MISKWO SINNEE MUNNIDOMINUG

William A. Fox *Ministry of Culture and Recreation*

The rather cumbersome title of this paper means "red stone beads" in Odawa (Fig. 1), and refers to an artifact class represented on a number of historic Petun village sites in the Blue Mountain area of Ontario (Fig. 2). A red siltstone and slate bead manufacturing industry was first noted on the Hamilton-Lougheed site (BbHa-10) in David Boyle's 1888 archaeological report to the Ontario Minister of Education, in which he states: "We were particularly fortunate in finding on the north half of lot 13, concession 7, the property of Mr. Robert Lougheed, a number of exceedingly valuable specimens of shell and of red stone on which some work has been expended preparatory to the making of beads. These pieces are of special value as indicating to us the laborious methods adopted to produce symmetrical forms from rough obdurate material." Later, in the same report, Boyle describes two slate pendants recovered from the Lougheed farm, while a further brief reference to this industry occurs in his 1904 report.

The author visited the Hamilton-Lougheed village site and first viewed a collection of the distinctive bead manufacturing debris through the kind assistance of Mr. Charles Garrad of Toronto. Since that time, red siltstone bead and pendant production debitage has been identified in collections from a variety of historic Petun villages; however, the heaviest concentration documented to date occurs on the Hamilton-Lougheed village initially reported by Boyle (1888). This village site has been equated by Garrad (1978) with the capital town of Ehwae mentioned in the Jesuit Relations.

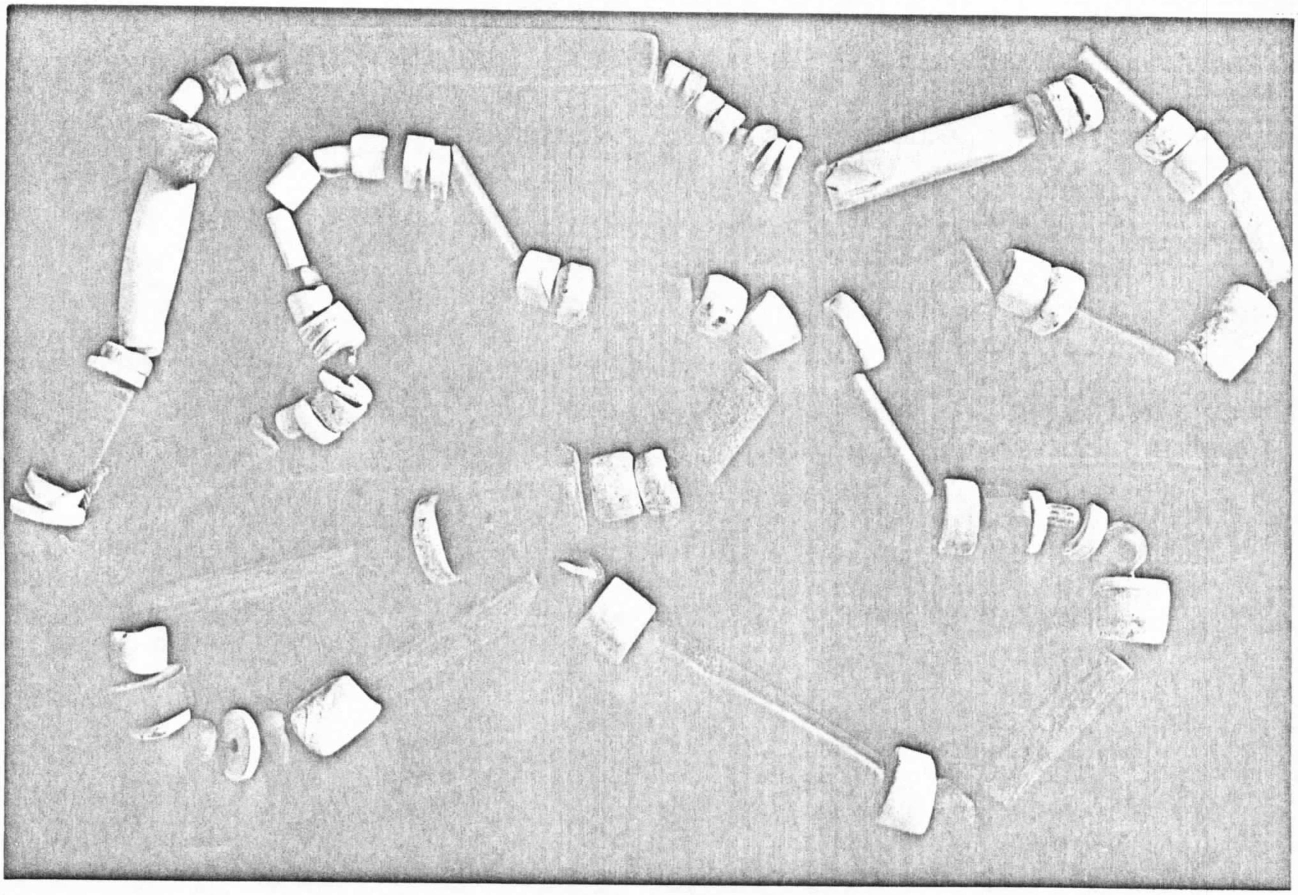

FIGURE 1. Siltstone, catlinite, glass and shell beads from the historic Petun Campbell-Kelly village.

