

# GLASS BEADMAKING AND ENAMEL LAMPWORK IN PARIS, 1547-1610: ARCHIVAL AND ARCHAEOLOGICAL DATA

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*This article presents beadmaking in Paris during the second half of the 16th century as seen through period documents and artifacts. Parisian archives document beadmaking by artisans called patenôtriers who made a wide range of glass buttons and jewelry, including beads. Records of the patenôtriers' guild provide an idea of the number of artisans engaged in this activity, while notarial contracts and estate inventories reveal individual careers and the material dimension of beadmaking in Paris. Patenôtriers obtained their materials – soda glass and enamel supplied as tubes, rods, or ingots – from glassmakers in rural France, Altare in Italy, and a small glassworks that operated in the suburb of Saint-Germain-des-Prés in 1598-1608. They exported rosary beads to Iberia and trade beads to North America. In European terms, Paris was a major beadmaking center during the 16th century and we know its products from a small number of archaeological finds and museum holdings.*

## INTRODUCTION

Glass beadmaking in Paris developed considerably from the middle of the 16th century. This activity gained a professional stature in 1566 with the creation of the “enamel and glass beadmakers and buttonmakers guild” (*patenôtriers et boutonnières d’email et de verre*), with statutes that defined the skills and the products made and sold by these artisans. Other related artisans, described by Laurier Turgeon (2001, 2019), specialized in working other materials such as coral, jet, horn, and bone. The production of glass beads and buttons was not a new activity in Paris, as archives show enamellers and button makers there before 1566 with apparently the same skills, but the trade greatly expanded thereafter. At the end of the 1580s, elections for the four guild officers, which elected two master artisans at a time, attracted from 28 to 37 voters, giving us an idea of the size of the community of enamel *patenôtriers*.<sup>1</sup>

*Patenôtriers* were producers, but their statutes also allowed them to sell glass merchandise, notably bottles covered in wicker that had a good market. This activity

put them in competition with merchant glassworkers specializing in wickering bottles (*marchands verriers couvreurs de bouteille en osier*), a separate but related guild that obtained its statutes in 1583. Conflicts erupted during the second half of the 16th century as these guilds opposed each other in court over the right to sell glass products. Despite these frictions, the artisans formed a common “glass community.” *Patenôtriers* and merchant glassworkers were frequently friends, neighbors, and even relatives.

This article builds on Laurier Turgeon’s study of 16th-century beadmaking in Paris and the export of these objects to North America. It presents new information gathered for my doctoral dissertation, “Verre et verriers à Paris et en Île-de-France dans la seconde moitié du XVI<sup>e</sup> siècle (1547-1610): production, commerce, usages” (Vanriest 2020). It uses postmortem inventories available in print or manuscript form, and notarial contracts, as well as archaeological finds from the Cour Napoléon and the Cour Carré at the Louvre Museum, which complement the beads found nearby at the Jardins du Carrousel that Turgeon studied. These three sites have yielded the vast majority of post-medieval glass beads presently known in France (Dussubieux and Gratuze 2012).

## THE PRODUCTS OF THE *PATENÔTRIERS*

The guild statutes of 1566, promulgated by Charles IX, regulated the activity of the Paris enamel beadmakers and buttonmakers and listed the products they could make. Article 15 states that they could fabricate and sell in Paris “all kinds of beads, enamel buttons, gilded glass and enamel” and more generally, “all other kinds of works belonging to and depending on the said *métier* passing through fire and ovens, made in enamel, *canon*, crystal, and all other kinds.”<sup>2</sup> Article 16 further stipulates that “the masters of the said *métier* may string all kinds of belts, chokers, chains, necklaces, bracelets, beads, drawstrings, rosaries, and all other sorts of products resulting from the said *métier* of *patenostrier*.”<sup>3</sup>

Thus, the guild members were more than mere makers of beads, buttons, and rosaries. All lampworked glass objects – that is, fashioned at the flame of a lamp equipped with bellows, to melt rods of colored glass – were subject to their knowledge and skills.

