

Bow and Arrows. -- For shooting, the bow was used until recently, and in some remote places it is still used by a few people. In former times it was the favorite weapon of the Chukchee; and as late as the thirties in the nineteenth century, the official reports of the Anui fair, speaking of the number of Chukchee comers, say that there were so and so many camps, with so and so many Chukchee men "versed in archery."

The epic tales are full of descriptions of shooting-bouts and contests. Ability to split a blade of grass with the point of an arrow was proof of the greatest skill of the archer. Nowadays only the toy-bows of children are put to their full use; and shooting with small arrows is practised much in the same way as in former times, the children beginning at a very early age.

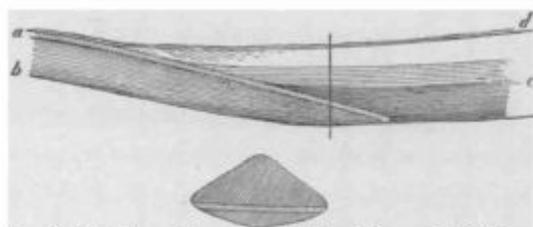


Fig. 68 (310/17). Diagrams of "Double-wooded" Bow. Thickness at bend, 2.5 cm.

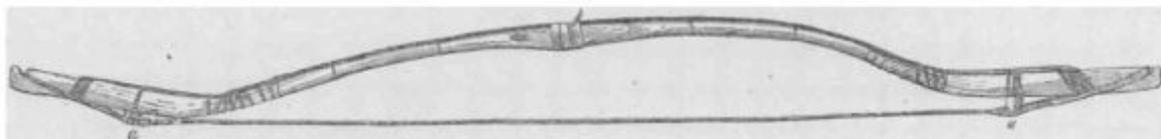


Fig. 69 (310/13). Bow with Backing of Sinew. Length, 160 cm.

Two varieties of bow are used in northeastern Asia. One is the "double-wooded bow," so called by the Russians. It was composed of two pieces of wood, mostly birch and larch, which were glued together. The outer piece (Fig. 68, *a*) was much thinner than the inner one (Fig. 68, *b*). The horns often consisted of separate pieces, and were spliced to the body of the bow (Fig. 68, *c*). The back of the bow was almost always covered with a thin layer of sinew pasted over with fish-glue (Fig. 68, *d*). Over that was glued a covering of birch-bark, often wound around the body of the bow in a spiral, to increase its resisting power. This bow was used by the Yukaghir, the Lamut, the Koryak, the Yakut, and, in fact, by all the tribes of northeastern Asia, besides the Chukchee and the Eskimo. The Reindeer Chukchee bought bows of this shape from their neighbors, and had quite a number of them in actual use.

The other variety of bow (Fig. 69) was made of a single piece of wood, mostly larch, but occasionally birch or pine, found among the driftwood on the coast. It was strengthened by a wrapping of birch-bark or sinew, and in addition had a plaited-sinew backing. Occasionally even a "double-wooded" bow would have a sinew backing, not only among the Chukchee, but also among the Yukaghir and the Lamut.

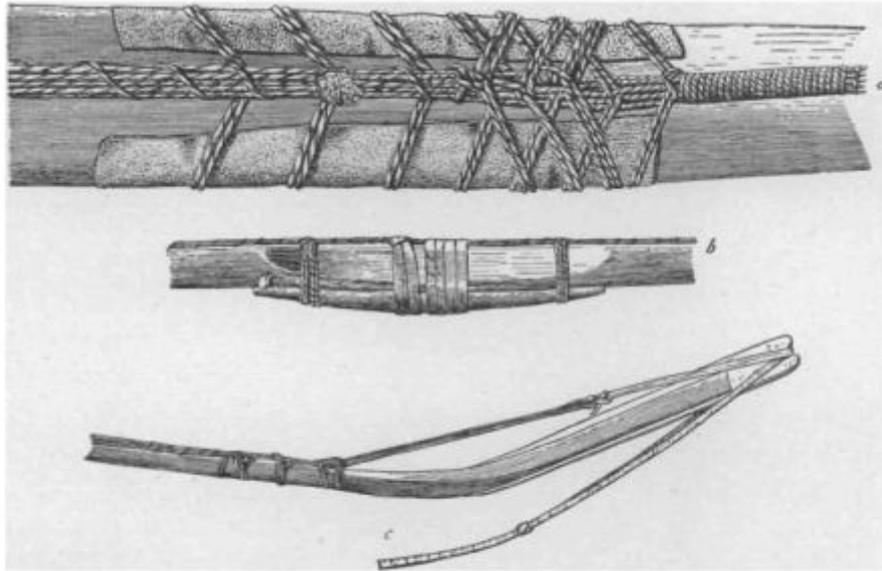


Fig. 70, *a* ( $\frac{10}{1383}$  a), Detail of Sinew Backing of Bow represented in Fig. 69; *b* ( $\frac{10}{1383}$ ) Detail of Strengthening of Grip of Bow; *c* ( $\frac{10}{1383}$ ), Method of tipping Horns of Bow  
Length of bow in *b*, *c*, 155 cm.

