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Archeological Materials from the Vicinity of
Mobridge, South Dakota

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finished edges or ends on any of the pieces, nor is there evidence of ornamentation. The largest piece at hand measures about 18 by 11 cm.

The heavier cloth is made of two-ply cordage, and is very much stiffer and coarser than the foregoing. Each of the two strands making up the cords, when viewed from the end, shows a counter-clockwise twist; and in combining the two elements into the larger cord, the twisting was in the opposite direction, that is, clockwise. The twisting, at least in the final operation, was evidently much more tightly done than in the lighter textile described above. The cords used in the weaving averaged from 2 to 3 mm. in diameter; they were worked into a tight hard over-two-under-two, or twilled, fabric in which there are about four cords per linear centimeter. So far as I can determine, there are no finished edges in this piece.

Cloth tape.—The only other textile fragment certainly recognizable as of white origin is a small length of woven tape, 25 mm. wide. White cotton and brown wool were used as warps, brown wool as wefts. In the finished piece, the ground is a rather loose brown twill (over-two-under-two) broken by four narrow strips of basket weave (over-two-under-two) in which the white cotton warps are most prominent. There is no way of determining from which grave this piece came, or how it was utilized by the Indians.

GLASS AND EARTHENWARE

Glass beads.—Glass beads of various sizes, colors, and shapes were taken from graves in all four cemeteries. With the exception of the small blue and white necklace beads, none of the varieties occurred in any great numbers. Unfortunately, the specimens recovered were not segregated according to provenience, either by grave lots or by site; and, except in a very few instances, it is not now possible to identify the beads in hand with those listed in the field notes as accompanying any given burial.

Most common in the collection are the small blue and white "seed" beads of size 0 or larger.¹⁵ They average 3 to 5 mm. in diameter and run, when strung, about 10 or 12 to the inch. In shape and size they are quite variable, and many have the perforation off-center. The white beads (USNM 325454) are all opaque; the blue (USNM

¹⁵ Here I must acknowledge again my indebtedness to Glenn A. Black, Indiana University, for his courtesy and helpfulness in examining the beads from the Mobridge locality. The entire series was sent to Black without any data whatsoever regarding their provenience and without suggestion as to their time or cultural associations. Not until the beads were returned by Black to the U. S. National Museum, along with his report, dated March 7, 1951, did I inform him as to the source of the material. His general comment on the material follows: "With some exceptions, these beads are of types which were handled by both the French and the British as trade items in the period around 1750. There are some beads which were popular in the period 1700-1750 which are lacking from this group, which makes me feel that, generally, the period represented is from 1750 to 1800."

325463) are predominantly pale in color, and more or less translucent, with an occasional clear or dark-blue specimen. The field notes indicate that the small blue and white beads frequently occurred together, but in the collections at hand, there are only about 700 small whites as against nearly 6,000 small blues.¹⁶ The latter are strung in 17 lots of somewhat varied size, but all bear the same catalog number.

Two strings of larger blue beads also include several kinds. On one (USNM 325456) there are four hexagonal faceted pale-blue opaque beads about 7 mm. in diameter and the same in length; four hexagonal and polygonal faceted dark-blue translucent beads, with length and diameter varying from 6 to 8 mm.; 32 irregularly shaped and variously sized deep-blue translucent beads 6 to 8 mm. in diameter; 27 uniformly shaped and sized pale-blue opaque beads, 5 to 7 mm. in diameter; and two green beads similar to the immediately preceding group.

The second string (USNM 325461) includes 61 opaque light-blue subglobular to subcylindrical beads, all under 8 mm. in length; and two ellipsoidal beads of the same general appearance, but ranging in length from 13 to 15 mm. and in diameter from 10 to 12 mm. (pl. 68, c). Many of these are surface-pitted with what are evidently air bubbles or other structural defects; and 8 or 10 of them have a dull-gray look that suggests burning. This string has been figured by Stirling (1947, fig. 2, *h*) as an example of native Arikara glassworking.

