

Early Herrera. The first egalitarian tribal society of the cundiboyacense altiplano, Colombia*

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ABSTRACT

In this article, the categories of increasing complexity (CC) and threshold are used for the study of the ancient history of the Altiplano Cundiboyacense, between the years 20,000 B.C. and 1550 AD, where we can differentiate four different levels of CC: 1) hunter-gatherers; 2) early hunter-food producers; 3) agro-pottery societies, and 4) hierarchical cacical-type societies. The complexity of the Early Herrera egalitarian tribal society was determined, based on the following variables: 1) settlement patterns, 2) primary economic activities, 3) secondary craft-type activities, 4) architectural structures in the villages, 5) The exchange of raw materials and manufactured goods and, 6) funeral customs

KEY WORDS: Increasing complexity, Threshold, Cundiboyacense Altiplano, Early Herrera Society.

Herrera temprano. La primera sociedad tribal igualitaria del altiplano cundiboyacense, Colombia

RESUMEN

En el presente artículo se utilizan las categorías de complejidad creciente (CC) y umbral, para el estudio de la historia antigua del Altiplano Cundiboyacense, entre los años 20.000 a.C. y 1.550 d.C., donde podemos diferenciar cuatro niveles diferentes de CC.: 1) cazadores-recolectores; 2) cazadores-productores tempranos de alimentos; 3) sociedades agroalfareras, y 4) sociedades jerarquizadas de tipo cacical. Se determinó la complejidad de la sociedad tribal igualitaria Herrera Temprano, a partir de las siguientes variables: 1) los patrones de asentamiento, 2) las actividades económicas primarias 3) las actividades secundarias de tipo artesanal, 4) las estructuras arquitectónicas en las aldeas, 5) El intercambio de materias primas y bienes manufacturados y, 6) las costumbres funerarias

PALABRAS Clave: Complejidad creciente, Umbral, Altiplano Cundiboyacense, Sociedad Herrera Temprano.

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1. INTRODUCTION

Two of the most important narratives in the Archaeology today are the origin of the complexity of socio-cultural systems and how and when the different levels of increasing complexity emerged in human history. According to the new complexity paradigm, all sociocultural structures that have existed in ancient history, from hunter-gatherers to state societies, are dynamic systems that we could consider complex societies. The qualitative difference between each of these structures lies in the hierarchy and the level or degree of complexity that each of them reached over time, which is known as increasing complexity (IC) while the transition between each level of IC is considered, therefore, as a threshold. According to David Christian, thresholds are: "the elements that indicate the presence *of a major turning point*, that is, of a moment in which hitherto existing things underwent a drastic reorganization or underwent alterations of some kind, which in turn *generated the appearance of new or 'emergent' properties* and brought forth qualities that had never before materialized." (Christian, 2019, p.21) (emphasis added).

This theoretical position differs from the commonly accepted conception in current archaeology, that society is "complex" only when it reaches a particular degree or level of sociocultural development, where institutionalized social inequality is considered a fundamental turning point (Sambueza et al., 2020, p. 9). However, as shown by several archaeological investigations of hunter-gatherers and early food producers in South America, in these egalitarian societies there are several elements of social complexity, despite not having institutionalized social inequality. Recently Yacobaccio (2004, p. 315) has suggested that during the Early and Middle Holocene, the economic model of these two types of social structures was characterized by the implementation of specialization, diversification, and intensification strategies. In other words, they were "complex hunter-gatherers."

If we use the theoretical categories of IC and threshold, I consider that in ancient American history it is possible to differentiate the following five levels of IC, with their corresponding thresholds or turning points: 1) egalitarian pre-tribal societies of hunter-gatherers, 2) egalitarian pre-tribal societies of hunters and early food producers, 3) sedentary egalitarian tribal societies, 4) hierarchical chiefdom-type societies, and 5) state societies. All five levels were present in Mesoamerica and the Central Andes, while in northern South America, the Caribbean, and most of southern South America, only the first four levels existed. In turn, within each of these five levels, we find societies that had different levels of development.

As for the specific case of Colombia, it is very likely that the first four levels of IC were represented by the following sociocultural structures: The pre-tribal egalitarian hunter-gatherer societies of the late Pleistocene (20,000-8,000 BC) which have been detected, for now, in the Middle Magdalena (Pubenza) (Van der Hammen and Correal 2001), and in the Cundiboyacense Highlands (Tocogua and Tibitó 1) (Gómez et al. 2007; Correal, 1981). Egalitarian pre-tribal societies of hunters and early food producers occupied a wider Andean territory, including the center, west, and south of the eastern, central, and western cordilleras. His timeline was from 8000 to 2000/1300 BC (Rodríguez, 2019b, 2021). The third level has been detected, for now, in the Caribbean coast, the Andean regions of Antioquia, and the Cundiboyacense Highlands. In this case, we are dealing with egalitarian societies with a sedentary settlement pattern, regular agriculture, and the introduction of artisanal processes, such as pottery and textiles. *Grosso modo*, this type of society existed between 1,300 BC and the beginning of our era. And finally, the fourth level, which was present practically throughout the national territory, was characterized by a great diversity of hierarchical forms, including chiefdoms, which were structured approximately during the last thousand years before the Spanish invasion.

As the reader will notice, the chronology of each of these levels of IC overlaps in certain periods. This is explained by the fact that during the same historical period, several societies with different levels of IC coexisted. For example, in Colombia, 6,000 years ago, societies with two different levels of IC were interacting with each other. While in the Calima region (El Pital terrace) (Salgado 1995), and in Antioquia (Porce Y-021) (Castillo and Aceituno 2006), semi-sedentary groups were at IC level 2, in the Colombian Caribbean lowlands (San Jacinto 1 and Puerto Chacho), level 3 corresponds to more complex semi-sedentary societies, which introduced ceramic production (Oyuela-Caycedo and Bonzani, 2014, pp. 26-27).

Now, in relation to the Cundiboyacense Altiplano (CBA), it is necessary to clarify that this is one of the best studied archaeological regions of Colombia, where it has been possible to identify a sequence of sociocultural development of about 20,000 years, which is currently the most complete in the ancient history of Colombia.¹ To define the different levels of IC that occurred in this region I have resorted to the metaphor of building blocks or components proposed by Fred Spier, who considers that the different levels of complexity are based on four basic criteria: (a) the number of components available since it is clear that with a greater number of components more complex structures can be obtained; (b) the level of complexity can increase when the variety of building components increases; (c and d) levels of complexity can increase when the connections and other interactions between building components are more numerous and varied (Spier, 2011, p.150).²

Based on the four components suggested by Spier, I would like to hypothesize that the CBA, during the chronological span between 20,000 BC and AD 1,550 we can differentiate six levels of IC, qualitatively different in time: 1) hunter-gatherer societies (20,000-8,000 BC); 2) early hunter-gatherer food-producing societies (8,000-1,300 BC); 3) Early Herrera society (1,300

BC- AD 200); 4) Late Herrera society (AD 200-1,000); 5) Early Muisca society (AD 1,000-1,350) and 6) Late Muisca society (AD 1,350-1,550). With the first three levels, we can associate egalitarian societies, while the following three levels correspond to hierarchical sociocultural structures of chiefdom type, with different magnitudes of development (Table 1).