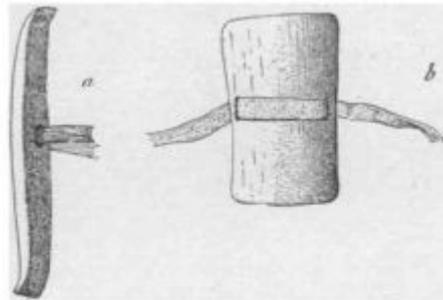


Fig. 71, *a* ( $\frac{10}{1383}$  1), Ivory Lever for twisting Sinew; *b* ( $\frac{10}{1383}$ ), Ivory Thumb-Guard.  $\frac{1}{4}$  nat. size.

The lashing (Fig. 70, *a*) was of the western type, so called by John Murdoch, with a single sinew cable secured about the body of the bow in half-hitches, with extra strengthening on both bends. This type of lashing has been described by John Murdoch as characteristic of the bow of northeastern Siberia, with the occasional mixture of the so-called Arctic type. {Murdoch, *Eskimo Bows*, pp. 313, 314.} Small ivory levers (Fig. 71, *a*) were used in twisting up the cords of sinew on the back of the bow, making them into a cable. In shape they are identical with those used by the American Eskimo and represented by Nelson {Nelson, Fig. 30, p. 111.} and Murdoch. {Murdoch, *Eskimo Bows*, Plate X, Fig. 27; Plate XI, Figs. 28, 29.} Like the latter, they were used in sets of two. The set in the collection was bought, together with one of the quivers. It has both levers tied together with a cord of sinew passing through holes at their middle points. Sometimes the belly of the bow was strengthened with a smooth flat piece of whalebone fastened to it with glue, or with an extra piece of wood lashed to the middle, beneath the grip (Fig. 70, 5). This kind of bow was in use among the Chukchee and the Asiatic Eskimo.

The bows of the Gilyak, as may be seen from specimens in the collections of this Museum, are strengthened with whalebone on the inside in much the same way as the Chukchee bow. They have a layer of sinew glued to the back, and over that a birch-bark covering, but no backing of plaited sinew. According to Schrenck, the finer specimens of Gilyak bows were strengthened with whalebone on the back and with elk-hide on the belly. {Schrenck, II, p. 245.}

The two forms of bow were alike in shape: they had recurved ends, a body flat on the outside, and flat or rounded on the inside. The grip was in the middle, and narrower than the

arms. The bow became thicker and narrower towards the ends, which were almost triangular in cross-section. When unstrung, bows of both types assume a peculiar position, with the belly slightly curved, but with horns so much turned back that sometimes the bows look as if curved outwards.

The string was made of plaited sinew or of thong. The notches for the reception of the string were cut either on the back of the bow or across the ends of the horns (Figs. 69, 70 *c*). In bows without separate horns, each end was often tipped with a long piece of bone (Fig. 70, *c*) as a protection against the impact of the string. Small wooden supports (Fig. 69, *a*) were frequently fastened to the horns to make the string stand off. Some of the Chinese bows -- as, for instance, those in the collections recently sent to the Museum by Dr. Berthold Laufer -- have many details in common with the Chukchee bow. They are strengthened on the belly with a thin strip of hard black wood, have supports for the string in exactly the same places; their nocks are tipped with iron; and their whole appearance resembles that of the Chukchee bow.

Both varieties of bow were strong, and sometimes could be strung only with the help of the feet, as mentioned in many traditions.

One of the Chukchee bows brought by the expedition from the mouth of the Anadyr is 160 cm. long, and another measures 155 cm. {Dr. Adler (II) gives for the length of the Chukchee bows (ancient), 142-159 cm.; for the length-of the Chuvantzy bow, 185 cm.} Both are similar in shape, but the former (Fig. 69) is made of a single piece of wood, strengthened from inside with a piece of whalebone reaching to the nocks and neatly fitted in. The back of this bow has the usual layer of sinew glued on, and over that a layer of birch-bark. This is overlaid with a backing of plaited sinew. The cable of sinew is fastened to the body of the bow with a few half-hitches, then it is firmly lashed to the bends and its ends fastened around the horns, not reaching the nocks by two inches. The string is of sinew, and the notches are on the horns of the bow.