In the vocabulary preserved in the archives, “enamel” includes opaque glass, while “glass” and “crystal” refer to transparent glass, colored or uncolored. A 16th-century book of Venetian glass recipes explains that the main difference between enamel and glass lies in the presence or absence of *lattimo*, i.e., white glass opacified with tin oxide (Moretti and Toninato 2001:32). Crystal (*cristallin*, from *verre cristallin*) made in the manner of Venetian *cristallo* was glass of superior quality. It was colored or uncolored, and made with soda flux that imparted the greatest purity and transparency to the vitreous material. Its quality was reflected in its price. In Jeanne Gourlin’s boutique, crystal tubes and rods sold at 10 *sous* a pound, whereas enamel tubes and rods were five times cheaper at only 2 *sous* a pound.<sup>4</sup>

We will begin by revisiting bead types, the *patenôtriers*’s main product that went into the assembly of jewelry, rosaries, and clothing adornments. Laurier Turgeon (2001) noted several in the postmortem inventories of *patenôtriers*. Tubular beads called *canons* were round or square in section, and *grains* were barleycorn beads. *Olives* had an oval form, while “blackberries” (*mûres*) were rounder in form and covered with small nodes. Among the beads we may consider “teardrops” (*larmes*) and “flames” (*flamines*, *flambes*) inventoried in the shops of Dominique Le Sencier and Benoît Vincent.<sup>5</sup> Examples were found at the Cour Napoléon (Figure 1). They were sewn onto clothing, as shown by an order sent by Marguerite de Valois to her mercer, Robert Foussart, in 1577.<sup>6</sup> She purchased “a thousand teardrops and flames of black enamel” to decorate a dress and, a few months later, “nine dozen bunches of enamel tubular beads (*canons*), flames, and teardrops also to put onto the said dress.”<sup>7</sup> Glass *paillettes* (small flat beads pierced in the middle) and *canetilles* were also embroidered onto clothing.<sup>8</sup> Turgeon (2001:70) suggests that the enamel *patenôtriers* organized their guild and prospered during the second half of the 16th century precisely because of the fashion of decorating clothing with glass ornaments.

Paradoxically, few *patenôtriers* sold their products in their own shops. We see great quantities, however, passing through the hands of mercers. These merchants purchased glass and enamel beads (sometimes gilded or silvered) from *patenôtriers*, assembled them in lots, or combined them with other materials for sale. At his death in 1552, the mercer Claude Bobie possessed a stock of glass merchandise including 25 “cords of glass beads highlighted with gilded



**Figure 1.** Teardrop pendants of dark blue glass from excavations at the Cour Carrée, Paris (Louvre Museum, CC 0085) (all photos by author).

wooden beads,” and “thirty-six cords of enamel *patenostres* of several kinds and makes alternating with profiled jet and gilded *grains* of several kinds.”<sup>9</sup> Beads were worn on strings or hooked onto belts, but only rosary beads were combined with a cross (Figures 2-3). Claude Bobie sold many “rosaries both in enamel and crystal of several kinds and colors, decorated with tassels and interspersed with gilded seed beads.”

Mercers also assembled glass beads and buttons onto *passementeries* (decorative trimming) and *boutonnieres* (decorative lapels). Alexandre Bardin’s boutique had “two packets of *boutonnieres* embroidered with tubular glass beads (*canon*)” and “fourteen lots of enamel *passementerie*, both lacy and plain, each lot containing four dozen.”<sup>10</sup> Bernard Palissy, a Renaissance ceramicist known for his animal moldings and his research on enamel, took a dim view of glass buttons: “men today are embarrassed to wear them and say they are for fops, since they are so cheap”<sup>11</sup> (Palissy 2010:481).

