water, on which is sprinkled some fine sawdust in order to show up the currents more distinctly.

The cord is wound around the shaft so as to give a clockwise motion to the tray, this being the direction of the earth's rotation when viewed from the South Pole. This is, of course, for a model of the Southern Hemisphere, for the Northern the cord being wound the opposite way so as to give an anti-clockwise rotation. The weight is then attached to the cord, whereupon the tray slowly begins to move, and, while it is slowly accelerating, all the phenomena of the main oceanic currents in the Southern Hemisphere can be observed in miniature.

ART. XXVIII.—*Some Maori Fish-hooks from Otago.*

By H. D. SKINNER.

[*Read before the Otago Institute, 10th December, 1918; received by Editor, 27th December, 1918; issued separately, 16th July, 1919.*]

Plate XXIII.

STUDENTS of the material culture of the Maoris have long been familiar with the great collections of stone and bone objects obtained from the beaches of Otago. The beaches between Blueskin Bay and Hooper's Inlet, which are not more than nine miles apart in a direct line, have contributed by far the greater part of these collections, though Shag Point and Waikouaiti to the north, and the beaches and islands of Foveaux Strait to the south, have also yielded a share. At the beginning of the last century Otago Peninsula and the coast immediately to the north-west of it were very thickly populated. Indeed, one of the earliest European accounts of this district speaks of "the town of Otago" as being the largest Maori village in New Zealand. But early in the century the South Island was swept by an epidemic which left only a few hundred native inhabitants south of Cook Strait. The coast of Otago had long been frequented by sealers and whalers, and when regular settlement on a large scale began the remnants of the Maori tribes were rapidly Europeanized. For this reason very little detailed information relating to material culture in the south has been preserved, and conjecture is the sole guide in assigning uses to many of the articles in public and private collections. There is no difficulty in diagnosing a large section of the bone objects as the points of composite fish-hooks, the wooden shanks and flax bindings of which have long since decayed away. But, taken as a whole, these bone points, barbed and unbarbed, differ so much from those used in the North Island that students can only conjecture the types of hook to which they originally belonged. No information can be given by the Maoris themselves.

For these reasons the small group of hooks shown in the plate, several of which have lost nothing more than the cord attaching them to the rod or line or spread, is of unusual interest. They formed a part of the large collection of ethnographic material recently presented to the Otago University Museum by Mr. A. Moritzson. Unfortunately, they have no history. When first received they were in a small box together with a number of bone objects of types usually found on Otago beaches, and it was assumed that all had been found in some cave, forming perhaps the complete outfit of some neolithic fisherman. A closer examination showed that while

nearly all the loose bone objects had been dug from sand discoloured by charcoal, which still adhered, all but three of the hooks (Plate XXIII, figs. 4, 5, 6) had blue estuary-mud still adhering, and were stained the same deep brown as is timber waterlogged in estuaries and harbours. The flax cord also showed signs of estuary-mud. On the back of one of the hooks (Plate XXIII, fig. 7) was a fragment of plaited flax, the plait being that commonly used by the Maoris in making kits. A close examination yields evidence that they were found together in estuary-mud, and that some former European owner has carefully scrubbed three of them (Plate XXIII, figs. 4, 5, 6) to which neither mud nor sand of any kind remains adhering.

When the collection was received the serrated bone point of No. 5 was inserted in the shank as shown, but, as it was not secured with small wooden wedges like the points of Nos. 7, 8, 9, it may possibly have been discovered elsewhere and inserted by the owner who scrubbed the three hooks already mentioned. This may also have been the case with the bone points of Nos. 2 and 6, but a careful examination of each will, I think, convince any one that points and shanks all actually "belong."