+1.550	L E V E L 6	Late Muisca Society
+1.350	L E V E L 5	Early Muisca Society
+1.000	L E V E L 4	Late Herrera Society
+2000	L E V E L 3	Early Herrera Society
-1.300	L E V E L 2	Society of Hunters and early food producers
-10.000	L E V E L 1	Society of Hunter Gatherers
-20.000		

Years
before
and
after
Christ

Table 1. Timeline of the different levels of IC present in the ancient history of the Cundiboyacense Altiplano.

I have addressed the study of the first two levels of IC in three publications that came out between 2019 and 2021 (Rodríguez 2019a, 2019b, 2021). In the present article, I will deal with the third level of complexity corresponding to the Early Herrera society (EHS). For the study of this new type of society, I will implement an interdisciplinary methodology, which prioritizes the complementarity of data provided by disciplines such as archaeology, bioanthropology, paleobotany, and zooarchaeology. I propose that it is possible to establish the level of complexity of EHS by analyzing six cultural variables:

1. Settlement patterns
2. Primary economic activities (agriculture, hunting, and fishing)
3. Secondary craft-type activities (pottery, textiles, manufacture of lithic and bone tools),
4. Architectural structures in villages
5. Exchange of raw materials and manufactured goods and cultural interaction
6. Funerary customs associated with death (shape of graves, types of burial and composition of grave goods) (Rodríguez 2022) (Rodríguez 2022).

2. SETTLEMENT PATTERNS.

According to the study of 17 archaeological sites located in the CBA, EH communities used three types of settlement: a) rock shelters, b) villages, and c) dispersed hamlets (Figure 1).



Figure 1. Spatial location of archaeological sites related to the EHS. 1. Arboloco. 2. Cubsio. 4. Chía 2. 5. Guaimaral. 6. El Infiernito. 7. La Filomena. 8. Nueva Esperanza. 9. Facatativá. 10. Salcedo. 11. Tequendama. 12. Tocaima. 13. Tocarema 5. 14. Zipacón 1. 15. Zipaquirá V.

Settlements in rock shelters. The rocky shelters of the Bogotá Savannah were ideal places to take refuge from the inclement weather. Therefore, it is no coincidence that they have been used for millennia as dwelling sites and for activities related to the biological and socio-cultural reproduction of human groups. The tradition of permanently occupying these sites, initiated by the pre-tribal hunter-gatherer macro-bands (second level of IC), since the end of the Pleistocene, was continued, although to a lesser extent, by some EH sedentary tribal communities, who used the rock shelters as dwellings during the initial and intermediate phases of their sociocultural development, that is, about 1,200 years, between 1,300-100 BC. The rock shelters involved in this settlement pattern were: Zipacón 1, Tequendama 1, Ventaquemada 1, Piedra Pintada and Chía 2. Of special interest are the rock shelters of Zipacón and Tequendama 1. The first is because it is the archaeological site where the oldest Early Herrera pottery was found, dated 1,300 BC. (Correal and Pinto, 1983, p.

40). And the second, because of the intensity of its occupation during 7,500 years. The first two were carried out by groups of pre-tribal hunter-gatherers, and the last one related to sedentary groups of the EH egalitarian tribal society, who built a dwelling with a stone floor, around 275 BC. (Correal and Van der Hammen, 1977, pp. 155-162) (Figure 2).



Figure 2. General view of the excavations in the Zipacón rock shelter (Correal and Pinto 1983: 40).

Village life. Undoubtedly, the village was the type of settlement that prevailed over time. This new physical space allowed the grouping of the EH population in larger social units than the bands and macro-bands belonging to the second level of IC. As the population increased and the productive forces of society developed, the villages grew and were divided until the time of the Spanish conquest, they became true regional centers, as was the case of the Muisca villages.

The archaeological studies of systematic regional reconnaissance, as well as the excavations that have been carried out in the CBA during the last 30 years, have made it possible to identify three areas of population concentration of the HTe society: the first is Funza-Mosquera-Fontibón, which is characterized by having the largest villages, indicating the highest population density. Second, the regions of Fúquene-Susa and Cota-Suba, with intermediate (medium) villages and intermediate

populations. And finally, the region of the Leiva and Tena valleys is characterized by small sites and low population (Argüello 2015, pp. 63-64).³ Usually, scattered hamlets related to the centers of the greater population were located near the villages.

Small villages. To illustrate the life of EH populations in small villages, we will take the example of several sites studied in the Leiva and Sogamoso valleys. According to the results of the archaeological surveys carried out in the first valley, EH ceramics were found in 21.7 ha. Here it was possible to identify a dispersed settlement pattern in small and medium-sized hamlets. But also, a small village (2.1 ha.). The population occupied flat areas and fertile soils following the course of the rivers El Cane, Sutamarchán and Sáchica. As in Tena and Fúquene, the habitation sites were located on fertile soils, favorable for agriculture (Langeback, 2001, p. 48).

Meanwhile, the EH occupation in the Sogamoso valley covered 19.5 ha. Half of the population lived in small villages of less than 50 inhabitants, while the other half lived in scattered farmsteads of no more than 1 ha. in extension. For this valley, three levels of intensity of HT human interaction have been suggested: In the first level, there are three local communities, which would be small villages (FIR-A, FIR-B, and SOG-B). The small village FIR-A was located to the south and its population ranged from 13 to 33 people. This small community, which included FIR-A and several scattered hamlets covering about six hectares, could have had a population of between 30 and 59 people. FIR-B and SOG-B, the first in the south and the other in the northeast, would also be part of this first level.

Medium-sized villages. In the Fúquene valley, the EH populations settled in scattered hamlets occupying less than one hectare, and also in two villages, one medium-sized and the other small. The first, (VF-494), located in the lower part of the Soche River, occupied an area of 5.79 ha. The second village (VF-718), of similar size (5.21 ha), was located in the western foothills of the

Táquira hills. And finally, the smallest village (VF-724), covered an area of 2.82 ha, near the Moiba rock (Langebaek, 1995, p. 74). These three villages occupied 34.6% of the area inhabited by the HTe populations, while the rest of the territory (65.4%) was appropriated by families living in dispersed dwellings. In general, the size of the sites varied between 0.12 ha. and 5.79 ha. The demographic density was very low and could range between 7.7 and 10.8 individuals per km², for a sparse population, estimated between 399 and 558 people (Langebaek, 1995, p. 76).

It is important to point out that, as in the Tena Valley, in Fúquene, the settlements where the largest population was concentrated, i.e., VF-494, VF-718, and VF-724, were located in privileged areas with the most fertile soils for agricultural activities. In other words, the agricultural potential of the soils was a determining criterion that the settlers took into account when locating their villages (Langebaek 1995, p. 82).

Large villages. So far, the largest EH village was discovered and studied during the rescue archaeology project, conducted between 2012 and 2015, at the Nueva Esperanza Electric Substation, municipality of Soacha, Cundinamarca. The large village of Nueva Esperanza (NE) was located on a 29.8 ha. terrace, at an altitude of 2,596 masl, 1,000 m. in a straight line from Salto del Tequendama, and 4.5 Km. in a straight line, in a northeast direction from the Aguazuque site. Field survey and excavations were carried out in 5.8 ha. located in the extreme south, where the electrical project was developed. Initially, there in the southern sector, populations of the EH society founded their village. Then the population grew, increasing the dimensions of the village, during the Late Herrera (LH), also in the southern sector. And finally, the Muisca populations occupied the terrace, especially the northern sector. It was possible to identify a historical period of 2,000 years, which includes EH, LH, and Muisca societies (Final Report 2016, TI-II-III; Argüello 2018 (Edit.); Santa et al. 2019 (Edit.) (Figure 3).

