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Urban Archaeology in the Lower Amazon: Fieldwork Uncovering Large Pre-Colonial Villages in Santarém City, Brazil

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ABSTRACT

This article defines the spatial configuration of the large pre-colonial site in the present-day city of Santarém on the lower Amazon, Brazil, demonstrating a settlement pattern consisting of two villages separated by a seasonal lake. The sites Aldeia (121 ha) and Porto (89 ha) form part of the largest archaeological complex found today in any urban area of Amazonia. The article describes the research methods employed, including augering, geophysical prospecting, and stratigraphic excavation, and presents the contexts of cultural occupation, as well as the chronology, which confirms the contemporaneity of these sites between A.D. 1200 and 1600. Both sites are habitational, while the Aldeia site appears to have been a ceremonial center with features for depositing shamanic artifacts. The article argues that although evidence has been found for a hierarchy of sites within the region, this does not imply political centralization but rather situates the Aldeia site as a place of ritual convergence, thus pointing to other ways of thinking about social complexity.

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Introduction

Archaeological knowledge of the ways of life of the populations inhabiting the Amazon region before European conquest has been fundamental to the debates on preserving the rainforest and protecting the rights of indigenous populations. The Aldeia and Porto pre-colonial sites, located in the urban area of Santarém city, Brazil, are of singular importance in the context of Amazonian archaeology. Their settlement patterns, internal structure, artifactual variability, and chronology are key elements in discussions about the long-term history of Amazonia, a debate shaped by the use of neo-evolutionist ideas to explain the forms of sociopolitical organization that developed in the region. In this article, I propose some alternative ways of thinking about political power, which has only become possible due to the undertaking of field research at sites in the region generally but in the urban area in particular.

Situated at the confluence of the Amazon and Tapajós Rivers, Santarém has been central to discussions on the emergence of complex and hierarchical regional societies, which practiced collective rituals and the mummification of ancestors. These debates take into consideration ethnohistorical references to the Tapajó, a protohistorical group reported as extinct in the 18th century A.D. (Acuña 1941; Betendorf 1910; Carvajal 1941; Daniel 1976; Heriarte 1874; Meggers 1971; Porro 1996; Rojas 1941), as well as archaeological evidence (Gomes 2017; Gomes et al. 2023; Nimuendaju 1949, 2004; Quinn 2004; Roosevelt 1999; Schaan and Alves 2015; Stenborg 2016). During the expedition of the Spanish conquistador Francisco de Orellana, responsible for the European discovery of the Amazon River in A.D. 1541–1542, diverse regions and indigenous groups were described. The Dominican friar Gaspar de Carvajal, the expedition's

chronicler, reported large indigenous settlements on both the upper and lower Amazon, each with many inhabitants, similar to cities (Carvajal 1941). One of these descriptions corresponds geographically to the Santarém region on the lower Amazon.

Centuries later, this region would become an area of interest for museums in various parts of the world keen to acquire elaborate ceramic artifacts from Amazonia. The German ethnologist Curt Nimuendaju (2004) was sent to Santarém by the Gothenburg Ethnographic Museum in Sweden to obtain archaeological collections and was there between A.D. 1923 and 1926 conducting an extensive archaeological survey that identified 140 sites. According to the researcher, the largest of these was the Aldeia site, located in the eponymous neighborhood in Santarém city (Nimuendaju 1949). Close to the Aldeia site is the Porto site, both today covered by urban occupation and layers of tarmac, posing a methodological challenge for their study and understanding.

In earlier work, along with the presentation of archaeological data, I highlighted the importance of shamanic rituals and the use of objects bearing a mytho-cosmological iconography with an animist/perspectivist character (Viveiros de Castro 1996b, 2002) as key elements in the social structuring of the Santarém region. This analysis involved adopting an ontological approach that considered relational modes of interaction between humans, non-humans, and the material world. Revisiting Clastres' thesis (2003 [1974]), I discussed some of the possible strategies for maintaining an egalitarian order (Gomes 2017). In another article, prioritizing the understanding of this regional society, I synthesized research data and bibliographic information on settlement patterns and organized the existing chronology with dates obtained

by myself for the Aldeia and Carapanari sites (Gomes 2017), those reported by Roosevelt and collaborators (Quinn 2004) for the Porto site, and the dates produced by Schaan and collaborators (Alves 2012; Schaan 2016; Stenborg 2016; Troufflard and Alves 2019) for the Porto, Cedro, Bom Futuro, and Amapá sites. This analysis included calibrating all these dates. Finally, I presented new archaeological and archaeometric data. The latter document different stylistic and formal choices, as well as technological innovations in ceramic production at smaller and later sites that emerged around Santarém, such as the Carapanari site (A.D. 1440–1690), following a demographic expansion in the population. This assemblage of evidence enables an interpretation of the archaeological data that indeed indicates a hierarchy of sites beyond a neo-evolutionist framework, thereby challenging the hypothesis of political centralization (Gomes et al. 2023).

This article presents the largest pre-colonial archaeological complex in any urban area of the Amazon region, distributed discontinuously along a 4 km stretch running parallel to the confluence of the Amazon and Tapajós Rivers in northern Brazil. Formed by two large Amazonian dark earth (ADE) sites—Aldeia (121 ha) and Porto (89 ha), separated by a seasonal lake—this complex today covers eight neighborhoods of Santarém city. Long-term investigations (2006–2015) conducted by the author set out to understand the insertion of these sites within a regional society of 23,000 km² and contextualize their ritual activity (Figure 1). The two sites were delimited and excavated using an archaeological methodology that combined systematic and non-systematic methods in the urban area, together with geophysical prospecting through Ground Penetrating

Radar (GPR). The morphological, structural, and cultural composition of the sites was defined and a chronology established beginning at 1000 B.C. The settlement pattern described here, and the dates obtained by the research, confirm the existence of two large contemporaneous villages during the late period (A.D. 1200–1600) in Santarém, which suggests a substantial indigenous population density before the arrival of Europeans. However, I propose an alternative explanation for the forms of political power that emerged there, according to which shamanic ritual activity and its archaeological expression—viewed through the bell-shaped depositional features—foreground the Aldeia site and its relationship with the regional landscape.

The potential for recovering information from pre-colonial archaeological sites in urban areas has long been recognized (Staski 1982). Archaeology in Mexico City has recovered important vestiges of temples, religious structures, and artifacts that tell us much about the daily life of the ancient population (Rodríguez-Alegría 2016). Similar processes have been described in Cusco, Peru, where a colonial city developed from the Inca capital (Vranich, Berquist, and Hardy 2014). In New York, archaeology reveals a long cultural sequence that begins north of Manhattan, with an indigenous occupation of hunter-gatherers dated to 9000 B.C., and extends to the potters of the late Woodland period who occupied the Bronx until the arrival of the first Europeans in A.D. 1624 (Cantwell and Wall 2001; Wall and Cantwell 2004). These examples demonstrate that urban archaeology in the Americas is not limited to historical occupations. When we consider the specificities of pre-colonial archaeological sites in the South American lowlands—



Figure 1. Map of the research area showing the Aldeia and Porto sites. Map: João Paulo Lopes da Cunha.

lacking architectural structures and often situated in areas covered by urban occupation—this research approach becomes even more significant.

In Amazonia, although most of today's cities were built on top of archaeological sites, research has tended to focus on investigating preserved pre-colonial sites far from urban areas. Bibliographic references on urban pre-colonial sites are scarce. In Manaus city, Amazonas state, there are 24 recorded lithic and ceramic sites, which can be related to the chronology of central Amazonia (7000 B.C.–A.D. 1500), preservation of which has been threatened by unplanned occupation. Lima and Moraes (2010) report on the destruction of ceramic sites in Manaus, one of them being the Nova Cidade site, covering an area of 12 ha and containing more than 240 funerary urns from the Paredão phase, mapped in the early 2000s. Today, this site is severely impacted. Given this context, archaeological research in the urban area of Santarém is important for understanding ancient settlement patterns in Amazonia.

Background

Changes in the interpretation of Amazonian indigenous societies

Since the 1980s, the depiction of a pre-colonial Amazonia marked by sparse and seasonal occupations in small villages, isolated in the forest and politically autonomous, has been questioned (Heckenberger, Petersen, and Neves 1999; Neves 2022; Roosevelt 1980, 1991a; Viveiros de Castro 1996a). According to the proponents of this earlier vision, the cultural development of the societies that once lived in the region was limited by environmental factors, especially by soil infertility (Meggers 1954, 1971) or the scarcity of animal protein (Gross 1975), which prevented sedentarization, especially in terra firme regions. Settlement patterns related to the size, morphology, and structure of sites were always important factors in this discussion.

