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ETUDES ET DOSSIERS

THE CONTENT OF CATEGORIES AND EXPERIENCE; THE CASE FOR SOME NUAULU REPTILES

By Roy F. ELLEN *, Andrew F. STIMSON **, James MENZIES ***

This is the second paper in a series of systematic descriptive accounts of Nuaulu ethnozoology. In the first (Ellen, Stimson and Menzies 1976) we presented data on Nuaulu categories for amphibians, as well as providing information on location, ecology and ethnography, and on basic techniques employed in field investigations. The present report encompasses the identification, utilization and general knowledge of reptiles (excluding snakes) of the Nuaulu people of south central Seram, eastern Indonesia (1). We note the main details of the non-serpentine reptile fauna of the region and discuss Nuaulu categories applied to turtles, crocodiles and lizards, their classificatory arrangement and social uses. Throughout, particular emphasis has been placed on cognitive and lexical variation between informants, something neglected in earlier studies. This is dealt with in some detail.

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1. THE REPTILE FAUNA OF SOUTH CENTRAL SERAM

We have already pointed out the still rudimentary state of knowledge concerning the herpeto-fauna of Seram, and the Moluccan islands in general (Ellen, Stimson and Menzies 1976). However, the information available for reptiles is probably more complete than that for amphibians.

Reptile species are more numerous than those of amphibians on Seram. Prior to 1969, 43 certain species had been reported plus one uncertain provenance for the Elapid snake *Aspidomorphus muelleri*. There are two families of Testudines: the Cheloniidae, of which there are now four species recorded, and the Emydidae, of which one species is found. The order Crocodylia is represented by a single member of the family Crocodylidae. Five families of lizards (Sauria) occur: four species of geckos (Gekkonidae), three distinct species of the family Agamidae, one species of monitor lizard (Varanidae), and eleven species of skinks (Scincidae). There are four families of snakes known from Seram. Of the total known species, nineteen were definitely observed during fieldwork between 1970 and 1975, and most of them obtained as specimens in the Nuaulu area. In addition, the leatherback turtle, *Dermochelus coriacea*, was reported, previously unrecorded for Seramese waters. However, there is evidence that the Nuaulu are familiar with at least 39 reptile species. The difference between this figure and the number known zoologically from the entire island may be accounted for by relative geographical distribution, particularly differences between the highlands and the coast.

A checklist of reptiles reported from south central Seram, excluding snakes, is presented in table 1. Species identifications compared with Nuaulu categories applied to actual specimens collected are set out in table 2.

TABLE 1
*Checklist of turtles, crocodiles and lizards recorded
in the Nuaulu region of south central Seram*

Species	Ecological zones **					Nuaulu glosses
	I	II	III	IV	V	
CHELONIA						
Emydidae — Freshwater turtles						
<i>Cuora amboinensis</i> (Daudin)	—	—	—	+	—	<i>peku</i>
Amboinan box terrapin						
Cheloniidae — Sea turtles						
<i>Dermochelys coriacea</i>	—	—	—	—	+	<i>enu ikai</i>
Leatherback turtle						
* <i>Eretmochelys imbricata</i> (Linnaeus)	—	—	—	—	+	<i>enu hunane</i>
Hawksbill turtle						
* <i>Chelonia mydas</i> (Linnaeus)	—	—	—	—	+	<i>enu hunane</i>
Green turtle						
* <i>Caretta caretta</i> (Linnaeus)	—	—	—	—	+	<i>enu hunane</i>
Loggerhead turtle						

TABLE 1 (continued)

Species	Ecological zones **					Nuaulu glosses
	I	II	III	IV	V	
CROCODILIA						
Crocodylidae						
<i>Crocodylus porosus</i> (Schneider) Estuarine crocodile	—	—	—	+	+	<i>buhu</i>
SAURIA						
Gekkonidae — Geckoes						
<i>Hemidactylus frenatus</i> (Dumeril & Bibron) Common house gecko	—	—	+	—	—	<i>nimasasai numa</i>
<i>Gekko vittatus</i> (Houttuyn)	—	—	+	—	—	<i>nimasasai numa</i>
Agamidae — Dragon-lizards						
<i>Calotes cristatellus</i> (Kuhl)	—	—	+	—	—	<i>kasa'un</i>
<i>Draco lineatus amboinensis</i> (Lesson)	—	—	+	—	—	<i>hohone</i>
<i>Hydrosaurus amboinensis</i> (Schlosser)	—	—	+	—	—	<i>isa</i>
Varanidae — Monitors						
<i>Varanus indicus</i> (Daudin) Water monitor	—	—	+	—	—	<i>bwo</i>
Scincidae — Skinks						
<i>Tiliqua gigas</i> (Schneider)	—	—	+	—	—	<i>nopa inai</i>
<i>Mabuya multifasciata</i> (Kuhl) Many banded skink	—	—	+	—	—	<i>poso noho kunie</i>
<i>Mabuya 'rudis'</i> (Boulenger)	—	—	+	—	—	<i>poso ai totu kopuwe</i> <i>poso noho metene</i>
<i>Carlia fusca</i> (Dumeril & Bibron)	—	—	+	—	—	<i>poso ai totu kopuwe</i>
<i>Carlia</i> sp. (probably <i>fusca</i>)	—	—	+	—	—	<i>poso ai totu kopuwe</i>
<i>Dasia smaragdina moluc-</i> <i>carum</i> (Barbour)	—	—	+	—	—	<i>poso kaimarane</i>
<i>Emoia cyanura</i> (Lesson)	—	—	+	+	—	<i>poso kaimarane</i>
<i>Emoia kuekenthali notomoluc-</i> <i>censis</i> (Brongersma)	—	—	+	—	—	<i>poso kaimarane</i>
<i>Eugongylus rufescens</i> (Shaw)	—	—	+	—	—	<i>nopa hanaie</i>

* These species have not been observed or collected during fieldwork, although their existence is suspected from statements made by informants, material deposited in museum collections and references in the literature.

- ** Zone I = above 100 metres; principally montane rain forest
 Zone II = Tropical rain forest
 Zone III = Secondary forest, garden and village areas
 Zone IV = Freshwater and swamp forest
 Zone V = Marine or estuarine

TABLE 2

Species identifications compared with Nuauulu categories applied to 111 reptile specimens

