

RESEARCH UPDATE

Archaeometallurgy in Colombia: Recent Developments

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Introduction

The technical quality and aesthetic beauty of the pre-Columbian metalwork of Central and South America have long fascinated scholars and the public alike. However, the existing picture of pre-Columbian metallurgy remains rather generalised and, as such, archaeologically simplistic. With some notable exceptions, much previous work has downplayed the role of humbler metallurgical traditions, the importance of archaeological contexts, and the changes deriving from cultural interaction among indigenous communities, and between these and early European colonists. The *UCL Archaeometallurgy in the Americas Research Network* aims to enhance and diversify our understanding of the production, use and value of metals in America before and after Christopher Columbus, as a proxy for the underlying diversity of cultural and historical contingencies. One of our main strategies is the use of a bottom-up approach to develop a coherent set of high-resolution, science-assisted contextual studies that may allow for temporal and cultural comparisons, from which we can approach

the development of ideas, their transmission and adaptation, as materialised in goldwork.

Much of our work in recent years has zoomed into Colombia. This country alone encompasses a great deal of diversity in ecological environments, resources, ethnicities and cultural traditions, materialised in tens of thousands of metal objects recovered in a relatively small region, with chronologies spanning over two thousand years to the present day. As such, it is an excellent ground for the characterisation of different technical styles at the subregional level, as opposed to the traditional broader comparisons between larger regions. Building primarily on a collaboration agreement signed between the UCL Institute of Archaeology and the Gold Museum in Bogotá, we are trying to combine UCL's expertise in archaeometallurgy with the Museum staff's intimate knowledge of the tens of thousands of artefacts in their stores and the myriad of cultures who created, used and deposited them. This report outlines three lines of recent and current work and publication.

Muisca Goldwork, Wax and Connoisseurship

A significant strand of our research so far has focused on the study of Muisca votive offerings. The Muisca were a Chibcha-speaking community organised in chiefdoms that inhabited the Eastern Highlands of Colombia (ca. AD 800-1600). One of their visible archaeological traces is the hundreds of

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tunjos or figurines they left behind, typically in the form of votive offerings deposited in special locations of the landscape (Lleras Pérez 1999). Through stylistic, microscopic and chemical analyses of many of these, we have characterised the Muisca votive goldsmithing tradition as one that peculiarly devoted more attention to the modelling of wax models for lost-wax casting than to the actual casting and finishing of the metal items themselves (Uribe-Villegas 2012; Uribe-Villegas and Martín-Torres 2012). Objects often appear unfinished, with remnants of casting feeders and dirt from the moulds on their surfaces (Fig. 1). As such, Muisca votive metalwork seems to defy the generalised conception of goldwork as refined and ostentatious, and instead it points to the ritual importance of wax, corroborated ethnographically (Falchetti 2003, Martín-Torres and Uribe-Villegas 2015a). These ideas have led us to reconsider the famous Muisca raft of El Dorado (gold votive model of a raft) from a perspective that explicitly tries to avoid Eurocentric biases (Uribe-Villegas, Martín-Torres and Quintero in press).

In the course of this project it also became apparent to us that, like art connoisseurs but using science rather than subjective judgement, we could potentially identify the work of individual artisans based on their idiosyncratic technical gestures and use of materials. This has given us not just a way of recognising the agency of anonymous prehistoric individuals, but also an entry point to address issues such as the organisation of workshops, knowledge transmission, skill, and the tension between individual and social agency. We plan to continue work in this direction, and have encouraged others to explore the potential of 'science-based archaeological connoisseurship' (Martín-Torres and Uribe-Villegas 2015b). Even before it had been published in academic journals, this research formed the basis of a very successful exhibition at the Gold Museum (Uribe-Villegas et al. 2013); our findings have also led to a redesign of some

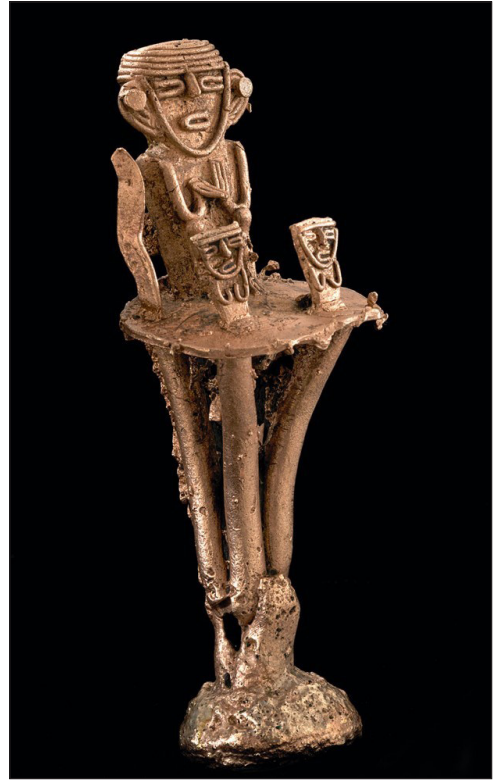


Figure 1: Muisca votive object cast in a gold-copper alloy (O15117). The object would have been cast upside down. The very prominent cast sprue cup and feeders have not been removed from the finished object. Casting flashes, and traces of clay and charcoal from the mould, are still visible in some corners and crevices. Overall height is 12.8 cm (Photo Clark M. Rodríguez, Museo del Oro, Banco de la República).

of the permanent displays at the Museum, including that of the popular Muisca raft.

