J. Ethnobiol. 1 (1): 165-174 May 1981

WASPS, WARRIORS AND FEARLESS MEN: ETHNOENTOMOLOGY OF THE KAYAPÓ INDIANS OF CENTRAL BRAZIL

DARRELL A. POSEY

University of Pittsburgh, Center for Latin American Studies
Pittsburgh, Pennsylvania 15260

ABSTRACT.—This paper is an attempt to briefly summarize the taxonomic features of the folk entomological classification system of the Kayapó Indians of Central Brazil. The folk system shows a correlation with scientific taxonomies, especially at levels of Class, Order and Family. Several morphological continua or "sequences" are evident and within these are found additional sub-groupings called "complexes." Of particular interest in this paper is the sequence labeled "ñy," which is analogous to the scientific Orders of Isoptera and Hymenoptera. Patterns for these groupings reflect important social and cultural values and are indicative of the significance of bees, ants, wasps and termites in the Kayapó belief system.

INTRODUCTION

The Kayapó Indians are one of the largest remaining tribes in Brazil's Amazonian Basin. Their well-earned reputation for belligerance and violence (cf. Wagley 1977:31) kept them insulated from encroaching western society until 1937. In that year the first missionaries established permanent contact with the Gorotire Kayapó. The Gorotire represented only one of several schismatic groups, all of which had once been united in a powerful and populous ancestral village, *Pyka-to-ti*[1] (Posey 1979b). Once the Gorotire had been "pacified" with Western trade items and medicines, other Kayapó groups ceased their warfare and established contact with Brazilian Indian Foundation (FUNAI) officials. The last group to be pacified was the Mekrãngoti Kayapó, who have now had less than 15 years of sporatic contact with the outside world (Verswijver 1978).

Most of the data analyzed in this paper were collected in Gorotire, the largest of the northern Kayapó villages. Gorotire was the base camp for this 14-month project because of its accessibility and the presence of some bilingual (Kayapó and Portuguese) Indians. Gorotire was originally established as an "attraction" village that was well-stocked with medicines and trade items to "attract" unpacified Kayapó groups. As a result, the Gorotire population is a heterogenous group. Nearly 20% of the village are Xikrin (a related Northern Kayapó group), 1% are non-Kayapó (originally children captured during raids and raised as Kayapó), and 10% have immigrated to Gorotire from other Kayapó groups within the past 5 years. This lends to Gorotire a "syncretic" air: the tribal elders are often heard arguing over whose version of a story or ceremony is the "proper" one. Thus it should not be assumed that Gorotire is a village that agrees even upon its own lore and mythology. Certain aspects of Kayapó culture, however, are more rigidly defined, or, if variation does occur, it is in a highly predictable manner. This paper deals with cultural phenomena that conform to this pattern: the principles underlying the Kayapó entomological classification system.

Ecological Profile

The Kayapó have traditionally been considered "marginal" peoples poorly adapted to their environment (Steward and Faron 1959). They have been pictured as exiles from savannas and inadequately adjusted to the region of Central Brazil (Levi-Strauss 1958). Bamberger (1967) refuted this misconception by pointing out that sociological factors, not ecological limitations, were responsible for the size of Kayapó villages. The Kayapó are abundantly adapted to the diversity of the campo-mato ecosystems in which they are found and dietary essentials are obtained with minimal effort and time (Posey 1979a). There is evidence that aboriginally the Gorotire population was 8-10 times larger than today (Posey

1979b). The great amount of time spent in the presentation of intricate and time-consuming artifact production, plus frequent performances of elaborate rituals and ceremonials, hardly seem to reflect a group pushed to the brink of marginal survival.

The village of Gorotire is located on the broad, flat campo next to the Rio Fresco (7°48'S, 51°7'W). To the east are vast expanses of "campo cerrado" and "cerradão"; in other directions, deciduous forest called "mato de segunda classe." Along the Rio Fresco is found "gallery forest" (See Cole 1960, and Hueck 1966, for a discussion of these ecological types). Classification of soils, climates and vegetative types has been drastically generalized to the point of obscuring any variations in the area. Basic research is still lacking on these subjects.

Kayapó villages have traditionally been located near both campo and mato. This allows exploitation of various ecosystem types and maximizes the potential for utilization of natural products and game. This diversity has given the Kayapó a greatly varied diet that requires minimal effort.

