

Ceramics of the Indigenous
Cultures of South America

*Studies of Production and Exchange
through Compositional Analysis*

EDITED BY

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From the Mountains to the Yungas

Provenience and Distribution of Ceramics in Ambato Societies of the Andes of Argentina in the Fifth Century AD

MARTIN GIESO, ANDRÉS G. LAGUENS, SILVANA R. BERTOLINO,
MATTHEW T. BOULANGER, AND MICHAEL D. GLASCOCK

INTRODUCTION

During the first millennium AD, a series of valleys in northwestern Argentina were settled by Aguada communities (see Figure 20.1). The Aguada communities occupied a large area covering a radius of 800 km in many of the lower valleys (approximately 1200–2000 m asl) and were characterized after AD 500 by increasing social differentiation; intensive agriculture and camelid pastoralism; large settlements with adobe, stone, tapia, and other material dwellings and productive infrastructure (corrals); ritualistic warfare; elaborate bronze metallurgy, ceramics, textiles, and other crafts. Aguada elements (textiles, etc.) are also found in north-central and northern Chilean sites (Cases and Agüero 2004). In pre-Inca times, the Aguada people reached their highest levels of political and religious integration and craft specialization in northwestern Argentina, but it is unclear how the different communities were related to each other. Some of the earliest Aguada communities were located in the Ambato Valley.

The Ambato Valley runs north-south and is surrounded by the Sierra de Graciana to the east and the Ambato hills to the west. The eastern side is covered by dense forests. The Ambato Valley connects the highlands of Aconquija with the valley of Catamarca. The Los Puestos River runs through the valley. Here, we explore the characteristics of an elaborate ceramic style, Ambato

negro o gris inciso (incised gray or black), and its distribution in the eastern sectors of the Aguada complex. The style is characterized by a limited number of standardized forms, thin walls, and elaborate polishing of the external surface. In addition, the pottery is decorated by a variety of incised/engraved motifs such as felines, humans, humans with feline masks, one- and two-headed snakes, felines with human heads, birds, and geometric figures. Recent ceramic research (mineralogy, chemistry, and thermogravimetric analysis) on domestic and ritual wares indicates that there was a continuity in ceramic technology from early Aguada (AD 100–500) to late Aguada (AD 600–1000), using a combination of local red and white clays (Bertolino and Fabra 2003; Fabra 2002).

Ceremonial centers were built in Ambato and other valleys in the provinces of Catamarca and La Rioja. These ceremonial sites could have been the centers of the different polities that formed the Aguada realm, all with unique characteristics but also overall similarities. Some of the similarities were (1) high population density, particularly around the valley bottom; (2) separation of ceremonial activities from domestic to nondomestic environments, and new communal as opposed to household ritualism; (3) building techniques; (4) hydraulic engineering systems; (5) use of several varieties of maize and other mid-altitude crops; (6) differential social access of faunal resources; and (7) ceramic standardization (Laguens

