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impossible to determine whether the iron clapper within was originally free or attached to the top by a loop, as it is now nearly rusted away.

Knife-like Ornament of Copper (pl. XIIe). A knife-like ornament of copper came from burial 5 at site 48. It is 6¾ inch long and 2 inches wide, the blade being 5 inches long and the constricted handle 1¾ inches long. One side of the blade is ground to a fairly sharp edge but the other is blunt. There is a hole at the end of the handle and three pairs of holes on the blade. A buckskin thong remains on the upper set of blade holes, indicating that the object was sewn to something. It probably served as an ornament rather than a knife.

TABLE 15

DISTRIBUTION OF COPPER PENDANTS AND OTHER OBJECTS OF COPPER

Type of Object	Site																						Total
	2	7A		24						29		31	46	47		48			51				
	Burial 10	Burial 3	Burial 4	Burial 11	Burial 13	Burial 21	Burial 23	Burial 25		Burial 4	Pit 4	Surface	Burial 2	Burial 1	Burial 10	Burial 2	Burial 4	Burial 5	Burial 1	Disturbed Burial			
Pendant	..	1	1	3	2	3	4	..		1	..	1	..	1	..	2	3	..	7	..			29
Button	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	1	..			1
Thimble	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	..	1	..			1
Knife-like ornament	..	..	..	..	..	..	..	..		..	..	..	..	..	..	..	..	1	..	..			1
Bracelet	..	..	1	1	..	..	..	..		..	..	..	..	1	..	..	..	..	..	..			3
Bell	..	..	..	..	..	..	..	3		..	..	..	..	..	..	..	..	..	..	..			3
Miscellaneous fragments	1	..	..	..	..	1	2	..		..	1	..	1	..	1	1	..	..	1	2			11
TOTAL	1	1	2	4	2	4	6	3		1	1	1	1	2	1	3	3	1	10	2			49
SITE TOTALS	1	3		19						2		1	1	3		7			12				

Glass Trade Beads

Glass trade beads were found in burials at sites 7A, 24, 47, 48, and 51. By far the greatest number came from site 24. The number and distribution are shown in table 16.

Most of these beads are tubular with slightly rounded edges, and are white or blue. This type runs 8 to 9 per inch when strung. These are strung together in solid alternating sections of blue and white. In burial 21 at site 24 the proportion was 2800 white beads to 3350 blue beads. A few green, red, coral, and black beads of about the same size and shape were also found. Blue or green globular beads 3/16 to ⅜ inch in diameter were found in small numbers at sites 24, 47, and 48, two of these being the only glass beads from site 47. The two

glass beads from site 51 are red and cylindrical (3/8 inch in diameter, 1/2 inch long). They are strung with dentalium and copper beads.

Many glass beads were noted in association with the disturbed burials on Kettle Falls Island and on the north bank of the Spokane River one-half mile below Detillion bridge, but they were not collected.

Apparently all of the glass beads were strung to be used as necklaces; there is no evidence that they were used for beading skins or cloth. The smaller beads are strung on two-stranded sinew twisted clockwise, and some of the larger beads on fine cord of two-stranded fiber twisted clockwise. A fuller description of bead stringing techniques is given on pages 106-108.

TABLE 16

DISTRIBUTION OF GLASS TRADE BEADS*

	Location	No. of beads	Site total
Site 7A	Burial 4	33	33
Site 7B	Burial 11	50	
	Burial 12	30	80
Site 24	Burial 3	1	
	Burial 15	4	
	Burial 17	380	
	Burial 21	6187	
	Burial 23	26	
	Burial 29	1950	8548
Site 47	Burial 10	2	2
Site 48	Burial 2	11	
	Burial 5	202	
	Burial 6	50	263
Site 51	Burial 1	2	2
TOTAL			8928

*NOTE: Large quantities of glass trade beads were noted but not recovered in the back dirt from disturbed graves on Kettle Falls Island and on the north bank of the Spokane River a half mile below Detillion bridge.

Articles of Iron

A total of 12 objects of iron was found at sites 7A, 8, 24, 47, and 51.

Site 7A. In burial 5 were found several irregularly shaped pieces of iron. One of these showed wood impressions at one end, as of a handle, indicating its possible use as a knife.

Site 8. In burial 1 were found two 16-penny iron nails with round cross sections. These are possibly intrusive in the burial. There are modern houses a few hundred yards away and several recent planks on the talus slope nearby. A plank containing nails might have rotted, allowing the nails to drop into the crevices above the burial. In burial 11 was a large object made of sheet iron. It is 31 inches long and bent in the middle to form a "U," although it was probably straight originally. One end is 3 inches wide, and tapers to ⅜ inch in width 12 inches from the other end, which bifurcates to form a "V." The inside edges of the "V" appear to have been sharpened. No use for this object can be suggested.

Site 24. In burial 2 was an iron object resembling a double-bladed axe. It is 4½ inches long, 3¾ inches wide and ¼ inch thick. The ends flare like an axe blade and are sharpened. It could have been used as an adze or axe. It would have been hafted like a grooved stone axe.

In burial 21 was a sword blade 19¾ inches long, 1⅜ inches wide at the base, and tapering gradually to the point. It is straight, unlike a cavalry sword. From the same burial came a wedge-shaped piece of iron 6¼ inches long, 1½ inches wide, ¼ inch thick, sharpened at one end. It could have been used as a wedge or adze. Also in this burial was a pistol barrel or segment of a rifle barrel 10¾ inches long, 1¼ inches in diameter at the breech and tapering to 1 inch at the muzzle. It is hexagonal in cross section. Since the breech is solid, it must have been a muzzle loader.

In trench 4 at a depth of 8 inches were 8 large square iron nails.