Elevation at Gorotire is approximately 1000 m. There is a marked dry season (May to August), with hot, windy days and cool nights. The peak of the rainy season is in February, when the Rio Fresco reaches its maximum. Annual rainfall is approximately 1700 mm.

Gorotire is one of 7 northern Kayapo villages located in the *reserva indigena* Kayapó (see map). The total Kayapó population is now over 2500; the area of the *reserva* is over 1,900,000 ha.

METHODS

Research was at first limited to work with the 6 men and 3 women who spoke Portuguese. Although an attempt to learn and utilize Kayapó was made from the onset of the project, it was 7 months before eliciting could be carried out in the indigenous language. The type of data gathered reflects these stages of the project.

One of the first tasks begun was to establish an insect collection. Frequent field trips were taken for the sole purpose of collecting as many different organisms as possible in categories the Indians loosely grouped together.

Four to 5 Indians accompanied the researcher on collecting forays. The researcher began the process by capturing a large grasshopper. The Indian assistants responded by capturing dozens and dozens of other grasshoppers. The researcher attempted to widen the selective process by capturing a dragonfly. The Kayapó assistants responded with dozens upon dozens of captured dragonflies. The researcher continued to try to widen the parameters of "acceptable" things by pointing out butterflies, then beetles, and finally cicadas. "Are these relatives?" the researcher asked, pointing to the insects already collected and those still uncaptured in an effort to determine if a notion of relatedness existed. "Yes," responded the Kayapó assistants. "Then capture all of the relatives of these (pointing to insects already collected) you can!" The results was hundreds and hundreds of the same insects, depending upon the frequency of certain insects at the time. It was impossible to explain to the assistants why 300 of the same thing was unnecessary. But eventually the range of "relatives of insects" (consistently called "*maja*") expanded in what was assumed to be a reflection of native ideas of relatedness.

After 3 months of this type of collecting, it appeared the lateral expansion of the category was completed. The category included all insects, scorpions, spiders, ticks, centipedes, millipedes, [illegible] the category *maja* has a one-to-one correspondence with the scientific category of Phylum Arthropoda.

As the collection progressed, it became apparent that most organisms were grouped into very generalized categories. If there were no consistent sub-groupings (i.e., no named or unnamed differentiations), the specimens in that group were boxed and sent to the Museu Goeldi for classification and storage in the Museu collections.[2]. If any evidence of subdivisions did exist, however, the specimens were retained in the village for further study.

In the village, informants were asked to a) name each specimen, and b) group those

specimens that were the same (*abenkot*) or simliar (*ombiqua*). In this manner, it was determined that covert (unnamed) grouping 5 exist that correspond in a one-to-one fashion with the scientific Class Arthropoda (Table 1). Further sub-groupings were few, except for the covert category corresponding to the scientific Class Insecta. Eighteen sub-classes ("forms") were found in this category (Table 2).

Each specimen was numbered and each number was recorded in a master notebook. This notebook contained essential field data on the specimen, plus a sketch or field identification notation if possible. If appropriate, entries were also made regarding the cultural use of the

TABLE 1.—*Arthropod groups.*

CLASS/ORDER	COMMON NAME	KAPAPO NAME	CORRELATION
Arachnoidea	————	————	————
(a) Scorpionida	scorpion	makre > mak	1:1
(b) Pseudoscorpionida	pseudoscorpion	makkryre > mak	1:1
(c) Phalangida	harvesters	hehpati > heh	1:1
(d) Aranea	spiders	heh > heh	1:1
(e) Acarina	mites/ticks	ten	1:1
Crustacea	crawfish	maj	1:1
Diploda	milipede	morokreruti	1:1
Chilopoda	centipede	kekek	1:1
Insecta	insects	(covert)	1:1

