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Perspectives

Pineapple Among the Indigenous Nambikwara: Early Twentieth Century Photographic Documentation from Central Brazil

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Abstract In the region that is today Brazil, presence of pineapple in the food of Indigenous peoples was noted early by the Portuguese and other European explorers, who described the presence of the plant in Indigenous gardens and around villages along the Atlantic coast and in the interior. The objective of this paper is to contribute to the ethnobotany and history of pineapple in South America, particularly Central Brazil, based on the first known photographic documentation of the use of pineapple in the diet of an Indigenous society: the Nambikwara in the northwestern region of the State of Mato Grosso, Brazil. The pineapple's presence in Nambikwara villages immediately caught the attention of the early explorers and fermented Nambikwara "pineapple wine" enjoyed enormous success. The photographic record presented here was produced on the occasion of one of the first scientific expeditions sponsored by the Brazilian government in the early twentieth century, the Commission for the Construction of Telegraph Lines from Mato Grosso to Amazonas (better known as the "Rondon Commission"). All photos presented here were taken by Major Thomas Reis during a visit to the Nambikwara-Mamaindê village, in the Cabixi River region, in northern Mato Grosso, during the expedition undertaken from 1913 to 1914. They show many details of how pineapples (*Ananas ananassoides*) are processed, including the familiar setting of a child playing beside her working mother. As these four images suggest, unexplored archival materials offer great potential for conducting visual historical ethnobotanical studies of topics that are otherwise invisible in the academic record.

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Introduction

For the non-Indigenous world, the "discovery" of the pineapple occurred in 1493, when, on the occasion of his second trip to tropical America, Columbus and his crew disembarked on the Caribbean island of Guadalupe (French West Indies) and soon entered into contact with the original population of the archipelago. Among the trophies chosen by Columbus for presentation to his King were pineapple fruits, which he named *pinã de Indes* (pine of the Indians). Since this encounter, the pineapple quickly disseminated among the principal kingdoms of Europe and, by the end of the sixteenth century, was cultivated pantropically, having been introduced to diverse European colonies in Africa and tropical Asia (d'Eeckenbrugge et al. 2018).

In the region that is today Brazil, presence of pineapple in the food of Indigenous peoples was noted early by the Portuguese and other European explorers, who described the presence of the plant in Indigenous gardens and around villages along the Atlantic coast and in the interior. Descriptions of the fruit were always eloquent as, for example, in the case of the record left by the naturalist Jean de Léry (1880:251), who travelled along what is now the Brazilian coast in the middle of the sixteenth century:

> … when ripe, the Ananas turns bluish-yellow in color and exhales the fragrance of raspberry that [one] can smell it from a distance; as for the taste, it melts in your mouth, and is naturally very sweet …

Besides the numerous descriptions that exalt the

olfactory, aromatic, and aesthetic properties of the fruit, there are also pictographic registers, generally ink drawings, that leave no doubt about the presence of pineapple in the diets of different Indigenous groups from Central America and the Antilles to the central part of South America, in the region of the triple frontier of Brazil-Paraguay-Bolivia extending westward to the coast of today's Peru, eastward to the northeastern coast of Brazil, and southward to the northeast of Argentina (Baker and Collins 1939; Clement et al. 2010, d'Eeckenbrugge et al. 2018; Schultes 1990).

Early travel logs and botanical accounts by Europeans explorers and missionaries in colonial Brazil documented extensively the presence of fruit juices and fermented beverages in the diets of numerous Indigenous groups, especially among Tupi peoples along the Atlantic coast (Lima 1975; Noelli and Brochado 1998). In these cases, fermentation of beverages made of starchy staples (e.g., maize and manioc) was achieved through the use of spittle. Documentation of such beverages in Central Brazil, especially among non-Tupi groups such as the Nambikwara, is less common, as is the use of spittle to ferment fruit juices. Diverse sweet fruit juices, often called "wines," were consumed unfermented or fermented without the use of spittle, relying on naturally occurring yeast (Lima 1975).

The objective of this paper is to contribute to the ethnobotany and history of pineapple in South America, particularly Central Brazil, based on the first known photographic documentation of the use of pineapple in the diet of an Indigenous society: the Nambikwara in the northwestern region of the State of Mato Grosso, Brazil.