Scholars like Myers (1973) pointed to the existence of large archaeological sites on the Amazon floodplains. Meggers (1990), for her part, based on the delimitation of sites estimated by the dispersal of surface remains, the excavation of isolated test pits, and the construction of relative chronologies, employing the Ford method to determine ceramic seriation, made use of ethnographic analogy related to the mobility of contemporary indigenous societies to contest the existence of these large sites. Their configuration was explained as the outcome of multiple reoccupations by semi-sedentary or highly mobile populations.

In the 1990s, the identification of large sites on the lower Rio Negro in central Amazonia, like the Açutuba site with a total area of 90 ha, as well as circular villages in the terra firme region of the upper Xingu, which possessed elaborate structures such as central plazas, earthworks, and specialized deposits, helped deconstruct those arguments that emphasized environmental constraints as factors limiting the size, permanence, and political structuring of pre-colonial Amazonian societies (Heckenberger 2005; Heckenberger, Petersen, and Neves 1999; Neves 2022). Fundamental in this process were the use of systematic methods for surveys and delimitation, excavation of large units, topographical mapping of sites in forested areas, ¹⁴C dating, and laboratory analysis of artifacts. Since then, archaeological evidence has

multiplied, showing the significant elaboration of many Amazonian archaeological sites, sedentarism, and the presence of dense populations associated with complex societies (de Souza et al. 2018; Erickson 2008; Gomes 2017; Gomes et al. 2023; Navarro 2018; Roosevelt 1991b, 1999; Rostain 2008; Saldanha 2022; Saunaluoma et al. 2021; Schaan 2008). Over recent years, the adoption of remote survey methods, including the use of satellite imagery (Heckenberger 2005; Heckenberger et al. 2008; Pärssinen, Schaan, and Ranzi 2009; Rostain 2017; Schaan 2016) and lidar (Iriarte et al. 2020a; Peripato et al. 2023; Prümers et al. 2022; Rostain et al. 2024; Stenborg, Schaan, and Figueiredo 2018), have helped compile the portrait of a culturally diversified Amazonia, with some societies producing earthworks, related to pre-colonial monumental sites and low-density urbanism.

In parallel, historical ecology has gained strength as an interdisciplinary approach focused on understanding the relationships between human societies and the environment over time, whose marks of past events have been imprinted in the landscape (Balée 2006; Erickson 2008). The Amazonian Forest is today seen as a managed forest whose current structure and floristic composition results from the alterations made by past populations (Levis et al. 2017). Different contributions in the field of archaeology have demonstrated a much broader panorama of subsistence practices among Amazonian societies based on fishing, hunting, plant domestication, and polyculture associated with agroforestry techniques, capable of sustaining large populations, which did not change significantly during the late Holocene before giving way to intensive agriculture (Clement et al. 2021; Fausto and Neves 2018; Heckenberger et al. 2007; Iriarte et al. 2020b; Lombardo et al. 2022; Neves 2007; Schmidt 2013).

Studies of Amazonian dark earths (ADEs), understood here as anthropogenic landscapes, since they are associated with the presence of large quantities of artifacts, have also developed substantially, with impacts on our assessments of the demography and social complexity of past Amazonian societies (Arroyo-Kalin 2016; Kern et al. 2003; Lombardo et al. 2022; Schmidt et al. 2023; Woods et al. 2009). Defined as high-fertility soils whose formation is correlated with the activities of pre-Colombian populations during the Holocene and their intentional modification of the environment, the genesis of ADEs is considered complex and still debatable. One hypothesis is that these anthrosols are correlated with habitational activities that generated concentrations of organic material, such as waste deposits around houses, excrements, charcoal, bones, and so on, whose geochemical alterations over time left an identifiable signature. Others argue for an intentional formation of these soils, linked to composting practices, deliberate burning, and sediment management, designed to boost the fertility of these soils and their agricultural capacity. On the lower Amazon, examples exist in Juruti, associated with the Konduiri culture (Costa, da Costa, and Kern 2013), as well as Belterra and on the Arapiuns River, both in the Santarém region, which resulted in distinct settlement patterns, since *terra mulata* (another type of anthrosol) sites, corresponding to agricultural areas, are found next to these residential villages (Sombroek 1966; Woods and McCann 1999). The fact is that dark earths of various dimensions exist in distinct environments and sociopolitical contexts, some of them exceeding 100 ha in size, as is the case of the sites located in urban areas of Santarém.

The history of research in Santarém

After the archaeological survey conducted by Curt Nimuendaju (1949, 2004) between A.D. 1923 and 1926, which covered an area of 23,000 km² in which sites associated with Santarém culture were distributed between the Amazon and Tapajós Rivers, various analyses of museum collections followed. Descriptive in kind, the first significant work was by Helen Palmatary (1939), who photographically documented and presented ceremonial pottery forms and large anthropomorphic figurines of seated men. Thereafter, artifactual and classificatory studies proliferated (Barata 1950, 1951, 1953a, 1953b; Corrêa 1965; Gomes 2001, 2002; Guapindaia 1993; MacDonald 1972; Palmatary 1960). Roosevelt (1996, 1999), seeking to reinforce her hypothesis of the existence of a complex, stratified, and politically centralized society in Santarém, called attention to the iconography of large figurines of seated men (chiefs/shamans) and predatory animals such as jaguars, caymans, snakes, and birds of prey as metaphors symbolizing the warlike and expansionist character of the Tapajó.

Another line of interpretation of the ceramic iconography of Santarém, proposed by Gomes (2007, 2010, 2012, 2017, 2022), connects the naturalist and iconic figurations of large predatory animals, prey animals, images of zooanthropomorphic beings in a state of body transformation, and vessels that refer to cosmological concepts and perhaps mythological narratives in the animist-perspectivist ontologies of indigenous Amazonia (Descola 2005; Viveiros de Castro 1996b, 2002). Descola (2005) describes animism as a conceptualization of the world without any separation of nature and culture and where intentionality is attributed

not just to human beings but also to plants, animals, and other natural forms. Seen in Viveiros de Castro's formulation (1996b, 2002) as an aspect of animist thought, Amerindian perspectivism emphasizes the way in which animals, plants, non-human beings, celestial bodies, and artifacts apprehend reality in accordance with their own points of view. The instability and transformational capacity of these beings is an essential aspect of perspectivism, which permits a correlation to be established between some of the iconic figurations identified in the artifacts, suggestive of body metamorphosis or a switching of perspectives. The ritual ceramics of the late Santarém phase are seen as a shamanic technology—artifacts serving as mediators between human and non-human beings and activating relations between cosmic planes through ritual action. The large anthropomorphic figurines of seated men wearing body adornments indicate the importance of the shamanic institution and the spiritual leaders (Figure 2). Going beyond studies of form, the ceramic iconography has been understood as an element that allows connections to be established between the thinking of contemporary indigenous populations and the archaeological patterns observed at sites in the region, advancing interpretations concerning the type of society that developed in Santarém during the late pre-colonial period.

Fieldwork in Santarém only began in the late 1980s with Anna Roosevelt, the first archaeologist to conduct systematic excavations in Santarém. Her initial objective was to construct a chronological sequence for the region. This began with the occupation of hunter-gatherers in the Pedra Pintada Cave in Monte Alegre, dated between 9250 and 8050 B.C. (Roosevelt et al. 1996). Next, she researched the Taperinha



Figure 2. Ceremonial pottery from the late Santarém phase. A) Naturalist figurine of a shaman (Museu Nacional-UFRJ). B) Figurine of a shaman in a state of body transformation (MAE-USP). C) Vessel body with scaled arms suggesting the figuration of non-human beings (Museu Nacional-UFRJ). D) Caryatid vessel (Museu Nacional-UFRJ). E) Vessel with zoanthropomorphic figures (Museu Nacional-UFRJ). F-G) Female figurines (Museu Nacional-UFRJ). Photos: author.

fluvial sambaqui, associated with the presence of ancient pottery-making fisher-gatherers, between 5130 and 3755 B.C. (Roosevelt et al. 1991). The chronology continues with an occupation by potters in the Pedra Pintada Cave, dated between 1650 and 1290 B.C., which the author labels as formative.

Guided by geophysical prospecting, Roosevelt conducted excavations in the urban area of Santarém in a more preserved region of the city corresponding to the Porto site. Her aim was to obtain material evidence to support her hypothesis of the development of a complex chiefdom, densely populated, with social stratification and political centralization. As well as identifying linear-shaped platforms, interpreted as house foundations, and excavating intentionally dug bell-shaped pits containing utilitarian and ritual ceramics, she obtained a chronology from the formative phase for the Porto site dated between 962 and 320 B.C. and from the late phase for the same site dated between A.D. 1200 and 1600. However, the evidence gathered was inconclusive in terms of confirming the existence of a complex and centralized society with its political center in Santarém (Quinn 2004).

