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SMITHSONIAN INSTITUTION.

UNITED STATES NATIONAL MUSEUM.

THE MAN'S KNIFE AMONG THE NORTH AMERICAN INDIANS.

A STUDY IN THE COLLECTIONS OF THE U. S. NATIONAL MUSEUM.

BY

OTIS TUFTON MASON,

Curator, Division of Ethnology.

From the Report of the U. S. National Museum for 1897, pages 725–745.

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18-R. P. 725-745, illus.

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INTRODUCTION.

Among implements used by man, the same forms may sometimes be employed for destruction and at other times for industrial purposes. When used for destruction they are weapons, but when their function is industrial they are tools. The same object, when used as a weapon, becomes a dagger, but if it be employed as an edged tool it is a knife. As in the case of all other weapons or tools, the edged tool works by pressure, by friction, or by a blow. One used by means of a blow is an ax if the edge is in a line with the handle, and an adz if it lies across the handle; an edged tool working by friction is a scraper, but one working by pressure is a knife.

It will be found in the study of industrial knives that in the long run they become the carver's and engraver's tools, the drawing knife, the spokeshave, the plane, and the planing mill. In some styles of the last named, however, the operative part of the machine is, more properly speaking, a machine adz than a knife. Carving in wood and other substances by the American aborigines differentiated the adz from the knife. It is probable that before the introduction of iron into America the adz was used more than the knife in dressing down wood; but when the iron blade came into vogue it was possible for the savage workman to carve out hollow dishes and boxes, and other objects with his knife by simple pressure. Notable exceptions to this are those regions where soft wood came into alliance with sharks' teeth and the incisors of rodents. This is shown in all the curved knives of the collections in the U. S. National Museum from the two hemispheres, especially those from wooded areas.

IMPROVEMENT THROUGH THE CURVED KNIFE.

There ought to be no doubt that in every case where the savage was fortunate enough to obtain the knife his carving and whittling were better done. There is a marvelous difference between carving on the one hand, man's work chiefly, and basketry or pottery on the other, conservative woman's work. In no tribes were the two last-named arts bettered by contact with the higher race. The work was done with the hands almost wholly. The tools were of the simplest character. The harsh iron awl was not so good as the smooth pointed bone awl, of which hundreds have been found, and the pride in personal endeavor departed with the quenching of the tribal spirit. The potter's wheel, such as it was three centuries ago, was only a barrier to the unmechanical sex. Therefore those who constantly assert that prejudice made it impossible for the savage to better himself in the adoption of the white man's devices catch only half a truth.

CLASSIFICATION.

In the class of cutting tools called knives, there are in the U. S. National Museum, collected among the North American Indians, two series. One has been called the "woman's knife;" the other, therefore, may now be denominated the "man's knife."[1]

Both of these series exist aboriginally in two subdivisions, the one containing no iron or evidences of the use of that metal, the other made partly of iron or with iron. In fact, there are four subdivisions of the term "industrial knife," namely, woman's knife, ancient; woman's knife, modern; man's knife, ancient; man's knife, modern.

The man's knife of the modern type exists in three varieties, to wit, the "curved knife," with bent blade, employed usually in whittling; a second variety, named "straight blade," with a short straight cutting part used in carving stone, antler, ivory, and other hard substances; and a third variety, usually with an old knife blade or piece of file well worn down for its working part, employed in the function of a burin for scratching or etching on hard surfaces. The three varieties necessarily merge into one another, so that there are no broad dividing lines. The curved knife may now be carefully examined as a contribution to studying the man's knife of ancient type.

PARTS OF THE CURVED KNIFE.

Each variety of man's curved knife, as of other primitive and modern mechanics' tools, consists of three elements or parts, differing among the several tribes and from place to place in materials and forms, though the blades furnished by Europeans are of the same general motive.

First, the whittling blade is usually of iron or steel, beveled on the

[1] The Ulu, or Woman's Knife, Rept. U. S. Nat. Mus., 1890, pp. 411–416, plates 52–72.

upper side and plain on the under side, and more or less curved upward at the outer end. The blades of commerce are not greatly different in shape, but it will be seen that native ingenuity has been able to fashion blades from any piece of iron. Murdoch, speaking of Point Barrow, says that "the carver's knife is not always curved in the blade."[1]

Those that are sold to the natives are mostly curved, and the handles are added afterwards. Example Cat. No. 89294 in the U. S. National Museum from Point Barrow has a short, thick "jackknife" blade much worn down. It is hafted between two longitudinal sections of reindeer antler held together by rivets, one section being cut out to receive the tang. Two rivets are of iron and three of brass.

The tang of the blade, which exists as an element in the hafting, is usually a continuation thereof, without much finish, being a flat rectangle in outline. The form of the tang, however, will be governed by the method of its application to the handle, as will appear. It may be, first, pointed and driven into the end of the handle; second, rectangular and laid between the halves of the handle; third, set into a narrow groove on top of the handle; fourth, laid in a shallow groove on the side of the handle; fifth, set in a saw-cut in the end of the handle.

Second, the handle or grip. This may be either of wood taken from the forest or from wreckage, or of bone or antler. The woman's knife, usually, has the grip attached to the back of the blade along its extent and the blade in position is under the grip. But in the man's knife the end of the blade forms the tang and the place of attachment for the handle, and therefore the grip is cylindrical or partly so. In point of fact the handle may be said to have three parts—the pommel or butt, quite frequently ornamented, even in tools of savages; the grip or portion actually in the hand, and the joint or hinge. The form of the grip may be that of the natural piece of material. Woman's knife handles are much more delicately fashioned to fit the fingers than are those of the man's knife. But in the curved type the thumb is especially cared for, as giving leverage and guidance in whittling, and in some examples a long extension of the handle enables the whittler to call into activity every muscle of his forearm. The portion of the handle and the treatment of it with reference to the bond or connection with the blade will be spoken of in the next paragraph. The modifications of the handle for the insertion of the working part involve the selection of the grain, splitting one end, splitting the handle, drilling, grooving, sawing, socketing, etc.