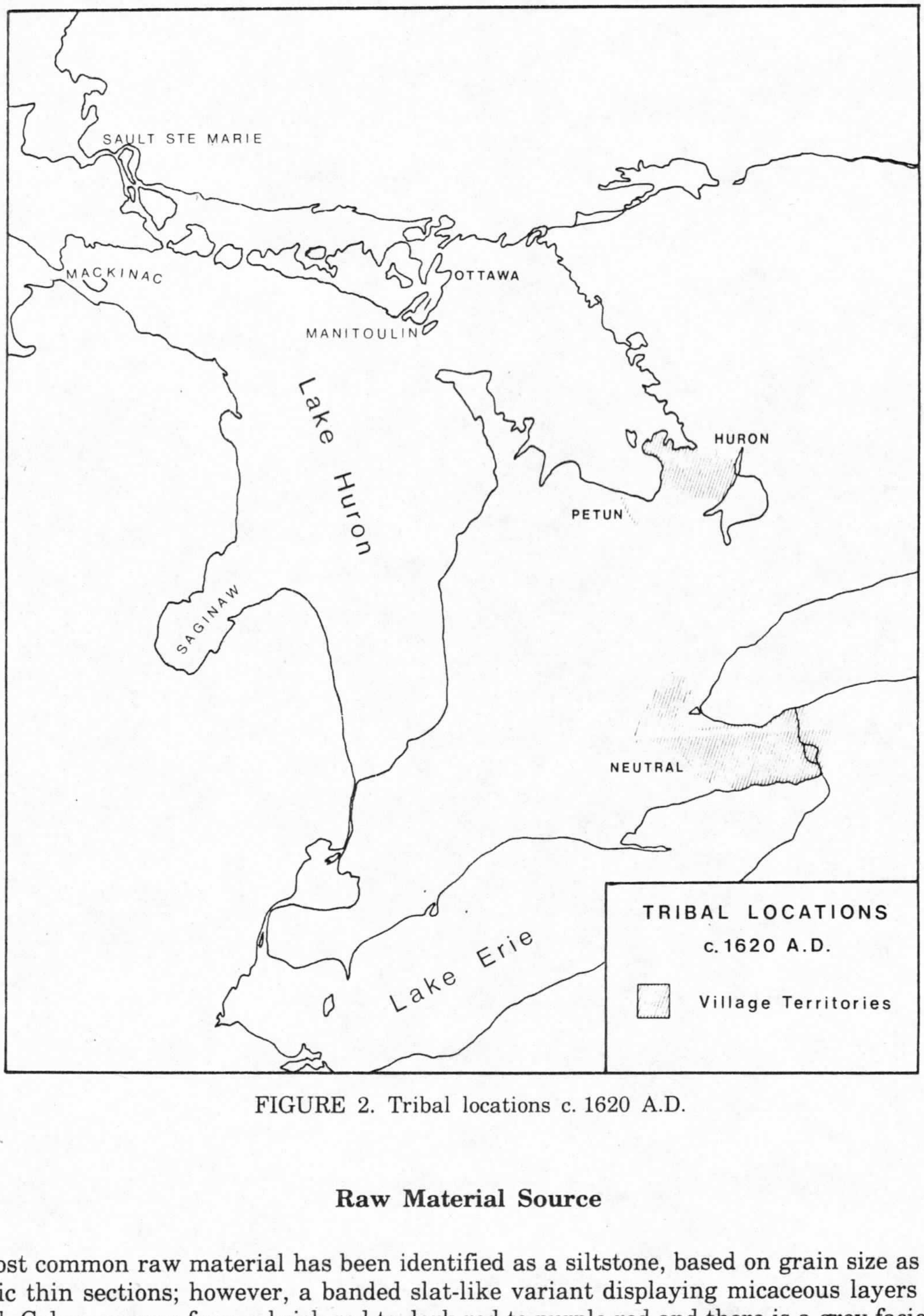

FIGURE 2. Tribal locations c. 1620 A.D.

Raw Material Source

The most common raw material has been identified as a siltstone, based on grain size as observed in petrographic thin sections; however, a banded slat-like variant displaying micaceous layers is also well represented. Colour ranges from a brick red to dark red to purple-red and there is a grey facies. The most common siltstone colour is Munsell 5R3/3 to /4, which differs considerably from the colour range of catlinite (Sigstad, 1970). X-ray diffraction mineral analysis has divided five archaeological specimens into two clusters; Group 1 containing plagioclase, quartz, chlorite and hematite as principal mineral components; and Group 2, containing additional significant amounts of potash feldspars and dolomite, plus some calcite (G. Soucie, pers. comm.). The preferred siltstone falls within Group 1. Gordon Soucie, a petrologist with the Ontario Ministry of Natural Resources,in a Jan. 23, 1973, letter states that "The Pipestone National Monument and Barron County samples (p. 2, attached diffractograms) are significantly different from all the above mentioned samples and from each other in that: the Pipestone sample contains prophyllite which is not present in any of the other samples, and the sample has a significantly lower quartz content than all the other samples; the Barron County sample is significantly different from all others in that it does not contain either feldspars or mica which are present in all other samples; also chlorite is much more abundant in the Barron County sample than in the other samples."

While it is obvious that the Hamilton-Lougheed industry did not utilize exotic catlinite or Barron County pipestone, the primary geologic provenience of the red siltstone and slate is difficult to pinpoint. Dr. Ken Card had suggested a Gowganda Formation source and Dr. Giblin a Lorrain Formation source for the siltstone, both of which form part of the Precambrian Cobalt Group of formations (Card, 1978) (see Fig. 10). The former consists of up to 1300 m. and the later up to 2200 m. of argillite, sandstone, conglomerate and, in the case of the Lorrain Formation, quartzite beds. Siltstones are found inter-bedded within the argillite and sandstone members of both formations. Finally, a Group 2 specimen exhibits circular oxidation spots similar to those reported for the Late Precambrian/Cambrian Jacobsville Formation which outcrops in the Sault Ste. Marie area (Fig. 2).

The exact primary geologic provenience of the siltstones and slates is not totally relevant, as the archaeological evidence indicates that the Native people obtained their raw material in cobble form from secondary deposits (see Fig. 3). After several years of searching, the author finally discovered numerous pebbles and cobbles of a visually similar material in an alluvial stream deposit at Wikwemikong (Fig. 10). X-ray diffraction analysis indicated a close similarity to the Group 1 archaeological specimens. The geographic location of the secondary deposit suggests a Lorrain Formation provenience.

A comment made by Dr. Giblin and repeated by other geologists has been that they have never seen outcrops of such vibrant red colour as the archaeological specimens. Experience with cherts suggested that the deep red might have been thermally induced; consequently a crude experiment was undertaken using a Wikwemikong locality pebble. Ten hours on a hibachi resulted in a slight enhancement of colour; however, a subsequent controlled thermal experiment resulted in a browner, dusky red colour (Munsell 10R3/2-7.5R3/4). Two pieces of Wikwemikong siltstone were heated for six hours in a muffle oven; one at 500° C. and the other at 700° C. The colour change achieved at both temperatures was identical and is comparable to many archaeological specimens.