<i>Species</i>	<i>peku</i>	<i>nimasasai ai ukuna</i>	<i>nimasasai numa</i>	<i>kasa'un</i>	<i>hohone</i>	<i>hoho metene</i>	<i>hoho na rihu rihu</i>	<i>hoho ai ukuna</i>	<i>bwo</i>	<i>poso</i>	<i>poso noho kunie</i>	<i>poso ai totu kopuwe</i>	<i>poso kai marane</i>	<i>poso kai marane onate</i>	<i>nopa hanaie</i>	<i>Number of informant responses</i>	<i>Number of specimens</i>
<i>Cuora amboinensis</i>	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	3 (1)
<i>Gekko vittatus</i>	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
<i>Hemidactylus frenatus</i>	—	1	50	—	—	—	—	—	—	—	—	—	—	—	—	51	42
<i>Calotes cristatellus</i>	—	—	—	21	3	—	—	—	—	—	—	—	—	—	—	24	14
<i>Draco lineatus</i>	—	—	—	—	1	1	1	2	—	—	—	—	—	—	—	5	5
<i>Varanus indicus</i>	—	—	—	—	—	—	—	—	7	—	—	—	—	—	—	7	3
<i>Mabuya multifasciata</i>	—	—	—	—	—	—	—	—	—	7	17	3	—	—	—	27	21
<i>Mabuya 'rudis'</i>	—	—	—	—	—	—	—	—	—	2	2	—	—	—	—	4	4
<i>Carlia fusca</i>	—	—	—	—	—	—	—	—	—	2	1	3	—	—	—	6	5
<i>Carlia sp. (2)</i>	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	2	2
<i>Dasia smaragdina moluccarum</i>	—	—	—	—	—	—	—	—	—	—	—	—	2	1	—	3	2
<i>Emoia cyanura</i>	—	—	—	—	—	—	—	—	—	—	—	—	9	1	—	10	7
<i>Emoia kuekenthali notomoluccensis</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0	1
<i>Eugongylus rufescens</i>	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	1
Totals	2	2	50	21	4	1	1	2	7	11	20	8	11	2	1	143	111

(1) Information concerning Nuauulu names lacking for one specimen.

(2) Full identification not yet available.

2. NUAULU TAXA APPLIED TO TURTLES

2.1 *Peku* (*pekuta*) (1)

No etymology provided. This is the only testudine category obtained for which specimens were actually collected, all other species being too large to preserve and transport under ethnographic field conditions. *Peku* corresponds to *Cuora amboinensis*, the fresh-water turtle, and is consistently identified as such by informants. Its morphological distinctiveness compared with other known turtles and the absence of an extensive testudine fauna makes this understandable. It is much smaller than the marine turtles with a shell length of little over 20 cm. It has a domed carapace, hinged plastron and unlike the marine turtles can completely withdraw into its shell when threatened. It is a herbivorous inhabitant of ponds and marshland.

Peku is a primary totem for the clan Nepane-tomoi'en, who are prohibited from using this word for the animal, although this attitude by no means applies to all totems. Instead it is referred to as *saha'unwe*. This is described as 'the house which it carries around with it'. Literally, it is derived from *msaha*, a term used to refer to or address married men before they have become fathers. *Unwe* = 'head'. The connection between the literal and stated meaning of the term *saha'unwe* is obscure. It is not the same as that used for carapace, which is *nene nonja* (*nene* = the possessive). *Peku* is sometimes referred to by individuals from clans for which it is not a totem as *peku saha'unwe*. The prohibition on the use of usual names of animals by clans or other groups for which they are sacred is common among the Nuaulu. *Mara-kokowe* (= 'cus-cus', *Phalanger orientalis* ♂) and *mitane* (prawns and shrimps) are prohibited names when in the company of the opposite sex, as they are said to refer to the penis (Ellen, 1972: 238, note 17). Instead they must be referred to as *mara hanaie* ('male cus-cus') and *okote* respectively. Such synonyms indicate the importance of correlating names with actual specimens, rather than informants' descriptions or ethnographers' observations, since different names have a tendency to suggest separate categories.

2.2 *Enu* (*penu*)

No etymology provided. *Enu* refers to marine turtles of which two types are recognized: *enu ikai* (*ikai* = 'fish') and *enu hunane* (*hunane* = 'moon'), also known as *enu tipope* (no etymology provided). The former corresponds precisely to the leatherback turtle *Dermochelys coriacea*, although Stresemann (1927: 61) reports that in the closely related language of Hatue the 'karettschildkrote' is known as *tipopi*. There are no testudines in museum collections from Seram apart from *Cuora amboinensis*, although *Chelonia mydas*, *Eretmochelys imbricata* and *Caretta caretta* are known for Ambon, and these species must certainly be present in Seramese waters. Sachse (1907: 57) reports *Chelon'a* (i.e. *Eretmochelys imbricata*) from Seram. Descriptions of *Enu hunane* appear to be referring to *E. imbricata*, but the label is probably applied by extension to all other marine turtles that are obviously not *enu ikai*. *Chelonia mydas* has a maximum shell length of just under 1.5 m and varies from light to dark brown, sometimes with a tinge of olive. The scutes are marked with radiating or mottled darker markings. *Caretta caretta* has about the same maximum length and is usually reddish-brown in immature specimens. It can be distinguished from *Chelonia mydas*

(1) On the transcription of Nuaulu words and the semantic structure of nouns see Ellen, Stimson and Menzies, in *JATBA*, No. 7-12, 1976: notes 1 p. 130 and note 1 p. 131. Terms in parenthesis are in free variation with those preceding them but appear to be less frequently used.

and *E. imbricata* by the five (instead of four) costal scutes on each side of the carapace. It also has a relatively larger, broader head. *E. imbricata* is the smallest of the *enu* species, with a maximum shell length of one metre. The overlapping scutes on its shell (in all but the very largest) distinguish it from all other marine turtles. The carapace is amber with streaks of various shades of brown and yellow.

Enu is a secondary totem for the clan Nepane-tomoi'en' probably by extension from *peku*.

3. GENERAL REMARKS ON NUAULU TURTLE TAXONOMY

On the basis of observation, tests and interviews, testudines are clearly treated by the Nuauulu as a natural group, although there is no generic term for them, such as the Ambonese *tuturuga*. The possession of such a distinctive morphology is backed up by the assertion that *peku* may develop from *enu* eggs. This belief in inter-species ontogeny is a widespread characteristic of Nuauulu ethnozoology (Ellen, Stimson and Menzies 1976). If an *enu* (type unspecified) lays 150 eggs in the forest, Ellen was told by Sanyau, 50 of these would become *peku* on reaching the shore. There is no evidence that either *enu* (which is more likely) or *peku* is used as a generic for testudines in the way *notu* is used for frogs. The distinction made within this covert group is probably simply habitational, between marine (*enu*) and freshwater (*peku*), although size (large: small) was also offered by informants as a distinguishing characteristic. This provides us with the taxonomy in figure 1.

