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A PREHISTORIC ROULETTE FROM WYANDOTTE COUNTY,
KANSAS

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IN the *American Anthropologist* for 1892, in two papers under the title "Studies in Aboriginal Decorative Art," Dr. W. H. Holmes discussed the use of the stamp or figured paddle by native potters of the Eastern United States. The second of these articles, devoted to "the rocking stamp or roulette," pointed out the logical relationship evidenced in decorative techniques between certain simple stamped wares of the Ohio-Illinois-Indiana area and a rouletted or rocked stamp ware (since termed Hopewell or Hopewellian) more widely distributed in the upper Mississippi Basin. Holmes indicated the relative ease with which straight wooden (?) stamps or dies with carved ends, such as those suggested by sherds "coming from the vicinity of Naples, Scott county, Illinois," could have developed into handled forms with curved edge or face, and these in turn into a wheellike type of implement. By mounting a notched cardboard disk on a penholder, and inking the edge of the disk, he produced broken-line designs closely resembling the impressions characteristic of his rouletted pottery ware (1892b, pl. 2, fig. 1; 1903, fig. 72). His observations ended on the somewhat pessimistic note (1892b, p. 152) that—

It is not to be expected that examples of these notched decorating tools will ever be recovered. Their burial with the dead would at best be of rare occurrence; besides, they were probably of wood and thus subject to rapid decay unless buried with copper or imbedded in some form of preservative salts. The exact form of the tool as a whole cannot be fully determined, but there need be no question as to its general character and the methods of its use.

Despite the accumulating wealth of archeological materials in subsequent years, there has been a notable absence of recorded artifacts that could with certainty be regarded as tools for producing indented pottery decoration. A brief search of the literature suggests a tacit assumption by some archeologists that a notched wheellike object was used, as when they speak of "roulette" impressions (e. g., McKern, 1931; Setzler, 1933; Cole and Deuel, 1937). Others, perhaps with less faith in Holmes' experiments, have preferred a less committal term such as "curved dentate stamp," "notched rocker," etc. Willoughby (1922, p. 92), describing pottery from the Turner mound group, speaks of "zigzag patterns which were not made with a roulette, as suggested by Holmes, but with a tool more or less gouge-shaped, having a plain or notched edge, which was pressed against the soft clay with a rocking motion, each opposite corner being raised and slightly advanced alternately, the tool not being wholly lifted from the vessel."

All these various terms and interpretations suggest devices by which clay vessels *could* have been ornamented, but so far as we are aware none rests on incontrovertible archeological evidence derived from the finding of the envisioned implements. More recently it has been demonstrated in the laboratory that certain pottery markings found at Marksville, La., in all probability represent impressions from the edge of a bivalve marine mollusk of the scallop or pecten family (Setzler, 1934, fig. 44, middle row; and unpublished notes). Fewkes (1937, p. 148) has described a flat elliptical end-notched stone object from Minnesota "that is unquestionably a stone stamp used for imprinting the roulette design on unfired clay." The same writer, scouting Holmes' theory of a roulette because of lack of supporting evidence, offers no alternative explanation for the even continuous lines of indented impressions that sometimes encircle, or partially cover the decorated surfaces of, vessels from the Hopewellian area.

In 1939 the junior writer was engaged in excavations at a small prehistoric village site about a mile south of the Missouri River near Bethel, Wyandotte County, Kans. Occupational debris, including sherds of varying types, worked and unworked flints, bone artifacts, limestone fragments, broken animal bones, charcoal, and burnt clay, occurs here in a dark horizon about 18 inches thick and in circular pits, overlain by about 22 inches of culturally barren colluvial soils. Up to the present time digging has been confined to the gullied margin of the site overlooking a small unnamed creek. Owing to the thickness of overburden, modern cultivation has not as yet disturbed the greater portion of the site along the creek bank. In most particulars the remains so far found appear to parallel others recovered by the United States National Museum in 1937 at the Renner site 5 or 6 miles to

the northeast in Platte County, Mo. (Wedel, 1938). Tentatively, both sites have been assigned to a western Hopewellian manifestation.

