

STUDIES OF SHAPES AND PATTERNS OF FLINT ARTIFACTS FOUND ALONG THE MACKINAW RIVER

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One of the most valuable and fascinating discoveries made by early man was the knowledge that flint could be made into very useful cutting tools. It was discovered that this kind of quartz could be chipped in any direction, and that straight, long, even pieces could be struck off from large cores. Because flint is very hard, the edges of cutting tools such as knives, celts, spearheads, arrowheads, would remain sharp even with very rough usage.

It is difficult to set up cleancut dividing lines between the various types of flint artifacts which were made by the Indians. Whether a flint artifact is a spearhead or an arrow point, a scraper or a perforator, is often difficult to determine. A medium-sized flint artifact might have been put to any one of several uses, depending upon the length or shape of the handle set onto the tool.

It must not be assumed that size is an important factor in deciding the use made of flint tools. The same shapes were produced in many sizes. The variation of size may change the character, use, and name of the artifact; it may, according to size, become an implement used for cultivating the soil, a spear, dagger, fish knife, or an arrow point.

Also, the relative thinness of specimens must be borne in mind in

classifying these objects: If thick, heavy, and large, they might require more force to puncture the body of an animal than an Indian could command.

Flint artifacts have been classified by many experts, but most classifications fail to satisfy anyone except the originator of the scheme.

Some tribes of Indians have made characteristically shaped arrow points. The Iroquois arrow points were almost always thin and triangular. Triangular points were used regularly by the Cherokees and occasionally by the Algonquians, but they were much thicker and heavier than the Iroquois points. It is recorded that the Fort Ancient people used a serrated triangular point. It is believed that practically every tribe of Indians in Kentucky had one or two, but not more than a few, types which were regular for definite purposes.

It is thought that the spear belongs to an earlier era in man's civilization than does the arrow. The spears are not common as tools.

A number of flint blades, both large and small, are found with beveled cutting edges. These beveled-edge points cause the flying arrow to rotate. However, the so-called beveled arrows are apparently too thick to penetrate, especially while whirling, and are probably resharpened.

ened knives. The most practical theory now is that beveled flints were used in skinning animals. The bevel is usually such as would be necessary if the blade were held in the right hand and pulled toward the user.

Millions of arrowheads have been found in the United States on ancient camp sites, near fishing streams, and along rivers. It is reasonable to believe that the Indians needed many more arrow points than knives or spearheads. The great numbers of flint points found is an indication of the antiquity of man in North and South America.

The variety of arrows was determined by the climate of the particular district involved, the materials available, the topography of the land, the occurrence of water, and the kind and distribution of game animals. The larger and more delicate flint blades were probably used as ceremonial pieces, for they were too brittle to stand rough usage. They often exhibited extra-fine quality of workmanship and design. Certain flint chippers apparently took artistic pride in making unusual and unique shapes, hook-like artifacts, charms of various sorts, and fetishes to suit their own whims as well as the whims of those whom they served. A number of these designs show unusual symmetry, pattern, and beauty.

I have placed these artifacts into several groups based largely on the shape, pattern, and quality of workmanship. In a few cases I have pointed out what I think demonstrates a special interest and taste in the colors of the flints.

Group I (fig. 1).—Arrowheads with straight base, horizontal

notches, and thin bodies. Most of the specimens are $1\frac{1}{8}$ " to $1\frac{5}{8}$ " in length; one is $3\frac{1}{4}$ " long. Most of these pieces have convex edges. The workmanship is fine.

Group II (fig. 2).—These arrowheads are of Hopewelleian type with owl-like bases. The base is extremely concave, forming points at outside corners. The edges are straight with a broad center axis. Most of the pieces are about $2\frac{1}{8}$ " to $3\frac{1}{2}$ " in length. Workmanship is good to fine.

Group III (fig. 3).—Arrowheads with a deeply concave base. Long points are formed at outside corners of the base. The edges are straight. The workmanship is fair to good. The pieces average from $1\frac{1}{8}$ " to $1\frac{5}{8}$ " in length.

Group IV (fig. 4).—Long slender celts are projectile-like pieces with straight bases. The edges are convex. These celts are thick in the middle and taper to each end. Pieces average $2\frac{1}{4}$ " to $3\frac{1}{2}$ " in length. These celts have been found in considerable numbers in fields on both sides of Wyatt Ford. Very few are found at any other sites.

Group V (fig. 5).—Hammer stones—round-like or roughly spherical—are rather brittle when made from quartz, chert, and flint. Hence, medium to large sections have broken off many of these. Most hammerstones fit well into the palm of the hand. These pieces are $1\frac{3}{4}$ " to $2\frac{7}{8}$ " in length.