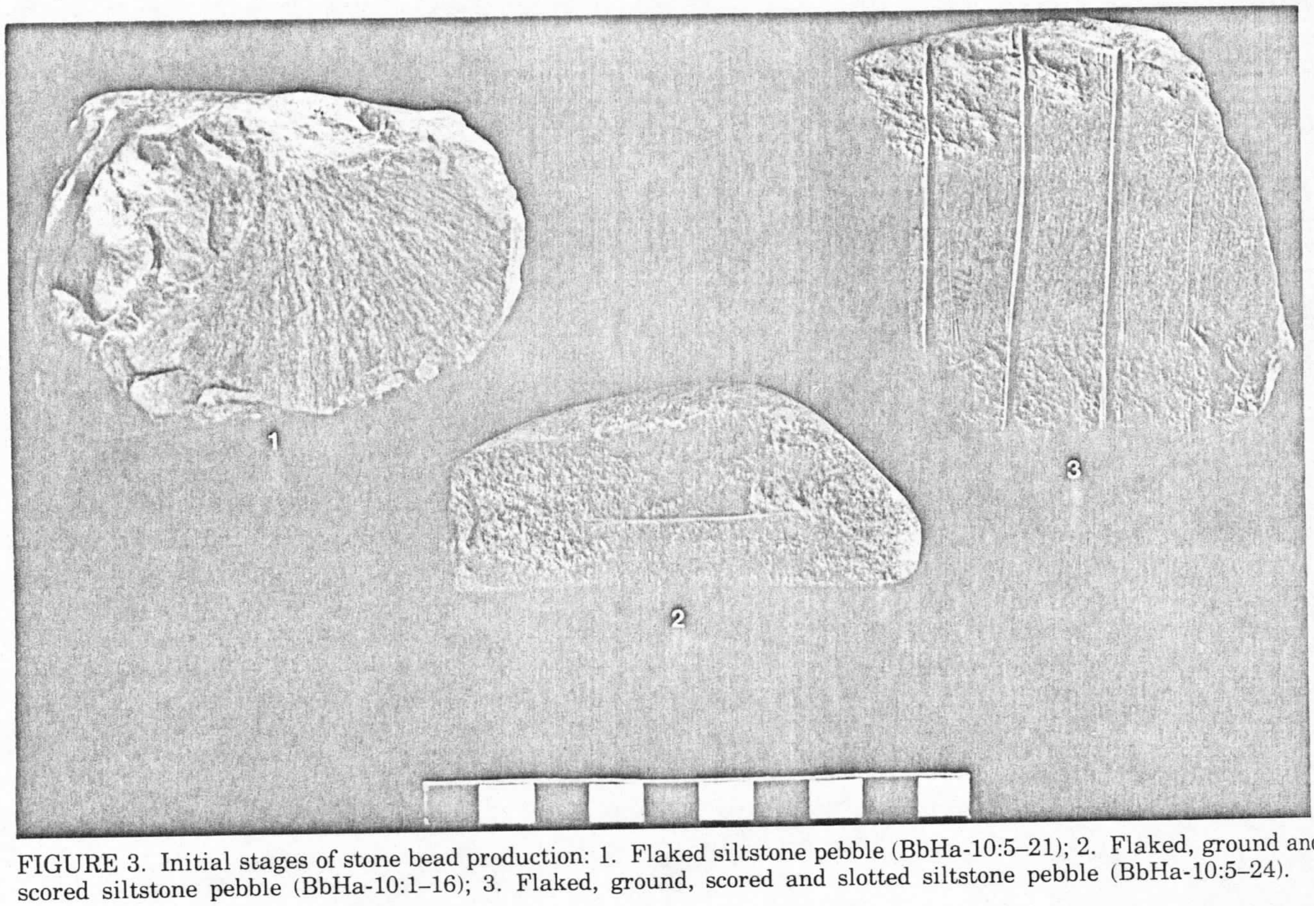

FIGURE 3. Initial stages of stone bead production: 1. Flaked siltstone pebble (BbHa-10:5–21); 2. Flaked, ground and scored siltstone pebble (BbHa-10:1–16); 3. Flaked, ground, scored and slotted siltstone pebble (BbHa-10:5–24).

The visual difference between even weathered catlinite and the siltstone is evident to a trained observer, but for those who are unsure, there is a physical test. Sigstad (1970) has demonstrated that catlinite has a distinct range of streak colour which separates it from other red pipestones in the United States. The author has successfully duplicated his results with catlinite and has found that the siltstone also has a distinctive streak colour. Archaeological specimens vary between Munsell 7.5 R6/4 and 6, while the Wikwemikong siltstone specimens register 10R6/3. A catlinite bead from the historic Petun Campbell-Kelly village produced a 5R 6/8 streak, which is consistent with Sigstad's findings.

The Manufacturing Sequence

Once a pebble was selected and, perhaps, thermally altered, the next step involved a number of options. The pebble might be worked into a thin parallel sided form through percussion flaking and/or grinding, though at times this step was omitted and the initial layout lines were scored on the natural pebble surface. Next, the piece was slotted along the layout lines (see Fig. 3).

The tool used for this slotting has not been identified; however, as on many historic Neutral sites, there are a series of serrated edge flakes from the Hamilton-Lougheed site. An experimental Onondaga chert flake tool was manufactured with a 20° edge angle and 4 serrations per cm. along the cutting edge. It should be pointed out that Petun serrated edge flake tools exhibit a variety of edge angles, with a number displaying less acute angled, stronger cutting edges. A second Wikwemikong pebble was selected, scored and then cut for 2 minutes, using a back and forth motion. A slot 27 mm. long, 2 mm. wide and up to .85 mm. deep resulted (Fig. 4). The teeth on the thin edged experimental tool displayed little attrition until a depth of approximately .75 mm. was reached and binding along the slot lateral edges occurred.

