiently different in general character to suggest a development under differing conditions.

RAFTS.

The raft is at least the crudest of the navigatory devices mentioned and possesses a distribution which is practically universal, though used in many regions merely as an occasional or emergency craft. Its form is usually extremely simple and seldom exhibits anything which can be dignified by the name of design or style, though occasionally there are exceptions to this. The balsa, found among certain California Indians and in isolated localities southward to Chili, is really a raft composed of bunches of tule or rushes tied together, although its pointed ends give it some resemblance to a canoe.

Regarding the northern Déné, we have the statement of Morice to the effect that they occasionally make use of rafts. "They are made of three dry logs bound together, with their larger ends aft, while a slightly tapering shape is given their opposite extremities. The logs are fastened together fore and aft by means of ropes, which, when of truly aboriginal make, are of twisted strips or willow bark, starting from one end of a crossbar placed over them and going round each of the logs and the bar alternately. Among the Loucheux, these primitive embarkations are used in combination with regular canoes."¹³

GENERAL REMARKS.

Decking, so prominent in Eskimo canoes, has been observed to be less extensive in the Dog-rib bark canoe, and still slighter in the Chipewyan, Algonquin and Malecite. It is interesting, however, to find it outside the Eskimo region. The side flaps of the Algonquin and Malecite and some Ojibwa decking sheets have been already referred to.

Sewing, like covering materials, exhibits changes based on geographical location, these consisting mainly of a transition from sinew (used by the Eskimo) to spruce root (used by nearly all Canadian tribes excepting the Eskimo and Kutchin); or, in a few cases, to the bast or inner bark of the basswood and elm (used by the Iroquois).

The seams in all bark canoes are gummed.

The wide, flat rib is characteristic of the Eastern Woodlands and extends westward to the Slave country. This is accompanied by an inside sheeting which covers the bark completely. Contrasted with the wide, flat rib, though not differing from it in principle, is the narrow and widely-spaced rib of the Eskimo, Kutchin and Dog-rib crafts.

A feature which seems to be closely associated with the birch-bark canoe in general is the separate strip or piece used to give shape to the bow and stern respectively. These are also possessed by the

¹³Morice, A. G. "The Great Déné Race," *Anthropos*, vol. 5, p. 443.