The Influence of Central Andean Metallurgy in the Highlands of Southern Colombia.

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1. Introduction

The Andean range, north of the equatorial line, is marked by several geographical and ecological characteristics that differ clearly from those of the Central Andes and suffice to classify it as a diverse area. Mean altitude, humidity and vegetation are quite different in the Cordillera of Colombia and northern Ecuador than in Peru and Bolivia. But what is strikingly different with relation to culture is the global topography of the mountainous system and its adjacent areas. In the Central Andean region, going from West to East, three regions can be clearly distinguished: Costa (coastal plains of the Pacific Ocean); Sierra (mountainous range of the Andes) and Selva (Amazon tropical forest). In the northern Andean region, the coastal plains of the Pacific and the tropical lowlands of the Amazon and Orinoco basins are still present, but the Cordillera divides into three separate ranges and comes to an end in the Caribbean lowlands.

The access that Indian societies, living both in the central and northern areas, had to natural resources and the way in which they managed their relations with neighbours was heavily influenced by this particular disposition of the land. Several authors (such as Rostorowski 1986) have shown that in the Central Andes there was a pattern of cultural contacts and management of different altitude zones that followed the West-East axis. The cultures that managed to impose economic, military or ideological control over large areas had some sort of influence over more than one of the regions and frequently over the three of them. In the northern Andes this scheme does not apply. The inter-Andean river valleys act as an extension of the Caribbean plains thus facilitating communication and contacts

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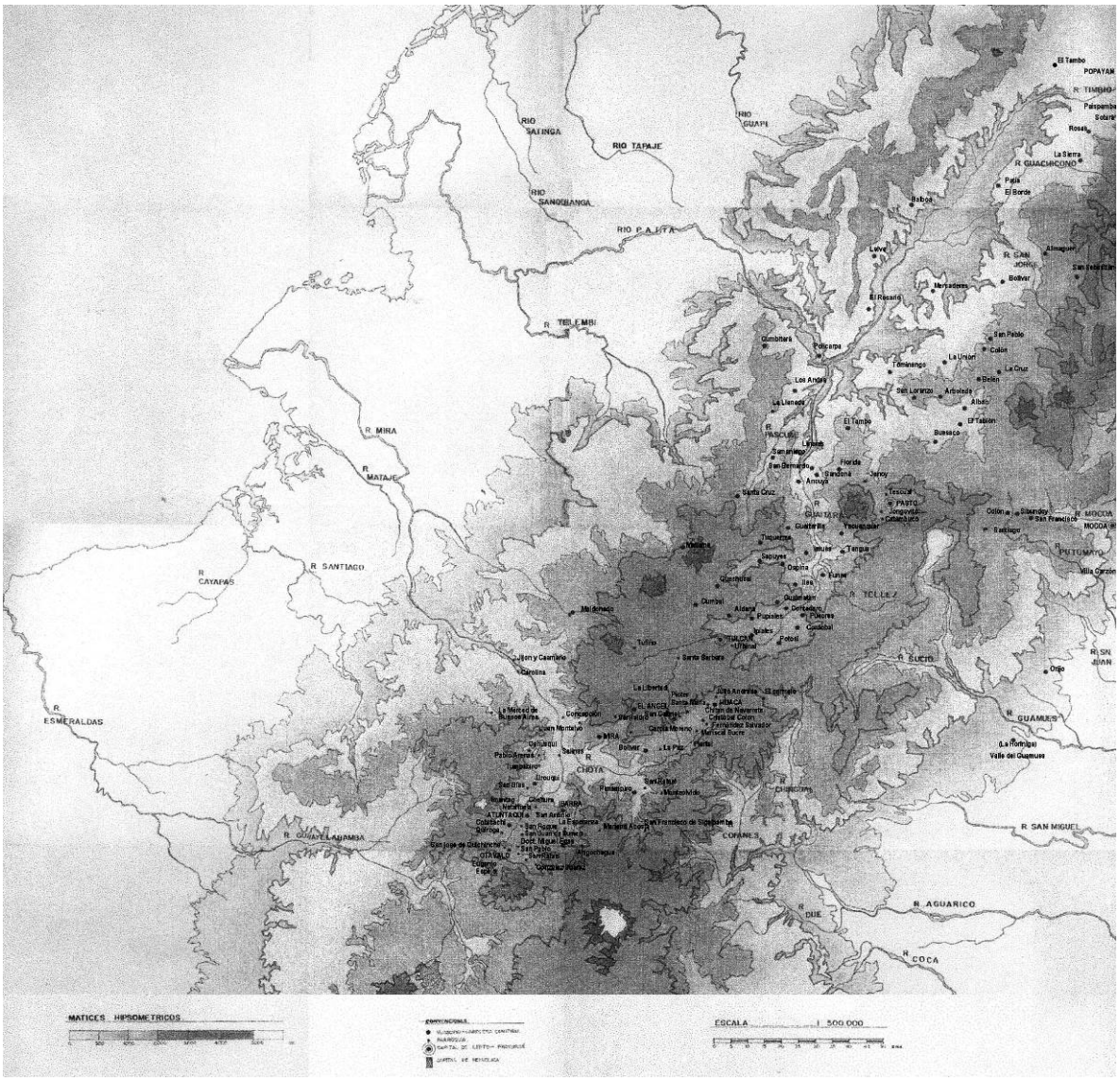
along the North-South axis (see map). The type of resources available, the management of different altitudes and the distances involved in inter-cultural contacts varied greatly across the two areas. As a result cultures on both regions show quite distinct attributes.