Nahuange Goldwork, Changing Colours and Object Biographies

The region of Sierra de Nevada de Santa Marta is well known for its steep slopes descending into the Caribbean sea, as well as for the thousands of gold objects left behind by the Tairona (Bray 2003; Giraldo 2010). These are among the most technically accomplished examples of metal casting and surface treatment

in South America, and as such they have attracted considerable scholarly and public attention. Fewer people, however, have considered the earlier roots of this technical tradition. Building on a long-term interest of Juanita Sáenz Samper (2015), we are developing a detailed characterisation of Nahuange or Early Period material culture (ca. AD 100–1000), with particular attention to metalwork.

A salient feature emerging from our analytical work is the way in which the Nahuange treated the surface of the metal (Sáenz-Samper and Martín-Torres 2017; in press). Like many other artefacts of Andean metalwork, Nahuange objects underwent a process known as depletion gilding, whereby a copper-rich gold alloy was oxidised and pickled to remove copper from the surface and hence create a more golden appearance. However, examination of many of these objects shows that, at some point in their lives, their outer surfaces were painstakingly polished off to remove the golden layer and show the pink colour of the underlying copper alloy (**Fig. 2**). This realisation highlights the often overlooked significance of copper

in so-called goldwork, and the fact that the value of metalwork cannot be judged by its gold content or sheen. Ethnographic accounts report the connection between red hues and the female and, interestingly, Nahuange human representations and iconography are dominated by female motifs. Whatever the explanation for this phenomenon, the gilding and un-gilding of Nahuange metalwork reminds us of the need to consider the life-histories of these objects, and of the probability that their materiality and value may well have changed over time. We are currently developing this exploration into a broader set of artefacts, casting the net more widely both diachronically and geographically. We are hoping to explore how changes in the political history of the region are reflected in changing technologies and uses of goldwork.

Colonial Encounters and Metalwork in Mompox

Considering the very large number of metal artefacts recovered in Colombia, it is quite remarkable that very few production remains have been reported. Recent excavations and

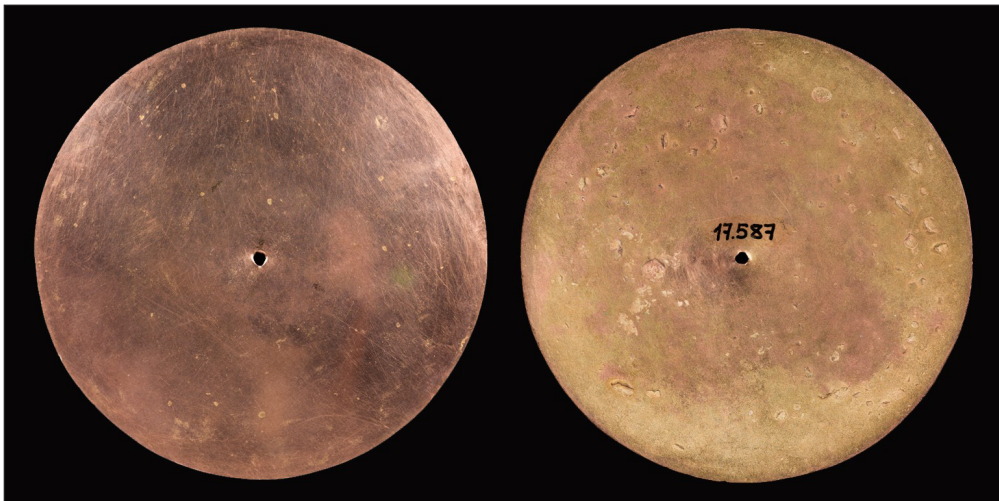


Figure 2: Front (left) and back of a Nahuange pectoral (O17587). The front has been polished intensively to remove the golden layer and expose the colour of the orange copper beneath. The back is unpolished and remains golden by depletion. Diameter is 10 cm (Photo Clark M. Rodríguez, Museo del Oro, Banco de la República).

related research led by Jimena Lobo Guerrero (2016) in Mompox have provided an opportunity not only to study such material, but also to begin to explore continuities and changes in goldsmithing traditions after the European arrival.

Located in a region known for its richness in alluvial gold and a long-lived pre-Columbian goldsmithing tradition, Santa Cruz de Mompox also became a key enclave for Europeans from the early decades of the colonial period: it was an obligatory stopping port for all the gold that was extracted from south of the territory of New Granada, as it had to be taxed or *quintado* in Mompox. In this town, indigenous groups and Spaniards experienced encounters of individuals, metallurgical technologies and knowledge – and all of these appear represented in the small sample of crucibles we analysed (Martín-Torres et al. in press). In our study we found evidence for the local manufacture of crucibles as well as for the melting of unrefined gold dust, tumbaga (gold-copper-silver alloys) and silver. These metallurgical practices illustrate some likely illegal activities, continuities with pre-Columbian traditions in the use of tumbagas, and the Spanish-led introduction of silver in northern Colombia.

Given the importance of metals and metalworking for all the communities involved, metallurgical remains can be informative of the wider social and economic negotiations that engaged indigenous peoples, mestizos and Spaniards in the configuration of the colonial reality, and we are hoping to see more work in this direction.

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Competing Interests

The authors have no competing interests to declare.

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