Context

The photographic record presented here was produced on the occasion of one of the first scientific expeditions sponsored by the Brazilian government in the early twentieth century, a few years after the proclamation of the republic. During this period, the government invested heavily in exploring the interior of the country, both from the point of view of its geography and cartography, as well as its botany, zoology, anthropology, and living conditions and health of the rural populations. In addition to scientific inquiry, many of these expeditions also played strategic roles in terms of recognizing international borders and integrating the interior of Brazil through the extension of telegraph and rail networks. It is in this context that the Commission for the Construction of Telegraph Lines from Mato Grosso to Amazonas (better known as the Rondon Commission) is situated. It aimed to integrate, by means of telegraph, the then-capital Rio de Janeiro with the north of Brazil (Diacon 2004; Maciel 1998; Sá et al. 2008).

From the scientific point of view, the Rondon Commission produced more than a hundred technical reports authored by eminent naturalists of the time who accompanied teams of engineers and workers during the many stages of the project of opening trails, documenting rivers, and installing lines and telegraph posts. In addition to these reports are many hundreds of photographs and meters of film made by the Rondon Commission under responsibility of Major Luiz Thomaz Reis (Lasmar 2011).

In the years from 1910 to 1920, it was not a simple task to produce photographic documentation in remote outdoor environments. It was necessary to transport bulky and heavy cameras by boats and mules or horses, in addition to glass negatives requiring tremendous care to avoid breaking during the trips. Rondon (1946:4) himself highlighted the challenges faced by the Commission's photographers during long trips to the interior of the country:

> … it is worth remembering the effort that, in the majority of cases, represents photographic documentation in the rough hinterlands. Heavy packages then made of sheets of glass that escaped falling apart in pieces on the rough transport by land or crossing waterfalls and rapids, where so many canoes, materials, and precious lives were forever entombed, it was almost by miracle that they arrived at our photographic cabinets in the cities!

The Pineapple and the Nambikwara of Northwest Mato Grosso

Among the hundreds of plants that attracted the attention of the scientists who participated in the Rondon Commission, pineapple aroused particular interest, perhaps due to the diversity of wild or semi-domesticated varieties found in areas of savanna grasslands, abandoned Indigenous gardens, or even on the outskirts of villages and settlements. For example, according to observations by the botanist Frederico Carlos Hoehne, who was a member of the Rondon Commission and also participated in the Roosevelt-Rondon Expedition, "large clumps of *Ananas sativus*

var. *microstachys* … abound on the outskirts of the city of Corumbá," in the triple border region of Brazil-Paraguay-Bolivia (Hoehne 1914:34). At that time, Corumbá, on the banks of the Paraguay River, was a mandatory stop for any party heading north. It was about 1,000 km north of Corumbá, after many weeks of travel through dense scrub, grasslands, and dense gallery forests, that the Commission came into contact with the Nambikwara, at the time known as "Indians of the North Mountains" ("*índios da Serra do Norte*").

The term Nambikwara (also written Nambiquara or Nhambiquara) was introduced in the anthropological literature after the Rondon Comission encountered multiple groups of linguistically and culturally related Indigenous peoples who continue to inhabit the extreme north of Mato Grosso and the south of Rondônia states. According to Price (1978), the Nambikwara linguistic family can be divided into three large linguistic groups that continue to be spoken today. Presently, the total population is estimated to be approximately 2,500 distributed in relatively small villages located in federally recognized Indigenous reserves in three ecological zones: cerrados, the headwaters of the Guaporé River, and the transition zone between the cerrado and Amazon forest at the headwaters of the Pimenta Bueno and Jurena rivers (Costa 2009). Historically, the Nambikwara have what might be called a two-sided fame. In the first place, they were contacted by Cândido Mariano da Silva Rondon in the beginning of the twentieth century and studied by prominent anthropologists Edgard Roquette-Pinto and Claude Lévi-Strauss. In the second place, they were the focus of international media attention in the 1960s and 1970s due to the severe epidemics they suffered, invasions of their lands, and sharp depopulation from approximately 5,000 in the early twentieth century to 550 after less than 50 years of contact, according to demographic analysis undertaken by Price and Cook (1969) and Price (1994). Thus, conditions among the Nambikwara today are very different than they were a half century ago.

