

## DATA PAPER

# Typology, technology, composition and context of Muisca metalwork (Colombia, AD 600-1800): a database

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This database presents a compilation of previously published and unpublished data on the chemical composition of over 200 Pre-Columbian gold and gold-alloy artefacts recovered in the archaeological region inhabited by the Muisca of Colombia (AD 600-1800), in addition to 35 analyses of geological gold from Colombia. The chemical data have been supplemented with information such as museum reference codes, dimensions, typologies and dates where available, as well as aspects of the artefacts' manufacture documented by macroscopic observation and metallographic studies. Where possible, the database also includes information relative to the specific location where the artefacts were found and their contextual associations, for example in groups of artefacts recovered as a single offering. The data allow an overview of typological, chemical, and technical aspects of this goldworking tradition but also detailed analyses on a contextual or local basis, as well as comparisons with other regions.

**Keywords:** archaeometallurgy, chemical analysis, Colombia, gold, Muisca, tumbaga, tunjo

### Funding statement

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### Context

#### Spatial Coverage

Eastern highlands of Colombia, integrating approximately the present-day departments of Cundinamarca and Boyacá. Boundaries given below are approximate.

- Northern boundary: 5.3177
- Southern boundary: 3.3350
- Eastern boundary: -72.7899
- Western boundary: -72.6470

#### Temporal Coverage

AD 600 – AD 1800

### Methods

#### Steps

Most of the data was collected from the archives of the Museo del Oro, Bogotá, Colombia, which holds the vast majority of the artefacts included in the dataset. These data include a large mass of unpublished chemical and metallographic analyses carried out by the Departamento Técnico Industrial of the Banco de la República. This dataset was completed with a literature review seeking published data on analyses of Muisca goldwork both in the

Museo del Oro and in other collections such as those at the Museum of Fine Arts, Boston, or the British Museum, London. Typological and other relevant information was added by M.A. Uribe Villegas when this was not given in the original sources.

All the data from various sources were compiled in a single spreadsheet with the same fields using Microsoft Excel, but preserving information about the primary data source such as the analytical method employed or the bibliographic reference.

#### Sampling Strategy

The dataset aimed to be as comprehensive as possible, including all goldwork artefacts that could be ascribed to the Muisca, based on stylistic grounds and/or their findspot. The only prerequisite was that some kind of chemical data was available.

#### Quality Control

A number of published analyses were excluded from this database because the artefacts' authenticity, or their attribution to the Muisca, could not be verified beyond reasonable doubt. Specific criteria for inclusion/exclusion and details of references excluded are detailed in<sup>1</sup>.

## Constraints

The chemical data include analyses carried out employing a variety of instrumental methods with different accuracy and precision ranges, sensitivity or detection limits.

We have separated qualitative or semi-quantitative analyses (by fire assay, touchstone or density) from fully quantitative analyses (by XRF, EPMA or AAS). However, no attempt has been made at calibrating the quantitative data among different laboratories. Some caution should therefore be exercised if pooling all of these data for quantitative processing, as well as for internal or external comparisons.

A potential additional constraint relates to the fact that the data include analyses of both artefacts' surfaces and cores (as noted in the database where possible), which might create some biases (for example, if surfaces were gilded). However, surface treatments are not common in Muisca goldwork, therefore this constraint has a relatively low incidence in the dataset.

## Dataset Description

### Object Name

Muisca database. Comprising: Disclaimer, Muisca data, Offerings, Native Au, C14 dates, and References

### Data Type

Combination of primary and secondary data in a standardised format

### Format Names and Versions

The whole database is available as a single Microsoft Excel 2007 file (.xlsx): named Muisca\_database.xlsx

This file includes six tabs, namely: Disclaimer, Muisca data, Offerings, Native Au, C14 dates, and References. These tabs are also provided as individual .txt or .csv files to facilitate open access.

### Creation Dates

2007-2010, with minor updates in 2012

### Dataset Creators, Roles and Affiliations

Maía Alicia Uribe Villegas was the main compiler of data and creator of the database, in consultation with Marcos Martínón-Torres.

The data was collected from a variety of sources. The main data creator was the Departamento Técnico Industrial, Banco de La República, Bogotá, Colombia. Other data creators include the following (see References for the sources from which the data were compiled)

- Bray, W.<sup>2</sup>
- Cárdenas, F.<sup>3</sup>
- Falchetti, A. M.<sup>4</sup>
- La Niece, S.<sup>5</sup>
- Lleras-Pérez, R.<sup>6,7</sup>
- Londoño, E.<sup>8</sup>
- McBride, J.<sup>9</sup>
- Meeks, N.<sup>10</sup>
- Newman, R., Hill, C. and Wang, D.<sup>11</sup>
- Plazas, C.<sup>12,13</sup>
- Rivet, P. and Arsandaux, H.<sup>14</sup>

- Scott, D. A.<sup>15</sup>
- Therrien, M. and Enciso, B.<sup>16</sup>
- Vogel, J. C. and Lerman, J. C.<sup>17</sup>

## Repository Location

UCL Discovery: <http://dx.doi.org/10.5334/data.1331810205>

## Publication Date

March 2012

## Language

English

## License

CC-BY

## Reuse Potential

**Aggregation and reference:** This dataset may facilitate the identification of remaining gaps in the analytical study of Muisca goldwork. Archaeometallurgists may want to add to this dataset in a coherent manner, or test if new analyses are consistent with previous data. Museums with old collections with poor archaeological documentation may use this dataset as a reference to find comparanda for their artefacts. It is hoped that similar datasets may be compiled for other regions of Colombia and beyond, thus facilitating regional comparisons.

**Further analysis and validation:** Our data analyses have allowed us to explore a range of observations and hypotheses regarding Muisca metallurgists, such as the identification of specific alloy batches corresponding to individual offerings, regional patterns in alloy composition, the deliberate inclusion of a broad spectrum of compositions and colours in individual offerings, or the absence silver metallurgy<sup>1,18</sup>. Other scholars may wish to test further hypotheses with this dataset, or to assess the data to validate the claims made in our publications.

**Teaching:** students of archaeometry or archaeometallurgy may wish to use this dataset for training in graphical presentation of data and statistics, as well as to discuss the potentials, limitations and compatibility of the different analytical techniques employed.

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