

MORE ON FRIT-CORE BEADS IN NORTH AMERICA

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This article publishes new findings on frit-core beads in North America, including an initial assessment of their chemical composition. Two new find sites have been added to the inventory, bringing the total to 19. In addition, two new types have been recorded, each with variants. Two beads from contexts later than the date range attributed to this bead category suggest that frit-core beads continued in use, possibly as heirlooms, well into the 17th century.

INTRODUCTION

Frit-core beads are distinct from glass beads in that, while the exterior is vitreous, the core is composed of sintered quartz sand or crushed quartz. Likely made in France, in North America they are only found in the northeastern states and provinces. In that they have relatively short temporal ranges, they are ideal chronological indicators for the latter part of the 16th century and the early 17th century. The base color of most of the beads is dark blue and the decorative elements are white, though there are examples where the color scheme is reversed. For additional details, *see* Karklins (2016).

Since the publication of the 2016 article, two more find sites have come to light; one in southeastern Quebec and the other in western New York state. Both are of interest as one replicates a rare style found only at one other site and the second is from an archaeological context significantly later than the date range proposed for frit-core beads. In addition, two previously unrecorded types were discovered in an unprovenienced collection of trade beads in Quebec City.

NEW SITES / NEW TYPES

Regarding the new find sites, the first specimen (Figure 1) was recovered from a pit at the Abenaki village of Odonak (site CaFe-7) near Pierreville on the north side of the Saint-François River in southeastern Quebec. It is Type 6 and 9 mm in length and diameter. The perforation is 2.5 mm wide.

While Odonak is recorded as having been founded around 1670, archaeological investigation has determined



Figure 1. Type 6 from Odonak, Quebec (photo: Andre Gill).

that the earliest occupation date for the site is 1571 (Musée des Abénakis 2017a, b). Radiocarbon dating attributes the pit fill to 1570 ±25 cal AD (Geneviève Treyvaud 2017: pers. comm.).

The second specimen was recovered from the Seneca Power House site near Lima in western New York (Rochester Museum and Science Center/Rock Foundation # 5264/24). It is Type 2 with four longitudinal stripes and four rows of four dots each alternating around the body (Figure 2). It measures 13 mm in length and 11 mm in diameter.

Power House is attributed to the period ca. 1640-1655 (Sempowski and Saunders 2001:6) which is well outside the 1560-1610 date range posited for frit-core beads (Karklins 2016:64). In this instance, it is highly likely that this is an heirloom piece.

A comparatively large group (8 specimens) of frit-core beads was discovered in an unprovenienced bead collection held by the Laboratoire et Réserve d'archéologie du Québec (LRAQ) in Quebec City. Of the eight beads, three are Type 1. They measure 13.3-14.3 mm in length and 9.2-10.3 mm in diameter. Another bead is a variant of Type 2. Instead of four or six longitudinal white stripes, this one has only three (Figure 3). It measures 12.8 mm by 9.8 mm.



Figure 2. Type 2 from the Power House site, western New York (photo: Michael J. Galban; courtesy of the Rock Foundation, Rochester Museum and Science Center).

The four remaining beads represent two new types. Continuing the type number sequence presented in Karklins (2016), Type 7 (Figure 4) has an oval configuration with three or five short longitudinal white stripes with a small blob at the medial end around either end. Three white rosettes composed of six dots around a central dot encircle the middle. The beads are 9.0 mm (fragmentary) to 12.3 mm in length and 8.7 mm to 9.6 mm in diameter.

Type 8 is oval and represented by two variations. One, with a unique indigo hue, exhibits six longitudinal, slightly raised, white stripes, each of which is decorated with three blue dots (Figure 5). On the other, the six stripes are represented by raised ridges which exhibit four white dots (Figure 6). The beads measure 12.8-14.8 mm by 10.8-10.9 mm.

Unlike most frit-core beads where the blue glass covers the entire surface, the core is visible at the ends of several of the LRAQ specimens. Broken surfaces further reveal that



Figure 3. Type 2 with three sets of stripes and rows of dots (photo: Adelphine Bonneau).



Figure 4. New Type 7 (photo: Adelphine Bonneau).



Figure 5. New Type 8 (photo: Adelphine Bonneau).

the core consists of what appears to be crushed quartz with angular edges. The particles are ca. 50-100 μ m in size and set in a beige-colored matrix (Figure 7).

It is unfortunate that the provenance of the beads in the LRAQ collection is unknown. The beads are strung together with shell and glass beads, some of which are of 19th-century origin, so the associated material does nothing to help determine where they were found or their age.