Between 2006 and 2010, Schaan and colleagues contributed to the archaeology of the Santarém region through an archaeological survey undertaken on the right bank of the Tapajós River, which identified 111 sites associated with the Santarém phase (Schaan and Lima 2012; Stenborg 2016; Stenborg, Schaan, and Lima 2012; Stenborg et al. 2014). Circular and elliptical depressions were mapped on the Belterra Plateau, corresponding to wells dug for water storage. Researchers recognize this form of water management as decisive for occupation of the plateau from A.D. 1320. The use of lidar was important to identifying new wells in densely forested areas inside the FLONA (national forest reserve) on the Tapajós River, advancing the geographical limit previously established for the Santarém occupation as far as the Middle Tapajós (Stenborg, Schaan, and Figueiredo 2018). Sites farther inland on the Belterra Plateau like Bom Futuro, Amapá, and Cedro were also excavated and dated between A.D. 1320 and 1710, demonstrating the resistance of the Tapajós populations during the colonial period.

Excavations in the urban area of Santarém were also conducted by Schaan at the Porto site between 2007 and 2014. The chronology she obtained records dates between 1310 and 310 B.C. for the formative levels, older than those reported by Quinn (2004) for the same site, while a date of A.D. 1000, relating to the beginning of the late Santarém phase, places the start of this occupation two centuries earlier (Alves 2012, 186). New bell-shaped pits associated with the later phase were identified, defined by Schaan as circular or elliptical structures whose circumference decreases with depth. Dug in sterile soil, these were subsequently filled with dark earth and contained both utilitarian pottery and fragmented ceremonial pottery, as well as prestigious objects like a green stone muiraquitã—a small lithic ornament in the shape of a stylized toad, whose production is associated with an extensive exchange network between Amazonia, the Guianas, and the Caribbean (Schaan and Alves 2015).

On the left bank of the Tapajós River, around 100 km south of Santarém, Gomes (2008, 2011) detected 10 sites in the community of Parauá and excavated three of them. The initial dates between 1850 B.C. and A.D. 110 are associated with ceramist populations with a semi-sedentary

lifestyle. Permanent villages presented an occupation linked to the Incised-Punctate ceramic tradition, dated between A.D. 630 and 1020, containing domestic pottery with a large artifactual variability and vestiges of elliptical habitations. At the Lago do Jacaré I site, the dating of an artifact typical of Santarém culture associated with shamanic paraphernalia (A.D. 1020) confirmed the initial date of the late Santarém phase (A.D. 1000) obtained by Schaan at the Porto site.

Fieldwork undertaken by Gomes at 31 sites on the right bank of the Tapajós, involving delimitation, surface collection, excavations, and mapping, made it possible to document the existence of a hierarchy of settlements in the regional space, with the areal dimensions of the sites varying between 0.4 and 121 ha. Three of these are located on high hills with difficult access, suggesting the existence of conflict situations. One of the sites has an ample view of the surrounding area and the Tapajós River. The dates obtained and their comparison with the chronologies of Roosevelt and Schaan show that the Aldeia and Porto sites are older and that the others began to be occupied from A.D. 1300, probably implying a process of population growth followed by fission, giving rise to smaller communities (Gomes 2017; Gomes, Silva, and Rodrigues 2018; Gomes et al. 2023).

Analysis of the domestic and ritual pottery samples, obtained at all of these sites, shows the existence of a consistent style with greater elaboration of the artifacts at the Aldeia site. Although ritual artifacts are also found at the smaller sites, there exists a large formal, decorative, and also technological variability, the latter observed especially at the Carapanari site based on archaeometric methods using Instrumental Neutron Analysis (INAA). These patterns of artifactual variability, observed in the comparison of the samples from the 31 sites, were interpreted as indicators of the autonomy of these communities, which together with the current discussions on the subsistence patterns of pre-colonial Amazonian populations led to the rejection of the hypothesis of political centralization in Santarém. On the other hand, the iconographic analyses made it possible to identify the existence of a mytho-cosmological symbolic unity related to shamanism and relational ontologies across an ample geographical area where Santarém ceramics occur. Ritual activity conducted by spiritual leaders seems to have been the most prominent aspect of the Santarém archaeological record, structuring the region politically (Gomes et al. 2023). In this context, understanding the role of the Aldeia and Porto urban sites is central to being able to advance an interpretation of the social forms that developed in Amazonia during the pre-colonial period.

Field Methods and Results

Delimitation of the Aldeia and Porto sites

The first indigenous villages, administered by various religious orders, were present in both Spanish and Portuguese colonial America and date back to the first half of the 16th century A.D. However, religious occupation occurred in non-systematic fashion, only really becoming consolidated in the 17th century A.D. with the missionary model. In Amazonia, the Jesuits began missionization along the Napo River and its tributaries, including territories in present-day Ecuador and Peru, in A.D. 1602 and 1603 (Casanova Velásquez

1998). The headquarters of the first Jesuit mission in the Brazilian Amazonia, founded in order to evangelize the indigenous population and use their labor to gather the *drogas do sertão* (cacao, vanilla, annatto, Brazil nuts, cloves, and sarsaparilla), was established in the indigenous village of Santarém in A.D. 1661. According to Father João Felipe de Betendorf (1910), in A.D. 1697, the indigenous village was located at the confluence of the Amazon and Tapajós Rivers, close to the hilltop where the Portuguese fortress was situated. Almost a century later, following the expulsion of the Jesuits and the prohibition on indigenous slavery issued by the Marquis of Pombal, Santarém village was elevated to the category of a town. Father João Daniel (1976) states that, in A.D. 1757, there were two segregated habitational areas, one Portuguese, the other indigenous, the latter no longer located next to the fortress but farther to the west. Although the change in the location of the former indigenous village

reflected a dynamic dictated by colonial interests, information from current residents of Santarém indicated the absence of archaeological remains east of the fortress, as well as the activities of manipulating and transporting archaeological soils for gardening and land filling, which makes any delimitation based on surface remains ineffective.

The fortress hill was taken as the start of the archaeological prospection work. From this point, a network of auger holes was established along the Santarém riverfront, measuring 4 km in a westward direction to Mapiri Creek. The work set out with the intention of implementing a systematic methodological strategy and a subsurface archaeological survey. However, the current urban occupation prevents archaeological interventions from being conducted at predetermined fixed intervals. Taking advantage of the rectilinear layout of the urban network with long streets and avenues that traverse the city from the city center to Mapiri Creek,



Figure 3. A) View of Santarém city (<https://guia.melhoresdestinos.com.br/santarem-237-6561-l.html>). B) Prospecting with auger holes uncovering Amazonian dark earth, Aldeia neighborhood, Santarém. C) Hélcio Amaral de Souza and local inhabitants beside the auger hole. Photos: author.

auger holes were dug at locations without tarmacked surfaces, including residential backyards, commercial establishments, and vacant terrains.

A total of 74 auger holes were opportunistically excavated, where the team were allowed to enter a property, in the modern-day districts of Centro, Aldeia, Santa Clara, Fátima, Laguinho, Liberdade, Salé, and Mapiri (Figure 3). The main streets, avenues, and squares prospected were parallel to the waterfront. Cross streets were also the subject of archaeological investigation. The results of the prospection and delimitation phase of the vestiges in the urban area demonstrated the existence of an archaeological complex distributed along a 4 km stretch formed by two linear sites: the Aldeia site, measuring 121 ha, and the Porto site, measuring 89 ha, separated by a seasonal lake of about 30 ha, landfill in the 1970s. The Aldeia site is an Amazonian dark earth (ADE) site whose archaeological layer varies between 0.5 m and 2.5 m in depth with lithic remains and domestic and ritual ceramics associated with the late Santarém phase, linked to the Incised-Punctate tradition (Meggers and Evans 1961).

Although the Aldeia site has been heavily impacted by urban occupation, a bell-shaped feature was recorded in a residence located on Travessa Sete de Setembro in the Aldeia neighborhood. This contained ritual ceramics only, including fragments of a necked vessel, a caryatid vessel, and another globular vessel with a jaguar effigy, deliberately destroyed, as well as an axe blade with red and white painting. In dialogue with Amazonian ethnology (Santos-Granero 2009), I proposed as an explanation the intentional breakage of these shamanic artifacts and their deposition in pits to neutralize their agency, akin to other ethnographic contexts involving powerful ritual objects that, in a variety of situations, are destroyed to prevent them from harming human beings (Gomes 2017). The existence of ritual bell-shaped pits in the Aldeia neighborhood was previously reported by Barata (1953a). At the Porto site, systematic research identified two additional types of contents in these archaeological features related to ritual festivities and waste disposal, which will be described in a later section.

