

FOLK APICULTURE AND FOLK ETHOLOGY OF THE KAYAPÓ INDIANS OF THE AMAZONIAN BASIN OF BRAZIL*

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Introduction

The Kayapó Indians are one of the largest remaining relatively unacculturated tribes in Latin America. Their villages are dispersed over a two million hectare area of the Rio Xingú drainage of the Amazonian Basin.

The Kayapó are excellent agriculturalists, but rely upon gathered foods as a major portion of their diet (*cf.* Bamburger 1967). The thoroughness of their ecological exploitation, and the wide variety of plants and animals that are utilized from that exploitation, has allowed the Kayapó to range over a variety of ecological zones effectively (Posey 1979). It has even been suggested that the Kayapó may have had aboriginal villages in excess of 5,000 inhabitants (Posey 1979). This is also suggested in historical documents (Turner 1965).

Previously I have pointed out the widespread use of insects by indigenous peoples of the lowland tropics (Posey 1978). Inevitably bees are one of the most valued sources of gathered foods. Both bee's wax and honey are important items in Indian commerce. Honey of stingless bees is also a nutritious item in Amerind diets.

Two terms will be utilized in this paper with specific meanings: 'folk apiculture' refers to the keeping of bees by the Kayapó. These are bees that return to their disturbed hives and offer sources of multiple exploitation. 'Folk ethology' refers to the Kayapó's knowledge of bee behavior. It will become readily apparent that the Kayapó are excellent observers of nature and are especially astute in their knowledge of bee behavior.

Apiculture and Ethology

Honey-producing bees are extremely important to the Kayapó as a source of honey and beeswax. Most of the bees in the area are stingless (*Meliponini*) and produce a highly flavorful, though somewhat acidic, honey. There are two folk species of stinging bees, one of which is the recently introduced hybrid European

*This research was funded by the Wenner-Gren Foundation for Anthropological Research. I would like to thank the staffs of FUNAI, INPA, CNPq and the Museu Paraense Emílio Goeldi for their cooperation and assistance. Particularly I would like to acknowledge the assistance of Kwyrà-ká and Irã Kayapó; also the continued support of Lauro Menescal, chefe do Pósto Goroitire. Without these people, this project would have been impossible.

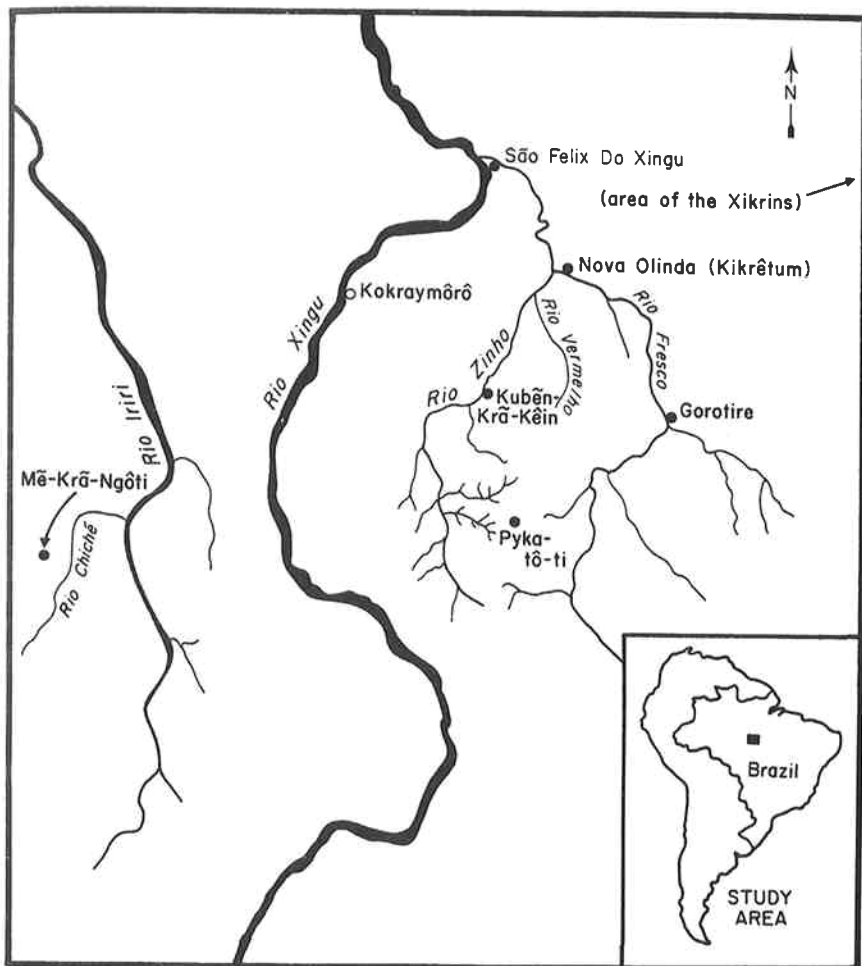


FIGURE 1.
General Geographic Orientation of the Kayapó Indian Villages of Central Brazil.

