Folk Classification of the Sago Palm (Metroxylon spp.) among the Galela

SENRI ETHNOLOGICAL STUDIES 7 1980

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INTRODUCTION

This ethnographic description of the folk classification of the sago palm (*Metroxylon* spp.) is based on data collected at Limau Village, in the Galela Subdistrict of North Halmahera. The description attempts to explain the manner in which Galela people classify the sago palm and to account for the adoption of this particular system of classification. The description focuses on the functions which led to the classification.

There are two different language groups in Halmahera; Non-Austronesian languages in the north, and Austronesian languages in the south.[1] Ordinarily, the North Halmahera language group is divided into 10 dialects, one of which is Galela. Although the languages differ markedly between North and South Halmahera, subsistence patterns in both areas are based on root-crop agriculture and fishing. The agricultural staples are bananas and manioc, with sago being locally important in particular areas.

In the Galela area, sago swamp forests occur near the coast and near rivers and lakes. Almost all sago palms appear to be wild, although some Galela groups probably once transplanted suckers.

1) Although the languages in North Halmahera are called Non-Austronesian, they are identified as an independent family which is contrasted with Austroasian, Austronesian, Papuan, Australian, and Malakka languages, and those of the Kadai family [SALZNER 1960: 1]. The languages in South Halmahera belong to the South Halmahera-West New Guinea group of the East Indonesian, Indonesian, and Austronesian family [SALZNER 1960: 7].

I. THE SAGO PALM

The sago palm is a rather rare type of plant in that starch is stored in the stem, in contrast to most other plants which store starch in the seed, fruit, root or rhizome. Only perennial arboreal monocotyledons, cycads, and a few genera of *Palmae* including the sago palm, store starch in the stem. It is still not known which ethnic group first discovered that the sago palm starch was edible, or where and how it was originally discovered.

Only one comprehensive taxonomic study of the palm, that of Beccari [1918], exists because the plants are so large that good herbarium specimens are difficult to collect and store. According to Beccari, palms of the genus *Metroxylon* are divided into two sections, *Eumetroxylon* and *Coelococcus*. The former, which ranges from New Guinea to India, can accumulate large amounts of starch, and is generally known as the sago palm. The latter is distributed throughout New Guinea, the Solomon Islands, the New Hebrides, Fiji, Samoa, and Ponape, and stores relatively little starch. Botanists usually classify *Eumetroxylon* into two species, *Metroxylon sagu* Rottb. and *M. rumphii* Mart. The latter has thorns on its petioles and spathes, whereas the former does not; its petioles and spathes are inerm. Some botanists, however, doubt that these are two distinct species [BARRAU 1959: 153]. On the other hand, several varieties of *M. rumphii* have been recognized; *M. rumphii*

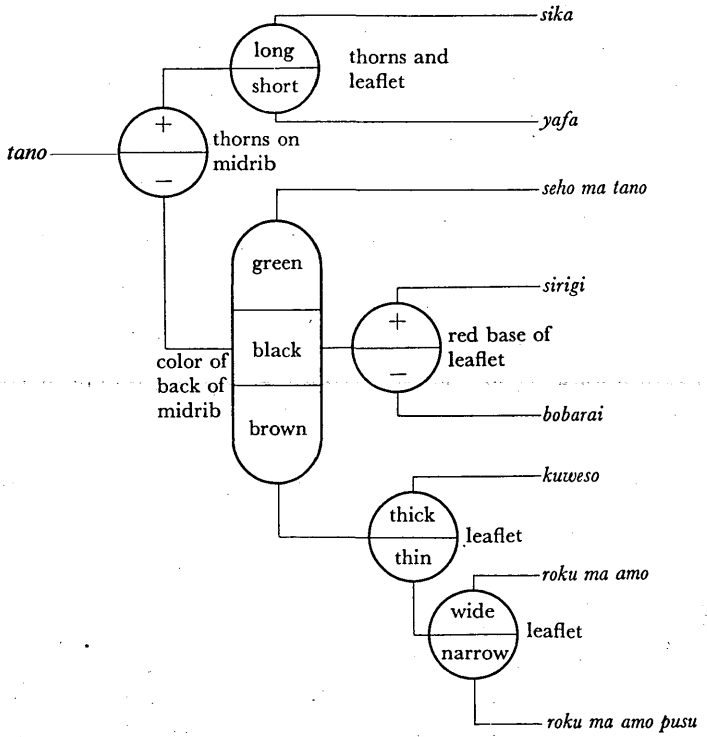

Fig. 1. Galela classification of the sago palm (*tano*) at the sucker level.

var. *sylvestre*, var. *microcanthum*, and var. *longisperum* [DIENUM 1948: 609]. Since the sago palms multiply by roots as well as by seeds, hybrids and mutants can be long persist. Nevertheless, experimental cultivation is required for precise classification.