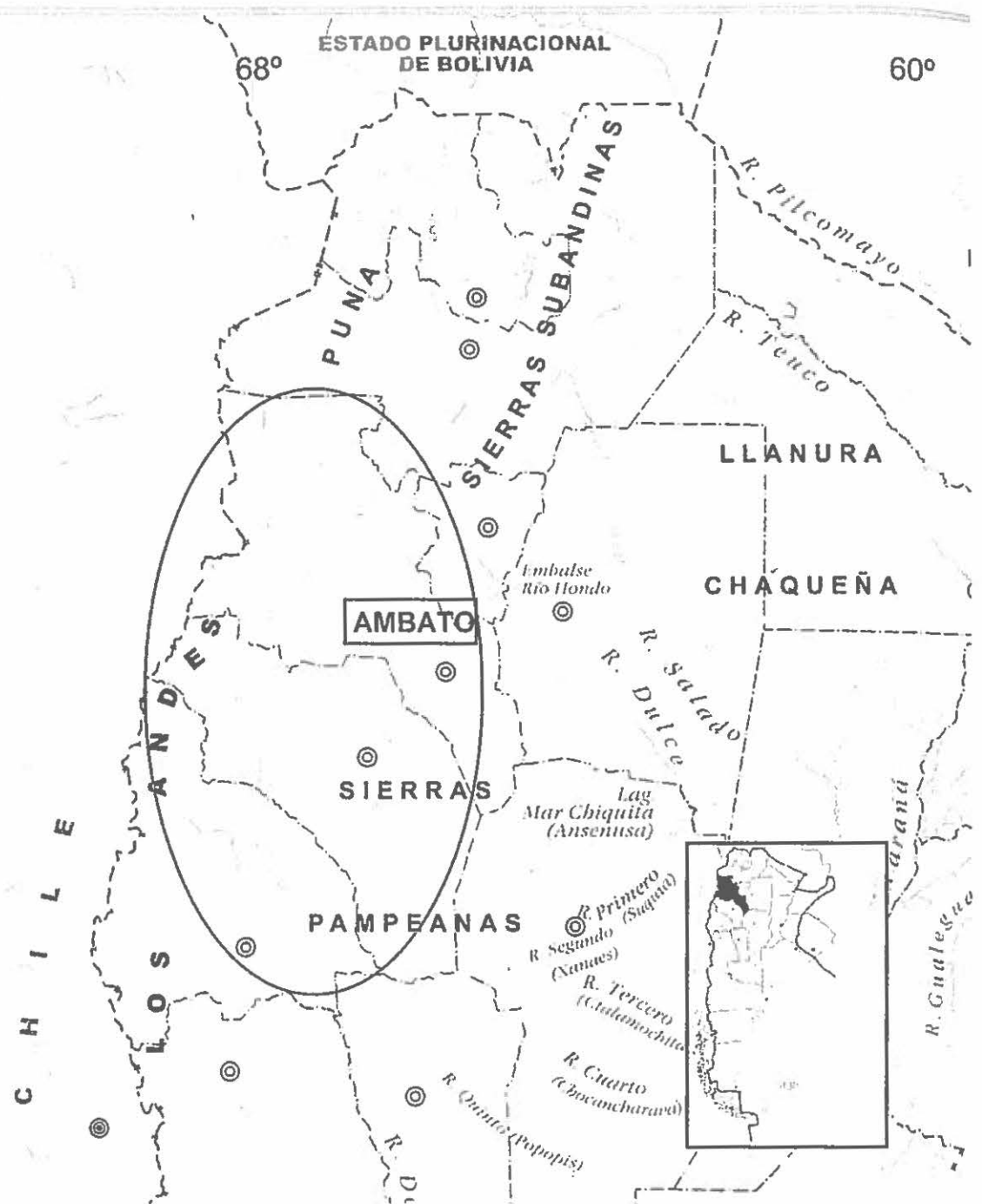


Figure 20.1. Map of northwest Argentina showing the location of the Ambato Valley. Modified with permission from an earlier version published by Scattolin (2006b).

and Juez 1999). We see variations in construction materials (stone vs. adobe) and form in domestic structures, as well as variations in ceramic styles with a common iconography, also present on metal, bone tools, and textiles (González 1998).

The Ambato Valley was the earliest center of Aguada ceremonialism and the focus of intensive archaeological research during the 1990s and early 2000s by archaeologists from the Universidad Nacional de Córdoba (Laguens et al. 2007). Two of the most important excavated sites

were Bordo de los Indios and Piedras Blancas (shown in Figure 20.2), from which the first sherds in this study were analyzed.

In recent years, a series of instrumental neutron activation analysis (INAA) measurements were conducted at the University of Missouri Research Reactor (MURR) on local clays and ceramic sherds from a wide range of sites in the eastern sectors of the Aguada complex, all located in low altitudes. Preliminary results suggested that one type of ceramics (incised black) used one of the clays and thus had a standardized production with a wide distribution in the region around Ambato and to the east.

The results reported earlier by Hauck and Glascock (2009) on 107 gray- and black-incised Ambato and

Ciénaga sherds from the Ambato Valley in southwestern Tucumán and the central valley of Catamarca strongly support use of a common clay source. Ambato sherds are found at all sites, but in different proportions, suggesting they were used by large segments of the population (Laguens 2004:146). After the initial INAA results identified use of a common clay (then of unknown origin), we expanded our sampling of clays to include other areas located south and east of Ambato. For this effort, we collaborated with colleagues from the Universidad Nacional de Catamarca (Nestor Krystkautzky and Bárbara Manasse). The new results were correlated with clay samples from Ambato, Pomán, and Andalgalá and continue to indicate use of a single clay source (i.e., Ambato