Third, the bond or "connective" between the blade and the grip—that is, between the working part and the manual part. In the history of tools these connective devices have had an interesting elaboration. Practically, the bond between working part and manual part consists of three elements: First, a modification in the blade corresponding to the tang; second, a modification of the handle for the insertion of the

[1] John Murdoch, Ninth Annual Report of the Bureau of Ethnology, p. 155, fig. 110.

tang; and third, the true connective of packing, cement, lashing, rivets, wedges or screws, some of which appear in the illustrations of this paper. Where the tang is driven into the end of the grip the elasticity or cohesion of the material forms the bond. In many examples the principle of the ratchet and of the dovetail exist in the shaping of the tang and its socket or in cutting notches on the tang.

Before the introduction of the Iron Age into North America there existed the same elements in the composition of a knife, to wit, a blade of tooth, or shell, or stone; a handle of antler, bone, or wood; and a connective of rawhide, sinew, yarn, or twine, of packing, of cement, and possibly of rivets made of wood, bone, ivory, or antler.

MODE OF CUTTING.

All primitive men's knives with single edge, so far as the national collections indicate, are made to cut toward the operator. Double-edged knives, however, cut both ways. Among the American examples all are for the right hand or for both hands. Lawson distinctly says that "when the Carolina Indians cut with a knife, the edge is toward them, whereas we always cut and whittle from us; nor did I ever see one of them left-handed."[1] The farrier, as will be seen, also cuts toward him, but by turning his hand under, in an awkward sort of way, occasionally cuts from him. Two curved knives in the U. S. National Museum from the Ainos of northern Japan, constructed exactly after the manner of the American curved knives, are made to fit the left hand, but they were received from the same person. It will be perfectly plain to one who has sharpened a quill pen or lead pencil that, in the absence of spoke shaves and fine carver's tools, the Indian was compelled to cut toward his body.

SOURCE OF CURVED KNIFE.

This manner of working is, doubtless, a survival of old processes of hand work before the introduction of more modern tools. It may have been overlooked by the student of technology that it was not until recently that any care was bestowed upon fitting the handles of mechanics' tools to the hand itself. In the case of the woman's knife it will be found that the farther away the Eskimo live from the white race the more simple the handle of the scraper, while in those areas where the contact has been most intimate the handle is more completely and perfectly made to conform to the right hand.

It is astonishing that until Perry's visit to Japan the handles of all Japanese tools were extremely simple. There are some specimens of bronze implements found in Europe in which the handle conforms to the right hand of the worker. It is reasonably certain, therefore, that the man's knife and the farrier's knife have come down from a remote past in their present simple form.

[1] The History of Carolina, Preface, p. v, Raleigh, N. C., 1860 [reprint], p. 330.

It is not disputed that among American Indians all of the iron-bladed knives for men are exotics, at least in the working part or blade. Ethnographers will notice also that in the acculturation of savages it is always the working part that they are willing to improve without prejudice. The manual part holds its own longer, and it will be seen that the grip and connective of men's knives are often "old school", while the blade is "new school."

An important question arises as to the date of introduction and the exact European source of some of the forms of blades. The only survival in the United States of the curved blade is in the farrier's knife, with which he pares the hoof of the horse prior to laying on the shoe.

After a diligent search among cutlers it is difficult to ascertain how long this form of knife has been in use among farriers, and what its precise relation is to the North American curved knife.

Murdoch draws attention to the fact that the Eskimo of Point Barrow call all knives savik, meaning also iron, the identical word used in Greenland for the same objects.[1] From this he argues that the first iron was obtained from the East, along with the soapstone lamps instead of from Siberia, as was tobacco. It is true, however, that whittling with a curved knife having a thumb cavity prevails all over eastern Asia. The white migrants to Greenland antedated those to Alaska, nevertheless, by several centuries. It will be found, also, by examining the Eskimo knives of Murdoch and Nelson, that they often differ radically from the Indian types here especially noted. Seldom does an Indian knife show the presence of the blacksmith, while the whaleship's blacksmith seems to have been a successful schoolmaster to the Eskimo. Moreover, ivory, antler, and bone are far less tractable than birch saplings for whittling, or cedar for shaping, excavating, or carving. The Eskimo blade is shorter, straighter and never used with two hands, while the Indian knife is used for grooving and reducing large surfaces in the absence of the plane.

Among North American aborigines the iron-bladed knife is restricted in its area to the Eskimo and the Indian tribes southward in Alaska, the Dominion of Canada, and the splint basket, snowshoe, the self-bow, and the birch-bark canoe area of the United States. The last-named implements are jackknives par excellence. They are designed for whittling and producing shavings, and not for chopping or scraping—that is, the formation of chips across the grain or of sawdust and scraps. These lines must not be too sharply drawn, however, inasmuch as this paper is restricted to materials furnished by the collections in Washington. It is wonderful how adept primitive artisans are in getting a variety of work out of one implement. In the absence of spokeshaves, planes, chisels, gouges, groove planes, small adzes, and a host of others, the Pacific coast Indians do the work of all with a double-edged curved blade ½ inch wide and 3 inches long.

[1] John Murdoch, Ninth Annual Report of the Bureau of Ethnology, p. 157.

Within the regions mentioned there is for the student an excellent opportunity to study the effect, materials, and their environmental forces upon the construction of the knife. Two varieties of the man's knife are steadily used by the Eskimo—the carver's knife and the etching knife or burin; but, all other shapes are employed by them, so that one finds the curved knife for whittling, the straight blade for carving, and the pointed blade for etching. The blades are short and firmly attached to the handles by rivets or by lashing. The handles are usually of bone, antler, or ivory, some of them being curved to fit the forearm and give great purchase in cutting hard material; others are short and adapted to be grasped in the hand for the purpose of making small chips and even for scraping.