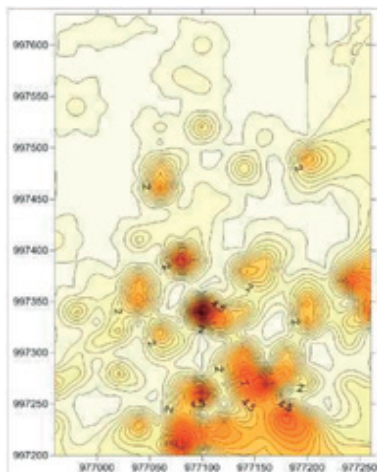


Figure 3. Distribution of the EH population, in the southern sector of the village of NE (Final Report 2016, Volume II: 181).

Another important village was Cubsio, located in the Tena valley. There, during the late phase of development of the EH society, between 100 B.C. and AD 400, the population settled in the coldest area of the valley, at an average altitude of 2,000 masl, using two types of settlements: First, it was concentrated in a large village called Cubsio, consisting of two large sites that formed the nucleus of a large village in the Tena Valley, covering an area of 11 h. And second, people lived in several hamlets scattered throughout the valley, which were outside the population center, but were probably integrated with it. Both in the case of the village and the dispersed hamlets, the population established their living sites in the most fertile soils for agricultural activities (Argüello, 2015, pp. 100-131). Regarding the amount of population during this period, Argüello (2015, p. 95) has suggested a very low density, with a range between 23 and 111 people.

3. ARCHITECTURAL STRUCTURES IN THE VILLAGES.

The archaeological investigations carried out in several EH

villages have allowed us to identify three types of architectural structures associated with life: a) residential units of circular plan, bohío type, used for living, b) half moon-shaped constructions, probably used for handicraft activities, and c) funerary structures, related to death. In the NE village, the bohíos were found both isolated and in groups, associated with communal transit areas and home gardens. The villagers lived in bohío-type houses, which functioned as domestic or residential units of biological and sociocultural production and reproduction. They were located in the southwestern and central-eastern sectors of the village and were between five and nine meters in diameter. Near the dwellings were the garbage or waste areas, and the tombs, some of them with communal burials. The walls of all the bohíos were covered with bahareque, and the central posts were lined with impermeable clays, known locally as puzzolana (Romano, 2018, p. 61).

The analysis of a fragment of bahareque from an ancient wall, which had the impression of a textile weave or basketry, found in Feature 11-C32 and the coatings of some post footprints, suggests the implementation of a specialized construction technology, which surely included the procurement of special raw materials more than 180 Km. far from the site, and also the presence of specialized workshops where the mixtures were prepared (Posada, 2016, p. 422). In these domestic units, the commoners carried out their daily activities of biological and sociocultural reproduction. There, the family groups executed work such as obtaining, preparing, and distributing food and also, the manufacture of material objects associated with craft activities, such as ceramics, lithic instruments of production (tools and spindle whorls), and objects of adornment (necklace beads and others). Also, work related to childbirth and child-rearing was carried out.

One of these units was of special interest because it was used during a period of about 2,000 years by the families of

the three agro-pottery societies identified in the village of NE: EH, LH, and Muisca. This is the domestic unit and its area of influence, which was excavated between cuts 30 and 24, where, among other things, cutters, scrapers, and perforators were found, instruments used in activities related to the treatment of skins and woodworking. Jaramillo (2016a, p. 191) has suggested that during the EH period, the family that initially occupied the dwelling was involved in a domestic economy, whose consumption activities were more frequent (the proportion of bowls was three times greater than that of pots). While, during the later LH, the domestic economy underwent a drastic change, since the production and storage of products surpassed that of consumption (a greater increase of pots, in relation to bowls) (Figure 4).

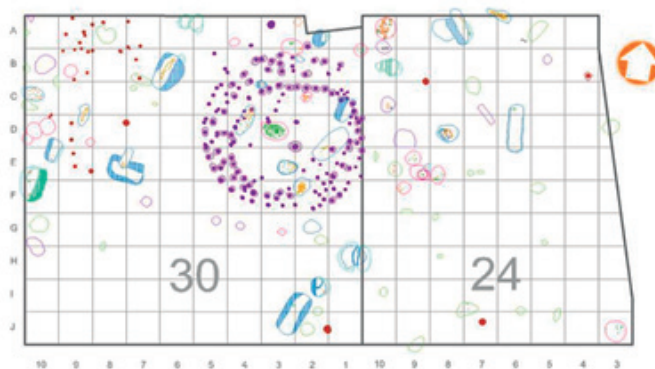


Figure 4. A circular plan of the residential unit was found between cuts 30 and 24 of the NE village (Jaramillo2016a: 185).

Four of the bohíos studied in the NE village stood out for their large size. Three of them, located in the center of the village, had dimensions between 12 and 15 meters in diameter and were located in a triangle. It has been suggested that these constructions probably belonged to the founding families of the village. Towards the central-western sector of the village stands out the largest house probably built during the final phase of EHS. It was a bohío, with a diameter of 17 meters and walls built

with large logs, and whose entrance floor had been covered with flagstones. Its function is unknown (Romano, 2018, p. 60-61) (Figure 5).



Figure 5. Reconstruction of the large and medium-sized bohíos in the NE village, during the EH period (Romano, 2018, p. 80).

4. PRIMARY ECONOMIC ACTIVITIES

In the EH egalitarian tribal society, there was a domestic economy, which was basically based on two types of productive tasks: the production of food goods and the production of non-food or handicraft goods. These two activities were involved in the economic cycle of production-distribution-consumption-exchange (barter). Both activities generated surplus products, although most of these came from the production of food through agriculture.

Agriculture and food crops. The EH communities implemented a mixed economy, based on agriculture, which was practiced on a regular basis. They implemented two complementary agricultural systems: *vegeculture*, especially of high-altitude tubers, and *semiculture*, with seeds, especially maize and beans. These two agricultural systems constituted the economic base of the EHS.⁴

This primary activity generated surplus products, which

were distributed collectively in festivals and other social activities. Likewise, part of this was used for exchange with communities in other villages at the regional level. In this type of egalitarian tribal society, the number of products produced above the subsistence consumption of the community, was not appropriated by a certain lineage for its benefit, but belonged to the community (Bate, 1984, in Sarmiento 1993, p. 99). The surplus of products was appropriated by lineages though in the following phase of sociocultural development: the hierarchical tribal societies (Bate, 1984, p. 65). The population consumed mainly vegetable protein, obtained from cultivated and collected plants, but also gathering, hunting and fishing activities. The regular use of both types of protein had a favorable effect on the health of these communities.

As we have already mentioned, among the populations of the EHS, there was an almost general tendency to establish their villages and hamlets dispersed in the most fertile soils, which were suitable to develop regular agricultural activities. The case of the NE village is very special, since 500 BC agricultural activities were carried out both in vegetable gardens near the dwellings and in larger cultivation fields, known as hollows (*hondonadas*), which were modified soils enriched with a high amount of fertilizers. Of these food production units, 17 were identified, and in three of them, macrorests and phytoliths of maize and palms were identified (Arroyave and Buritica, 2016, pp. 385-392).