Several pieces of evidence indicate that the estuary in which the hooks were found was probably in the neighbourhood of Dunedin. In the Otago University Museum collection is a wooden shank from a cave near Otago Heads almost identical with that of No. 5, but lacking the bone point. This type of shank is not known to occur elsewhere in New Zealand. If the bone point be accepted as evidence it is confirmatory, for it belongs to a type common in Otago but not recorded elsewhere. Much stronger is the evidence of hooks Nos. 7, 8, 9, for hooks of identical shape but having a nail in place of a bone point are still used in barracouta-fishing by European fishermen on the Otago coast. The timber now used for the shank is red-cedar, the colour attracting the fish without any need of bait. Frank Bullen has left an interesting account of the Maori method of using this type of hook as practised by the Maoris at Port William, Stewart Island, in the "seventies": "The Maoris have quite an original way of catching barracouta. They prepare a piece of rimu (red-pine) about three inches long by an inch broad and a quarter of an inch thick. Through one end of this they drive an inch nail bent upwards, and filed to a sharp point. The other end is fastened to about a fathom of stout fishing-line, which is in turn secured to the end of a stout five-foot pole. Seated in a boat with sail set, they slip along until a school of barracouta is happened upon. Then the peak of the sail is dropped, so as to deaden the boat's way, while the fishermen ply their poles with a sidelong sweep that threshes the bit of shining red through the water, making it irresistibly attractive to a struggling horde of ravenous fish. One by one, as swiftly as the rod can be wielded, the lithe forms drop off the barbless hook into the boat, till the vigorous arm can no longer respond to the will of the fisherman, or the vessel will hold no more."*

The large hook (Plate XXIII, fig. 2) is made of manuka wood, and was probably used in shark-fishing. At the bottom of the curve, on the outer side, is a small knob which appears to have been carved to represent a human face. This type of hook, to which Nos. 3 and 4 also belong, is common to the whole of New Zealand. The size of the remaining hook, No. 1, indicates that it was used for catching smaller kinds of fish.

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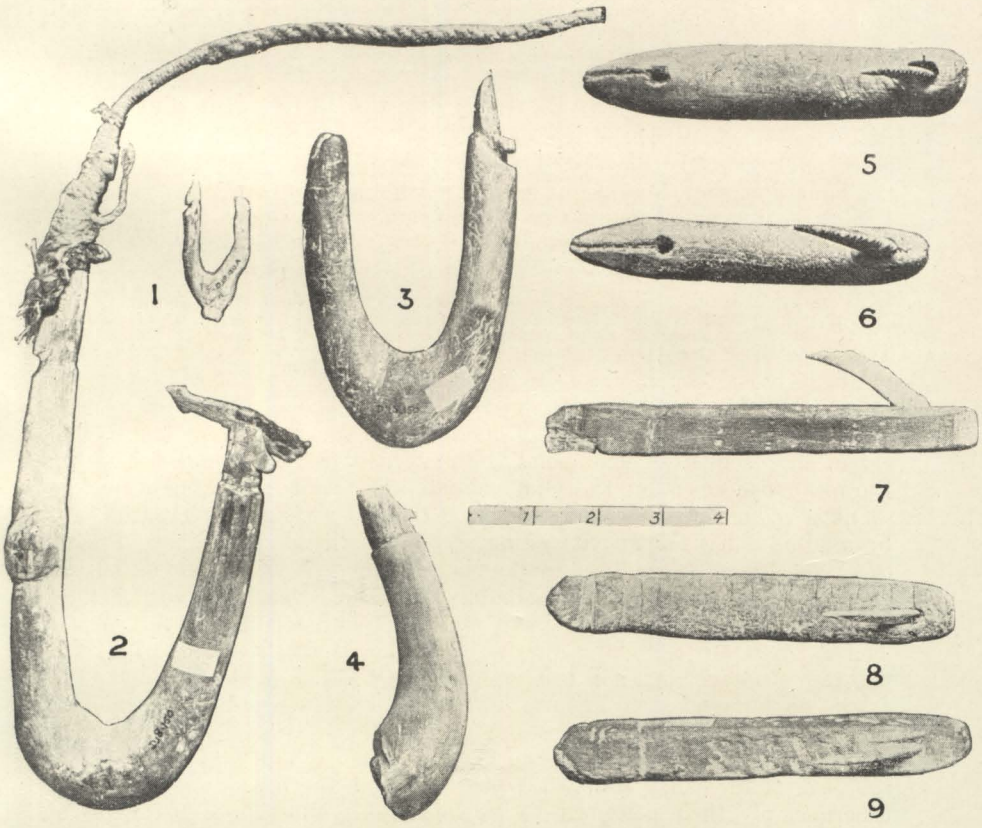
* *The Cruise of the "Cachalot,"* Chapter xxv. For this reference I have to thank Dr. W. N. Benson.



Maori fish-hooks from Otago. (The scale is in inches.)

Face p. 268.