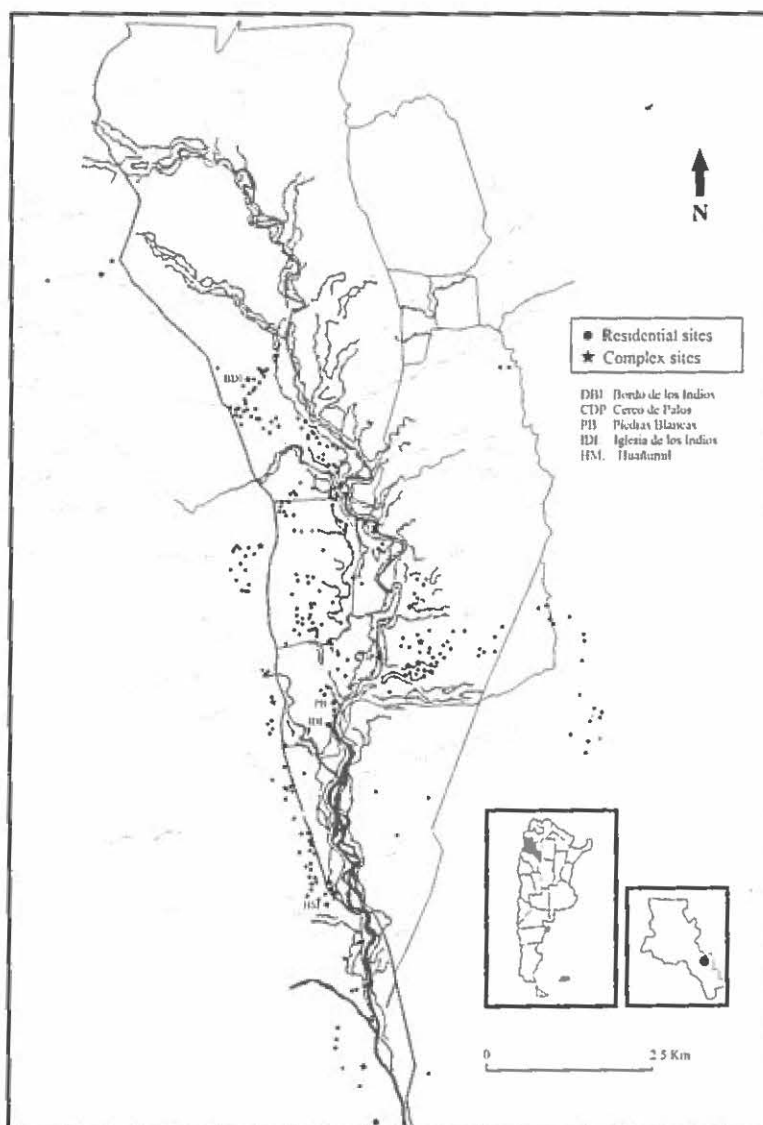


Figure 20.2. Distribution of Ambato sites in the Ambato Valley. Map by Marisa Lazzari.

Valley Reference Group [AVRG]) with wide distribution both inside and outside of the Ambato Valley.

The 16 clay samples listed in Table 20.1 came from locations in the province of Catamarca where the Ambato ceramics were found (MGCo01–12 from Ambato, AMPCo1 from Pomán, and AMPCo2 from Andalgalá). Ten of these were also submitted to X-ray diffraction (Bertolino and Fabra 2003; Bertolino et al. 2016). The first four Ambato clays analyzed (i.e., MGCo01–MGCo04) were from Sierra de Graciana (two were red and two were white). Clay samples MGCo05 and MGCo06 came from near the site of Humaya in the Ambato sierra (red and yellow clays). The latter clays, as well as AMPCo1 and AMPCo2, are in use today by potters who reproduce Aguada ceramics in the traditional styles. The Cerco de Palos samples were collected near the archaeological site with the same name in Ambato. We note that the samples

from Andalgalá (MGCo14 and AMPCo2) have very high concentrations of arsenic. None of the clay samples match the AVRG.

SAMPLE PREPARATION AND DATA INTERPRETATION

Samples were prepared for INAA at MURR according to procedures described in Glascock (1992; see also chapter 1, this volume) and Neff (2000). By comparing the unknown samples to standard reference materials (SRM-1633a [coal fly ash] and SRM-688 [basalt rock]), concentrations for up to 33 elements were established. New Ohio Red Clay (an in-house standard) was used to monitor quality control for all analyses.

Statistical analysis procedures were used on base-10 logarithms of the elemental concentrations to compensate for differences in magnitude between the major elements and trace elements, such as the rare earth elements. The transformation to base-10 logarithms also produces distributions closer to normal for most trace elements.

