

**Isotopic composition of lead white pigments on qeros: Implications for the chronology and production of Andean ritual drinking vessels during the colonial era**

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Additional File 1: Use of white pigments on *barniz de Pasto* objects

## Use of white pigments on *barniz de Pasto* objects

Lead white and mopa mopa resin were also used in a related colonial art form known as *barniz de Pasto*, produced in Pasto, Columbia and Quito, Ecuador for the Spanish market. Often referred to as a lacquer technique, local artisans called *barnizadores* fabricated a variety of elaborately decorated secular and religious wooden objects such as writing cabinets, portable writing desks, chests, coffers, picture frames, trays, bowls, plates, and cups [1–5]. Unlike qeros, designs were based on European and Asian sources with some local influences [3–5]. This tradition began under Spanish influence very early in the colonial period, but historical records indicate that the resin was being utilized for various purposes when the Spaniards arrived, and there is a possibility that the resin’s unusual properties had been discovered centuries earlier. A thriving local craft industry called *barniz de Pasto* continues in Pasto [2,6–8]. The lustrous lacquer-like nature of these objects elicited the interest of visiting Europeans, including Alexander von Humboldt in 1801 [9], who described the resin technique and the colorants, mostly dyes from plant sources: dilute indigo for blue; pure indigo for black; annatto for red; powdered *Escobedia scabrifolia*, a saffron-like root, over silver leaf for gold; and “lead oxide” for white. Recently several investigators [10,11] have identified a previously undocumented and unusual mercury-based white colorant called calomel or mercury white ( $\text{Hg}_2\text{Cl}_2$ ) on *barniz de Pasto* objects. Calomel has also recently been identified on a 15th-century English illuminated manuscript and a late 16th-century English portrait miniature [12]. Notably, extensive studies of qero pigments indicate that calomel was not used for qero decoration [13,14].

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