Barreto (2013; Barreto and Oliveira 2016, 57–58) described “memory pits” as features encountered at sites on the middle Amazon and in the Trombetas River region, associated with the Pocó-Açutuba tradition (Neves et al. 2014). These features, measuring a few meters in diameter and 1 m or more in depth, contain black earth, charcoal, and numerous fragments of decorated ceramics. Carefully selected, these fragments appear to constitute a showcase or testimony to diverse types of figurative representations. The same designation was extended by the author to the pits found at the Aldeia and Porto sites in Santarém. However, it seems to me that this concept is more appropriately applied to behaviors involving continuous deposits at sites revisited for ancestor worship where funerary urns and other artifacts with possible votive functions were deposited in funerary pits, some featuring lateral chambers, like those found at megalithic sites in Amapá (Saldanha 2022; Saldanha and Cabral 2012).

There are sectors with dense historical occupation in the Centro and Aldeia neighborhoods. At the Porto site, previously excavated by Roosevelt and Schaan, the auger holes presented both lithic and ceramic vestiges relating to pre-colonial occupation. The precise localization of all the

auger holes was recorded by GPS and plotted in a cartographic database.

The excavations

The stratigraphic excavations at the Aldeia site were conducted in locations without tarmac surfaces, preferentially in the yards of homes and commercial establishments, which provided a window to the past within today's dense urban occupation. All squares, numbered units 1–15 and covering a total area of 50 m², were distributed over locations that allowed excavation, using artificial levels at 10 cm intervals, with the aim of understanding the stratigraphy and formation processes of this site, identifying domestic and ritual contexts, as well as obtaining samples for ¹⁴C dating (Figure 4). The research made it possible to characterize the Aldeia site as multicomponential with a complex stratigraphy in the Centro and Aldeia neighborhoods, including three levels of occupation: the first, the oldest, associated with the Pocó-Açutuba tradition (Gomes 2011; Neves et al. 2014); the second corresponding to the late Santarém phase (Gomes 2017); and, the third relating to the indigenous, African, and European presence during the colonial period in the 18th and 19th centuries A.D. (Muniz and Gomes 2017; Symanski and Gomes 2015).

In terms of the pre-colonial chronology, the development of ceramics in the Amazon dates back to the earliest periods, most of which are correlated with the presence of fishers who occupied coastal shell middens (sambaquis) along Brazil's eastern coast, extending from the Guianas to Maranhão, as well as fluvial shell middens on the lower Amazon and in southwestern Amazonia (Bandeira 2008; Evans and Meggers 1960; Pugliese Junior, Zimpel, and Neves 2017; Roosevelt 1995; Simões 1981). These occupations are associated with the Mina tradition and, in the case of southwestern Amazonia, with the Sinimbu and Babacal phases. In the Santarém region, the Taperinha shell midden (7000–5000 B.P.) constitutes the earliest ceramic occupation in the Americas (Roosevelt et al. 1991).

Semi-permanent villages emerged in Amazonia between 3800 and 1800 B.P., associated with a broad range of phases whose ceramic styles are organized around the Incised Rim tradition (Meggers and Evans 1961) and the Pocó-Açutuba tradition (Neves et al. 2014). Both of these traditions are present in the Santarém region, the latter being recorded at the Aldeia site (Gomes 2008, 2011). Between 1500 and 1000 B.P., two other important ceramic traditions emerged in Amazonia, both of which persisted after the arrival of Europeans in A.D. 1500: the Polychrome tradition, found on the upper, middle, and lower Solimões River (Lopes et al. 2024), and the Incised-Punctate tradition, more prominent phases of which have been found on the lower Amazon (Meggers and Evans 1961). The later phases of these two traditions are associated with a period of increased population density and the rise of complex societies. The late Santarém phase (A.D. 1000–1600) belongs to the Incised-Punctate tradition.

At the Porto site, the research was undertaken in the context of the environmental licensing for the construction of buildings in the expansion area of the UFOPA campus (Universidade Federal do Oeste do Pará). Previously occupied by a soccer pitch, the site was well preserved and without any medium- or large-scale plant cover. Due to its condition, a different methodological strategy from the Aldeia site was



Figure 4. Map showing the location of the excavation units at the Aldeia and Porto sites and the now-landfilled lake in the urban area of Santarém. Map: João Paulo Lopes da Cunha.

adopted: an intrasite geophysical survey with the use of GPR. The results guided the archaeological excavations in search of well-defined features and depositional contexts. Seventeen discontinuous units were excavated, covering a total area of 24 m², which in this area of the Porto site revealed an association with the late Santarém phase.

Earlier occupation

In three excavation units located in the Aldeia neighborhood (units 3, 4, and 7) and another in the Santa Clara neighborhood (unit 5), the existence of fairly old occupation contexts was documented, with dates ranging between 1000 B.C. and A.D. 150. These sites are related to the presence of pottery from the Pocó-Açutuba tradition (Neves et al. 2014), which presents some affinities with sets that occur in central Amazonia and in the Trombetas River region (Hilbert and Hilbert 1980; Lima, Neves, and Petersen 2006). At the Aldeia site, the occupations are sparse and low density in the brownish soil (7.5 YR-5/6 strong brown) and between 0.5 and 1.3 m in depth (Figure 5A). Another characteristic is that the pottery remains are associated with concentrations of very hard charcoals.

The artifacts are coiled and tempered with an abundant quantity of freshwater sponge spicules (*cauixi*). There are modeled zoomorphic appendages, lip flanges, brushed, incised, and excised decorations, red, black, and wine-colored paint, and wine and yellow on white polychrome painting (Figure 5B). The forms identified through rim fragments are all open and small in diameter. Previously called formative ceramics, based on earlier excavations at the Porto site, these are indicators of the first indigenous occupations of the locality and the modification of the landscape.

Late occupation

Most of the units excavated in the Centro and Aldeia neighborhoods present a sandy-clay matrix of Amazonian dark earth, up to 2.5 m deep, containing ceramic and lithic artifacts from the late Santarém phase. This matrix was cut by numerous historical bell-shaped waste pits, whose artifacts intruded from the pre-colonial layers. This renders the stratigraphy highly complex, making it difficult to define pre-colonial contexts and obtain reliable charcoal samples for dating the late occupation. Even so, our team managed to isolate some contexts containing dark earth and diagnostic artifacts from the late phase, which enabled a chronology to be constructed for the Aldeia site (**Figures 6, 7**).

Due to the formation processes of the Aldeia site, impacted by three centuries of occupation, it was impossible to identify other features relating to domestic activity. The domestic pottery associated with the late Santarém phase, and consequently the Incised-Punctate tradition, is made from a paste composed of freshwater sponge spicules and grog, sometimes carapé, coiled, very carefully smoothed, and fired. Forms include open vessels, griddles, plates, and deep vessels, some with surface wear indicating the consumption of fermented drinks. The ceramic sample recovered during the excavations at the Aldeia site consists of small-sized fragments, making it possible to document the inclinations on the rims, as well as the incised patterns and polychrome painting (Figure 8). The rims of these artifacts are decorated with undulations on the lips and bands of transversal and horizontal incisions, as well as different types of punctate decorations made with an instrument with a circular, rectangular, or triangular tip. There are also ceramics painted red (Figure 9A). Some of these patterns from the late domestic ceramics are encountered at various sites from the region, such as the Carapanari site.



Figure 5. A) Profile of unit 5, Aldeia site. Drawing and photo: author. B) Ceramics associated with the Pocó-Açutuba tradition, Aldeia site. Photos: author.

Ceramic artifacts interpreted to be used as part of shamanic activity, found during the excavations, are the same as those documented in museum collections and in the bell-shaped pit identified during the delimitation stage. These comprise the three types of vessels previously described by Frederico Barata as caryatid vessels, necked vessels, and globular vessels with polychrome painting and jaguar effigies, as well as female figurines (Table 1). In unit 2, a caryatid vessel was recovered that had been deliberately burnt after use, mixed with common waste. In unit 4, some variations were identified that have previously never been seen, such as a necked vessel featuring a zooanthropomorphic being and another caryatid vessel that does not feature king vultures on the lip flange but a zooanthropomorphic being (Figure 9B). All these artifacts were found in sequence at depths of 140–190 cm and were probably part of a bell-shaped ceremonial pit which was intersected by a historical pit. Regarding these features, it can be proposed that they were associated with ceremonies that had a high degree of formalization.