The Canadian Indians and those of the northern United States, having only soft material and bark to work upon, restrict themselves mostly to the long-bladed curved knife. On the Pacific coast, among Indian tribes from Mount St. Elias and southward, there is a mixture of hard material and soft wood, so that there is a great variety in the form of the whittler's knife. Furthermore, these tribes have been in contact with sailors for more than a century and use any piece of steel or iron they can secure in trade. The Canadian Indians were stimulated by the fur-trading companies to travel more rapidly and to make longer journeys; hence, in furnishing them with the curved knife, they made it possible for these Indians to work out the frame of the birch-bark canoe, the bows of the snowshoes, splints for basketry, and a thousand and one objects made of birch bark, with this simple but most efficient device. It has become the traveling tool of the Canadian Indians and has done more than aught else to improve their mechanical skill. An examination of old patterns of snowshoes, in comparison with the latest patterns, reveals an astonishing improvement. The versatile curved knife is just as useful in the making of fine babiche or rawhide string for the webbing of the snowshoe as in whittling down the frame. In the old-fashioned snowshoes the rawhide footing is nearly one-fourth inch wide, while in the best and latest the strands are as fine as thread.

EXAMPLES.

Example Cat. No. 176434, in the U. S. National Museum, is a farrier's knife (fig. 1), made and used by M. E. Horigan, horseshoer in Washington, D. C. The blade is a wedge-shape piece of steel, flat on the lower side and beveled on the upper side, and bent to a hook at the other end. The tang is in form of a rectangle 2 inches long. The handle is a piece of a rib from an ox; the natural curve is taken advantage of in the manufacture; a slight notch is cut on the upper end for the thumb, and depressions have been worn on the upper face by the fingers of the operator. In order to combine the blade with the handle, a saw cut is made on the inner end of the latter for 2 inches. The tang is slipped into the saw cut and is held firmly in place by

two rivets passing through both it and the handle. Many thousands of specimens as rude as this are in use among the horseshoers all over the United States and Canada.

Example Cat. No. 153603, in the U. S. National Museum, is a curved knife from the Micmac Indians of Nova Scotia (fig. 2), collected by Dr. G. M. West. It has the usual farrier's blade let into a narrow notch or stub groove on the back of the handle and held by a seizing of cord. The handle of hard wood fits the hand of the workman very neatly.

In this example, as in others, the seizing or connective, holding the blade and the handle together, is easily removed so as to allow the former to be taken out and sharpened. Especial attention is called to the fact that, in accordance with northern usage, the end of this cord is driven into the handle and held fast by means of a wooden peg instead of being fastened off by being tucked under one of the former roundings itself. Length, 9¼ inches.

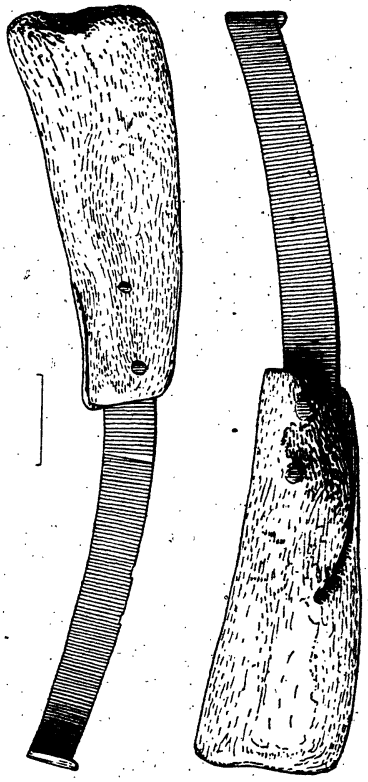


Fig. 1.
FARRIER'S KNIFE.
Back and front views.
Washington, D. C.
Cat. No. 176434, U.S.N.M.

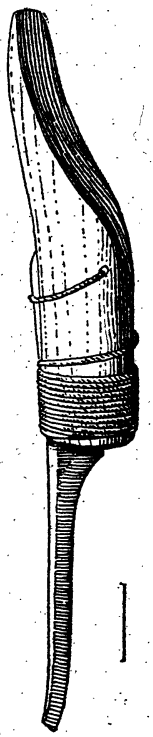


Fig. 2.
MICMAC CURVED KNIFE.
Cat. No. 153603, U.S.N.M.

Example Cat. No. 153604, in the U. S. National Museum, is a curved knife also from the Micmac Indians of Nova Scotia (fig. 3), collected by Dr. G. M. West. The blade is of European manufacture, slightly curved, let into a groove on top of the handle and neatly seized with a thong of rawhide. At one end the thong is doubled over the tang, and driven into the groove of the handle; the other end is drawn through a hole bored in the handle, wedged fast and cut off, making a very neat finish. The handle is made of birch wood and curved to fit the hand, the bevel for the thumb being unusually long and broad. Length, 10½ inches.

The Micmacs are especially whittlers in bow staves, snowshoes, and canoe frames. The women also make splint baskets in wickerwork. Their household utensils were in wickerwork and birch bark, so they did little adzing.

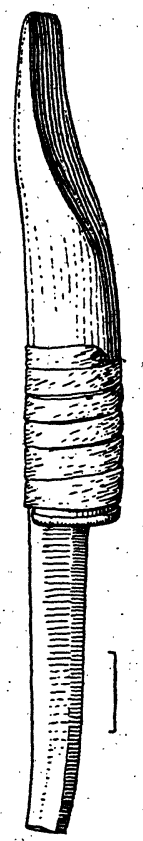


Fig. 3.
MICMAC CURVED KNIFE.
Cat. No. 153604, U.S.N.M.

Example Cat. No. 54338, in the U. S. National Museum, is a curved knife from the Passamaquoddy Indians, Eastport, Maine (fig. 4), collected by Mr. R. Edward Earll. The blade is in form of a farrier's knife, let into a stub groove on the back of the handle, and held in place by a seizing of wood splint. The handle is straight in the grip, and turned up and beveled at the outer end to receive and fit the thumb, as in other curved knives. The connective of wood splint is specially noteworthy in its neat administration and thoroughly aboriginal fastening off, as in the two previous specimens from the Micmac Indians. Length, 10½ inches.