Updated type descriptions are presented in Table 1 and all the types are illustrated in Figure 8.

COMPOSITIONAL ANALYSIS

To obtain an initial chemical profile of a frit-core bead which might indicate a place of origin, the Type 5A specimen (BjFj-101-4B43-560) (Figure 9) from Pointe-à-Callière,

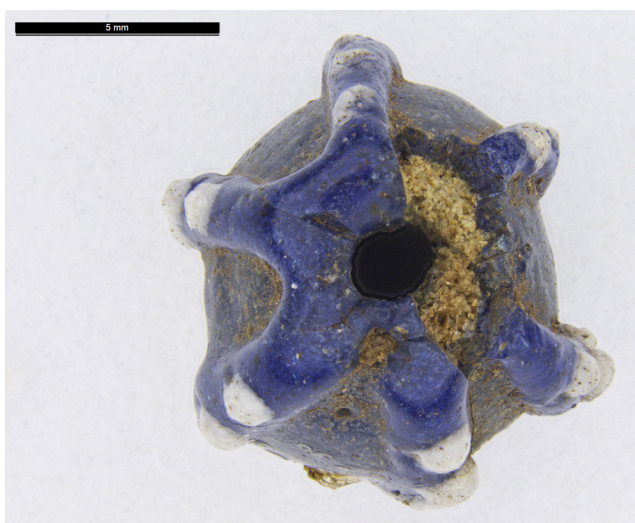


Figure 6. Type 8 variant with raised stripe ridges (photo: Adeline Bonneau).

Montreal, Quebec, was subjected to microscopic, Raman spectroscopic, and micro X-ray fluorescence analysis at Laval University, Quebec City (Bonneau and Auger 2018). This revealed that the dark blue component is a potash-lime glass with 5.6% potash, 3.1% soda, 8.0% lime, 0.8% magnesia, and elevated alumina (7.9%). It is colored with a high concentration of cobalt (0.3%), compared to what can be expected for cobalt-colored glass from the 17th-18th centuries. Conversely, the white part is composed of soda-lime glass with 7.9% soda, 4.9% potash, 5.8% lime, 1.7% magnesia, 1.2% alumina, and 0.1% titanium. It was opacified with a high concentration of tin (11.5%) and lead (11.2%) which is consistent with the use of a lead-tin calx,

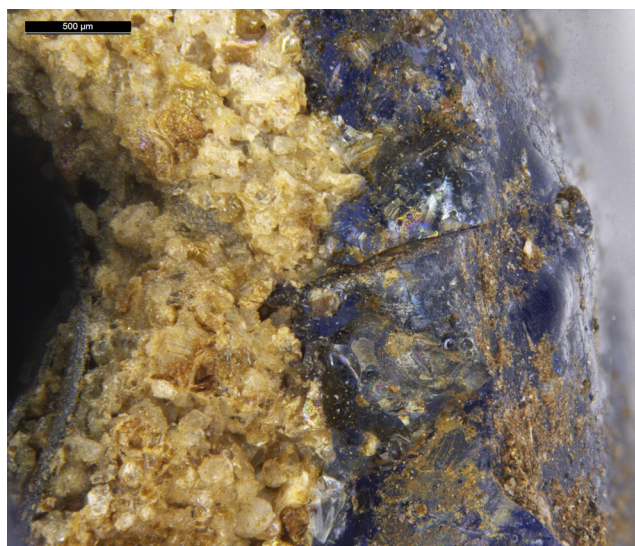


Figure 7. The sintered crushed-quartz core of a Type 8 bead (photo: Adeline Bonneau).

Table 1. Frit-Core Bead Types.

<p>Type 1. A loop with 6 dots around a single dot in its center is situated on opposite sides of the bead. The space between the two loops contains a longitudinal row of 4-5 dots on either side.</p>
<p>Type 2. This type exhibits 3, 4, or 6 longitudinal stripes between each pair of which is a row of 3-5 dots.</p>
<p>Type 3. No decoration.</p>
<p>Type 4. A configuration of 6 “petals” encircles either end of the perforation; a line encircles the middle. There are examples where the surface is covered with white glaze and the design elements are blue. These are designated with the suffix A (Type 4A).</p>
<p>Type 5. There are three or more longitudinal stripes, between each pair of which is a configuration of 5-6 dots around a single dot with a short stripe at either opening of the perforation. As with the previous type, there are examples where the color scheme is reversed (Type 5A).</p>
<p>Type 6. An undulating line encircles the middle. In each of the 4 undulations is a dot encircled by 5 dots.¹</p>
<p>Type 7. Exhibits 3 or 5 short, longitudinal, petal-like stripes around either end. Three rosettes composed of 6 dots around a central dot encircle the middle.</p>
<p>Type 8. There are two variations. One, with a unique indigo hue, exhibits 6 longitudinal slightly raised, white stripes, each of which is decorated with 3 blue dots. On the other, the 6 stripes are represented by raised ridges which exhibit 4 white dots.</p>

a recipe used by Venetian glassmakers (Biron and Verità 2012).