At the Porto site, the area excavated at the Tapajós/UFOPA Campus presents an ADE soil varying according to the Munsell table between 7.5YR-2.5/1 (black) and 7.5YR-3/2 (dark brown) with lithic vestiges (flakes, micro-flakes, and grooved lithic straighteners) and ceramic fragments associated with the late Santarém occupation. The geophysical survey conducted here consisted of electromagnetic measurements obtained using GPR, performed along

76 lines, oriented southwest-northeast, spaced 1 m apart, with a length varying between 40 and 88 m. The results revealed images corresponding to three types of anomalies: hyperboles, discontinuities, and valleys (Figure 10). Two of these bell-shaped pits correspond to anomalies described as a valley with discontinuity, signaling a hole in black earth, dug in the shape of a trough, whose discontinuity is in relation to the yellowish brown soil and archaeological black earth (Figure 11) (Gomes and Luiz 2013).

Unlike the ceremonial bell-shaped pits encountered at the Aldeia site containing ritual artifacts, these resemble waste dumps, with a predominance of highly fragmented domestic ceramics from the late Santarém phase, as well as others decorated with incisions, modeling, punctate decorations, applied elements, and red paint, as well as a fragmented figurine. Another unit revealed a spherical vessel 20 cm in diameter with micro-fragments of bones, which suggests a function as a funerary urn to contain calcined bones. This information aligns with Schaan's discovery of secondary burials in the area of the Porto site (Schaan and Alves 2015). A prominent element in the excavations of the latter site was the abundance of lithic artifacts recovered, with the sample composed of flakes, micro-flakes, grooved lithic straighteners, and chipped and polished artifacts, indicating an area of lithic production activity. The results of the excavations at the Porto site imply activities related to cleaning and maintaining the village, subsistence activities including the use of

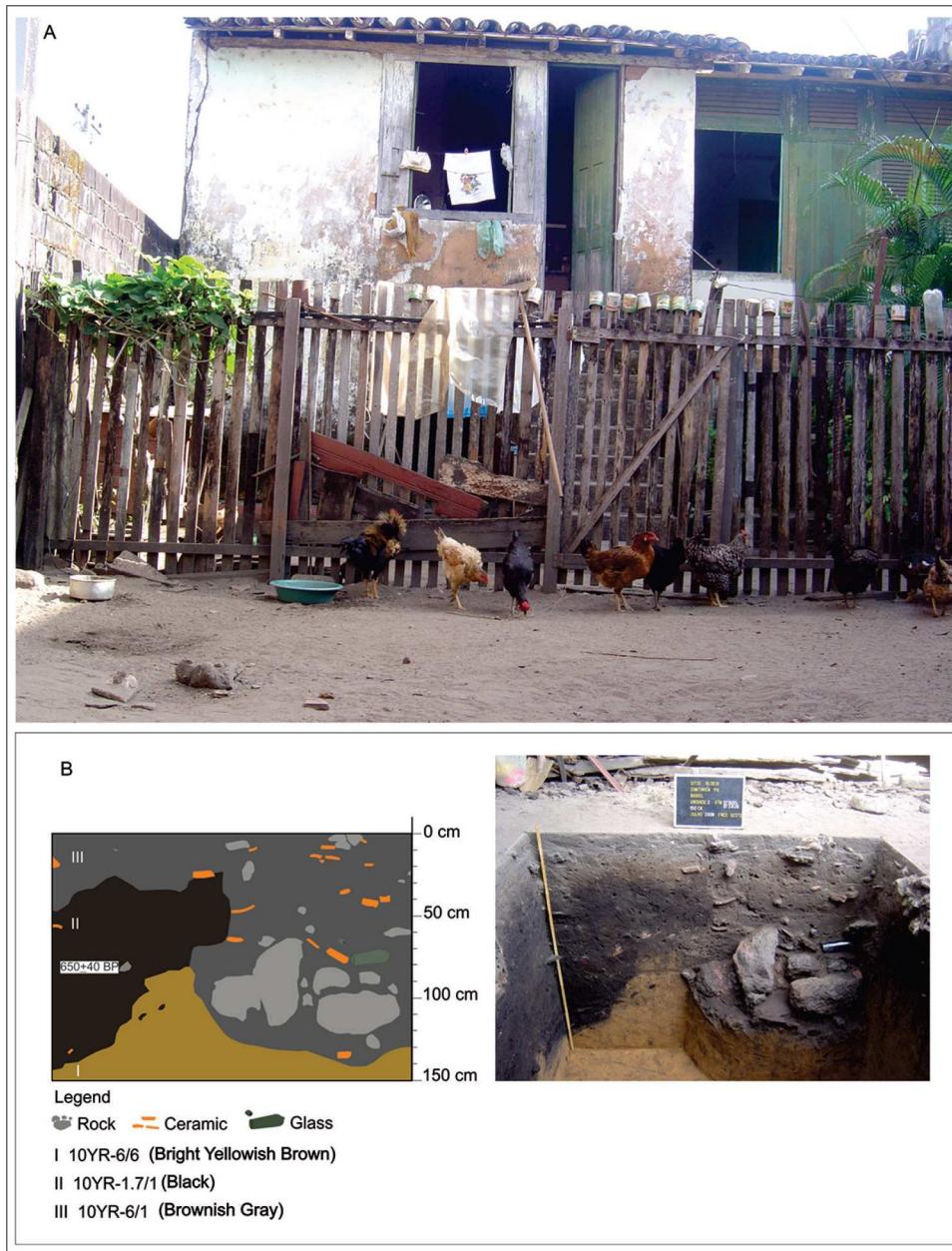


Figure 6. A) Residence where unit 2 was excavated. B) Profile of unit 2, Aldeia site. Photos and drawing: author.

domestic hearths, and a funerary context in an area of habitation, as well as the production of chipped and polished artifacts.

Another contribution to understanding the settlement patterns of the Aldeia and Porto sites was the excavation of three units (9, 10, and 11) and the opening of a trench in the Laguinho neighborhood. This was once the location of a seasonal lake that connected with the Tapajós River during the rainy season, but the site has been landfill since the 1970s. The English naturalist Henry Bates (1864, 219–220), who stayed in Santarém in A.D. 1849, described this area as covered with a series of shallow pools. According to the author, in the rainy season when the river water reached the level of the pools and formed a lake, the area was visited by various bird species.

Units 9 and 10, located on Travessa 24 de Outubro, in an area that should correspond to the shores of the former lake, presented a sandy clay soil varying between 7.5YR-3/1 (dark gray) and 7.5YR-5/8 (strong brown), hypothetically interpreted to result from an alluvial influence (Figure 12A–B).

In both these units, ceramic and lithic micro-fragments (flakes, micro-flakes, and grooved lithic straighteners) were recorded only in the first 30 cm (Figure 12D). The absence of features associated with habitational contexts and the low density of these vestiges, along with their smaller size, suggests that these are related to gathering, hunting, and fishing activities, with the use of grooved lithic straighteners to make fishing rods. On the other hand, unit 11 and the 28 × 2.5 m trench, dug with the assistance of a tractor excavator, were excavated 200 m away from the previous units on a plot of land on Avenida Tapajós. This location should correspond to the center of the lake. Both presented a layer of landfill and the absence of archaeological remains. The water table was reached at a depth between 0.6 and 1.2 m, showing that the lake is active (Figure 12C).

The excavations in the Laguinho neighborhood confirmed the physical separation between the Aldeia and Porto sites, which allowed a more precise definition of the pre-colonial settlement patterns. Calibration of the ¹⁴C dates obtained for the Aldeia and Porto sites showed that

