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Indo-Pacific glass beads from the Indian subcontinent in Early Merovingian graves (5th–6th century AD)

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ABSTRACT

Peter Francis Jr. has devoted much of his research to Indo-Pacific glass beads. These productions are among the emblematic objects made by South Asian glass workshops for nearly two millennia. Despite their wide distribution, both in Asia and Africa and in the Middle East, these tiny beads have never been reported in Western Europe. They have recently been found in large numbers on funerary sites in Merovingian Gaul, dated to between the middle of the 5th and the middle of the 6th century AD (mainly in the form of necklaces or clothing ornaments). Their presence stimulates reflection on the extensive trade between the Merovingian and the Indian worlds. This contribution discusses the technological, typological and chemical characteristics of these beads, as well as their use.

1. Introduction

The term "Merovingian" designates a dynasty of kings, which reigned from the 5th to the middle of the 8th century AD on a territory corresponding more or less to Roman Gaul, located in the Western Empire.[1] In its greatest extension, this kingdom covered the current European territories of France, Belgium, Luxembourg, the southern part of the Netherlands, south-west Germany as well as Switzerland. The first Merovingian king was Clovis I, who reached power around 482 AD. The last is Childeric III, who was superseded in 751 by Pippin the Short, the founder of the Carolingian dynasty.

During the Merovingian period, people were buried with more or less abundant and varied grave goods, such as tableware, utility objects, weapons for men and jewellery for women. Among them, glass beads are one of the most original and emblematic artisanal products, found in the hundreds and thousands on funerary sites in Early Medieval Gaul. Never before had they been as popular. This material is interesting in many respects, and the diversity of shapes, colours and decoration indicate the particular taste of the Merovingians for polychromy.

In spite of their apparent profusion in graves, few production sites of glass beads have so far been found within the boundaries of the territory here considered. Hence, there is a distinct gap in our understanding of the technology and the mechanisms of supply of this type of material.

Our recent work allowed the identification of a large group of small drawn beads within 5th to 6th century funerary sites. These small beads appear to be morphologically and typologically identical to Indo-Pacific beads produced on the Indian Subcontinent (Fig. 1). Chemical analyses have since confirmed their South Asian origin[2] (Pion and Gratuze, forthcoming; Pion, 2014).

It has been firmly established that Indo-Pacific glass beads were intensively and widely traded throughout Asia (see below), thanks to the pioneering ethno-archaeological work of Peter Francis Jr. in Asia (mainly Francis, 2002). However, up to now they had never been identified in Western Europe during the Early Middle Ages. Their presence in Merovingian graves thus stimulates reflection on the extensive trade between the Merovingian and the Indian worlds.

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[1] About the Merovingian period, see mainly Effros and Moreira (forthcoming).

[2] This study is the fruit of a collaboration between the Free University of Brussels and the Ernest-Babelon centre (IRAMAT, UMR 5060, CNRS-University of Orléans), the principal objective of which was the analysis and study of the elementary compositions of the glass beads. This research project would not have been possible without the contribution of numerous researchers, archaeologists and excavation directors who very kindly furnished information or archaeological material.

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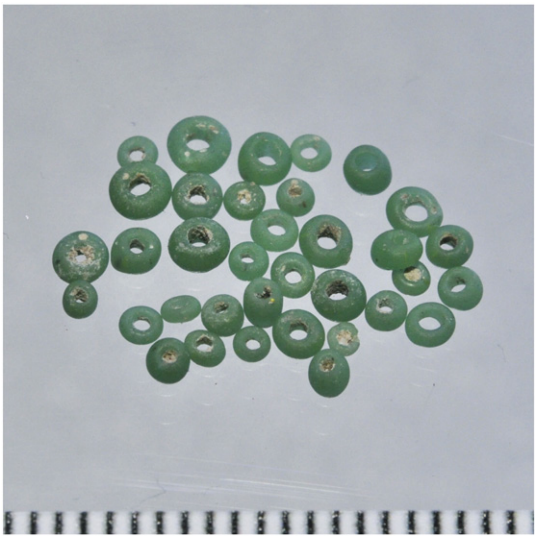

Fig. 1. Glass beads of "Indo-Pacific" type from India or Sri Lanka. Blanzac-Porcheresse "le Molle" (Charente), grave 931.
Photo C. Pion © Hadès.

Fig. 2. Drawing of a glass tube according to the lada method (Gudo, Indonesia). Photo J.W. Lankton.

2. Technology of drawn glass beads

Unlike wound beads, fabricated by wrapping a mass or gather of molten glass around a rotating metal rod (called a mandrel),[3] drawn beads are obtained by segmentation of thin glass tubes. The fabrication of these can be carried out in several ways that are difficult to identify from the finished object.[4] One method consists of gathering a mass of molten glass on the end of a hollow metal rod (a pontil or blowpipe) and to imprison an air bubble within it, either by blowing or by inserting a metal rod. The method of introducing a metal rod is characteristic of beads of the "Indo-Pacific" type. The artisans in the village of Papanaidupet in Southeastern India (Madras region), for example, practice this technique to this day (Fig. 3) (see e.g. Stern, 1987; Francis, 1990, 2002, 2004; Kanungo, 2004).