*Patenôtriers* created jewelry, rings, earrings (Figure 4), necklaces called *carcans* worn high on the neck like chokers, as well as belts and bracelets (Figure 5). Not least, they made imitation gemstones. We find false garnets of

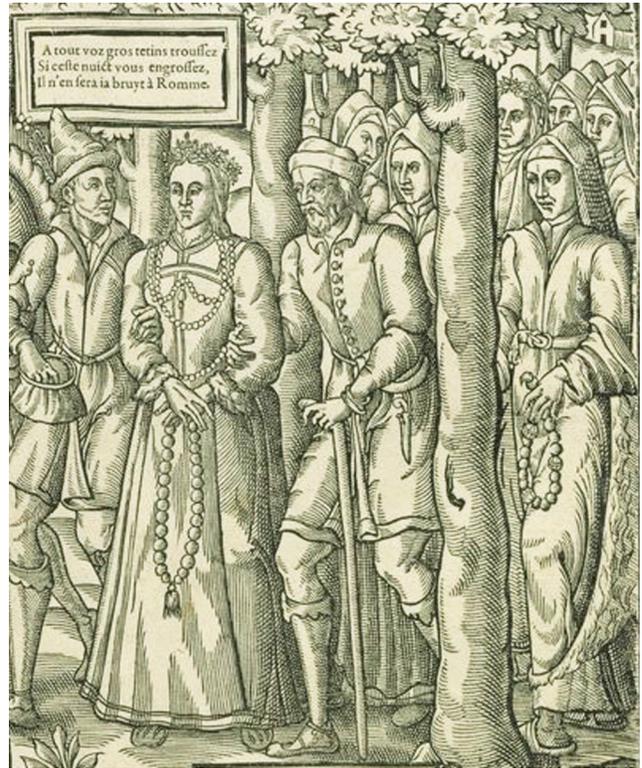


**Figure 2.** Devotional use of bead strands; detail of *Au Juste poids véritable balance* (1519) (courtesy Musée de Picardie, Amiens).

different colors in the boutiques of Dominique Le Sencier (green and yellow) and Jeanne Gourlin (green and red).<sup>12</sup> Benoît Vincent’s production included “two and a half hundreds of imitation enamel agates” and “enamel chains made to look like lapis lazuli,” as well as imitation pearls.<sup>13</sup> These products recall the Venetian art of imitating agate and chalcedony as early as the mid-15th century, when Angelo Barovier is said to have perfected a glass recipe called *calcedonio* (Moretti and Toninato 2001:72).

Although enamel and glass were relatively inexpensive, the aristocracy did not disdain jewelry made from these non-precious materials. Mary Stuart, queen of Scotland and widow of the French king François II (d. 1560), owned several chokers and belts that alternated glass beads and crystal *grains*. She offered James Stuart, regent of Scotland from 1567 to 1570, a belt of green glass garnished with gold and porcelain *grains* (Robertson 1863:87, 120). An inventory of items in the deceased king’s cabinet at Fontainebleau in January 1561 lists beads, including “three of blue glass,” “a [pair] of enamel *turkins*,” and “another ten of enameled crystal.”<sup>14</sup>

*Patenôtriers* expanded their skills at the end of the 16th century and their product range diversified accordingly. In



**Figure 3.** Detail of the wedding of Macée and Gombaut showing the use of strands of beads (*Histoire de Robin et Marion, Gombaut et Macée*, Jehan le Clerc, Paris, 1581-1599).

1599, Pierre Ponchet the younger, king’s counselor, placed an order with Louis Coufiat for a fountain “in the shape of a rock, made of several things including enamel, glass, shells, and others” to decorate the garden at his residence in Sèvres.<sup>15</sup> The *patenôtrier* Benoît Vincent created glass and enamel figurines, including “eight gross of little enamel cupids” and “eight gross of small images of Our Lady, also in enamel.”<sup>16</sup> Excavations in the Cour Napoléon unearthed fragments of glass figurines; their opaque material fits the term “enamel” in records of the 16th and 17th centuries (Figure 6).



**Figure 4.** Acorn-shaped earring excavated in Paris (Louvre Museum, CN 1390).



**Figure 5.** Bracelet or necklace plates from the Cour Napoléon, Paris (Louvre Museum, CN 2503).

Finally, *patenôtriers* had the right to sell all kinds of glass merchandise, a prerogative they shared with bottle wickerers. These sales brought a considerable income and the most affluent *patenôtriers* all sold glass goods. Despite their differences in wealth, makers and merchants had many business and family ties that bound them into a single community. They lived and worked in the same neighborhoods around the parish churches of Saint-Nicolas-des-Champs and Saint-Sauveur, and along Rue Saint-Denis (Vanriest 2020:59 ff).