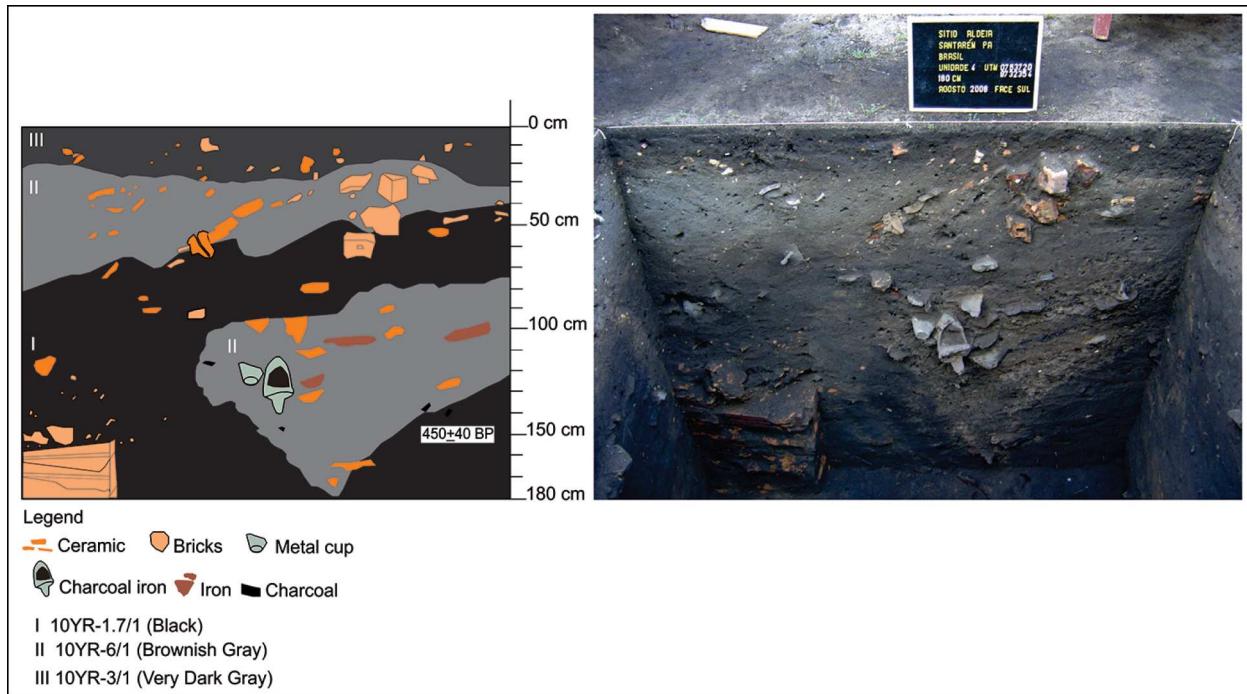


Figure 7. Profile of unit 4, Aldeia site. Photos and drawing: author.

the occupation of the late Santarém phase began in A.D. 1000 at the Porto site and that both sites were contemporaneous between A.D. 1200 and 1600 (Table 2, Figure 13). When compared to the region's other sites, this chronology indicates that the Aldeia and Porto sites are older and that occupation of other communities in the region took place from A.D. 1300 onwards. Population expansion can be postulated, provoked by the fissioning of these two large villages, which led to the emergence of other communities due to demographic growth and perhaps political disputes.

Conclusions

The delimitation of two large archaeological sites located in the urban area of Santarém—Aldeia (121 ha) and Porto (89 ha), separated by a seasonal lake—along with definition of their internal structure, cultural analysis of the artifacts, and construction of a chronology, demonstrating the contemporaneous occupation of both sites between A.D. 1200 and 1600, contributes to the knowledge of the settlement patterns and ways of life of the indigenous societies that lived there at the moment of European arrival. These substantially-sized ADE sites by themselves demonstrate the existence of large-scale modifications in the landscape. However, the interpretation proposed here of these sites and their interaction with regional communities, though recognizing a hierarchy of settlements, rejects political centralization, differing from earlier hypotheses concerning late pre-colonial sociopolitical forms in Amazonia.

Prior to this research, estimates for this pre-colonial occupation in the urban area of Santarém suggested the existence of a single site measuring between 4 and 5 km² (Roosevelt 1987; 1999, 24), equivalent to 400–500 ha. These proposed dimensions were a key part of the argument supporting the hypothesized existence of a complex chiefdom in Santarém, a proposal heavily based on ethno-historical accounts.

This political structure was described as highly stratified with supreme chiefs, nobles, and commoners, presenting political centralization and intensive agriculture. The site was seen as a regional capital around which other satellite communities were organized. The large size of some Amazonian sites, home to a dense population sustained by agriculture and with a hierarchy of settlements, formed part of the conceptual imagination of the 1990s and early 2000s of the existence of complex chiefdoms in Amazonia (Carneiro 2007), an idea proposed by various authors. Although heterarchical explanations were also advanced, Santarém continued to be described as “a complex chiefdom, but with moderate centralization” (Roosevelt 1999, 27).

The debate on the emergence of social complexity is undeniably important for Amazonian archaeology. The research conducted on the topic in recent years has united a substantial quantity of archaeological data, recognizing the existence of diverse societies of varying sizes with significant population density and regional chieftains and various examples with earthworks, roads, and ceremonial structures, showing diverse modes of interaction between the indigenous populations and the environment and giving rise to cultural landscapes. The so-called garden cities of the upper Xingu (Heckenberger 2005; Heckenberger et al. 2008), consisting of networks of multi-centered villages connected by paths and roads linking them to other settlements, some focused on agroforestry production, as well as the sites with residential mounds organized around ceremonial pyramid-shaped sites in Llanos de Mojos, Bolivia (Prümers et al. 2022) and the elaborate organizational layout of sites in the Upano River Valley in Ecuador (Rostain et al. 2024), have been discussed in terms of ancient urbanism in Amazonia. What these sites possess in common is an investment in diverse forms of earthwork architecture, constructions such as residential and ceremonial mounds, platforms, paths, roads, defensive ditches, reservoirs, and raised crop fields. These examples contrast with Santarém, where such

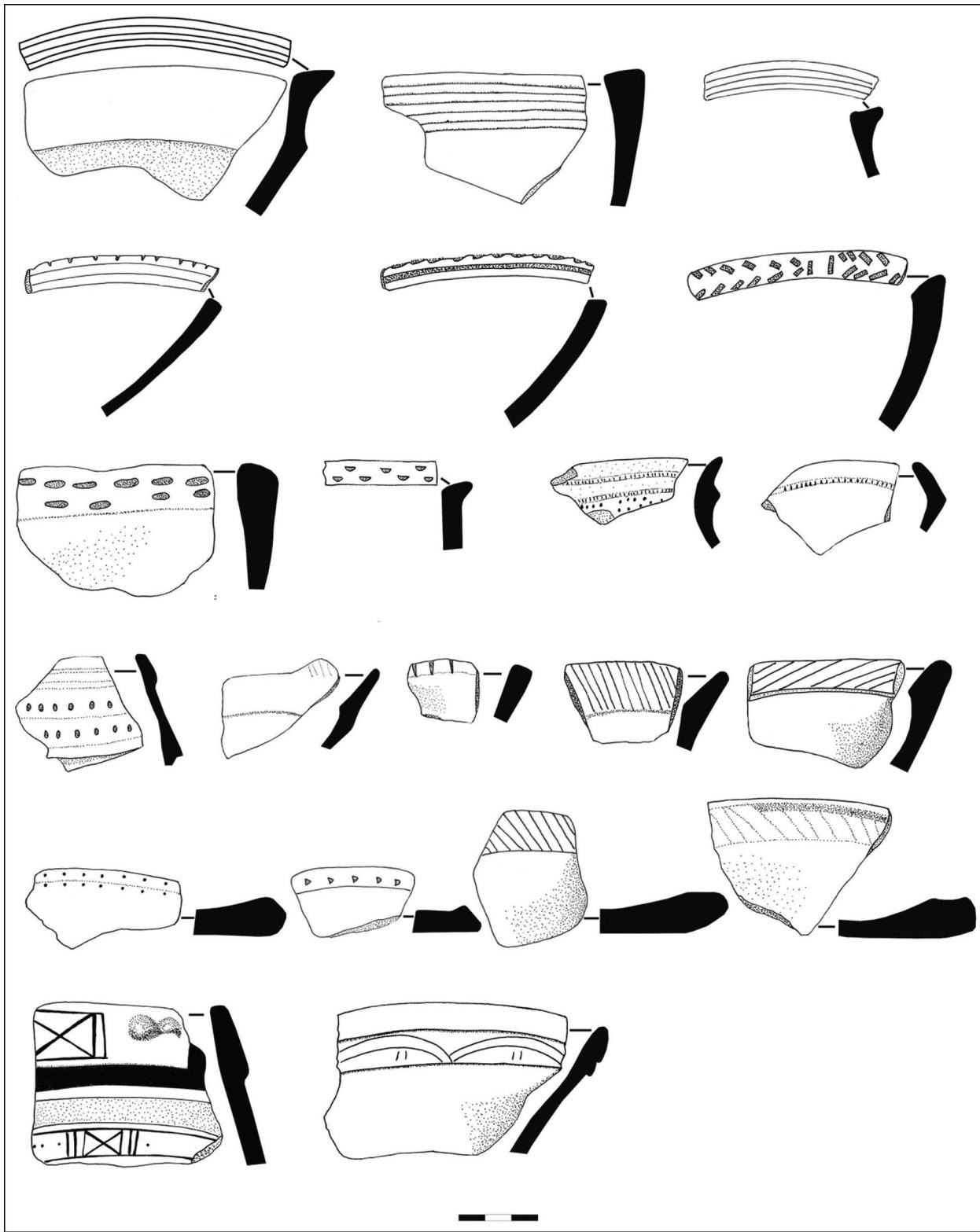


Figure 8. Profiles of ceramic rims and their decorative patterns, Aldeia site. Drawings: author.

structures are absent from the Aldeia and Porto sites and others in the region.

