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## PREHISTORIC HAFTED FLINT KNIVES.

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THE question of the function of the stone implements commonly called arrow and spear points has been a vexed one. There are few references by early writers to the use of chipped flint by the American Indians for other purposes than as points for projectiles. It is very probable, however, that a majority of these implements were used as knives or cutting tools and were attached to short handles of wood or antler.

Major Powell found such knives in use among the Pai Utes. Colonel Ray collected similar implements from the Hooper valley Indians of California, and there is in the Peabody Museum at Cambridge a fine collection of leaf-shaped jasper blades fastened with pitch and cord wrappings to short handles of wood. These were obtained from the Klamath Indians of southern Oregon.

The finding of a few similar tools with wooden hafts still attached in prehistoric burial caves, cliff houses, and graves, shows that such implements were in use in prehistoric times over a large portion of North America. Prof. F. W. Putnam

has described and illustrated hafted stone knives from graves in the Santa Barbara Islands and from prehistoric burial caves in the state of Coahuila, Mexico; also one knife with a handle of antler from a mound in Ohio.<sup>1</sup>

The blades of the eight knives from the mummy packs of the Mexican burial caves referred to above are chipped from light-colored chalcedony, the largest one being seven and one-fourth inches in length, and its greatest width being three and one-fourth inches. The smallest blade is three and one-fourth inches long and two and one-fourth inches wide near its base. The blades vary in form, some being proportionally short with rounding points, others being comparatively narrow and sharply

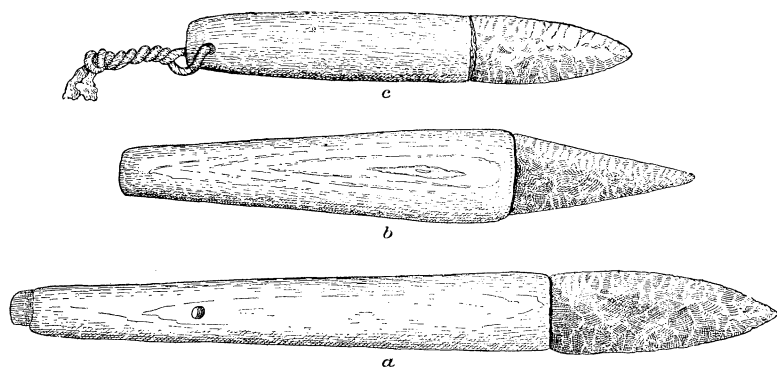


FIG. 1. — Prehistoric knives from the cliff houses,  $\frac{1}{2}$ .

pointed. The hafts of these knives are of wood, about six inches in length, the majority of them being made of a section of a limb with the bark removed. One is fashioned from the discarded hearth of a fire-making set, and still retains the burnt depression in which the fire drill revolved. The thin base of the blades is inserted into a notch extending across the end of the haft, and is fastened with gum.

The knives from the Santa Barbara graves have small blades of flint of the leaf-shaped type. The hafts are of split wood, the blades being inserted into a notch at one end and secured with asphaltum.

<sup>1</sup> *Bulletin of the Essex Institute*, vol. xv, 1883; *Wheeler's Survey West of the 100th Meridian*, vol. vii; *Peabody Museum Reports*, vol. iii, p. 457.

The knife from the Marriott mound, Ohio, has a blade of black flint, nearly triangular in outline, inserted into a notch cut in the larger end of a curved antler prong. This knife and those from the Mexican caves, together with one from the Santa Barbara Islands, are on exhibition in the Peabody Museum.

While studying the remarkable collections from the cliff houses of the Southwest collected a few years since by the state of Colorado and by private individuals, the writer had unusual opportunities for examining a number of prehistoric flint knives

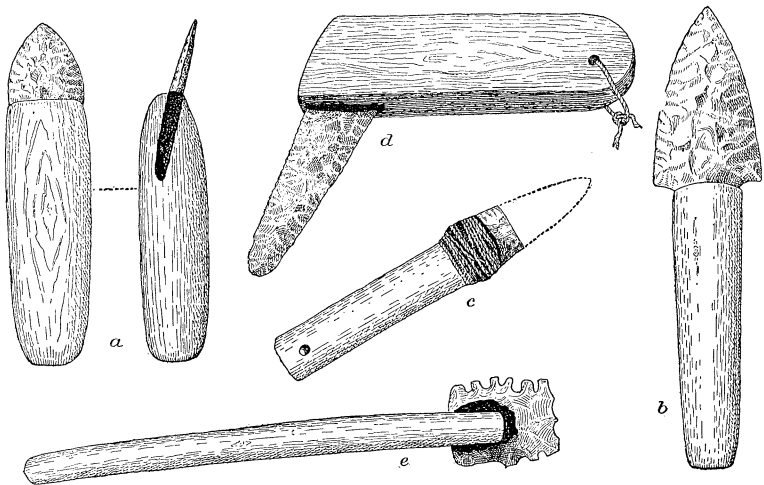


FIG. 2. — Prehistoric knives from the cliff houses,  $\frac{1}{2}$ .

hafted in wooden handles. He is indebted to those in charge of the collections for permission to make the drawings accompanying this paper. Several of these knives are now in the Free Museum of Science and Art in Philadelphia.