II. FOLK CLASSIFICATION OF THE SAGO PALM

Galela people divided the sago palm (*tano*) into 8 varieties, which they can identify instantly. However, they have difficulty in explaining the differences between varieties, and it appears that they do not recognize clearly the distinctive features of the different varieties, but that recognition is rather gestalt. But with repeated and varied forms of explanation, gradually they can explain the distinctive features of each variety. They apparently have two kinds of classification, depending on the growth level of the sago palm; the sucker or immature level, and the botanically mature level. This is not surprising, since the characteristics of young and botanically mature sago palms differ considerably.

1. Classification at the Sucker Level

All young sago palms have thorns that gradually disappear with growth. At the

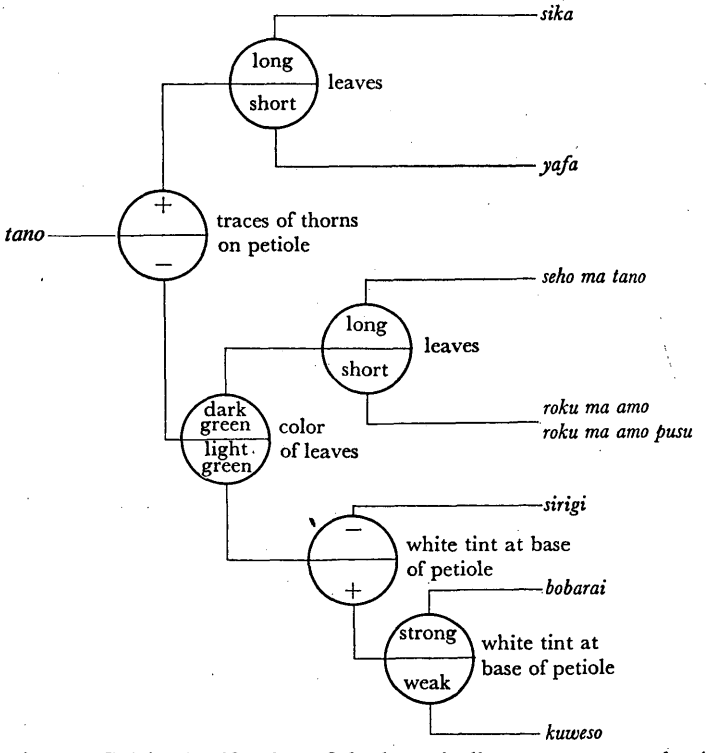

Fig. 2. Galela classification of the botanically mature sago palm (*tano*).

sucker level, these thorns are very important in Galela classification. The sago palm is divided into two groups according to whether or not it has the thorns on the midrib of the leaf. The thorny group is further subdivided into two varieties based on thorn length; the long-thorn (*sika*), and the short-thorn variety (*yafa*) (Fig. 1). Other differences between two include the length of the leaflet, *sika* having the longer ones.

Another distinctive feature of many sago palms at the sucker level is a colored band on the back of the midrib. This disappears as the plants grows. *Seho ma tano* has a faint green band; *sirigi* and *bobarai* have a black band; three others (*kuweso*, *roku ma amo*, and *roku ma amo pusu*) have a brown band; and *sika* and *yafa* both lack a band. *Sirigi*, in particular, has a remarkable band, and in addition it has a characteristic red spot at the base of the leaflet. *Bobarai* has a weak black band and is sometimes confused with *seho ma tano* because of the color weakness, but it has other distinctive features such as the thinnest leaflet with thornless edges. Among the brown band group, *kuweso* has the thickest leaflets. *Roku ma amo* and *roku ma amo pusu* have rather thin leaflets, but the former has shorter thorns on the edge of the leaflet and has wider leaflets than the latter.

2. Classification at the Botanically Mature Level

The outstanding features at the sucker level, such as thorns and color of the band on the midrib back, are not present in botanically mature palms. Moreover, the characteristics of the leaflets cannot be used for classifying the mature sago palm since the leaflets are not easily visible. Other features, including color of leaves, length of leaves, color of petiole, color of starch, are therefore used for classification.

At the mature level *sika* and *yafa* have traces of thorns on the petiole, which look like white stripes, whereas the other varieties lack any such traces. *Sika* and *yafa* differ in their leaf length, *sika* having the longer leaves (Fig. 2).