bee (the so-called 'Brazilian bee'; *Apis mellifera*). The Kayapó have grown to like the abundant, sweet and thick honey of the Brazilian bee (*ngâi-pêrê'y*), but still prefer the flavor of the honey from stingless bees. This Brazilian bee is a source of great concern for the Kayapó because of the bee's aggressive behavior. Since its arrival in the area in 1971 (the Indians know the year and month when the first *ngâi-pêpê'y* was collected), the Brazilian bee has driven out or taken over the nests of native bees. The Kayapó claim that the availability of native bee honey has drastically declined because of the colonizing exuberance of the *Apis mellifera*.

There are various ways of grouping bees (*mehn*). One system groups bees by 'ecological zones'. The Kayapó recognize three (3) major zones:

1. *kapôt* (campo) of which there are four (4) types:
 - a. *kapôt-kên*—campos with short grasses;
 - b. *kapôt-kamepti*—campos with trees;
 - c. *kapôt-kam-bôiprek*—campos with high grasses;
 - d. *pykati'ô'krai*—campos with intermittent trees;
2. *krai* (mountains), and
3. *bâ* (forest) of which there are four (4) types,
 - a. *bâ-kamrek*—gallery or riverine forest;
 - b. *bâ-êpti*—dense jungle;
 - c. *bâkati* or *pi'y-kô*—high forest; and
 - d. *bâ-rârârâ*—forest with intermittent openings.

Informants were able to group bees under these ecological zones with consistency.

Another classification systems is utilitarian, based on the violence or aggressiveness (*akrê*) of the species. Although *Meliponini* do not sting, they can bite and invade eyes, ears, and hair. Some will bite off hairs or even tackle the skin. Some species cause small painful blisters to appear on the skin. Thus it is practical for Kayapó to know with which species he is dealing.

Bees that are *akrê* (bite, burn or sting) are procured by using fire and smoke to drive the bees from their nests. Long sticks with flammable, dry palm leaves tied to their ends are ignited and rammed into the colonies. A tree may be felled if the nest is too high and a fire built near the entrance of the nest to drive away the furious bees.

Five (5) types of stingless bees (scientific classification undetermined to date) are actually semi-domesticated. A portion of the nest with the queen (called the *benadjwârâ* or 'chief') is left in the nest site. The Indians say the bees will return to the queen and re-establish the colony after the honey is robbed. Trees that have such colonies are carefully watched and visited periodically. These nests are in a sense 'owned' by the man or men who first discovered the colony.

There are two (2) types of bees (unidentified to date) that build external, round nests in trees. The Kayapó will cover these nests with leaves to keep the bees from fleeing and carry nest, bees and all back to the village. These nests will



A Corotire Kayapó man showing a nest of a termite commonly found in the savanna. Inside the nest resides, in conjunction with the termites, a colony of honey-producing bees.

be hung from the eave of a hut or suspended over a house's thatched roof. Another species of bee will nest in cavities in the posts of houses. These bees produce little honey, but their presence is encouraged by the Kayapó.

A ground-nesting bee is also encouraged by the Kayapó to nest in earth walls of holes built in fields. These holes are approximately one meter deep, one-half to one meter in diameter and located in the partially shaded margins of fields. The locale is apparently ideal for two bees, one that nests in the sides of the pit, and another that nests in logs thrown into the pit. The Indians will gather a few rotting logs to place in the holes to encourage the latter type of bee. The Kayapó believe these bees to be 'good' for the fields. Although they have no conception of pollination as we do, the Kayapó clearly associate bees with crop and productivity.