The other bow is made of two pieces of wood glued together, as described before. The sinew layer is absent, but it has the usual backing of plaited sinew. The cable of sinew is fastened to the bow by a method similar to that used in the first specimen; but the cable, after being lashed to the bends, extends directly to the nocks. A loop of thong is slung around each nock, and meets the cable halfway, where they are tied together. The bow is covered with bark that is glued on, and adorned on the back with black cross-lines similar in description to those found by Dr. Adler {Adler, II, p. 10.} on a Chuvantzy bow from the Middle Anadyr. The string is of thong. Notches are cut across the ends of the bow, which are tipped with bone (Fig. 70, *c*). One horn was broken, and afterwards spliced and secured with bone wedges and a strong sinew lashing.

Bows were also made of one piece of wood, without backing or covering, and shaped in a single curve. Such bows occur among the Lamut or Yukaghir, but they were used only temporarily, in the absence of weapons of better make; or they may be degenerate forms of the better type that developed after the introduction of fire-arms.

Among the Chukchee, however, plain bows without recurving ends have always been in use side by side with those of better workmanship. The plain bows consisted of a single piece of wood, without elastic cover, but they were supplied with a heavy sinew backing of the combined Arctic and western types of John Murdoch. I found such bows among the Reindeer Chukchee of the Kolyma country.

The bow is held vertically, and the arrow is on its left. The so-called Mediterranean arrow-release was used, in which the first two fingers were employed for drawing the string, and the arrow was held between them. Arrows were often flattened around the nock, to make them better adapted to the position between the fingers.

The secondary release was also in use, at least among the Reindeer Chukchee, and perhaps also the Mongolian release, if we may judge from the occurrence of the thumb-guard. Specimens of thumb-guards were found among the Chukchee (Fig. 71, *d*), though the owners

could not exactly tell their use. Perhaps they were used similarly to those of the Mongolian archers.

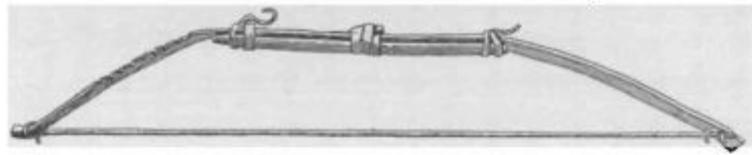


Fig. 72 ( $\frac{1}{8}\frac{1}{8}\frac{1}{8}$  a). Child's Bow, made of Whalebone. Length, 46 cm.

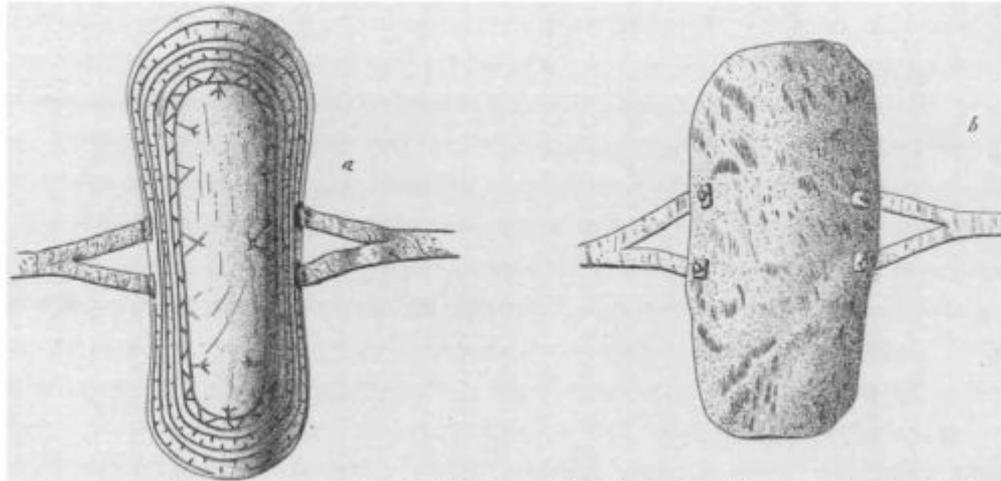


Fig. 73, *a* ( $\frac{3}{8}\frac{0}{8}\frac{5}{8}$ ), Ivory Wrist-Guard (width, 4 cm.); *b* ( $\frac{1}{4}\frac{1}{8}\frac{5}{8}$ ), Wrist-Guard made of Hide (width, 5 cm.). *a*, Eskimo, Indian Point; *b*, Lamut.