The other varieties are divided into two groups according to leaf color: *Seho ma tano*, *roku ma amo*, and *roku ma amo pusu* have dark green leaves, and the others have light green or yellowish green leaves. Among the dark-leaved varieties, *seho ma tano* has the longest leaves. Sometimes they are broken at the middle or near the top like the leaves of the sugar palm (*tano*=sago palm, *seho*=sugar palm, and *seho ma tano* refers to a sago palm similar in appearance to a sugar palm). Since it is impossible to distinguish between *roku ma amo* and *roku ma amo pusu* when botanically mature, the villagers often seek the sucker forms and distinguish them by leaflet type.

Among the light-leaved varieties, *babarai* and *kuweso* have white spots on the base of the petiole. *Bobarai*, especially, has a striking white spot in contrast to the weak or faint white spot of *kuweso*. *Sirigi* has no spot. *Kuweso* has reddish starch like *sika* and *yafa*, whereas all the others have white starch.[2)]

2) For information on the collection and cooking of sago, see Ishigen this volume pp. 191～201, 282～295.

III. FUNCTIONS OF THE CLASSIFICATION OF THE SAGO PALM

There is reason to believe that folk classification is functional. The naming of each variety and the construction of a classification system are based on certain functions that differ among cultures. Therefore, an explanation of how natives classify a certain object is only the first step in research. The second step comprises an ethnographic description of what functions led to the classification; in this case, the reason that the Galela developed their classification system.

1. Katu-Making

Katu (*atap* in Malay) is the material used mainly for covering roofs. *Katu* is made of sago leaflets and bamboo, the leaflets being folded over a stalk of bamboo and sewed together by strips of the pliant epidermis of bamboo (see Ishige this volume, pp. 457–462). *Katu* functions almost like money in the Galela village, it being easily exchanged for cash at Soasio. Consequently, the villagers, including children, make it every day, gathering leaflets from sago palms at the sucker stage for the purpose.

Thorny sago leaflets are seldom used for making *katu* (Table 1). When the villagers require a strong roof matting they use *kuweso*, because its leaflet is the thickest. However, these are not usually used for commercial matting because it requires hard work; they make it only for covering their own roofs. *Sirigi* also has a thick leaflet which is wider than *kuweso*, so that it is easier to work and fairly strong. For this reason, *sirigi* is frequently used for both domestic and commercial *katu*. *Seho ma tano* has such long leaflets hence its *katu* is also strong because of the longer folded part. *Roku ma amo* has such thin, wide leaflets that *katu* can be easily and rapidly made, but it is not strong. As *roku ma amo pusu* has thicker and narrower leaflets than *roku ma amo*, using it to make *katu* requires more time than that made of *roku ma amo*. Also it is not as strong. *Bobarai* has the thinnest leaflets, so that its *katu* is weak, but making *katu* out of it is fairly easy, and accordingly children often use it.

Table 1. Features of *katu*-making

variety	presence of thorns	thickness of leaf	width of leaf	length of leaf	characteristics of *Katu*
sika	###				seldom used
yafa	###				seldom used
kuweso	+	##	+	+	strong *katu* but requires hard work; used for villagers' own roofing material
sirigi	+	+	##	+	rather strong *katu*; sometimes used for villagers' own roofing
seho ma tano	+	+	+	##	rather strong *katu*, and easily made
roku ma amo	±	+	##	+	rapidly made
roku ma amo pusu	+	+	+	+	requires more leaflets and more time
bobarai	−	±	+	##	rapidly made, but weak

Thus, the classification of the sago palm at the sucker level is closely connected with making *katu*. Features such as the presence of thorns and the thickness, width, and length of the leaflet are important for making *katu*, as well as for classifying the palms at the sucker stage. Only the color of the band on the back of the midrib is unimportant for making *katu*. However, because it is very pronounced, Galela people use it as a distinctive feature. Perhaps they originally used the leaflets of every variety for *katu* without distinguishing them, and later took note of the various features of the leaflets. The ease or difficulty of making *katu* and the strength or weakness of the *katu* probably gave rise to classification at the sucker level.

2. Ownership of Sago Palms

According to a Galela folktale, the ownership of the sago palm forest near Limau Village originated from *Orang Moro*, who are very mysterious and usually invisible beings, considered to be the descendants of Sultan of Jailolo.[3] The ownership of the forest was later transferred to the Sultan of Ternate, whose descendants now own about half the forest, though members of Limau Village have use rights to its palms.[4] The other half of the forest is owned outright by villagers,

3) For further details on *Orang Moro*, see Ishige this volume pp. 410–417, on the "Traditional Spirit World."