Map – The highlands of southern Colombia and northern Ecuador

Between the central and northern regions of the Andes there is a large transitional zone, extending roughly from the equatorial line to latitude 2º north. Archaeological and ethno-historical evidence shows that this area had a transitional character, in pre-Hispanic times, also with reference to culture and, indeed, to metallurgy. Nowadays, in geo-political terms, this region corresponds to the northern Ecuadorian provinces of Imbabura and Carchi and

to the southern Colombian departments of Cauca, Nariño and Putumayo. While the lowlands, both to the west and east were densely populated in pre-Hispanic times, we will focus only on the highlands, since it is here that this complex metallurgical tradition, known as Nariño-Carchi, was produced and used.

2. Archaeological background

The area of distribution of metallurgy in the highlands of Nariño-Carchi comprises the following natural sub-regions (refer to map 2):

1) Northern Imbabura plateau
2) Upper Chota-Mira river canyon
3) Tulcan-Ipiales-Tuquerres plateau
4) Upper and Middle Guaitara-Patia river canyon
5) Atriz valley
6) Eastern Andean slopes
7) Western Andean slopes
8) Inter-Andean slopes

Right – Northern Imbabura plateau. Left – Upper Chota-Mira river canyon

Right - Tulcan-Ipiales-Tuquerres plateau. Left - Inter-Andean slopes

A large proportion of the area is located above 2,000 m.a.s.l.; with the exception of parts of the Chota-Mira and Guaitara-Patia canyons. There are a few snow-peaks and several volcanoes such as the Cayambe, Cumbal, Chiles, Azufral, Galeras and Doña Juana. Volcanic activity was intense from the Tertiary Period onwards and it had a strong influence on shaping the landscape (IGAC 1982). The availability of land for agricultural purposes varies widely; soils are rich and well drained in most of the plateaux and river valleys, but severely limited by acute slopes and erosion elsewhere. Rainfall and water availability is adequate over most of the region, except in the Chota-Mira canyon where dry conditions prevail. Native vegetation, composed mainly of medium-sized species of the High Andean Forest, has disappeared almost entirely with the exception of small areas near volcanoes and lakes and the most sparsely populated parts of the eastern and western slopes.

No archaeological sites corresponding to the Early Peopling Period or even to later Early Agricultural stages have been found in this area, whereas both to the nearby north and south of it there are important early sites. There is, in fact, no archaeological record prior to 130 A.D. It has been argued that the extremely strong volcanic activity prevented the settlement of populations in the region before this date, but this hypothesis needs to be sustained with convincing geological evidence.

After the sixth century and until the time of the Spanish conquest, which occurred around the middle of the sixteenth century, the archaeological record becomes both abundant and extremely complex. Several attempts have been made to interpret the finds on both sides of the Colombo-Ecuadorian border, but in spite of them the prehistory of the area remains largely obscure and many questions lay unsolved.

The archaeology of the area has been investigated by Jijon y Caamaño (1914, 1920, 1951), Grijalva (1937), Uhle (1928, 1933), Athens (1980), Stafford (1987), Narr and Schonfelder (1989) - all cited in Gutierrez 2004 - and Doyon (1995) on the Ecuadorian side and by Lehman (1935), Ortiz (1934, 1936, 1937a, 1937b, 1938a, 1938b, 1950, Uribe (s/f, 1976, 1977-78) Uribe y Lleras (1982-83), Groot y Hooykas (1991), Gómez (1991), Fernández (1994), Patiño (1995) and Cárdenas (1995) on the Colombian side. The work of these pioneers allowed the identification of different ceramic complexes found within the

same area, sometimes associated with metallic objects and stylistically different from other complexes of central Ecuador or south-west Colombia.

Francisco (1969) produced the first integrative interpretation. This author, based on previous works and on her own field collections, defined three pottery styles and proposed a chronological sequence in which Capuli was the oldest style and was followed by Piartal and Tuza. This last style was identified with the Pasto ethnic group that dominated the area in the sixteenth century and still survives in significant numbers in the region. This interpretative tendency became dominant and marked the direction and conclusions of the following studies.

Uribe (1976, 1978) carried out extensive surveys and controlled excavations north of the border and participated in similar projects on the Ecuadorian side (Echeverria 1985). As a result of those works she proposed a new scheme, which took into account Francisco's work, introducing a radically new historical dimension. Uribe postulated that the Piartal and Tuza complexes represented two phases of the same cultural unit; the Capuli complex was contemporary to the Piartal-Tuza development and co-existed within the same area for a period of nearly seven hundred years. The affiliation of the Tuza complex to the Pasto ethnic group was maintained and, therefore, the older related complex (Piartal) was ascribed to the predecessors of the Pastos (shortly afterwards named Proto-Pastos).

Despite the many efforts it was impossible to isolate, at any given moment of the cultural development of the area, the territories of distribution of the Capuli and Piartal-Tuza archaeological complexes. Since the identification of ceramic complexes and ethnic groups seemed to be so clear and straightforward, the resulting hypothesis spoke of two distinct peoples living in close proximity for centuries but, nevertheless, keeping their cultural traditions separate and unpolluted by each others influences.

