Contribution

Aztec commoner access to foreign trade goods: a west Mexican bronze needle from the Teotihuacan Valley

Joshua J. Kwoka

Metallurgical studies comprise a comparatively small portion of the corpus of Mesoamerican archaeology. This is due to the predominance of lithic technologies, the complete absence of metal artifacts in many areas, and the negligible role this technology played in pre-Hispanic state formation (Hosler 2014). Early works were primarily distributional or focused on developing regional typologies, though recent scholarship has begun to explore the extraction (i.e., mining) and production facets of metalworking chaînes opératoires (Hosler 2013). As papers in Simmons and Shugar (2013) demonstrate, there is increasing evidence that metallurgy was more widely practiced in Postclassic Mesoamerica than previously thought. Most of these traditions can trace their origins to the West Mexican metalworking zone, particularly the Pacific coast of Jalisco and Nayarit, and the lower reaches of the Río Balsas along the Michoacán–Guerrero border (Hosler 1994, 2013, 2014). It is here that the earliest evidence of metallurgy appears at the close of the Classic period (ca. A.D. 650–700). Beginning in the Late Postclassic (ca. A.D. 1300–1350) the emergent Tarascan state began a campaign of outward expansion from the Pátzcuaro Basin, eventually assuming control over a significant portion of the West Mexican metalworking zone. Eastward expansion was halted by conflict with the Aztec state. It is within this context that I turn to the discovery of a single metal needle in a small rural irrigation canal located across the heavily militarized Aztec–Tarascan border.

In doing so this paper contributes to our understanding of the availability of foreign trade goods to rural Aztec populations while highlighting the persistence of economic connectivity between warring polities.

The Maravilla Irrigation System

From 1956–57, René Millon conducted a series of excavations at a small irrigation system in the northern piedmont of the lower Teotihuacan Valley (Figure 1). The Maravilla irrigation system (hereafter MIS) is located in the contemporary municipality of San Juan Teotihuacán roughly equidistant from the borders of Zacualula and Teotihuacán de Arista. The MIS is centered on the seasonally dry Río de la Gapila and consists of an irrigation canal and three dams, only one of which (Dam I) remains partially intact (Armillas et al. 1956; Millon 1957). According to settlement pattern studies conducted by the Teotihuacan Valley Project (Evans et al. 2000; Sanders 1994), this area was lightly inhabited by the Late Formative with continued sparse occupation until a Late Postclassic population boom. The lone exception is the nearby site of Maquixco Bajo which was host to a large late Teotihuacan and smaller subsequent Toltec and Aztec settlements. The earliest segments of the MIS are at least Coyotlatelco in age, while local informants reported that portions of the system were in use during the early 20th century (Millon 1957).

In the only published report on the MIS excavations, Millon (ibid) stated in passing that a single metal needle was recovered from a trench cut across the irrigation canal (Figure 3). He cited figures from Aguilar Piedra (1946) and Rubin de la Borbolla (1944) when suggesting that the needle was similar to those found at Tzintzuntzan, and hence likely to be of Tarascan origin. No further mention or analysis of the artifact was provided. The needle is currently housed with the rest of the Maravilla collection within the University at Buffalo Department of Anthropology’s Teotihuacan Archaeology Laboratory.

In terms of metric attributes, the bronze needle is 85.86 mm in length with a diameter that decreases from 0.97 mm at the eye to 0.56 mm at the tip, and weighs 0.49 g (Figure 3). Following Hosler’s (1988, 1994, 2009) classification scheme, it is a Type 2a round eye needle with a tucked and enclosed tab (Figure 4). Period 2 material emerges in west Mexico ca. A.D. 1100 and is produced through the Spanish conquest. It is characterized by multiple stylistic and technological changes in relation to Period 1 objects, chief amongst which is the shift from the use of cooper to copper alloys (i.e., bronze). Ceramics found in association with the needle consisted primarily of Late Aztec period (ca. A.D. 1350–1520) Aztec III Black-on-Orange wares, dating the context to a timeframe that corresponds with Period 2 material. As published reports of metal artifacts predating the historic period within the Teotihuacan Valley are rare, the discovery of single metal needle warrants attention. The following sections consider pathways by which rural inhabitants of the Teotihuacan Valley could

![Fig. 1. Sites referred to in the text.](image)
have obtained west Mexican metal implements through a discussion of interpolity economic ties and the Aztec market system.