4) The complete tale of the origin of the sago palm is as follows: Limau Village started with the migration of two brothers from Ngidiho Village, which lies inland. Long ago, the two brothers went into the forest, lost their way, and had to sleep in the forest without any food. During the night the elder brother dreamed that a strange man came to him and asked, "What are you doing here?" He answered, "We lost our way and are without food. We tried to find our way out but we could not do so, so we are sleeping here." The man said, "What a pity! All right, I will give you some food. You will find edible trees tomorrow when you wake up."

The next day, the brothers saw strange, tall trees that they had not seen the previous day. Those were sago palms, and the strange man in the dream was *Orang Moro*. So sago palms were originally possessed by *Orang Moro*, who gave them to Ngidiho village.

One day, the villagers of Ngidiho wanted to fight, but they did not have a big canoe. The head of the village said to the Sultan of Ternate, "I will give you our sago palms if you will make a big canoe for us." The Sultan of Ternate ordered his workmen to make one and gave it to them. Thus, the sago palms became the sultan's possession.

Later, the men of Toala Village, which is near Soasio, were going to fight on the Sultan's orders, but they did not have any food to leave for their wives and children who were remaining in the village. The head of Toala went to Ternate, arrived at night, and knocked at the sultan's door. The sultan called out, "Who is knocking on my door at night?" "I am the head of Toala. We have to go to fight, but there is no food for our women and children." "Don't worry, go and fight! I will give them food." Thereupon the Sultan of Ternate entrusted the control and use of the sago palms to the Toala villagers who moved to a place near the sago palm forest and made a new village called Gilitopa. In the 1950's, Gilitopa Village was transferred to Limau and combined with Limau Village. Nowadays the sago palm forest which the sultan had possessed is called *dusun raja* (sultan's village), another name of Gilitopa Village.

whose ancestors transplanted the sago suckers, from which their half of the present forest was formed.

In the Galela area the land on which sago palms grow is not owned, but rather individual palms are owned. However, it is difficult to recognize individual palms since each multiplies naturally from seeds and roots, so that the varieties easily mix. On the other hand, the ownership of a palm is so valuable that if a villager collects starch from another's palm the owner can claim one *ruru* in damages.[5)]

The classification of the sago palm at the botanically mature level is connected with palm ownership. The Limau villagers recognize the ownership of the sago palms by the location and the name of the varieties; they can name the order of the varieties from one edge of the forest to the other, designating each by its owner's name. Sometimes they also mention the complicated paths through the forest and the wells used for collecting starch, in order to indicate a more exact location.

IV. DISCUSSION

(1) This description highlights the fact that the Galela have two kinds of classification for the sago palm; one at the sucker stage and the other at the botanically mature stage. That at the sucker level is connected with *katu* making, and the botanically mature classification with the palm ownership. The question then arises, which came first, the need or the classification? The attention given to *katu*-making provides scope for a solution: *Katu*-making probably gave rise to the recognition of the palm varieties as a consequence of the treatment of the leaflets. Most varieties may have already been named at the sucker level and the classification was then employed for the new need, the recognition of palm ownership.[6)] Repeated treatment or use of an item probably leads to bestowing a name, rather than sheer intellectual curiosity. The process is somewhat similar to that of inprinting.

(2) Tobelo people, neighbors of the Galela, recognize 13 varieties of sago palm; *bawehe*, *bobarai*, *halime*, *hohaki*, *kueso*, *ratemu*, *roku ma amo*, *roku ma amo pusa*, *sirigi*, *sirigi pusa*, *sisika*, *soama*, and *ukoro*. (Since /s/ of Galela regularly changes to /h/ of Tobelo, I cannot account for *sirigi* and *sisika* in Tobelo. These terms seem to have been borrowed recently from Galela.) The Tobelo and Galela areas are not far apart and ecologically they are almost the same. If in fact the Tobelo have 13 varieties, they must perceive a need for distinguishing more than do the Galela, and it is worth asking whether the motivation for developing the classification is different.

(3) Although this paper is written from the viewpoint of folk classification, some botanical comments are in order. *Sika* and *yafa*, because of their thorns, can be

5) A *ruru* is a bag made of sago leaflets which is used to hold wet sago. Usually sago is measured by the *ruru* (see, Ishige, this volume pp. 203).

