

THE MOHAWK GLASS TRADE BEAD CHRONOLOGY: CA. 1560-1785

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Early glass beads acquired by the Mohawk Indians of New York state were a mixture of whatever was made available to them by European traders. By the second quarter of the 17th century, the beads reflected a dominance of particular types and/or colors as villages were relocated. This phenomenon appears to have ritualistic connotations and suggests that the bead-selection process was a part of the ceremonialism practiced in the daily, seasonal and annual life modes of the Mohawk. Ten distinct periods have been identified based on an examination of approximately 10,000 glass beads recovered from 33 Mohawk village sites. Other datable artifacts, historic occurrences and documents are cited to bolster the validity of using glass trade beads as a primary tool in dating the Mohawk village relocations.

INTRODUCTION

The Five Nations Iroquois Confederacy of the 16th-18th centuries was spread across present-day New York state in an east-west line from Albany to Rochester. At various intervals, villages were relocated and revitalized to ensure ready access to firewood, and to replace exhausted horticultural resources and dilapidated longhouses. Relocation in the territory inhabited by the Mohawk (Fig. 1) appears to have been on a fairly regular basis, about every 15 years or so, as if a schedule was to be followed as directed by their select tribune of councillors.

The primary diagnostic trade artifact that has emerged from research on these temporal delineations in protohistoric and historic times is the European glass bead. Several glass bead classification systems have been devised to date but the one most accepted for Iroquoian research is the one developed by Kenneth E. and Martha Ann Kidd (1970), and all references are to that system. An asterisk (*) in the

identifying code denotes a variety not recorded by the Kidds, while two asterisks (**) indicate a new type. Abbreviations used include op. = opaque, tsl. = translucent, tsp. = transparent, v.l. = very large, Pl. = color plate and R. = row in color plate. Tubular specimens with rounded ends are termed "finished" (sometimes called "tumbled"), while those with broken and jagged ends are "unfinished." The term "seed bead" refers to small beads ca. 2.0-4.0 mm in diameter.

Other trade goods that are useful in dating habitation areas (such as white clay smoking pipe heel and stem marks, firearm components and Jesuit rings) will be referenced as additional tools in the dating process. Documentary evidence such as *The Documentary History of the State of New York* (O'Callaghan 1849-51), *Documents Relative to the Colonial History of the State of New York* (O'Callaghan 1853-87) and *The Jesuit Relations* (Thwaites 1896-1901) are reliable sources which provide direct contact dates with the Mohawk from a very early date. Other tribes to the west were in relative isolation until the mid-17th century.

Estimated site-habitation dates are exclusively those of the author and, in a few cases, are slightly different from those proffered previously (Rumrill 1985) due to more recent artifact finds and updated analyses. Dr. Dean R. Snow, Professor of Anthropology at the State University of New York at Albany, has recently had Accelerator Mass Spectrometry (AMS) dating performed on Mohawk-site material, especially corn kernels, at the University of Arizona's physics laboratory. The more than 40 specimens tested so far reveal that the dates are "pretty much right on the mark" (Snow 1992: pers. comm.).

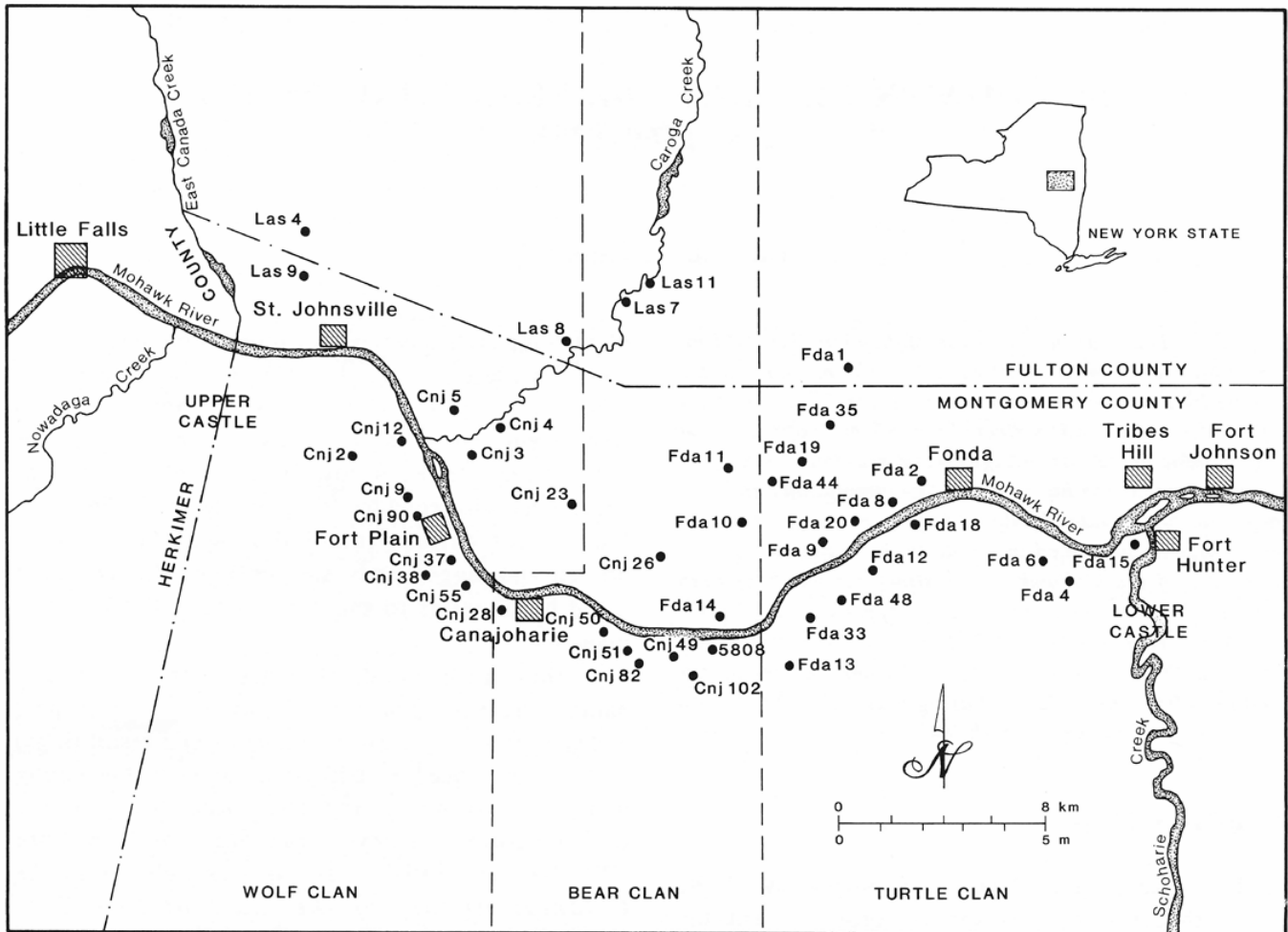


Figure 1. Locations of Mohawk Indian villages, ca. 1560-1785 (drawing by M.C. Rumrill and D. Kappler).

THE BEAD CHRONOLOGY

Protohistoric Period: 1560-1580

This is known as the Garoga Phase in ceramic studies and should also be considered the protohistoric period in overall Mohawk studies.

Prior to European incursion into the interior of New York state, the Mohawk lived a very uncomplicated existence of fractured village clusters both north and south of the Mohawk River with no seemingly structured movement pattern. That it was not always peaceful is attested by archaeological evidence of palisades protecting most villages against sporadic aggression by other Indian bands for probably ritualistic, rather than territorial, reasons. By the mid-16th century, mayhem by the intruders and,

indeed, fighting even within their own ranks brought about, if not the actual formation of a "League," at least the infancy of the Great Law of Peace, the basis upon which the Iroquois Confederacy was formed.

The earliest confirmed artifacts of European origin in Mohawk territory are articles locally made from brass kettle remnants. Possibly not meant initially as trade items, these cooking vessels were eagerly sought as a source of raw material for the production of such adornments as beads (Pl. IA, R.1, #1), tinkling cones and pendants, and the manufacture of utility items such as knives, crude saws and arrow points.

The Cayadutta, Garoga and Klock sites have an approximate median date of 1570. This date has been arrived at primarily by backdating and reversing chronological movements measured by diagnostic artifacts and relevant documents from certain key

Table 1. The Chapin Site (Fda-19) Beads (n=4).

Variety	Description	No.
IIa6	Round; op. black (Pl. IA, R.2, #3)	1
IIa36	Round; op. aqua blue	1
IIb56	Round; op. robin's egg blue with 3 op. white stripes (Pl. IA, R.2, #5)	1
IVk3	Round; 5-layer chevron: tsp. bright navy exterior/ op. white/ op. redwood/ op. white/ tsp. bright blue core (Pl. IA, R.2, #4)	1

control-date sites of the 17th-century Mohawk. The writer is convinced that this is also the approximate date for the genesis of the Iroquois Confederacy and the possible creation of distinct clan cantons (Fig. 1).

Cayadutta (Fda-1) is the eastern-most of the three above-mentioned village sites, and is situated 4.8 km (3 mi.) north of the Mohawk River. It is a typical, classic Mohawk village configuration on a peninsula 18 m (60 ft.) above Cayadutta Creek. Ravines delineate the village's north and south perimeters, and a single-row palisade originally extended across the southeast side, the only level access point.

A tubular bead of rolled brass nearly 17.8 cm (7.0 in.) in length was definitely recovered from this site (Beauchamp 1903: 17; Pl. 23, fig. 234), and another has been reported but not verified. A tubular wampum bead (Pl. IA, R.1, #2) was retrieved during one of several excavations conducted over the years, as were worked marine-shell remnants indicative of the *in situ* production of centrally perforated discoidal shell beads (Pl. IA, R.1, #3). The rarest find made by the author — a small turquoise nugget indigenous to the Southwest — reveals the complexity of trade conduits in place amongst the Indians.

Garoga (Las-7) is located some 9.6 km (6 mi.) north of the Mohawk River and its configuration is the same as Cayadutta. It overlooks the east bank of Caroga Creek, and had a double-row palisade on its one accessible side. Beauchamp (1903: 16; figs. 245, 256) illustrates two "cylindric brass beads" from Garoga, one 7.6 cm (3 in.) and the other 3.8 cm (1.5 in.) in length. Harrington (1905: 27) reports finding "a shell bead made from the columnella of a busicon whelk" which he termed "a good example of primitive wampum." Sixty per cent of the one-hectare (2.5 acres) village area was excavated by crews under the

direction of Drs. William A. Ritchie and Robert E. Funk, past and present New York State Archaeologists, respectively. Funk also found a tubular wampum bead, as well as a centrally perforated discoidal shell bead (Ritchie and Funk 1973: 326-8).

Klock (Las-8) is west of Caroga Creek, approximately 4.8 km (3 mi.) from the Garoga site, and closely resembles the two previously mentioned villages in both lithic and ceramic traits. Dr. Funk's excavations in 1969-70 did not produce any European material, other than a few ambiguous odds and ends (Funk 1990: pers. comm.); Donald Lenig (1977: 78) reported just one item. All things being equal, Klock is probably the Wolf Clan contemporary of Cayadutta (Turtle Clan) and Garoga (Bear Clan), all dating ca. 1560-80.

None of these sites produced any glass trade beads, but descriptions of the sites are necessary to establish anchor points for clan enclaves, the probable formation-date of the Iroquois Confederacy, and the slow incursion of European influence and materials into Mohawk territory during the early decades of the protohistoric period.

Continuing Protohistoric Period: 1580-1600

Glass trade beads did not find their way into the Mohawk Valley very quickly during this period either. Of five sites assigned to the period, Saltsman's (Fda-35), Pagerie-Smith (Las-11), Crum Creek (Las-4) and Bellinger (Las-9) have not produced beads although Pagerie-Smith, especially, has produced significantly more copper/brass refuse and artifacts (Funk 1990: pers. comm.). The only exception, Chapin (Fda-19), yielded glass beads (Table 1), each different, as well as an iron axe

Table 2. The England's Woods Site (Fda-6) Beads (n=6).

Variety	Description	No.
IIa6	Round; op. black	1
IIa15	Oval; op. white (Pl. IA, R.1, #4)	1
IIa40	Round; op. robin's egg blue; "disappearing bead" (Pl. IA, R.2, #1)	2
IIbb1	Round; op. redwood with 3 tsp. bright navy on op. white stripes; v.l. (Pl. IA, R.3, #4)	1
IVnn5	Round; 4-layer chevron: op. white exterior/ op. redwood/ op. white/ tsp. bright blue core; 6 broad op. redwood stripes and 6 thin tsp. bright navy stripes; v.l.	1

(Wemple 1982, 1986; pers. comm.). A fifth glass bead of unrecorded type was recovered by A.J. Richmond, a meticulous collector from the early part of this century. It is believed that the beads arrived near the start of the 17th century.

Early Historic Period: 1600-1615

Acquisition of glass trade beads was not brisk even into the Early Historic Period, at least for the Mohawk. Seriations for the Oneida (Bennett 1983), Onondaga (Bradley 1987) and Seneca (Wray 1983) indicate comparatively larger numbers of glass beads for these tribes at an earlier date. Nevertheless, the writer cannot justify earlier dates for the Mohawk. There appears to be room for adjustment in all tribal territories since much of the information is from burials and Mohawk interment locations are virtually undefinable for the protohistoric and early historic periods.

The England's Woods site (Fda-11) has been picked over through the years but not heavily since the owners have been quite selective about who went on it and for how long. The writer was able to "hawk" the site a half dozen times and found a triangular brass pendant (Fig. 2,c), a similar pendant of red slate, a brass tinkling cone (Fig. 2,d), four rolled-brass beads like those found at Cayadutta, three brass-spiral fragments, two triangular brass arrow points and some scrap brass. Iron objects were absent. Two of the six recovered glass beads (Table 2) are known to local archaeologists as "sky blue disappearing beads," a name coined by Dr. Paul Huey while excavating at Fort Orange in present-day Albany, New York. For

some reason, this particular bead disintegrates in the ground, leaving little trace.

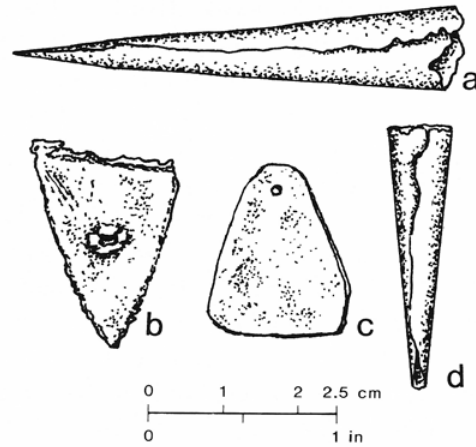


Figure 2. Objects made from brass trade kettles: a, conical arrow point; b, perforated triangular arrow point; c, pendant; and d, tinkling cone (drawing by M.C. Rumrill).

The Barker site (Fda-44) is similar in all respects to England's Woods including a small dome-shaped piece of brass and tubular brass beads. A small number of glass trade beads have been found but no record of them is available. The writer has managed to find eight fragments of the "disappearing bead" and a centrally perforated discoidal bead of marine shell.

Dewardalaer (Cnj-23) was a small hamlet of one or possibly two longhouses of average size: 30.5 m (100 ft.) by 6 m (20 ft.). Main villages with nearby satellite shelters, hamlets and hunting camps were common over the centuries and continued through the

Table 3. The Briggs Run Site (Fda-9) Beads (n=635).