TABLE 2.—*Levels of correspondence for insects.*

B.O.L. CATEGORIES*	COMMON NAME	CORRESPONDENCE LEVELS	CORRELATION #
Focal Forms:			
(1) mara	beetle	Order (Coleoptera)	1:1
(2) ipoi	true bug	Order (Hemiptera)	1:1
(3) kapo	roach	(Family: Blattidae)	#
(4) krytkanet	grasshopper, cricket	Order (Orthoptera)	1:1
(5) wewe	butterfly, moth	(Various Orders)	-
(6) kanenet	dragonfly	Order (Odonata)	1:1
(7) kokot	leafhopper, cicada	Order (Homoptera)	1:1
(8) pure > (9) kopre >	fly	Order (Diptera)	1:1
(10) rorot	termite	Order (Isoptera)	1:1
(11) mrum	ant	(Family: Formicidae)	#
(12) amuh	social wasp	(Family: Various)	#
(13) mehn	bee	(Family: Apidae)	#
Collective Forms:			
(14) ngoire	minute insects	(Various)	
Aberrant Forms:			
(15) karere	earwig	Order (Dermaptera)	1:1
Transitional Forms:			
(16) kapoti	giant roach, mantid	Order (Dictyoptera)	#
(17) kungont	solitary bee & wasp	(Various)	#
(18) mehnkamamuh	honey wasp	(Genus: Brachygastera)	#

*B.O.L. (Basic Object Level Categories)

#Correlations stated in relation to correspondences at the scientific level of *Order* (# indicates an over-differentiation; - is under-differentiation).

insect or any peculiar circumstances under which the specimen was collected. (Often Indians would bring a specimen to be examined because they thought it interesting, unusual or particularly significant).

Groupings of insects were tabulated initially for 6 men and 3 women; the maximal number of insects utilized in these sorting experiments was 635. Informants conducted the grouping activities on 3 different occasions, each time with actual insect specimens. The identification number of each specimen grouped was recorded for each category.

"Informant error" was treated as problematic since patterns in "error" were soon evident and eventually predictable. Based on these data, 4 types of "forms" were identified (Table 2):

1) *Focal forms,* those consistently labeled and grouped in the same way and considered "typical" of the category. These forms are best illustrated as "fuzzy sets" (cf. Gardner 1976; Kempton 1978) with certain members being more focal and others being more peripheral.

2) *Transitional forms,* those consistently "mislabeled" between 2 categories. These forms are viewed as being "like" 2 groups that are contiguous categories in a morphological sequence.

3) *Aberrant forms,* those consistently labeled in one category, but given a special name because of unusual morphological characteristics.

4) *Collective forms,* those consistently given the same name and grouped together, although informants point out members of a collective class may not "really" be the same. In the one collective form discussed in the paper, small flies (*ngôire*), members of the category were considered too small to have significant morphological features and were illustrated with small dots.

Utilizing tabulated responses and informant sorting responses, it was possible to link into a more generalized pattern 18 named groupings. These groupings seem to best coincide with the criteria of "basic object level" categories (cf. Dougherty 1978; Rosch et al. 1976). Informant drawings and statements showed that the underlying patterns of these subordinate groupings were based on recognition of gross morphological features.

DISCUSSION

Patterns in Folk Entomological Classification

For the Kayapó all things are divided into 4 categories: 1) things that move and grow, 2) things that grow but do not move, 3) things that neither move nor grow, and 4) man, a creature that is akin to all animals, yet unique and more powerful than most animals because of his social organization.

It is the covert (unnamed) category of "animal" with which this paper is particularly concerned. All animals are sub-divided into 2 named groups: those with "flesh" (called by the name "*mry*"), and those with "shells" and no flesh (called "*maja*"). This latter group, animals with shells and no flesh, coincides with the scientific Phylum Arthropoda. Further folk subdivisions correlate with the 5 scientific classes of Arthropoda (Table 1).

Although the folk grouping that corresponds with "insects" is covert, there is a 1:1 relationship with the scientific Class Insecta. There are 4 morphological "sequences" within this grouping (Fig. 1). The term "morphological sequence" refers to a continuum of traits that unite a series of basic object level categories. The sequence may be an uninterrupted continuum with overlapping members between contiguous categories along the continuum; or there may be interruptions in the continuum. To bridge this gap, named transitional forms may occur to produce intermediate categories (Table 2).

