Fire and ritual: bark hearths in South-American Tupiguarani mortuary rites

Mariana Beauclair*, Rita Scheel-Ybert, Gina Faraco Bianchini, Angela Buarque

Museu Nacional, Universidade Federal do Rio de Janeiro, Quinta da Boa Vista, São Cristóvão, 20940-040 Rio de Janeiro, Brazil

A R T I C L E   I N F O

Article history:
Received 19 November 2008
Received in revised form
6 February 2009
Accepted 11 February 2009

Keywords:
Anthracology
Archaeobotany
Ceramists
Funerary ritual
Brazil

A B S T R A C T

High proportions of bark pieces (up to 85% of the charcoal content) were found in several hearths from Morro Grande archaeological site (Southeastern Brazil). This site, dated between 3220–2840 and 1820–1390 yrs cal BP, is associated to the Tupiguarani Tradition, attributed to supposed ancestors of Tupinambá native populations, who occupied the major part of the Brazilian coast in the XVIIIth century. Bark hearths, archaeologically associated with the mortuary ritual, were found encircling a funerary urn and associated with ceramic fragments painted with elaborated patterns in black, white, and red. Other hearths, spatially isolated from the funerary area, were associated to fragments of utilitarian non-painted ceramics and therefore attributed to domestic contexts. These ones presented few or no bark fragments. It is clear that bark was intentionally selected as fuel for the funerary hearths. Although bark is related, in historic accounts, as a specialized firewood for ceramics firing, its presence in ritual context has not been previously recorded. In this paper, the anthracological record is discussed in the light of ethnographic and historic accounts. A possible explanation for the presence of bark hearths in funerary context is proposed, suggesting it might be a symbolic parallel with the quotidian: the potency and power of transformation of bark as a fuel would be regarded in a spiritual level, achieving the transformation of the body soul in the revered soul – an Ancestor.

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1. Introduction

Cultural responses to death are so diversified that common elements among them are almost impossible to find. The only universal characteristic of death seems to be the impact it causes and the meaningful and expressive reaction it generates (Huntington and Metcalf, 1979).

Mortuary rituals are aimed to deal with the impact of death and restore a social order weakened by the loss of a member and by fears related to death (Hertz, 1960). Their great importance is translated in highly elaborated and ritualized practices (Ribeiro, 2002). Almost nothing in a funerary ritual is there by chance; all elements involved have symbolisms that justify their presence and disposition. In archaeological context, burials are the product of each set of ritualized practices, and all associated material culture is pervaded by symbolic signs. These signs are the product of their structural relationship to other signs, as a collective symbolic scheme that provides meanings for the actions (Shanks and Tilley, 1987).

The anthracological analysis of concentrated charcoal samples from a Tupiguarani archaeological site in Southeastern Brazil revealed the presence of tree bark hearths encircling a funerary urn and its accompanying artifacts. Bark hearths would be expected in domestic hearths, as the use of bark to fire ceramics is described in historical accounts (Staden, 1927). However, the presence of bark hearths in funerary context has not been previously recorded. Interpretations of archaeological context and ethnographic and ethnologic analogy led to the hypothesis that the role of transformation of bark hearths in a quotidian activity (clay/ceramics) was transferred, in ritual context, to a symbolic level (spirit of the dead/Ancestral).

2. Materials and methods

The archaeological site Morro Grande occupies an area of about 90,000 m² in the urban area of Morro Grande, Araruama region, Rio de Janeiro State, Southeastern Brazil (22°47'07"S, 42°21'49"W) (Fig. 1). At least two occupation periods were identified in this site: an earlier period, dated between 2920 ± 70 yr BP (3220–2790 cal yr BP) and 2600 ± 160 yr BP (3000–2150 cal yr BP), and a more recent one, around 1740 ± 90 yr BP (1820–1390 cal yr BP) (Scheel-Ybert et al., 2008).