Men are always the honey gatherers. During the dry season, groups of men often go off for days just to procure honey. Honey is constantly sought after on hunting trips and is prized as much as meat. A Kayapó hunter may infrequently make a kill, but he never comes back from the forest empty-handed. He will always have acquired some wild plant, nuts, or honey. To my knowledge, all meat and gathered foods, except honey, are brought to the village and given to the wife or wife's mother (the eldest female of the household). She then distributes the meat or produce as she pleases amongst relatives. This is not the case with honey; a man is free to distribute honey as he pleases. Rarely does any honey ever reach the village, however, for it is relished and consumed with such gusto that most is drunk on the collection site.



The nest of the *rorot-kam-mehn* is cut open with a machete to reveal the honey combs of the stingless *Trigona* bee.



The Kayapó are avid hunters of honey. This man smilingly displays the nest of the *ngà'i'y* bee.



This young Kayapó warrior shows a split bamboo cane in which is found the nest of the *rorot-kam-mehn* which produces small portions of very tasty honey.



A Kayapó woman rests against a ladder next to her house. Above the roof extends a nest of one of the semi-domesticated *Trigonids*.

The Indians make honey buckets on the spot from multiple layers of banana leaves. The leaves are folded upward to form an impromptu collection vessel. When no honey remains in the vessel, the leaves are licked to glean the last drops that may have escaped through the leaf cracks.

The Kayapó take stalks of wild ginger and masticate the thick base until an absorbent brush-like object is produced. This is dipped into the honey and pulled through the mouth. This is a very efficient and clean way for several people to consume honey at the same time. Some Kayapó dispense with any proprieties and drink the honey like water. It is hard to say how much honey is consumed by the average Kayapó in a year's time. Most honey is consumed *in situ*. I have seen a single Indian boy drink a half-liter of honey in one sitting. The Kayapó men like to drink honey until they are almost drunk from its consumption.

Often sections of the nest combs that are filled with larvae, pupae, or pollen are also eaten. These have very light, wafer-like texture and taste and are excellent with a bit of honey on top. These combs are as highly-prized as the honey itself.

When honey is removed from the hive, a portion is always left behind for *Bep-kôrôrôti*. *Bep-kôrôrôti* was a powerful shaman who was taken into the sky in a flash of lightning. He resides in the clouds, or rather is the clouds, and sends lightning, thunder, and rain. Anyone who does not share with *Bep-kôrôrôti* and his fellow Kayapó is risking being struck by lightning. To prevent the wrath of the great shaman, the Kayapó always leave something for *Bep-kôrôrôti*.

Honey, wax and bees are associated with the heavens and rains because of *Bep-kôrôrôti's* penchant for honey. Beeswax is burned to produce a smoke that is believed to attract storm clouds and rains. This smoke is also believed to repel evil, purge houses from lingering ancestral spirits, and protect children from witchcraft.

Beeswax is also used for many Kayapó artifacts. In most cases I was unable to ascertain if the beeswax had special ceremonial importance in artifact production, or if it served purely functional purposes.

Feathers and bow points are cemented into arrows with beeswax. Wax is also used to strengthen and lubricate bow string. Black wax is used to darken cotton string that is used in making various wooden and bone artifacts.

The most impressive article made from beeswax is the *mē-kutôm*, a wax hat worn by young men about to receive ceremonial names. The beeswax for these hats is inherited and stored as a ball in a hole in the earthen floor in the family's house. At the time of a name-giving ceremony, the wax ball is exhumed and formed into the *mē-kutôm* by a male relative of the boy. The form of the *mē-kutôm* is highly symbolic (see Figure 1).

The front point of the *mē-kutôm* is called the 'morning sky pole' (*kaikwa kratx*); the rounded back is the 'evening sky pole' (*kaikwa nôt*). These poles represent the beginning and ending points of the sun's path across the sky. The two 'legs' (*pa*) are equivalent to north and south cardinal directions. There are



Two Kayapó men dance, hand-in hand, through the village of Gorotire. They are wearing the *mê-kutom*, a model of the Kayapó world made from beeswax.

painted patches on the *pa* that represent the idealized geographical relationships between village and fields. The village is the *ñipôk*, or center circle. The circle also represents the sun. The smaller circle inside the *ñipôk* represents the moon superimposed over the sun. The painted paths from the sky poles indicate the paths of the sun and moon through the sky (*kaikwa*) and over the earth (*pyka*).