Tradition speaks also of bows that were made wholly of whalebone, although this material could not make a strong bow. However, children still use small bows made entirely of whalebone (Fig. 72). Wrist-guards (Fig. 73) made of ivory or of strong leather served for protecting the hands from the rebounding string.

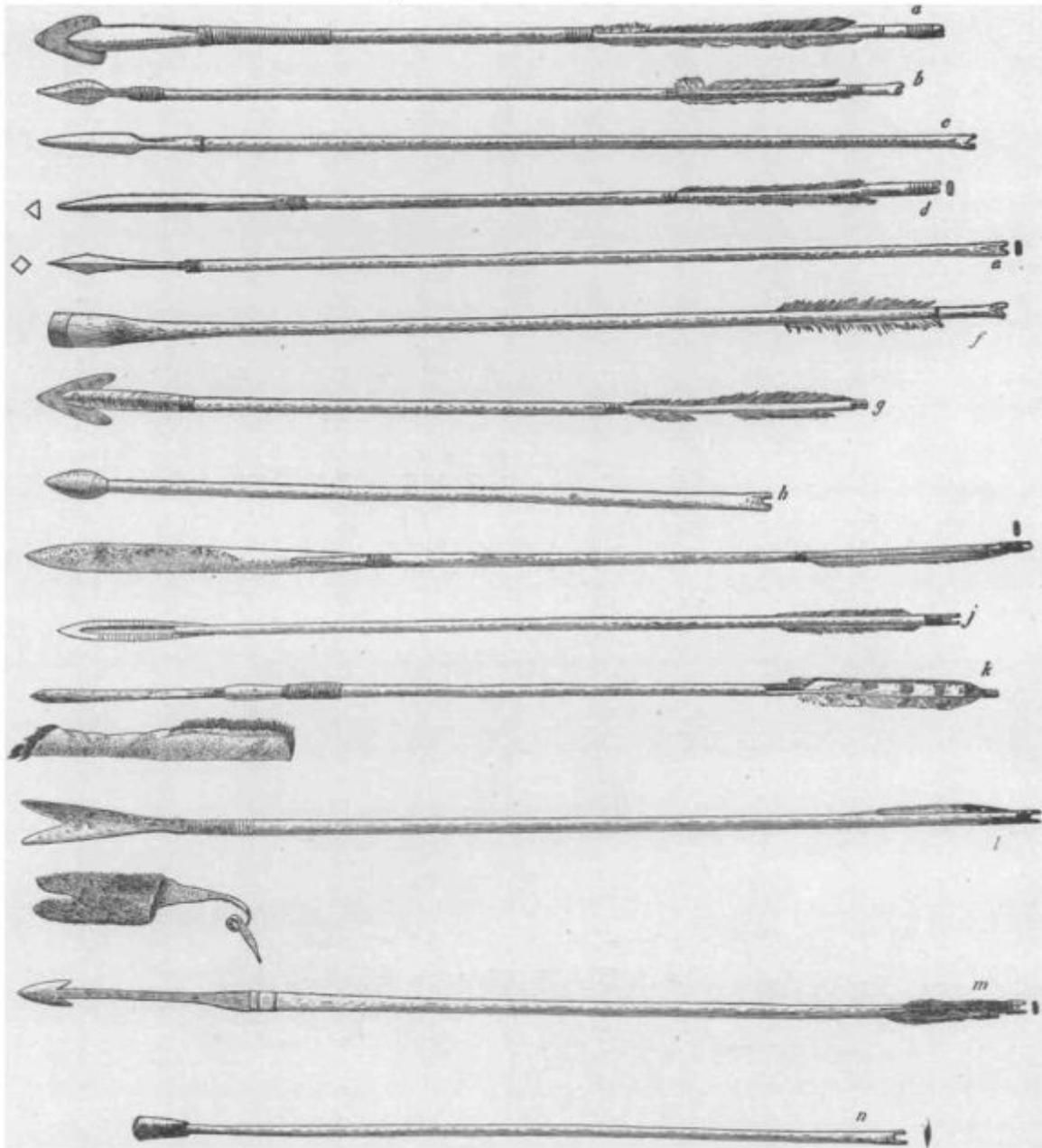


Fig. 74. Various Types of Arrows.  $\frac{1}{2}$  nat. size. a, 1884 d; b, 1833 g; c, 1884 f; d, 1883 h; e, 1883 c; f, 1884 d; g, 1833 j; h, 1833 d; i, 1833 b; j, 1883 i; k, 1833 h; l, 1880 e; m, 1833 b; n, 1833 b.