Next, in an attempt to replicate the results of cutting with an iron trade knife, a modern paring knife was utilized in a similar fashion for two minutes, to produce a slot 28 mm. long, 1 mm. wide and 2 mm. deep (Fig. 4). The chert flake tool cross-section form dictated a low (.38) slot depth over width index, which was far different from the high steel knife (2.0) index, but compared favourably with the low (.63) index derived from a slot on an archaeological specimen. Since serrate edge flake tools are distributed over numerous historic Petun and Neutral village sites, many of which display no evidence of red siltstone bead manufacturing, it can not be argued that all or, perhaps, any were used in bead manufacturing. Nevertheless, slot morphology on archaeological specimens does suggest that non-metal tools were used in cutting out the bead preforms.

Slotting was accomplished from both faces in order to facilitate release of these preforms (Fig. 5). Next the preform edges were ground to produce a roughly square-to-rounded square cross-section (Fig. 6). Drilling was then initiated. This was often accomplished from both ends of the preform, and misalignment of the drill holes is not uncommon. Figure 7 illustrates the structural failure of a bead preform along a micaceous bedding plane during drilling; a relatively common occurrence.

The grainy nature of this raw material may well have facilitated drilling by providing a cutting compound as drilling proceeed. McGuire, in his 1894 Smithsonian Report article, has described such a drilling phenomenon. The drill used to produce these beads probably consisted of a simple shaft drill with a solid iron point. Bore holes which taper to the bead centre support this hypothesized drill form, but a number of beads were observed to have a constant bore diameter throughout. This could argue for the use of narrow gauge metal wire for some drilling.

An optional final stage involved the grinding of the bead edges to produce a round cross-section. Following manufacture and distribution, these tubular beads were often slotted and snapped into shorter sections (Fig. 8).

An ancillary industry involved the production of small siltstone geometric and animal effigy pendants (Fig. 9). A flake blank appears to have been selected and ground into an oval or rectangular, thin preform. The preform was then notched and carved into shape and a hole drilled for suspension.

Distribution

Red siltstone beads and some pendants have been recovered from numerous historic Petun, Huron (Fox, 1979) and Neutral village and burial sites (Fig. 8). While they may occur as early as ca. A.D. 1615

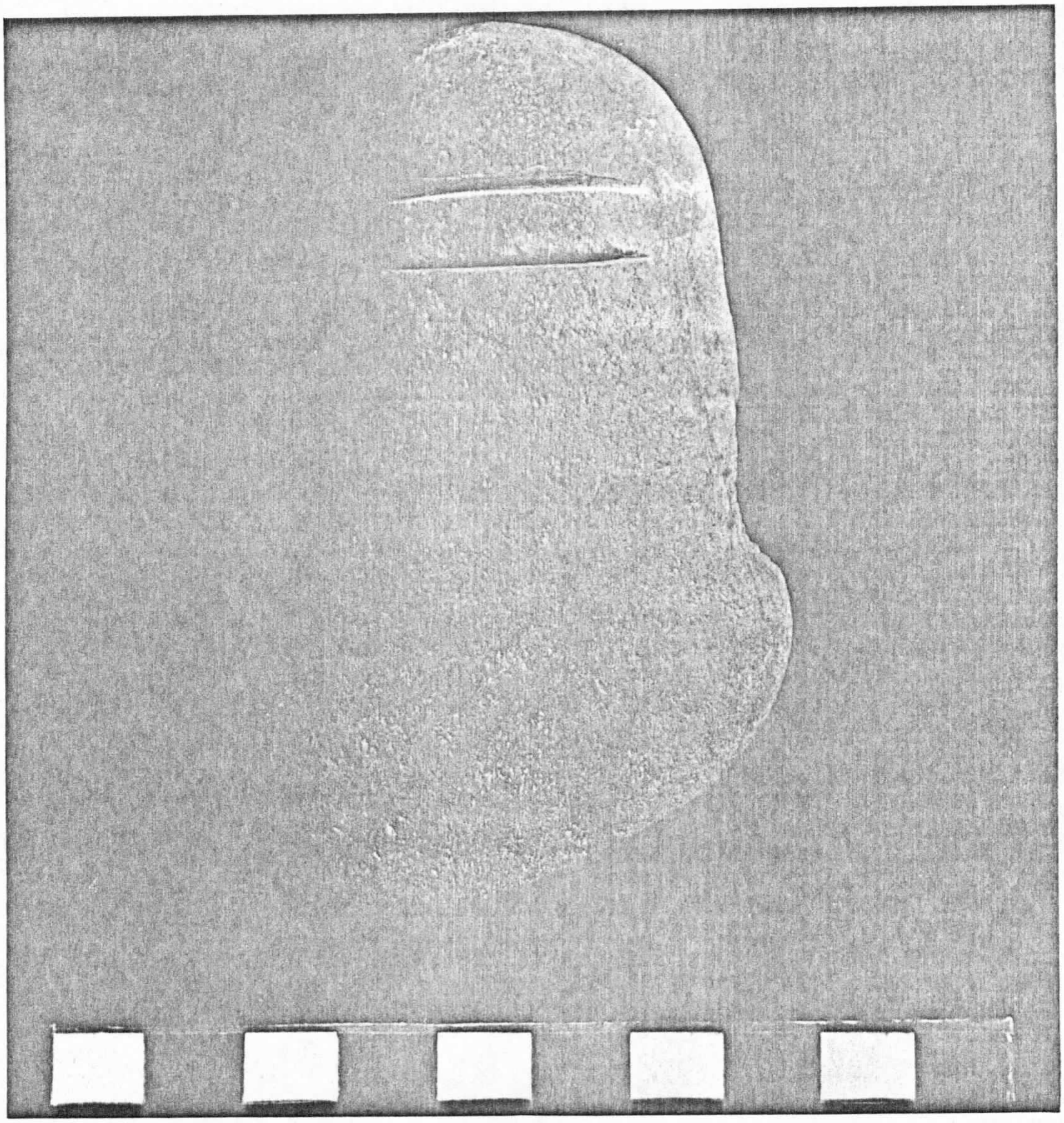

FIGURE 4. Pebble Slotting Experiment. Wikwemikong Locality pebble.