Sequence 1: Let us look at *Sequence 1* (Fig. 1) as an example. There is a continuum of gross morphological form from the OVATE "polar form" to the OBLONG "polar form." Within this sequence can be found 2 distinct complexes:

Complex A. This includes that part of the overall Sequence from beetles (*mara*) to hemipterans (*ipoi*) to roaches (*kapo*). All forms in this complex have leathery outer wings or protective wing covers; their general form ranges from ovate to oblong. Considerable

SEQUENCES:

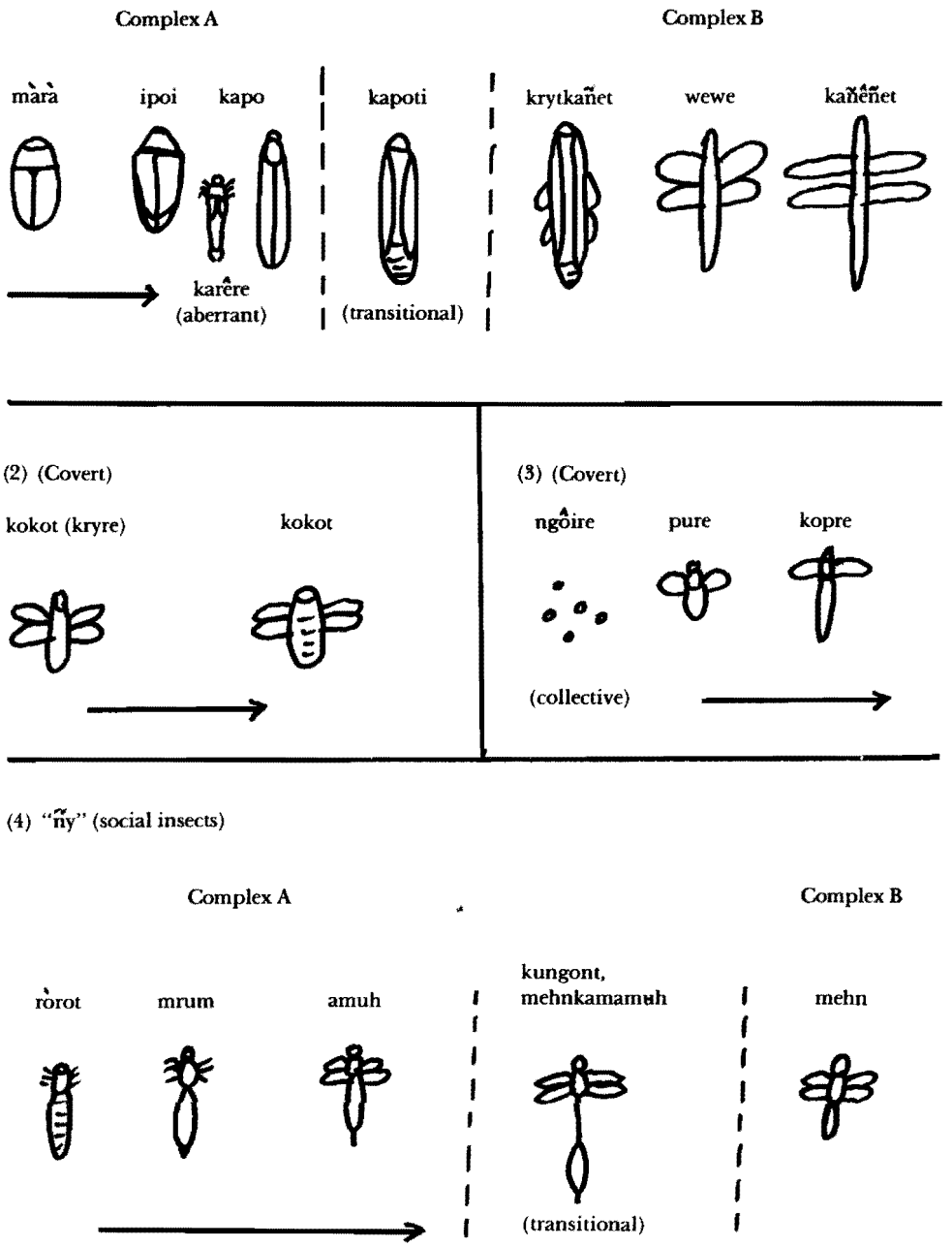

FIG. 1.—Insect sequences and complexes (based on drawings by Irã Kayapó).