I confess to some perplexity regarding this last string of beads. Under the binocular microscope, the dull-gray specimens are seen to be imperfectly shaped, with large air bubbles, and the perforation wall is often nubby. It gives the impression of poorly fused angular particles, some of which indeed have a strong reddish color. They look very much like an amateurish attempt at glassworking.

In contrast, the bright-blue specimens that predominate on the string, though they have a somewhat bubbly look, are vitreous in cross section, lack the large air bubbles, and have a smooth-finished perforation wall. Moreover, they are generally more symmetrical than the "burned" specimens just described, and look like the products of a competent and experienced craftsman. I am inclined to suspect that the inferior beads with the burned look may indeed be native-made; but the better-made and more numerous specimens would seem to me to have been beyond the capabilities of the Arikara glassworkers.

Several other strings or lots of miscellaneous glass beads are cataloged. One of these (USNM 325457) is cataloged as "from grave" and may include specimens from Graves 16 and 18, Cemetery 4. In

¹⁶ Tabeau, Maximilian, and other contemporary observers uniformly aver that blue beads were preferred above all other colors by the Upper Missouri tribes.

this string there are eight translucent bright-red beads, with thin white lining(?) in the perforation; they are globular in shape, with diameter and length both averaging 6 mm. There are three multifaceted beads, including one short wide specimen of clear colorless glass, 9 mm. in diameter; a clear blue bead 5 mm. in diameter; and a long milky white specimen 18 mm. long by 7 mm. Other specimens in this lot include: a large short globular bright blue bead with wavy black and white lines; two white opaque barrel-shaped beads, 7 by 11 mm., with wavy bluish lines; three thick pear-shaped beads, with wide dull brownish stripes; a slightly smaller, similarly shaped specimen, encircled by a brown stripe flanked with pale blue-green stripes; a dark-brown tubular bead, 5 by 9 mm., with a wavy yellow fillet encircling each end; and two small barrel-shaped opaque greenish beads.

Another miscellaneous lot includes, besides fragments of types already noted above, a large multifaceted clear glass bead, barrel-shaped, and measuring 12 by 23 mm. (from Grave 6, Cemetery 4); and a smaller multifaceted specimen of opaque bluish-green glass, 12 mm. long.

There are two strings of medium-sized oblong glass beads, mostly white, that may include some or all of those listed in the field notes as "many large porcelain beads, of many different sorts." On the string of larger beads (USNM 325460), of which a sample is shown in plate 68, *d*, there are several beads that carry fine blue lines, usually in groups of two or three and sometimes spirally arranged. Highly variable in size and proportions, these beads range in length from 6 to 13 mm., and in diameter from 6 to 10 mm. The second string (USNM 325464) consists of smaller varisized white beads, generally of a wheat-grain form with flattened ends, and apparently of wire-wound manufacture. They range in size from 3 by 5 mm. to 7 by 13 mm. The 145 "porcelain" beads reported by Strong from a child burial at Cemetery 2 (p. 95) are all opaque white, without decorative lines or other markings, and resemble those in the first of these two strings.

Largest beads in the present collection are 13 ellipsoidal specimens (pl. 68, *e*), cataloged (USNM 325459) as "stone beads" but identified in the field records as of native manufacture (see also Stirling, 1947, p. 260 and fig. 2, *g*). Six are a dull opaque white; seven are pale blue, which in several examples appears to be weathered and faded. They vary somewhat in length from 25 to 31 mm., and in diameter from 12 to 18 mm.; the whites, as a group, are slightly larger. They have somewhat the shape of a pigeon egg, are generally well made and symmetrical, and have even well-centered perforations. The surfaces are somewhat pitted by air bubbles; but in general the beads

all have a solid heavy appearance and feel. According to Black (letters of March 7 and 20, 1951):

They are known as "wire-wound" beads due to the fact that the molten glass was gathered upon a revolving metal spindle. They are of an old type and have been found here on French site of the period 1690-1750. They continued later than that, however. . . . Duplicates are found in Indiana at the site of Miami East, Wea Town, and in Michigan at the site of Fort St. Joseph. I have also seen them from several sites in the southeast. They were traded mainly by the French but the British used them also.