Archaeological excavations were made along several stages of fieldwork since 1993. The occupation level is up to 0.60 m thick.
Funerary urns are the only archaeological artifacts below this depth (Fig. 2). Although partially destroyed by urbanization, the site presents many intact archaeological features and well preserved polychrome ceramics that allowed its association to the Tupiguarani Tradition (Buarque, 1999; Cezar et al., 2001). This Tradition is associated to pre-colonial sites which polychrome ceramics are very similar to those produced by historical Guarani (South Brazil, North Argentina, Uruguay and Paraguay) and Tupinambá (Brazilian Northeast and Central Coast) populations. The Paranapanema valley, near to the Tropic of Capricorn, is considered as the limit separating the southern Guarani and the northern Tupinambá occupations (Dias, 1994/1995), but it is possible that this limit be situated a little southerly, at the Paranaguá bay (Chmyz, 2002).

Associating material culture to an ethnic group on the basis of archaeological data is recognizably hard. However, material evidences suggesting a relation between the archaeologically defined Tupiguarani ceramist Tradition and the historic Tupinambá are particularly strong in the studied region. The distribution of archaeological sites frequently corresponds to the location of villages described by chroniclers, while funerary structures, as well as ceramics morphology and decoration, have clear similarities to the XVth century iconography. For these reasons, material culture found in Morro Grande site was attributed to the historic Tupinambá ancestors (Buarque, unpublished data).

The Tupinambá occupied a large part of the Brazilian coast in the XVth century. They had an intense contact with the arriving Europeans, who produced many accounts of various aspects of their quotidian activities, ritual ceremonies, habitational and funerary structures, and material culture. In spite of their varying credibility and partiality, these historical accounts are the main sources of information about these populations, who were already disappearing due to extermination and migration in the early XVIIIth century (Fernandes, 1963; Météaux, 1979; Prous, 1992; Noelli, 1998).

Morro Grande site was excavated along large surface areas, according to natural stratigraphic levels. Charcoal from hearths was systematically collected for anthracological analysis and radiocarbon dating. However, not all identified features provided charcoal, probably because of post-depositional and preservation issues. Dispersed (in the soil) and concentrated (in hearths or other features) charcoals were sampled in Locus 2. All the sediment removed from the excavation area was dry- or water-sieved and charcoal pieces were collected with supple tongs. In loci 1 and 4 charcoal was manually collected.

In the laboratory, charcoal pieces were manually broken exposing transverse, tangential longitudinal, and tangential radial sections for wood anatomical identification. Sections were examined under a reflected light brightfield/darkfield microscope. Systematic determination was achieved using Atlas Brasil software (Scheel-Ybert et al., 2006), specialized literature (e.g. Metcalfe and Chalke, 1950; Détienne and Jacquet, 1983), and a reference collection.

3. Results

This work presents the results of the anthracological analysis of concentrated charcoal from three loci of Morro Grande site. The analysis concerned 1636 charcoal pieces recovered in 11 hearths from Locus 2 (L2) (Fig. 3), one hearth from Locus 1 (L1), and one from Locus 4 (L4). From these, 535 wood fragments were identified, 97 charred pieces could not be identified (knots, small branches, poorly-preserved fragments), and 1006 fragments corresponded to dicotyledonous bark. In sum, thirty-one taxa were recognized (Fig. 4).

Most hearths were characterized by a very low taxonomic diversity (Fig. 4). Prevailing taxa were frequently Leguminosae species: Bauhinia sp. (H2L2), Copaifera sp. (H1L2, H4L2), Myroxylon sp. (H13L2, H17L2), Poecilanthe sp. (H16L2), and Inga sp. (H11L1) (Fig. 5). Taxa from other families predominated in H6L2 (Myrtaceae), H7L2 (Tabebuia sp.), and H10L2 (Lauraceae). In five hearths from Locus 2, more than 70% of the charcoal pieces corresponded to bark (H1L1, H2L1, H4L2, H5L2, and H6L2). Hearth H7L2 and a sample of dispersed charcoal (DC) near Locus 2 funerary urn also presented a high proportion of bark pieces (Fig. 3). Few or no bark fragments were identified in hearths located in Loci 1 and 4 (Fig. 4).