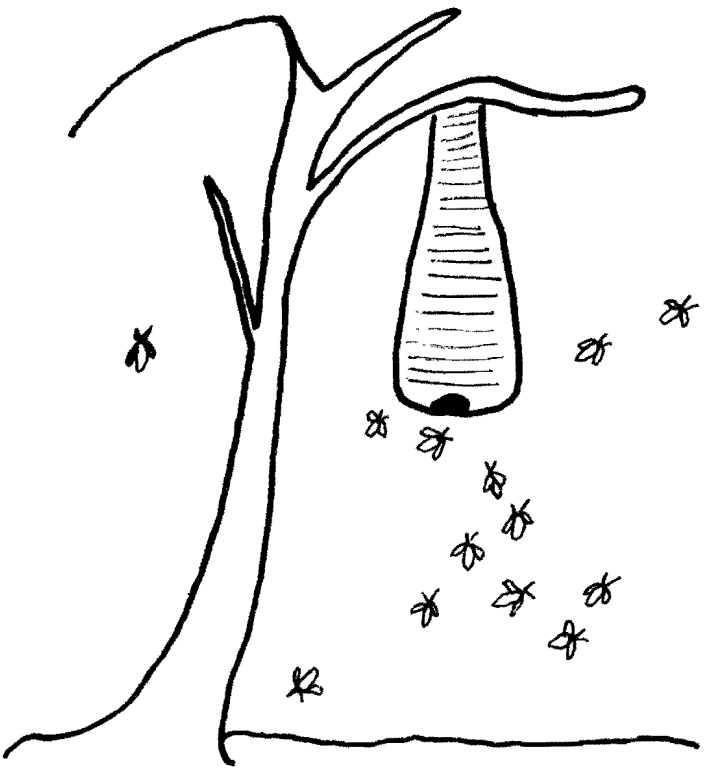

FIG. 2.—A drawing by Irã Kayapó of the wasp nest (*amuh ũrũkwa*).

ambiguity occurs between these 3 forms — that is, certain beetles are consistently classified as *mara* and *ipoi*, but never is there overlap between *mara* and *kapo*. Likewise many *ipoi* are classified as *mara*, but also as *kapo*. No *kapo*, therefore, are co-classified with *mara*. The earwig *karere* is an aberrant form. It is consistently classified as a type of *kapo*, but is singled out because of its morpohological distinctiveness (mainly because it has rudimentary wings and "pincers" on its abdomen) and given a special monomial label.

The overall sequence is interrupted with the transition from *kapo* to *krytkanet*, i.e., from cockroaches to grasshoppers, although the morphological form continues toward elongation. This break is clearly due to the presence of large wings that become sufficiently conspicuous to define the perimeters of the animal's shape.

There is a transitional group, *kapoti* or giant cockroaches, that bridges this gap. The large wings and elongated bodies of this group cause them to be co-classified with *kapo* and *krytkanet*. This transitional form has a distinctive name and coincides with the scientific Family Blattidae.

Complex B. The Sequence (Sequence 1) continues the second Complex (Complex B). In Complex B we have 3 overlapping genera: grasshoppers (*krytkanet*), butterflies (*wewe*), and dragonflies (*kañenet*). The polar form is the dragonfly, whose form is distinctive because of its extremely elongated abdomen and 4 wings.

Sequence 2: This sequence consists of a single complex called *kokot*. The continuum within the complex is one of smallness to largeness — the leafhoppers being considered the "children" of the larger cicadas. There is something of a form sequence from the slightly rounded leafhoppers to the ovate cicadas, but this is insignificant to most informants.

Sequence 3: This sequence consists of a single complex of flies. It includes 2 object level

categories: tiny flies (*kopre*), and mosquitoes (*pure*), biting flies and pium. There is, as is expected, overlapping between contiguous categories and minor morphological form gradation from *ngoire* (tiny flies, which are drawn as small dots) and more slender mosquitoes.

Sequence 4: This sequence is composed of 3 distinct object level categories in Complex A: termites (*rorot*), ants (*mrum*), and wasps (*amuh*). Complex B is composed of the single category honey bees (*mehn*). The break in the morphological sequence comes between wasps and bees. This is attributable to the anomalous nature of bees, for they are the only shelled animal *maja* with major economic benefit. There are intermediate forms to bridge this functional gap. These intermediate forms are bees that make no honey and are solitary *kungont*, and social wasps that do produce wax and honey (*mehnkamamuh*).

This is the only named Sequence, being called "ñy." This name refers to the social nature of these insects; the name is also used to label the immature forms (larvae and pupae) that the Indians say are carried about like children in the insects' "villages" (or *urukwa*). The "ñy" or social insects are seen to be in a special relationship to man because of their communal nature. All "ñy" colonies (*urukwa*) are thought to have a chief (*õ-benadjyra*) and be organized into family units just like the Kayapó. They are known to have warriors and the sounds of their movements are likened to Kayapó movements and singing.