**Figure 6.** The head of a glass figurine, Cour Napoléon (Louvre Museum, CN 9564).

### THE ORIGIN AND COMPOSITION OF ENAMEL

Most *patenôtriers* did not make the enamel they used to create beads and other objects. They purchased this raw material from glassworks in the form of rods, tubes, or ingots. One Parisian *patenôtrier* obtained his raw materials from at

least two suppliers and regions. In 1579, Claude Poissetz placed an order with Sébastien de Pelouze, a glassmaker at Plessis-d'Orin in Perche County, for 1500 pounds of enamel tubes or rods (*canon*) of five kinds: streaked white crystal, clear crystal, green, violet, and black.<sup>17</sup> Two years later, he contracted Bernard Perrot, a glassmaker in Altare in northern Italy, for 2000 pounds of enamel tubes or rods (*canon*): 500 pounds of blue, 500 pounds of white striped, 500 pounds of solid white, 500 of green.<sup>18</sup> Poissetz provided the Altare glassmaker with a sample of blue tubing with the desired size and color. His orders reveal the range of colors used to make beads in the last quarter of the 16th century.

Italian glassmakers installed in the Paris region likely supplied enamel to beadmakers. A glassworks founded in 1551 by Venetian artisans at Germain-en-Laye, near the royal residence, made enamel tubes and rods. In its final years, from 1572 to 1585, this operation had French owners and operators (Vanriest 2020, 2021). In the 1580s, two small workshops in the suburb of Saint-Germain-des-Prés, run by the Venetian Jean Marie (Zuan Maria) and the Italian Jacques Brambille, created enamels that they sold, in part, to goldsmiths.<sup>19</sup>

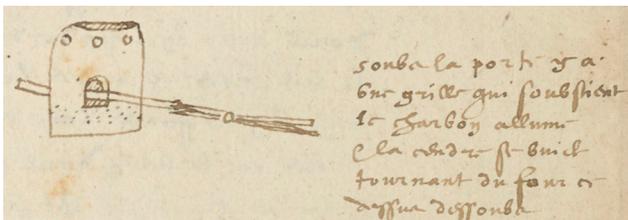
Our most extensive evidence is for a glassworks in Saint-Germain-des-Prés, operated by the Altarese glassmaker Jacques Sarode (Jacopo Saroldo) and his family from 1598 to 1608. Altare was the second glassmaking center in Italy, after Venice. Many Altarese glassworkers emigrated, principally to France, during the second half of the 16th century (Maitte 2009). The plant in Saint-Germain-des-Prés produced enamel ingots and its clientele included *patenôtriers*.<sup>20</sup> Sales mention black and blue enamel colored with *safre* (cobalt). We learn the composition of glass made in Saint-Germain-des-Prés from a large number of contracts for the purchase of raw materials. The plant's main product was soda glass, fluxed with barilla from Alicante in Spain, which arrived in Paris via Rouen and Saint-Malo (Girancourt 1886:71). The silica source was sand, stored in casks, although we do not know its precise origin. White sand often arrived in Paris by boat from Fontainebleau and by cart from Étampes, south of the city (Vanriest 2020).

Indirect evidence suggests that Venetian glass ingots might have been used to make some Parisian beads. In 1573, Jeanne Gourlin, the wealthy widow of merchant *patenôtrier* Bonaventure Morel, possessed "37 pounds of enamel marked with a siren." Glassworks stamped their mark on the ingots they made and sold, and it turns out that one Venetian glassworks specializing in fabricating enamels had a siren mark, "*alla Serena*" (Zechin 1987:186-187, 210). Its artisans created filigree glass and crystal *piastre*. We know that Jeanne Gourlin imported wares from Venice since her inventory lists 100,000 "glass imitation pearls from Venice" and 43,000 "*turquins façon de Venise*".