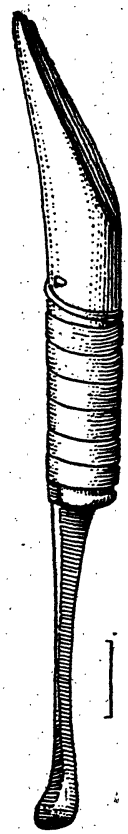


Fig. 4.
PASSAMAQUODDY KNIFE.
Cat. No. 54338, U.S.N.M.

Mr. Lucien Turner says of the Nenenot Indians of the Algonquan stock, living on the borders of the Ungava, in northern Labrador, "that they make their crooked knives of steel files and knife blades (fig. 5). The Indian reduces the metal to the shape desired, flat on one side and beveled on the other, by grinding. He then heats the blade and gives it the proper curve." He also draws attention to the fact that left-handed persons suit the tool to their hand by bending the blade in the proper direction. "No Labrador Indian ever goes on a journey without a curved knife. The handle is held at right angles to the body and drawn toward the user. It is employed in all cases for whittling or shaving wood and the preparation of the strips and slats of canoes, paddles, snowshoes, and everything cut from wood. It requires great skill to use the knife properly."

Turner says that "this tool is in universal use both among the Eskimo and the Indians of this region."

Example Cat. No. 153498, in the U. S. National Museum, is a curved knife from Labrador (fig. 6), collected by Dr. H. G. Bryant. The blade

is like that of the farrier's knife. The shank is let into a stub groove on the side of the handle; a thin portion of the piece of wood taken out is restored and a seizing of tawed buckskin is wrapped around. The handle is rectangular and terminated with a curved portion to fit the thumb. The noticeable feature of this knife is that the shank of the blade is let into the handle in such way that when cutting is being done the strain comes against the solid wood and not against the buckskin lashing, as in a great many examples studied. Whittling does not involve hard pressure, so there is no necessity for a strong joint, as in the knives for carving hard substances.

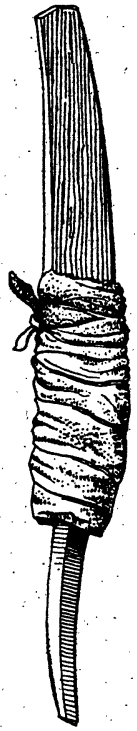


Fig. 5.
CURVED KNIFE FROM UNGAVA.
Cat. No. 10657, U.S.N.M.

Example Cat. No. 153046, in the U. S. National Museum, is a curved knife from the Nascopi Indians of Labrador (fig. 7), collected by Mr. Charles McLaren. The blade is inserted into a stub groove in the top of the handle, and this is covered by a strip of wood, and all lashed together with a rawhide band, which is fastened off by tucking under at both ends. The handle is of spruce wood, and the grip is straight, but the thumb portion is bent up and inward so as to fit exactly the curvature of the hand. A loop of string at the outer end of the handle completes the device. Especial attention is called to the neat fastening of the rawhide connective. Length, 9 inches.

Fig. 6.
CURVED KNIFE FROM MONTAGNAIS INDIANS.
Labrador.
Cat. No. 153498, U.S.N.M.

In the annual report of the Bureau of Ethnology, Dr. W. J. Hoffman figures a curved knife in general use among the Menomini Indians in Wisconsin. These Indians are of the Algonquian stock, and one is not surprised, therefore, to find a curved knife of the same type as those of eastern Canada and the United States. The handle has a long slope for the thumb; the tang of the blade is let into a stub groove on the side of the handle and at the tip end carried quite through. The connective portion of the handle is also cut in a long groove to secure the cord used in lashing. The author says that "among the Menominis this knife is used in preparing the splints from elm logs, out of which baskets are made."

The cutting is always done toward the body. In the case of these knives it will be seen that the function of splitting, planing, and smoothing is performed rather than that of excavating and finishing off large blocks of soft wood.

The material employed by the Menominis in their basketry is tough, and therefore only soft saplings are used in their work.[1]

Holm figures a large number of men's carving knives.[2] Seven of his figures give bone or antler handles, four have plain wooden handles, and in two of them bone and wood are mixed. Seven of these have blades of stone and seven have iron blades. The preciousness of iron is shown in blades made up of two or three pieces or strips of iron riveted together. The blades are all inserted into the ends of the handles, most of them by driving. Two show evidences of saw-cuts at the ends and three have wrappings or bands of twine. The only ornamentation on these handles are rings and geometric figures made of dots. Four of the bone handles are shaped somewhat into characteristic forms.

Fig. 7.
CURVED KNIFE FROM NASCOPI INDIANS.
Cat. No. 153046, U.S.N.M.

Parry says that "the principal tool of the Eskimo of Iglulik was the knife (panna); that they possessed a great number of excellent ones previously to his coming, and that the work was remarkably coarse and clumsy. The manner of holding the the knife also was most awkward; that is, with the edge backward."[3]

Example Cat. No. 1100, in the U. S. National Museum, is a curved knife from Anderson River, in the Mackenzie River district (fig. 8), collected by Mr. R. M. Macfarlane. The blade is much curved, let into a stub groove on the top of the handle, and

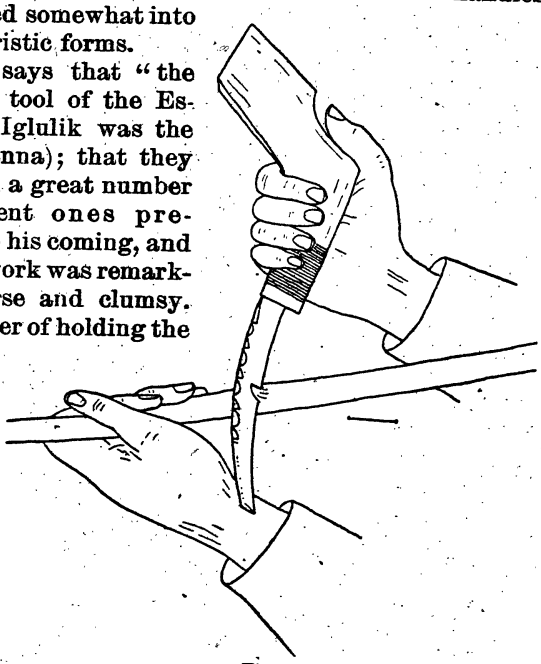


Fig. 8.
ESKIMO KNIFE.
Mackenzie River.
Cat. No. 1100, U.S.N.M.