The blades are chipped from different varieties of flint and chalcedony, and are of the common typical forms (leaf-shaped, triangular, stemmed, and notched) usually found in a collection of chipped implements. The handles are of wood, in most instances symmetrically fashioned and well finished, the blades being inserted into a deep notch and cemented with gum, probably of *Larrea mexicana*. In a few examples, windings of sinew or of cord made from yucca fiber furnish additional security.

The blades of the knives shown in Fig. 1 are attached to their handles with gum only. Their bases fit the notches snugly. The cement with which they are fastened projects slightly beyond the end of the haft and is pressed against the blade at either side. The blade of *a* is of black flint; *b* is also of dark flint, and *c* is chipped from gray chalcedony. A suspending cord of twisted cotton passes through the handle of *c*. The handle of *a* is also perforated for the passage of a cord.

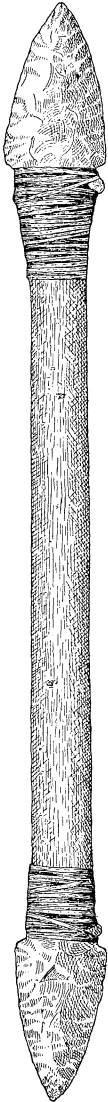


FIG. 3. — Prehistoric double-bladed knife from a cliff house,  $\frac{1}{2}$ .

The leaf-shaped blade of the knife illustrated in Fig. 2, *a*, is of light-colored chalcedony and is inserted for about half its length into the wooden handle, being firmly secured with gum. The drawing shows both front and side.

The beautiful knife shown in Fig. 2, *b*, has a blade of the stemmed variety, chipped from pink chalcedony. It is attached to the wooden handle with gum only.

The broken blade of Fig. 2, *c*, is fastened with gum. As an additional security it is wrapped with a cord of twisted yucca fiber. The handle is perforated for the passage of a suspending cord.

The unique example illustrated at *d* has a blade of dark flint secured at an angle to the well-made wooden haft. A cord of twisted yucca fiber passes through a perforation near the end.

The implement represented in Fig. 2, *e*, would perhaps be most correctly classed as a saw. The blade is of a type widely distributed but nowhere common. It is chipped from dark flint. The teeth are thin and sharp, and in the hands of a skilled prehistoric workman it has doubtless done good execution in wood, bone, and antler. The handle is a section of a limb or shoot, and the blade is secured with gum.

The double-bladed knife illustrated in Fig. 3 has for a handle a section of a small sapling or limb, with the bark

still adhering. Its length, including the blades, is eleven and one-half inches. The notched blades are fastened with sinew. A similar double-bladed knife is shown in the hand of a god issuing from the mouth of a serpent sculptured upon one of the lintels of a ruined temple at Yaxchilan, southern Mexico.

It is very probable that the implements shown in Fig. 4 were primarily intended as foreshafts for light spears projected with a spear thrower, a few examples of this ingenious device having been found in the cliff houses of the Southwest. These spear throwers have double finger loops, and are in other respects very similar to the ancient Mexican atlatl used by both Mexicans and Mayas, and represented in their sculptures. The foreshafts of the spears accompanying the atlatl in the carvings resemble

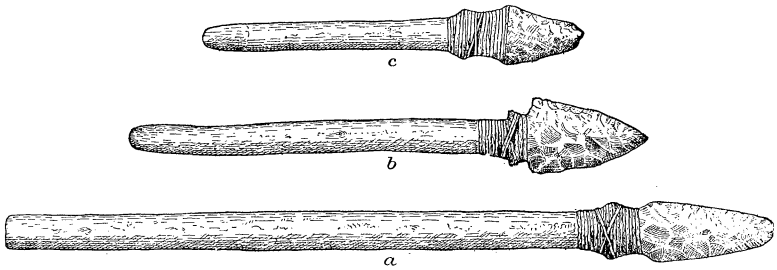


FIG. 4. — Prehistoric knives or foreshafts,  $\frac{1}{2}$ .

those illustrated in Fig. 4. A foreshaft similar to Fig. 4, *b*, has the end opposite the point beveled for inserting into a socket at the end of the spear shaft. The lower end of Fig. 4, *c*, is also slightly beveled. The ends of *a* and *b* show no beveling, and these implements may have been intended for knives only; but if originally constructed for foreshafts to spears, it is probable, as they are detachable, that they were also used as cutting implements. The blades are secured to the hafts with sinew, no cement being visible.

In one of the collections was a spear-like implement tipped with a point of black flint closely resembling in form the knife blade illustrated in Fig. 1, *b*. This was secured in the notch with cement and cord wrappings. The shaft, forty inches in length, is worked smooth and polished, its lower end terminating in a rounding point.

Besides the tools whose functions are indicated by their forms, as perforators, scrapers, etc., chipped flint was used in America for cutting implements and as points for various kinds of projectiles, including arrows, light spears thrown with a throwing stick, harpoons with detachable heads, hand lances, small javelins, and thrusting weapons; but the greater number of flint implements of the common types, of lengths varying from about two inches to seven inches, were probably used as knife blades. Nor are we safe in assuming that the stemmed and notched forms were all projectile points, as an examination of Fig. 2, *b*, and Fig. 3 will show. It is of course impossible with our present knowledge to classify correctly all forms of chipped implements, but a study of the few prehistoric hafted examples known will materially aid us in the work.

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