On June 11, 1939, a small object at first believed to be made of bone was uncovered near the southern border of the site. It was 14 inches below the top of the cultural horizon, at a depth below the present surface of 26 inches. Unassociated with any feature indicative of its use, it had apparently been discarded by its aboriginal owner because of breakage. On January 15, 1940, it was forwarded to the National Museum for examination by the senior writer.



FIGURE 49.—End and side views of roulette ($\times 1$).

The material of which the specimen was fashioned, though superficially much altered in the process of dressing and finishing, is tentatively identified by the division of mammals, United States National Museum, as deerhorn from a "spike" buck. The base of the horn has been ground off about the edges, where the "burr" normally occurs, and is convex in profile. Above this base the specimen contracts rapidly in size, tapering out to a round stem carved from the shaft of the horn, and broken at the end. Its general appearance thus is much like the head and upper end of an ordinary straight pin. The head of the "pin" is slightly elliptical (fig. 49, *a*) and measures 22 by 24 mm. The periphery, thin and sharpish (fig. 49, *b*), has 19 small V-shaped notches, which are unequally spaced. At the broken end the stem is 6 mm. in diameter. The overall length, which offers no clue to the original length, is now about 35 mm. As is shown in figure 49, *b*, the stem is not in the center of the head, nor does it rise at a right angle with the plane of the notched edge. This placement, in all probability dictated by the natural conformation of the raw material, is most advantageous for the use to which the object, in our opinion, was put. All the surfaces have been smoothed, and the notched edge appears to be well worn.

When the implement, held lightly between thumb and index finger, is rolled in plastic clay it leaves a curved V-shaped line interrupted by low transverse ridges $1\frac{1}{2}$ to 3 mm. apart. With very little effort a symmetrical curve 25–35 mm. long can be made; longer lines up to 50 or 55 mm. are probably possible, but when made by inexperienced hands these tend to lose their uniformly even curve. At the end of a

line, if the object be rolled back at a slightly different angle but without lifting it from the clay, a second line of indentations results. This procedure, repeated indefinitely, produces a band of "dentate rocker" impressions that duplicate in every essential the markings on sherds actually found at the Trowbridge site (cf. figs. 50, *a*, and 50, *b*). In the sherd illustrated (fig. 50, *b*) the markings made by the native potter differ from those produced on plasticine in the laboratory (fig. 50, *a*) in being more closely spaced and somewhat deeper. The greater depth is probably due to the use of a sharper or less worn tool.

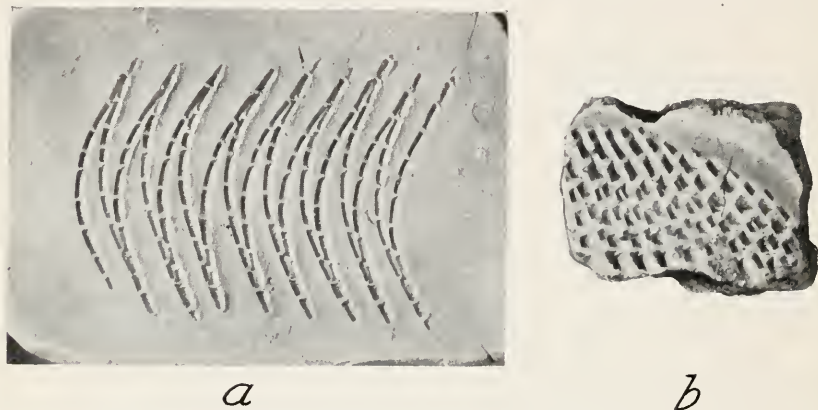


FIGURE 50.—Impressions produced on plastic clay (*a*) by roulette, compared with rouletted sherd (*b*) from Trowbridge site, Wyandotte County, Kans.