All identified taxa are common in the Brazilian Atlantic Forest. Analysis of dispersed charcoal from this site supports that Morro Grande was surrounded by the Atlantic Forest during all its occupation period (Scheel-Ybert, unpublished data).

3.1. Wood and bark selection: identifying elements of the funerary ritual

The low taxonomic diversity of most studied hearths agrees with usual descriptions of concentrated charcoal in burning features (Badal Garcia and Heinz, 1991; Badal Garcia, 1992; Scheel-Ybert, 2004). Concentrated charcoal samples commonly originate...
from short duration fires, reflecting only the species used in the last (or single) burning episode. They may also be associated to specialized or ceremonial activities.

Leguminosae species are frequently dominant in the Atlantic Forest, either in number of species or of individuals (e.g., Lombardi and Gonçalves, 2000; Lima and Guedes-Bruni, 1994). The prevalence of this family in the analyzed samples is likely an expression of the past environmental conditions.

The diverse requirements related to domestic or utilitarian use of fire may be satisfied by an appropriated fuel selection. Wood choice is likely to be guided by burning characteristics (e.g., calorific power, smoke, or flames production), which may depend upon the taxonomic range, but also upon the qualities and state of the selected wood log (stem/branch diameter; dry, green or decayed wood etc.) (Thery-Párisot, 2001). Among Amazonian Tupian Ka’apor, for instance, dozens of species can be selected for each kind of fire-demanding activity (Baleé, 1994).

Choices related to ceremonial aspects rely on subjective characters which are particular to each culture and even harder to discern. There is no evidence of specific wood selection in the analyzed samples, but the present data do not allow discarding the possibility of choices based on non-taxonomic parameters.

On the other hand, even if some bark is expected to be identified in anthracological samples, as this material is not ordinarily taken off when wood is burnt, the proportion of bark in some of the analyzed hearths is too high. It is clear that bark itself was burnt, and that this material has been intentionally selected as fuel.

In Locus 2, bark hearths encircle the funerary urn and associated artifacts, which include fragments of ceramics with painted decoration (Fig. 3). Ceramic vessels, probably used for food offerings, are associated to the urn. Several fragments from this context present elaborated patterns (e.g., skeletal) that suggest they were especially made for the funerary ritual (Buarque, unpublished data). Hearths located farther from the funerary urn are associated to fragments of utilitarian, plastic decorated ceramics. These hearths, interpreted as domestic, do not present any distinguishing compositional character. Hearths from Loci 1 and 4 did not present many bark remains, although they are associated to funerary contexts. Very few charcoal pieces were recovered in each one of these samples (ca. 10), and therefore these results are poorly representative. If confirmed, their low bark content might indicate either a restriction in the use of funerary bark hearths, which might have been attached to specific burials (elected by gender, age, status attributes, or else), or a change in funerary ritual through time. Ages already presented for Morro Grande are almost 1000 years apart, suggesting that this settlement was re-occupied in different periods (Scheel-Ybert et al., in press). Although Loci 1 and 4 have not been dated, they might
possibly represent another period of occupation, even if there is no indication of that in the material culture.

3.2. Tupi mortuary rituals

Funerary structures in Morro Grande site were probably near the habitations; the body lied inside the urn, avoiding contact with the soil (Buarque, 1995). Vestiges of hearths were associated to all funerary assemblages, even when charcoal was not recovered. In Locus 2, bark hearths provided the fire.

Tupi funerary rituals vary greatly. There are mentions to primary and secondary, simple and double burials, which may be in urns, mats, hammocks, or family members (anthropophagy). Nevertheless, some elements attached to these mortuary rituals seem invariable in space and time, especially the use of fire in funerary ceremonies and the facts of keeping the dead in the proximities and of avoiding the contact of the body with the soil (Ribeiro, 2002).