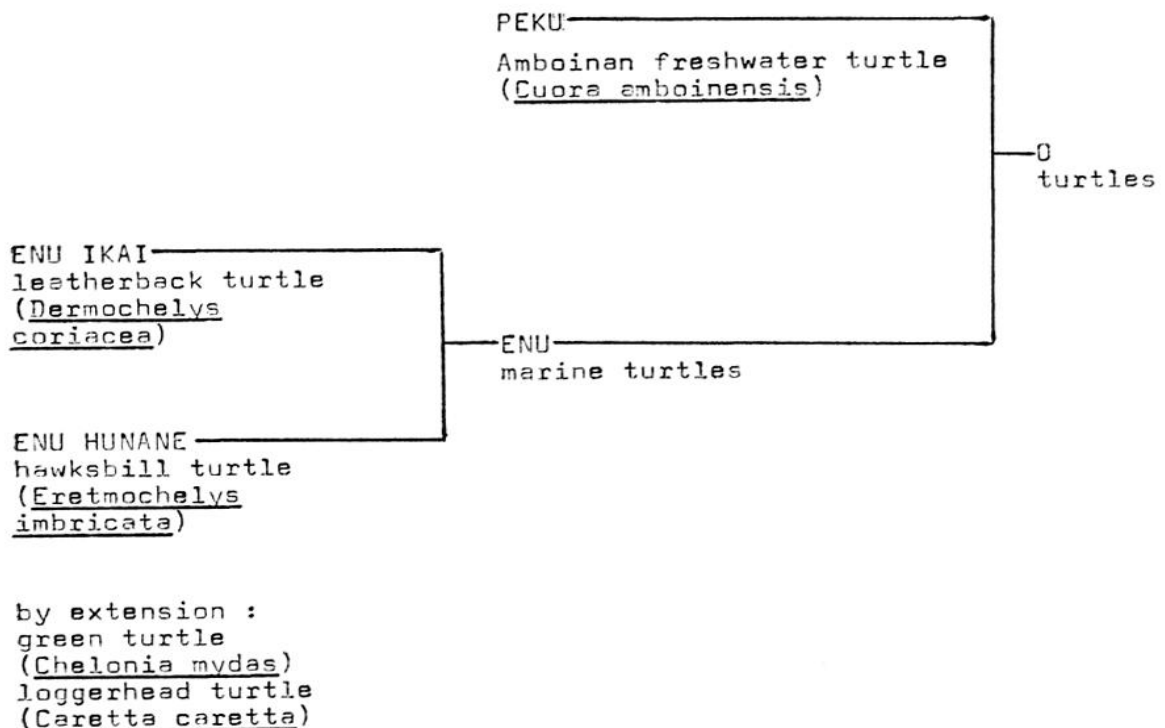


Figure 1. — Nuauulu classification of turtles arranged as a taxonomic hierarchy *

* This chart incorporates the maximum number of classificatory levels held to be distinguished by informants. In all cases the condition of transitivity is understood. In this and subsequent figures 'O' indicates a covert category.

4. SOCIAL USES OF TURTLES

Except for Nepane-tomoi'en, turtles may be eaten by anyone, and it is not even entirely clear whether the taboo with respect to *enu* is rigidly enforced for this clan. However, they are not preferred foods and occurred nowhere among the items consumed during a dietary survey undertaken in 1970-71. They are not sought after or hunted, but eaten when available. Although *E. imbricata* is occasionally eaten, the flesh can be poisonous and its consumption has been known to cause human deaths.

Peku is undoubtedly the most commonly consumed turtle, and occurs in large numbers around the mouths of the larger creeks flowing into the Banda sea, such as the Upu and Pia. The larger marine turtles are only eaten when caught on the beaches, usually when they are in the process of laying eggs. A large *enu ikai* was caught in this way in August 1973. Sorita caught the leatherback just before sunrise, killing it by hacking through the cervical vertebra with a bushknife. As soon as the alarm was raised kinsmen and affines from the clans Matoke and sonawe-ainakahata came to assist him, carrying a variety of baskets and other containers. The beast was turned on its back and the carapace cut along the lateral lines so that the entire ventral portion could be removed. The liver, eggs, gut, pancreas and heart were removed in that order and placed in baskets and other containers or laid out on coconut fronds on the upper part of the beach. When the shell, calipee, dung, blood and waste had been discarded just over half of the original 80 k weight was available for eating.

The odour of the leatherback is disliked, and compared to the smell of decomposition — *hawe kopuwe* (*hawe* = 'smell', *kopuwe* = 'rotten', 'decaying', 'foul'). Eggs of all turtles are eaten when available.

The shell of hard-backed marine turtles (*en(u)'unta* = 'enu skin'), usually that of *Eretmochelys imbricata*, is worked to form finger rings (*sopa'o*) and small anklets (*niti anai*), generally for children (1). The shell is roughly cut with a knife to give the outline of the item to be made and then ground and polished with sand and water, pumicestone and pebbles; with the application of heat and pressure where necessary. The finish is generally rather coarse and matt compared with the lustrous objects made from the same material by the Ambonese and other non-tribal peoples of the central Moluccas. Among these groups craftwork in 'tortoise shell' has been developed into a fine art, producing such articles as hair ornaments, combs, bracelets and fans, as well as those already mentioned. Given that the Nuaulu have only had direct access to suitable raw material since they have been in their present location, it seems pretty certain that this craft has been introduced via other coastal peoples relatively recently.

5. NUAULU TAXA APPLIED TO CROCODILES AND LIZARDS

5.1 *buha* (*bu'uha*)

No etymology provided, although it may possibly be related to the Malay *buaja*. Crocodiles (*Crocodylus porosus*) are more or less confined to the estuarine areas of the larger rivers of south central Seram, such as the Ruatan. They are a large carnivorous

(1) For example, see Museum of Mankind (London) Reg. Nos. 1972 ASI, 224-7; Rijksmuseum voor Volkenkunde, Ellen field catalogue No. 551; British Museum (Natural History) Reg. No. 1976. 933.

inhabitant of both fresh and saltwater and may reach a length of nearly 6 m. The young feed on frogs and invertebrates while adults eat larger animals including man. Crocodiles have been reported by informants from other locations and appear to have been more widely distributed in the past. They are not hunted, although they may have been formerly. Crocodile hide is referred to by the Nuaulu as *nene kibeto (kibeda)* (c. f. 2.1). The crocodile is a totemic animal for the clans Matoke, Sopianan, Sonawe-aipura and Huri, though for none of these does it appear to be a primary totem. In the case of Matoke it is believed to have 'evolved' from one of the founders of the clan. It is clearly feared and gives its name to a type of taboo sign or scare charm (*wate buha*), which threatens the victim with a fate worse than (but including) death, by being eaten alive. There is some evidence to suggest that the fearsome reputation of the crocodile and the fact that its increasing inaccessibility prevents it being hunted make this an animal respected and tabooed by all Nuaulu. This is not made clear in any formal sense, but was the considered view of certain informants.

5.2 *bwo (bu'o)*

No etymology provided. This is the term applied to all monitor lizards (*Varanus indicus*), commonly found along the coast, particularly in coconut groves, and known in Ambonese Malay as *sua-sua*. At 1.5 m it is the largest lizard on the island. It differs from the others by its long slender forked tongue. It is a good swimmer and often found in the vicinity of water. It has a distinctive coloration of numerous small yellow spots on a blackish or dark olive ground. In Nuaulu nomenclature this sexually dimorphic species is divided into two terminal categories. *b. inai* (*inai* = 'mother') (♀) and *b. sipane* (no etymology given) (♂) (see 6.3). There are no difficulties in identifying *Varanus* as *bwo*, although youngsters sometimes find difficulty in sexing them.

Bwo is a primary totem for the clan Matoke, on whose war shields it is sometimes depicted. It is believed to be descended from the dog of the original *jonate Matoke*, glossed in Malay as 'Lord of the Land' (Ellen 1978), but a detailed origin myth was not recorded. As the clan Matoke is guardian of the village ritual house, a *bwo* motif is sometimes carved on the large drum attached to this structure, as in the village of Watane. *Bwo* is a secondary totem for the clans Penisa, Pia and Nepane-tomoi'en. Like *buha*, *bwo* also gives its name to a type of scare charm.