From our experiments and field observations, we are led to believe that this type of tool, with certain easily made variants, was in general use among the potters of the Trowbridge, Renner, and culturally related sites of the Kansas City area. The off-center and oblique placement of the handle, together with a slightly elongate wheel, forms an ideal combination for making curved rocker impressions. Smooth or edentate rocker marks, which decidedly predominate over the dentate style in this locality, could have been produced with an identical implement from which the rim notches had been omitted. Owing to the eccentric placement of the handle, a continuous indented line tends to be wavy and undulating, though an experienced operator would probably have better success than we. But this difficulty could be easily remedied: a centrally placed handle at right angles to the plane of the working edge would permit the easy production of straight lines of any desired length. Given the essential idea, as in the present specimen, it is within the bounds of reason and probability that the variants, though not yet recognized in the local archeology, were known and used in aboriginal times.

While we incline to the view that this interpretation of certain characteristic decorative techniques in the Kansas City locale may be applicable over a very much wider area in the Mississippi-Ohio region, there is no attempt to assert here that all pottery showing indentations or rocker marks was necessarily worked over with a tool of identical type. Simple toothed stamps, both straight and curved, were used to a limited extent at the Renner and Trowbridge sites for roughening portions of the vessel surfaces, and compound stamp impressions occur on sherds from neighboring sites. It is possible that still other types of implements with curved edges such as the shells already mentioned served occasionally to produce rocker impressions. Forms without side handles, however, must have been much more awkward to use or would at any rate seem to involve more tiring movements of the wrist and hand. The roulette from the Trowbridge site, requiring little more than a simple rolling motion of the fingers, operates with an ease and effectiveness that would seem difficult or impossible to equal with flat end-notched objects, sticks, gougelike forms, or shells unless they were in some way provided with a handle. We concur in Holmes' observation (1892b, p. 150) that—

Mounting upon a handle is essential to the free and proper use of this tool [i. e. the curved-edge stamp]. The step from the use of the curved edge to the employment of a wheel is a slight one, although the advantage gained is very great. Mounted upon a handle the notched wheel * * * may be revolved at will encircling the vessel or giving lines or filling spaces of any length.

It may be noted that sherds from the Renner and Trowbridge sites, where ornamented with vertical rocker marks, characteristically appear to have the convex side of the marks to the right as one views the upright pot or potsherd. The Trowbridge roulette, however, when held in the right hand, produces curves convex to the left. Does this mean that the ancient potters here were left-handed? Or, if right-handed, did they invert or lay the pots on the side to apply the ornamentation? Or, again, did they lean over the upright pot and work on the far side?

It is unfortunate that the handle of this implement is broken off. Were the degree of taper manifested by the remaining stub continued 3 to 5 cm. farther, one would suspect that the tip could have been used in making the punched bosses frequently found on local rim sherds (Wedel, 1938, pl. 3, F-I).

In our opinion, this specimen fully vindicates Holmes' theory that a type of roulette was part of the material equipment of the native potters who produced the "rouletted" wares of the upper Mississippi Basin. It is immaterial that the technique often used was rocking or partial rolling, since this can be done quite as effectively and easily—perhaps more so—with a notched disk as with any other primitive tool. As for the long indented lines sometimes found on

pottery of the region (Wedel, 1938, pl. 7A; Holmes, 1892b, pl. 2, fig. 2), these must often have been produced by a continuously rolled wheel rather than by the repeated application of a straight stamp. The apparent absence of roulettes from most archeological sites may indeed be due, as Holmes suggested, to the fact that they were customarily made of wood or other perishable substance. Alternatively, it may reflect only the relatively small amount of excavation performed at village sites whose inhabitants, to judge from the decorative techniques shown by their pottery remains, might be suspected of having possessed such tools. A careful reexamination of extant collections might bring to light specimens similar to that described herein that are now otherwise classified as ornaments or problematical forms. In any event, whatever the eventual distribution of wheellike specimens of this nature proves to be, and granting the probability that simpler noncircular rockers and curved-edge stamps existed, we submit that the Trowbridge find substantiates (cf. Fewkes, *op. cit.*) " 'rouletting' on the principle of wheel-rolling, as originally deduced by Holmes * * * in aboriginal American ceramics."

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