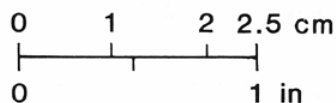
Variety	Description	No.
IIa7	Circular; op. black; seed beads; 86.1% (Pl. IA, R.1, #6)	539
IIa33	Round; tsp. light aqua blue	1
IIa37	Circular; op. aqua blue; seed bead	1
IIa40	Round; op. robin's egg blue	6
IIa47	Circular; op. shadow blue; seed beads	4
IIa49	Oval; op. dark shadow blue	6
IIa54	Oval; tsp. ultramarine	1
IIa56	Circular; tsp. bright navy; seed beads	4
IIb*	Round; op. redwood with 8 pairs of op. white stripes; v.l.	1
IIb10	Round; op. black with 3 op. white stripes; v.l. (Pl. IA, R.3, #3)	1
IIb15	Round; op. black with 3 op. redwood and 3 op. white stripes; v.l.	1
IIb16	Round; op. black with 3 op. ruby and 3 op. light cherry rose stripes	1
IIb*	Circular; as IIb16; seed beads	2
IIb18	Round; tsp. light gray with 12 op. white stripes; "gooseberry" (Pl. IA, R.3, #1)	1
IIb*	Circular; op. white with 4 op. yellow and 4 op. green stripes	3
IIb*	Circular; op. white with 4 op. lemon yellow and 4 tsp. dark palm green stripes; a bead unique to this site	3
IIbb1	Round; op. redwood with 3 op. bright navy on op. white stripes	1
IIbb*	Round; op. black with 8 op. redwood on op. white stripes	1
IVa5	Round; op. redwood with tsp. apple green core	3
IVa7	Oval; op. redwood with tsp. apple green core; cased in tsp. light gray glass; "barrel beads" (Pl. IA, R.2, #2)	7
IVa8	Round; op. redwood with tsp. bright blue core; melted (Pl. IA, R.3, #2)	1
IVa13	Circular; op. white with tsp. light gray core; seed beads; 2.9% (Pl. IA, R.1, #5)	18
IVa17	Circular; tsp. ultramarine/ op. white/ op. ultramarine core; seed beads; 4.3%	27
IVk4	Round; 5-layer chevron: thick tsp. bright navy exterior/ op. white/ op. redwood/ op. white/ tsp. bright blue core	2

somewhat-regimented Confederacy organization of tribal territories and clan cantons. Significant brass recoveries are crude triangular arrow points, including one that is perforated (Fig. 2,b), and an Indian-fashioned knife. Iron scissors, awls, a knife, several wrought nails and two felling axes are in the author's collection, but not one glass bead. A final find is half a quahog shell.

Briggs Run (Fda-9) was a village constructed only 1.0 km (0.6 mi.) from the river, and may overlap into the next time period judging by the sudden increase in European material. Marine-shell scrap, along with discoidal and tubular beads, is in greater evidence than previously. Rolled brass beads, tinkling cones, and triangular and conical projectile points (Fig. 2, a) in fair numbers, a piece of a blue and gray Westerwald

Table 4. The Yates Site (Fda-33) Beads (n=64).

Variety	Description	No.
Ic'1	Tubular, square-sectioned; loose twist; op. redwood; finished (Fig. 3)	1
IIa1	Round; op. redwood	1
IIa6	Round; op. black	5
IIa7	Circular; op. black; seed beads; 35.9%	23
IIa36	Round; op. aqua blue	4
IIa40	Round; op. robin's egg blue	1
IIa46	Round; op. shadow blue	1
IIa47	Circular; op. shadow blue; seed beads; 15.6%	10
IIa55	Round; tsp. bright navy	1
IIb56	Round; op. robin's egg blue with 3 op. white stripes	2
IIIa3	Tubular; op. redwood with tsp. apple green core; unfinished	1
IIIa6	Tubular; tsp. light gray exterior/ op. redwood/ tsp. light gray core; unfinished	1
IIIa10	Tubular; tsp. ultramarine exterior/ op. white/ tsp. ultramarine core; unfinished	1
IVa13	Circular; tsl. oyster white with tsp. light gray core; 17.2%	11
IVa*	Round; op. shadow blue with tsp. bright navy core	1

**Figure 3.** Square-sectioned, tubular glass bead with loose spiral twist (Ic'1) (drawing by M.C. Rumrill).

vessel and a small button of opaque white glass with an iron shank (Pl. IA, R.3, #5) presage direct contact with the source of this material.

At least 635 glass trade beads have been recovered from Briggs Run (Table 3), mostly by mechanized sifting of a large area, possibly a midden. Most of the specimens (95.5%) were small "seed" beads. There were also seven "barrel" beads which, in most cases, are red in color and cased in transparent gray (colorless) glass. Both ends exhibit a ridge giving the bead a barrel shape. Burials which were accidentally plowed up south of the habitation area were

carefully excavated and reinterred at a safe level. There were almost no gifts included in the graves; only one contained a few seed beads.

Seed beads are the hallmark for this period with polychrome types, including "gooseberries," making a rapid increase toward the end of the period. Some beads (such as IVa5) continue throughout the century. The Mohawk and Mahican tribes are known to have been at war with each other around 1610-25, and pottery with Mahican rimsherd designs, probably crafted by captives, is found at Briggs Run.

Swart-Farley (Cnj-37) also falls into the 1600-15 period, but lacks glass trade beads. It also doesn't fit the oft-quoted theory that all of a sudden around 1630, the Mohawk made a complete exodus from the north side of the river to the south side to better control trade with Fort Orange. The small percentage of brass, iron and other European material, compared to native-made materials, demonstrates that some of the Mohawk just moved to that location about 1600 in consideration of their immediate needs.

Polychrome and Flush Eye Bead Period: 1615-1630

Another early transfer to the Mohawk River's south side was the band that settled at the Yates site (Fda-33). Part of the habitation area was destroyed when gravel was removed for road construction in 1953. Fortunately, Henry Wemple (1986: pers. comm.) gathered together a few avocationalists and they did as much of a salvage job as time would allow. Yates reflects the trend for the period with less than 20% of the recovered artifacts being of European origin, and, of the 64 recorded glass beads, 44 (69%) are of seed-bead varieties (Table 4). There seems to be no pronounced color preference at this time, but tubular glass beads are more numerous: 4 specimens (6.3%).

Another site south of the river occupied during this period is Ford (Cnj-82), now an abandoned gravel bank. The only glass bead attributed to this site is a small redwood specimen with an opaque black core and decorated with three, thin, opaque white stripes (IVb3). Pratt (1982: 8) records this variety for the Oneida Blowers (Andrews) site (Ond-1) and suggests a date of 1595-1625 for it. Martin and Coleman-Van Duesan (see below) are the only other Mohawk sites to display this variety with two each and, coincidentally, date to the same time period as Ford and Blowers. Additionally, a few white clay pipe stems have been found at Yates, placing the terminal date in the latter part of the period.

The Martin site (Fda-8) is less than 0.8 km (0.5 mi.) north of the river; it covers 1.2 hectares (3 acres) on a north-facing slope. Artifact concentrations and dark outlines when the field is freshly plowed suggest that 12 longhouses may have occupied the site. Analysis of 230 glass beads from seven collections (Table 5) reveals that the primary diagnostic beads are the IVk* varieties, also referred to as "chevron" beads. Gooseberries and two varieties of "flush eye" beads are quite exclusive to this era in the three Mohawk enclaves as well. Variety IIa61 is unique in that, under different lighting conditions, it can exhibit a dark amber hue, a rosy coloration or an amethyst tint. Medium to large beads are predominately polychrome, while small beads are usually circular monochromes of red, blue, and black. There are only five tubular beads in the collections: three chevrons,

one Ia13 and one IIIa12, a variety which is common throughout the first half of the 17th century.

The abrupt increase in glass beads on Mohawk sites coincides with the exploration of the upper Hudson River and the development of remote posts there by the Dutch commencing in 1614 with Fort Nassau, just south of present-day Albany (O'Callaghan 1853-87, I: 11-13), and a major colonization venture at Fort Orange in 1624 (O'Callaghan 1853-87, I: 149) where Albany is now located. One of the settlers, Harmen Meyndertsz van den Bogaert, kept a journal on a trip through the Mohawk homeland in 1634-35 (Gehring and Starna 1988). It relates that one of their Mohawk companions pointed out a high hill where their castle had stood "nine years ago" when they were driven out by their enemies. The author is of the opinion that the Martin site represents the castle so designated.

Other significant artifacts provide the earliest evidence of firearms in the Mohawk Valley. Probably just "souvenirs," they include a serpentine from a matchlock, a frizzen from an early English lock (doglock), and a gun spall, plus several pieces of Weser slipware (Weserware), a northern-European earthenware imported into Amsterdam, Holland, from about 1570 to 1620. The same type of ware has been recovered at the Oneida Cameron site (ca. 1620), the Onondaga Pompey Center site (ca. 1600-20), and in early 17th-century tidewater-dwelling areas of Virginia as well (DeAngelo 1983: pers. comm.).

Rice's Woods (Cnj-26) is situated 3.2 km (2 mi.) north of the Mohawk River on a sloping ridge with both a northern and a southern exposure. Over 2,000 glass beads were recovered from burials just west of the village site, a very high proportion being chevron varieties. Most of the beads were associated with only a few of the burials (Funk 1992: pers. comm.). Tangless, perforated, iron arrow points were collected here, the earliest to be found on a Mohawk site. Very little excavation has occurred on the site which, unfortunately, had a private access road cut through it recently.

Twenty (22%) of the 91 beads recovered from the habitation area of the site (Table 6) are mostly medium-size chevrons, the most frequent being variety IVk3. Only 16 (17.6%) beads are monochrome and most of these are small seed beads. Many of the

Table 5. The Martin Site (Fda-8) Beads (n=230).

Variety	Description	No.
Ia13	Tubular; tsl. aqua blue; unfinished (Pl. IB, R.1, #6)	1
IIa1	Round; op. redwood	1
IIa2	Circular; op. redwood	4
IIa6	Round; op. black	11
IIa7	Circular; op. black	2
IIa28	Round; tsp. dark palm green (Pl. IB, R.2, #3)	1
IIa35	Round; op. light aqua blue	1
IIa40	Round; op. robin's egg blue	5
IIa49	Oval; op. dark shadow blue	1
IIa52	Circular; tsp. ultramarine	7
IIa55	Round; tsp. bright navy	6
IIa56	Circular; tsp. bright navy	8
IIa57	Oval; tsp. bright navy (Pl. IB, R.1, #7)	1
IIa61	Round; tsp. dark rose brown	1
IIb1	Round; op. redwood with 6 op. black stripes	1
IIb2	Round; op. redwood with 3 op. white stripes	3
IIb6	Flattened-round; op. redwood with 8 op. white stripes	1
IIb*	Oval; op. black with 6 op. white stripes	2
IIb13	Round; op. black with 10 op. white stripes	1
IIb14	Round; op. black with 3 pairs of op. white stripes	2
IIb15	Round; op. black with 3 op. redwood and 3 op. light cherry rose stripes	4
IIb18	Round; tsp. light gray with 12 op. white stripes; "gooseberry;" 2.6%	6
IIb19	Oval; tsp. light gray with 12 op. white stripes; "gooseberry"	2
IIb56	Round; op. robin's egg blue with 3 op. white stripes	3
IIb61	Round; op. shadow blue with 6 op. redwood stripes	5
IIb68	Round; tsp. bright navy with 4 op. white stripes	1
IIb'2	Round; op. black with 7 op. white spiral stripes	1
IIbb1	Round; op. redwood with 3 tsp. bright navy on op. white stripes; 7.8%	18
IIbb2	Flat; op. redwood with 3 tsp. bright navy on op. white stripes	1
IIbb3	Round; op. redwood with 4 tsp. bright navy on op. white stripes	4
IIbb4	Round; op. redwood with 3 tsp. bright navy on op. white stripes and 3 op. light gold stripes	1
IIbb5	Round; op. black with 5 op. redwood on op. white stripes	2
IIbb7	Round; op. black with 3 op. redwood on op. white stripes (Pl. IB, R.3, #4)	6
IIbb'*	Oval; tsp. dark navy with 4 op. redwood on op. white spiral stripes	2
IIg4	Round; op. white with 3 tsp. bright navy dots each with 2 op. white rings; "flush eye" (Pl. IB, R.2, #1)	2
IIIa12	Tubular; tsp. bright navy exterior and core with op. white middle layer	1
IIIk3	Tubular; 5-layer chevron: tsp. bright navy exterior/ op. white/ op. redwood/ op. white/ tsp. bright blue core; beveled ends	3

Table 5. Continued.

Variety	Description	No.
IVa1	Round; op. redwood with op. black core (Pl. IB, R.1, #5)	1
IVa13	Circular; tsp. oyster white with tsp. light gray core	1
IVa14	Circular; op. white with tsp. light aqua blue core	1
IVa18	Round; tsp. bright navy with tsp. light gray core	2
IVa*	Circular; op. shadow blue with op. black core	2
IVb3	Round; op. redwood with op. black core; 3 thin op. white stripes	2
IVb*	Round; op. black exterior and core with op. white middle layer; 12 op. white stripes	2
IVb18	Round; tsp. apple green exterior and core with op. white middle layer; 3 op. white stripes	1
IVb30	Round; tsp. bright navy exterior and core with op. white middle layer; 3 op. white stripes	1
IVb*	Round; tsp. bright navy exterior and core with op. white middle layer; 6 op. white stripes (Pl. IB, R.1, #2)	1
IVb32	Round; tsp. bright navy exterior and core with op. white middle layer; 7 op. white stripes	1
IVb33	Round; tsp. bright navy exterior and core with op. white middle layer; 8 pairs of op. white stripes; 3.9% (Pl. IB, R.3, #2)	9
IVb35	Round; tsp. dark navy exterior and core with op. white middle layer; 8 op. white stripes	5
IVb36	Round; tsp. dark navy exterior and core with op. white middle layer; 12 op. white stripes; 3.0% (Pl. IIA, R.1, #6)	7
IVb*	Round; tsp. dark navy exterior and core with op. white middle layer; 7 op. white stripes	1
IVb*	Round; tsp. dark navy exterior and core with op. white middle layer; 10 op. white stripes	2
IVbb3	Round; op. redwood with tsp. apple green core; 3 op. black on op. white stripes	3
IVg*	Round; tsp. bright blue exterior and core with op. white middle layer; 3 op. redwood stars on op. white dots on op. bright blue dots; "flush eye" (Pl. IB, R.2, #5)	2
IVk3	Round; 5-layer chevron: thin tsp. bright navy exterior/ op. white/ op. redwood/ op. white/ tsp. bright blue core; 7.8%	18
IVk*	Oval; 5-layer chevron: thin tsp. bright navy exterior/ op. white/ op. redwood/ op. white/ tsp. bright blue core (Pl. IB, R.2, #2)	3
IVk4	Round; 5-layer chevron: thick tsp. bright navy exterior/ op. white/ op. redwood/ op. white/ tsp. bright blue core; 14.3%	33
IVn2	Round; 5-layer chevron: tsl. oyster white exterior/ op. white/ op. redwood/ op. white/ tsp. light gray core; 6 op. redwood and 6 tsp. bright navy stripes (Pl. IB, R.3, #5)	3
IVnn4	Round; 4-layer chevron: op. white exterior/ op. redwood/ op. white/ op. redwood core; 6 op. redwood and 6 tsp. bright navy stripes; 3.0% (Pl. IIA, R.1, #1)	7

Table 6. Beads from the Habitation Area at the Rice's Woods Site (Cnj-26) (n=91).