The study of the metallurgy of the area had, for its theoretical framework, this starting point. Plazas (1978) studied nearly twelve hundred objects belonging to the Museo del Oro in Bogota; most of them recovered by treasure hunters and devoid of most of their contextual information. Some objects, however, were well documented by the archaeologists who found them during rescue excavations (Sanmiguel 1972; Parra 1972; Correal and Morales 1973; Turbay, Londoño and Perdomo 1974; Uribe 1975-78). Plazas

(1978) divided her material into two distinct groups, which she termed Capuli and Piartal-Tuza, stating that:

a) The two groups of metal objects were clearly associated to diagnostic pottery belonging to the two cultural traditions defined by Uribe (1978).
b) They had different ranges of manufacturing and decorative techniques.
c) They had different iconographic depictions.
d) They used different metal alloys.
e) They were associated to different types of tombs.

We will discuss these statements in detail on the basis of the information compiled in our database and the preliminary analyses we have made.

As archaeological and ethno-historical work progressed several new facts arised, which cast serious doubts on the thesis of the two co-existing cultures. To start with, the available documents of the sixteenth century failed to confirm the archaeological hypothesis (Groot and Hooykas 1991). It seemed that at the time of the arrival of the Spaniards there was no such thing as a multi-ethnic territory anywhere in the highlands of Nariño or Carchi; a small zone (Chota-Mira canyon) intensively used for Coca planting was used by several neighbouring groups but not for permanent settlements. By no means was it possible to establish any coincidence between the areas of distribution of the Capuli and Piartal-Tuza complexes and the ethnic territories of the late 1500's. Moreover, it was impossible to find an ethnic group that fitted into the spatial and chronological limits of the Capuli complex and the archaeological-ethnic correspondence was, therefore, lacking in about half of its substance.

The excavations of Cardenas (1989, 1989a, 1992, 1995) revealed that the Piartal-Tuza complex extended further north than it was previously defined, and that there were indeed many associations of Capuli and Piartal-Tuza pottery within the same archaeological contexts. The excavations of Cadavid (1989) and Cadavid and Ordoñez (1992) revealed yet another pottery and metal complex distributed around the extreme northern limits of our area. Gomez (1991) obtained a date, which pushed back, the starting date of the Tuza complex previously postulated by Uribe (1978). Doyon (1995) compiled evidence from northern and central Ecuador and proposed an alternative sequence that placed Capuli as the earliest cultural matrix in the area; Piartal and Tuza would have derived from it.

Even though the metallurgical classification has not been directly discussed until now, it was definitely affected by the doubt cast on the validity of the thesis of the two cultural traditions. The time came to look closely at the whole collection, not just at some "diagnostic" objects, and to examine critically the reported provenance and association of assemblages without the "benefit" of pre-existing cultural classifications.

3. Metallurgy in the Nariño-Carchi area

The results we are presenting correspond to the preliminary examination of nearly twenty-four hundred metal items reported from the Nariño area, which belong to the Museo del Oro of Colombia. The next stage in our research must include the examination of the collections of objects from Carchi and Imbabura located in Ecuadorian museums, something that was not possible at this stage. The C14 dates, site and provenance information, pottery and lithic associations were also correlated. Finally, an effort was made to compare our finds and observations with the metallurgical traditions of Ecuador and northern Peru. We felt that this comparison would allow us to propose alternative explanations to the development of metallurgy in this region. The reason underlying this methodology is that the Nariño-Carchi metallurgy is strikingly different from its counterparts in the north, so that its inclusion in the early south-western tradition of Colombia is fundamentally wrong.

3.1. Provenance and Distribution

The information related to the provenance of metallic objects is necessarily related to modern political divisions. On the Colombian side of the border the archaeological area is divided in three major political divisions (Departamentos = Departments); Nariño, Putumayo and Cauca. Each Department is, in turn, divided into minor units (Municipios = Municipalities). Most of our provenance information refers to Municipalities. In some cases the information is quite vague and we only have references relative to the major political

division. In the present state of this research we have not been able to locate metallic objects from the Putumayo Department. Objects from the southern part of the Cauca Department are scarce and apparently different from the main group, so that it was decided not to include them until they are further examined. Our information is, therefore, restricted to 2,363 objects found in the Department of Nariño. Those objects are distributed in the Municipalities of Nariño as shown in the following table:

Table 1 – Distribution of Metallic Objects in the Department of Nariño.

Municipality	Frequency	Percentage of total
Arboleda	1	0.04
Consaca	90	3.79
Cordoba	66	2.79
El Rosario	3	0.12
El Tambo	102	4.32
Guachucal	40	1.69
Guaitarilla	3	0.12
Ipiales	247	10.46
La Cruz	92	3.89
La Union	15	0.64
Pasto	15	0.64
Puerres	2	0.08
Pupiales	710	30.06
Sandona	43	1.82
Yacuanquer	34	1.44
Total with known municipality	1,463	61.90
Undefined Municipality	877	37.13
Unknown provenance	23	0.97
Total	**2,363**	**100.00**

When analysing the provenances, as synthesised in this table, we must warn against some problems related with the sources that affect to some degree the reliability of the information. Most metallic objects from Nariño have been acquired in the Museo del Oro in

groups, not individually. It may happen that the group may comprise objects from different nearby municipalities; but only one provenance is declared for the whole group. Care was taken to exclude from the table the most evident cases but, nevertheless, a certain bias may have been introduced. On the other hand metallic objects from certain under-represented areas may have been sold elsewhere and, finally, the intensity of looting in certain municipalities (Pupiales and Ipiales) has introduced apparent concentrations of distribution that seem to be far too high with respect to real pre-Hispanic distribution.