Monitor meat is commonly eaten by clans other than Matoke, and after the reticulated python it is probably the most important reptile species appearing in Nuaulu diet. It is not normally actively hunted, but will be caught if located in coconut palms near the village. As a pest which will eat chickens and ducks, it is often more important to destroy it in the interests of pest control than to capture it for food. Although the Nuaulu appear to have no use themselves for the skin at the present time, this is always carefully removed as it can be later sold to dealers trading between Seram and Ambon, where it is used as an abrasive, an ingredient in Chinese medicines, and possibly also for other purposes.

5.3 *isa*

No etymology provided, but *isar* means 'to fetch from the gardens' and as *isa* (like *bwo*) has a reputation as a pest, the two terms might well be semantically related. This is the term applied to the agamid lizard *Hydrosaurus amboinensis*, the sail-tailed lizard, so-called because the crest, which is very distinct on the back, becomes even higher on the base of the tail, especially in mature males. It may exceed a metre in length, of which two-thirds is tail. It is unusual among lizards in being almost entirely

vegetarian. It is semi-aquatic, living on the banks of rivers and streams. It is occasionally eaten, but is not especially sought after.

Like *Varanus*, *Hydrosaurus amboinensis* is a sexually dimorphic species and the category *isa* is divided by the Nuaulu into two terminal categories: *i. inai* (*inai* = 'mother') (♀) and *i. bibane* (♂). 'Bibane' is said to refer to the serrated dorsal sail. The male is the larger of the two, and one specimen examined (but not collected) measured 75 cm from head to tail. *Isa* does not appear to be of any totemic or other sacred significance. Because it is less common than *bwo* it is correspondingly more difficult to identify consistently and certainly to sex with any degree of accuracy. Because of its superficial similarity to *Varanus*, it is often described as 'a kind of *bwo*'.

5.4 *hohone*

No etymology provided. This is the term consistently applied to the flying lizard, *Draco lineatus amboinensis*, although the term was also applied by three informants on one occasion to specimens of *Calotes cristatellus* (see 5.5). This, however, appears to represent a generic usage or may be simple informant error in responses from young children. However, the abundant distribution of this unmistakable species in garden areas near the village would seem to make confusion unlikely.

Nuaulu recognize at least three different terminal categories for flying lizards, and perhaps as many as five. Napwai singled out the following types.

5.4.1 *Hoho ai artu*

Ai = 'tree', 'woody shrub'. The meaning of *artu* is unknown. The term probably refers to a particular type of tree or plant for which identification is lacking, or is descriptive of a particular kind of vegetation. '*Ai artu*' occurs frequently in the names of terminal categories for animals, and may simply refer to the fact that a species is tree dwelling.

5.4.2 *Hoho ai ukuna*

Ai = 'tree', 'woody shrub'; *ukuna* = 'end', 'top': *ai ukuna* = 'treetop', 'tree branches', as in the Indonesian *ujung kayu*.

5.4.3 *Hoho na rihu rihu*

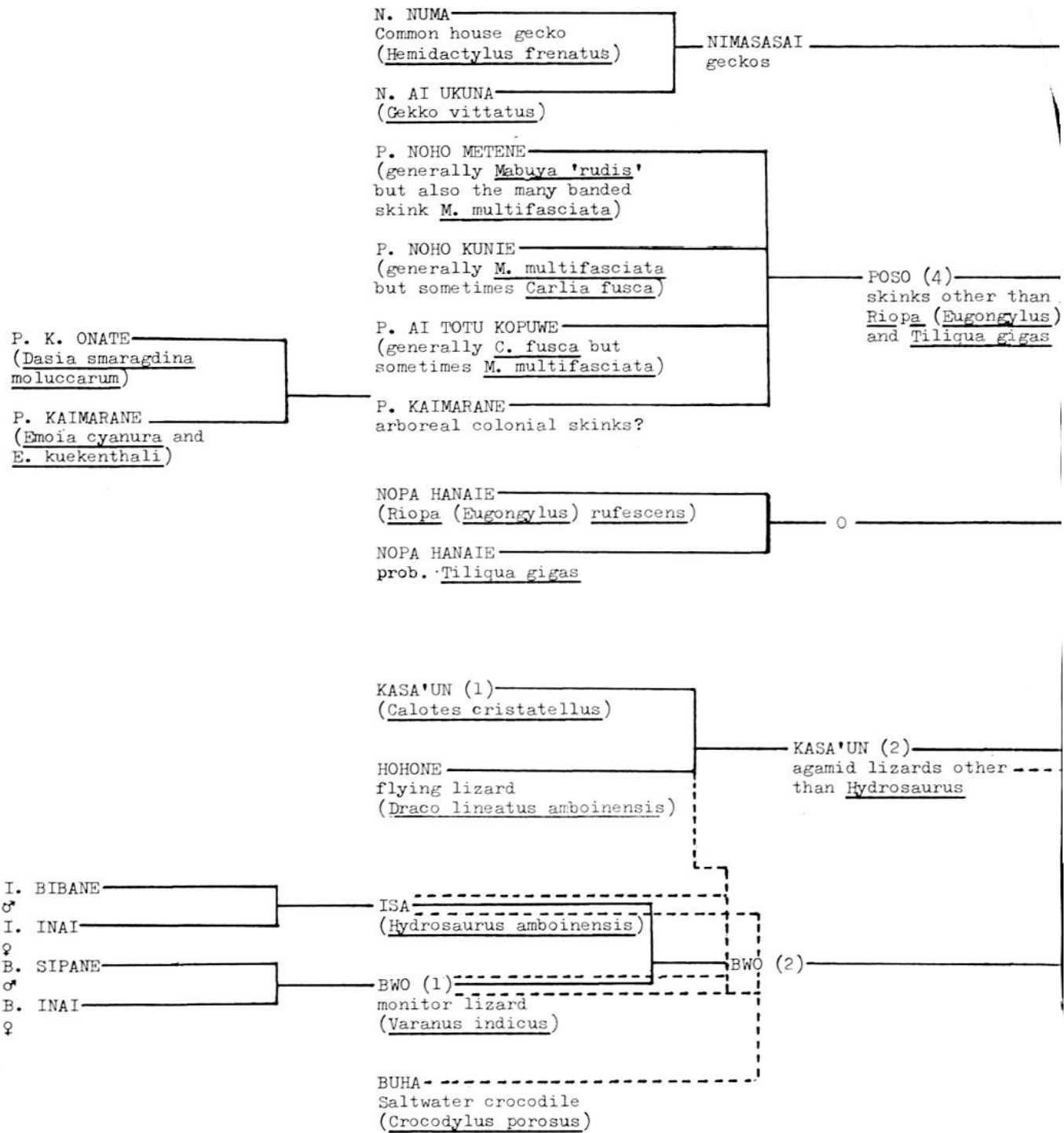
The meaning of *na rihu rihu* is uncertain: *irihuta* = 'very cold', 'to be very cold'; *eruai-eruai* = 'always sitting down', 'sitting down for a long time'. Derivation from the first term would be morpho-syntactically appropriate, while the second is semantically more apt.