In recent times arrow-points were made of iron, bone, ivory, wood, and of all these materials combined (Fig. 74). They were fastened to the shaft in various ways, -- wedged in and occasionally wrapped with sinew, or inserted in a hole in the tip of the shaft. I was told that some were simply slanted and tied to the shaft, though among the specimens obtained not a single splice of this kind is found. However, this method of splicing is well known in northeastern Siberia, and is used, for instance, in lashing a man's crooked knife to its slender handle, and especially in joining two pieces of broken stick, as in canes, arrow-shafts, sledge-rails, etc.

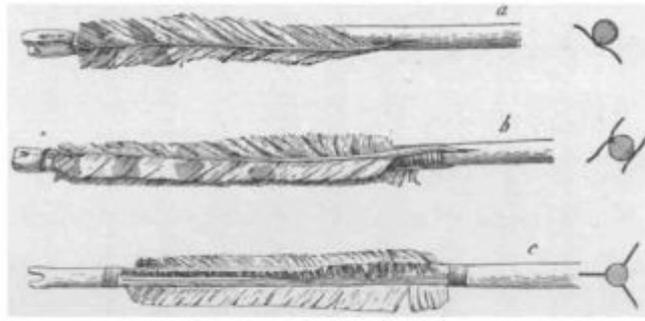


Fig. 75, *a* (1880 b), *b* (1833 h), *c* (1833 g). Methods of feathering Arrows. Thickness, 75 cm.

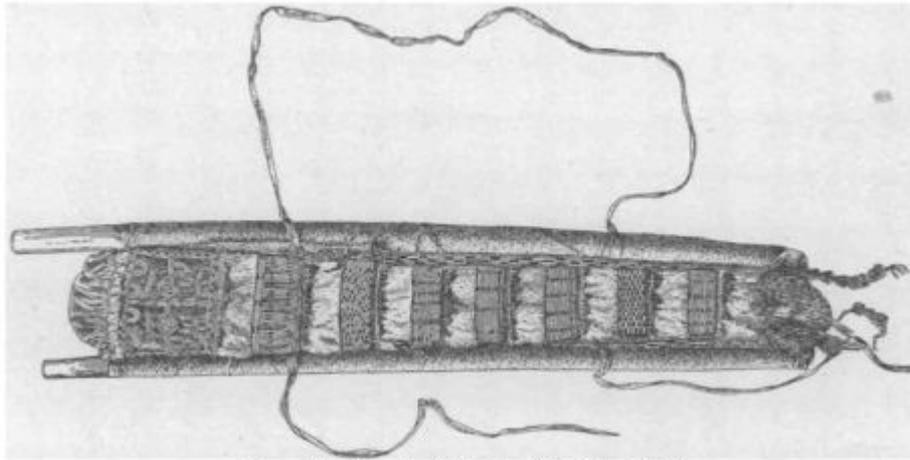


Fig. 76 (1833 a). Quiver. Length, 83 cm.

Many of the points had fur sheaths to protect the sharpened edges. Those with heavy blunt heads were intended to stun birds and small animals. The ends of the shafts were often tipped with bone or wrapped with sinew to prevent the nock from splitting. Arrows were generally feathered, and the feathers were either glued on along their whole length, or only their tips were caught in a slit in the rearshaft, and the bases were tied to the nocks with sinew, while the middle remained free. There were arrows with one, two, or three feathers (Fig. 75). The length of the arrows was from 60 to 85 cm. {According to Adler (I), 51 to 78 cm.}

I could find no indications whatever that poisoning of arrows was known to any of the tribes of northeastern Asia, though Steller and Krasheninnikoff mention it as existing among the Kamchadal. The latter, they say, smeared their arrow-points with the juice of some kind of *Aconita*, numerous species of which are found in Kamchatka.

Arrows were usually put into quivers. These were rectangular in shape, and embroidered on the outer side. They were carried on the back, supported by shoulder-straps, like a knapsack (Fig. 76; see also Plate XXI). Sometimes, to protect the quiver from rain, an extra covering was used, which was frequently also embroidered. A covering for the bow was employed for the same purpose.