Thanks to paleobotanical studies carried out with plant materials from several sites, especially microrests (pollen and phytoliths), macrorests (seeds) and starches, we know that four main domesticated plants were used in the diet of the EH populations of the NE village, which they cultivated and consumed intensively: a primitive maize, of the Pollo variant (*Zea mays* cf. var. Pollo), which is still cultivated by farmers on the eastern slopes of Cundinamarca and Boyacá; beans (*Phaseolus vulgaris*); squash (*Cucurbita* sp.), quinoa (*Chenopodium quinoa*) and two edible plants: a succulent herbaceous plant (*Talinum* sp. Cf.) and

another grass of the Oryzae tribe (Figures 6 and 7).

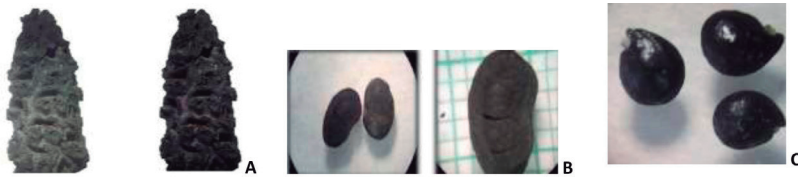


Figure 6. Cultigens used by EH populations in the NE village: A. Charred maize rachis (Rojas 2015:295). B. Charred bean seeds (Rojas 2015:288). C. Quinoa seeds (Rojas 2015, p. 330).

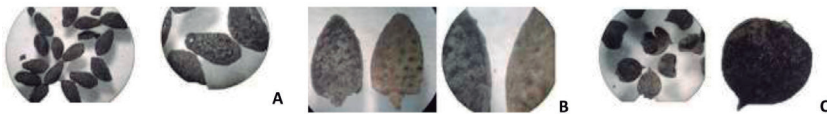


Figure 7. Fruits and medicinal plants used by EH populations in the NE village: A. Charred curuba seeds (Rojas 2015, p.321). B. Charred seeds of granadilla (Rojas 2015,p.325). C. Charred seeds of yellow starthistle (Rojas,2015, p. 327).

It is possible that these six crops were essential for the subsistence of these populations, since they provided a large part of the vegetable proteins they consumed. In addition, we should mention three important fruits, used both for food and medicinal purposes: the curuba (*Passiflora tripartita*), the passion fruit (*Passiflora ligularis*) and the wild strawberry (*Fragaria vesca*). They also took advantage, probably for medicinal purposes, of the yellow thistle (*Argemone subfusiformis* cf) (García, 2016, pp. 64-66-67-69; Rojas, 2015, pp. 285-330). In addition to maize, beans, squash and quinoa, EH populations cultivated and used achira or sagu (*Canna indica*), a plant with high nutritional value, in their diet. Phytoliths of sagu, along with those of maize and

squash, were found in a dwelling excavated at the Arcadia 1 site, associated with a date of 140 BC (Argüello, 2018, p. 21).

It is most likely that the EH agro-pottery groups, both from NE and other villages, also included in their diet several high altitude tubers, probably cultivated in their home gardens, just as several hunter-horticulturalist groups of the Bogotá Savanna had done millennia before. Such is the case of yam (*Dioscörea*), which began to be used in the diet around 1900 BC by the egalitarian horticulturalist populations that occupied the Aguazuque terrace. Along with yam, they also cultivated, by the same time, pumpkin (*Cucurbita pepo*) and ibia (*Oxalis tuberosa*) (Correal, 1990, p. 261). Nor can we rule out that they ate avocado (*Persea americana*), a fruit that had been consumed by the early farmers of Zipacón, around 1,320 B.C. (Correal, 1990, p. 256).

In relation to textile production NE artisans used cotton (*Gossypium barbadense*), a fiber with which they elaborated, especially dresses and blankets. This plant was cultivated in the Magdalena valley and its fiber was obtained by barter with villages located in warm climates (García, 2016, p. 65). Finally, we should mention three cultivars that may have been used for different purposes. The first is the chonta palm (*Batris* sp.), whose fruits (chontaduro) and oil were used. Also, its wood was used in the construction of huts and to make bows and arrows, used in hunting and fishing activities. The second is a plant of the Asteraceae cf. family, with nutritional and medicinal properties. And also, another plant of the Cactaceae sp. family, surely used both in food and for medicinal purposes (García, 2016, pp. 69-70).

In the same way, the populations of the northern sector of the CBA used a similar group of plants, as demonstrated by the study of phytoliths in the teeth of a group of 15 individuals who lived in the village of Moniquirá in Sosamoso (Boyacá) in the 2nd century AD. The analysis allowed the identification of the following cultigens: maize (*Zea Mays*), beans (*Phaeolus*

vulgaris), amaranth (*Chenopodium ambrosioides* L.), broad beans (*Viciafoba* L.), pumpkin (*Cucurbita máxima* Duchesne), tomato (*Solanum lycopersicum* L.), guascas (*Gasilonga parviflora* Cav.) and curuba (*Passifloracea*) (Aldana, 2017, pp. 46-47).

Thus, if we assume that the creators of the EH egalitarian tribal society were the Late Preceramic horticultural groups, archaeologically identified in the Bogotá Savannah, then it would be logical to think that the farmers who succeeded them had a millenary tradition in the management of a large set of wild plants, which over time were domesticated and permanently cultivated.

Agricultural intensification. Around 500 BC, NE farmers began to use fertilizers in crop fields known as *hondonadas*, with the aim of increasing agricultural productivity, necessary to feed their growing population. Around the same time, other villages, also in the Bogotá Savanna (Cota and Chía), began to build, for the same purpose, an agricultural system of raised fields or *camellones* (Boada, 2006, 2013). These primary food production systems not only increased agricultural productivity, but also made it possible to obtain surpluses, which eventually formed the economic basis on which social inequalities or social hierarchies among the LH populations arose (Boada, 2006, p. 84).

Of special interest is the system of raised fields studied by Boada (2006) in the municipality of Suba, Cundinamarca. From the *camellón* located at the site of La Filomena-2, a date of 500 BC was obtained, associated with maize and bean crops (Boada, 2006, pp. 102-108). It is probable that in its beginnings, this agricultural system would have been built and maintained by the domestic units and small villages of the Early Herrera society (Erickson 1993; Serpenti, 1965, in Boada, 2006, p. 83). Furthermore, the agricultural surplus products generated were used by the leaders of the communities, both in communal activities (festivals, etc.) and to obtain, through the exchange, raw materials and manufactured products from other communities.

Hunting, fishing, and gathering. Zooarchaeological studies

conducted on osteological samples of animals recovered from various archaeological sites (domestic units, garbage dumps, and burial structures) of the CBA have revealed the presence of a large number of animals that were used by the EH communities. The most frequently hunted and consumed animals were the white-tailed deer (*Odocoileus virginianus*) and the soche deer (*Mazama rufina*), which provided a large amount of meat. In the NE village, during the EH period, sustainable hunting of these animals was practiced, in order to conserve the resource within acceptable limits, which is evidenced by the presence, in the skeletal remains, of a very low amount of infant individuals, while juvenile individuals are 50% less than that of young adults (Castro and Beltrán, 2016, p. 412).