In addition to these terms, *hohone* are sometimes described as either *hoho metene* (*metene* = 'black', 'dark') or *hoho marai* (*marai* = 'blue/green'). Of these, only *h. metene* was actually used with reference to collected specimens, and it seems that flying lizards which are not of a particularly dark hue are simply described as *hohone*, and lexically differentiated no further. *Hohone* is not normally differentiated into these various types, and it appears that the terms distinguish between variant individuals, rather than terminal categories in the strict sense of the word.

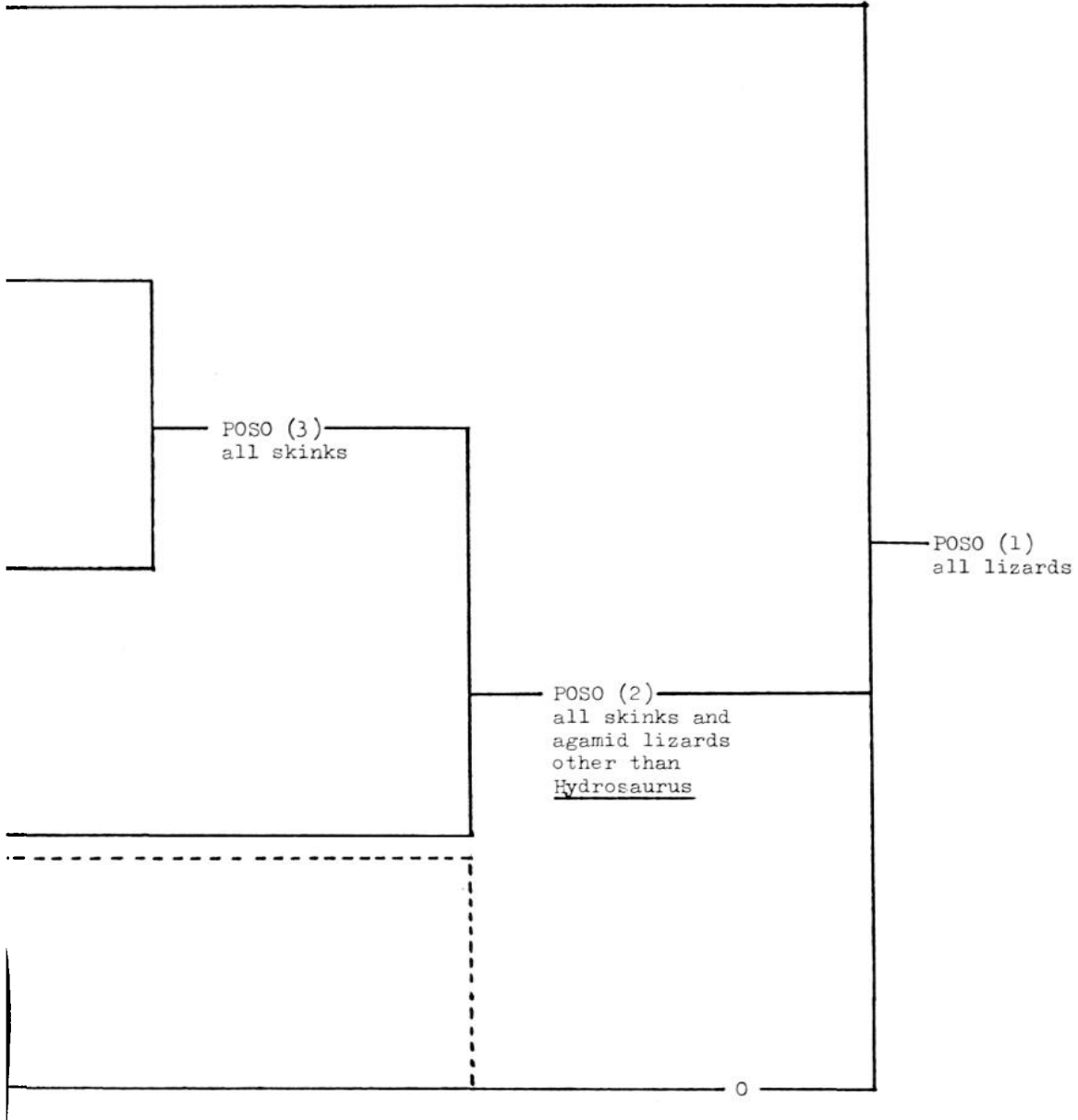
5.5 *Kasa'un (kasa uni, kasa unu)*

No etymology provided, but the term may refer to the shape of the head (*uni/unu* = contractions of *unuri* = 'head'); *kasa* may be derived from *kasane-pune* (= 'sago thatch walling'), or less probably from *kasipi* (= 'manioc'). All specimens of *Calotes*

Figure 3.— Nuaulu classification of crocodiles



and lizards arranged as a taxonomic hierarchy



crisatellus were consistently allocated to this category (but see 5.4). This species is extremely common in the garden areas and around villages. It is a great favourite among children when playing, the lizard being tied around the belly with a rattan lead. Although *kasa'un* is quite clearly grouped with *bwo*, *isa* and *hohone* on the basis of certain morphological features, Komisi says that it is distinguished from other animals by the length of its tail (which may be as much as three times the length of the body). On account of this it is said to be derived from *tekene* ('snakes'), although this is not evident from their classificatory position.

5.6 *Nimasasai (imasasai)*

Nima = 'five', and *sasai* must certainly refer to the digits or digital pads, although human digits are termed *nakata*. The terms *imasasai* and *nimasasai* are obviously in free variation, although in view of the etymology *nimasasai* is the original term. Both forms occur with equal frequency. This term is applied to all geckos (Gekkonidae) known to the Nuaulu, and as might be expected, it is the pentadactyly and the suction pads on the digits which are the crucial distinctive features of the category. Geckos are also distinguished by the small number of eggs which they lay, compared with other lizards.

There are two terminal categories applied to geckos: *n. ai ukuna* and *n. numa*.

5.6.1 *Nimasasai ai ukuna*

As has already been mentioned (5.4.2), *ai ukuna* refers to the 'tree top', 'tree branches'. In this context it distinguishes between species of geckos on grounds of habitat, between forest and village. It is described by informants as being an habitue of gardens, banana and coconut palms.

Although only two specimens were subsequently collected and formally identified, it is clear that this term is more or less consistently applied to *Gekko vittatus*, despite the fact that one of the two specimens so identified was *Hemidactylus frenatus*. On this occasion there appears to have been a genuine error on the part of the collector, partly due to the fact that the specimen did not seem to fit into *n. numa*, on account of its light coloration and mottling. This is a good example of a small sample of specimens and responses badly reflecting general classificatory practice.

N. ai ukuna is normally morphologically quite distinct from *n. numa* on account of its greater size (with an adult length of 25 cm) and colour. It is brown above and below with a distinct cream stripe along the middle of its back. This stripe bifurcates on the neck, the two branches running along the sides of the head to the eyes. The original tail has about four cream bands, but regenerated tails lack obvious pattern. The dorsal granules are interspersed with numerous small tubercles. It is the largest gecko on Seram.