[1] Fourteenth Annual Report of the Bureau of Ethnology, p. 260; also Harper's Magazine, March, 1896, p. 505.

[2] Holm, Ethnologisk Skizze, Copenhagen, 1887, plate 18.

[3] Parry's Second Voyage, London, 1824, p. 536.

held by a seizing of fine rawhide thong. One end of the thong is driven into the groove end of the handle, a favorite method of fastening off among the Eskimo. The other end is fastened off by simply drawing it through a dozen turns of the seizing. There are no knots tied. The handle is of fine spruce wood in the shape of a knee, and chamfered on the back to fit the thumb. This is an unusual shape among handles. Length of blade, 5 inches.

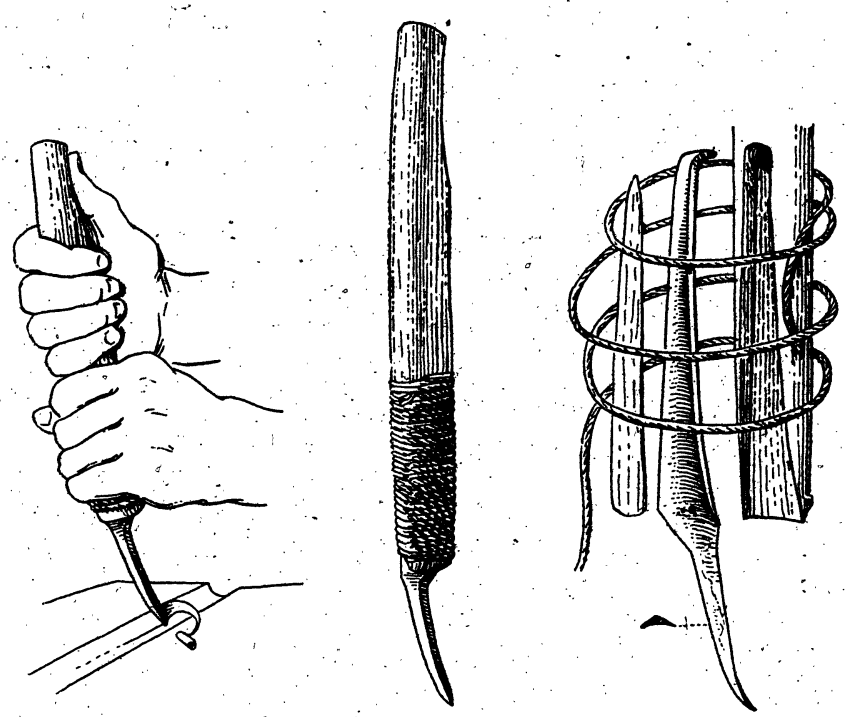


Fig. 9.

TWO-HANDED CURVED KNIFE, SHOWING STRUCTURE AND METHOD OF USING.

Yakutat, Alaska.

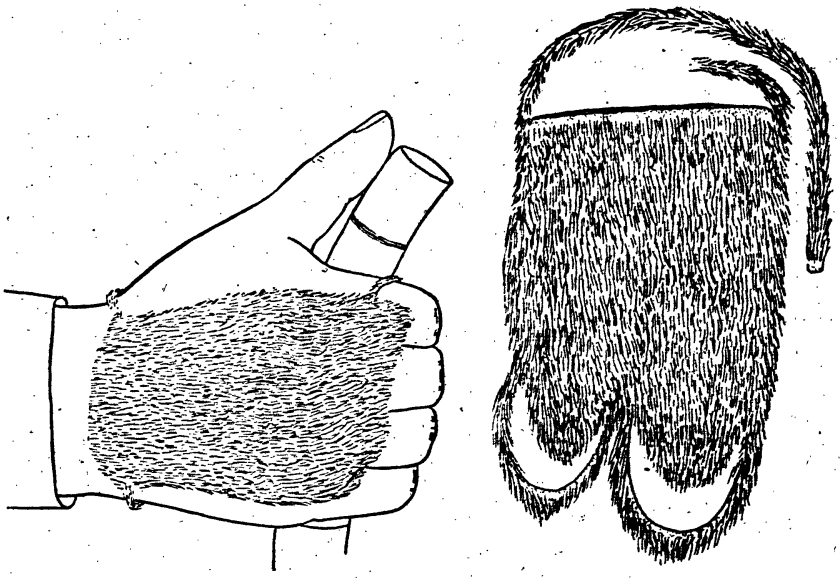
Cat. No. 178196, U.S.N.M.

Murdoch declares that the Point Barrow Eskimo have two styles or sizes of carver's knives, one large Midlin, with a haft 10 to 20 inches long, for wood working, and a small one, Savigron (instrument for shaving), with a haft 6 to 7 inches long, for working bone and ivory. The knife is held close to the blade between the index and second fingers of the right hand, with the thumb over the edge, which is toward the workman. Murdoch speaks in great praise of the skill of the carver.[1]

[1] Ninth Annual Report of the Bureau of Ethnology, p. 157, fig. 113.

It is easy to understand the existence of the two types in the arctic area, where soft driftwood exists alongside of antler and ivory.

Example Cat. No. 20831, in the U. S. National Museum, is a curved knife from Prince of Wales Island, Alaska, collected by Mr. James G. Swan. The curved blade is of iron, with both edges alike, and resembles the modern can-opener. To form the joint its tang is roughly let into the wooden handle at its end on one side, the other side being notched, and is held in place by a lashing of thong. The handle of oak is curved upward outside the thumb space and



Figs. 10, 11.

CARVER'S KNIFE, AND GUARD FOR BACK OF HAND.

Sitka, Alaska.