Variety	Description	No.
Ia6	Tubular; op. light ivory; unfinished	1
IIa6	Round; op. black	2
IIa39	Round; tsl. aqua blue	1
IIa40	Round; op. robin's egg blue	2
IIa47	Circular; op. shadow blue	2
IIa48	Round; op. dark shadow blue; 5.5%	5
IIa49	Oval; op. dark shadow blue	2
IIa55	Round; tsp. bright navy	2
IIb3	Round; op. redwood with 4 op. white stripes	1
IIb4	Oval; op. redwood with 4 op. white stripes	2
IIb15	Round; op. black with 3 op. redwood and 3 op. white stripes; 3.3%	3
IIb16	Round; op. black with 3 op. ruby and 3 op. light cherry rose stripes	1
IIb18	Round; tsp. light gray with 12 op. white stripes; "gooseberry;" 2.2%	2
IIb31	Round; op. white with 2 op. redwood and 2 tsp. bright navy stripes	2
IIb*	Round; op. white with 2 tsp. bright navy and 2 tsp. light gray stripes	1
IIb56	Round; op. robin's egg blue with 3 op. white stripes; 2.2%	2
IIbb1	Round; op. redwood with 3 tsp. bright navy on op. white stripes; 11%	10
IIbb3	Round; op. redwood with 4 tsp. bright navy on op. white stripes	1
IIbb*	Round; op. black with 8 op. redwood on op. white stripes	1
IIbb27	Round; tsp. bright navy with 3 op. redwood on op. white stripes	1
IIIk3	Tubular; 5-layer chevron: tsp. bright navy exterior/ op. white/ op. redwood/ op. white/ tsp. bright blue core; beveled ends	1
IVa*	Round; op. shadow blue exterior/ op. white/ tsp. light gray core	1
IVa17	Circular; tsp. ultramarine exterior/ op. white/ tsp. ultramarine core	1
IVa18	Circular; tsp. bright navy with tsp. light gray core; 6.6% (Pl. IB, R.1, #3)	6
IVb1	Round; op. redwood with op. black core; 8 op. black stripes	2
IVb3	Round; op. redwood with op. black core; 3 op. white stripes	1
IVb4	Round; op. redwood with op. black core; 3 pairs of op. white stripes	2
IVb5	Round; op. redwood with op. black core; 6 op. white stripes	1
IVb*	Circular; op. white with tsp. light aqua blue core; 4 op. redwood and 4 tsp. bright navy stripes	1
IVb30	Round; tsp. bright navy exterior/ op. white/ tsp. bright navy core; 3 op. white stripes; 3.3%	3
IVb31	Round; tsp. bright navy exterior/ op. white/ tsp. bright navy core; 6 op. white stripes (Pl. IB, R.2, #4)	1
IVb33	Round; tsp. bright navy exterior/ op. white/ tsp. bright navy core; 8 pairs of op. white stripes	2
IVb34	Round; tsp. bright navy exterior/ op. white/ tsp. bright navy core; 16 op. white stripes.	2

Table 6. Continued.

Variety	Description	No.
IVb36	Round; tsp. dark navy exterior/ op. white/ tsp. dark navy core; 12 op. white stripes	1
IVbb1	Round; op. redwood with op. black core; 3 op. black on op. white stripes	1
IVk3	Round; 5-layer chevron: thin tsp. bright navy exterior/ op. white/ op. redwood/ op. white/ tsp. bright blue core; 15.4%	14
IVk4	Round; 5-layer chevron: thick tsp. bright navy exterior/ op. white/ op. redwood/ op. white/ tsp. bright blue core; 6.6%	6
IVn6	Round; tsl. oyster white exterior/ op. white/ op. redwood/ op. white/ tsp. light gray core; 4 op. redwood, 4 tsp. dark palm green and 4 tsp. bright navy stripes	1

beads (almost 50%) are red or blue specimens decorated with simple and complex stripes, predominantly white.

It is noteworthy that although the beads associated with burials at this time are compatible with those found in habitation areas, later Mohawks exhibit a tendency to make funereal gifts of heirloom beads; i.e., beads from earlier in the sequence. Consequently, care must be taken to segregate beads recovered from different activity areas of a site (e.g., cemeteries vs. villages) or the results could create an erroneous glass trade-bead seriation.

Wagner's Hollow (Cnj-4) is 2.8 km (1.75 mi.) north of the Mohawk River and situated on a high bluff 30 m (100 ft.) above Caroga Creek with a slight slope to the north and east. The village appears to have consisted of eight longhouses based on the number of artifact concentrations. Two cemeteries are located a fair distance from the village proper; this may have been a common practice since very few early Mohawk burial grounds have been located. Brass, iron and shell artifacts are present in increasing numbers, and it should be noted that bone combs, for instance, have become beautifully executed objects of art, metal tools having facilitated their creation. Special note should be made of what appears to be the earliest white clay smoking pipe from a Mohawk site (Fig. 4). The raised-platform heelmark on the bulbous pipe bowl is a variety known as the "Dutch Tulip" which is attributed to the second quarter of the 17th century, giving much credence to a terminal date of

approximately 1630 for the Polychrome and Flush-Eye Bead Period.

Two bead collections derived by surface hunting only the occupation area of the Wagner's Hollow site contain 72 specimens representing 38 varieties (Table 7). Gooseberry, chevron and flush eye beads are diagnostic types. There are also several Iib56 beads which become more numerous on later sites. Sixty-one per cent of the recovered beads are decorated with stripes, while 28% are some shade of blue.

The Coleman-Van Duesan site (Fda-10) is 2.4 km (1.5 mi.) from the river. The surrounding terrain is quite flat and the village site slopes downward from a central high point, a departure from previous geographically well-defended positions. European artifacts are more numerous and diversified and the site may, therefore, warrant a later terminal date. However, the glass bead seriation is still consistent with the sites described above and there are no firearm parts or white clay pipe remnants to extend the estimate of the occupation period. Several lead musket balls and lead waste, melted brass globs and scrap, iron axes, knives, nails and awls are in evidence, and a couple more firsts — iron Jew's harps and a bone-handled clasp knife — attest to the quickening of material culture change. Half a dumbbell-shaped lead seal with an incomplete stamped impression, originally affixed to fabric when exported from Europe, conjures up thoughts of the fur trade at Fort Orange.

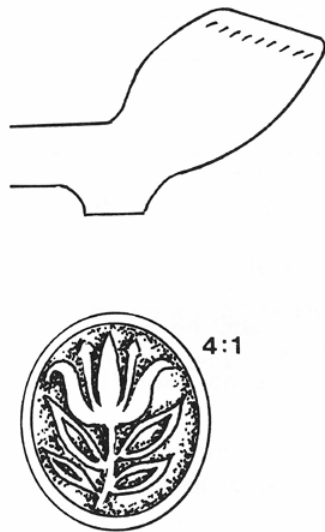


Figure 4. White clay pipe bowl with "Dutch Tulip" heel-mark, ca. 1630 (drawing by M.C. Rumrill).

Of 420 glass beads (Table 8), a large percentage are "barrel" beads; i.e., round, oval and circular specimens which exhibit a lip-like ridge around either end. Flush eye and gooseberry beads are represented, and a "giant chevron" was uncovered during plowing and is in the possession of the property owner. Giant chevron beads and their fragments continue to be found in 1650s contexts but it has not been determined if they are an item of trade for the entire period or represent a keepsake of the ca. 1630 era.

Cromwell (Fda-12) is the last village site to be named for the 1615-30 period. It is located on the south side of the Mohawk River with a proposed terminal date of about 1636 (Rumrill 1985: 8,9) and was probably originally constructed as early as 1620. The bead assemblage is absolutely diagnostic of the period. The writer equates Cromwell to van den Bogaert's 36-longhouse village of Onekagonka of 1634-35 (Gehring and Starna 1988: 3-5). Gun spalls (early gunflints), brass, iron, and, significantly, white clay smoking pipe fragments have been recovered from this large site.

Throughout the 1615-30 period, there is a predominance of polychrome glass beads with percentages of the various varieties being equal, within tolerances. However, each site has several varieties that are not common to the other. It appears that these "exotic" beads represent what

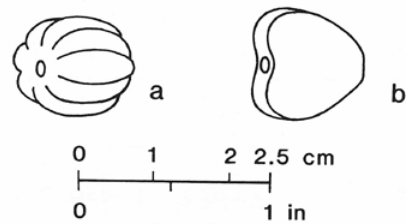


Figure 5. Wound glass beads: a, melon (WIIe) and b, corn (WIIa) (drawing by M.C. Rumrill).

was available at Fort Orange and were very acceptable to the Mohawk.

Blue Bead Period: 1630-1646

Date ranges for the various periods are not as exact as they may seem but are based on documented events and artifacts that can be relatively tightly dated. For instance, the Failing site (Cnj-12) was probably initiated ca. 1620 and was abandoned about 1635. This was probably the large 55-longhouse castle of Tenotoge which van den Bogaert described as being in a very deteriorated condition (Gehring and Starna 1988: 9). Sand Hill #1 (Cnj-9) can be conjectured as another van den Bogaert village, possibly Cawaoge with 14 longhouses, of the same approximate date. Failing was destroyed when the New York State Thruway overran it, and Sand Hill #1 has been almost completely destroyed by gravel quarrying. Surviving artifacts, documents and theoretical chronological movements have been used to determine occupation periods for these villages. No one has yet been able to interpret the van den Bogaert journal sufficiently to equate more than just a few historical villages with actual site locations.

As previously noted, the Mohawk did not have a simultaneous *en masse* exodus to the south side of the Mohawk River, but, by ca. 1634, it is evident that all villages were so located. Clan enclaves remained intact as villages moved almost directly across the river (Fig. 1). Bead-wise, a phenomenon occurred that was to set a pattern for the remainder of the 17th century. Whereas glass beads had previously been dominated by round polychromes, the 1630-46 period is best described as the "blue bead era." This was true also throughout the Five Nations Iroquois Confederacy although reported date ranges for the different areas do not always coincide. Very few bead

Table 7. Beads from the Habitation Area of the Wagner's Hollow Site (Cnj-4) (n=72).

Variety	Description	No.
IIa1	Round; op. redwood	1
IIa9	Round; tsp. light gray; 5.6%	4
IIa13	Round; op. white	1
IIa15	Oval; op. white	2
IIa18	Round; op. amber; 5.6%	4
IIa19	Circular; op. amber	1
IIa29	Oval; tsp. dark palm green	1
IIa40	Round; op. robin's egg blue	1
IIa44	Round; tsp. cerulean blue	1
IIa57	Oval; tsp. bright navy	2
IIb2	Round; op. redwood with 3 op. white stripes	1
IIb15	Round; op. black with 3 op. redwood and 3 op. white stripes	1
IIb18	Round; tsp. light gray with 12 op. white stripes; "gooseberry;" 6.9%	5
IIb*	Round; op. white with 2 op. redwood and 2 op. brown stripes	1
IIb48	Round; op. mustard tan with 8 op. redwood stripes	2
IIb54	Round; tsl. light aqua blue with 8 op. redwood stripes	2
IIb56	Round; op. robin's egg blue with 3 op. white stripes	3
IIb*	Round; tsp. bright navy with 6 op. white stripes	2
IIb*	Round; tsp. bright navy with 8 op. white stripes	1
IIb'*	Round; op. black with 6 op. white spiral stripes	1
IIb'*	Round; op. black with 8 op. white spiral stripes	1
IIb'4	Oval; tsl. oyster white with numerous irregular spiral stripes of op. light gold, op. redwood, tsp. ultramarine and tsl. aqua blue (marbled effect)	2
IIb'*	Round; op. aqua blue with 8 op. redwood spiral stripes	1
IIbb1	Round; op. redwood with 3 tsp. bright navy on op. white stripes	3
IVa1	Round; op. redwood with op. black core	1
IVa19	Circular; tsp. bright navy exterior and core; op. white middle layer	2
IVa*	Oval; op. brass-coated glass; possibly intrusive	1
IVb3	Round; op. redwood with op. black core; 3 op. white stripes	1
IVb4	Round; op. redwood with op. black core; 3 pairs of op. white stripes	3
IVb32	Round; tsp. bright navy exterior and core; op. white middle layer; 7 op. white stripes	1
IVb34	Round; tsp. bright navy exterior and core; op. white middle layer; 16 op. white stripes	3
IVbb1	Round; op. redwood with op. black core; 3 op. black on op. white stripes	3
IVbb4	Round; op. redwood with op. black core; 3 tsp. bright navy on op. white stripes	1
IVg*	Round; tsp. bright blue exterior and core; op. white middle layer; 3 op. redwood stars on op. white dots on op. bright blue dots; "flush eye"	1

Table 7. Continued.

Variety	Description	No.
IVk3	Round; 5-layer chevron: thin tsp. bright navy exterior/ op. white/ op. redwood/ op. white/ tsp. bright blue core; 11.1%	8
IVn7	Flat; 5-layer chevron: tsl. oyster white exterior/ op. white/ op. redwood/ op. white/ tsp. light gray core; 4 op. redwood, 4 tsp. dark palm green and 4 tsp. bright navy stripes	1
WIIe6	Melon; tsp. bright copen blue (Fig. 5,a)	1
Brass	Tubular	1

Table 8. The Coleman-Van Duesan Site (Fda-10) Beads (n=420).

Variety	Description	No.
Ib5	Tubular; op. black with 3 op. white and 3 op. redwood stripes; unfinished	1
IIa1	Round; op. redwood; 3.8%	16
IIa2	Circular; op. redwood; 6.4%	27
IIa6	Round; op. black	9
IIa7	Circular; op. black	5
IIa13	Round; op. white	3
IIa15	Oval; op. white	1
IIa26	Round; tsp. emerald green	2
IIa28	Round; tsp. dark palm green	2
IIa31	Round; tsp. turquoise	2
IIa36	Round; op. aqua blue	1
IIa38	Oval; op. aqua blue	1
IIa40	Round; op. robin's egg blue; 4.3%	18
IIa41	Circular; op. robin's egg blue	1
IIa46	Round; op. shadow blue	4
IIa47	Circular; op. shadow blue	5
IIa48	Round; op. dark shadow blue	6
IIa49	Oval; op. dark shadow blue	3
IIa54	Oval; tsp. ultramarine	1
IIa55	Round; tsp. bright navy	14
IIa56	Circular; tsp. bright navy	7
IIb1	Round; op. redwood with 6 op. black stripes	1
IIb2	Round; op. redwood with 3 op. white stripes	3
IIb3	Round; op. redwood with 4 op. white stripes	1

Table 8. Continued.