In burial 22 was a piece of iron 2¾ inches long and 1 inch wide. Fragments of wood adhere to both sides at one end, suggesting the possibility that the object is a fragment of a hafted knife.

Site 47. In burial 1 was a knife made by inserting an iron blade into the split edge of a deer rib (p. 80; pl. IXg).

Site 51. In burial 1 were two single-bladed iron axes 6½ inches long, 3½ inches wide at the blade edge, with a 1¾-inch hole for hafting (pl. XIIIn).

TECHNIQUES OF BEAD STRINGING

Several methods of stringing shell, copper, and glass beads were used in our region. These are described in the following classification. Their distribution is shown in table 17.

Type 1a. The smaller glass trade beads are strung on a cord of two-stranded sinew twisted clockwise.

Type 1b. In a few cases the larger glass trade beads are strung on a very fine cord of two-stranded fiber (cedar bark or Indian hemp) twisted clockwise. This cord is too thick for the smaller beads.

Type 2. Necklaces of copper and dentalium beads or copper alone strung on a single strand of buckskin.

Type 3. Tubular copper beads and small segments of dentalia strung on two strands of buckskin (fig. 16a). The strands are not twisted in the section holding the copper beads but are twisted tightly clockwise in the section holding the dentalium beads to accommodate their smaller diameter.

Type 4a. Long ("whole") segments of dentalia strung double on two strands of buckskin, one strand crossing over to the opposite side through a hole in the other strand at the end of each pair of dentalium segments (fig. 16b).

Type 4b. Tubular copper beads in pairs and dentalium segments singly on two strands of buckskin. At the end of the pair of copper beads the two strands pass together through the same dentalium segment (fig. 16c).

Type 4c. Dentalium segments strung in pairs on two-stranded sinew twisted clockwise (fig. 16d). The effect is the same as in *4a*, but the cords are knotted at each end of the pair of beads instead of one strand being passed through a hole in the other.

Type 5a. Dentalium and copper beads, dentalium beads alone, or copper beads alone, strung on two-stranded bark fiber (cedar bark or Indian hemp) twisted clockwise (fig. 16e).

Type 5b. Dentalium and copper or dentalium alone strung on three or more, often four, very fine cords of two-stranded fiber twisted clockwise, the beads being arranged singly as in *5a*.

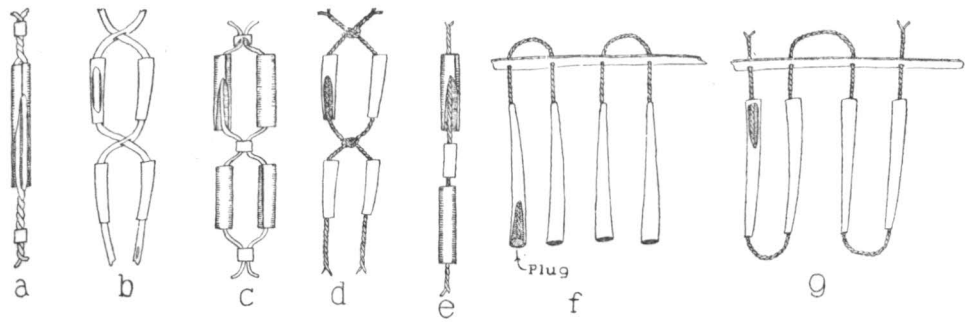

Figure 16. Techniques of Bead Stringing

Type 6a. Dentalium fringes for shirts or dresses are made by fastening whole dentalium shells to a narrow strip of deer skin. The shells are suspended with the smaller end up by means of a two-stranded sinew cord twisted clockwise. The shells are hung in pairs, the cord running from the lower end of the first up through the leather strip and returning to the lower end of the second. The shells are prevented from slipping down the cord by plugs of gum or resin at their lower or large ends (fig. 16f).

Type 6b. Similar to *6a* but the shells are suspended, small end down, by means of a continuous two-stranded cord twisted clockwise connecting the shells in pairs (fig. 16g).

Shell disc beads, bone tubular beads, olivella beads, and perforated elk teeth were found unstrung with no evidence to show how they had been strung or suspended.

TABLE 17

DISTRIBUTION OF TECHNIQUES OF BEAD STRINGING

	Location	Type										
		1a	1b	2	3	4a	4b	4c	5a	5b	6a	6b
Site 7A	Burial 3	x	..	..	..	..	..	..	..	..	..	..
	Burial 4	x	x	x	..	..	x	..	x	..	..	..
Site 8	Burial 11	..	..	..	..	..	..	..	x	..	..	..
Site 11	Trench 5	..	..	..	..	x	..	..	..	..	..	..
Site 24	Burial 2	..	..	..	..	..	..	..	x	..	..	..
	Burial 6	..	..	..	..	..	..	..	x	..	..	..
	Burial 17	x	x	x	..	..	..	..	x	..	..	..
	Burial 21	x	x	..	x	..	..	..	x	..	..	..
	Burial 29	x	..	..	x	..	..	..	..	..	..	..
	Trench 2	..	..	..	..	..	..	..	x	..	..	..
Site 47	Burial 1	..	..	..	..	..	..	..	x	..	..	..
	Burial 10	..	..	..	..	..	..	..	x	..	x	x
Site 48	Burial 2	..	..	x	..	..	..	x	x	x	..	..
	Burial 4	..	..	x	x	..	..	x	x	x	..	..
	Burial 5	x	x	x	x	..	..	..	x	..	..	..
	Burial 6	x	x	..	..	..	x	..	..	..	..	..
Site 51	Burial 1	x	..	..	x	..	..	..	x	x	..	..
	Burial 2	..	..	x	..	..	..	..	..	x	..	..
Kettle Falls Island, disturbed burial		..	..	x	..	..	..	..	x	..	..	..