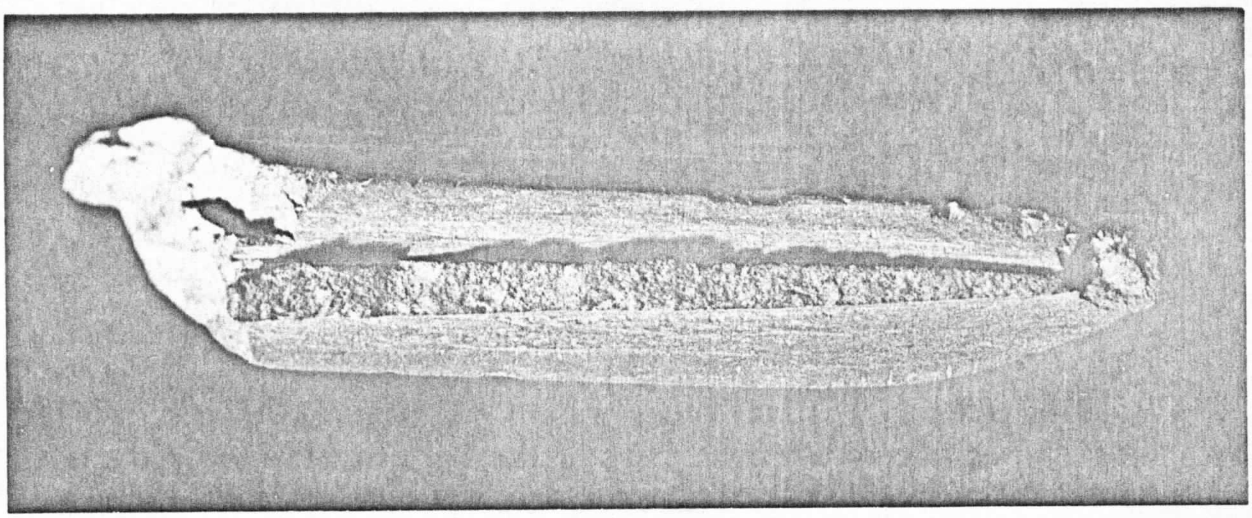

FIGURE 5. Native Slotting of Pebble Blank. Slotted and snapped siltstone pebble (BbHa-10:3–4).

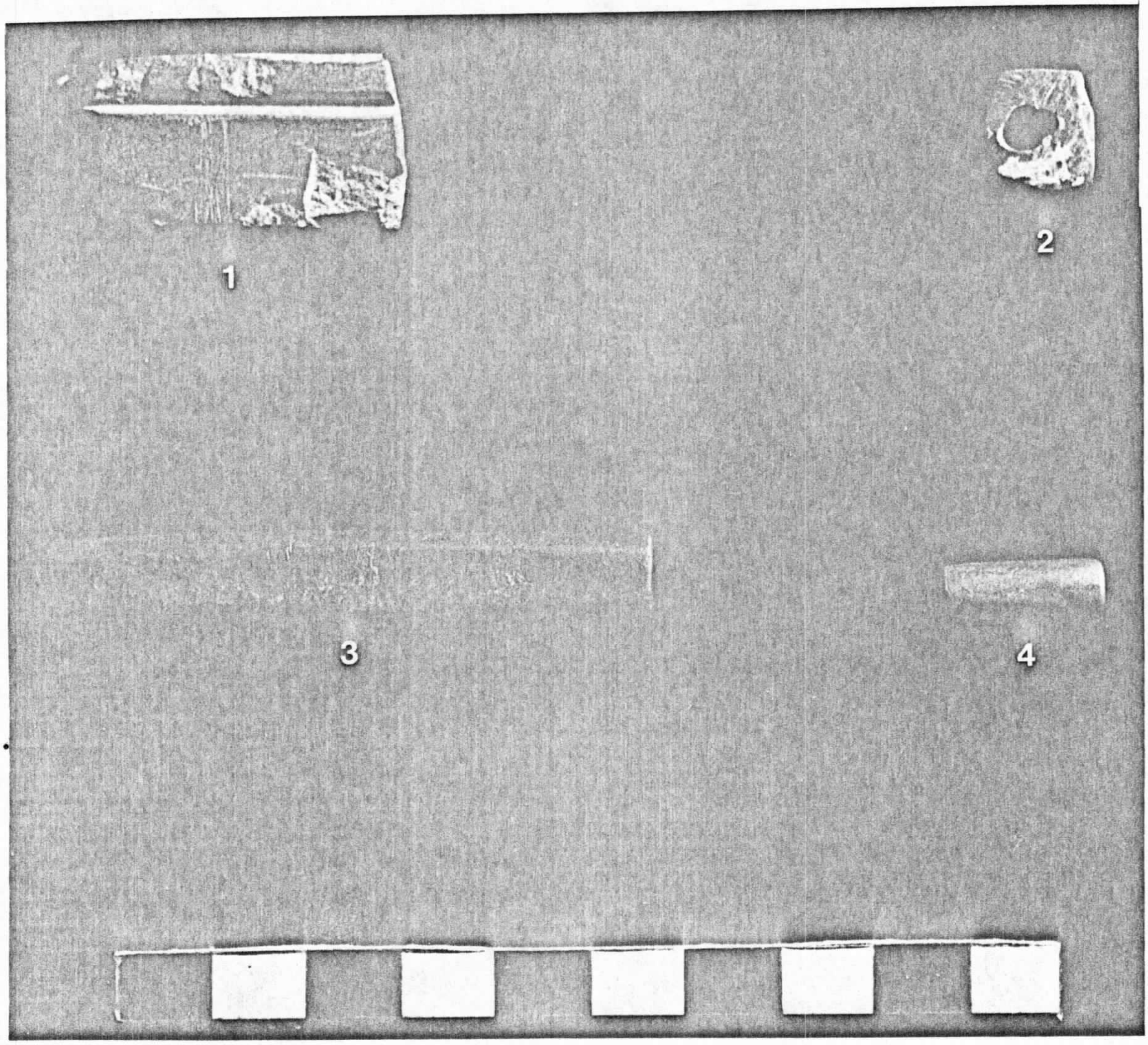

FIGURE 6. Intermediate Stages of Stone Bead Production: 1. Siltstone bead preform (BbHa-10:5–58); 2. Drilled siltstone bead preform (BbHa-10:5–35); 3. Siltstone bead-rectangular section (BbHa-10:5–31); 4. Siltstone bead-circular section (BbHa-10:5–37).

on Rock Tribe Huron villages such as the Cahiague and Ball sites (Knight, 1978), red siltstone beads did not become popular until approximately A.D. 1620. They then continue to occur until the dispersal of the Ontario Iroquois by the Five Nations in the mid-seventeenth century.