Variety	Description	No.
Iib*	Round; op. redwood with 3 pairs of op. white stripes	1
Iib*	Round; op. redwood with 8 pairs of op. white stripes	1
Iib10	Round; op. black with 3 op. white stripes	2
Iib15	Round; op. black with 3 op. redwood and 3 op. white stripes	2
Iib18	Round; tsp. light gray with 12 op. white stripes; "gooseberry"	11
Iib*	Round; op. white with 6 op. redwood stripes	1
Iib22	Flat; op. white with 8 op. redwood stripes	2
Iib33	Round; op. white with 3 op. redwood and 3 tsp. dark palm green stripes	2
Iib34	Oval; op. white with 3 op. redwood and 3 tsp. dark palm green stripes	1
Iib56	Round; op. robin's egg blue with 3 op. white stripes	4
Iib61	Round; op. shadow blue with 6 op. redwood stripes	5
Iib72	Oval; tsp bright navy with 2 op. redwood and 2 op. white stripes	1
Iib73	Oval; tsl. dark navy with 3 op. white stripes	1
Iibb1	Round; op. redwood with 3 tsp. bright navy on op. white stripes	11
Iibb5	Round; op. black with 5 thin op. redwood on op. white stripes	1
Iibb7	Round; op. black with 3 broad op. redwood on op. white stripes	2
Iibb10	Round; op. black with 3 op. lemon yellow on op. redwood stripes and 3 thin tsp. bright navy on op. white stripes	1
Iig*	Round; tsp. turquoise with 3 op. white dots; "flush eye"	1
IIIb7	Tubular; tsp. shadow blue exterior and core; op. white middle layer; 8 op. white stripes; unfinished	1
IIIb*	Tubular; tsp. bright navy exterior and core; op. white middle layer; 6 op. white stripes; unfinished	1
IIIbb3	Tubular; op. redwood with op. black core (the core of one bead is square); 4 tsp. bright navy on op. white stripes; unfinished	2
IIIbb7	Tubular; tsp. bright navy exterior and core; op. white middle layer; 3 op. redwood on op. white stripes; unfinished	1
IIIk2	Tubular; 4-layer chevron: thin tsp. teal green exterior/ op. white/ op. redwood/ op. black core; unfinished	2
IIIk3	Tubular; 5-layer chevron: tsp. bright navy exterior/ op. white/ op. redwood/ op. white/ tsp. bright blue core; beveled ends	1
IVa1	Round; op. redwood with op. black core	10
IVa3	Circular; op. redwood with tsp. light gray core	2
IVa*	"Barrel;" op. redwood with tsp. apple green core; cased in tsp. light gray glass; shiny; flanged ends; 12.6% (Pl. IB, R.1, #1)	53
IVa5	Round. op. redwood with tsp. apple green core	3
IVa6	Circular; op. redwood with tsp. apple green core	6
IVa10	Round; op. black exterior and core; op. white middle layer	2
IVa13	Circular; tsl. oyster white with tsp. light gray core	3

Table 8. Continued.

Variety	Description	No.
IVa14	Circular; tsl. oyster white with tsp. light aqua blue core	3
IVa*	Circular; op. shadow blue with op. black core	1
IVa19	Circular; tsp. bright navy exterior and core; op. white middle layer; 9.2%	39
IVa*	Circular; tsp. bright navy with tsp. light aqua blue core	2
IVb*	Round; op. redwood exterior and core; op. black middle layer; 3 op. black stripes; cased in colorless glass (Pl. IB, R.1, #8)	1
IVb3	Round; op. redwood with op. black core; 3 broad op. white stripes	1
IVb*	Round; op. redwood exterior and core; op. white middle layer; 16 op. white stripes	2
IVb15	Circular; op. white with tsp. light gray core; 4 op. redwood and 4 tsp. bright navy stripes (Pl. IB, R.1, #4)	2
IVb16	Circular; op. white with tsp. light aqua blue core; 3 op. redwood and 3 tsp. bright navy stripes	4
IVb*	Circular; op. white with tsp. light gray core; 8 op. redwood stripes	1
IVb*	Round; op. black exterior and core; op. white middle layer; 12 op. white stripes	13
IVb28	Round; tsp. bright navy exterior/ op. white/ op. redwood core; 4 op. redwood, 4 op. white and 4 op. lemon yellow stripes	1
IVb29	Round; tsp. bright navy exterior and core; op. white middle layer; 3 op. white stripes	1
IVb31	Round; tsp. bright navy exterior and core; op. white middle layer; 6 op. white stripes	1
IVb*	Circular; tsp. bright navy exterior and core; op. white middle layer; 5 op. white stripes	1
IVb33	Round; tsp. bright navy exterior and core; op. white middle layer; 8 pairs of op. white stripes	1
IVb35	Round; tsp. dark navy exterior and core; op. white middle layer; 8 op. white stripes	4
IVb'*	Oval; tsl. black exterior and core; op. white middle layer; 4 op. white spiral stripes	1
IVbb1	Round; op. redwood with op. black core; 3 op. black on op. white stripes	1
IVbb7	Round; op. redwood with tsp. apple green core; 3 tsp. bright navy on op. white stripes	1
IVbb8	Oval; op. redwood with tsp. apple green core; 3 tsp. bright navy on op. white stripes	1
IVbb*	Round; tsp. bright navy exterior and core; op. white middle layer; 6 triple op. redwood on op. white stripes (Pl. IB, R.3, #3)	1
IVg*	Round; tsp. bright blue exterior and core; op. white middle layer; 3 op. redwood stars on op. white dots on op. bright blue dots; "flush eye"	4
IVk3	Round; 5-layer chevron: thin tsp. bright navy exterior/ op. white/ op. redwood/ op. white/ tsp. bright blue core	6

Table 8. Continued.

Variety	Description	No.
IVk4	Round; 5-layer chevron: thick tsp. bright navy exterior/ op. white/ op. redwood/ op. white/ tsp. bright blue core; 7.8%	33
IVk5	Flat; 5-layer chevron: thick tsp. bright navy exterior/ op. white/ op. redwood/ op. white/ tsp. bright blue core	7
IVn6	Round; 5-layer chevron: tsl. oyster white exterior/ op. white/ op. redwood/ op. white/ tsp. light gray core; 4 op. redwood, 4 tsp. dark palm green and 4 tsp. bright navy stripes (Pl. IB, R.3, #1)	2
IVn7	Flat; 5-layer chevron: color sequence as for IVn6	2
IVnn4	Round; 4-layer chevron: op. white exterior/ op. redwood/ op. white/ op. redwood core; 6 broad op. redwood and 6 thin tsp. bright navy stripes	11
IVnn5	Round; 4-layer chevron: op. white exterior/ op. redwood/ op. white/ tsp. bright blue core; 6 broad op. redwood and 6 thin tsp. bright navy stripes	1
IV**	Round; 4-layer chevron: tsp. light gray exterior/ op. white/ op. redwood/ tsp. light gray core; 6 op. redwood stripes and 6 tsp. bright navy on op. white stripes	1
WIe*	Truncated cone; tsp. dark palm green	1

types are carried over from one village site to the next in the chronological sequence. Consequently they become the prime diagnostic artifact for determining 17th-century Five Nations Iroquois chronology.

The beads found at four important Mohawk village sites for this period are described in Tables 9-12. The Bauder site (Fda-13) inventory (Table 9) is a compilation of the beads from seven collections. Fifty-four seed beads are present, over half of which are of blue hues. Another uncataloged collection containing almost 400 beads contains mostly seed beads, also predominately of blue hues. Only two tubular beads are present. The IIa1 variant described in Table 9 is diagnostic of this period.

The Bauder site collection contains several distinctive beads that have not been found elsewhere in the Mohawk territory. Two of these are the tubular, multi-layered, "Nueva Cadiz" varieties (IIIc'*) which have twisted square-sectioned bodies. Beads similar to the three-layered specimen have been reported from four Seneca sites near Rochester (Smith and Good 1982: 51-2) which are attributed to the 1590-1635 period (Wray, Sempowski and Saunders 1991: 387).

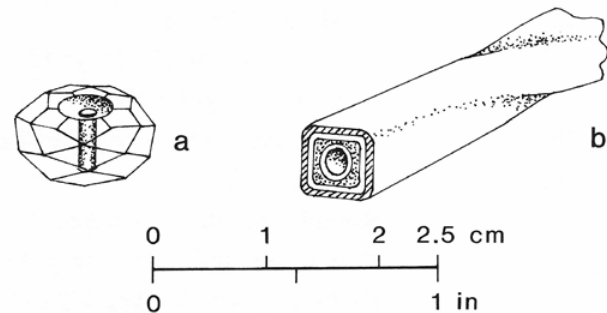


Figure 6. Unique beads from the Bauder site (ca. 1640): a, faceted Florida Cut Crystal; and b, Nueva Cadiz variety (drawing by M.C. Rumrill).

With the exception of the Daisy site in eastern Pennsylvania, these are the only occurrences of Nueva Cadiz beads north of Tennessee (Smith and Good 1982: 46-7). The four-layered specimen with the apple green core appears to be unique (Fig. 6,b).

Even more interesting and problematic are four rock-crystal beads which are identical in every respect to those known as Florida Cut Crystal (Smith 1983). They are oblate and exhibit irregular cut facets (Fig. 6,a). The two beads that could be examined have 14

Table 9. The Bauder Site (Fda-13) Beads (n=198).

Variety	Description	No.
Ia1	Tubular; op. redwood; unfinished	2
IIa1	Round; op. redwood with shiny colorless casing; tiny perforation; diagnostic (Pl. IIA, R.1, #4)	7
IIa3	Oval; op. redwood	2
IIa6	Round; op. black	2
IIa7	Circular; op. black	6
IIa11	Round; tsl. oyster white	1
IIa13	Round; op. white	1
IIa19	Circular; op. amber	1
IIa27	Circular; tsp. emerald green	1
IIa37	Circular; op. aqua blue	3
IIa40	Round; op. robin's egg blue; 8.3%	16
IIa42	Oval; op. robin's egg blue	4
IIa43	Round; tsl. bright blue	1
IIa47	Circular; op. shadow blue	3
IIa48	Round; op. dark shadow blue	3
IIa49	"Barrel;" op. dark shadow blue	2
IIa52	"Barrel;" tsp. ultramarine; 8.3%	16
IIa54	Oval; tsp. ultramarine	2
IIa56	Circular; tsp. bright navy; 13.5% (Pl. IIA, R.1, #5)	26
IIa57	Oval; tsp. bright navy	3
IIb18	Round; tsp. light gray with 12 op. white stripes; "gooseberry"	6
IIb20	Round; op. white with 3 op. redwood stripes	1
IIb*	Round; op. white with 2 op. redwood and 2 op. dark brown stripes	3
IIb*	Round; op. dark palm green with 3 op. redwood stripes	1
IIb56	Round; op. robin's egg blue with 3 op. white stripes; 9.4%	18
IIb67	Oval; tsp. bright navy with 3 op. white stripes	1
IIb68	Round; tsp. bright navy with 4 op. white stripes	2
IIbb10	Round; op. black with 3 op. lemon yellow on op. redwood stripes and 3 tsp. bright navy on op. white stripes	1
IIg4	Round; op. white with 3 tsp. bright navy dots each containing 2 op. white rings; "flush eye"	1
IIc'*	Tubular, square-sectioned; twisted; tsl. turquoise exterior/ thin op. white middle layer/ tsp. light blue core; "Nueva Cadiz"	1
IIc'*	Tubular, square-sectioned; loose twist; tsl. turquoise exterior/ op. white/ op. redwood/ tsl. apple green core; "Nueva Cadiz" (Fig. 6,b)	1
IVa11	Circular; tsp. light gray outer layer and core; op. white middle layer	1
IVa13	Circular; tsl. oyster white with tsp. light gray core; 14.1%	27
IVa14	Circular; tsl. oyster white with tsp. light aqua blue core	1

Table 9. Continued.

Variety	Description	No.
IVa*	"Barrel;" op. white with tsp. light gray core	4
IVa17	Circular; tsp. ultramarine exterior and core; op. white middle layer	5
IVa19	Circular; tsp. bright navy exterior and core; op. white middle layer	1
IVa*	Circular; tsp. bright navy exterior/ op. white/ op. black core	1
IVb*	Circular; op. white with tsp. light gray core; 8 op. redwood stripes	3
IVk4	Round; 5-layer chevron: thick tsp. bright navy exterior/ op. white/ op. redwood/ op. white/ tsp. bright blue core	1
IVn7	Flat; 5-layer chevron: tsl. oyster white exterior/ op. white/ op. redwood/ op. white/ tsp. light gray core; 4 op. redwood, 4 tsp. dark palm green and 4 tsp. bright navy stripes	3
Wle*	Truncated cone; tsp. light gold	1
WIIa1	"Corn" bead; tsp. light gold (Fig. 5,b)	2
WIIa3	"Corn" bead; tsp. dark palm green	1
Glass	Buttons; op. black; iron shanks	5
Stone	Oblate; Florida Cut Crystal; faceted	4

diamond-shaped facets encircling the middle and 6-7 pentagonal facets around either battered end for a total of 26-28 facets. The specimens are 11-13 mm in diameter and 7-9 mm in length.

The presence of the cut-crystal beads in the Mohawk region is enigmatic as no similar beads have been previously reported north of Leedstown, Virginia (Karklins 1992: pers. comm.). Also, these beads are believed to derive from the Spanish and are generally assigned to the second half of the 16th century (Smith 1983: 148, 155). In this instance they date significantly later. A worn Dutch copper coin bearing the inscription *Transisvlania* (Overijssel) and the date 1628 provides a viable *terminus post quem* for the Bauder site. The coin's worn condition, coupled with the other beads and firearm components that have been found at the site, suggests an occupation centering on about 1640.

The Van Evera-McKinney site (Cnj-51) is represented by 48 glass beads (Table 10) in two collections. Tubular beads comprise 25% of the total, while blue beads make up almost half (44%) the inventory.

The 115 beads reported for Oak Hill #1 (Cnj-2) (Table 11) are from a midden excavated by a crew from the 1983 Mohawk Valley Project directed by Dr. Dean Snow, SUNY Albany, and Dr. William A. Starna, SUNY Oneonta, and cataloged by Pamela E. Sugihara (Sugihara 1986). Tubular beads comprise 15.7% of the collection. Approximately half of the remainder are seed beads. Blue beads make up 40.9% of the total.

The Rumrill-Naylor site (Cnj-102) is believed to be the Canagere village mentioned in van den Bogaert's journal for 1634-35. The 144 beads described in Table 12 are a combination of 53 specimens surface-collected by the author, and 95 specimens derived from the excavation of two longhouses and adjacent areas by the 1984 Mohawk Valley project under the direction of Dr. Dean R. Snow, SUNY Albany. Blue beads predominate, comprising 60.4% and 51.6% of the surface and excavated collections, respectively. Tubular beads make up 17.0% and 10.5% of the two collections, respectively.

Artifacts which link the previous four sites to the same time period include identical polished slate pipes (Rumrill 1988:19), sheet-lead effigies (Rumrill 1988: 19-20), white-clay pipe bowl and stem marks,

Table 10. The Van Evera-McKinney Site (Cnj-51) Beads (n=48).

