



pipes. were recovered from the site. None is complete, but most, if not all, were probably at least 20 or 40 mm. long. Outside diameters range from 5 to 8 mm.; diameters of the longitudinal perforation, or fenestration, are about 3 mm. Exterior surfaces are badly weathered, but once must have had a glossy polish.

In an extensive and most useful study of Indian hair pipes, John Ewers (1957) notes that those of shell were first commercially manufactured for the Indian trade in the latter part of the 18th century, probably between the years 1776 and 1798. Earlier forms were made of either silver or glass. However, the development of the shell hair pipes, which perhaps can be traced to John W. Campbell of Pascack (now Park Ridge), New Jersey (Ewers, 1957: 42), provided less expensive and more durable trade items. Thus, between the years ca. 1800 and 1880—when the shell hair pipes began to be replaced by the even more durable bone ones—these ornaments gained widespread popularity among the Indians. Throughout most of this period, the Campbell family nearly succeeded in controlling the manufacture of shell hair pipes. Since the most common type was made from the lip of the West Indian conch (*Strombus gigas*), it is probable that those from the White Site are from the same type of shell. Perhaps they were even made by members of the Campbell family.

Shell hair pipes probably did not reach the southern Plains in any appreciable number until about 1830. They did not, in fact, truly become common in that area until after about 1850, when hair-pipe manufacturing shifted from a hand to a mechanized operation (Ewers, 1957: 74). In keeping with the relative ease of acquisition, earlier uses emphasized ear and hair ornaments, and necklaces and chokers; while in the post-1850 period more extravagant ornaments appeared, especially breastplates.

The hair pipes from the White Site, if the sample collected is reasonably complete, are hardly numerous enough to account for the presence of a breastplate. Rather, a simple necklace, choker, or hair ornament seems more likely. Since most of these uses continued up to, or beyond 1880, a wide range of dates, ca. 1830 to at least 1880, is possible.

Fig. 2. A, B, copper bangles; C, fragment of shell hair pipe; D, D', wide, stamped bracelet; E, narrow, fragmentary stamped bracelet; F, leather pouch; G, dressed skin fragment with concha (?) and brass bell impressions; H, dressed skin with beads still intact; I, J, portions of concha belt; K, undecorated brass wire bracelet; L-O, designs on brass wire bracelets. Scale of D 1/2 that of other objects; L-O, twice that of other objects.

Glass beads (Fig. 2, H). These are characteristic of middle to late nineteenth century trade beads in the southern Plains. Four forms are present: (1) tiny, simple seed beads in a variety of colors; (2) tiny, compound seed beads; (3) simple, hexagonal tubular beads; (4) one simple, cylindrical tubular bead.¹ The dimensions, colors, and frequency of the glass beads are given in Table 1. The seed beads were undoubtedly sewn on clothing, containers, and the like to form designs, while the tubular beads were probably strung into necklaces.

A small fragment of dressed skin (deer)—evidently part of a mocasin, coat, or other item of clothing—has a group of tiny, simple seed beads still in their original alignment as part of a beadwork design (Fig. 2, H). The beads are sewn on with fine sinew (?) by means of a technique known as the lazy stitch; i.e., the beads are strung on threads which are fastened to the hide of cloth at the ends of short parallel rows (Douglas, 1951: 90). The design consists of a band made by placing rows of beads side-by-side, each row containing eight beads. The beads are arranged by colors to create alternating, diagonal, colored stripes that slant across the band: first a stripe composed of opaque white beads, then a stripe of translucent dark blue beads, next another stripe of opaque white, then a stripe of translucent red, after which the same sequence was apparently repeated. Traces of vermilion—probably stain from the spilled contents of a small leather pouch (see below)—are visible at one end of the fragment beside the beadwork.

In addition to the dressed animal skin, there are two fragmentary leather scabbards (one may be an awl case) which have parallel rows of tiny impressions unquestionably made by the seed beads (Fig. 5, D). The beadwork design on these was probably similar to that in Fig. 2, H.

Wire bracelets (Fig. 2, K-O). More or less oval-shaped, heavy (2 to 3 mm. in diameter) brass wire bracelets are well represented (70) and include both decorated and undecorated specimens. Of the more numerous (64) undecorated ones, 34 are complete, eight are about three-quarters complete, and 22 are less than half complete. All six of the decorated bracelets are incomplete. Most specimens measure approximately 75 mm. across, although the extreme range

¹The terms used here for classifying bead structure are those devised by Duffield and Jelks (1961; 40-41). Beads made from one kind of glass are designated as *simple*; beads made from two kinds of glass are termed *compound*. "Translucent Red/Opaque White" refers to a bead that has a core of opaque white glass, over which is a veneer of translucent red glass.

TABLE 1
Glass Beads

Form	No.	Remarks
Tiny simple seed beads (diameter: 2-2½ mm.; length: from slightly less than 1 mm. to 1½ mm.; diameter of perforation: less than 1 mm.), in various colors:		Glass is smooth, with no visible bubbles; some specimens are frosted on the exterior, probably due to weathering.
Opaque white	449	
Opaque yellow	178	
Translucent red	507	
Translucent green	12	
Translucent milky	3	
Opaque ultramarine	14	
Translucent turquoise	17	
Translucent pale blue-green	3	
Opaque chartreuse	2	
Translucent medium to dark blue	178	
Translucent light blue	21	
Tiny compound seed beads, Translucent Red/Opaque White (diameter: 2-2½ mm.; length: from slightly less than 1 mm. to 1½ mm.; diameter of perforation: less than 1 mm.).	4	Glass is smooth, with no visible bubbles; surfaces are unfrosted.
Simple hexagonal tubular beads (diameter: approximately 5 mm.; length: 4-6 mm.; diameter of perforation: 2-3 mm.) in two colors:		Ends were broken irregularly, then lightly smoothed.
Translucent amber	35	These are patinated heavily on the surface and appear purplish-black to the naked eye. They must be broken and held before a strong light before the amber color can be discerned.
Translucent blue	1	
Simple cylindrical tubular bead, pale powder blue, fragmentary (diameter: 8 mm.; length: indeterminate; diameter of perforation: 2 mm.)	1	
TOTAL	11,425	