Beads and pendants manufactured mainly of catlinite, but of similar form, have been reported for the late 17th century Lasanen burial locality in Mackinac County, Michigan (Cleland, 1971). The beads in this later sample are longer, narrower and have smaller bore diameters on the average than the early 17th century specimens; however, they do conform more closely to a catlinite specimen from the historic Petun Graham-Ferguson site (Fig. 8:1). These morphological differences may reflect either the softer nature of catlinite, or the refinement of this Native industry through time, perhaps through the acquisition of European iron drills.

Shu-Wu-Hou (1971) in his section on catlinite artifacts from the Lasanen site, suggests that certain of the catlinite bead forms were intended as copies of glass beads. This seems plausible, particularly considering the timing of the initiation of the industry (ca. A.D. 1615) and the lack of similar Native stone bead morphological antecedents.

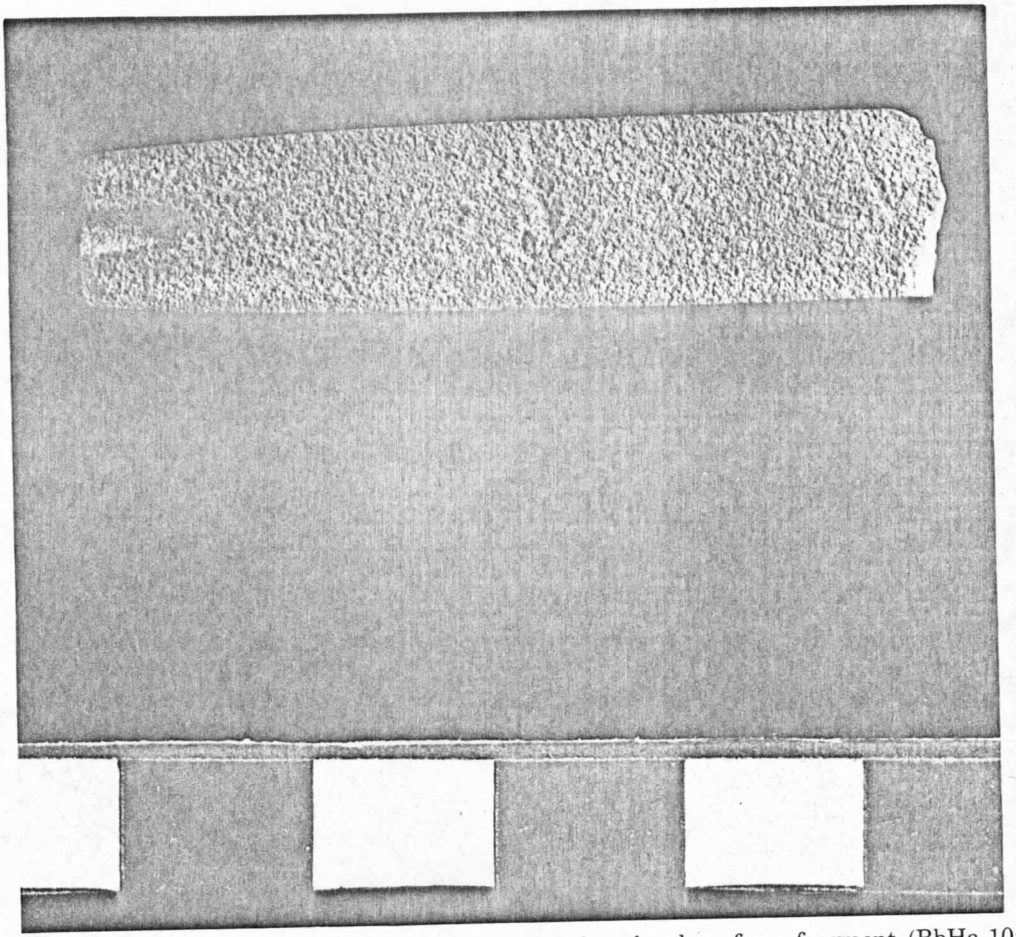

FIGURE 7. Bead Failure During Drilling. Siltstone/slate bead preform fragment (BbHa-10:5–32).

The Manufacturers

Cleland (1971) suggests that the Lasanen site is historic Ottawa, and there are definite morphological similarities between the Lasanen stone beads and pendants and those recovered from Collingwood area village sites. Nicolet visited the Ottawa or Outaouan on Manitoulin Island in A.D. 1635 and Vimont refers to this group in 1640 as members of the nation of *cheveux relevé*. Champlain in 1615 met 300 *cheveux relevé* at the mouth of the French River and then encountered the same group in January of 1616 when he visited the Petun area. He noted that they had a chief for each region and travelled great distances to trade. It is no mere coincidence that siltstone was available in secondary deposits on Manitoulin Island and probably elsewhere along the north shore of Georgian Bay, and it appears likely that it was brought to the Petun area by the *cheveux relevé* who wintered in the Collingwood area (Fig. 10). This hypothesized Ottawa transportation of lithic raw material is further supported by the quantities of Kettle Point, Michigan, and Manitoulin cherts on historic Petun Villages (Fox, 1979a.)

Further support for Ottawa involvement in this industry is provided by Cadillac's late 17th century linguistically erroneous, but nonetheless important observation that "Ottawa means Nation of Pierced Noses because they pierce their noses and attach to the nose a small prettily ornamented stone which comes to the middle of the mouth between the lips." He continues, saying that "it is a fashion with them (Mackinac Ottawa), they would not think themselves properly decked out if they were wanting. There are nevertheless, some old men who maintain that it is a protection against medicine, that is to say, against the fates and spells that their enemies and other malicious persons might cast on them or make them die."