Sanyau says that there is only one 'natural kind', but did distinguish varieties on the basis of the predominant hue of the skin: *n.a. metene*, *n.a. putie* and *n.a. msinai* (= 'black', 'white' and 'red' respectively). One informant described it as being derived from *bwo*.

5.6.2 *Nimasasai numa*

This gecko lays its eggs in the thatch of Nuaulu houses (*numa* = 'house'). Of the fifty responses elicited from informants for 41 specimens, all applied to *Hemidactylus frenatus*, the common South-East Asian house gecko. This has an adult length of 12.5 cm, is greyish or pinkish brown above with or without indistinct darker mottling. A dark-edged light streak passes on the sides of the head and through the eye. The

skin on the back is soft and smooth without tubercles. The Nuaulu see no necessity to recognize sub-types. Since this is the most common gecko found in south central Seram, the term *nimasasai* is meant to refer to this species when used in an unqualified way.

As for the Kalam (Bulmer, Menzies and Parker 1975: 299-300), so among the Nuaulu, familiarity with the house gecko tends to breed contempt. They are worthless little animals of slight ritual and no economic significance and yet are found everywhere in the village. Gecko-chasing is a common past-time among children who catch their tails and treat them as unfair game in play-hunting with bows and arrows, despite their small size. Yet geckos are curious creatures, and may often out-wit man in his efforts to catch them. Their tails are easily detachable and may come in a variety of shapes and sizes; some are even forked. Komisi said that *n. numa* (and by extension probably all geckos) are derived from the eggs of *bwo* (5.2), and card-sorting tests (Ellen 1977) revealed a consistent grouping of these two categories although there is no morpho-syntactic indication of this relationship. Although not utilized totemically, *n. numa* has a particular significance for the clan Somori. If one is heard calling in a house where there is a sick person this is an indication that the spirit of a recently deceased member of the clan (*sionata*) has entered the body of the gecko and is guarding the patient. If the gecko is then caught it must in no way be harmed.

5.7 *Poso*

No etymology provided. The term is used in a maximum of four senses:

1. all Sauria
2. all Sauria that are neither geckos or monitors
3. skinks (Scincidae)
4. skinks other than *nopa hanaie* and *nopa inai*

The sense indicated is generally clear from the context. Its broadest sense (1.) is rarely encountered except in the artificial situation of an ethnographer asking abstract questions concerning the classification of animals. Its second sense is more common and includes all skinks plus the Nuaulu categories *kasa'un* and *hohone*. Whether *nopa hanaie* and *nopa inai* should be included at this level or whether they are *sensu stricto* to be included in a more restricted sense (3.) is variable. The narrowest sense (4.) almost certainly has the status of a primary taxon, contrasting with *nimasasai*, *kasa'un*, *hohone*, *buha*, *isa* and *bwo*. Sub-divisions of the primary category are usually indicated morpho-syntactically by further differentiation (e.g. *p. noho kunie*, where 'noho kunie' has no meaning in terms of skink classification except when preceded by 'poso'). The different senses of the term *poso* are examined further below.

5.7.1 *Poso noho metene*

No informants identified specimens as *p.n. metene* (*metene* = 'black', 'dark'), although it is possible (on the basis of informants' descriptions) that four unidentified specimens of *Mabuya rudis* are to be placed in this Nuaulu category. On Seram this skink appears to be acting as a species distinct from *M. multifasciata*, rather than simply as a sub-specific variant (Smith 1927: 215-16; 1935: 268-9).

5.7.2 *Poso noho kunie*

Of the eighteen responses indicating this category (*kunie* = 'yellow'), seventeen referred to specimens of the many banded skink, *M. multifasciata*. Larger individuals are said by informants to be coprophagus. In general, they are regarded as dirty and polluting.

5.7.3 *Poso ai totu kopuwe*

This name may be glossed ‘rotting tree leaf skink’ (*ai* = ‘tree’, ‘wood’; *totu(we)* = ‘leaf’; *kopuwe* = ‘rotting’, ‘decaying’). It is described by informants as living on decaying leaf litter and on middens. Its colouring and patterning provide an appropriate camouflage. Of eight specimens assigned to this category, each with a single identification, three were *M. multifasciata*, three *Carlia fusca* and two *Carlia sp.* As there are no other species of the genus *Carlia* known from Seram, it is possible that specimens of *Carlia sp.* will turn out to be *C. fusca*. This would confirm the most likely view that the type characteristics of *p. ai totu kopuwe* are those of this latter species.

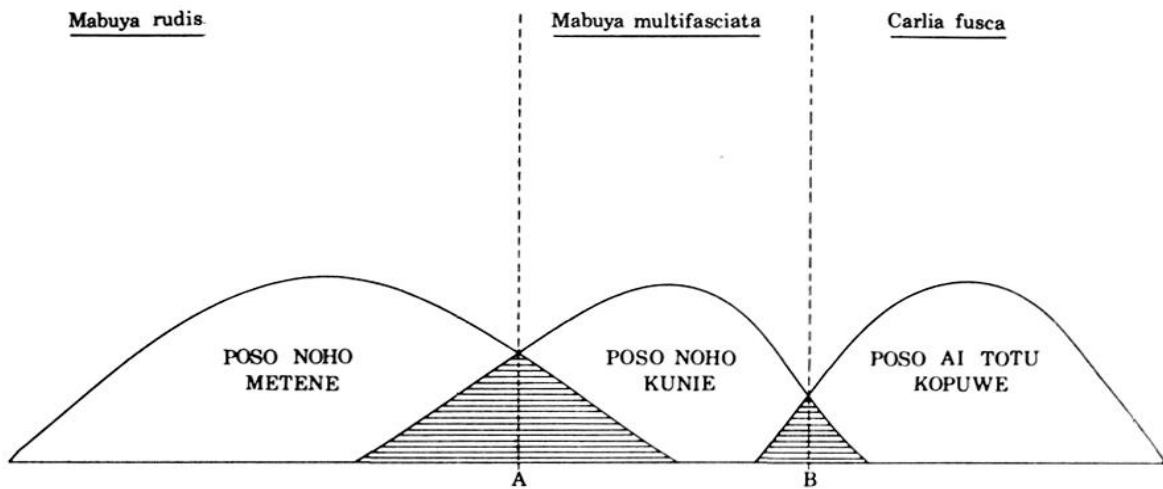


Figure 2.— *Relationship between Nuaulu taxa for certain skinks and their phylogenetic content*

5.7.4 *Poso kaimarane*

The term for this skink is sometimes simply rendered as ‘*kaimarane*’ (*kai* = ‘to climb’ (?), *marane* = cuscus, *Phalanger*: literally ‘to climb (as a) cuscus’). Like a cuscus it is said to be able to climb trees, unlike other members of the primary category *poso*.