The Kayapó are aware that some "ñy" really live alone — that is, there are solitary forms. But they see these as socially aberrant types that used to live in a "village" but for some reason now live alone. Solitary bees and wasps are like certain Kayapó who go off alone maybe for years on spirit quests, or are like shamans, who are solitary by nature. These insects are associated with the manipulation of spirits and are important ingredients in the concoctions of shamans. In short, their anomalous nature in relation to other social Hymenoptera and Isoptera make them important tools in the manipulation of natural powers by shamens. These aberrant forms are labeled with primary lexemes, although they are consistently classified as a sub-group of the category *amuh*, social wasps.

Except for Sequence 4 (termites, ants, bees and wasps), specific taxa are few for insects; subspecies are even fewer. Affixes denoting color, texture, size (or age), or some other general feature are frequently attached to the primary (1°) lexemic label of the generic category. An informant may choose any of a number to describe a specimen. Thus, (*màrà-tyk-ti*) means big, black beetle and the label may apply to any one of many beetles that are big and black. But the same beetle might also be called (*màrà-krã-ti*), big-headed beetle, if it were black and also had a big head. Occasionally a descriptive (or secondary lexeme) label may be reserved for a particular, limited set of insects. Within the beetle category is such an example, (*màràtire*) or dung beetles (Scarabidae). Each insect group (basic object level category) has a "father" (*bam*). The "father" is usually the largest member of the group. The "father" of the (*màràtire*) is the impressive Rhinocerous Beetle (*Strataegus*, Scarabaeidae). It is called the (*krã-kam-djware*) and is also considered the "chief" (*õ-benadjware*) of all insects (really all *maja*).

There are, however, only a few examples of this specific naming in Kayapó insect classification — except, as I have said, within the Sequence (4) of "ñy," the social insects. There are 32 sub-groupings of (*mrum*) ants; 48 sub-groupings of wasps (*amuh*); and 57 sub-groupings of bees (*mehn*). These specific and sub-specific groups are generally labeled with secondary (2°) lexemes. But why does this specialized classification occur within the Sequence "ñy?"

The importance of bees is obvious: they are sources of honey and wax. But of what significance are wasps and ants? Already we know these animals are like man because they live in societies like the Kayapó: they have villages, chiefs, and warriors. But so do termites, yet there are only 4 sub-divisions of termites (*rorot*). This is certainly not due to a paucity of termite types in the Kayapó area.

To understand this situation, we must understand one of the most significant of Kayapó myths: the story of the ancient fight with the giant rhinocerous beetle, the *krã-kam-djware*.

In ancient times the Kayapó lived in the sky with other animals. The Kayapó were then like other animals and Indians could understand animal languages. But in these ancient days, the Kayapó were weak and did not live in villages or have societies. Indians were not more powerful than other animals and certain animals, especially the beetles (*màrà*) under the leadership of their "chief," the *krã-kam-djware*, waged war against men. In the ancient days, in the sky, the Kayapó learned to organize themselves into groups and live in villages like the "ñy" (wasps and ants). Then in a great battle in those ancient times, the valiant and fearless warriors of the Kayapó defeated the *krã-kam-djware*. That defeat established man as a creature more powerful than other animals because of 2 things: 1) the power came from the social organization, and 2) the great strength and valiance of the Indian warriors that had also come from the wasps. The Kayapó had learned the wasps' secrets by carefully observing the behavior of wasps and had learned of their "power" that could be gotten through their potent stings. The venom of the wasps had been the secret; the aggressive, fearless attacks of the wasps had been the model for Indian warriors.

Today, on regular occasions the Kayapó commemorate the acquistion of these secrets and their victory over the *krã-kam-djware*. They are constantly searching for the nest of the most powerful and aggressive wasp (the *amuh-dja-ken: Polistes testacolor*). When a nest is found that is sufficiently large (usually 1.5 m long, 0.5 m in diameter), scaffolding is erected (by night when the wasps are inactive) to prepare for a re-enactment of the ancient event.

In the numbing cold of a gray pre-dawn haze, the entire village goes solemnly to the site. The warriors dance at the foot of the scaffolding and sing of the secret strength they received from the wasps to defeat the giant beetle. The women wail ceremonially in high-pitched, emotional gasps as the warriors, two-by-two, ascend the platform to strike with their bare hands the massive hive. Over and over again they strike the hive to receive the stings of the wasps until they are semi-conscious from the venomous pain.