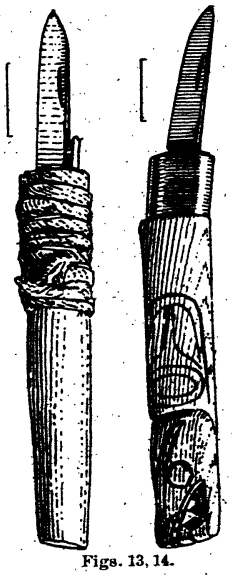
Cat. Nos. 168342, 168345, U.S.N.M.

tapers slightly to the outer end. The noteworthy features are the adaptation of a modern can-opener for the blade, the resemblance of the handle with its thumb space to Japanese and Korean handles, and the notch at the inner end to prevent the slipping of the seizing. Mr. D. W. Prentiss, jr., of the U. S. National Museum, had the good fortune to observe a Yakutat Indian carving with a large specimen of this variety of two-edged blade (Cat. No. 178196, U.S.N.M.). The handle is held in both hands while the carver dresses down the inside of his canoe or wooden box. Now chipping toward himself, now away, with the greatest rapidity, he gave the fine adz finish often observed

on many objects brought from the cedar areas of southeast Alaska. In this its perfected form the knife is both chisel and adz, working always by pressure (fig. 9).

Example Cat. No. 168342, in the U. S. National Museum, is a curved knife from the Tlingit Indians of Alaska (fig. 10), collected by Lieut. G. T. Emmons, U. S. N. It consists of a blade of a common pocketknife driven into the end of a handle of antler and held in place by an iron ferrule and by a seizing of rawhide thong. The handle has rings scratched around it an inch apart. The example has this peculiarity, that the bevel of the blade is underneath, for the workman to cut toward him, and must have been designed, therefore, to be used after the modern fashion of a trimming chisel. Length, 7¼ inches. With this knife belongs example Cat. No. 168345, U.S.N.M., a guard of sealskin to be worn on the back of the hand (fig. 11), so that when the workman is whittling in a box or canoe he may protect himself. The entire outfit is quite modern, but it is remarkable that this guard is the only example of its kind in the collection.

Fig. 12.
CARVER'S KNIFE, FOR TWO HANDS.
Sitka, Alaska.
Cat. No. 20752, U.S.N.M.



Figs. 13, 14.
CARVER'S KNIVES.
British Columbia.
Cat. Nos. 129976, 129978, U.S.N.M.

Example Cat. No. 20752, in the U. S. National Museum, is a curved knife from Sitka, Alaska (fig. 12), collected by Mr. James G. Swan. It is evidently made up for trade, and shows no sign of use, but it has the long handle of the Yakutat two-handed type. The blade, with two edges, is lashed by its tang to the side of a pine handle by means of a buckskin thong, which last is the only aboriginal part of the apparatus, and is laid on in a slovenly manner, and any savage would be ashamed to use it on his own account.

Since ethnographic material has entered into commerce the Museum curator is vexed continually by receiving specimens that never had any serious aboriginal use. Furthermore, trade centers, such as Unalaska, Sitka, Victoria, and Honolulu, where in the old days whalers met and exchanged or pawned their collections from different places, specimens were carried far from their original source, and now can be identified only by comparing them with well-authenticated objects.

Example Cat. No. 129976, in the U. S. National Museum, is a wood carver's knife from the Kwakiutl Indians of Fort Rupert, British Columbia (fig. 13), collected by Mr. James G. Swan, and forms a transition between old art and European art. The blade is that of a modern jackknife set into the end of an oak handle and held firm by a ferrule of sheet brass nailed on. Here are united in a single joint the most primitive and most persistent connective, namely, a tang driven into the grain of the handle at the working end and metal ferrule, the latest form of bond. The handle is slightly curved, and bears on its end and surface a carving of a totemic animal's head and fins. Length, 8½ inches.

Fig. 15.
CURVED KNIFE.
Fort Rupert Indians.
Cat. No. 129977, U.S.N.M.

Example Cat. No. 129978, in the U. S. National Museum, is a similar knife, with jackknife blade in a very plain handle without carving (fig. 14). To form the joint the inner end of the handle has a saw-cut made across, into which the tang of the blade is set and made fast by a wire driven through the hinge hole. Stovepipe wire is wrapped about the joint, and a wedge of wood and one of iron driven in between the edges of the tang and the wire. Outside the wire is a wrapping of cotton rag to protect the hand. This example shows that there is plasticity even in the savage mind. The elements of this old form have been nearly all patented inventions.

Example Cat. No. 129977, in the U. S. National Museum, is a curved knife of the Fort Rupert or Kwakiutl Indians (fig. 15), collected by Mr. James G. Swan. It consists of a blade bent up at the top, beveled only on the upper side, and by its shank lashed to a shouldered cut on the handle. The handle is of oak and is also curved. The two parts are held together by a seizing of twine, and outside of this a wrapping of blue cloth. Length of handle, 8 inches.

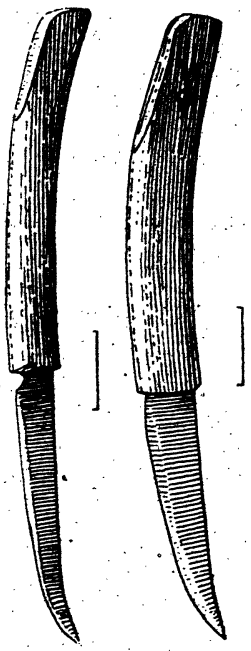


Fig. 16.
CARVER'S KNIVES.
From the Ainos.
Cat. No. 150715, U.S.N.M.