Some *patenôtriers*' workshops contained varying amounts of raw materials, suggesting the occasional on-site production of enamel. Jean Delamare had a stock of five tons of "Pieregot" rock, also called *pierre de Périgord*. This is manganese, added to glass in different amounts to produce colors from violet to black (Moretti and Toninato 2001:71). Delamare's workshop also stocked 22 pounds of violet tubes, 150 pounds of black tubes, and 2000 black and violet tubular beads, all made by him.<sup>21</sup> The workshop had a mortar and pestle for crushing enamel. Dominique Le Sencier stored enamel wasters and colorants in his workshop: "sixteen hundredweight of rejected works as well as cobalt and manganese."<sup>22</sup> In 1573, Jeanne Gourlin stocked large quantities of cobalt, including some in powder form.<sup>23</sup> The same year, Pierre Rogeret, a glass merchant, possessed 290 pounds of *piéregot* and 684 pounds of soda, for unknown purposes.<sup>24</sup> These are substantial amounts and Rogeret may have sold these raw materials to *patenôtriers* with whom he often did business, or to the Saint-Germain-en-Laye glassworks, the only furnace known to use soda flux at this time in the Paris region (Vanriest 2021).

Early references confirm that some *patenôtriers* made rods in their own workshops, without substantial glassmaking infrastructure. In 1552, Germain Gayant agreed to draw enamel tubes or rods (*canon*) of two different diameters for Bonaventure Morel.<sup>25</sup> In 1578, Jean-Baptiste de Calcano hired *patenôtrier* Nicolas Delahaye to build a furnace for making crystal and garnet tubes and rods, as well as violet, black, and white enamel.<sup>26</sup> This furnace must have been larger than the small clay ovens listed in *patenôtriers*' postmortem inventories (Figure 7). In 1572, Perrette Laboucle, widow of the merchant Zacharie Delahaye, hired a mason for several days to demolish and rebuild a "glassworks furnace to melt enamel."<sup>27</sup>

Archival data suggest that most beads were monochrome. The most frequent colors were black (violet or very dark blue), violet, blue, and *turquin*, i.e., a turquoise color obtained through the addition of copper oxide (Dussubieux and Gratuze 2012:34). Claude Poissetz also made beads or buttons with a striped decoration. Some buttons had complex decoration, as in a contract drawn up by Marin Gosse and Sébastien Amaus for buttons "à



**Figure 7.** Small clay oven listed in the postmortem inventory of a Paris *patenôtrier* (B.N.F., ms. fr. 640, fol. 6v).

*la moresque*" and "à la damasquine."<sup>28</sup> Such Moorish and inlaid decoration with stylized floral motifs drew on Islamic themes that also influenced other 16th-century decorative arts, such as bookbinding, ivory carving, and goldsmithing (Gruber 1993:277-299).

*Patenôtriers* were authorized to add gilding and silvering to the objects they created. We find a clue to the gilding material from a goldsmith named Georges Jollivet who died in 1575.<sup>29</sup> Jollivet supplied his products to enamel *patenôtriers* Jacques Cottard, Germain Duval, and Marin Tournant. A list of goods sold by merchant mercer Alexandre Bardin includes chains of purple enamel "covered with gilded azure" and glass chains covered with "imitation silver."<sup>30</sup>

## BEAD AND BUTTON EXPORTS

Certain merchant *patenôtriers*, notably Jeanne Gourlin, sold their wares to dealers from Auvergne living in Thiers, Mauriac, Anglars, Drugeac, and other localities.<sup>31</sup> In this region, Le Puy-en-Velay was a major pilgrimage center and a starting point on the Road to Santiago. It apparently had a thriving bead and rosary business. Patents held by Paris *patenôtriers* specify that their Auvergnat dealers traded into Spain, indicating that this country was an outlet for beads and rosaries made in Paris. As early as the 1560s, archives contain commercial contracts with Spain. In 1561, Marie Fleurette, the widow of Gilles Poissetz, sold enamel buttons made by her husband to Robert Petit, a merchant living in Spain.<sup>32</sup> Diego Ratina, a merchant from Vitoria in Biscay, bought goods from Jeanne Gourlin in 1571.<sup>33</sup> Biscay was an important entry point for French merchandise into Spain until the 1570s and 1580s, when the Seville trade developed (Casado Alonso 2000:37).