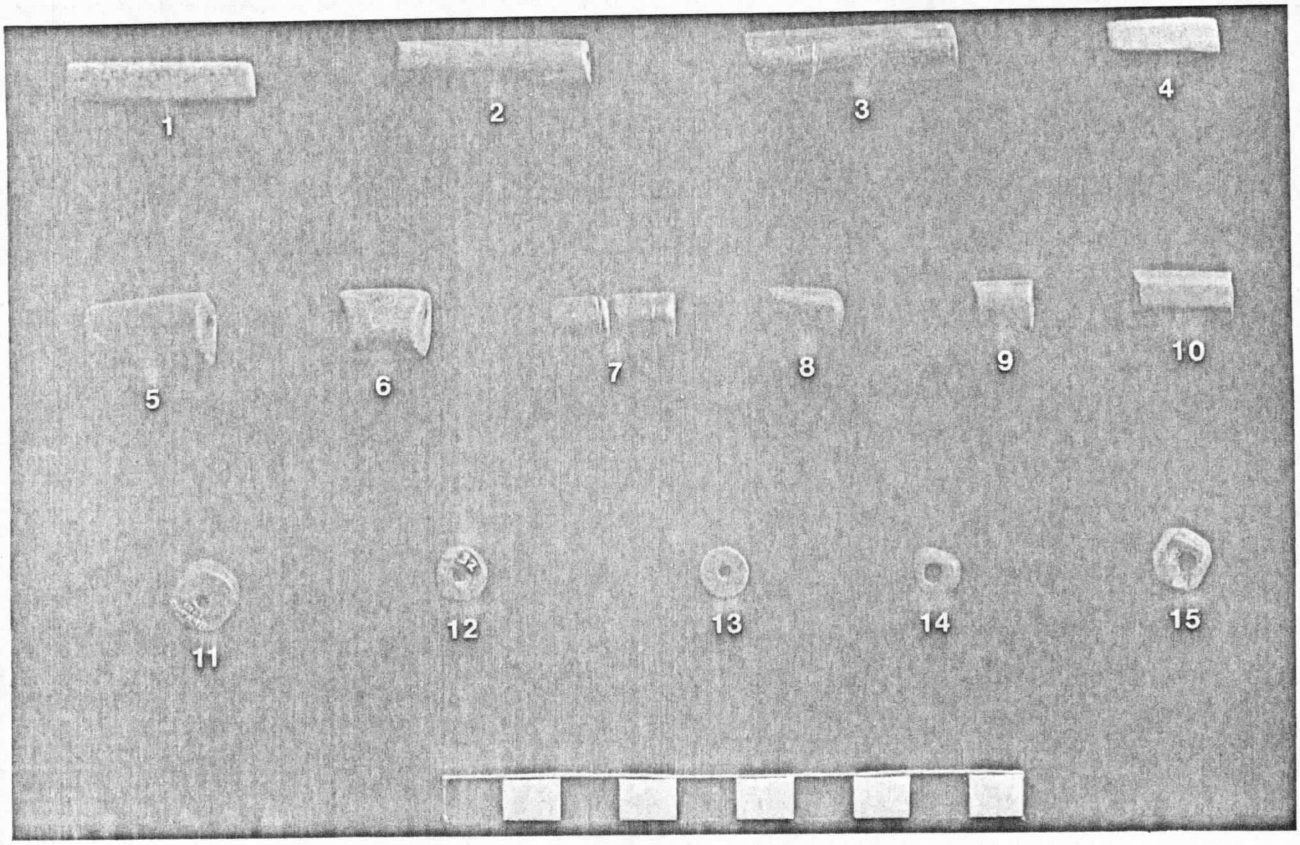

FIGURE 8. Completed Stone Beads: 1. Catlinite tubular bead (BcHb-7:6c7); 2. Siltstone tubular bead (BbHa-10:5–36); 3–5, 7–9 Siltstone tubular beads from an historic Huron village (BeHa-3); 6. Catlinite tubular bead from an historic Huron village (BeHa-3); 10. Siltstone tubular bead from an historic Neutral village (AgHa-9); 11. Siltstone discoidal bead (BbHa-10:1–10); 12. Siltstone discoidal beads from an historic Huron village (BeHa-3).