Hearths frequently surrounded the graves in Tupinambá funerary rituals. Their function was, presumably, to warm the dead (Sousa, 1938). Thévet (1575; Léry, 1889) reported that fire was also important to frighten evil spirits. Historic accounts testify that Tupinambá mortuary rituals were characterized by the mourning and panegyric of the dead (Thévet, 1575; Léry, 1889; Cardim, 1980) and by the relatives’ grief demonstrations (Cardim, 1980). The dead body was firmly tight and well buried to avoid its return (Thévet, 1575) and the living did all the necessary so that the soul could reach the promised land: the Guajupiá.

The Guajupiá was conceived as a place of pleasure, beyond the mountains, where the souls would meet their ancestors and live eternally (Thévet, 1575; D’Abbeville, 1922). Only few individuals who personified the ideal of their culture (courageous men who had fiercely fought their enemies or who had captured many enemies and ritually sacrificed them) could aspire to this paradise (D’Abbeville, 1922; Marcgrave, 1942). These beliefs certainly had important influences in Tupinambá way of life (Fernandes, 1963), as only the brave combatants would triumph over the hard path to the Guajupiá (Thévet, 1575; Fernandes, 1963). The men (and most women) who couldn’t achieve this ideal would be taken by an evil spirit called Anhangaé or Jurupari (Thévet, 1575; D’Abbeville, 1922; Marcgrave, 1942).

The Tupinambá believed the Anhangaé could take many different forms. It was frequently seen, and even those who were alive could have body and soul punished day and night. The mere remembrance of sufferings imposed by the Anhangaé was enough to torment them. The Tupinambá claimed they feared this evil spirit more than anything else (Thévet, 1575; Léry, 1889).

The evil spirit was one of their greater concerns when preparing the dead for the journey to Guajupiá. Food was offered either to sustain the dead as to feed the evil spirit, which would otherwise consume him. Fire was aimed to provide heat and protection to the dead, maintaining the Anhangaé away (Thévet, 1575; Léry, 1889; Sousa, 1938; Cardim, 1980). The living also encouraged the dead, recommended him to his parents and grandparents already in Guajupiá, and advised him, above all, not to let extinguish the fire (D’Evreux, 1874).

Fire, therefore, performed an essential role in Tupinambá funerary rituals. It was one of the necessary elements to grant the soul a successful journey to the Guajupiá. And in funerary context, fire was provided by hearths.

3.3. Why bark?

There is as yet no reference to bark hearths in funerary context, either in the ethnographic literature or in the archaeological record. However, it is known that bark was used by Tupinambá women to fire ceramics. The vessels were deposited upon stones and covered with dry bark, which was fired. Ceramics then heated until incandescence (Staden, 1927).

Modern ceramists consider bark as one of the best fuels to fire ceramics, because of its high and instantaneous heat (Lefferts apud Thompson, 1994). North American Yuma (Rogers apud Sheppard, 1968), Luiseños, and Diegueños (Curtis, 1926), as well as Brazilian
Fig. 4. Results of charcoal analysis. Black bars represent the percentage of taxa identified in each hearth. The percentage of bark in hearths is represented in circles (black = wood; white = bark). Ni = number of identified pieces; Nt = total number of analyzed pieces and Nsp = number of identified taxa. The asterisks mark the funerary hearths.

Fig. 5. SEM micrographs of transversal plans of a bark piece (A) and some of the identified taxa: Tabebuia sp (B), Myrtaceae (C), and Myroxylon sp (D). Scales correspond to 100 µm.
natives (Lima, 1986), use bark to fire ceramics. Authors who described this activity in the present frequently emphasize the disposition of bark, covering in ceramics in order to preserve the heat and produce uniform firing (Sheppard, 1968; Lima, 1986), precisely in the same way related for historic Tupinambá (Staden, 1927).