Glass merchandise found its way to Spain by way of merchant houses that assembled lots of various goods made in Paris and shipped them to Basque merchants, who forwarded them to Portugal or Spain. In December 1605, the hardware dealer Hugues Beroult sold twelve gross of glass buttons to Vincent Cabannes, a Lisbon merchant.<sup>34</sup> The buttons, packed with guns, locks, rosaries, scissors, combs, mirrors, and other goods, were to be sent on to Spain. A few days later, a group of engravers, pinmakers, spectacle makers, mercers, and *pasementiers* consigned their wares to a Béarn merchant, Bernard Allonce, also for shipment to Spain. The goods formed a heterogeneous lot: pins, brass thimbles, pig-bristle brushes, etc. One of the producers was Guillaume Sornet, a *patenôtrier* in Rue Saint-Denis who contributed "eighty gross of glass enamel buttons," while the mercer Pierre Le Gendre placed "two gross of glass earrings" in the shipment.<sup>35</sup>

Some of these goods went on to Spanish colonies, like the lot of Parisian glass beads shipped to New Spain in 1590 (Martins Torres 2019:120). Parisian beads reached North America in the hands of French explorers and merchants. Jean Ribault and René Laudonnière, who established forts on the coast of Florida, Georgia, and South Carolina in 1562-1565, offered knives, axes, combs, mirrors, and glass beads to the Indigenous people (DePratter and Smith 1987:52, 54). In his study of notarial archives in Bordeaux, La Rochelle, and Rouen, Laurier Turgeon noted a dozen trading ships between 1558 and 1574 heading for the “coast of Florida” – which in this case possibly meant the Gulf of Maine. Marvin T. Smith and Mary Elizabeth Good (1982: Figures 6-7) have classified glass beads exported to Central and South America during the early Spanish colonial period. Many of these beads belong to a square-sectioned type called Nueva Cadiz, traded by Spanish merchants since the early 16th century. Their origin remains uncertain, and archaeologists have reported no examples in Spain, despite its major glass centers in Catalonia and Andalusia (Martins Torres 2019:136). Nor can we be certain that Venetian beadmakers made Nueva Cadiz beads, despite their production of chevrons called *rosettes* in notarial acts.<sup>36</sup> French workshops may have fabricated Nueva Cadiz beads in the early 17th century, based on an example found on the site of a *patenôtrier* workshop in Rouen (Karklins and Bonneau 2019: Figure 7). Similarly, the *canon bleu* (blue tubes or beads) that are often seen in contracts, while imprecise, may refer to the Nueva Cadiz beads found in the Americas and at the Cour Napoléon (Figure 8). While archaeology has not confirmed the fabrication of square-sectioned or Nueva Cadiz beads in Paris, archival sources raise this possibility.

Relations between Paris and Rouen *patenôtriers* were very close, and the goods made in each city were not very different. In 1593, Claude Poissetz supplied Dominique Le Sencier with enamel tubes or rods (*canon*) he had



**Figure 8.** Square-sectioned blue bead with a light gray core and ground corners, Cour Napoléon.

obtained from Rouen.<sup>37</sup> The Paris guild defended the Rouen *patenôtrier* Mathieu Delamare in 1613 in a lawsuit brought by the crystal glassmaker, François de Garsonnet, who argued that he had a monopoly over the production of enamel tubes and rods in Rouen. In his defense, Delamare cited the statutes of the Rouen *patenôtriers*, promulgated in 1593 and copied from those of Paris. The Paris *patenôtriers* affirmed “that since all time they had seen their predecessors make enamel and glass tubes of different colors, or made into rods and ingots for their use” (Girancourt 1886:74-75). The court ruled that Delamare could continue to make enamels for use by Rouen *patenôtriers* (Loewen 2019).