From a side view (see Figure 2), the *mê-kutom* represents another plane and relationship between sky and earth. The wax hat itself is seen as a floating, somewhat concave, disc with small 'feet' (*pa*). The circle (*ñipôk*) as seen from above is really an elevated hump into which is inserted a thin stick. Onto the stick is woven an arch of bamboo and cotton. Macaw feathers are inserted into the bamboo to produce a radiating arc of red and blue feathers. This arc represents the sky (*kaikwa*). The Kayapó believe they once lived above the sky and lowered themselves to the earth by means of a woven cotton rope that was dropped through an armadillo hole. The stick represents the cotton string that once brought the Kayapó from the upper world to the earth.

It is said that the wax used for the *mê-kutom* is the same as that brought by the ancient Kayapó from the sky. It is a direct and highly valued link with the very origins of Kayapó culture. It is the one material continuity the Kayapó of today have with their most ancient ancestors.

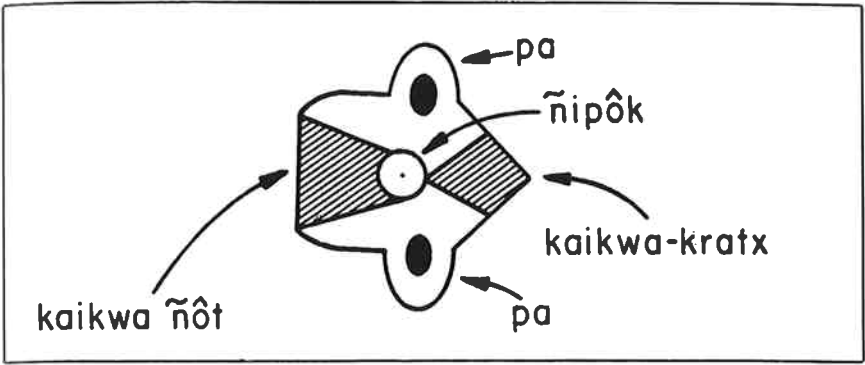


FIGURE 2.
An Overview of the *mē-kutom*, showing major symbolic components.

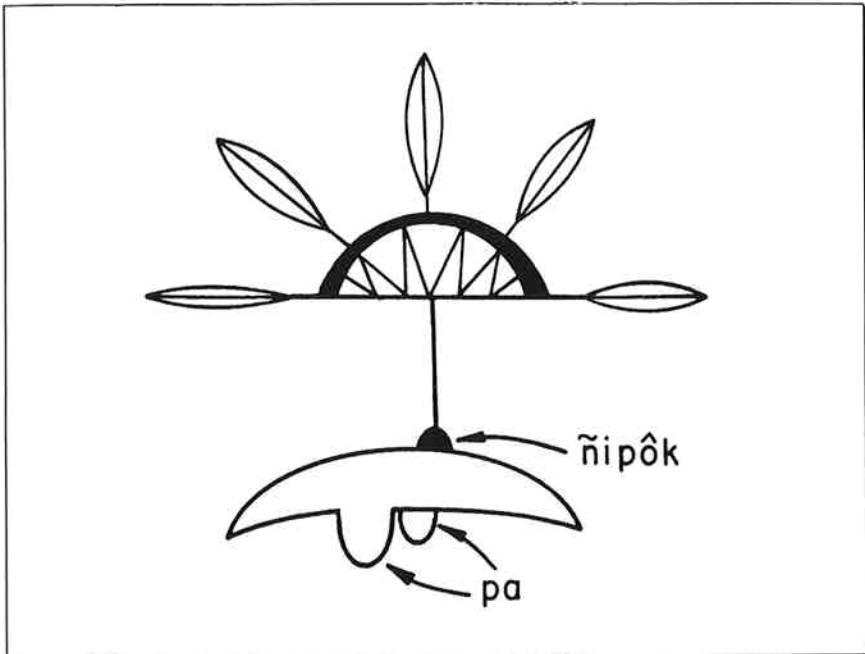


FIGURE 3.
A lateral view of the *mē-kutom*, showing the symbolic relationships between earth (*pyka*) and sky (*kaikwa*).

In conclusion, bees are important to the Kayapó as a source of honey and wax. The Indians have semi-domesticated several species of bees and 'keep' some colonies in or near the village. Bees are associated with crop growth and maturity and are encouraged to nest in Kayapó fields. Beeswax is used in a variety of artifacts and is symbolically related to the producer of lightning, thunder, and rain. The *mē-kutôm* is a wax hat that is made to represent the Kayapó world view. Beeswax is the only substance believed to have been brought from the sky in the ancient days and passed through lines of inheritance to recreate the visible model of time, space, and the world.

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