They also consumed curí (*Cavia* sp.), a species already domesticated, which occupied the second place among the skeletal remains of animals, after deer, and which appeared mainly in domestic contexts of NE (Beltrán and Castro 2016, p. 110,111). Likewise, peccary (*Tayassu pecari*), capybara (*Hydrochoerus hydrochaeris*), paca (*Cuniculus tacznowskii*, *Cuniculus paca*), borugo (*Cuniculus* sp.), tropical rabbit (*Sylvilagus brasiliensis*), Ñeque or guatín (*Dasyprocta punctata*), water dog (*Speothos venaticus*) fox (*Cerdocyon thous*), gray fox (*Urocyon cinereoargenteus*), opossum (*Didelphis marsupialis*), taira (*Eira barbara*), South American coati (*Nasua nasua*), mountain coati (*Nasuella olivacea*), armadillo (*Dasypus novemcinctus*), turtles (*Testudines*) and herons (*Ardeidae*). Ocelot (*Leopardus pardalis*) and Yaguaroundi (*Puma yagouaroundi*) teeth were excavated in domestic and ritual contexts (tombs) which were probably used to make pendants or necklace charms. Among the birds are those similar to the paujil (*Cracidae*), represented in the zoomorphic art of the spindle whorls and some stone figurines. Likewise, the duck (*Anatidae*), heron (*Ardeidae*), cuckoo-like birds (*Cuculidae*), and parrots (*Psittacidae*) (Beltrán and Castro, 2016, pp. 114-116).

Another important activity among the EH populations of

NE was the collection of mollusks used for food and aesthetic activities, to elaborate ornamental objects. In particular, we should mention local terrestrial shell mollusks (*Cochlicella*). Species from other latitudes include mollusks from the Middle Magdalena (*Drymaeus nigrofasciatus*) and bivalves of the Tellinidae family from the Colombian Caribbean, whose shells were probably obtained through trade. In one of the vessels found in one of the excavated tombs, a snail shell with perforations and a set of armadillo necklace beads were found. Remains of gastropods, which were probably part of a necklace, were also found in tomb 4, where an infant was buried (Beltrán and Castro 2016, p.115). Meanwhile, fishing activities, which were carried out with hooks and nets, also provided the population with a good amount of protein. Fish vertebrae of the Actinopterygii family, appeared in several domestic units and tombs of NE (Corredor, 2019, p. 73-82).

Thus, the EH populations of NE consumed animals that they hunted and gathered in the forests near the village, as well as those obtained through exchange with villages of the Middle Magdalena and the Atlantic coast. All these animals provided an excellent amount of protein to the diet of these early sedentary gro-pottery societies of the CBH.

5. THE ARTISANAL WORKS

The EH artisans manufactured a large number of objects, among which we should mention: a) lithic production tools, b) bone tools, c) ceramics and d) textiles. Although this variety of materials has indeed been found in different villages of the CBA, our study will focus on those recovered in the NE village, since, as we said before, this is the best studied of all this geohistoric region.

In their daily life, the communities used three types of production tools: lithic tools, bone needles, and spindle whorls. The rocks of the region were the preferred materials for the

manufacture and use of a large number of lithic production tools. Thus, for example, the main tools used by the EH populations of NE in their different daily activities were: polished axes that were used for clearing, cutting wood, and probably in territorial defense activities; grinding hands and metates, directly associated with agricultural product processing activities, especially maize; mortars and anvils, used for grinding and macerating soft foods.

For small game hunting of rodents and deer, they used triangular projectile points with peduncles and launchers or propellers. Likewise, in work processes such as gathering, depressing animals, and handling soft materials such as wood and bone, they used scrapers and cutters. With non-food-producing activities, we can associate hammers, used to grind hard and soft materials. The latter could have been used to manipulate and prepare clays, which were used to shape the different ceramic objects used by the population. On the other hand, well-elaborated instruments such as polishers were probably used in the terminal phase of the productive processes also associated with pottery (Buriticá, 2016, pp. 1-55).

Bone tools. The artifacts made from animal bones found in the NE village were mainly objects of personal adornment and production tools. These were used in life but also placed as grave goods for the individuals of the community so that they would continue to serve in the "afterlife". Most of them (63.7%) were excavated in domestic units, while the rest (36.3%) came from funerary contexts. Almost the totality of the sample collected was from the first category, with necklace beads and pendants standing out. The materials used for the elaboration of the necklace beads were: armadillo skin plates, long animal bones, especially deer and birds, and a combination of both. For their part, pendants were commonly manufactured with dental pieces (especially deer), long bones (metopod and radius), and mollusk apices (Beltrán and Castro, 2016. pp. 123-126).

Among the production tools, we should also mention

needles, one of them made from the backbone of a fish, pins, polishers, awls, punches, perforators or awls, and spatulas made from deer bones. An arrowhead or spearhead and seven small polished tubes were also presented. The main techniques used to manufacture these artifacts were cut-polishing, cut-abrasion, and perforation (Beltrán and Castro, 2016, pp. 120-125).

Pottery. The EH potters produced a great variety of ceramic objects, among which we should mention: vessels, containers, and zoomorphic figures. According to Boada and Cardale de Shrimpff (2017), the EH pottery is mainly composed of four types: Mosquera Red Incised (MRI), Mosquera Crushed Rock (MCR), Zipaquirá Sherd Temper (ZST) and Funza Fine Quartz (FFQ). These four types appear in almost all the deposits (domestic units, dumps, architectural dwelling structures, and tombs) of the EH society, including the NE village.

Vessels. The paste of MRI ceramics is dark or black, with a sandy or granular texture. It has sand and abundant quartz as temper. The main decoration consists of a thick red slip and an incision in the upper part of the vessels. The forms are simple hemispherical and compound silhouette bowls (aquillados), open, closed, and aquillados, high neck vessels, and globular vessels with restricted mouths and plates (Boada and Cardale de Shrimpff, 2017, pp. 14-21) (Figure 8).

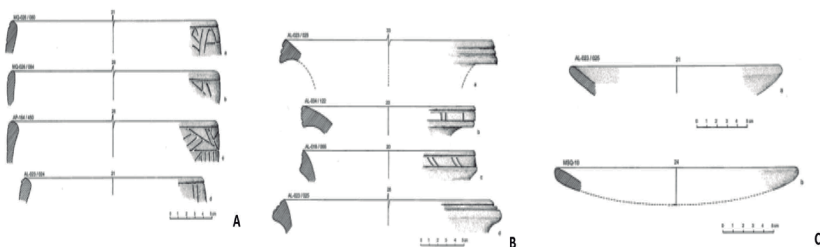


Figure 8. Shapes of MRI-type vessels: **A.** top left: hemispherical bowls. **B.** Top right: everted neck vessels. **C.** Below, dishes (Boada and Cardale de Schrimpff, 2017, p. 16-19, and 20. Figures 4.4., 4.13, and 4.15).

The MCR ceramic has a soft, porous, and calcite-defatted paste. It has black rock and calcite as temper. This type, quite popular, was produced locally in the different domestic units of the EH villages. It presents incisions, triangular impressions, and red paint, especially on the rims, lips, and necks of the vessels. The most common forms are: bowls and bowl-pots, simple hemispherical and compound silhouettes, open and closed, some with reinforced folded rims and folded inward, everted neck vessels, and deep dishes (Boada and Cardale de Shrimpff, 2017, pp. 21-28) (Figure 9).