The pineapple's presence in the villages immediately caught the attention of the early explorers: "In the backlands of Mato Grosso, in the Serra do Norte region, the Indians use [pineapple fruits] to make juice and alcoholic beverages" (Hoehne 1937:107). This drink seems to have been a success among Rondon Commission workers, as reported by Roquette-Pinto, another member of the Commission: "A liqueur, thus taken from the wild pineapple, enjoyed an honorable reputation among the telegraph line workers" (Roquette-Pinto 1919:241). Two decades later, Lévi-Strauss (1948:368) travelled along Rondon's telegraph lines and visited the Nambikwara, where he described a "slightly alcoholic beverage … prepared of wild pineapples mixed with water." Five decades later, in an interview with anthropologist Beatriz P. Moisés (1999:11) in his laboratory at the Museé de l'Homme in Paris, Lévi-Strauss vividly expressed his "olfactory memory" (as he called it) about the expeditions he carried out in northwest Brazil:

> I remember, for example, that after the Nambikwara, we were heading towards [Rio] Madeira, and it was not yet the Amazon rainforest, it was more grasslands, a kind of dry forest, and suddenly, mounted on the horse, I saw a field of wild pineapples on the ground. It was enough to lean very low, without dismounting, to pluck the fruits and eat them. It is one of the gustatory and olfactory sensations that remained with me because it was not like the pineapple we know, it was a pineapple with an absolutely extraordinary raspberry smell …

It was none other than Theodore Roosevelt, who co-headed the expedition named after himself and his army colleague, Colonel Cândido Rondon (the Roosevelt-Rondon Expedition), who wrote one of the most interesting reports about the pineapple wine made by the Nambikwara. One day, Roosevelt's son, Kermit Roosevelt (Roosevelt 1914:234),

> while a couple of miles from our tents, came across an encampment of Nhambiquaras, … Kermit, after the manner of honest folk in the wilderness, advanced ostentatiously in the open, calling out to give warning of his coming. … The Nhambiquaras received Kermit with the utmost cordiality, and gave him pineapple-wine to drink.

On another occasion, when describing a Nambikwara house, Roosevelt (1914:239) pointed out that "inside were their implements and utensils, such as wicker baskets (some of them filled with pineapples)."

The Nambikwara "pineapple wine" enjoyed enormous success among members of the Rondon Commission, undoubtedly because, in addition to its

Figure 1 Nambikwara-Mamaindê Indian woman crushing wild pineapples ("*Índia Nhambiquara Mamaindê socando abacaxis silvestres*"). Source: *Índios do Brasil* (Rondon 1946:20).

agreeable flavor, its alcohol content could reach elevated levels. Although our photographic essay shows the production and consumption of unfermented pineapple juice or "wine," natural fermentation without the use of spittle was common among the Nambikwara and many other Indigenous peoples. Analyses by Lima (1975:181) of Indigenous fermented pineapple juice from Northeast Brazil showed ethanol levels often surpassing 7%, making it among the most inebriating of the alcoholic beverages encountered in Indigenous societies by any travelers in the interior of Brazil in past centuries. In the words of Marcgrave, naturalist of the Dutch court installed in Recife in the seventeenth century, who travelled extensively throughout the then Province of Pernambuco, the "wine" denominated *nanaî* "is produced from the extremely precious fruit known as *Naná* … this beverage is stronger and more easily intoxicating" (Marcgrave 1942:274)[1].

Figure 2 Extracting juice from pineapples for drinking. Cabixi River ("*Espremendo os abacaxis para bebida. Rio Cabixi*"). Source: *Índios do Brasil* (Rondon 1946:20).

The Photographs

The consumption of pineapple, whether grown in gardens or collected in abandoned fields or in the tropical savannas, is mentioned by early explorers and anthropologists for other ethnicities in Mato Grosso, as well as in eastern Paraguay and Bolivia. Most references are mere mention in ethnobotanical lists of useful or food species. However, in no other case of an early expedition or contemporary research was it possible for us to locate photographic or contextualized ethnographic documentation that captures the use of pineapple as a food or drink. Thus, these four photographs constitute the only known published photographic ethnobotany of Indigenous Nambikwara pineapple use. The exact scene captured by these images may also be viewed in a film directed by Major L. Thomaz Reis (1932).