In spite of those biases the available information reveals the existence of certain trends and areas of concentration. The extreme south of the Department (Municipalities of Pupiales, Ipiales, Cordoba, Puerres and Guachucal) concentrates 45.09% of the objects. We must take into account that there are 900 (38.10%) objects whose exact provenance is unknown; some of those may come from this region but, in the absence of reliable information, they should not be considered. When those objects are excluded from the table the percentage corresponding to the extreme south is considerably higher (72.85%).

The second area showing an interesting concentration of metallic objects is located in the central part of the department, roughly around the city of Pasto. The municipalities of Pasto, Consaca, Yacuanquer, Guaitarilla and Sandona concentrate a total of 185 objects that represent 7.83% of the total or 12.65% of the reliable provenances. The last area of concentration is the extreme north of the department comprising the municipalities of Arboleda, El Tambo, El Rosario, La Union and La Cruz. Objects from this area sum 213, representing 9.02% of the total or 14.56% of the reliable provenances.

The available information seems to reveal the existence of three major clusters within which all of the metallic objects have been found. The southern one is the major cluster and concentrates nearly three-quarters of the finds while the central and northern ones are roughly similar in importance. With the exception of El Rosario, the sites of provenance are located in the central part of the Andean range above 1,500 m.a.s.l. Up to date there are no finds reported from the eastern slopes (Putumayo Department) and the upper part of the western slopes. Towards the Pacific Ocean there is a wide stretch of archaeologically unknown land between 1,500 and 500 m.a.s.l. where the Tumaco – La Tolita area begins.

Two important areas located within the central part of the Andean range, where metallic objects have not been reported, include parts of the middle Guaitara-Patia river canyon and the northern part of the Tuquerres plateau. This uneven distribution, characterised by heavy concentration areas bordered by areas apparently devoid of metallurgy, even if biased by factors affecting the reliability of information, is quite peculiar. The panorama is, of course, incomplete because we lack information across the borders of Ecuador and Cauca where there seem to be important extensions of the northern and southern clusters. Preliminary information do, however, point towards a confirmation of this hypothesis since Tulcan, Huaca and San Gabriel in Ecuador and Mercaderes, Bolivar and Patia in Cauca are well known as sites where metallic finds are frequent (see map).

The most probable explanation for this pattern of distribution is the existence of well-localised foci of production and use of metallic objects within the area. It is possible that the three clusters that we have been able to identify correspond to pre-Hispanic centres where metallurgical production had achieved certain importance. The circulation and use of metallic objects outside of these areas would have been much less important if not altogether non-existent. Those foci may well have corresponded to large chiefdoms or federations of chiefdoms, but this possibility as well as the ethnic identity of the territories where the foci are located needs to be tested by research.

3.2. Chronology and Associations

As we explained in the introductory part of this paper, the chronological sequence of the Nariño-Carchi area is still quite confuse. There are several C14 dates obtained from controlled excavations but most of them come from funerary contexts, so there is a repetitive pattern with regard to associations but a notorious lack of relation between those particular associations. No deep stratified habitational site has been excavated and as a result it is difficult to confirm the proposed sequences and the chronological frame for each. Twenty five dates are associated with metallic objects; two of them correspond to looted objects with little or no contextual information (nos. 2 and 13). There are, fortunately, many metallic objects in the Museo del Oro collection adhered to remains of

textiles or associated to organic materials that can be dated. The following table summarises the existing chronological information.

Table 2 - Absolute dates from the Department of Nariño and neighbouring areas.

Number	Date	Range	Site /Object	Municipality
1	130	±210	La Florida (offerings)	Quito (Ecuador)
2	150	±40	Tinculpa O18466	Nariño (undefined)
3	200	±40	Object O33106	La Unión
4	331	±36	Tinculpa (B.C.E.)	El Carmelo (Ecuador)
5	340	±80	La Florida (offerings)	Quito (Ecuador)
6	350	±80	La Florida (offerings)	Quito (Ecuador)
7	400	±60	Objects O8702-13	La Cruz
8	420	±80	La Florida (offerings)	Quito (Ecuador)
9	440	±50	Object O33262	Yacuanquer
10	585	±65	Object O33262	Yacuanquer
11	810	±60	Object O19511	Pupiales
12	845	±80	T. 6 (Miraflores), O16631-16636	Pupiales
13	950	±40	Object O18507	Nariño (undefined)
14	950	±50	Object O20063	Ipiales
15	1000	±40	Object O22515	Pupiales
16	1050	±40	T. 2 (Miraflores), Object O16304	Pupiales
17	1080	±115	LC 2 Tomb 2 (Las Cruces)	Ipiales
18	1120	±140	Objects O21520-21585	Pupiales
19	1170	±40	T. 8 (Miraflores), O20106	Pupiales
20	1250	±35	T. 8 (Miraflores), O20099-20131	Pupiales
21	1290	±40	Object O24508	Pupiales
22	1470	±40	Object O31654	Ipiales
23	1510	±30	Tomb TAJ-Z2 (7), Tajumbina	La Cruz
24	1600	±50	Tomb TAJ-Z2 (1), Tajumbina	La Cruz
25	1680	±50	Tomb TAJ-Z2 (10), Tajumbina	La Cruz

The chronological range for metallurgy in Nariño and neighbouring areas spans from 130 to 1,680 A.D. It seems safe, therefore, to assume that metallurgy was in production in this region for at least 1,500 years and that the earliest objects date back from the second century. The end of massive production and use of metal objects must have coincided with the arrival of European conquerors in the sixteenth century, but we have evidence of isolated finds even up to the 17th century.