Interpretations proposing the existence of forms of stratified and centralized power in the Amazon region, including the control and coercion of labor in collective work associated with agricultural economies, have come under question (Gomes et al. 2023; Rostain et al. 2024). The present text rejects neo-evolutionist models of social development, which through a series of transformations, especially a growth in population density, argue that these processes

invariably lead to political centralization. In view of the analysis of the Aldeia and Porto sites and their regional context, the proposal here has been to examine possible forms of shared power, collective agency, and local institutions, suggesting what other scholars have called “alternative paths of complexity” (Fargher, Heredia Espinoza, and Blanton 2011, 306; Feinman 2023, 357; Feinman and Nicholas 2016, 283). The line of investigation proposed here is based on a transversal approach that connects spatial and intrasite archaeological analyses with iconographic studies



Figure 9. A) Domestic pottery, Aldeia site. B) Ceremonial pottery excavated from unit 4. Photos: author.

theoretically informed by pan-Amazonian perspectivist ontologies (Viveiros de Castro 1996b, 2002).

During the research at the Aldeia and Porto sites, no empirical evidence was found to indicate hierarchical differences between people. The villages situated around Santarém, here considered autonomous, are conceived in terms of a mixed, non-agricultural subsistence economy. Another argument in favor of the autonomy of these smaller villages is the already mentioned technological, formal, and stylistic variability of the ritual ceramics found at these

sites compared to the artifacts from the Aldeia site. At the Porto site (89 ha), the research conducted by Roosevelt and Schann pointed to the existence of habitational areas, with the presence of late phase bell-shaped pits used for depositing domestic and ritual ceramics, indicating practices for keeping these areas clean. In addition, activities were detected linked to the production of lithic artifacts and secondary burials in urns with calcined bones. This research confirmed these same patterns.

At the Aldeia site, here the subject of systematic investigations for the first time, the impact of more than three centuries of colonial and contemporary occupation meant that it was impossible to identify features related to habitational contexts, although domestic artifacts were found throughout the site. What stands out at this site are the ritual activities and the diverse contexts in which artifacts were deposited in bell-shaped pits dug exclusively for this purpose, one of them documented during the delimitation process. These indicate that, in addition to the Porto settlement, the Aldeia site was also a habitational site but with a prominent ceremonial function where collective ceremonies were held.

A comprehensive understanding of the Aldeia and Porto sites is only possible if we take into consideration their relations with a regional setting. Research conducted on the Belterra Plateau by Schaan and collaborators (Schaan 2016; Stenborg 2016; Trouflard and Alves 2019) identified practices of soil manipulation, cultivation, and maintenance

Table 1. Ceremonial forms recovered in the excavations, Aldeia site, Santarém.

Forms	Parts found	Decoration
Caryatid vessel	Anthropomorphic appendages, king vultures, rims with graphic designs, pedestal base	Plastic (incisions, punctate), modeled
Variation of caryatid vessel	Zooanthropomorphic appendage, rim with graphic designs	Plastic (incisions, punctate, application), modeled (spheres)
Necked vessel	Zoomorphic appendage, king vulture, bush dogs	Plastic (incisions, punctate), modeled
Variation of necked vessel	Zooanthropomorphic appendage, unrecognizable being	Plastic (incisions, punctate, application), modeled
Globular vessel	Jaguar appendage	Modeling, incisions, polychrome painting
Female figurines	Faces, arms, body	Plastic (incisions, punctate, application), red and white paint

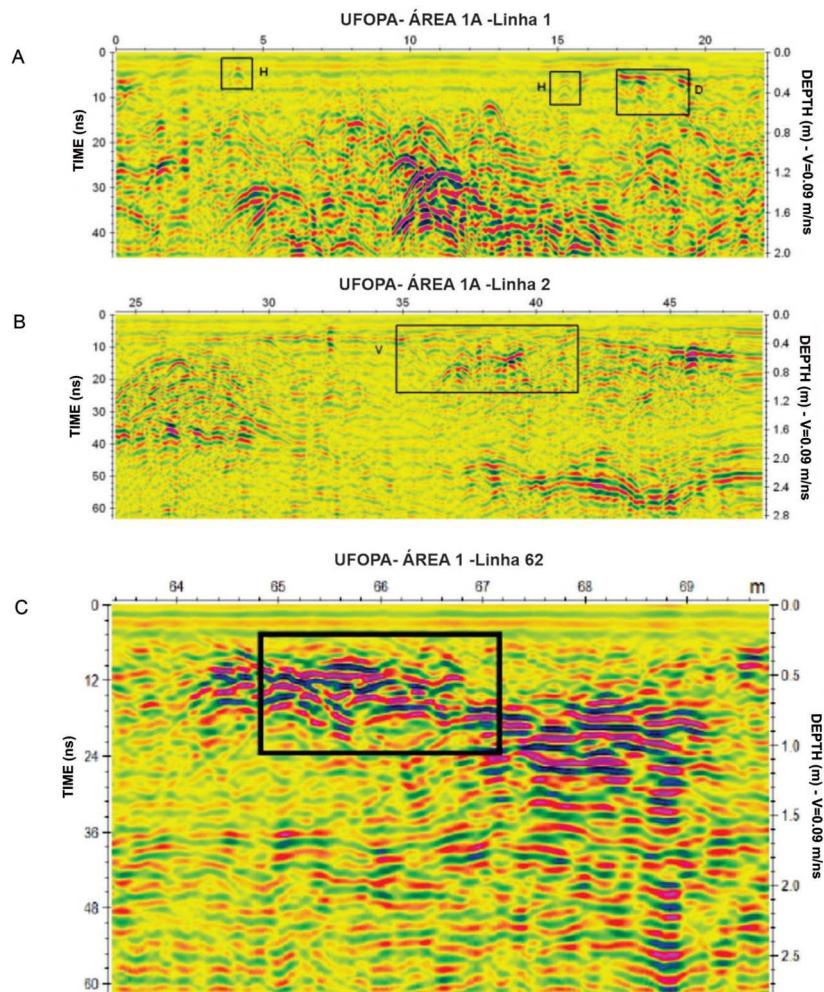


Figure 10. The three types of anomalies obtained from GPR survey: A) hyperbole, B) valleys, and C) discontinuities.



Figure 11. Bell-shaped pit shown in the excavation profile, Porto site. Photo: author.



Figure 12. Excavations at Laguinho. A) Profile of unit 9. B) Excavation of unit 10. C) Trench dug with a tractor excavator showing the emergence of the water table. D) Micro-flake. E) Ceramic fragments. F) Grooved lithic straighter. Photos: author.

of water storage wells, pointing to the existence of community-level resource management with cooperative solutions that allowed these communities to be self-sufficient. On the other hand, the Carapanari site and 29 other sites in the research area along the Tapajós River (Gomes et al. 2023), as well as the sites on the Belterra Plateau and others located across a broad region of 23,000 km², also organized in cooperative basis, clearly shared similar cultural patterns. Ceramic analysis allows us to infer domestic and ritual practices comparable to those at the Aldeia and Porto sites, albeit with some variations. These sedentary communities within the wider Santarém region shared the same animist/perspectivist ontology, whose artifacts demonstrate the broad regional distribution of the same ritual repertoires. As discussed earlier, this ontology, distributed across Amazonia and even the Andean region, indicates the enduring temporal persistence of indigenous modes of thought associated with a diverse range of pre-colonial social configurations (Gomes 2007, 2017, 2022).

Shamanic rituals were also performed at the Porto site and other smaller sites in the region, but these appear to have been more restricted and domestic in nature. However, it is at the Aldeia site where the shamanic institution is more strongly expressed, given the frequent presence of ritual vessels and statuettes depicting male figures sat on stools, holding rattles, and wearing body ornaments. Archaeological evidence obtained during fieldwork includes the previously mentioned bell-shaped features, which are recurrent at the Aldeia site. Thus, my hypothesis is that the Aldeia site, in addition to being a place of habitation, also functioned as a ceremonial center—a place of pilgrimage where people from other communities converged to participate in collective ceremonies, share esoteric knowledge, and gain access to substances, materials, and artifacts (Gomes 2017).

It is here that a connection between ritual and politics becomes evident. Indigenous leaders were not redistributive chiefs focused on the economic administration of food products but were instead deeply connected to ritual activity,

Table 2. Late chronology of Porto and Aldeia sites, Santarém, lower Amazon, Brazil. Calibrated with OxCal 4.4 using IntCal20 atmospheric curve. OxCal v.4.4.4 (Bronk Ramsey 2021), r.5; atmospheric data from Reimer and colleagues (2020).