Out of thirteen responses for nine specimens, two indicated *Dasia smaragdina moluocarum*, and nine *Emoia cyanura*. An unidentified specimen of *E. kuekenthali notomoluccensis* is also probably assigned by the Nuaulu to this category. Nuaulu appear to sub-divide it still further (which would give it an intermediate status), but not consistently so. Two identifications indicated *p.k. onate* (*onate* = ‘large’), which appears to refer to *Dasia smaragdina moluocarum*, and is commonly found on and around coconut palms. Other members of this ‘intermediate’ category seem to be simply referred to as *p. kaimarane*. One informant volunteered the term *p.k. ikine* (*ikine* = ‘small’), but this term appears to be hardly ever used. Anyway, it is clear that it refers to *Emoia cyanura*. This is a distinctive little creature seen commonly on bushes, fallen trees and in the gardens, although it is found in particularly large numbers (almost to the exclusion of other lizards) in the great sago swamp forest on the Ruatan river. The species is sexually dimorphic, the female (though smaller) being the most

easily recognizable with its bright blue luminous tail and yellow body with black horizontal bands. This sexual dimorphism is not recognized terminologically by the Nuaulu, although Retau'une did say that there were three morphological types of *p. kaimarane*; *onate*, presumably *Dasia smaragdina*, and what were clearly the two sexes of *E. cyanura*.

5.7.5 *nopai hanaie, nopai inai*

These terms, rendered *nopa hanaie/inai* and *poso nopa hanaie/inai* with equal frequency, distinguish two terminal types (*hanaie* = 'male', *inai* = 'mother') of a covertly recognized intermediate category. On morpho-syntactic grounds, one might expect them to be members of a category labelled *nopane*, but there is absolutely no evidence that this is current practice. 'Nopa' has an uncertain etymology and we have no direct information from informants on this point. 'Nopa *asu*' means 'to hold a dog' and 'nopa *okum*', 'to hold one's nose'. It may be that 'to grip' or 'to hold' is indicated here, referring to the reputation this animal has for biting humans. *Nopa hanaie* is described as very large, with 'a stomach as big as a human fist'. Its head is said to be more like that of a snake than of a skink, and by this is presumably meant that the jaws are well-developed and stand out laterally. Its dorsal surface is described as having the coloration of *poso*, while its belly is white with yellow flanks. It is said to have a vicious bite which is capable of killing a man, and the recent case of Hunimora Nepane-tomoi'en was related to Ellen by Komisi as an instance of this. The skin of *nopa inai* is said to be similar to that of a snake, with pink and black vertical stripes. Its bite is said to cause a swelling, but it has never been known to result in death. The identification of a single specimen indicates *nopa hanaie* as *Riopa (Eugongylus) rufescens*.

Nopa inai is unlikely to be the female of *R. rufescens* as the species shows no obvious sexual dimorphism. It is probably *Tiliqua gigas*, which is much larger, has darker limbs, a relatively heavier head, and some similarities in coloration. These are the only skinks regarded by the Nuaulu as being edible.

5.7.6 *kako nione*

Despite its name (*kako* = a type of frog: see Ellen, Stimson and Menzies 1976; *nione* = 'coconut'), this creature appears to be a lizard. It is compared to the monitor in behaviour, spending much of its time on coconut palms. It has a dangerous bite and 'its distinctive cry' (presumably resembling that of its amphibian namesake) is said to be audible in the late afternoon. As informants were unwilling to collect specimens, its identification remains uncertain. One individual gave the Ambonese Malay gloss *ular bisa* (= 'poison snake'), but it is clear that this term is to be equated with the Nuaulu *nanate (Acanthophis antarcticus)*. The gloss may have been used in a rather general sense to indicate the dangers associated with it. It may be that we are dealing here with what is called in Ambonese Malay *ular kaki empat* (= 'four-legged snake'). If so, it is likely to be a species of Banded skink, *Sphenomorphus muelleri*, although this does not appear to be an arboreal species (1). As skinks go, this is something of a giant with a length of up to 56 cm. Its head and throat are black, its back is pale brown mottled with dark brown and its tail has irregular transverse dark bands. There is a longitudinal dark stripe on each flank. Many skinks press their limbs flat

(1) Bulmer, Menzies and Parker (1975: 298-9) report that among the Kalam this genus is treated with considerable aversion.

against their body while undulating through the undergrowth and in this species the very small black limbs would merge with the dark lateral stripe giving the animal a legless snake-like appearance. In this case, it is unlikely that it would have a distinctive cry, and this may belong to some other animal (perhaps a frog or insect) living in the same trees.

6. VARIATION IN THE IDENTIFICATION AND CLASSIFICATION OF TURTLES, CROCODILES AND LIZARDS

That individuals within a society are not entirely consistent in the identifications they make of natural species, and vary in the ways in which they classify them, might be thought to be self-evident. And yet assumptions of homogeneity are to be found in much early work on folk classifications, and at times still appear in the literature. The information that is necessary to reveal patterned variation has rarely been presented. More recently, however, there has been a growing interest in cognitive variation, and some work has paid particular attention to arrangements of animal and plant categories (see American Ethnologist 1975; Ellen 1977, and references cited). In this final section we examine Nuauulu knowledge of the reptiles described above in terms of (a) consistency in identification (1), and (b), variation in the assignation of terminal categories to more inclusive groups.

Specimens of *Cuora amboinensis* were consistently identified as *peku. Enu* of any kind are rarely encountered and there is probably some difficulty among younger Nuauulu in differentiating between *e. hunane* and *e. ikai*. This is partly to be accounted for by the fact that Nuauulu do not generally engage in marine fishing, and it is even forbidden for some clans e.g. Sonawe-ainakahata. No doubt this is connected with the fact that prior to resettlement the Nuauulu were located in the upper valleys of the Nua and Ruatan rivers, with little opportunity to see — let alone eat — sea turtles. There is no evidence though that the term *enu* is a recent loan word, which one might reasonably expect to be connected with this fact.

In any estimate of the consistency of Nuauulu reptile identifications crocodiles must be ignored. They are seldom encountered and were not collected as specimens. Vivid folk descriptions and their occurrence in stories, however, suggests that most adult individuals would have little difficulty in recognizing them for what they are, except perhaps in the case of immature specimens.

Lizards present a much more difficult picture for interpretation than either turtles or crocodiles. Specimens of *Gekko*, *Hemidactylus*, *Varanus*, *Draco*, *Calotes*, *Emoia*, *Dasia* and *Eugongylus* appear to be more or less consistently identified from what evidence is available (table 2 above; Ellen 1977; table 1, and discussion). The reasons for this appear to be, at least in the first instance, largely a matter of their individual morphological distinctiveness. The sub-specific discriminations of *Varanus indicus* (*bwo*) and *Hydrosaurus amboinensis* (*isa*) are due to sexual dimorphism and appear to be consistently made. The sub-specific discriminations of *Draco lineatus* (*hohone*) and *Gekko vittatus* (*nimasasai ai ukuna*) are probably made rather inconsistently and

(1) Statements about consistency in identification always refer to category allocations. Some Nuauulu categories for animals may be labelled with a number of different terms (synonyms), others have several phonemically related terms which are in free variation.

relate to distinctions in location, behaviour, and in certain cases, subtle colour differences. They are probably not regarded by the Nuaulu as being 'natural', in the sense of being sexually self-reproducing.