The relation between the dates obtained and the clusters of concentration that we defined in the previous chapter are not straightforward, but some patterns seem to emerge. The

dates for the northern cluster (nos. 3, 7, 23, 24 and 25) correspond to two very different periods, one of them early and the other very late; in the absence of comparable information, we can not conclude much from them. The two dates for the central cluster (nos. 9 and 10) are considerably old (fifth century). One date for the southern cluster (no. 22) is late while another one, just south of the border but belonging to the same cluster is very early (no. 4).

Notwithstanding the limitations of associated information and the scarcity of absolute dates, it is evident that we have both early and late dates for the southern, central and northern clusters. We cannot be sure at this point what this means and how the whole process evolved across Nariño.

Another important conclusion has to do with evolutionary patterns. As we have seen, absolute dates indicate that metallurgy was present in the area for 1,500 years. Such a long period of time must have seen many changes in the manufacture and use of metal objects and the emergence and decline of styles. Up to now metallurgical styles have been analysed as static sets with no consideration of how they may have evolved in time (Plazas 1977-8). Further analysis is required but we can state with confidence that time is an important factor in shaping the heterogeneity of metalwork in the Nariño area and that many of the different styles that we have registered must correspond to changes in time rather than to geographical variations.

Pottery and lithic associations of metallic objects give us some other important clues about the styles. According to Bravo (1998) and Perez (1998) there are some peculiar associations of lithic, ceramic and metallic objects that cast some doubts about the difference of Capuli, Piartal and Tuza styles; their conclusions can be summarised as follows:

1) Even though there are some particular associations of lithic materials in individual Piartal, Tuza and Capuli tombs, there is no such thing as a particular lithic tradition associated to specific ceramic complexes or metallurgical styles.
2) A particular type of stone axe tends to reproduce the shape and decoration of bronze axes common in several metallurgical traditions of the Central Andean region. The context and associations of this type are still unknown. This fact is particularly

interesting because the technology for the production of metal axes was known in Nariño and this is the only area in Colombia where pre-Hispanic metal axes are to be found.

3) In spite of the differences that can be found between the Capuli, Piartal and Tuza ceramic complexes, there are at least twenty shapes of vessels, decorative motifs and iconographic traits that are very similar. Some of those iconographic traits can be found also in metallic objects.
4) Ceramic and metallic objects classified as Capuli have been found inside tombs regarded as Piartal or Tuza, containing mostly elements ascribed to those complexes (as in the Miraflores site). Similarly, ceramic and metallic objects classified as Piartal or Tuza have been found inside tombs regarded as Capuli (as in the La Victoria site).
5) Even though the main funerary sites can be characterised either as Capuli (e.g. Las Cruces) or Piartal-Tuza (e.g. Miraflores), it occurs that tombs of the other complexes are to be found in them. Additionally, those sites are, in some cases, located in such close proximity that, if they were indeed contemporary, they could not have belonged to different ethnic territories.

The research carried out by Cardenas (1989, 1989a, 1992 and 1995) and Fernandez (1994) tends to reinforce these conclusions. The existence of a Capuli culture has been postulated on the basis of funerary contexts (Uribe 1977-8), but no domestic component has ever been found. The whole argument of two coexisting cultures relies on supposedly marked differences between the types of tombs, pottery, lithics and metallurgy. New data and a new look at existing data is showing that there are no such marked differences and that, as far as metallurgy is concerned, associations between styles, ceramic complexes, lithic objects and sites are not consistent.

3.3. Function and form

The analyses made on the information registered in our database for 2,359 objects in the collection of the Museo del Oro is summarised in the following table:

Table 3 – Distribution of objects according to their function.

Function	Frequency	% of total
Crown	3	0.13
Diadem	35	1.48
Helmet	4	0.17
Ear ornament	211	8.94
Ear pendant	549	23.27
Nose ornament	1,010	42.81
Necklace	21	0.89
Bead	38	1.61
Pendant	46	1.95
Breastplate	3	0.13
Nipple piece	30	1.27
Bracelet	15	0.64
Flute	1	0.04
Pan’s flute	5	0.21
Flute casing	1	0.04
Staff casing	5	0.21
Bell	1	0.04
Hawk-bell	83	3.52
Appliqué	64	2.71
Skin appliqué	2	0.08
Textile appliqué	77	3.26
Pin	1	0.04
Lime dipper pin	1	0.04
Plate	2	0.08
Dangler	6	0.25
Wire	1	0.04
Fishing hook	1	0.04
Tweezers	1	0.04
Spring	32	1.36
Laminar object	4	0.17