Principal component analysis (PCA) was performed on the data with the goal of recognizing patterns in graphical presentations of the chemical data. Biplots of the variables (elements) and objects (samples) were examined to identify possible subgroups. Mahalanobis distances (or generalized distance) were used to calculate group membership probabilities. The results matched some of the studies done on form and paste (petrographic) of Ambato and other local Aguada ceramics (i.e., Portezuelo), which consistently offer strong evidence of standardization in the selection of raw materials and in the manufacturing techniques used (Cremonte et al. 2004; Fabra 2002).

As we show in Table 20.2, 84% of the sherds belong to

TABLE 20.1. LOCATIONS OF CLAY SOURCES

ANID	SITE NAME	LATITUDE	LONGITUDE
MGC001	Sierra de Graciana	-27.9538	-65.7964
MGC002	Sierra de Graciana	-27.9538	-65.7964
MGC003	Sierra de Graciana	-27.9538	-65.7964
MGC004	Sierra de Graciana	-27.9538	-65.7964
MGC005	Humaya	-27.9117	-65.9740
MGC006	Humaya	-27.9117	-65.9740
MGC007	Cerco de Palo	-28.1375	-65.8511
MGC008	Cerco de Palo	-28.1375	-65.8511
MGC009	Los Varelas	-27.9250	-65.8700
MGC010	El Rodeo	-27.9850	-65.8183
MGC011	La Aguada	-27.9911	-65.8017
MGC012	Arroyo los Escobales	-27.9174	-65.8028
MGC013	Saujil	-28.1738	-66.2115
MGC014	Andalgalá	-27.6000	-66.3167
AMPC01	Mutquin	-28.3194	-66.1694
AMPC02	Choya	-27.5361	-66.4028

TABLE 20.2. NUMBER OF SHERDS ASSIGNED TO THE AMBATO VALLEY REFERENCE GROUP AND OTHER SOURCES

SITE	AMBATO VALLEY REFERENCE GROUP	GROUP 2	SANTA MARÍA MG2A AND B	SANTA MARÍA MG7	UNASSIGNED	TOTAL
Ambato	63	2	4	2	0	71
Catamarca	5	0	0	0	5	10
Ancasti	8	0	0	0	2	10
Valle Viejo	6	0	1	0	1	7
Andalgalá	2	0	0	0	0	3
Balcosna	3	0	0	0	0	3
Alberdi	3	0	0	0	0	3
Total	90	2	5	2	10	107

the AVRГ compositional group, and 89% of the sherds from sites located in the Ambato Valley are from AVRГ. Smaller groups of ceramics (e.g., Santa María 1 and 2 and Group 2) are exclusively from sites in the Ambato Valley. Sherds corresponding to Santa María Group MG2 are found in the Santa María Valley (Catamarca), 120 km north of the Ambato Valley (Lazzari 2006; see also chapter 19, this volume), and MG7 in the Hualfin Valley (Catamarca), 100 km northwest of Ambato (see also chapter 19).

COMPARISONS WITH OTHER AGUADA SITES

Several petrographic studies of pastes and pigments have been conducted by other scholars on ceramics from both of the Ambato Valley sites and sites in the Catamarca Valley. Studies of pastes of incised-black ceramics from the ceremonial centers of La Rinconada (Ambato Valley) and Choya 68 (Catamarca Valley) do not show marked differences. The manufacturing technique seems standardized, but there could have been one or more production centers (Baldini et al. 2005). The pastes are compact and micrograined with fine or very fine quartzite sand, and from a textural point of view, differ from other ceramic types (Cremonte et al. 2004:706). Studies of ceramic pastes from Choya 68 and La Rinconada indicate a high degree of homogeneity and an apparent continuity of clay usage that characterized black- and gray-incised ceramics, dating between 1400 and 1000 BP (Cremonte et al. 2004:707–708). Dates for the different occupation levels at La Rinconada place the site after AD 600, the peak of the Aguada culture (Gordillo 1999). The fragments from Choya 68 suggest that Ambato vessel manufacture, especially the black-incised ware, showed little change during four centuries (Cremonte et al. 2004:707–708).

CONCLUSIONS

There are several types of ceramic pastes, but the largest and most homogeneous is the AVRГ. These ceramics are present in all analyzed sectors. The other three are the Santa María Group 1, the Santa María Group 2, and Group 2. Several unassigned pastes were also identified. AVRГ was manufactured utilizing clays that correspond to a source located in the Andalgalá region (Williams et al. 2000).

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