Using a tool, so-called lada, the glass is drawn into a tube of the desired diameter and size (Fig. 2). These glass tubes are then cut up into beads. Again, the method of segmentation can vary. Judging from the shape of the edges of the beads found in Merovingian Gaul there are two principal methods: hot and cold cutting.

Cold-cutting is specific to beads of the "Indo-Pacific" type. On the current Indian subcontinent, the craftsman places a series of tubes (about a dozen) side by side on the cutting edge of a blade fixed on the ground and then cuts these tubes into small cylindrical segments by means of a second blade. This method enables a rapid and quasi-industrial production of beads with edges that display a more or less regular clean cut. These products can be used or commercialised as is. However, the majority of beads show a more or less pronounced degree of roundness as a result from heat treatment (Fig. 4). At Papanaidupet, this treatment is carried out by placing thousands of beads in a ceramic container, mixed with mud, dung and ashes so that they do not stick to each other and the holes do not close due to the action of the heat. The ceramic container is then placed on a fire or in an oven for several minutes and the content mixed regularly. Once cooled, the products are cleaned and sometimes polished in a mortar. Re-firing gives the beads a more rounded shape, makes them shinier, and causes the striations on the surface to partly disappear. It sometimes happens that several beads become soldered in small clusters, as seen in the discoveries made on the site of Arikamedu in Southeastern India (Fig. 5). In this case they are removed from the production and rejected.

The second method, the most common among the Merovingian assemblages, consists of reheating a section of the tube and segmenting it by squeezing the glass tube at regular intervals. This transformed tube is subsequently cut at the squeezed points to produce simple or multiple segments. The edges of the beads present an umbilical shape (Fig. 8), rarely rounded unless they have received a cold finishing (polishing) or a heat treatment (re-firing). In practice, a fine metal rod is pushed into the tube to enable its manipulation and avoid deformation or closing of the hole once softened, such an iron rod within a tube of drawn glass was discovered on the Egyptian site of Kôm el-Dikka (5th–6th century AD) at Alexandria (Arveiller-Dulong and Nenna, 2011). The segmentation points can be made individually with a blunt instrument such as a blade, or collectively by rolling the tube on a mould with a crenellated surface (Fig. 6). The second procedure is known to commence in the Roman period and allows the uniform segmentation of the tubes at regular intervals with one action. The shape of the beads depends upon that of the mould. The excavations of Kom el-Dikka, where the production of drawn beads is dated to between the end of the 5th and the 6th centuries AD, have yielded a series of stone moulds associated with drawn tubes of which some have not yet been segmented (Rodziewicz, 1984). The profiles of the Kom el-Dikka stone moulds are comparable to those of beads discovered in Gaul in this period (Fig. 7). This segmentation technique likewise enables a large-scale production of beads with relatively standardised shapes. The shapes of the beads were quite varied in the Merovingian period: cylinders with rounded edges and "perfect" cylinders (perfectly straight edges) are among the most frequent; the tubular, fusiform, baluster and ninepin shapes are much rarer (Fig. 8).

The production of drawn glass requires substantial technological skills and expertise. However, no trace of their fabrication or even of the use of drawn tubes has been found in Merovingian Gaul, neither in bead-making nor in glassmaking workshops. Beads with edges indicating the segmentation technique and covered by metallic leaf (silver or gold) are generally considered to be Levantine imports (e.g. Callmer, 1977; Greiff and Nallbani, 2008; Francis, 2004; Spear, 2001), as are probably most of the other beads with such edges. The latter were a key product of the Near East (Egypt and the Syro-Palestinian coasts), where they have been found in large quantities

[3] On the subject of the technique of wound glass, we refer the reader to the technological descriptions proposed in Spear, 2001, 45–51; Sode, 2004, 89–94; Siegmann, 2006, 928–932, Pion, 2013, 2014, 53–72, where bibliographies are furnished. In addition, contemporary manuals intended for training in wound bead fabrication are particularly precious for the technological study of the archaeological material. Reference is made in particular to the richly illustrated publication by Kimberley Adams, *The complete book of glass beadmaking* (Adams, 2005).

[4] Concerning the technique of drawn beads, we refer mainly to Francis, 1990; *Id.* 2002, 17–50 and 90–92; *Id.* 2004, 450–460; Spear, 2001, 46-48 and 130-135 and Siegmann, 2006, 932–937, but also to the ethnoarchaeological observations and data kindly provided by James W. Lankton (University College London) from his research on Asian bead craft. More specifically on the Merovingian beads, see: Pion, 2014, 36–52, Pion and Gratuze (forthcoming).