Table 3 - Continuation

Function	Frequency	% of total
Casting ingot	2	0.08
Basket	2	0.08
Chisel	9	0.38
Tool	1	0.04
Axe	10	0.42
Figurine	3	0.13
Spinning disc	26	1.10
Container	8	0.34
Undefined object	1	0.04
Fragment	10	0.42
Multi-piece object	34	1.44
Total	**2,359**	**100.00**

The distribution of objects according to their function shows a very particular trend. There is a large number of different objects (40 exactly, excluding the “Multi-piece objects” that correspond to registration procedures rather than to real categories). In spite of this, many categories are extremely scarce (less than 6 objects and, in 10 cases only one object in each). Only twelve categories have more than 25 objects (just over 1% of the sample). Those well represented categories include: Diadems, Ear ornaments, Ear pendants, Nose ornaments, Beads, Pendants, Nipple pieces, Hawk-bells, Appliqués, Textile appliqués, Springs and Spinning discs. Those twelve types of objects concentrate 93.28% of the sample. More even, the three most represented types (Ear ornaments, Ear pendants and Nose ornaments) amount to 1,770 objects (75.02% of the sample). This particular pattern of concentration is radically different from the one observed for other archaeological areas of Colombia (Lleras 1997). The emphasis on the decoration of the ears and nose must reflect a cultural pattern related both with the use of metal adornments and the human body about which we have no exact idea.

On the other hand, it must be noted that the vast majority of those ear and nose ornaments are quite simple and small. This abundance of simple repetitive forms seems to indicate a widespread use of metal ornaments among the population of the area. Many

small nose and ear ornaments seem to be have been found inside simple shallow graves probably corresponding to individuals belonging to low and middle strata of the indigenous society. This trend would have been counterbalanced by a small quantity of large, complex and exquisitely crafted ornaments that are only found inside deep complex graves. Among those special objects, reserved for the high stratum of society, we have crowns, diadems, helmets, breastplates and special types of nose ornaments.

The available chronological information does not allow us to conclude whether this pattern, that determined the coexistence of simple ornaments in large quantities with complex ornaments in small quantities, was particular to any given period within the fifteen centuries of metallurgical production or whether it was the rule throughout that period. The frequency of each type of ornament must be analysed also with relation to the geographical distribution, something that at this stage was impossible to finalise. Complementary information can be obtained when the geometrical shape and the representation of the objects is synthesised as in the following tables:

Table 4 – Distribution of objects according to their geometrical shape.

Geometrical shape	Frequency	% of total
Ring shaped	496	24.33
Bi-conical	4	0.20
Cylindrical	15	0.74
Circular	530	26.00
Concave circular	48	2.35
Convex circular	42	2.06
Conical	29	1.42
Square	3	0.15
Complex shape	11	0.54
Various shapes	10	0.49
Elliptical	24	1.18
Globular	13	0.64
Ovoid	2	0.09
Rectangular	12	0.59

Table 4 – Continuation.

Geometrical shape	Frequency	% of total
Rhomboidal	2	0.09
Semi-elliptical	550	26.97
Semi-globular	12	0.59
Semi-lunar	130	6.38
Sub-globular	76	3.73
Twisted	3	0.15
Trapezoidal	18	0.88
Triangular	6	0.29
Tronconical	3	0.15
Total	**2,039**	**100.00**

As in the previous case (function), we can see that even though there is a large range of geometrical shapes (23 altogether), most of them appear very rarely (typically bellow a total frequency of 20 objects or 1% of the sample). On the other hand circular or circular-related objects (ring shaped, cylindrical, circular, concave circular, convex circular, elliptical, globular, ovoid and conical) sum 1,199 (57.81% of the sample) and semi-elliptical and related forms (semi-elliptical, semi-globular, semi-lunar and sub-globular) sum 768 (37.67% of the sample).

The emphasis on those two families of shapes as opposed to polygons (squares, triangles, etc.) is showing another marked cultural pattern, which has its counterparts in pottery (Perez 1998). It is common in archaeological literature to establish associations between circular forms with the Sun and semi-lunar shapes with the Moon. That kind of hypothesis would require further research before any definite conclusion is presented. The type of representation (that is the repertoire of forms different from geometrical shapes) present in Nariño complements this panorama.

Table 5 – Distribution of objects according to representation.

Representation	Frequency	% of total
Anthropomorphic	7	4.76
Anthropozoomorphic	3	2.04
Arc shaped	31	21.09
Bird shaped	24	16.33
Snail shaped	1	0.68
Band shaped	2	1.36
Fang shaped	6	4.08
Heart shaped	1	0.68
Spatula shaped	1	0.68
Star shaped	5	3.40
Flower shaped	4	2.72
Claw shaped	1	0.68
Shaped as an “H”	8	5.44
Forked shaped	17	11.56
Monkey shaped	4	2.72
Shaped as a “n”	1	0.68
Spring shaped	3	2.04
Gourd shaped	1	0.68
Imitating feathers	25	17.01
Zoomorphic	2	1.36
Total	**147**	**100.00**

The most noticeable fact about representations is their very low frequency; shapes different from geometric forms are present in only 147 out of 2,359 objects (that is just 6.23% of the sample). There are 20 different representations but half of them have frequencies bellow 2% of the sample (3 or less objects). Only four types of representations are present in significant numbers (over 17 objects or approximately 12% of the sample): arcs, birds, forks and feathers. Those four types account for 97 objects (65.99% of the sample). Anthropomorphic and Anthropozoomorphic representations are scarce and if any single animal is dominant, there is no doubt that birds have that tittle, since bird and feather representations sum 33.34% of the sample.