This ceremony is one of the most important to the Kayapo: it is a re-affirmation of their humanity, a statement of their place in the universe, and a communion with the past. Time and space collapses to provide the unity of being — the continuity of life, history, identity and knowledge.

The wasp's nest itself is a symbolic statement of this unity. Its three-dimensional shape illustrates the relationships between the polar forms of the classification morphology — the ovate and elongate forms (Fig. 2). A cross-sectional view — or view from above or below — shows the circular form; a lateral view shows the elongate form. The nest is a graphic study of the relationship between these shapes.

Even more importantly, the general structure of the hive itself serves as a model of the universe. The hive is divided into parallel "plates" that seem to float just like the layers of the universe. The Kayapó say that today they live on one of the middle plates. But in ancient days, they believe they lived on another plate above the sky. Some Kayapó still live on an upper plate the tribal elders say, and their campfires are the stars in the sky (Fig. 3).

And below? From lower plates comes the "worthless men" (non-Kayapó, *kuben-kakrit*). Many *kuben-kakrit* still live below, though most have already ascended to "this earth layer" through a termite mound.

Termites are in alliance with "worthless people" and termites themselves are worthless. They are weak (*rêrêkre*) and cowardly (*wajobore*) and, although they appear to live like Indians and social insects, they are neither brave (*akrê*) nor strong (*tytx*) like wasps or Kayapó warriors. No Indian would, therefore, find value in studying termites (*rorot*). They are sub-grouped only according to whether they are white, red, or black — the skin colors of non-Kayapó "worthless people." (A fourth subgrouping labels the termite that lives in the mound through which came the *kuben-kakrit*).

And what of ants? They are more like men than even wasps because they walk and hunt on the ground. The Kayapó believe that ants too have special powers because of their stings. But the power received from ants is more useful on man's hunting ally — the dog. Ants are used in many concoctions to make a hunting dog unafraid to keep his nose to the ground and to

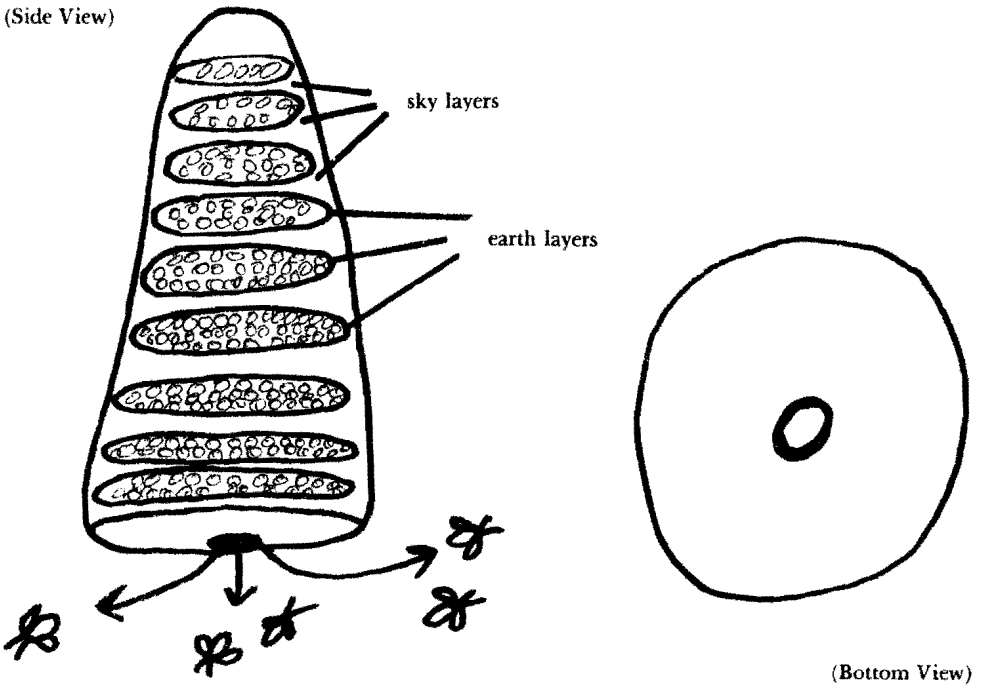

FIG. 3.—Cross-section of a wasp nest (drawing by Irã Kayapó).

make him aggressive. Some ants are seen as excellent hunters, so often man and dog are adorned for the hunt with the sacred red urucu paint mixed with ant parts. To be good hunters, therefore, the Kayapó must know ants, just as they must know wasps to be brave and fearless warriors.

