Mineralogy of the Louvres Merovingian garnet cloisonné jewelry: Origins of the gems of the first kings of France

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ABSTRACT

Proton-particle induced X-ray emission (p-PIXE) analyses have been performed on cloisonné jewelry from a necropolis excavated in 1987 at Louvres (North Paris) that dates from the Early Middle Ages (fifth through sixth centuries). Stylistic analysis of the jewelry indicates that they may have belonged to members of the close entourage of Childéric I or Clovis I, the Frankish kings that founded the French monarchy. The analyses suggest that all red cloisonnés of the treasure are garnets of three types: rhodolite (type I), pyrope (type II), and Cr-rich pyrope (type III). These garnets have moderate-to-high Mg contents (40 to 70 mol% pyrope). Surprisingly, no common almandine garnets were found. Type III garnets are likely to have originated in the Podsedice area (Bohemia, Czech Republic). Types I and II garnets probably originated from granulitic-type terrains, which are relatively rare in the ancient world. India-Sri-Lanka, Central Europe, and Scandinavia are the most likely origins for these garnets but it is not possible here to constrain these origins more accurately. These results emphasize the variety of possible sources for raw material used in Merovingian cloisonnés. The most aristocratic sepultures contain the geologically rarest garnets (i.e., the garnets richest in pyrope end-member). This correlation may suggest a relatively modern knowledge by the Franks in their evaluation of gem garnets (i.e., the geologically rarest gems are the most precious). This concept is more consistent with the Arab gemological writings of the fifth through ninth centuries than with those of the Roman lapidaries of the first through seventh centuries.

INTRODUCTION

Jewelry of the Early Middle Ages (approximately fourth through ninth centuries) is characterized by the emergence of a unique fashion that spread to all Europe: the cloisonné art. Stylistically, this jewelry consists of thin sections of red and translucent materials (usually judged by eye to be garnet) that are fixed to the base of the jewel using a putty or gypsum-based cement (Arrhenius 1985). Every cell is separated from the others by a metallic wall (a cloison, the wall of a cell), which gave its name to this style. Precious metals (usually gold, silver, and bronze) form the structure of the jewel (Fig. 1). Rarely, some cloisonnés are found inlaid with green glass (another luxury item at that time), ivory, chalcedony, or polished rocks such as marble. To enhance the brightness of the garnet cloisonné, a thin metallic and patterned foil (called paillon) is inserted between the cement and the garnet. This jewelry has been discovered in many sepultures together with weapons (axes and scaramasaxes, a kind of large sword of that time), glass-based items (e.g., bowls and bottles), and many other artifacts as well as human remains.

Cloisonnés have been discovered in nearly all of Europe and were produced by so-called Barbarians, i.e., various tribes coming from Scandinavia or Asia that invaded central and western Europe. They precipitated the decline of the Roman Empire. Among others, these included the Huns, Awaren, and Goths in Germany; Franks and Burgonds in France; Ostrogoths in Italy, Wisigoths in Spain, as well as the Vandals who finally established themselves in Tunisia. Inlays were never more appreciated than during the Early Middle Ages. Indeed, the cloisonné style characterizes sepultures of major figures of that period, including kings and queens, and more particularly the first monarchs of France: Childéric I (deceased in 481 or 482: Kazanski and Perin 1988) or Aregonde (buried between 565 and 570: Fleury and France-Lanord 1992), one of the wives of King Clothaire I.

Identification of the geological (and geographic) origins of raw gem materials helps historians to better un-