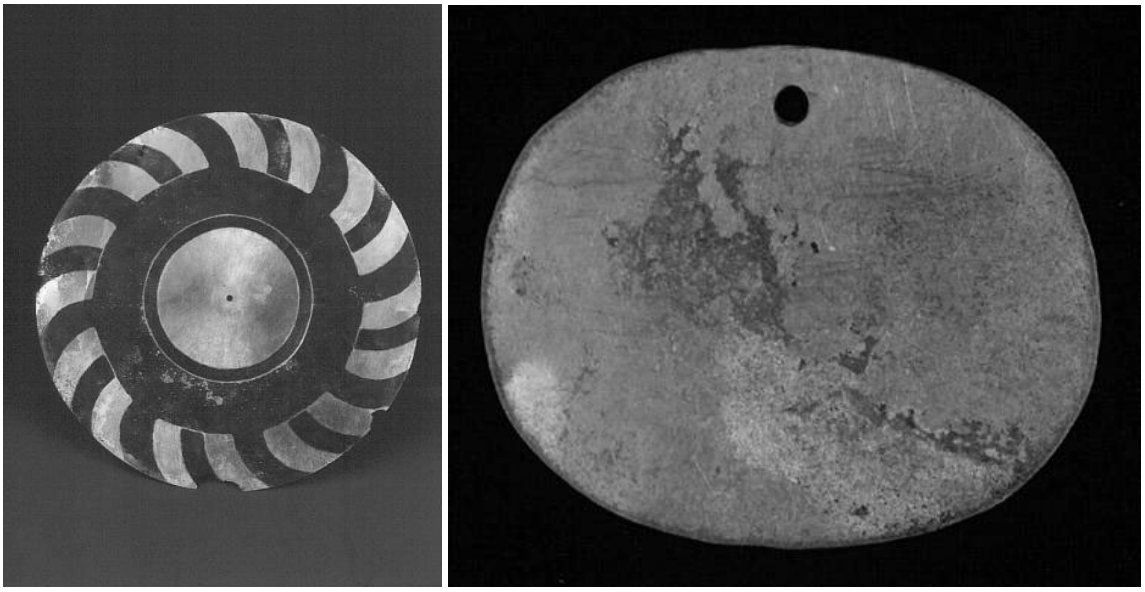
To sum up, the data summarised in the tables we have briefly analysed shows that the pre-Hispanic metallurgy of Nariño has the following general characteristics with respect to function and form:

1) There is a wide range of functional categories but most of them are present in very low frequencies while three types of objects (nose ornaments, ear ornaments and ear pendants) concentrate three quarters of the total sample.
2) There is equally a wide range of geometrical shapes but many are extremely scarce whereas two families (circular and semi-elliptical) concentrate over 95% of the sample.
3) Representations different from geometrical shapes are scarce and within the existing ones, half are very scarce. Four main types concentrate nearly two thirds of the sample. Bird representations are dominant.

These curious patterns need to be analysed in more detail taking into consideration other factors which, at this stage, it was impossible to include, such as chronology, colour, technological characteristics, etc. However, the general trend seems to show a combination of complexity and simplicity co-existing within the same culture. It seems as if there were two different sets of uses and patterns of production, one alongside the other. What we can be sure about in this stage is that those two sets do not correspond to the so-called Capuli and Piartal-Tuza styles, since both simplicity and complexity are present inside those styles as previously defined (Plazas 1977-8). Even in the absence of important additional data the most probable interpretation for the existence of these two sets has to do with social hierarchy.

Left – Gilded copper ornaments from Yacuanquer. Right – Head ornament from La Cruz

Left – Tinculpa style ear pendants. Right – Geometrical ear pendants. Both pairs of ornaments from south cluster.



Left – Spinning disc, south cluster. Right – Breastplate from La Cruz (north cluster).

4. Relations with Ecuador and the Central Andes

As we pointed out in the introductory part of this paper the Nariño-Carchi metallurgical area, located in south-western Colombia and northern Ecuador, is a rather insular cultural phenomenon when seen from the perspective of the rest of the metallurgical traditions of Colombia. The relations of the so-called Capuli style with the Early South-Western Tradition rely on two very fragile arguments, namely the use of pure gold and the emphasis on hammering for manufacture. At the present stage of this research we have not got yet precise data for manufacturing techniques but, as far as the type of alloys used,

we are sure that within the so-called Capuli style there are several examples of objects made with various grades of gold-copper and gold-silver-copper alloys.

Taking into account what we stated about the importance of the Costa – Sierra – Selva communication in the Central Andes and the fact that our area of interest does participate to a large extent of this scheme, we should be able to find some sort of similarity between the Nariño-Carchi metallurgy and that of the coastal Tumaco – La Tolita region. Even though there are some evidences of influence in both regions, the strength of these similarities is rather small.