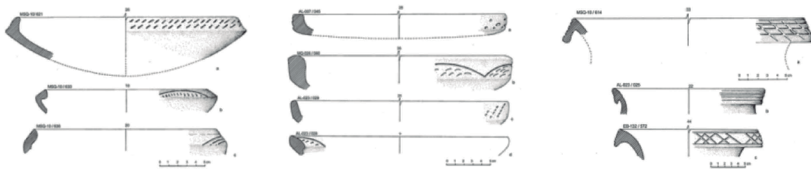


Figure 9. MCR-type vessel forms: top left: bowls of composite silhouette, with reinforced rim folded inward. Above right: deep dishes. Below, everted neck vessels (Boada and Cardale de Shrimpff, 2017, pp. 23-31, and 30. Figures 4.22, 4.41, and 4.38).

Meanwhile, the ZST pottery has two variants: a coarse one with bell-shaped vessels and bowls that were used for salt evaporation, and a domestic one, with a great variety of shapes. Usually, the paste of this type is porous, not very hard, and well oxidized. It has a homogeneous texture and inclusions of ground potsherd or chamotte. The decoration is mainly present on domestic vessels and consists of incised lines and cross-hatching, comb impressions, incised stippling, and undulate decoration. This decoration can be found on the lip, neck, and upper part of the body of the vessels. The main forms of domestic ceramics are hemispherical and aquiline bowls, which can be open and closed; vessels with everted necks, and dishes. Among the most common forms, used in the work of salt production, are aquiline bowls,

open bowls, deep bowls and pandas, and campaniform vessels (Boada and Cardale de Shrimpff 2017, pp. 28-37) (Figure 10).

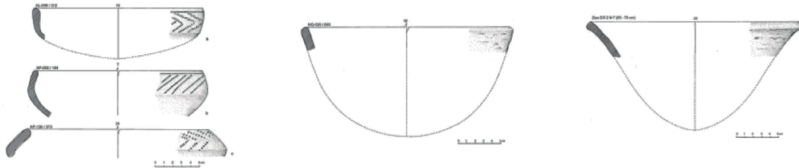


Figure 10. Vessel forms of the ZST type: Top, composite silhouette bowls of the domestic variant. Center, deep open bowl. Bottom, campaniform vessel (Boada and Cardale de Schrimpff, 2017, p. 2, 37 and 38. Figures 4.42, 4.55 and 4.57).

And finally, the FFQ ceramic type has a fine, porous paste, rich in vegetable fibers and quartz temper. The most common forms are hemispherical bowls with a reinforced everted rim, bowls with a composite silhouette, straight neck vessels, and vessels with rims bent outwards. The decoration of the vessels includes orange slip on the external surface, red slip on both surfaces, dots, and triangular and rectangular incisions, made in different sectors of the vessels (Boada and Cardale de Shrimpff, 2017, pp. 37-41) (Figure 11).

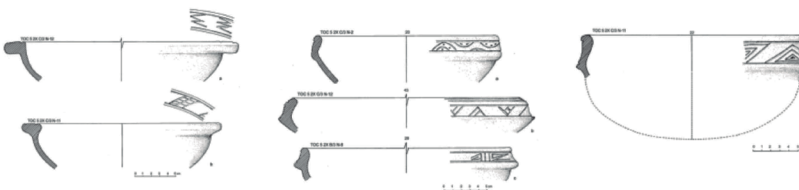


Figure 11. Shapes of type FFC vessels: top (a,b), hemispherical bowls with reinforced everted rim. Center (a,b,c), composite silhouette bowls with a vertical rim. Bottom: hypothetical reconstruction of a keeled bowl with a vertical rim (Boada and Cardale de Schrimpff, 2017, pp. 38-39. Figures 4.42, 4.61, and 4.60).

Zoomorphic figures. EH potters also produced animal figures. Near the foot of the main burial of collective grave No. 21 in NE village, possibly a shaman has placed the head of a zoomorphic figure that appears to be the representation of a feline, which was considered a shamanic power animal (Romano, 2018, pp 76-77) .

Textile production. Along with pottery, textile production was one of the important economic activities of the EH communities. This work was included the use of spindle whorls, as well as needles made of bone and cotton, which were one of the main fibers used for the production of blankets and other garments. In the case of the NE village, evidence of textile production is documented, also by the cotton seeds found during excavations. In almost all the domestic units of the different occupation periods (EH, LH, and Muisca), spindle whorls of different shapes, sizes, weights, and decorations were found (Romano, 2018, p. 62-65). Blankets, in addition to pottery and salt, were a very precious commodity and part of them were exchanged, through barter, with other village communities, thus feeding the cultural exchange networks.

Spindle whorls are one of the important production tools, which together with the looms, were part of the textile activity, as one of the main artisan occupations of the EH communities. Specifically, these were tools used to twist the spindle and elaborate the thread necessary to produce diverse textiles, among them the blankets used by the population, which were also exchanged with neighboring populations. The intensification of textile activities, which generated surpluses that were exchanged, could have played an important role in the emergence and establishment of social hierarchies (Jaramillo, 2016b, p. 30). But, in addition to fulfilling an important function as production tools, spindle whorls were the support for the development of visual languages that functioned, among other things, as symbolic markers of cultural identity (Lema, 1996). In some pre-Hispanic Ecuadorian

cultures, spindle whorls were sacred objects and were used in different cults associated with the duality of life and death, and also with fertility (Fauria, 1984; Wilbert, 1974). Their study also allows us to obtain valuable information on the relationships that were established daily within a village, both at the family and communal levels.

In the NE village, 29 spindle whorls of EH period use were recovered, most of which were found in the domestic units and tombs located in the southern and central sectors. Their shapes were basically: discoidal (20 units), truncated cone (3 units), hyperboloid (3 units), and flattened cylinder (3 units). The main decoration was geometric (Jaramillo, 2016b, pp. 37-39- 46).

In general terms, during the EH period, in the NE village, there was a homogeneous production of spindle whorls of different types, according to weight: light, medium, and heavy. The light type, of little use, was probably related to the production of fine cotton yarns, while the other two, with medium and coarse gauge yarns, were produced on discoidal spindle whorls (Jaramillo, 2016, pp. 30-58). Textile production seems to have been, quite modest and was carried out in the framework of a domestic economy that met individual and communal needs, and possibly, did not generate a large amount of surplus products for exchange with other communities. That is to say, it was not a standardized production (political economy), as it happened in the following period, when the first hierarchical social structure emerged and developed, known as the LH.

6. CULTURAL INTERACTION AND EXCHANGE

The populations of the different EH villages were involved in various commercial exchange networks that were structured in the Colombian territory between the end of the Formative period and the Regional Classic. This was possible because the population produced more food and material objects than they consumed. The presence of these surplus products allowed the development

of exchange with permanent villages located mainly in three nearby geographic regions: the Cundiboyacense Altiplano, the Middle Magdalena, and the Eastern Plains. Thus, for example, the inhabitants of NE, exchanged, in addition to ceramic objects, another series of products such as salt (coming from Zipaquirá and Nemocón), plants from warm regions (coming from the Magdalena Valley and Eastern Plains) such as cotton, chonta palm, peanuts and fruits, animals (armadillos, turtles, peccaries, and birds) and rocks for the manufacture of ornamental objects (malachite, crystalline quartz) (Romano, 2018, p. 72).