The compositions of the two glasses point to two different European production centers. The components of the white glass suggest an origin in southern Europe, but the high levels of potash, alumina, and titanium tend to reject a Venetian provenance, although it is possible that the core of the bead may have influenced the μ XRF analysis. The constituents of the blue glass are indicative of an origin in northern or northeastern Europe. Further analysis using Laser Ablation-Inductively Coupled Plasma-Mass Spectrometry (LA-ICP-MS) is necessary to make a final determination. One can, however, postulate that the bead was made from imported glass.

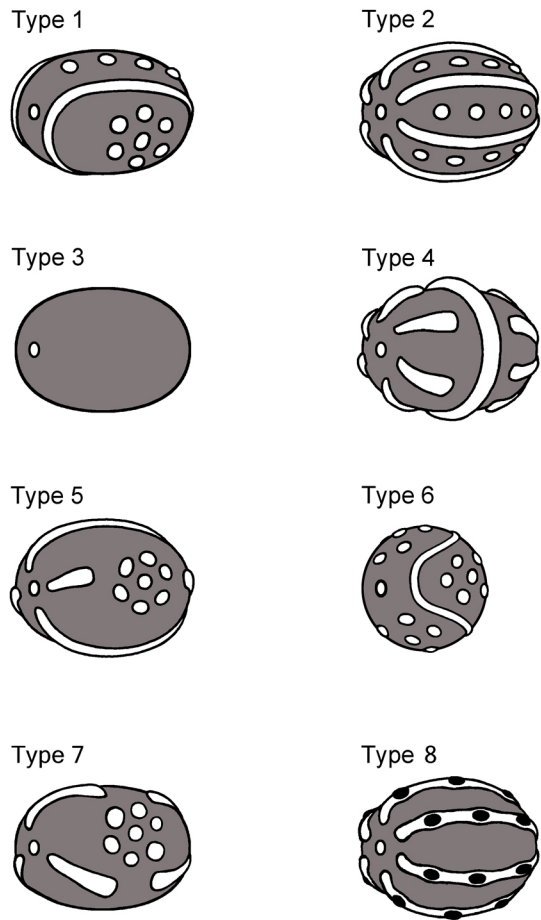


Figure 8. Frit-core bead types (drawing: Dorothea Larsen).



Figure 9. Type 5A bead from Pointe-à-Callière, Montreal, Quebec (photo: Alain Vandal; courtesy of Musée Pointe-à-Callière).

CONCLUSION

The number of find sites for frit-core beads has increased to 19 and there are now eight style types, several of which have color variants. Their temporal range has also increased significantly. They were originally considered to be type fossils for the latter part of the 16th century in southern Ontario (Kenyon and Kenyon 1983:60). Based on new finds, the date range was subsequently expanded to 1560-1610 for the Northeast in general (Karklins 2016:63-64). The Power House specimen discussed above suggests that frit-core beads may still have been in use as late as 1640-1655, though likely as heirlooms. The Type 5A bead from Fort Ville-Marie at Pointe à Callière, Quebec, may also be added to this later period. Previously attributed to the 1580-1600(?) period (Karklins 2016:62), the occupation of the fort actually only began in 1642 and the site was gradually abandoned beginning in 1665 (Conciatori 2000:38-39). This being the case, care must be taken to not automatically assign all frit-core beads to the 16th century or slightly later, especially if only one example is found. There may well be other instances where these beads are heirlooms, either handed down from one generation to another or possibly found eroding from the ground at an earlier village site in the region and put to use by the finder. It will be interesting to see if other specimens are recovered from 17th-century contexts.

As to their place of origin, it is hoped that planned LA-ICP-MS analysis of frit-core beads from the archaeological contexts in Quebec mentioned above and those found in France will provide the required information.

ACKNOWLEDGEMENTS

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ENDNOTE

1. In the 2016 article, this type was described as having five undulations and dot rosettes. This was based on sketchy notes, coupled with a 3-D reconstruction that showed it was possible for a bead ca. 10 mm in diameter to have that many undulations. The Odonak specimen clearly shows that only four are possible. The description of Type 6 has, therefore, been revised.

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