6) Although a main usage of sago palm at the botanically mature level is stanch puoduction, the distinction among the starches of sago palm varieties is not significant for the Galela. So, they would not have had a motivation to distinguish among the varieties at the level in terms of starch collection.

identified as *M. rumphii* Mart, and the other folk varieties as *M. sagu* Rottb. [BARRAU 1959: 153]. Since the differences between *sika* and *yafa* are apparently relative, *sika* and *yafa* probably do not correspond to botanical varieties. Furthermore, it is rather difficult to distinguish between *roku am amo* and *roku ma amo pusu*, and the differences between them are also probably relative. On the other hand, the other folk varieties (*seho ma tano*, *sirigi*, *bobarai*, and *kuweso*) are clearly distinguishable. However, it cannot be definitely ascertained whether these folk varieties correspond to botanical ones, because sago palms can multiply by rooting. Genetic surveys are required for an accurate scientific classification of sago palms.

(4) The general nomenclatural principles of folk classification presented by Berlin *et al.* [1973] also merit brief comment. They indicate that there is a universal notion for classifying living things among pre-scientific men and that the 5 ethnobiological taxonomic categories are universally recognized, viz., unique beginner (e.g. plant), life form (tree), generic (oak), specific (white oak), and varietal categories. Although their hypothesis is fascinating, it is somewhat dubious, as noted by Bulmer [1974], who raised the question of "how to distinguish clearly between unaffiliated generics and life forms" [1974: 23]. According to Berlin *et al.*, life form categories are defined as: "Some taxa marked by primary lexemes are not terminal and immediately include taxa designated by primary lexemes. Taxa satisfying these conditions refer to life form categories; their labels are life form names" [1973: 218]. If Berlin's principle is applied to the Galela classification of the sago palm, *tano* clearly corresponds to a life form category, and the varieties except *roku ma amo pusu* are generic categories. However, Berlin later wrote that life form categories were not decided only by nomenclatural principles, and he cited Kay's remark that rank should be stipulated on the basis of empirical considerations [BERLIN 1976: 383].

The Galela can hardly explain verbally the distinctive features of the varieties of the sago palm. It seems that their recognition is gestalt, and not achieved by the analysis of individual features. This is evidence for the varieties being generic categories, because they are recognized ordinarily by gestalt. Even if it is difficult for us to discriminate the varieties, Galela people are so familiar with them that they can identify them easily. This argument is reinforced by Dougherty's paper [1978], in which she shows that life form categories are fundamental for urban Americans who have little interaction with their biological environment, in contrast with the generic categories that are fundamental for pre-scientific men. She argues that the most salient or fundamental categories in biological classification are not fixed by nature, but vary as a function of an individual's or a culture's degree of interaction with the domain concerned [DOUGHERTY 1978: 76]. Indeed, not only the fundamental categories but also the life form categories themselves are relative, their relativity depending mainly on the familiarity of the objects. Cultivated plants, for instance, are so familiar to agricultural peoples that not only are the varieties of cultivated plants recognised by gestalt, but also the cultivated plants themselves are transformed and are spread over the range of variation. As a result, it can be seen in the case of cultivated plants that the categories which ordinarily correspond to

generic categories are elevated to life form categories. Berlin *et al.* classify cultivated plants as unaffiliated generic categories [1973: 219]. However, cultivated plants should be included in a folk classification system itself, because they are the most culturally important plants and also sometimes share in relatively large part of the native concept of plants. Berlin's hypothesis would be suitable to wild plants and could be applied to cultivated plants, too. When Berlin's principles are applied to them, life form categories would not be limited in his original ones such as tree, vine, and grass.

BIBLIOGRAPHY

BARRAU, J.
1959 The Sago Palms and Other Food Plants of Marsh Dwellers in the Pacific Islands. *Economic Botany* 13: 151–162.

BECCARI, O.
1918 Asiatic Palms, Lepidocaryae. *Annals of the Royal Botanical Garden.* 12: 2. cited in Barrau (1959), pp. 152–153.

BERLIN, B.
1976 The Concept of Rank in Ethnobiological Classification: Some Evidence from Aguaruna Folk Botany. *American Ethnologist* 3(3): 381–399.

BERLIN, B., D. E. BREEDLOVE, & P. H. Raven
1973 General Principles of Classification and Nomenclature in Folk Biology. *American Anthropologist* 75(1): 214–242.

BULMER, R.
1974 Folk Biology in the New Guinea Highlands. *Social Science Information* 13: 9–28.

DEINUM, H.
1948 Sago. In C. J. J. van Hall and C. van de Koppel (eds.) *De Landbouw in de Indische Archipel* IIA. N.V. Uitgenerij W. van Hoere, pp. 604–621.

DOUGHERTY, J. W. D.
1978 Salience and Relativity in Classification. *American Ethnologist* 5(1): 66–80.

SALZNER, R.
1960 *Sprachenatlas des Indopazifischen Raumes.* Wiesbasen: Otto Harrassowitz.