Tumaco – La Tolita metallurgy is among the oldest metallurgical traditions in South America and definitely the oldest in Colombia. Absolute C14 dates for metal objects from this culture go back as far as the fifth century B.C. (Patiño and Bouchard in Bravo 1998). Even though archaeological research has been carried out on both sides of the border, most metal objects have been obtained by looting. An important sample exists in the Museo del Oro in Bogota, but the most representative collection is kept at the Museo del Banco Central del Ecuador in Guayaquil and Quito.

The distinctive characteristics of the Tumaco – La Tolita metallurgy are quite different from those of the Nariño – Carchi area. Most objects are skin appliqués and miniature ear and nose ornaments that have no similar counterparts in the highlands. The use of platinum and the combination of gold and platinum in small objects is another important feature of metal work in this area. A few objects show some similarities with objects from our area of interest; those include circular anthropomorphic or zoomorphic ear pendants and bowls decorated with human and animal faces. No other important connection can be established between the two areas with respect to metallurgy, a fact that is surprising when we take into account that most of the gold and silver used in the highland area must have been obtained in the coastal area.

A similar type of circular ear pendants appears in the Jama-Coaque culture (300 B.C. – 700 A.D.), another coastal culture located south of the Tolita region. In the Jama-Coaque pieces the animal representations tend to convey a stronger aggressive image that, curiously enough, differs from the Tolita examples and comes closer to the Nariño-Carchi objects.

Both Jama-Coaque and Tumaco-La Tolita are believed to have their cultural roots in an earlier Formative culture, which spread along most of the central and northern part of the Ecuadorian coast: Chorrera. A contemporary and closely related culture occupied the highlands of central and southern Ecuador and, in turn, acted as the cradle of later developments in the Andes: Narrio. Both Chorrera and Narrio developed approximately between 1,000 and 300 B.C. The first evidences of the production and use of metal objects in Ecuador are associated with Chorrera and Narrio. Both gold and copper artefacts were being produced in the Andes and Pacific lowlands. Some types of axes and tools are similar to their Nariño-Carchi counterparts in spite of the enormous time gap that separates the two developments. Adornments of the Chorrera and Narrio cultures show no special similarities with those of our area of research.

Further south, in the central northern part of the Peruvian Sierra between 1,000 and 400 B.C., the Chavin culture evolved a complex iconography that formed the basis of later coastal and highland cultures. Metallurgy is present in the Vicus culture (300 B.C. to 300 A.D.) in elaborate adornments and figures portraying anthropomorphic representations and arc-shaped objects reminiscent of some Nariño-Carchi objects. The Vicus metallurgy employed several gold-copper alloys and techniques that were later popular in the Nariño area.

The classic culture of northern Peru (300 to 800 A.D. approximately) with important metallurgical production is Moche. Recent excavations have revealed an extremely complex and exquisitely elaborated set of metal objects accompanying the burials of important individuals. In Moche metal work was developed both in the technological and iconographic aspects to a high degree. Gold, copper and silver were used pure or in binary or ternary alloys to produce large objects which were then surface-treated by means of various methods (Kauffman-Doig 1969). Several gilding techniques were known and were combined with selective abrasion and cinnabrium coating to produce different combinations of colours.

Even though it is not strictly possible to establish similarities between Moche objects with the Nariño-Carchi metallurgy, there are several patterns of manufacture and design that

are very similar and, at the same time, not shared by any other metallurgical tradition of Colombia. Among those we must underline the following:

1) The use of gold-copper alloys followed by selective surface treatments.
2) The use of pure silver.
3) The division of surfaces in different colour and texture zones.
4) The search for colours different from the basic metal colours for design purposes.

Later northern Peruvian cultures belonging to the Epoch of Regional Developments (1,200 to 1,450 A.D.), like Chimu and Sican-Lambayeque, carried on the basic Central Andean tradition of metal work. Both cultures used binary and ternary alloys, gilding techniques and soldering to produce complex objects. A few iconographic traits of Chimu and Sican-Lambayeque iconography present in necklaces, pendants and masks (Kauffman-Doig 1969) show surprising similarities to Nariño-Carchi objects.

At the present state of our research it would be inappropriate to establish direct links between the Ecuadorian and northern Peruvian metallurgical traditions that we have named and the Nariño-Carchi metal work. In spite of the fact that our approach to this theme is still a preliminary one, we believe that we can state the following with confidence:

1) In the Costa and Sierra of northern Peru and Ecuador, between 1,000 B.C. and 1,450 A.D., the Chavin, Vicus, Moche, Chorrera, Narrio, Jama-Coaque, Tumaco-La Tolita, Chimu and Sican-Lambayeque cultures developed a highly sophisticated and complex metallurgy. The basic tradition of metal work, the use of certain alloys, specific techniques of surface treatment and iconography were passed from one culture to the other throughout this period.
2) This Central Andean metallurgical tradition irradiated its influence northwards into the highlands of northern Ecuador and southern Colombia allowing the emergence of a metallurgical area where the basic technological and iconographic patterns of the influencing tradition were kept.
3) From approximately 400 A.D. the Nariño-Carchi area developed its own dynamics with respect to metallurgical production and produced certain innovations. Even so, contacts remained stronger with the Central Andean region than with south-western

Colombia until the European conquest. This fact explains the insularity of the Nariño metallurgy within pre-Hispanic Colombia.

In the future, further research into the collection of the Museo del Oro and the Ecuadorian collections and more detailed comparisons with Peruvian material will allow us to refine these hypotheses.

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