Moving Metal: Aztec Access to Tarascan Trade Goods

Beginning in the mid-15th century in the Toluca Basin, the Aztecs and Tarascans engaged in a series of conflicts that resulted in the formation of a largely static militarized frontier zone. In addition to functioning as a barrier to Aztec territorial and hegemonic expansion, this border also restricted economic transactions between the two states. There is abundant evidence of cross-polity exchange, but not in sufficient quantities to suggest large-scale state-sponsored exchange networks, nor the ancient equivalent of free trade. The restriction in movement caused by the perpetual state of war resulted in trade being largely circumscribed within the frontier region and a few large Tarascan "ports of trade," such as Zacatula on the Pacific coast and Taximaroa on the eastern/western border (Gorenstein 1985; Pollard 1994). Metal objects made their way to these areas from Jalisco and the interior of Michoacán via local or state merchants (Hosler and Macfarlane 1996; Pollard 2000), where they then transited the border via pochteca or down-the-line trade. As to the latter, Pollard (2000) notes that much of eastern/western frontier was inhabited by multiethnic communities comprised of Matlatzinca or Otomí inhabitants who did not necessarily share the designation of personae non gratae, and hence may have traded more freely.

Multiple authors (e.g., Hosler 1994; Maldonado 2006, 2009; Pollard 1993) have proposed a distinction between highly restricted ritual implements such as bells and tweezers, and widely available utilitarian tools like awls, fishhooks, and needles. However, the inclusion of metal needles in high-status female burials at Uriku (Pollard and Cahue 1999) and Tzintzuntzan (Rubin de la Borbolla 1944) within the Pátzcuaro Basin suggests that the value of these seemingly utilitarian implements extended beyond functionality into the realm of identity formation and maintenance. Being both small and valuable, metal needles were an attractive commodity to Aztec long-distance merchants known as pochteca. This is supported by their inclusion in Sahagún’s (1959 9:17-19) inventory of high-value goods carried by pochteca and by their depiction in an accompanying illustration (ibid.:Plate 14). Once within Aztec territory needles would have been available to the general populace through regional marketplaces, or tianquiz (Durán 1971:273, 276-277). Smith (2003) notes that Tarascan metal objects were sold in the central Tlaltetolco market, and there is no evidence ethnohistoric or otherwise to suggest that this was an exclusive arrangement. Falling within the domain of the Texcoco altepetl, the closest regional market for rural populations living in the vicinity of the MFS would have been at Alcoman, a market which also specialized in the sale of dogs (Durán 1971:278).

Table 1 Maravilla irrigation canal trench assemblage composition

<table>
<thead>
<tr>
<th>Material Class</th>
<th>Count</th>
<th>Relative Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal</td>
<td>1</td>
<td>0.0002</td>
</tr>
<tr>
<td>Lithic</td>
<td>230</td>
<td>0.0402</td>
</tr>
<tr>
<td>Ceramic</td>
<td>5,489</td>
<td>0.9596</td>
</tr>
<tr>
<td>Total</td>
<td>5,720</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

The MIS Needle: Final Deposition

It is impossible to say with certainty how the needle came to rest in the vicinity the canal, but two potential scenarios appear most probable: intentional deposition as an offering or unintentional deposition via erosion processes. As to the first, the practice of propitiating deities with offerings is a pan-Mesoamerican tradition that is well-documented in the archaeological and ethnohistorical records. The Aztec pantheon contained multiple deities affiliated with agriculture, though the placement of an offering in a seasonal floodwater canal would suggest a direct association with Tlaloc. A bronze needle, however, would be an atypical offering for this deity. Using material recovered from the Templo Mayor in Tenochtitlan as an analog, ritual deposits associated with Tlaloc often include: stone or ceramic effigy vessels bearing the deity’s likeness, greenstone beads or effigies, aquatic fauna, or other materials associated with water (Bonifaz Nuño and Robles 1983; Broda 1983; López Luján 2005). Clearly the Templo Mayor was an extraordinary context within the Aztec world, and as such may not be representative of commoner domestic rituals. Recalling the preceding discussion of value, it is probable that a bronze needle would have been of significant value to rural Aztec populations, and thus perhaps both a powerful and suitable offering despite its departure from established canon.

The second possibility is that the needle originated in a residential structure that would have once sat adjacent to the canal on the slope of Cerro Maravilla Chico. This hypothetical housemound could have been destroyed and its contents moved downslope via large-scale sheet erosion caused by deforestation and the disuse of soil retention features resulting from the depopulation of the area post-conquest. The occurrence of this same process has been documented for extensive areas of the Teotihuacan Valley and elsewhere in the Basin of Mexico (e.g., Cordova and Parsons 1997; McClung de Tapia 2012; Sanchez-Perez et al. 2013). The large amount of domestic refuse found in association with the
needle also lends credence to the scenario of deposition via erosion (Table 1).