Canada appears as a market for French and Parisian beads. In the first half of the 16th century, the explorer Jacques Cartier gave beads to the Indigenous people he met in Canada. Returning from an excursion up the Saguenay River in 1541-1542, one of his captains offered knives and glass *patenôtres* to the inhabitants of Stadacona (Cartier 1545:14v). In 1565, the La Rochelle ship *L'Aigle* left with a load of trade goods including white glass beads called *marguerites* and blue tubular beads (*canons*) to trade with the First Nations (Turgeon 2001:75). Basque and Breton commerce in the Saint Lawrence estuary burgeoned in the 1580s. The Basque merchant captain Johannes Hoyarsabal bought 50,000 blue *turquin* beads – made in Paris, as we have seen – specifically for trade in Canada in 1587 (Turgeon 2019:196). The Paris merchant Charles Chelot supplied glass beads to merchants involved in the Canada trade, including Guillaume Delamare of Rouen, Samuel Georges of La Rochelle, and Pierre Bore of Bordeaux<sup>38</sup> (Turgeon 2019:190). Turgeon (2001:76-77) noted similarities between beads from the Jardins du Carrousel and about 400 examples (which he attributed to the Basque trade) from two Indigenous funerary sites at Pictou, Nova Scotia. These data reveal Paris as a major European beadmaking center that could compete with Amsterdam or Venice. Many aspects, however, need further clarification, such as the network of bead imports from Venice to France, or the final destination of French beads shipped to Spain.

## CONCLUSION

Archival data show beadmaking in Paris within a larger industry of glass and enamel arts exercised by *patenôtriers* who prospered during the second half of the 16th century. In seeking a chronology of beadmaking in Paris, we see that records from the 1550s to about 1590 reveal several sources of tubes, rods, and ingots. We find Perche County west of Paris, small and medium-sized furnaces in Paris, Altare in northwest Italy, possibly Venice, and possibly a

soda glassworks known at Saint-Germain-en-Laye from 1551 to 1585. Glass merchants acquired soda, manganese, and cobalt from distant sources, and supplied these raw materials to local *patenôtriers*. Colors mentioned during this time include white, striped white, blue, violet, black, and green; we also find “garnets” in red, green, and yellow. Fancy “blackberries” had molded nodes. Other than striped white, we find no mentions of polychrome beads, although many references lack details. As for bead exports, Laurier Turgeon noted shipments via French ports to the Gulf of Maine and the Saint Lawrence estuary, and we find reference to French beads distributed from the Carolinas to Florida.

Beginning in the 1590s, the data highlight a diversity of products including beads to decorate clothing and for jewelry. From 1598 to 1608, an Altaresse glassworks in Saint-Germain-des-Prés produced soda glass and enamel. After 1590, records rarely note simple colors as in earlier decades, but mention imitation agates, pearls, lapis lazuli, and chalcedony made using elaborate recipes. At the same time, soda glassmaking and beadmaking appear in Rouen as outgrowths of the Paris industry. Paris *patenôtriers* found new outlets for their products as the pilgrimage market for rosaries blossomed. Large volumes of beads went to Iberia by way of dealers based in Auvergne, Béarn, and Biscay, or were shipped directly to Lisbon and Seville. While we cannot tell to what extent these archival trends reflect real changes, they appear to show an evolution in supply chains, products, and markets. We need more research to understand the continued evolution of Parisian *patenôtriers* in the 17th century.

## ACKNOWLEDGMENTS

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## ENDNOTES

1. Registres d'élection du métier, Archives nationales de France (A.N. hereafter), Y 9306 A and B.
2. In 16th-century Parisian records, *canon* can denote rods, tubes, or tubular beads, depending on the context. *Canon* usually appears in singular form, as in a stock of rods, tubes, etc. Often, we can translate it as tubes. Where the context seems to indicate that *canon* signifies rods or tubular beads, we include *canon* in parentheses after our translation.

A.N., Y/6, 13 avril 1566: “...toutes sortes de patenostres, boutons d'esmail, dorreures sur vouaire et esmail;” “... toutes autres sortes d'ouvrages appartenans et deppendans

*audit métier passant par le feu et le fourneau, faites tant d'esmail, canon, cristalin, que toutes autres sortes.”*