Variety	Description	No.
Ia1	Tubular; op. redwood; unfinished	3
Ia2	Tubular; op. black; unfinished	1
Ia5	Tubular; op. white; unfinished	2
Ia7	Tubular; op. light gold; unfinished	1
Ia19	Tubular; tsp. bright navy; unfinished	2
Ib2	Tubular; op. redwood with 6 op. white stripes; unfinished	1
Ibb2	Tubular; op. black with 3 op. redwood on op. white stripes; unfinished	1
IIa1	Round; op. redwood	4
IIa7	Circular; op. black	5
IIa17	Round; op. light gold	1
IIa18	Round; op. amber	1
IIa27	Circular; tsp. emerald green	1
IIa36	Round; op. aqua blue	2
IIa38	Oval; op. aqua blue	1
IIa43	Round; tsl. bright blue	2
IIa56	Circular; tsp. bright navy	4
IIa57	Oval; tsp. bright navy	2
IIb56	Round; op. robin's egg blue with 3 op. white stripes	6
IIbb21	Round; op. teal green with 3 op. redwood on op. white stripes	1
IIg5	Round; op. shadow blue with 3 op. redwood dots on op. white dots; "flush eye"	1
IIIa12	Tubular; tsp. bright navy outer layer and core; op. white middle layer; unfinished	1
IVa13	Circular; tsl. oyster white with tsp. light gray core	3
IVb16	Circular; op. white with tsp. light aqua blue core; 3 op. redwood stripes and 3 tsp. bright navy stripes	1
IVn*	Round; 5-layer chevron: tsp. bright navy exterior/ op. white/ op. redwood/ op. white/ tsp. bright navy core; 6 narrow op. white stripes and 6 broad op. light gold stripes	1

Campana seals originating from a center of textile manufacturing in the province of Overijssel, Holland, and black-glass buttons with iron-wire shanks. Firearm parts represent early Dutch snaphaunces and wheellocks, early English snaplocks and Spanish miquelets (Puype 1985: 85-6; Rumrill 1985, 1986). Van den Bogaert mentions in his 1634-35 journal that in every village the Mohawk would ask him to fire his musket and relates that there was no evidence of firearms. The recovered artifacts reveal that the villages were abandoned sometime after his journey.

Additionally, a white-clay pipe stem with the initials PG and a fleur-de-lis in a diamond (Fig. 7) was found at Rumrill-Naylor, and a bulbous pipe bowl (Fig. 8) with a raised heelmark of a mounted knight with raised sword and the initials VO was found at Van Evera-McKinney. Both marks are usually found on the same pipe which dates to 1640-47 at Fort Orange (Huey 1984: pers. comm.; 1988, 2: 272), and to 1630-40 at the Onondaga Shurtleff site (Bradley 1976).

Table 11. The Oak Hill #1 Site (Cnj-2) Beads (n=115).

Variety	Description	No.
IIa1	Round; op. redwood cased in colorless glass (shiny); tiny perforation; diagnostic variant	6
IIa7	Circular; op. black	14
IIa40	Round; op. robin's egg blue	16
IIa44	Round; tsp. cerulean blue	2
IIa51	Circular; tsp. dark shadow blue	3
IIa57	Oval; tsp. bright navy	4
IIb56	Round; op. robin's egg blue with 3 op. white stripes	4
IIIa12	Tubular; tsp. bright navy outer layer and core; op. white middle layer; unfinished	18
IVa5	Round; op. redwood with tsp. apple green core	2
IVa11	Circular; tsp. light gray outer layer and core; op. white middle layer	4
IVa13	Circular; tsl. oyster white with tsp. light gray core; 36.5%	42

Three of the above sites (Bauder, Rumrill-Naylor and Oak Hill #1) also figure prominently in the events surrounding the capture and death of Rev. Isaac Jogues, S.J., a French Jesuit priest on missionary service to the Huron Indians in Canada. After their capture in 1642 on the St. Lawrence River by a Mohawk war party, Jogues, his two French lay assistants, Rene Goupil and William Couture, and

several Hurons were taken to the first Mohawk "castle" named Ossernenon where they ran the gauntlet and were variously tortured. Several of the Hurons were slain and others adopted into the tribe. Couture was also adopted and took up residence at Teonontoguen (Oak Hill #1) as a "Mohawk" until some years later when he was released and returned to Canada.



Figure 7. White clay pipe stem mark, ca. 1640 (drawing by M.C. Rumrill).

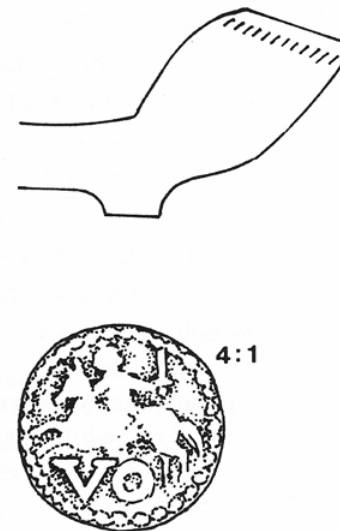


Figure 8. White clay pipe bowl and heelmark, ca. 1640 (drawing by M.C. Rumrill).

Table 12. The Rumrill-Naylor Site (Cnj-102) Beads (n=144).

Variety	Description	No.
Ia1	Tubular; op. redwood; unfinished	5
Ia19	Tubular; tsp. bright navy; unfinished	5
Ib13	Tubular; op. pale blue with 3 op. redwood stripes; unfinished	2
Ib21	Tubular; op. shadow blue with 6 op. redwood stripes; unfinished	1
Ibb1	Tubular; op. redwood with 3 tsp. bright navy on op. white stripes; unfinished (Pl. IIA, R.1, #3)	6
IIa1	Round; op. redwood cased in clear glass; tiny perforation; diagnostic variant	5
IIa3	Oval; op. redwood cased in clear glass; tiny perforation; variant	1
IIa7	Circular; op. black	9
IIa15	Oval; op. white	1
IIa28	Round; tsp. dark palm green	1
IIa31	Round; tsp. turquoise	4
IIa36	Round; op. aqua blue; 2 specimens have tiny perforations; 14.6%	21
IIa40	Round; op. robin's egg blue	3
IIa44	Round; tsp. cerulean blue (Pl. IIA, R.1, #2)	6
IIa48	Round; op. dark shadow blue	2
IIa49	Oval; op. dark shadow blue	2
IIa55	Round; tsp. bright navy	1
IIa56	Circular; tsp. bright navy	1
IIb36	Oval; op. white with 4 op. lemon yellow and 4 tsl. dark palm green stripes	2
IIb55	Flat; tsl. light aqua blue with 8 op. redwood stripes	1
IIb56	Round; op. robin's egg blue with 3 op. white stripes	8
IIb57	Round; op. robin's egg blue with 4 op. white stripes	1
IIb70	Round; tsp. bright navy with 16 thin op. white stripes	1
IIb'2	Round; op. black with 7 op. white spiral stripes	2
IIIbb4	Tubular; op. redwood with tsp. apple green core; 3 op. black on op. white stripes; unfinished	1
IVa6	Circular; op. redwood with tsp. apple green core	3
IVa13	Circular; tsl. oyster white with tsp. light gray core; 20.8%	30
IVa*	Circular; op. dark shadow blue with tsp. bright navy core; 7.6%	11
IVb36	Round; tsp. dark navy exterior and core; op. white middle layer; 12 op. white stripes	6
IVnn1	Round; 3-layer chevron: op. redwood exterior/ op. white/ op. redwood core; 8 op. white stripes	1
IVnn4	Round; 4-layer chevron: op. white exterior/ op. redwood/ op. white/ op. redwood core; 6 broad op. redwood and 6 thin tsp. bright navy stripes	1

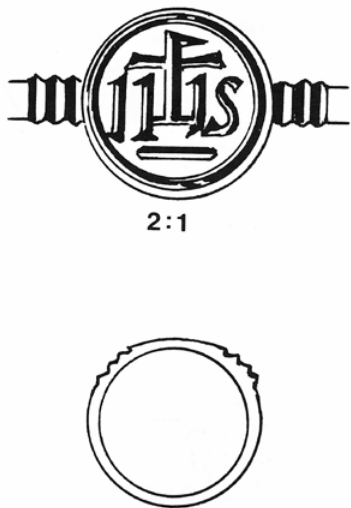


Figure 9. Incised brass Jesuit ring, ca. 1658 (drawing by M.C. Rumrill).

Goupil was made a slave and, on September 29, 1642, was slain at Ossernenon which the writer believes could be the Bauder site. Jogues was made a slave to a family that had recently lost a son in warfare. In 1643, he was secretly rescued by the Dutch and given transportation back to France (Jameson 1909: 235-53). Back in Canada in June of 1646, Jogues made a trip to the Mohawk Valley as a peace envoy in civilian attire, was respectfully accepted in this role and allowed to return to Canada. In October 1646, he returned to the Mohawk Valley as a priest in his Jesuit habit and was slain on the 18th of that month at the "lodge of the bear clan" (the writer believes that this is the location of the Rumrill-Naylor site), the Mohawk blaming a locked box that he had left in June for causing crop disasters and other troubles (Grassman 1969: 113-16; O'Callaghan 1853-87, III: 250, n. 4).

Since the "black robes" were *persona non grata* until ten years later, a number of significant finds reinforce the probability of these events occurring at the named villages and that the dates proffered for the sites are quite accurate. The items include a small rosary medal, a silver chalice and a pewter bottle cap at Oak Hill #1; a late 16th or early 17th-century Catholic French Grotto souvenir pin (J. Baart 1986: pers. comm.) and a hinged locking clasp at Rumrill-Naylor; and a pewter cup at Bauder.

Unfinished-End Tubular Bead Period: 1646-1659

When Mohawk villages moved to new locations in the mid 1640s, the renewal rites accompanying the occupation of their new homes again brought forth a dramatic change in glass bead styles. Tubular beads become the numerically dominant style. A large number are red and blue, with a fair number of white as well, suggesting that color was not a factor in the selection process at this time. A small tubular bead of opaque light gold glass (Ia7) appears at the end of this period and is a marker for ca. 1660. A small but significant number of round blue beads are found in the assemblages, helping to confirm the bead sequence. Almost all of the tubular beads exhibit broken or unfinished ends, a diagnostic trait for this period. Around 1659, short tubular beads with finished or rounded ends appear as a time marker as will be noted in the next section. Catlinite (red pipestone) beads appear for the first time in squared and rounded tubular forms, as do long tubular beads of marine shell.

Jesuit priests were allowed to visit the Mohawk Valley intermittently from 1655 to 1658 (Brodhead 1853, I: 646-7), and one finds religious rings with incised patterns (Fig. 9) on all sites of this period, thus serving as horizon markers. Firearms become abundant with late snaphaunces and English locks being the weapons of choice (Puype 1985; Rumrill 1986). Cast pewter pipes and lead and pewter effigies (Fig. 10), possibly produced by the Indians themselves (J. Baart 1987: pers. comm.), appear and disappear throughout Iroquoia in the first half of the 1650s and are diagnostic of this period (Rumrill 1988). White clay pipes with EB hallmarks on raised heels are common and flush-heel funnel bowls with the same EB impression (Fig. 11) are introduced near the end of the period. Brass Jew's harps stamped with a stylized R have been identified by Jan Baart (1986: pers. comm.) as being manufactured by one person exclusively in Holland from around 1640 to 1680. At least 80% of the artifacts found on sites of this period are European.

The Printup site (Fda-18), a village of approximately seven longhouses, produced 323 glass beads (Table 13).



Figure 10. Pewter pipe with "Birdman" effigy, ca. 1650 (drawing by M.C. Rumrill).

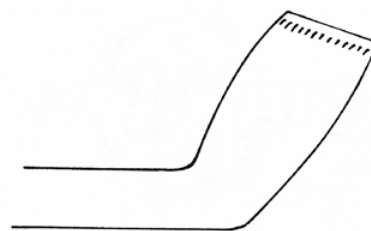


Figure 11. White clay pipe bowl with "EB" heelmark, ca. 1660 (drawing by M.C. Rumrill).

Table 13. The Printup Site (Fda-18) Beads (n=323).

Variety	Description	No.
Ia1	Tubular; op. redwood; all but two specimens have unfinished ends; 41.5% (Pl. IIA, R. 2, #2)	134
Ia2	Tubular; op. black; unfinished ends on all but one bead	8
Ia4	Tubular; tsl. oyster white; unfinished; 6.5% (Pl. IIA, R.2, #4)	21
Ia5	Tubular; op. white; the ends of all but one bead are unfinished	6
Ia13	Tubular; tsl. aqua blue; unfinished; 5.6%	18
Ia19	Tubular; tsp. bright navy; unfinished; 15.5% (Pl. IIA, R.2, #5)	50
Ib2	Tubular; op. redwood with 6 op. white stripes; unfinished	6
IIa1	Round; op. redwood	7
IIa36	Round; op. aqua blue; 6.8%	22
IIa38	Oval; op. aqua blue	7
IIa40	Round; op. robin's egg blue	1
IIa45	Circular; tsp. bright copen blue	1
IIa57	Oval; tsp. bright navy	10
IIIa1	Tubular; op. redwood with op. black core	7
IIIa3	Tubular; op. redwood with tsp. apple green core; unfinished	12
IIIa12	Tubular; tsp. bright navy exterior and core; op. white middle layer; unfinished	12
IIIbb6	Tubular; op. black with tsp. light gray core; 3 op. redwood on op. white stripes	1

Table 14. The Mitchell Site (Cnj-49) Beads (n=36).

Variety	Description	No.
Ia1	Tubular; op. redwood; unfinished	2
Ia13	Tubular; tsl. aqua blue; finished	1
Ia19	Tubular; tsp. bright navy; unfinished	1
Ib*	Tubular; op. mustard tan with 8 op. redwood stripes; unfinished	1
IIa1	Round; op. redwood	2
IIa36	Round; op. aqua blue	4
IIa40	Round; op. robin's egg blue	4
IIa41	Circular; op. robin's egg blue	1
IIb7	Round; op. redwood with 12 op. white stripes	1
IIb48	Round; op. mustard tan with 8 op. redwood stripes	1
IIbb1	Round; op. redwood with 3 tsp. bright navy on op. white stripes	1
IIIa12	Tubular; tsp. bright navy exterior and core; op. white middle layer; 30.6%	11
IIIa1	Round or oval; 7-layer "giant" chevron fragments: tsp. bright blue exterior/ op. white/ op. redwood/ op. white/ tsp. bright blue/ op. white/ tsp. bright blue core	2
IIIa*	Round or oval; 7-layer "giant" chevron fragments: tsp. bright blue exterior/ op. white/ op. redwood/ op. white/ op. redwood/ op. white/ op. redwood core	1
IVa13	Circular; tsl. oyster white with tsp. light gray core	1
IVb36	Round; tsp. dark navy exterior and core; op. white middle layer; 12 op. white stripes	1
IVn7	Flat; 5-layer chevron: tsl. oyster white exterior/ op. white/ op. redwood/ op. white/ tsp. light gray core; 4 op. redwood, 4 tsp. dark palm green and 4 tsp. bright navy stripes	1

Tubular beads with unfinished ends represent 83.9% of the total collection. Five other tubular specimens have finished ends. The collection also contains a long tubular catlinite bead (Pl. IIA, R.2, #3).

A village of approximately six longhouses, the Mitchell site (Cnj-49) yielded 36 glass beads (Table 14). Tubular beads with unfinished ends comprise 44.4% of the collection. Also present are two tubular purple wampum, a tubular bird-bone bead, a perforated elk's tooth, and a black-glass button.

At the Janie site (5808), a village of 3-4 longhouses, tubular beads with unfinished ends make up 71.4% of the glass bead collection (Table 15). Similarly, tubular specimens with unfinished ends

comprise 77.8% of the total (Table 16) at the Brown site (Cnj-55).