Group VI (fig. 6).—The flint scrapers have one edge that is sharply worked for scraping bones or wood. Scrapers are sometimes made from broken arrows or celts. The

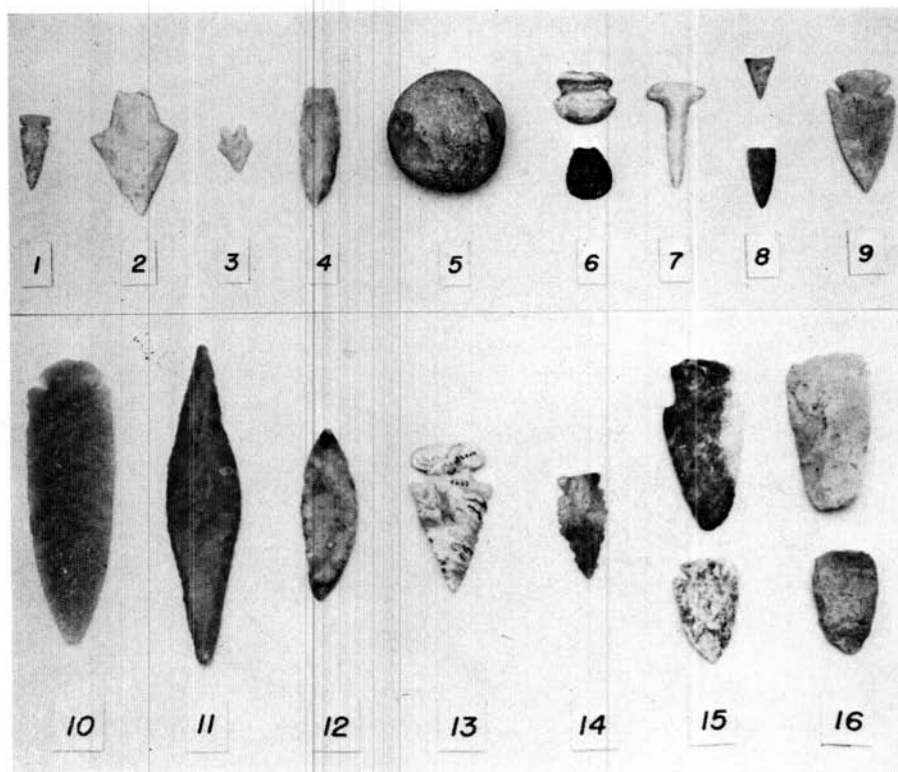


PLATE I.—Artifacts representative of groups described in text.

average measurements are about $1\frac{15}{16}'' \times 4\frac{1}{16}'' \times 1\frac{3}{16}''$. Workmanship is very good in a few cases.

Group VII (fig. 7).—Drills are often thumb screw or plain heads and measure $\frac{1}{4}'' \times 2'' \times 7\frac{1}{16}''$. Workmanship is good in most cases. A high percentage of drills are broken.

Group VIII (fig. 8).—Triangular projectile points are arranged according to a pattern designed by John W. Griffin, a graduate student at the University of Chicago. An article explaining his pattern was published in the April 1945 issue of the *Journal of the Illinois State Archaeological Society*. These points

measure approximately $\frac{1}{8}'' \times 1\frac{11}{16}'' \times 1\frac{3}{16}''$. The workmanship is good considering the small size of the pieces.

Group IX (fig. 9).—Convex based arrowheads measure $\frac{6}{16}'' \times 3'' \times (1\frac{7}{16}'' \times \frac{6}{16}'')$. The bases are usually nearly symmetrical.

Group X (figs. 10, 11, 12).—These are a mixed lot of possibly ceremonial pieces. The two larger pieces are slightly more than 5 inches long. The slender double-pointed piece is a gray spearhead. The other arrowhead is made of quartzite and exhibits excellent symmetry and workmanship. The smallest piece is a

willow-leaf celt 4 inches long and is finely worked with the entire perimeter a cutting edge.

Group XI (fig. 13).—Beveled-edge arrowheads are apparently all made by a right-handed person. They measure about $4/16''$ thick x $2\frac{1}{4}''$ x $8/16''$. The workmanship is fair to good.

Group XII (fig. 14).—Serrate-edge arrowheads are only fair in workmanship. The points or teeth along the edge are uneven in size and length. These pieces measure approximately $4/16''$ in thickness x $2''$ x ($1\frac{3}{16}''$ x $3/16''$).

Group XIII (fig. 15).—The colored arrowheads are about average in dimension and range from dull black, dull reddish brown, red, lus-

trous reddish brown, blue and white, to mottled blue and white.

Group XIV (fig. 16).—Broad flint celts are common chipped artifacts. Flint is among the materials longest in use in America for making stone tools. These tools measure on the average $6/16''$ thick x $14/16''$ x $1\frac{14}{16}''$. Much use destroys the symmetry of these pieces usually.

The Indian certainly had an eye for variety and beauty of colored materials in his flint artifacts as well as in his blankets and head dress. With only the beauty of nature for his educational background, his accomplishments, in their limited way, show as much genius as do the works of world-renowned artists and sculptors of past generations.