CONCLUSION

In conclusion, I believe ethnomethodology can lead the ethnographer into fields of investigation along natural (*emic*) paths. Folk taxonomies are in and of themselves cultural statements, but it appears that these taxonomies may reflect deeper cultural patterns.

This analysis indicates that insects are encoded at a "basic object level" with the predominating characteristic being gross morphology (shape) that grades from the ovate form to the elongate form. These 2 "polar forms," and the relationships between these forms, become an underlying principle for Kayapó folk entomological classification as well as a spatial and structural theme in the belief system. It is therefore suggested that the correlations between a) basic shapes and forms, b) belief system patterns, and c) classification principles may be more closely integrated than previously expected. It appears that belief systems can play an important role in classification patterns and that such patterns can, in turn, offer an emic guide to cultural realities of perception.

ACKNOWLEDGMENTS

Funding for this project was made by the Wenner-Gren Foundation for Anthropological Research. Brazilian sponsors of the project were the Conselho Nacional de Pesquisas (CNPq), the Instituto Nacional de Pesquisas de Amazônia (INPA), the Museu Paraense 'Emílio Goeldi,' and the Fundação Nacional do Indio (FUNAI). I am most grateful to the Institutions for their support.

Literature Cited

Bamberger, Joan. 1967. Environmental and Cultural Classification: A Study of the Northern Cayapó. Unpubl. Ph.D. dissert. (Anthrop.), Harvard Univ.

Cole, Monica. 1960. Cerrado, Catinga and Pantaanal: distribution and origin of the savanna vegetation of Brazil. Geograph. J. 126 (2): 186-179.

Dougherty, J.W.D. 1978. Salience and relativity in classification. Amer. Ethnol. 5:66-80.

Gardner, Peter. 1976. Birds, words, and a requiem for the omniscient informant. Amer. Ethnol. 3:446-468.

Hueck, K. 1966. As Florestas da America do Sul: Ecologia, Composição e Importancia Economica. Brasilia: Editora Universidade da Brasilia.

Kempton, Willett. 1978. Category grading and taxonomic relations: a mug is a sort of a cup. Amer. Ethnol. 5:44-65.

Levi-Strauss, Claude. 1958. Anthropologia Structurale. Paris: Plon.

Posey, Darrell. 1979a. Kayapó Controla Inseto com Uso Adequado do Ambiente. Revista da Atualidade Indígena III (14): 47-58.

_____ 1979b. Pyka-tô-ti: Kayapó Mostra Aldeia de Origem. Revista da Atualidade Indígena III (15): 50-57.

Rosch, E., C.B. Mervis, W. Gray, D. Johnson and P. Boyes-Braem. 1976. Basic objects in natural categories. Cognitive Psych. 8:382-439.

Steward, J.H., and L.C. Faron. 1959. Native Peoples of South America. McGraw-Hill, New York.

Stout, Mickey and Ruth Thomson. 1971. Kayapó narrative. Interntl. J. Amer. Linguistics 37 (4): 250-256.

_____ 1974. Fonemica Txukuhamei (Kayapó). Serie Lingüistica 3:153-176.

Verswijver, Gustaaf. 1978. Enquete Ethnographique Chez lesKayapo-Mekrangoti: contribution a l'etude de la dynamique des groupes locaux (scissions et regroupements). Unpubl. Thesis, Ecole des Hautes Etudes en Sciences Sociales, Paris.

Wagley, Charles. 1977. Welcome of Tears: The Tapirape Indians of Central Brazil. Oxford Univ. Press, New York.

Notes

[1]The orthographic system used throughout this paper for Kayapó words is the official Brazilian government version developed in 1974 in conjunction with the Summer Institute of Linguistics (SIL).

For further information on the Kayapó language, see Stout and Thompson (1971, 1974).

[2]A collection of nearly 6,000 insect specimens was deposited with the Museu Paraense 'Emílio Goeldi' (Belém-Pará), under the supervision of Dr. William L. Overal, head of the invertebrate zoology section. I am indebted to Dr. Overal for his limitless assistance in identification of both collections.