Short, Finished-End, Tubular Bead Period: 1659-1666

This period is very well documented both for its beginning date and its disastrous termination. New York colonial documents record that on September 24, 1659, Dutch and Mohawk representatives met at "Kagnuwage" where the most-easterly Mohawk village was preparing to erect palisades and had asked for horses to help with this task (Brodhead 1853, I: 659). In October 1666, the Marquis de Tracy

Table 15. The Janie Site (5808) Beads (n=42).

Variety	Description	No.
Ia1	Tubular; op. redwood; unfinished; 11.9%	5
Ia16	Tubular; op. shadow blue; unfinished	1
Ia17	Tubular; tsp. dark shadow blue; unfinished	1
Ia18	Tubular; tsp. ultramarine; unfinished; 23.8%	10
Ia20	Tubular; tsp. dark navy; unfinished; 11.9% (Pl. IIA, R.2, #1)	5
IIa15	Oval; op. white	1
IIa37	Circular; op. aqua blue; 23.8%	10
IIb56	Round; op. robin's egg blue with 3 op. white stripes	1
IIIa1	Tubular; op. redwood with op. black core	2
IIIa3	Tubular; op. redwood with tsp. apple green core	1
IIIa9	Tubular; tsl. shadow blue with tsp. bright navy core	1
IIIa12	Tubular; tsp. bright navy exterior and core; op. white middle layer; 9.5%	4

Table 16. The Brown Site (Cnj-55) Beads (n=9).

Variety	Description	No.
IIa40	Round; op. robin's egg blue	2
IIIa1	Tubular; op. redwood with op. black core; unfinished	3
IIIa3	Tubular; op. redwood with tsp. apple green core; unfinished	3
IIIa12	Tubular; tsp. bright navy exterior and core; op. white middle layer; unfinished	1

began a punitive mission of destroying "four Mohawk villages which totalled a hundred cabins" (O'Callaghan 1849-51, I; 68-70), and described the topography of the first village. Both the historical description and the archaeological evidence leave no doubt that this is the Freeman site. Kingston Larner, a long-time member of the Van Epps-Hartley Chapter of the NYSAA, supervised an excellent two-season excavation of a large area of the site and concluded that most of the village and palisade had been consumed by fire. No religious artifacts were unearthed. This is significant since both earlier and later villages had Jesuits in residence (i.e., ca. 1657-58 and ca. 1667-82), with many religious artifacts being recovered from these sites.

White clay pipes with EB flush-heel marks (Fig. 11) are prevalent at Freeman, as are brass Jew's harps with an impressed R. In addition, a piece of gray stoneware from a Bellarmine that shows the distinctive facial feature is attributable to the third quarter of the 17th century. Brass arrow points have a new standard configuration: stemmed with double perforation and elongated barbs (Fig. 12).

That the Mohawk were still making pottery at this late date is evidenced by ten rimsherds decorated with a pattern known as Fonda Incised, one in use since the era of the Garoga site a century before. The rimsherds do not seem to represent an earlier occupation since no other early artifacts were recovered.

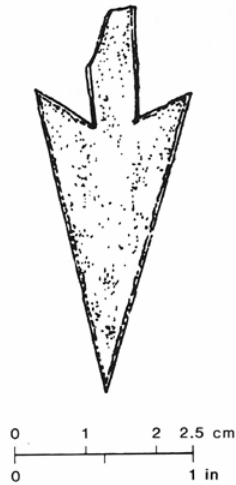


Figure 12. Tanged brass arrow point, ca. 1660 (drawing by M.C. Rumrill).

Of the three sites that will be dealt with here, only Freeman is cut and dried. The Allen and Fisk sites appear to have been relocated two to five years earlier, based on the number of tubular glass beads with unfinished ends that are present. These include the tubular light gold (Ia7) time marker for 1660 that has already been mentioned. Incised brass

finger rings are present at Allen and Fisk. Allen also has numerous lead and pewter pipes and effigies that appear only in the 1650s (Rumrill 1986). It is a site with at least two historic occupations which will be dealt with later. Curiously, Allen (Table 17) and Fisk do not exhibit a color preference in their glass beads, but Freeman (Table 18) does, with red varieties making up 56% of the collection; tubular beads with finished ends comprise 57.1% of the total. At the Allen site, tubular beads make up 73.5% of the collection total; those with finished ends comprise 58.3% of the total.

The glass beads in the Fisk site (Cnj-38) collection were quantified only on the basis of shape: 64 tubular beads with unfinished ends, 24 tubular beads with finished ends, and one round bead (IIb*, op. black with 6 op. white stripes).

Red Bead Period: 1667-1682

After the almost complete destruction of the Mohawk villages by de Tracy, archaeological and documentary evidence substantiates that all were rebuilt on the north side of the Mohawk River. Jesuit

Table 17. The Allen Site (Cnj-28) Beads (n=132).

Variety	Description	No.
Ia1	Tubular; op. redwood; 9 unfinished, 5 finished	14
Ia2	Tubular; op. black; finished	24
Ia5	Tubular; op. white; 2 unfinished, 10 finished	12
Ia7	Tubular; op. light gold; unfinished	1
Ia19	Tubular; tsp. bright navy; finished	15
Ib3	Tubular; op. black with 3 op. redwood stripes; finished (Pl. IIA, R.3, #6)	13
Ib4	Tubular; op. black with 3 op. white stripes; 5 unfinished, 3 finished (Pl. IIA, R.3, #7)	8
Ib10	Tubular; op. white with 3 op. redwood stripes; 2 unfinished, 2 finished (Pl. IIA, R. 3, #8)	4
Ib12	Tubular; op. white with 3 op. black stripes; finished (Pl. IIA, R.2, #9)	2
IIa1	Round; op. redwood	30
IIa2	Circular; op. redwood	5
IIIa1	Tubular; op. redwood with op. black core; 1 unfinished, 3 finished	4

Table 18. The Freeman Site (Fda-48) Beads (n=91).

Variety	Description	No.
Ia1	Tubular; op. redwood; finished (Pl. IIA, R.3, #1)	5
Ia2	Tubular; op. black; finished; 11% (Pl. IIA, R.3, #2)	10
Ia5	Tubular; op. white; finished; 11% (Pl. IIA, R.3, #3)	10
Ia7	Tubular; op. light gold; unfinished (Pl. IIA, R.3, #4)	4
Ibb2	Tubular; op. black with 3 op. redwood on op. white stripes	1
IIa1	Round; op. redwood; 19.8%	18
IIa2	Circular; op. redwood; 12.1% (Pl. IIA, R.3, #5)	11
IIa3	Oval; op. redwood	1
IIa26	Round; tsp. emerald green	1
IIa28	Round; tsp. dark palm green	2
IIa37	Circular; op. aqua blue	1
IIIa1	Tubular; op. redwood with op. black core; finished	6
IIIa2	Tubular; op. redwood with tsp. light gray core; finished	1
IIIa3	Tubular; op. redwood with tsp. apple green core; finished; 20.9%	19
IVb*	Circular; op. redwood with op. black core; 8 op. black stripes	1

priests, who were again allowed to reside in Mohawk country, converted many to Catholicism and persuaded them to defect to Canada where a village, also called Caughnawaga, was created, thereby carrying on the progression of villages of the same name. A goodly number of Mohawk residents were not actually Mohawk at all. At one point it was estimated

that at least half were adopted captives and, in 1659, the entire Huron bear clan at Quebec, Canada, voluntarily transplanted to the Mohawk domain.

Great Britain, meanwhile, had taken possession of New Amsterdam (New York City) on September 8, 1664, and with it the areas influenced by the Dutch known as New Netherland. Great Britain also considered the Five Nations Iroquois as part of this jurisdiction. In 1673, the Dutch regained control (O'Callaghan 1853-87, III: 198-202) only to lose it again by treaty to Britain on February 19, 1674. On orders from Governor Andros, an Englishman by the name of Wentworth Greenhalgh made a trip in 1677 through Iroquoia informing all Five Nations and any resident priests of the sovereign right of Great Britain to govern this territory. Greenhalgh recorded where each village he visited was situated in relation to the river and how big it was. He estimated a total of 96 "houses" and noted that all were on the north side of the river (O'Callaghan 1853-87, III: 250-52).

Religious items are found once again on sites of this period, and a majority of the brass rings are of stamped embossed types (Fig. 13) whereas earlier ones were all incised, making the former a good time marker. The presence of stamped rings

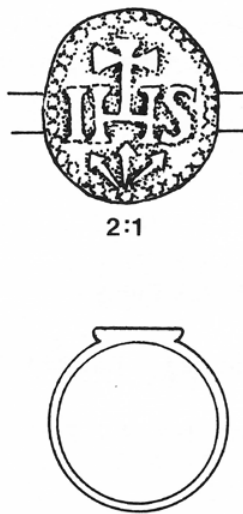


Figure 13. Stamped brass Jesuit ring, ca. 1670 (drawing by M.C. Rumrill).

Table 19. The Jackson-Everson Site (Cnj-5) Beads (n=275).

Variety	Description	No.
Ia1	Tubular; op. redwood; finished	7
Ia2	Tubular; op. black; finished	3
IIa1	Round; op. redwood; 52.2% (Pl. IIA, R.4, #1)	143
IIa2	Circular; op. redwood; 23% (Pl. IIA, R.4, #3)	63
IIa3	Oval; op. redwood (Pl. IIA, R.4, #2)	3
IIa7	Circular; op. black	1
IIa40	Round; op. robin's egg blue	1
IIIa1	Tubular; op. redwood with op. black core; finished	6
IIIa2	Tubular; op. redwood with tsp. light gray core; finished	1
IIIa3	Tubular; op. redwood with tsp. apple green core; finished	3
IVa2	Round; op. redwood with tsp. light gray core	2
IVa5	Round; op. redwood with tsp. apple green core; 12% (Pl. IIA, R.4, #6)	33
IVa6	Circular; op. redwood with tsp. apple green core	8
IVb36	Round; tsp. dark navy exterior and core; op. white middle layer; 12 op. white stripes	1

fits the framework established for the Seneca of this period described by Alice S. Wood (1974). The Fox Farm site has all the archaeological and documentary evidence for being the St. Peter's mission of the 1670s. Unfortunately, 90% of the area has been trucked away for gravel. A new white clay pipe heelmark is the "cross and orb" (Fig. 14) which also

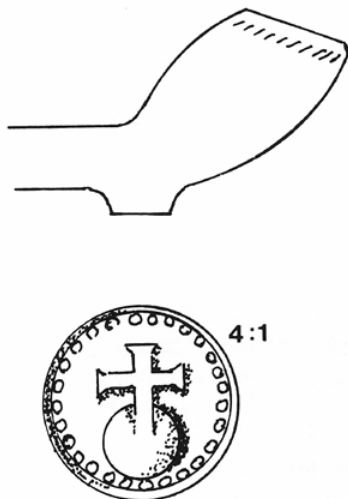


Figure 14. White clay pipe bowl with "cross and orb" heelmark, ca. 1675 (drawing by M.C. Rumrill).

correlates extremely well with the occupation of the Onondaga Indian Hill (1663-82) (Bradley 1976: 4) and Bloody Hill (1675-85) (DeAngelo 1976) sites, and the Oneida Sullivan (1660-77) and Upper Hogan (1670-80) sites (Bennett 1983: 55-6).

Iron trade axes for this period have the round English hafting eye whereas the Dutch axe eye was oblong. Also, every site of this period is dominated by red glass beads, as presaged by their presence in significant numbers at the Freeman site. The renewal or revitalization ritual of glass bead selection was borne out once more with the rebuilding of the Mohawk castles and hamlets.

One village, Jackson-Everson, is believed to have been the new residence of the captive Hurons since virtually all of the native-made ceramics recovered from the site and adjacent burials are of incised Huron rimsherd designs. All sites of this period still contain native pottery and lithic artifacts.

The majority of the bead analysis for Jackson-Everson is derived from a 1983 midden excavation conducted by a small group of SUNY Albany graduate students and volunteers as an adjunct to the Mohawk Valley Project (Sugihara 1986: 57-9). Earl

Table 20. The White Orchard Site (Cnj-3) Beads (n=88).

Variety	Description	No.
Ila1	Round; op. redwood; 53.4%	47
Ila2	Circular; op. redwood; 23.9%	21
Ila3	Oval; op. redwood	6
Ila6	Round; op. black.	2
Ilb'3	Oval; op. black with 3 op. white spiral stripes (these beads, as well as specimens of several other varieties, were mounted on brass wire links)	2
IIla1	Tubular; op. redwood with op. black core; finished	2
IVa1	Round; op. redwood with op. black core (Pl. IIA, R.4, #5)	1
IVa3	Circular; op. redwood with tsp. light gray core	1
IVa5	Round; op. redwood with tsp. apple green core	3
IVa6	Circular; op. redwood with tsp. apple green core	2
WIe*	Truncated cone; tsp. emerald green	1

Table 21. The Schenck Site (Fda-14) Beads (n=141).

Variety	Description	No.
Ia2	Tubular; op. black; finished	3
Ia5	Tubular; op. white; finished	2
Ia7	Tubular; op. light gold; finished	3
Ia20	Tubular; tsp. dark navy; unfinished	1
Ila1	Round; op. redwood; 59%	83
Ila2	Circular; op. redwood; 14%	20
Ila3	Oval; op. redwood	5
Ila6	Round; op. black	7
Ila7	Circular; op. black	1
Ila40	Round; op. robin's egg blue	1
Ilb9	Round; op. black with 3 op. redwood stripes	1
Ilb23	Round; op. white with 4 op. black stripes	1
IIla1	Tubular; op. redwood with op. black core; finished	2
IIla3	Tubular; op. redwood with tsp. apple green core; finished	1
IIla8	Tubular; tsl. oyster white with tsp. light gray core; unfinished	2
IIla*	Tubular; op. shadow blue with tsp. light gray core; unfinished	1
IIla9	Tubular; tsl. shadow blue exterior/ op. white middle layer/ tsp. light gray core; unfinished	1
IVa5	Round; op. redwood with tsp. apple green core	6

Table 22. The Fox Farm Site (Fda-20) Beads (n=92).

Variety	Description	No.
Ila1	Round; op. redwood; 35.9%	33
Ila2	Circular; op. redwood; 46.7%	43
Ila3	Oval; op. redwood	4
Ila6	Round; op. black	1
Ila7	Circular; op. black	3
Ila8	Oval; op. black	1
Ila36	Round; op. aqua blue	1
IVa5	Round; op. redwood with tsp. apple green core	3
IVa6	Circular; op. redwood with tsp. apple green core	1
IVa8	Round; op. redwood with tsp. bright blue core	1
IVb*	Round; op. redwood with tsp. apple green core; 3 op. black stripes	1

Casler and Dr. Kingston Lerner, serious longtime avocationalists and members of the Van Epps-Hartley Chapter of the NYSAA, also provided much information. The writer, additionally, made his own investigation and viewed other collections. Only the Sugihara assemblage, consisting of 275 glass beads plus one heirloom specimen, is described here (Table 19) since all glass bead assemblages for this period are monotonously the same (cf. Tables 20-22). At all the sites, red specimens comprise 89.6%-97.8% of the bead collections.