Among the foreign ceramics found in several NE domestic units, the Montalvo Black on Red (MBR), Montalvo Incised (MI), Salcedo River Sand (SRS), and Guaduro Applied (GA) types appeared, which belong to the Montalvo society of the Middle Magdalena (Calderón, 2016, p. 25). The result of the petrographic analysis (thin sections) of 30 samples analyzed, allowed to establish that some of the samples of the MRI, and ZST types, characteristic of EH ceramics, were foreign. This indicates that in several periods of its cultural development, the HTe society was part of the cultural exchange networks that had begun to be structured in different regions of Colombia since the Formative period. A good example of the exchange between villages that shared the same EH cultural tradition, and other villages of the Middle Magdalena, bearers of the Montavo Culture, is that of the Domestic Unit that appeared associated with a garbage dump and a multiple burials, in Area 1, and that was reoccupied during the entire cultural sequence of the village. In a multiple burials of 11 sub-adult individuals, linked to a possible fragmented monolith, a large amount of local ceramics (MRC and MRI types) and foreign ceramics of the Zipaquirá Sherd Temper type (ZST) from the Altiplano and Montalvo Black on Red (MBR), from the Middle Magdalena, were found.

Another domestic unit also involved in foreign cultural exchanges was found in Area 4, where there was a collective

burial around a menhir. The presence of a zoomorphic piece of the Montalvo Incised (MI) type, placed as the trousseau of one of the buried individuals, constitutes clear evidence that the rulers, founders of the village, obtained sumptuous goods that allowed them to acquire status within the community (Rojas, 2016, p. 307) (Figure 12).



Figure 12. Montalvo Culture bowl and pot, found in EH tombs of NE (Romano 2018, p. 69).

Foreign ceramics have also been reported in the village of Cusbio, where between AD 100 and 400, pots, pitchers, and simple bowls of the MRI type were used (Argüello 2015, p.50-158). Likewise, sherds of the Zipaquirá Sherd Temper (ZST) type, which correspond to vessels used to transport salt, were recovered during prospecting in the Fúquene Valley (Langebaek, 1995, p. 80). Similarly, in the EH cultural strata of the Madrid 2-41 village, ceramics of the Montalvo black on red (MBR) and Montalvo incised (MI) types were found (Rodríguez Cuenca and Cifuentes, 2005). However, it is important to note that between 1,300 BC and 500 AD, cultural exchange networks between the societies of the Cundiboyacense Highlands and the Middle Magdalena functioned in both directions. Thus, for example, in the village of Coello, municipality of Espinal (Department of Tolima), ceramics of the ZST type from the Altiplano were found, suggesting that the communities of this region obtained, by

barter, salt from some villages of the Bogota Savannah, possibly Zipaquirá and Nemocón (Cifuentes, 1996, p. 57).

7. FUNERARY CUSTOMS

The EH communities of the CBA implemented the cult of their ancestors by burying their dead in or near their dwellings. The burial structures excavated in the NE village had basically three forms: single circular pit, single and double oval pit, and irregular pit. In the first form, the main one, the dimensions of the pit present an average diameter of 100 cm, and between 30 and 50 cm deep (Calderón et al., 2019, pp. 85-86). In the tombs of NE, there were two types of burials: collective and primary individual. The first type was the most common, while dual primary and collective burials occurred in smaller proportions. Most of the skeletons were articulated, in a flexed lateral decubitus position. But disarticulated skeletons were also found (Calderón, et al., 2019, pp. 85-87) (Figure 13A).

On the other hand, the collective tombs were located:

"... towards the central-western sector and in the outer vicinity of the large circular house of 17 m in diameter, in the northwestern sector of the terrace. In some cases, they were demarcated by small menhirs -elongated stones vertically embedded- protruding from the surface. In some communal tombs, rocks were placed with sculpted human figures that probably symbolized a common ancestor. These tombs included 9 to 13 people and had irregular shapes whose dimensions ranged from 4 × 6 m to 18 × 20 m; their depth reached 80 cm. The grave goods of these burials were simple and contained, in essence, objects of local and foreign manufacture." (Romano 2018: 73,74) (Figure 13B).

It is likely that towards the final period of the EH society, some inhabitants of the central sector of the village, who lived

in three large houses of circular plan, began to be buried in individual tombs of large dimensions, evidencing the great status that these individuals had. According to Romano (2018, p. 74): " Those tombs were located inside the large houses, had a conical shape, were circular in plan with a diameter of 2 m and were 2.5 m deep. The grave goods of these tombs were unusually composed of remains of rocks and ceramics, which formed a dense layer covering the inhumed body." Towards the end of the EH period, a large circular single shaft tomb was also used. A structure of this type, located in Cut 8 was dated to 260 +/- 30 AD (Calderón et al., 2015, pp. 2,3).

Another important component of the funerary customs of the EH populations was the grave goods placed in the tombs. In the NE graves, individuals were buried with necklace beads, local and foreign ceramic vessels, lithic tools, spindle whorls, and ornamental objects (Calderón et al., 2019, p. 96). Of particular interest were the grave goods presented in tomb 21, which contained several people, whose main burial, possibly of a shaman, had near his feet, the head of a zoomorphic figure that seems to be the representation of a feline, which is an animal of shamanic power (Romano, 2018, pp. 76-77).

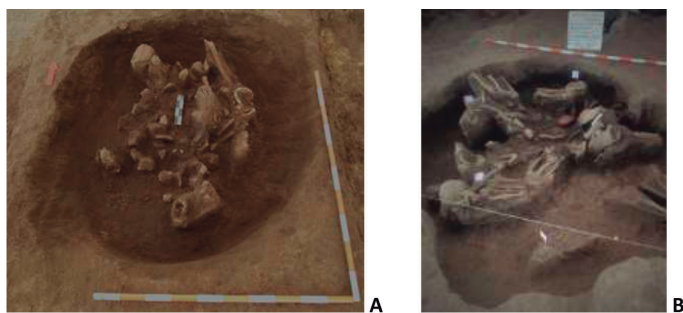


Figure 13. A. Circular shaft tomb excavated in Cut E41-Feature 21, with an individual burial of scattered bones, dated AD 20+/-30 (Calderón et al., 2019, p. 85, Figure 25). B. Tomb 21, irregular shaft, with collective burial and grave goods. At the feet of the individual buried in flexed lateral decubitus position (shaman?) was placed, the head of a possible feline, classified as ceramic of type MCR. (Romano, 2018, p. 75)

Thus, the six cultural variables analyzed as a whole in the previous pages could be considered as clear evidence of the level of complexity reached by the EH populations of the CBA during the different periods of their social and cultural development. This level or degree of complexity was very different from that achieved by the preceding hunter-gatherer (Level 1) and early food-producing hunter-gatherer (Level 2) societies. In Table 2 I present a comparative analysis of the six variables studied, which allow us to observe the qualitative differences between the three societies compared. If we analyze the variable of settlement patterns, we observe that the complexity increases as the type of society changes. For example, while level 1 societies were characterized by a domestic sedentary lifestyle, level 2 societies implemented a slightly more complex sedentary lifestyle, combining both domestic and funerary sedentary lifestyles. Meanwhile, level 3 societies were organized in permanent villages, where they built circular bohio-type dwellings.