Interestingly enough, Catlin's portrait (No. 124) of the wife of an Arikara chief shows large beads of identical shape used as a necklace (Ewers, 1950, pl. 3); and on the original painting in the National Museum these beads clearly include both blue and white specimens, in alternating sequence. I think there can be no doubt that Catlin was depicting just the type of bead here discussed.

Native-made ornaments of glass.—Among the most interesting specimens in the present collection are 23 flatwork ornaments (USNM 325465) that can be accepted, without question, as examples of Arikara glassworking. All are blue or bluish white in color; and, except for a certain slight translucence at the edges, they are opaque. Two shapes are indicated (pl. 68, *a, b*). Seventeen examples are circular, with planoconvex cross section; they are from 20 to 22 mm. in diameter, up to 5 mm. thick, and have each a central perforation. The convex surface is usually blue, whereas the flat surface, or reverse side, has a dull grayish unfinished appearance. The upper surface tends to turn upward sharply just at the perforation, so as to form a slight ridge surrounding the latter. The only decorated specimen has two concentric rings of white inlay on the upper convex surface (Stirling, 1947, fig. 2, *c*).

Six specimens are subtriangular in outline, with rounded corners. In most particulars, they closely resemble the circular pieces, except that the surfaces seem to be more plentifully sprinkled with air bubbles, particularly on the flat back and along the edges. In size, they range from 33 by 27 mm. down to 20 by 16 mm., with a thickness between 5 and 7 mm. Four have inlaid decoration of two parallel whitish or brownish lines, between which are four or five dots of the same character (Stirling, 1947, fig. 2, *a, b, f*).

The available historical and ethnographic data on native glassworking by the Indians of the Upper Missouri region have been recently brought together and discussed in some detail by Stirling (1947, pp. 257-263), and there seems no point in repeating here the material thus made easily accessible. Briefly, the process involved the grinding up of ordinary trade beads, shaping or molding into desired form the resulting powdered and moistened glass, and then the