Pea-Size Black Bead Period: 1682-1693

Sometime between 1680 and 1683, the Mohawk, because of the necessity of revitalizing their habitat and resources, removed to locations on both sides of the Mohawk River. The Allen and Horatio Nellis sites are probably at the earlier end of the sequence since a few religious artifacts have been found in the habitation areas. Glass beads in the occupation mantle at Nellis are those prevalent during the 1682-93 period with a few leftovers from the previous period, while grave goods are predominantly heirloom types. Both bead assemblages are presented for comparative purposes (Tables 23-24). Note that red beads diagnostic of the previous period comprise 51.6% of

the beads recovered from the Nellis site burials; 15.1% of the beads are even earlier.

Caughnawaga (Fda-2) is the present-day site of the Katerie Tekakwitha Memorial Shrine dedicated to an Indian maiden who the supervising Franciscans are petitioning the Catholic church to elevate to sainthood as the first Native American to achieve this status. The site is reported to be the location of the mission and spring at which she was baptized in 1676, but, unfortunately, archaeological evidence and historical documents reveal that this village was not in existence until at least five years after she left the Mohawk Valley in 1677 for Canada, where she died in 1680 (Grassman 1969: 314). The Jesuit priests were forced to leave the valley around 1682, and religious artifacts are no longer found on any of the Mohawk sites for the remainder of the 17th century. The entire Caughnawaga village site was excavated in the early 1950s (the only Mohawk village with this distinction), mainly through the efforts of Earl Casler, Donald Lenig and the Van Epps-Hartley Chapter of the NYSAA, with no religious artifacts being recovered. The bulk of the beads (88.3%) were black (Table 25).

Count Louis de Frontenac, Governor of New France (Canada), with over 600 French and Canadian soldiers and Indian allies, struck the Mohawk villages in February of 1693 (O'Callaghan 1853-87, IX:

Table 23. Beads from the Occupation Mantle at the Horatio Nellis Site (Cnj-50) (n=36).

Variety	Description	No.
Ia1	Tubular; op. redwood; unfinished	1
Ia19	Tubular; tsp. bright navy; unfinished	2
Ibb2	Tubular; op. black with 3 op. redwood on op. white stripes; finished	1
IIa1	Round; op. redwood	1
IIa6	Round; op. black	4
IIa7	Circular; op. black	14
IIa13	Round; op. white	1
IIa36	Round; op. aqua blue	2
IIa44	Round; tsp. cerulean blue	1
IIa53	Circular; tsp. ultramarine	2
IIIa1	Tubular; op. redwood with op. black core; finished	3
IIIa3	Tubular; op. redwood with tsp. apple green core; unfinished	1
IVa1	Round; op. redwood with op. black core	1
IVa*	Circular; op. shadow blue with tsp. bright navy core	1
IVb16	Circular; op. white with tsp. light aqua blue core; 3 op. redwood and 3 tsp. bright navy stripes	1

550-2). Two large villages and one hamlet were pillaged and burned. One of these was doubtless Caughnawaga, the last to be referred to by that name in the Mohawk Valley. Another may have been the Horatio Nellis site. The third settlement remains unidentified, but was probably not the Allen site which, although contemporary, does not appear to have been harmed since its glass beads continue into the next period (Table 26).

HG heelmarks, some with three-pointed and others with five-pointed crowns, on flush-heel white clay pipes (Fig. 15) become dominant. Only the HG and EB makers marks seem to appear on flush-heel pipes in the Mohawk territory. Firearms have progressed to the well-known flintlock with a gooseneck cock, rounded surfaces on most exposed lock parts, lockplates with concave bottom edges, and artistic side plates (Puype 1985; Rumrill 1986). Red glass beads are replaced by pea-size black beads which comprise 52.8%-88.3% of the bead collections, and wound beads appear more frequently. Distinctive types for this period include "Roman" and flush eye beads (the latter are different

from the earlier ones). Tubular catlinite and shell beads continue to be present, including a large conch-shell bead measuring 2.7 cm x 3.3 cm x 1.4 cm (Pl. IIA, R.4, #4).

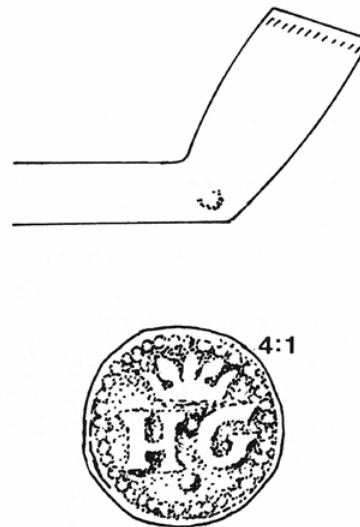


Figure 15. White clay pipe bowl with "crown and HG" heelmark, ca. 1690 (drawing by M.C. Rumrill).

Table 24. Beads Associated with Burials at the Horatio Nellis Site (Cnj-50B) (n=126).

Variety	Description	No.
Ia1	Tubular; op. redwood; very large; unfinished	2
Ia5	Tubular; op. white; finished	1
Ib10	Tubular; op. white with 3 op. redwood stripes; finished	4
Ib12	Tubular; op. white with 3 op. black stripes; finished	1
Ic'1	Tubular, square-sectioned; loose twist; op. redwood; finished	1
IIa1	Round; op. redwood; 43.7%	55
IIa2	Circular; op. redwood; 7.9%	10
IIa6	Round; op. black; 11.1%	14
IIa7	Circular; op. black	5
IIa12	Circular; tsp. oyster white; 12.7%	16
IIa13	Round; op. white	1
IIa31	Round; tsp. turquoise	1
IIa33	Round; tsp. light aqua blue	1
IIa44	Round. tsp. cerulean blue	1
IIa45	Circular; tsp. bright copen blue	2
IIa46	Round; op. shadow blue	1
IIa52	Round; tsp. ultramarine	1
IIa55	Round; tsp. bright navy	1
IIIa1	Tubular; op. redwood with op. black core; unfinished	2
IVb36	Round; tsp. dark navy exterior and core; op. white middle layer; 12 op. white stripes	2
IVnn4	Round; 4-layer chevron: op. white exterior/ op. redwood/ op. white/ op. redwood core; 6 broad op. redwood and 6 thin tsp. bright navy stripes	1
WId*	Doughnut-shaped; op. black (iridescent) (Pl. IIB, R.1, #8)	1
WIe*	Truncated cone; tsp. emerald green	2

Early Wound Bead Period: 1694-1712

The Mohawk dispersed in several directions after Frontenac's crushing campaign of 1693 (O'Callaghan 1853-87, IV: 20). Various groups went to Schuyler Flats near Albany, Tribes Hill (originally Tripe's Hill) across the river from Fort Hunter, and "Eskarie" (Schoharie), 40 km (25 mi.) south of the Mohawk River on Schoharie Creek near Middleburgh, New York. Clan cantons were essentially abandoned and two main villages were the population centers: the "Lower Castle" near Fort Hunter and the "Upper Castle" near present-day Fort Plain (O'Callaghan 1853-87, IV: 802). There were other smaller

communities. One, the Allen site near Canajoharie, was at times referred to as the "Middle Castle," and another was known as the "Castle of Tarajories." The latter was not the usual metaphoric name denoting the location of the village but, rather, the name of the sachem who resided there (O'Callaghan 1853-87, III: 901). The material culture was 99% European; native-made pottery had all but disappeared with only pottery pipes remaining as a vestige of this craft. However, shell and catlinite beads and ornaments increased in frequency.

Glass beads did not change radically as they had in the past at the time of village relocation, although wound and faceted beads did become more common.

Table 25. The Caughnawaga Site (Fda-2) Beads (n=724).

Variety	Description	No.
Ia1	Tubular; op. redwood; finished	1
Ia19	Tubular; tsp. bright navy; finished	1
IIa1	Round; op. redwood	} (5.4%)
IIa2	Circular; op. redwood; 9 specimens are seed beads	
IIa3	Oval; op. redwood	
IIa6	Round; op. black	} (88.2%)
IIa7	Circular; op. black; 151 specimens are seed beads	
IIa8	Oval; op. black	
IIa13	Round; op. white	6
IIa14	Circular; op. white; seed bead	1
IIa31	Round; tsp. turquoise	1
IIa37	Circular; op. aqua blue; seed beads	13
IIa56	Circular; tsp. bright navy; seed beads	15
WIIe*	Truncated cone; tsp. light gold	5
WIIa3	"Corn" bead; tsp. dark palm green	3

Table 26. Beads of the First Historic Occupation at the Allen Site (Cnj-28) (n=39).

Variety	Description	No.
IIa6	Round; op. black; 38.5%	15
IIa7	Circular; op. black; 33.3%	13
IIa13	Round; op. white	6
IIg1	Round; op. black with 3 op. white dots; "flush eye" (Pl. IIB, R.1, #6)	1
IIj1	Round; op. black with 2 parallel op. white wavy lines; "Roman bead" (Pl. IIB, R.1, #2)	1
IIj2	Round; op. black with 3 op. white wavy lines; "Roman beads" (Pl. IIB, R.1, #1)	2
IVb*	Round; op. white with op. redwood core; 4 op. redwood and 4 tsp. bright navy stripes	1

Limited information is available for two sites of this period (Tables 27-28).

Wound and Faceted Bead Period: 1712-1750

Britain's Queen Anne had a fort and chapel built for the Mohawk Indians in 1712 on the east side of

Schoharie Creek where it enters the Mohawk River (O'Callaghan 1853-87, V: 279-81). A map accompanying a survey of this location (O'Callaghan 1849-51, III: 902) reveals that the "Lower Castle" consisted of two groups of cabins, one on each side of the creek. These are the Cold Springs sites and the associated cemetery at Auriesville. Also at Auriesville is the Roman Catholic Martyrs Shrine to

Table 27. The Milton Smith Site (Fda-6) Beads (n=56).

Variety	Description	No.
Ia1	Tubular; op. redwood; unfinished	1
Ia5	Tubular; op. white; finished	1
Ib10	Tubular; op. white with 3 op. redwood stripes; finished	1
Ib22	Tubular; tsp. dark shadow blue with 6 op. redwood and 6 op. white stripes; finished	1
IIa6	Round; op. black; 24.4% of the glass beads (Pl. IIB, R.1, #7)	11
IIa7	Circular; op. black; 13.3% of the glass beads	6
IIa13	Round; op. white	3
IIa14	Circular; op. white	3
IIa27	Circular; tsp. emerald green (Pl. IIB, R.1, #5)	1
IIa37	Circular; op. aqua blue	1
IIa40	Round; op. robin's egg blue	1
IIa44	Round; tsp. cerulean blue	1
IIIa1	Tubular; op. redwood with op. black core; finished	2
IIIa3	Tubular; op. redwood with tsp. apple green core; finished	5
IIIa8	Tubular; tsl. oyster white with tsp. light gray core; finished	1
IIIbb1	Tubular; op. redwood with op. black core; 3 op. black on op. white stripes; finished	1
IVa5	Round; op. redwood with tsp. apple green core	1
IVa6	Circular; op. redwood with tsp. apple green core	1
IVa*	Circular; op. redwood with tsp. bright blue core	1
WIE*	Truncated cone; tsp. light gold (Pl. IIB, R.1, #4)	2
Shell	Tubular; wampum; white	7
Shell	Tubular	3
Shell	Round	1

Table 28. Beads of the Second Historic Occupation at the Allen Site (Cnj-28) (n=14).

Variety	Description	No.
WId*	Doughnut-shaped; tsl. white (Pl. IIB, R.1, #3)	1
WId1	Doughnut-shaped; tsp. amber	1
WId*	Doughnut-shaped; tsp. citron	1
WIE*	Truncated cone; tsl. amber	8
WIIc5	Pentagonal-faceted; tsp. amber; 5 pressed facets (Pl. IIB, R.2, #2)	1
WIIc11	Pentagonal-faceted; tsp. ultramarine; 5 pressed facets (Pl. IIB, R.2, #5)	1
WIIc12	Pentagonal-faceted; tsp. bright navy; 5 pressed facets	1

Table 29. Glass Beads from the Cemetery at the Galligan #2 Site (Cnj-90) (n=3028).

Variety	Description	No.
Ia1	Tubular; op. redwood; finished	122
Ia2	Tubular; op. black; finished	1
Ia5	Round; tsp. ruby	38
Ia6	Round; op. black	51
Ia7	Circular; op. black	594
Ia*	Circular; tsp. light gray (colorless)	36
Ia12	Circular; tsl. oyster white	477
Ia17	Round; op. light gold	74
Ia21	Round; tsl. citron	21
Ia23	Round; tsp. bright mint green	2
Ia27	Circular; tsp. emerald green; seed beads (Pl. IIB, R.2, #3)	1015
Ia28	Round; tsp. dark palm green	102
Ia*	Oval; tsp. light aqua blue	1
Ia34	Circular; tsl. light aqua blue	19
Ia40	Round; op. robin's egg blue	2
Ia44	Round; tsp. cerulean blue	2
Ia45	Circular; tsp. bright copen blue	44
Ia52	Round; tsp. ultramarine	46
Ia54	Oval; tsp. ultramarine	14
Ia55	Round; tsp. bright navy	4
Ia56	Circular; tsp. bright navy	13
Ia57	Oval; tsp. bright navy	3
Iib69	Oval; tsp. bright navy with 4 op. white stripes	3
Iib'2	Round; op. black with 7 op. white spiral stripes (Pl. IIB, R.2, #4)	36
Iibb15	Oval; op. white with 3 op. lemon yellow on tsp. bright navy stripes	8
Iij2	Round; op. black with 3 op. white wavy lines; "Roman beads"	35
Wib1	Round; tsp. light gray	3
Wib2	Round; op. white	74
Wib7	Round; tsp. amber	4
Wib9	Round; tsp. dark palm green	20
Wib*	Round; op. light green	3
Wib15	Round; tsp. ultramarine	2
Wib16	Round; tsp. bright navy	3
Wic1	Oval; op. white	2
WIic2	Pentagonal-faceted; tsp. light gray (colorless); 8 pressed facets	41
WIic*	Pentagonal-faceted; op. white; 8 pressed facets	15
WIic5	Pentagonal-faceted; tsp. amber; 8 pressed facets	64
WIic7	Pentagonal-faceted; tsp. teal green; 8 pressed facets (Pl. IIB, R.2, #1)	1
WIic10	Pentagonal-faceted; tsp. bright copen blue; 8 pressed facets	17
WIic11	Pentagonal-faceted; tsp. ultramarine; 8 pressed facets	2
WIid4	"Raspberry" bead; tsp. amber	14

Table 30. The Cold Springs Site (Fda-15) Beads (Surface Material) (n=13).

Variety	Description	No.
Ila7	Circular; op. black	3
Ila8	Oval; op. black	1
Iib*	Round; tsp. bright navy with 6 op. white stripes	1
Iibb*	Oval; op. white with 3 op. redwood on op. bright navy stripes	1
WIb5	Round; tsl. pale blue (alabaster)	1
WIc4	Oval; tsp. light gold	1
WIc*	Oval; tsp. light gray	1
WId2	Doughnut-shaped; tsp. maple	1
WIic5	Pentagonal-faceted; tsp. amber; 5 pressed facets	1
WIic10	Pentagonal-faceted; tsp. bright copen blue; 5 pressed facets	1
WIic12	Pentagonal-faceted; tsp. bright navy; 5 pressed facets	1

Table 31. The Auriesville Shrine Site (Fda-4) Beads (n=94).