3. “...pourront les maistres dudit mestier enfiller toutes sortes de saintures, carcans, chaisnes, colliers, braceletz, patenostres, cordelieres, chappeletz et toutes autres sortes d'ouvrages dependant dudict mestier de patenostrier.”
4. A.N., min. cent., IX/154, 20 octobre 1573.
5. A.N., min. cent., I/52, 4 septembre 1591; I/41, 3 May 1603.
6. Marguerite de Valois, daughter of King Henry II and Catherine de Médicis, became the Queen of Navarre with her marriage to the future King Henry IV in 1572.
7. A.N., KK/162, fol. 465 and 623 verso: “...ung millier de larmes et flambes d'esmail noir;” “...neuf douzaines de bouquets de canons, flambes et larmes d'esmail aussi pour mettre sur ladictte robbe.” The plural *canons* appears to mean a bunch of tubular beads strung for sale.
8. A.N., min. cent., XCI/130, 7 avril 1584; I/41, 3 May 1603.
9. A.N., min. cent., LIV/215, 6 octobre 1552: “...cordes de canon de verre marquées de bois doré... trente six cordes de patenostres d'esmail de plusieurs sortes et fassons marquées de getz profillez et grains dorés de plusieurs sortes;” “... chappeletz tant d'esmail que cristalin de plusieurs sortes et couleurs garnis de houppes et marques et grains dorés pourfillez.”
10. A.N., min. cent., XXIV/123, 16 février 1606: “... deux paquetz de boutonnières en broderie de canon de verre;” “quatorze pieces de passemens d'esmail tant dentelle que plain contenant chacune piece quatre douzaines.”
11. “...qu'aujourd'huy les hommes ont honte d'en porter et disent que ce n'est que pour les belistres, parce qu'ils sont à trop bon marché.”
12. A.N., min. cent., I/52, 4 septembre 1591; IX/154, 20 October 1573: “...deux cens et demy d'agattes fausses d'email;” “chesnes d'email fasson de lapis.”
13. A.N., min. cent., I/49, 3 mai 1603.
14. B.N.F., ms. fr. 4732, n° 808: “...troys de verre bleu;” “...une [paire] d'esmail turquin;” “...ung autre [dizain] de cristalin esmaillé.”
15. A.N., min. cent., III/462bis, 17 septembre 1599: “...en forme de rocher et ce, de plusieurs sortes, tant d'esmail, verre, coquilles que aultres choses.”

16. A.N., min. cent., I/41, 3 mai 1603: "...*huict grosses de petitz cupido d'email;*" "...*huict grosses de petites ymaiges de notre dame aussy d'email.*"
17. A.N., min. cent., IX/96, 22 septembre 1579. Plessis-d'Orin is located 100 km southwest of Paris, in the glassmaking region of Alençon duchy.
18. A.N., min. cent. I/6, 1 avril 1581.
19. A.N., min. cent., LIV/205, 1 août 1581, and LIV/225, 19 janvier 1583.
20. A.N., min. cent., XLIX/234, 7 juillet 1598, fol. 362.
21. A.N., min. cent., IX/155, 22 novembre 1573.
22. A.N., min. cent., I/52, 4 septembre 1591: "...*seize cens livres pesant, tant œuvres en dechet que saffre et pierregot.*"
23. A.N., min. cent., IX/154, 20 octobre 1573.
24. A.N., min. cent., XCI/124, 11 mars 1573.
25. A.N., min. cent., XCI/29, 11 août 1552.
26. A.N., min. cent., CXXII/1472, 27 septembre 1578.
27. A.N., min. cent., IX/75, 10 avril 1572.
28. A.N., min. cent., CXXII/1355, 1 avril 1565.
29. A.N., min. cent., XCI/126, 16 avril 1575.
30. A.N., min. cent., XXIV/143, 16 février 1606.
31. A.N., min. cent., IX/154, 20 octobre 1573.
32. A.N., min. cent., IX/141, 17 janvier 1562 [n.s.].
33. A.N., min. cent., IX/154, 20 octobre 1573.
34. A.N., min. cent., XV/15, 19 décembre 1605.
35. A.N., min. cent., XV/15, 31 décembre 1605.
36. In 1601, the Flemish merchant Carlo Helman shipped 1415 pounds of *rosettes* from Venice to Cadiz, among other types of glass beads (Brulez 1965:400, no. 1211).
37. A.N., min. cent., I/21, 28 août 1593.
38. A.N., min. cent., X/13, 21 juin 1610.

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