All photos presented here were taken by Major Reis during a visit to the Nambikwara-Mamaindê village, in the Cabixi River region, in northern Mato Grosso, during the expedition undertaken from 1913 to 1914. The photos were digitized from the first volume of the series of three photographic albums entitled *Índios do Brasil* (Rondon 1946), whose glass negatives are on file at the Museu do Índio in Rio de Janeiro. The original caption of each photograph is reproduced with our translation.

The sequence reproduced here shows a scene in the village, where a woman crushes (Figure 1), extracts (Figure 2), and drinks (Figure 3) fresh unfermented pineapple juice while a child plays with collected fruits around the wooden mortar (Figure 4). In addition to depicting this basic sequence, the graceful photographs have additional ethnobotanical and ethnographic value. Considered as a set, they show many details of how pineapples are processed, including the familiar setting of a child playing beside her working mother. Figures 1 and 4 show the relatively small size of the pineapples, some smaller than the woman's hand, as well as the shape of the small wooden mortar used to crush the fruits. Figures 1–3 show the versatility of receptacle sizes, shapes, and functions (gourd bowls to collect juice and hold fruit pulp, and a ceramic bowl[2] used as a drinking receptacle), as well as the woman's dress and ornamentation, which include a waist band, upper arm bands, and necklaces made of monkey teeth and *tucum* palm nut (*Astrocaryum* sp.) beads. Figure 4 shows the dress and ornamentation of the child (upper chest

Figure 3 Nambikwara-Mamaindê woman drinking pineapple juice ("*Mulher Nhambiquara Mamaindê bebendo o suco de abacaxi*"). Source: *Índios do Brasil* (Rondon 1946:21).

Figure 4 Nambikwara-Mamaindê child, playing with wild pineapples ("*Criança Nhambiquara Mamaindê, brincando com abacaxis silvestres*"). Source: *Índios do Brasil* (Rondon 1946:21).

band, upper arm bands, and bracelets), as well as a characteristically Nambikwara wicker carrying basket (known in the native language as *hatisu*; Costa 2009) made with thin strips of *taquara* (*Merostachys* spp., family Poaceae), a kind of bamboo widely used for basketry by Indigenous peoples in Central Brazil.

What is the Species of the Nambikwara Pineapple?

There is considerable debate about the botanical identity of the species belonging to the genus *Ananas* and its multiple cultivated or semi-domesticated varieties (Baker and Collins 1939; Camargo 1943; Smith 1955). It is not our aim in this article to discuss in detail the extensive botanical literature on this plant. However, based on the most recent review of the genus *Ananas* made available by the Flora do Brasil project led by the Rio de Janeiro Botanical Garden, the Nambikwara pineapple[3] shown in the photographs and described by botanist F. C. Hoehne in 1914 as *Ananas sativus* var. *microstachys* is now considered an outdated synonym of *Ananas ananassoides*. *Ananas comosus* also occurs in the region (Forzza et al. 2015).

In recent decades, large areas of territory previously covered by savannahs have been replaced by pastures with exotic grasses and monoculture of grains and sugar cane, causing great loss to native flora and fauna (VanWey et al. 2013). The Indigenous peoples that traditionally exist in the cerrados, such as the Nambikwara, also suffer pressure from the farms that surround their lands, even though their reserves are legally demarcated (Souza and Martini 2000). For example, the threat posed to human health by pesticides and fertilizers used on farms, often carried by the wind or leachate to the headwaters of rivers after the rains, is continuous (Hunke et al. 2015; Schwartzman et al. 2013). The occurrence of nearly annual wildfires of great proportions, the main fuel of which is the African grasses introduced as forage for

cattle pastures, has become another constant threat to the Indigenous territories of the region (Welch and Coimbra Jr. 2019). From the point of view of ethno-knowledge in younger generations, particularly related to plants, the impacts of ongoing threats including radical changes in the landscape and the reduction of biodiversity are evident.