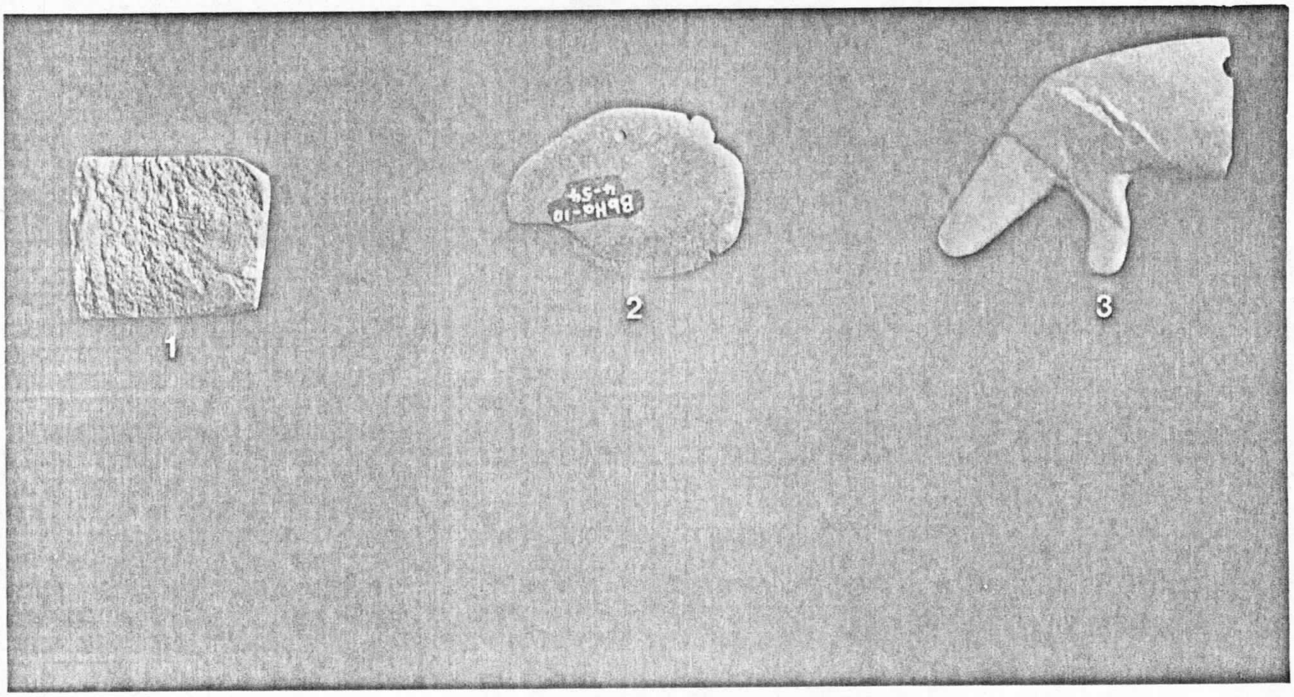

FIGURE 9. Stages of Stone Pendant Production: 1. Siltstone pendant blank (BbHa-10:4–56); 2. Siltstone pendant preform (BbHa-10:4–54); 3. Siltstone wolf(?) effigy pendant fragment (BbHa-10:3–59).

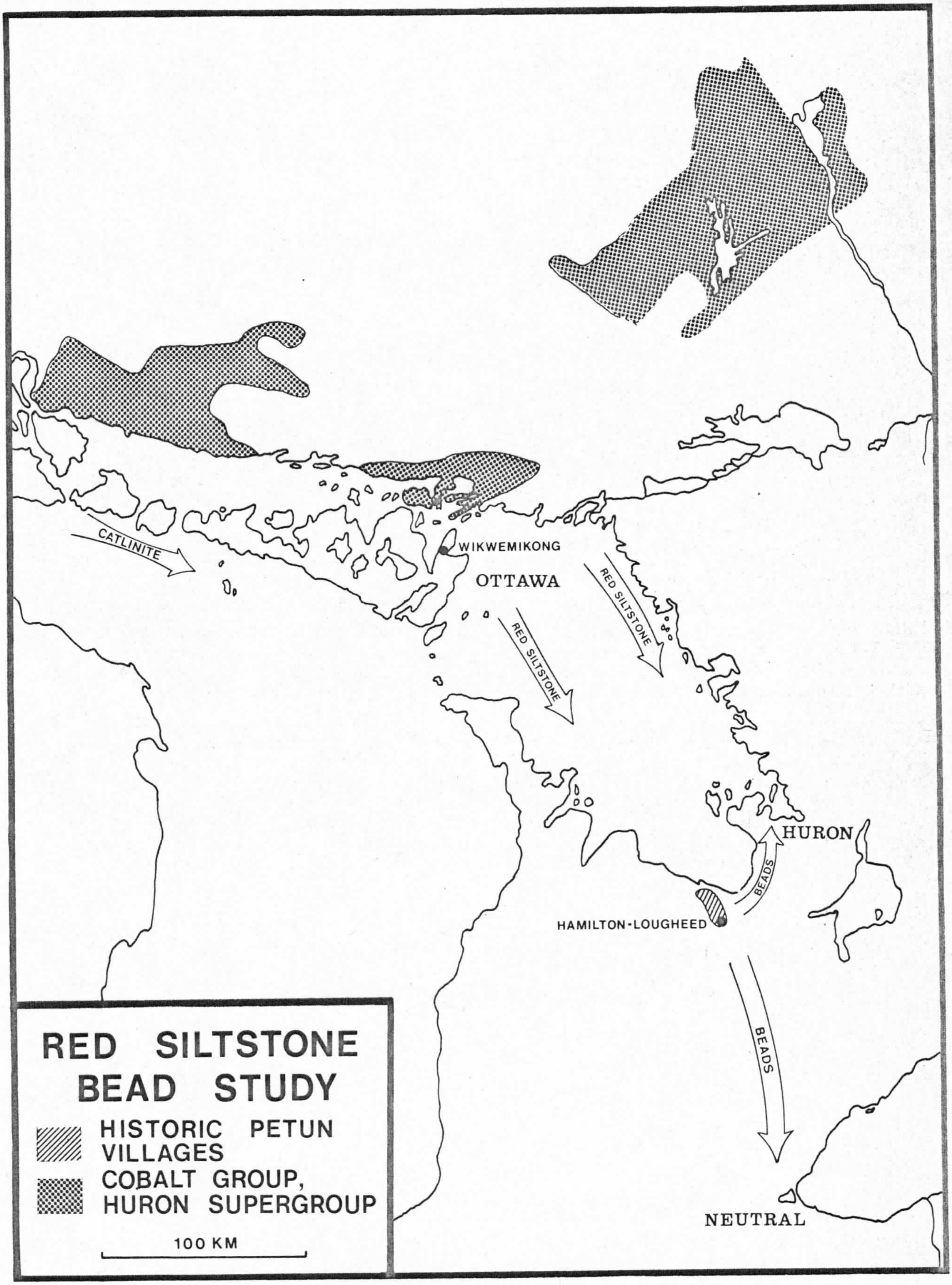

FIGURE 10. Red siltstone bead study.

Conclusions

There are many perspectives from which this industry could be considered, including the ideological significance of the colour red or of the various pendant forms. George Catlin (1973) touches on colour symbolism in his description of the catlinite quarries of western Minnesota and the various tribal traditions concerning this sacred site.

This study was undertaken originally in order to correct some prevalent misconceptions concerning the source of certain stone bead forms recovered on historic Ontario Iroquoian village and burial sites. The social ramifications of the sources are considerable, as there is a difference of 800 mi. between northern Georgian Bay and western Minnesota. This distance is substantial, would have involved both water and land transportation, and perhaps have required the participation of a number of different tribal and linguistic groups. Some catlinite was reaching Southern Ontario in early historic times; however, the vast majority of beads and pendants were manufactured from Lorrain Formation siltstone, which was available in the traditional summer occupation area of certain of the Ottawa.

It is hypothesized that Ottawas were involved in not only raw material transportation, but also the manufacture of siltstone beads and pendants in an effort to articulate their prehistorically established western exchange system in Native goods, with a burgeoning eastern trading network involving European products.

Acknowledgements

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