Laboratory data	Site	Excavation unit	Depth	Radiocarbon age B.P.	Radiocarbon age A.D.	Calibrated age range B.P. (2 σ , 95% confidence)	Calibrated age range A.D. (2 σ , 95% confidence)	Sources
Beta 322202	Porto	N240/6L150	63 cm	960 ± 30	990	920–780	1020–1170	Alves 2012
WK6844	Porto	20/5N	—	664 ± 57	1286	680–540	1270–1410	Quinn 2004
WK6837	Porto	11/4B	—	652 ± 56	1298	670–540	1280–1410	Quinn 2004
WK6843	Porto	18	—	650 ± 59	1300	670–540	1270–1410	Quinn 2004
Beta 248483	Aldeia	2/3	80 cm	650 ± 40	1300	670–550	1280–1400	Gomes 2017
Beta 248484	Aldeia	2/3	100 cm	600 ± 40	1350	650–530	1300–1420	Gomes 2017
WK6839	Porto	12	—	586 ± 56	1364	650–510	1300–1440	Quinn 2004
WK6833	Porto	8	—	583 ± 57	1367	650–510	1300–1440	Quinn 2004
Beta 391786	Aldeia	15/1	70 cm	570 ± 30	1380	640–520	1310–1430	Gomes 2017
Beta 248487	Aldeia	4/3	160 cm	550 ± 40	1400	630–500	1310–1450	Gomes 2017
WK6840	Porto	12	—	537 ± 58	1413	650–480	1300–1470	Quinn 2004
WK6845	Porto	25	—	455 ± 63	1495 ± 63	620–320	1330–1630	Quinn 2004
WK6837	Porto	11/4B	—	452 ± 57	1498	550–320	1400–1630	Quinn 2004
Beta 248489	Aldeia	4/4	150 cm	450 ± 40	1500	540–330	1410–1620	Gomes 2017
WK6841	Porto	13	—	425 ± 56	1525	530–320	1420–1630	Quinn 2004
Beta 248486	Aldeia	4/4	130 cm	420 ± 40	1530	520–320	1430–1630	Gomes 2017
WK6842	Porto	15C	—	418 ± 59	1532	530–320	1420–1630	Quinn 2004
WK6838	Porto	11/4B	—	413 ± 56	1537	520–320	1420–1630	Quinn 2004
Beta 248488	Aldeia	4/3	190 cm	410 ± 40	1540	520–320	1430–1630	Gomes 2017
WK6832	Porto	5	—	386 ± 62	1564	510–310	1440–1640	Quinn 2004
WK6835	Porto	9B	—	380 ± 64	1570	510–300	1440–1650	Quinn 2004

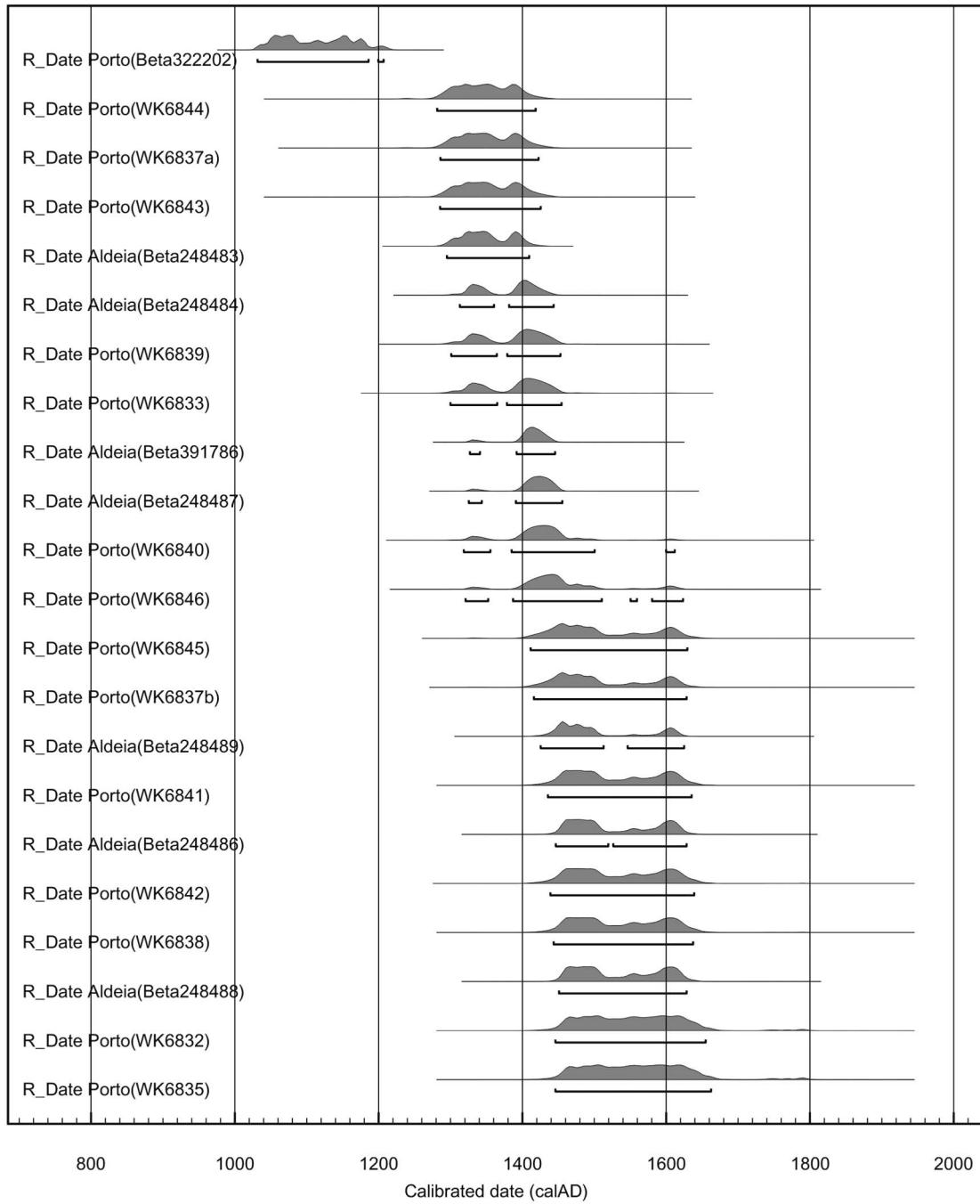


Figure 13. Calibrated ^{14}C dates, Aldeia and Porto sites. OxCal v.4.4. (Bronk Ramsey 2021), r:5. Atmospheric data from Hogg and colleagues (2020).

including ceremonial forms that translated into political relationships connecting the Aldeia site to other communities in the region. Based on the available evidence, we cannot currently determine the continuity of these social forms with any precision. What I infer is that leadership positions, insofar as they were based on prestige and the ability to bring people together, were more than likely cyclical.

Iconographic studies of ceramic artifacts from the Santarém phase consider ritual objects and bearers of images as part of a social network (Gell 1998). Analyses have shown the importance of figurines with naturalistic configurations of shamans—seated, corpulent men, wearing different body adornments, sometimes including a type of hat—and consequently of shamanism as an institution. The artifacts that make up the shamanic paraphernalia, many of them found in bell-shaped features, provide information about the cosmological concepts of their makers. Other artifacts

display a structure associated with the recollection of myths, as well as various images showing the existence of interspecific beings, or even the switching of perspectives, and the emergence of other images produced by moving the artifacts or altering the observer's viewpoint, again evoking the notion of bodily transformation. These are notions that establish a connection with the relational ontologies of contemporary indigenous Amazonian societies, where the involvement of objects in ritual performances, with the participation of different collectives, suggests other ways of reflecting on political power, far removed from Eurocentric conceptions.

A picture can be constructed of a pre-colonial society, situated amid the Amazonian Forest, densely populated, with large villages, regional in scope but decentralized, with vibrant ceremonial activity, as well as the presence of chiefs and shamans as figures of prestige and power. The

hierarchy of settlements in Santarém translates not as political centralization, based on the submission of people and communities on its periphery, but as a place of ritual convergence. Hence, the society that developed during the late pre-colonial period was different in scale and in demographic, spatial, and organizational terms to the indigenous Amazonian societies existing today: a link is established between past and present through the institution of shamanism and a mytho-cosmological base that demonstrates a long-term continuity, albeit historically transformed (Sahlins 1997).

Another way of understanding political relations emerges, inseparable from cosmological organization, which implies an interpersonal interaction between chiefs, religious specialists, and local and regional collectives, the latter articulated through networks involving human and non-human beings in a dynamic of constant negotiation. This seems to have been the intentional political project of the indigenous Santarém society, materialized through ritual activity. Given the threat posed today to the biocultural heritage of the Amazon rainforest, archaeology can make a significant contribution to recovering the history of indigenous peoples and valuing their ways of life and institutions.

Disclosure Statement

The author reports that there are no competing interests to declare.

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