In the mid-1980s, anthropologist David Price conducted extensive demographic and socio-environmental surveys in Nambikwara territory, as a consultant to the World Bank, on the eve of an immense contract that this organization would sign with the Brazilian government for the construction of highways and the promotion of agricultural colonization along an imaginary line that stretched for about 1800 km, connecting Cuiabá to Porto Velho (Price 1989). This development zone, known as the Polonoroeste Project, essentially followed the trail of the old telegraphs, whose posts still hung surrounded by vegetation. Nambikwara villages were dispersed in one of the areas considered a priority for development, located in the northwest of Mato Grosso, one of the hot spots of the expansion of soy monoculture in Brazil today. Using the title of the book written by Price on leaving the Bank, the Nambikwara were there "Before de Bulldozer" and were consequently overrun by the development effort, with many villages left just a few meters away from the newly redirected and paved BR-364 highway (Price 1989).

Perhaps surprisingly, one of the cultivars of *A. comosus* is recognized in Brazil today as the "Rondon Pineapple" (Cabral 1999; Sousa 1995). According to agronomist Felisberto C. Camargo of the Campinas Agronomic Institute, his seedlings were brought from the North of Mato Grosso in the early twentieth century and planted in the Botanical Garden of Rio de Janeiro in a flower bed designed to showcase a collection of bromeliads from the Rondon Commission. This flower bed was subsequently abandoned and taken over by brush until, during a visit to the Garden in 1930, Camargo, inspecting the tangle of vegetation, became interested in a bromeliad, which he did not yet know would develop at the Campinas Agronomic Institute's experimental gardens into a showy plant with "[edible] fruit, rich in juice … leaves without thorns or almost smooth" (Camargo 1939:324). It is ironic to imagine that the "Rondon pineapple," most likely from some Nambikwara village or garden and brought to Rio de Janeiro, now contributes to the production of hybrid pineapples of commercial value.

Conclusion

Unfortunately, these photographs of Nambikwara pineapple processing were not accompanied by explanatory or interpretive text (Rondon 1946). Equally unfortunate is the general lack of ethnographic attention to the pineapple among the Nambikwara. Even texts based on data from the 1970s only mention pineapples in passing (Aspelin 1979; Costa 2009), while more recent texts addressing food plants among this ethnic group do not mention pineapples at all (Miller 2018), suggesting they have been overlooked or their use was discontinued, perhaps as a collateral effect of the changes accompanying the arrival of settlers, highways, and agribusiness. What we are left with in the published record are these insightful images and comments by early explorers praising Nambikwara and other Indigenous ethnic groups' "pineapple wine" for its flavor and potentially inebriating qualities. Without these records and the four photographs highlighted in this article, knowledge of pineapple use among the Nambikwara and other Indigenous peoples in Amazonia would be lost. There are, however, hundreds upon hundreds of unpublished texts, illustrations, and photographs deposited by early explorers to the interior of Brazil in various archives at museums and research institutions, which potentially contain additional materials that have yet to be accessed. As these four images suggest, these unexplored materials offer great potential for conducting visual historical ethnobotanical studies of topics that are otherwise invisible in the academic record.

Notes

[1]*Na'na*: word of Tupi origin that gave origin to the Portuguese-language lexicon "*ananas*," commonly used to refer to wild varieties of pineapple, principally in the interior of Brazil (in Portugal, all pineapples are designated *ananas*). The Tupi word *nana-y* (or *nanaí*) designates any beverage (fermented or not) made from any variety of pineapple (*na'na*) (see Carvalho 1987; Cunha 1982).

[2]According to Costa (2009:116), the Nambikwara production of pottery was discontinued sometime after the 1970s.

[3]The Nambikwara name for pineapple is *kuáhlu*

according to Oberg (1953) or, according to Rondon (1947), *coaré*. Rondon called attention to terminological differences depending on the Nambikwara interviewee, which could reflect linguistic or dialectical diversity between the various Nambikwara "groups," which was only clarified many years later by Price (1978).

Declarations

Permissions: This study was registered in the Brazilian Sistema Nacional de Gestão do Patrimônio Genético e do Conhecimento Tradicional Associado (SisGen) under Registry Number A874A57.

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