Example Cat. No. 150715, in the U. S. National Museum, is a curved knife of the Ainos of Yezo (fig. 16), collected by Mr. R. Hitchcock. The tang of the blade of iron is driven into a wooden handle, which is

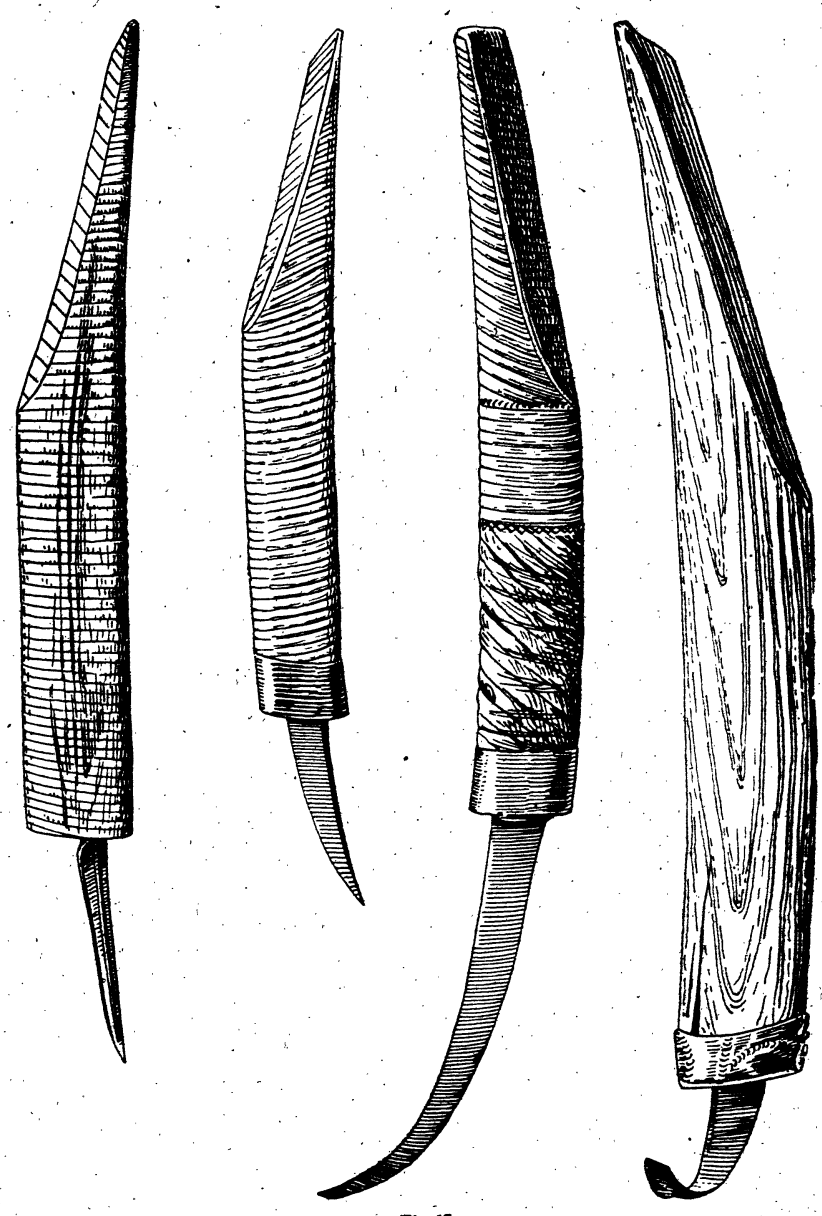


Fig. 17.
CURVED KNIVES.
Amoor region.
After von Schrenck.

slightly curved and has a chamfer for the thumb. There is no attempt at cementing or seizing or ratcheting on the tang. The bond is in effect a very ancient connective done in iron. Length, 7½ inches.

Example Cat. No. 150715 (*a*), in the U. S. National Museum, is similar to the foregoing excepting that the blade is straight and there is a slight carving at the outer end of the handle. The handle in both of these specimens seems to be left hand, inasmuch as the bevel and curve of the blade and the chamfer fit the left hand and do not fit the right. The great number of whittling knives of this species in eastern Asia raises some interesting questions of the method of intrusion of the Iron Age into the aboriginal life of the Western World.

In the area between Bering Strait and the Aleutian Islands, under the influence of Russian traders and the whaling industry, great numbers of carver's knives in endless variety are found. The largest collection from this region has been made by Mr. E. W. Nelson, and the forms of whittling knives, carving knives, and etching knives will be found fully illustrated in Mr. Nelson's work.

A large and interesting series of curved knives were collected by von Schrenck about the mouth of the Amoor River and northward, and are now in the Imperial Museum at Moscow. These knives represent all of the different classes spoken of in this paper, to wit: Knives with straight blades, for ordinary domestic purposes; those with long curve, for ordinary whittling; those with abrupt curve at the end, as in the farrier's knife, for excavating canoes and boxes; and those with sharp points, for engraving on hard substances. The handles are either plain or ornamented and have a short or a long bevel for the thumb. Those which have a decided sidewise curve are always fitted to the right hand and cut toward the person (fig. 17).

CONCLUSION.

I find that in the employment of the curved knife the Eskimo, the Canadian tribes, together with their kindred on the northern boundary of the United States, and, more than all, the North Pacific tribes on both sides of the ocean have exhausted the possibilities of an implement that has been in the hands of some only a century or two.

The arts of all these tribes were bettered and not degraded by the curved knife. In every case they were immensely improved. The form of knife with straight, short blade made it possible for the northern and western tribes to become better carvers and engravers. Before the possession of iron there is meager evidence that either of these areas possessed other than the most trivial carvings in hard material. Their best results were in soft wood and slate, by means of beaver tooth or shark's tooth knives.

The curved knife serves to confirm the opinion that as soon as any process or device came within the scope of a people's intelligence they have mastered it and brought it to a climax, from which time on new ideas and new inventions replaced the old.

List of man's knives in the U. S. National Museum.