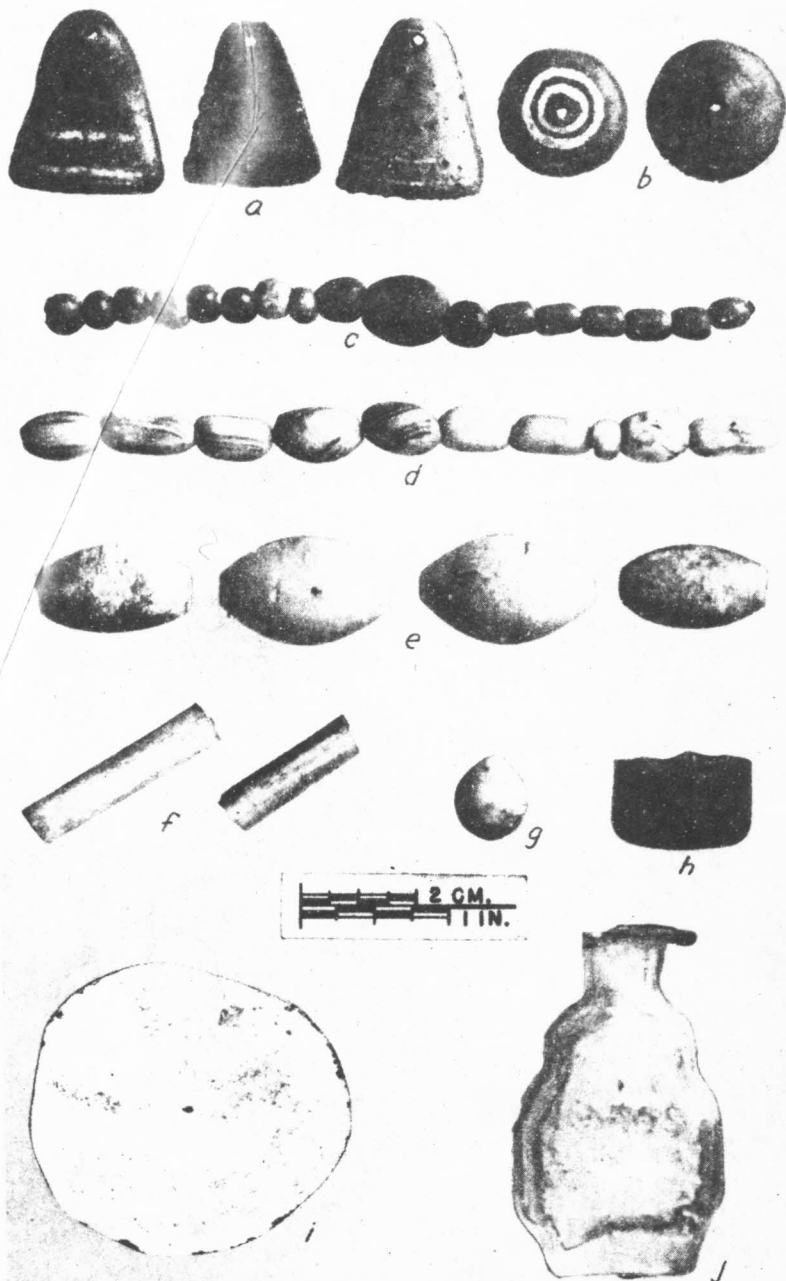
proper firing of the materials. According to Tabeau (Abel, 1939, p. 139), "A Spanish prisoner taught them (the Arikara) how to melt our glass beads and to mould them into a shape that pleases them. This art which is as yet unknown to them is practised only secretly and still passes for a supernatural talent." This statement suggests that the trait was still a fairly new one among the Arikara in 1803, an impression that receives some support from the fact that in the present series native-made glass objects were recorded only from the latest of the burial sites represented, i. e., the Leavenworth Site.

That there is room for considerable diversity of opinion, even among professionals, in the matter of distinguishing trade beads from native-made glass ornaments is evident from what has been said in the foregoing pages. The specimens last described, of which Black observed that "they have me guessing," can hardly be anything else than native products. On the other hand, the large ellipsoidal wire-wound beads for which Black cites other occurrences at historic sites in the Indiana region, seem as certainly to have been erroneously identified previously as Indian glasswork. Finally, with regard to the string of blue beads (USNM 325461) earlier described herein, Black says on further inquiry that "they did not impress me evidently, for I made no notes relative to them." I have already indicated my doubts that this latter lot, with a few possible exceptions, can be attributed to Arikara glassworkers. In most respects, as Black implies, they evidently conform to recognized trade bead types; and it would seem to me a pointless effort on the part of the Indians to make, with their own primitive techniques, objects that could be obtained from the traders. The flattened triangular and circular forms, on the other hand, were quite unlike wares brought in by the Whites; and I am inclined to wonder whether most of the beads referred to in the early accounts of native glassworking were not actually more like the objects represented in our series by lot USNM 325465 than they were like the necklace beads included in USNM 325461.

Bottles.—From the burial of an adult male in Grave 10, Cemetery 4, was taken the small glass bottle shown in plate 68, j (USNM 325462). It measures 60 by 35 by 20 mm., and is complete except for a missing portion of the wide flange around the mouth. Its four sides bear the following inscription in raised letters:

L O N D O N	BY	ROBT
	THE	TURLI
	KINGS	NGTON
	ROYALL	FOR HIS
	PATENT	INVENTED
	GRANTED	BALSOM
	TO	OF
		LIFE

Jany 16??



Native and trade glass and earthenware objects from burial sites near Mobridge, S. Dak.
(USNM Neg. 41513E.)