The use of a material in everyday activities does not prevent it of having a ritual role (Morehart et al., 2005). Rituals can parallel quotidian activities. Mortuary rituals are amongst the routine, strategic engagements through which people reproduce the conditions of their own lives (Barret, 1990). Archaeological and ethnographic evidences indicate that in Tupian funerals, as well as in others domains, the economic processes and cultural-symbolic were dialectically related, feeding off each other.

It seems that the repetition of these domestic activities lend them a power that can be transferred to rituals, in a way that is hard to grasp by outsiders (Adams, 1971). Firing ceramics was probably the quotidian activity that demanded the greater hearth potencies. Wouldn’t protection of a dead relative’s soul also deserve the most potent fire? Bark hearths were capable of reaching temperatures that could make clay glow and become ceramics. They had the power of transformation. And the perilous journey the dead must overcome stand for a period of transformation. The dead’s soul, still over the earth of the living, is expected to supply the dead with everything it must pass through much probation. In this confused transitory society of the dead. But to accomplish this transformation journey the soul leaves the society of the living to integrate the society of the dead. To but to accomplish this transformation journey it must pass through much probation. In this confused transitory state, the living are expected to supply the dead with everything possible for a successful transition (Hertz, 1960).

It is conceivable that the power of transformation of ceramics hearths was transferred to a symbolic level: the transformation of the an in anguere (an is defined as the body soul, while anguere is the soul that lives in the destined place, according to D’Evreux, 1874).

4. Conclusion

Symbolic and cosmological characters are hard to recognize in the archaeological record. As we cannot directly apprehend the meaning of material remains, we need to interpret them, and there lies the greatest sources of error. Dealing with people and cultures long away gone, we will never be sure about interpretations (Pearson, 1997; Peregrine, 2001). Bark could have been chosen as fuel for the funerary hearths for a multitude of reasons: smoke, smell, burning period, fire intensity, or any immaterial motivation far beyond our thoughts. However, most options lack evidence, and without it we risk to enter the realm of mere abstraction.

Historical accounts can contribute in the search of a context and a meaning for the material remains. And archaeological data can enlighten some obscure or biased parts of history, allowing a critical analysis of these texts (Feinman, 1997). Together, these complimentary data can help us to build an image of the Tupinambá that can be closer to reality.

However, up to now, all the information about Tupiguarani religious practices and collective symbolic schemes relied heavily on ethnography and historic accounts from the XVth and XVIIth centuries. It is the first time that some inference is driven from direct vestiges of the material culture – in this case, from charred wood and bark.

In this work, anthracological results were interpreted under the light of historical accounts and ethnography. We hypothesized that bark was intentionally chosen as fuel for funerary hearths, and that its use was in some way restricted (to a period, a region, or to selected people). It is noteworthy that Tupian groups are characterized by very heterogeneous social morphologies, and that ceremonial structures can markedly vary among them (Viveiros de Castro, 1986). Further investigations on Morro Grande and other Tupinambá archaeological sites are necessary to better specify the context, period, and area in which bark hearths might be used.

Fire, as mentioned in historical accounts and in ethnographic studies, is one of the cornerstones of Tupin funerary rituals, and hearths would be inserted under its symbolism. It is proposed that bark would be chosen as fuel through a parallel with the quotidian: its potency and power of transformation would be regarded in a spiritual level.

This proposal remains, of course, as a mere hypothesis, and further analysis is still needed for a better understanding of this issue. The presence of bark hearths in a funerary context, however, is of great significance, as this fuel was undoubtedly selected for these specific hearths. Conservation of organic remains being particularly rare in Tupiguarani sites, these findings provide direct evidence that allow us to understand the symbolic purposes that guided this population.

Acknowledgements

Authors were supported by funds of Brazilian financement agencies National Counsel of Technological and Scientific Development (CNPq) and Carlos Chagas Filho Foundation for Research Support of the State of Rio de Janeiro (FAPERJ).

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