Variety	Description	No.
Ila14	Circular; op. white	28
Ila46	Round; op. shadow blue	1
Iij2	Round; op. black with 3 op. white wavy lines; "Roman beads"	9
WIb3	Round; tsp. pale blue	1
WIb4	Round; tsp. pale blue (opalescent)	1
WIb5	Round; tsl. pale blue (alabaster)	1
WIc2	Oval; tsp. pale blue (opalescent)	6
WIc11	Oval; tsp. ultramarine	1
WIic2	Pentagonal-faceted; tsp. light gray; 5 pressed facets (Pl. IIB, R.2, #6).	8
WIic4	Pentagonal-faceted; tsp. light gold; 5 pressed facets	13
WIic6	Pentagonal-faceted; tsp. cinnamon; 5 pressed facets	1
WIic12	Pentagonal-faceted; tsp. bright navy; 5 pressed facets	8
WIid6	"Raspberry" bead; tsp. bright navy (Fig. 16)	16

memorialize the deaths of Fr. Isaac Jogues and Rene Goupil and the birthplace of Katerie Tekakwitha.

General John S. Clark, an antiquarian from Auburn, N.Y., traveled around New York state in the late 19th century making positive, challenging statements concerning locations of various historical events. Clark stated that the Auriesville location was,

in fact, the site of Ossernenon, the most easterly Mohawk village in the 1640s, and, therefore, was the spot where Jogues and Goupil lost their lives and Katerie was born. He based his declaration solely on the fact that there was a ravine there (one of many in the Mohawk Valley), and that Auriesville was on a high hill as reported in Jogues' correspondence. Some

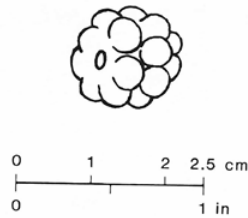


Figure 16. Wound glass "raspberry" bead (WIIId) (drawing by M.C. Rumrill).

glass beads were also recovered from Indian burials in the immediate area. Qualifications for the proper bead types of the period (1642-46) and the locations of Jogues' and Goupil's deaths have already been discussed, and Katerie's birthplace (1656) was, in all probability, the Printup site. Bead seriations provide both the primary positive and negative evidence necessary to date these events. No evidence has been found that a village or habitation existed at Auriesville and, ironically, the burials with which the beads were found were those of Protestant Mohawk Indians.

The site known as Galligan #2 on the western edge of Fort Plain, N.Y., contains evidence of a Revolutionary War blockhouse and an associated fort, a small 16th-century Mohawk village, a small 17th-century Mohawk village, and an 18th-century cemetery for a nearby Mohawk village dating ca. 1720-50. The glass beads recovered from the cemetery are listed in Table 29. Of these, 74.5% are seed beads. Another 11.8% are wound, of which 6.8% are faceted. Subtracting seed beads from the total, 26.8% of the remainder are faceted. Shell beads include 19 marine-shell runtees 3.8 cm (1.5 in.) in diameter which are decorated and double-drilled transversely for use in necklaces (*see cover*), a conch-shell "Birdman" (*see cover*), and a good many white and purple wampum. Catlinite is well represented by 36 tubular, triangular, circular (Pl. IIB, R.3, #3) and square beads, as well as one turtle (Pl. IIB, R.3, #4), one heron (Pl. IIB, R.3, #5) and 7 beaver (Pl. IIB, R.3, #1) effigies. Three red-slate spacers (Pl. IIB, R.3, #2) are also present. It should also be noted that many of the conical and faceted glass beads are heavily oxidized.

At the Cold Springs (Table 30) and Auriesville Shrine (Table 31) sites, faceted beads comprise 23.1% and 26.6% of the total, respectively.

The Galligan #2, Cold Springs and Auriesville bead assemblages compare in almost all respects to the Seneca Townly-Huntoon site which Charles Wray (1983: 46) dates ca. 1710-45, the Oneida Lanz-Hogan (Ond 2-4) site which Monte Bennett (1982: 22) dates to the 1720-50 period, and the Schoharie Mohawk site of Westheimer Knoll dating to 1710-50. Significant artifacts for this period are ornamental brass finger rings, silver crosses and other silver adornments, and a large number of white clay smoking pipes with RT or "Robert Tippet" in a cartouche on the bowl (Fig. 17).

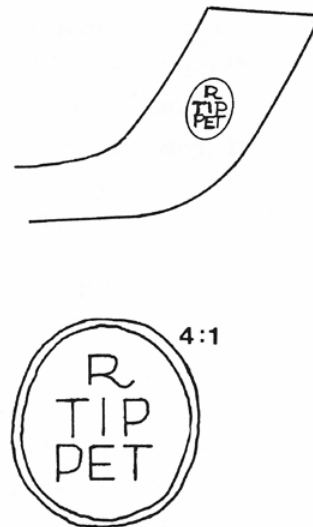


Figure 17. White clay pipe bowl by R. Tippet, ca. 1700s (drawing by M.C. Rumrill).

Seed Bead Period: 1750-1785

A lack of relevant glass-bead data precludes an inventory for the 1750-85 period. However, the writer concurs with Charles Wray's (1983: 47) assessment:

By 1710 a trend toward tiny seed beads was underway. These beads were sewn in designs on the leggings and moccasins and later on the upper clothing as well. By the time of the American Revolution, necklaces were scarce while ornamental seed beads were very numerous. After the American Revolution, short tubular black (Ia2) and short tubular white (Ia5) beads became numerous and were used as substitute wampum in belts and sashes and occasionally as necklaces.

CONCLUSION

Reference has been made throughout this discourse to a revitalization ritual coinciding with village relocation every fifteen years or so. There is no confirmation for this assumption, but the radical changes in glass bead types with each major movement for not only the Mohawk but the other Five Nations Iroquois as well strongly suggest mutual consent, an important part of the basic plan for their alliance. Accurate site chronology would be extremely difficult, if not impossible, without this phenomenon. The glass bead sequence, coupled with other datable objects and documentary references, helps us to understand the chronology and movements of the Mohawk from the mid-16th through the 18th century.

There is no indication that more than a very few glass beads found their way into Mohawk villages prior to ca. 1600. However, long tubular brass beads with small diameters are present just before this date, indicating at least indirect contact with Europeans. During the first quarter of the 17th century, there are many small monochrome glass beads while larger beads are mostly polychrome, especially chevron and gooseberry types. Red dots on blue flush eye beads and blue dots on white flush eyes, as well as "barrel" (flanged-end) beads, are unique to this period. In the second quarter of the 17th century, glass beads are predominantly round and blue in color. Small red beads cased in clear glass and having tiny perforations are diagnostic of this period. Unique and somewhat enigmatic specimens include several varieties of Nueva Cadiz and Florida Cut Crystal beads. White clay smoking pipes with hallmarks on raised heels make their appearance, as do firearm components.

From about 1645 to 1660, tubular beads with rough or unfinished ends predominate. Catlinite beads appear in small quantities, and religious articles — including incised brass Jesuit rings — are present, inferring dates almost exclusively within the 1655-58 period, as chronicled in *The Jesuit Relations* (Thwaites 1896-1901). A small, tubular, light gold bead of glass (Ia7) appears for a very short time beginning about 1660. Flush-heel white clay pipes are present, and villages of the 1660-66 period have no religious artifacts. In 1666, the Marquis de Tracy led soldiers from Canada to destroy Mohawk villages, all

of which were located on the south side of the Mohawk River.

Sites of the 1667-82 period are dominated by red glass beads. Cross-and-orb heelmarks on white clay pipes are common and, with the return of the Jesuit missionaries, stamped finger rings with embossed religious and ornamental motifs become numerous. Flintlock firearms with rounded lock parts and gooseneck cocks are the preferred weapon henceforth.

About 1682, the Jesuits were again banished from the Mohawk Valley and religious artifacts disappear with them. Black pea-size beads, black flush eyes with white dots, and "Roman" beads are diagnostic of the 1682-93 period. Wound beads begin to show up in limited quantities, as do white clay pipes with HG-and-crown heelmarks.

In 1693, Frontenac led a military expedition from Canada that again destroyed the Mohawk villages and the inhabitants dispersed to widely scattered areas, eventually discarding longhouse and village life modes for small European-style farms. Wound beads, many of them faceted (type WIIC), predominate until about the mid-18th century when ornamental seed beads prevail.

ACKNOWLEDGEMENTS

I gratefully appreciate the sharing of knowledge and data by many persons, most notably Gordon DeAngelo, Wayne Lenig, Earl Casler, Kingston Larner, Robert Funk, Paul Huey, Jan Baart and Henry Wemple. Gratitude is expressed to Dean R. Snow, Peter P. Pratt and, especially, Karlis Karklins for reviewing this paper and making most-helpful editorial comments. Many thanks to those who allowed me the pleasure of cataloging their private bead collections including, but not limited to, the late John Jackowski, the late Lester Wagar, Anthony Peters, Robert Ireland, William Klinkhart, Bruce Smith, Kingston Larner, Gladys Haas, Gordon Ballard, Graydon Ballard, the Fort Plain Museum and the Mohawk Caughnawaga Museum. Thanks, too, to my wife, Mary C. Rumrill, for her wonderful illustrations, assistance and patience. Most of all, I must acknowledge with considerable regard and appreciation the numerous landowners in Fulton and

Montgomery counties, New York, for their trust and the privilege of treading upon the very spots where this astounding Mohawk Indian history occurred!

REFERENCES CITED

Beauchamp, William M.

- 1903 Metallic Ornaments of the New York Indians. *New York State Museum Bulletin* 73.

Bennett, Monte

- 1982 A Salvage Burial Excavation on the Lanz-Hogan Site OND 2-4. *Chenango Chapter, NYSAA Bulletin* 19(4):11-25.
- 1983 Glass Trade Beads from Central New York. In "Proceedings of the 1982 Glass Trade Bead Conference," edited by Charles F. Hayes III. *Rochester Museum and Science Center, Research Records* 16:51-58.

Bradley, James W.

- 1976 A Preliminary Report on the Historic Onondaga Sequence. *W.M. Beauchamp Chapter, NYSAA Bulletin* 1(1):1-5.
- 1977 The Pompey Center Site: The Impact of European Trade Goods 1600-1620. *W.M. Beauchamp Chapter, NYSAA Bulletin* 2(1):1-19.
- 1987 *Evolution of the Onondaga Iroquois: Accommodating Change 1500-1655*. Syracuse University Press, Syracuse.

Brodhead, John R.

- 1853-71 *History of the State of New York*. 2 vols. Harper and Brothers, New York.

DeAngelo, Gordon

- 1976 A Cultural Sequence Chart for Central New York. *W.M. Beauchamp Chapter, NYSAA Bulletin* 1(1).

Gehring, Charles T. and William A. Starna

- 1988 *A Journey into Mohawk and Oneida Country 1634-1635: The Journal of Harmen Meyndertsz van den Bogaert*. Syracuse University Press, Syracuse.

Grassman, Rev. Thomas

- 1969 *The Mohawk Indians and Their Valley*. J.S. Lischynsky, Schenectady.

Harrington, M.R. and Irwin Hayden

- 1906 Two Mohawk Strongholds: An Account of Archaeological Exploration in the Mohawk Valley, 1905. In *Report to Prof. J.W. Putnam, Curator of the Peabody Museum, Cambridge, Mass.* Unpublished manuscript.

Huey, Paul R.

- 1988 *Aspects of Continuity and Change in Colonial Dutch Material Culture at Fort Orange, 1624-1664*. 2 vols. Unpublished doctoral dissertation. University Microfilms International, Ann Arbor.

Jameson, J. Franklin (ed.)

- 1909 *Narratives of New Netherland 1609-1664*. Charles Scribner's Sons. Reprinted in 1967 by Barnes and Noble, New York.

Kidd, Kenneth E. and Martha Ann Kidd

- 1970 A Classification System for Glass Beads for the Use of Field Archaeologists. *Canadian Historic Sites: Occasional Papers in Archaeology and History* 1:45-89.

Lenig, Donald

- 1977 Of Dutchmen, Beaver Hats and Iroquois. In "Current Perspectives in Northeast Archaeology," edited by Robert E. Funk and Charles F. Hayes III. *Researches and Transactions of the New York State Archeological Association* 17(1):71-84.

O'Callaghan, E.B. (ed.)

- 1849-51 *The Documentary History of the State of New York*. 4 vols. Weed, Parsons and Co., Albany.
- 1853-87 *Documents Relative to the Colonial History of the State of New York*. 15 vols. Weed, Parsons and Co., Albany.

Pratt, Peter P.

- 1982 *Oneida Iroquois Glass Trade Bead Sequence 1585-1745*. Pratt and Pratt, Syracuse. Originally published in 1961.

Puype, Jan Piet

- 1985 Dutch and other Flintlocks from Seventeenth Century Iroquois Sites. In "Proceedings of the 1984 Trade Gun Conference," edited by Charles F. Hayes III. *Rochester Museum and Science Center, Research Records* 18, Part I.

Ritchie, William A. and Robert E. Funk

- 1973 Aboriginal Settlement Patterns in the Northeast. *New York State Museum and Science Service Memoir* 20.

Rumrill, Donald A.

- 1985 An Interpretation and Analysis of the Seventeenth Century Mohawk Nation: Its Chronology and Movements. *Bulletin and Journal of the New York State Archaeological Association* 90:1-39.
- 1986 *The Evolution of Firearms and Its Relationship to Seventeenth Century Mohawk Chronological Analysis*. Paper presented at the New York State

- Archaeological Association annual conference, Middletown, New York.
- 1988 Art Form or Artifact Type? *Bulletin and Journal of the New York State Archaeological Association* 96:19-25.
- Smith, Marvin T.**
- 1983 Chronology from Glass Beads: The Spanish Period in the Southeast, 1513-1670. In "Proceedings of the 1982 Glass Trade Bead Conference," edited by Charles F. Hayes III. *Rochester Museum and Science Center, Research Records* 16:147-158.
- Smith, Marvin T. and Mary Elizabeth Good**
- 1982 *Early Sixteenth Century Glass Beads in the Spanish Colonial Trade*. Cottonlandia Museum Publications, Greenwood, Mississippi.
- Sugihara, Pamela E.**
- 1986 An Analysis of Glass Trade Beads from the Jackson-Everson Site. In *The Mohawk Valley Project: 1983 Jackson-Everson Excavations*, edited by Robert D. Kuhn and Dean R. Snow, pp. 55-65.
- Thwaites, Reuben G.**
- 1896-1901 *The Jesuit Relations and Allied Documents: Travel and Explorations of the Jesuit Missionaries in New France, 1610-1791*. 73 vols. Burrows Brothers, Cleveland. Reprinted in 1959 by Pageant, New York.
- Wood, Alice S.**
- 1974 A Catalog of Jesuit and Ornamental Rings from Western New York State. *Historical Archaeology* 8:83-104.
- Wray, Charles F.**
- 1983 Seneca Glass Trade Beads, c.A.D. 1550-1820. In "Proceedings of the 1982 Glass Trade Bead Conference," edited by Charles F. Hayes III. *Rochester Museum and Science Center, Research Records* 16:41-49.
- Wray, Charles F., Martha L. Sempowski and Lorraine Saunders**
- 1991 Tram and Cameron: Two Early Contact Era Seneca Sites. Charles F. Wray Series in Seneca Archaeology 2. *Rochester Museum and Science Center, Research Records* 21.

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