Cat. No.	Curved knives.	Locality.	Collector's name.
481	Iron knife (small)		
834		Fort Good Hope, N. W. Territory.	R. Kennicott.
1100		do do	R. Macfarlane.
1307–9	Eskimo knives	Anderson River do	C. P. Gandet.
1635	Eskimo knife	do do	R. Macfarlane.
1643	do	Mackenzie River do	Do.
1646	Man's knife	Anderson River do	Do.
1649	do	do do	Do.
1675	Man's curved knife	do do	Do.
2094	Carver's knife	do do	Do.
2101–4	Eskimo curved knives	do do	Do.
2274–75	Long-handled curved knives	do do	R. Kennicott.
2276–77	do	do do	R. Macfarlane.
2278–93	Short curved knives	do do	Do.
2297	Carver's knife	do do	Do.
2304	do	do do	Do.
2308	do	do do	Do.
5121	Eskimo knife	Mackenzie River do	Do.
5813	Small knife	Anderson River do	Do.
7405–10	Eskimo knives	Mackenzie River do	Do.
7455–61	Small iron knives	do do	Do.
10194	Man's knife	Igloolik, Baffin Land	C. F. Hall.
16146	Carver's tool (graver)	Cape Etolin, Nunivak Island, Alaska.	W. H. Dall.
16163	Carver's knife	do	Do.
16172	do	do	Do.
18920	Iron knife, bone handle	Clallam Indians, Washington.	J. G. Swan.
20458	Bone knife	Santa Barbara, California	Paul Schumacher.
20752–53	Curved knives	Tlingit, Sitka, Alaska	J. G. Swan.
20831	Iron curved knife and sheath	Hannegah, Charlotte Island	Do.
20846	do	Kootznoo Indians, Alaska	Do.
24411	Bone or ivory knife, iron blade.	Norton Sound, Alaska	L. M. Turner.
30107	Small table knife	Cumberland Gulf, Baffin Land.	W. A. Mintzer, U. S. N.
32145–46	Bone knives	Point Townsend, Washington.	J. G. Swan.
32874–84	Man's knives, bone or wood handle.	St. Michaels, Alaska	E. W. Nelson.
33027–28	Curved knives	Nulato do	Do.
33030	Knife for carving ivory	Nulato Ingalik do	Do.
33304	do	St. Michaels do	Do.
33314	Handle of wood-working knife.	Pastolik do	Do.
36315	Knife, ivory handle, iron blade.	Sfugunugumut do	Do.
36316	do	Kongigunogumut do	Do.
36317	Knife, bone handle, metal blade.	Koolwoguwigumut do	Do.
37238–39	Knife handles	Kushunuk do	Do.
37420–25	Ivory carved knife	Anogogumut do	Do.
37440		Ukogumut do	Do.
38113	Carved knife	Newlukhtalagumut do	Do.

List of man's knives in the U. S. National Museum.

Cat. No.	Curved knives.	Locality.	Collector's name.
38486	Carver's knife	Lower Yukon, Alaska	E. W. Nelson.
38487	do	do	Do.
43407	do	Cape Prince of Wales	Do.
43873	do	Unalakleet	Do.
44757	Handle for working knife	Sledge Island	Do.
45488	Curved knife	St. Michaels	Do.
46080–81	Knife for carving	Port Clarence	W. H. Dall.
46303	Curved knife	do	T. H. Bean.
48085	Woodworking knife	Cape Darby	E. W. Nelson.
48087	Ivory and bone worker	do	Do.
48291	Wood curved knife	Nunivak Island	Do.
48536	do	Kotzebue Sound	Do.
48846–47	Knives for splitting birch bark.	Mission, Lower Yukon	Do.
48916	Finger guard against curved knife.	Sabotnisky	Do.
54338	Curved knife	Eastport, Maine	R. E. Earll.
55923	Carver's tool (graver)	Bristol Bay, Alaska	Chas. L. McKay.
55942–43	Woodworking knives	do	Do.
56546	Man's knife, iron blade	Point Barrow	Lieut. P. H. Ray.
56552–54	Curved knife	do	Do.
60188–92	Curved knives, bone and wood handle.	Kootznahoo	J. J. McLean.
63274–75	Knives for carving ivory, etc	St. Lawrence Island	E. W. Nelson.
63316–22	do	do	Do.
63541–42	Iron knife blades, curved, unfinished	do	Do.
64154–55	Curved knives, leather sheath	Hotham Inlet	Do.
67978	Curved knife for wood carving.	Tlingit, Sitka	J. J. McLean.
76702	Curved knife	Fort Alexander, Alaska	J. H. Johnson.
89271–83	Knives, iron blades	Point Barrow	Lieut. P. H. Ray.
89293–304	Knives for carving	do	Do.
89383–84	Knives, iron blades	do	Do.
89579	Slate knife, bone handle	do	Do.
89582	Slate knife, wooden handle	do	Do.
89586	Slate knife, bone handle	do	Do.
89587–95	Bone handle knives	do	Do.
89597	Single-edged slate knife	do	John Murdoch.
89633–41	Knives, flint blade	do	Lieut. P. H. Ray.
89644	Crooked knife	do	Do.
89652	Small knife	do	Do.
89653	Carver's knife (graver)	do	Do.
89821	Knife, iron blade	do	Do.
89964–66	Knives for carving	Labrador	L. M. Turner.
90210–11	do	Ungava Bay, Labrador	Do.
90458	Knife, wood carving	Ugashik, Alaska	William J. Fisher.
126629	Iron knife blade	Tonalan, Mexico	Dr. E. Palmer.
127461	Curved knife	Iguswek River, Alaska	I. Applegate.
127567	Knife (el curvo)	Chile	W. E. Curtis.
127649	Curved knife	Ft. Alexander, Alaska	—— Johnson.
127788	Carving tool	Nakneek	William J. Fisher.
127809	Curved knife	Kauchiung	Do.
127895	Knives	Putnam River, Alaska	Lieut. Geo. M. Stoney, U.S.N.

List of man's knives in the U. S. National Museum.

Cat. No.	Curved knives.	Locality.	Collector's name.
129976–78	Curved knife	Kwakiutl, Fort Rupert, Alaska.	J. G. Swan.
130470	....do	Godthaab, Greenland	Theo. Holm.
131220	Knife, glass blade	Borja Bay, Patagonia	Thomas Lee.
150715	Curved knife, left handed (?)	Aino, Yezo, Japan	R. Hitchcock.
153046	Curved knife	Naskopies, Labrador	Dr. W. J. Hoffman.
153498	Curved knife, pine handle	Montagnais, Labrador	H. G. Bryant.
153603–4	Carved knife	Micmacs, Nova Scotia	Gerald M. West.
166956	Knife for carving	Yukon River, Alaska	J. H. Turner.
168342	Carving knife	Tlingit, Sitka, Alaska	Lieutenant Emmons.
176434	Farrier's knife	Washington City	M. E. Horrigan.