However, if we analyze the primary production activities variable, we can also observe important qualitative changes related to the emergence of new "emerging" properties. Level 1 populations had an appropriating mode of production (hunting, fishing, gathering), while the characteristic of level 2 society was the early mode of food production (horticulture), and of level 3 society, the regular mode of food production (agriculture), which began to generate surpluses. Similarly, we can observe important changes in relation to the variable of craft activities. The lithic industry of hunter-gatherers was very simple, in accordance with hunting, fishing, and gathering activities, while level 2 populations developed new lithic production tools, in accordance with the new needs of producing and processing plant species. On the other hand, the handicraft activities of the level 3 populations became more complex as they introduced, in addition to regular agriculture, productive branches such as pottery and textiles, which generated a greater quantity of surplus products.

A new important turning point occurred in the architectural structures variable. From natural shelters such as rock shelters (level 1), we moved to circular, semi-oval, and beehive-shaped dwellings, built outdoors (level 2) and circular huts for living, and crescent-shaped structures, used for craft activities, and also the use of wattle and daub and pozzolan (level 3). The same could be said of the cultural interaction variable. Although it is true that the exchange of raw materials and other goods between communities of the CBA and the Middle Magdalena existed during levels 1 and 2, it was specifically during level 3 that this activity was strengthened between the sedentary agro-pottery communities of the CBA, the Middle Magdalena, the Atlantic Coast, and the Eastern Plains, including not only raw materials but also luxury items. Finally, we should clarify that of all the six cultural variables we studied, it was in the funerary patterns where there were no relevant changes. The populations of levels 2 and 3 continued to bury their dead inside their dwellings, in both individual and collective tombs with circular, oval, or irregular pits. The predominant form of burial was the flexed lateral decubitus position.

8. CONCLUSIONS

In this article I have adopted the complexity paradigm to suggest that all sociocultural structures that have existed during ancient American history, from hunter-gatherers to state societies, should be considered complex societies. Likewise, I have proposed that the qualitative difference between each of these societies lies in the level or degree of complexity reached by each of them, which is considered as increasing complexity IC). In the same way, I have introduced in the analysis the concept of threshold, considered an important turning point in history, when new "emergent" properties arise. In other words, at the moment when something new and more complex than the preceding appeared (Christian, 2019).

Likewise, I have considered that the application of these two theoretical categories to the study of the ancient history of Colombia allows us to identify four of the five levels established for the pre-Hispanic history of America. From the pre-tribal egalitarian hunter-gatherers to the hierarchical chiefdom societies. Specifically, about the ancient history of the Cundiboyacense Altiplano, I have proposed a very different picture from most traditional narratives, considering that in this Geohistoric Region, for about 20,000 years, there were six levels of IC.

When the tribal revolution process culminated, the pre-Hispanic communities of this region reached the third level of IC, giving way to the EH egalitarian tribal society. It is possible to infer the IC level of this new society if we analyze, in a complementary way (archaeology, bioanthropology, paleobotany, etc.), six cultural variables: 1) settlement patterns, 2) architectural structures present in the villages, 3) primary economic activities, 4) craft activities, 5) cultural exchange and interaction, and 6) funerary customs. By examining these six archaeological variables as a whole, it is possible to clearly establish the level of complexity reached by the EH society, and its structural differences with the societies of the two previous levels

NOTES

1. In his recent book *Before Colombia*, Carl H. Langebaek, taking into account the dates obtained from the sites El Abra II and Tibitó 1, suggests that the beginning of Colombian history occurs about 14,000 years ago (Langebaek 2021). However, we know that the hunter-gatherers of Tocogua (Boyacá) were hunting different animals between 22,000 and 20,000 years ago (Gómez et al. 2007.145), while their cousins not far away, in the Middle Magdalena (Pubenza 3 site), hunted mastodons some 16,500 years ago (Van der Hammen and Correal 2001). I consider that both dates, so early for the beginning of the societies of the

first level of IC, should be taken into account. We should not be reluctant to accept such early dates for the initial settlement of northern South America, if we take into account the earliest dates of the Chibiriquete mural art, 19,500 years ago (Castaño-Urbe 2019: 773).

2. In general terms, Spier (2011: 151) considers that in Big History there have been three main levels of complexity: inanimate physical nature, life, and culture. Our study deals with the third level, within which, there were also different levels of IC.
3. Small villages could have between 1 and 5 ha (10,000-50,000 m²), housing between 3 and 10 domestic units (DU). On the other hand, medium-sized villages would have between 5 and 10 ha (20,000-100,000 m²). More than 10 DU and some large architectural constructions were used for festivals, rites, etc. And finally, the large villages would be those that occupied more than 10 ha (more than 100,000 m²) and would have a greater number of cultural components.
4. The vegeculture agricultural system corresponds to the agriculture of roots, stems, and tubers or rhizomes. In America, the most important plant species of this system were the cassava (*Manihot sculenta*), the potato (*Solanum tuberosum*), the jicama, pelenga or Mexican turnip (*Pachyrhizus erosus*), the ulluco (*Ullucus tuberosus*), the añú or cubio (*Tropaeolum tuberosum*), the ibia (*Oxalis tuberosa*), the arracacha (*Arracacia xanthorrhiza*) and ñane (*Dioscorea*).

LEVEL OF INCREASING COMPLEXITY	SETTLEMENT PATTERNS	PRIMARY PRODUCTION ACTIVITIES	CRAFT ACTIVITIES	ARCHITECTURAL STRUCTURES	CULTURAL INTERACTION	FUNERARY CUSTOMS
<i>Third level Early Herrera</i>	Permanent in villages. Semi-permanent in farms. Stone floors.	Regular mode of food production. Household economy. Permanent polyculture agriculture. Agricultural intensification (fertilizers, raised fields). Hunting, fishing, gathering.	Lithic workshops. Pottery production. Textile production. Production of bone objects.	Circular bohios (housing). Half-moon structures (handicraft activities). Bahareque. Pozzolan.	Increased cultural interaction with communities of the Cundiboyacense Highlands, the Middle Magdalena, Eastern Plains and Atlantic Coast. Barter of salt, ceramics, animals.	Individual and collective burials inside the dwellings. Inside the dwellings. Circular, oval and irregular shaft tombs. Burials in flexed lateral decubitus position.
<i>Second level Early hunter-producers</i>	Mixed inclusive sedentism: domestic and funerary. Semiaxial circular and beehive-shaped dwellings. Stone floors.	Early mode of food production. Economy of reproduction Polyculture horticulture.	New lithic industry for vegetable processing. Hoes, boulders with worn edges, anvils, tappers, grinding plates.	Semiaxial, circular and beehive-shaped houses.	Cultural interaction with communities of the Cundiboyacense Highlands and Middle Magdalena.	Individual and collective burials inside the dwellings. Burials in flexed lateral decubitus position. Burial of shamans with painted bones.
<i>First level Hunter gatherers</i>	Sedentary domestic type. Housing camps. Hunting camps.	Appropriating mode of production Hunting, fishing, gathering of plants and animals.	Lithic workshops.	Rock shelters.	Barter of raw materials and artifacts with neighboring communities.	-

Table 2. Comparative analysis of six variables of cultural complexity among the pre-Hispanic societies of the Cundiboyacense Altiplano, with three levels of increasing complexity.

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