Discussion

The recovery of a west Mexican bronze needle from a rural Aztec irrigation canal within the Teotihuacan Valley is an anomalous find, but is this rarity perceived or real? In the neighboring contemporary state of Morales, Smith (2003:90) recovered a "surprising" number of metal implements from excavations at the urban center of Yautpec, and the rural sites of Capilco and Cuexcomate. At the latter two, bronze sewing needles were recovered along with ceramic spindle whorls and spinning bowls from the majority of households, albeit in small quantities. The presence of foreign trade goods within a city-state capital is hardly surprising, though the frequency with which they occur at rural settlements raises a salient question: is the apparent dearth of metal objects within the Teotihuacan Valley simply a byproduct of a lack of household studies, or a reflection of the availability of metal implements to local Prehispanic populations?

The MIS needle is clear evidence that west Mexican bronze needles were both available and consumed by rural populations in the lower Teotihuacan Valley. The reportedly modest appearance of housemounds in the vicinity of the MIS further suggests that these implements were available to households spanning the socioeconomic spectrum (Evans et al. 2000). In contrast, household projects at Otumba and Cihuatecpan in the upper Valley produced few to no metal objects, perhaps suggesting differential access to these goods (Charlton 1993; Charlton et al. 1993; Evans 1993; Evans and Abrams 1988). It seems probable that household excavations in the vicinity of MIS would produce more metal artifacts, though perhaps not on the level of sites in Morelos. The high frequency of domestic contexts with metal needles in Morelos appears to be attributable to the region's role as the primary grower of cotton and exporter of cotton textiles within the Basin of Mexico (Smith 1994). Based on environmental setting it appears that rural populations near the MIS practiced a maguey-based economy centered on the production of aguamiel, pulque, and maguey fiber/cloth.

In closing, this article has shown that Tarascan metal artifacts were making their way into the hands of rural commoner populations in the lower Teotihuacan Valley, though likely in small quantities. To date, the paucity of metal artifacts in the upper Valley could be attributable to a distance decay effect, or perhaps down-valley demand exceeding availability and thus limiting supply. The latter seems more likely considering the Otumba city-state – a wealthy trading hub for north-central Gulf lowland commodities – was located in the upper Valley (Evans 2001). Another possible scenario is that if the needle dates to the early Late Aztec period then conflict closer to home between the Tepaneca and Acolhua confederacies, or later the Tepanec and Triple Alliance, could have disrupted regional exchange mechanisms. Whatever the case may be, this article provides further evidence of the partitioning of economic and political interactions between hostile polities. As Stanish and Levine (2011) note, the continuance of trade between warring parties – though perhaps on a diminished level – was a relatively common phenomenon in both antiquity and recent history (e.g., Earle 1997; Keeley 1996; Redmond and Spencer 2006).

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Re-evaluating the ancient Maya salt works at Placencia Lagoon, Belize

E. Cory Sills

The mound remnants of ten ancient Maya salt production areas are located along the western shore of Placencia Lagoon, Belize, accessible only by boat. Previous test excavations directed by Dr. Jefferson MacKinnon for the “Point Placencia Archaeological Project” suggests that these sites were salt works that produced salt for households as part of a subsistence economy as well as for trade to inland city centers (MacKinnon and Kepecs 1989). Evidence of salt production was identified from the recovery of briquetage – pottery used to evaporate salty water over fires to make salt test – from test excavations on earthen mounds. No other research except for test investigations was undertaken at the Placencia Lagoon Salt Works since the late 1980s. During the summer of 2015, Placencia Lagoon Salt Work 14 (PL-14), one of the ten salt works, was relocated and investigated to determine the impact of tourism development as well as the impact of damage from Hurricane Iris in 2001 (Figure 1). PL-14 was surface examined to evaluate the possibility of future additional excavations.

This article examines the role of the Placencia Lagoon Salt Works in the Classic Maya economy by situating the salt works into an updated framework based on newer evidence of the organization of ancient Maya salt production from coastal Belize. The Placencia Lagoon Salt Works are compared with other known salt works including the well-established Paynes Creek Salt Works located to the south in terms of the function of the sites, the activities occurring at the site, and the chronology (MacKinnon and Kepecs 1989; McKillop 1995; 2002; 2005; Sills and McKillop 2010; 2013; Watson et al. 2013). The above sea-level mounds at the Placencia Lagoon Salt Works reveal new insights into salt production in the region and indicate the ancient extent of brine enrichment at the Paynes Creek Salt Works where mounds are scarce.

Placencia Lagoon separates the mainland on the west from Placencia peninsula on the east. During the Classic period (A.D. 300–900), the salt production areas were optimally positioned near the source of salty water on the mainland whereas more permanent settlements were located on Placencia peninsula, off-shore cays, or at inland city-centers. Today, Placencia peninsula is a growing Caribbean tourist destination. Unlike most Caribbean islands, Belize offers beach resorts and activities as well as inland, eco-based...