In contrast, however, there is a rather special problem in determining the identity of certain skinks. Specimens of *Carlia fusca*, *Mabuya multifasciata* and *Mabuya rudis* were all identified by informants in a relatively inconsistent way (table 2 above; Ellen 1977: table 1, and discussion). If it is assumed that *Carlia sp.* is *C. fusca*, then the terms *p. noho metene*, *p. noho kunie* and *p. totu kopuwe* can be seen as being applied according to two relative criteria — degree of darkness and habitat — such that they overlap the three species *Mabuya rudis*, *M. multifasciata* and *Carlia fusca* as shown in figure 2. It should be noted that the degree of overlap between *p. noho metene* and *p. noho kunie* (A) is greater than that between *p. noho kunie* and *p. ai totu kopuwe* (B). This reflects the phylogenetic distance between the corresponding biological species. Although they seem to indicate the three phylogenetic species involved in terms of their ideal type characteristics, the three indigenous categories appear to be sometimes applied in a relative sense, as in A is to B (labels) as *x* is to *y* (observed animal). What may be labelled *p. noho kunie* in contrast to another labelled *p. ai totu kopuwe*, may in contrast to a lighter coloured individual of *M. multifasciata* be spoken of as *p. noho metene*. This kind of labelling, where relationships between observed animals is more important than equivalences between actual specimens and categories defined in terms of absolute distinctive features, occurs elsewhere in Nuaulu ethnozoology, but is nowhere better exemplified than with reference to skinks, and possibly frogs. In both cases the use of 'loose labels' appears to be related to the social non-utility of the species. The remaining *poso* categories do not display this property and this is undoubtedly related to their morphological distinctiveness.

As far as can be judged, there is little or no variation between informants in terms of assigning terminal categories for turtles to higher groups. Although this domain is not named, there is no difficulty in representing its inner relations as a taxonomy. This is partly due to the distinctive morphology of the group. In a card-sorting test (Ellen 1977: table 2, and discussion of techniques), 22 informants out of a sample of 25 grouped *enu ikai* and *peku* together. These were grouped with other reptile categories as follows (numerals indicate number of informants):

	<i>buha</i> crocodiles	<i>bwo (1)</i> monitor lizards	<i>isa</i> sail-tail lizards	<i>nimasasai</i> geckos	<i>poso (4)</i> skinks	<i>kasa'un</i> <i>Calotes</i> <i>crisatellus</i>
<i>peku</i>	11	2	2	1	1	1
<i>enu ikai</i>	9	4	4	3	2	2

The preference for grouping with *buha*, and then *bwo (1)* and *isa*, appears to be due to the fact that like turtles, these are to a certain extent, aquatic beasts. There seems to be no consistent reason for associating turtles with the remaining categories. The *enu/peku* distinction itself is probably made largely on the basis of habitat (sea: land).

As with turtles, there is no single Nuaulu term for crocodiles and lizards, although they are certainly construed as being closely related forms.

Buha is sometimes spoken of as a type of *bwo* and *bwo* is sometimes spoken of as a type of *poso*. Although one might argue on syllogistic grounds that *buha* is therefore a type of *poso*, in our experience it is never classified as much by the Nuaulu and

some informants emphatically denied the possibility. In the card-sorting test *buha* was grouped most frequently (in order of descending frequency) with *isa* (15), *bwo* (12), *peku* (11), *poso* and *enu ikai* (9 each). It is clear that there is some ambiguity here between *buha* classified morphologically (as a saurian related to *poso*, *isa* and *bwo*) and behaviourally (as an amphibious or aquatic form related to *enu ikai* and *peku*). Although, on balance, the 'morphological' classification appears to be the more important, even this is not completely clear. One informant justifying this schema commented 'all are *bwo*, they live in water or sometimes enter water'. It is indeed the case that *Hydrosaurus* and some monitors are semi-amphibious.

The card sorting test revealed very similar patterns of grouping for *bwo* (1) and *isa*:

	<i>bwo</i> (1)	<i>isa</i>	<i>nimasasai</i>	<i>poso</i> (4)	<i>buha</i>	<i>kasa'un</i>
<i>bwo</i> (1)	—	23	20	18	12	5
<i>isa</i>	23	—	17	15	15	5

The strong association between *isa* and *bwo* (1) confirms what has already been said about their relationship. More unexpected in view of the above discussion is the relatively low degree of association with *buha*, though in this case crocodiles may be seen as aquatic in contrast to the more terrestrial monitors and sail-tail lizards. Whether an animal is aquatic, arboreal, terrestrial, or whatever, is clearly very much a question of relativity.

The patterns of association for *kasa'un* and *poso* (4) are as follows:

	<i>nimasasai</i>	<i>isa</i>	<i>bwo</i>	<i>poso</i> (4)	<i>buha</i>	<i>kasa'un</i>
<i>kasa'un</i>	8	5	5	5	1	—
<i>poso</i> (4)	21	15	18	—	9	5

The low grouping of both categories with *buha* again suggests classificatory distancing on the grounds of a terrestrial-aquatic distinction. The strong grouping of *poso* (4) and *nimasasai* is almost certainly because both are characteristically inhabitants of the village, as opposed to the forest. *Poso* (4) and *kasa'un* are distanced classificatorily, and this must certainly be related to their morphological distinctiveness, the village-forest dichotomy and perhaps also the contrast between 'polluting' and 'clean'.

What is noticeable immediately from these groupings is that they cannot be arranged in terms of a neat taxonomy. A possible classification of Nuaulu crocodile and lizard categories arranged as a taxonomy is set out in figure 3, based on the maximum number of classificatory levels elicited. This is inevitably no more than a convenient representational device and does not include all the possible connections suggested by the results of the card-sorting test. No one informant volunteered such a schema, and in this sense it is that of an 'ideal speaker-hearer'. It is also important to see it as the *maximum* number of distinctions; it is unlikely to be elicited in this form from any hypothetical average informant. Some levels are commonly omitted and the degree to which they are relevant depends very much on context. For example, the terminal categories included in *poso* (4) may also be seen as types of *poso* (3) without the

intervention of *poso* (4) and the covert category (0). That is, the condition of transitivity is understood (figure 4a). Then there are cross-cutting classifications. For example, in response to the question 'what kinds of *kasa'un* (2) are there?', two informants listed *hohone*, *kasa'un* (1), *isa* and *bwo* (1) although the last two are also commonly grouped together as *bwo* (2) in contrast to *kasa'un* (2) (figure 4b). It is interesting to note that in the card-sorting test one fifth of all informants grouped *isa* and *bwo* (1) with *kasa'un* (1). Finally, there is the variable substitution of terms in a class inclusive relationship (not indicated in figure 3). Thus, in one elicitory context it may be in order to speak of *kasa'un* as a type of *hohone*, and in another of *hohone* as a type of *kasa'un* (figure 4c). This usage is also reported for *isa/bwo*, *nopa hanaie/nopa inai* and (for amphibians) *poro-poro/notu*. Nuauulu use of the conjunction *nai* to mean 'of the order of' (as in *isa nai bwo*) appears to be only used when the terms are not 'normally' related morpho-syntactically. We would therefore expect this to be a common usage in type C variation (Ellen 1975: 215).

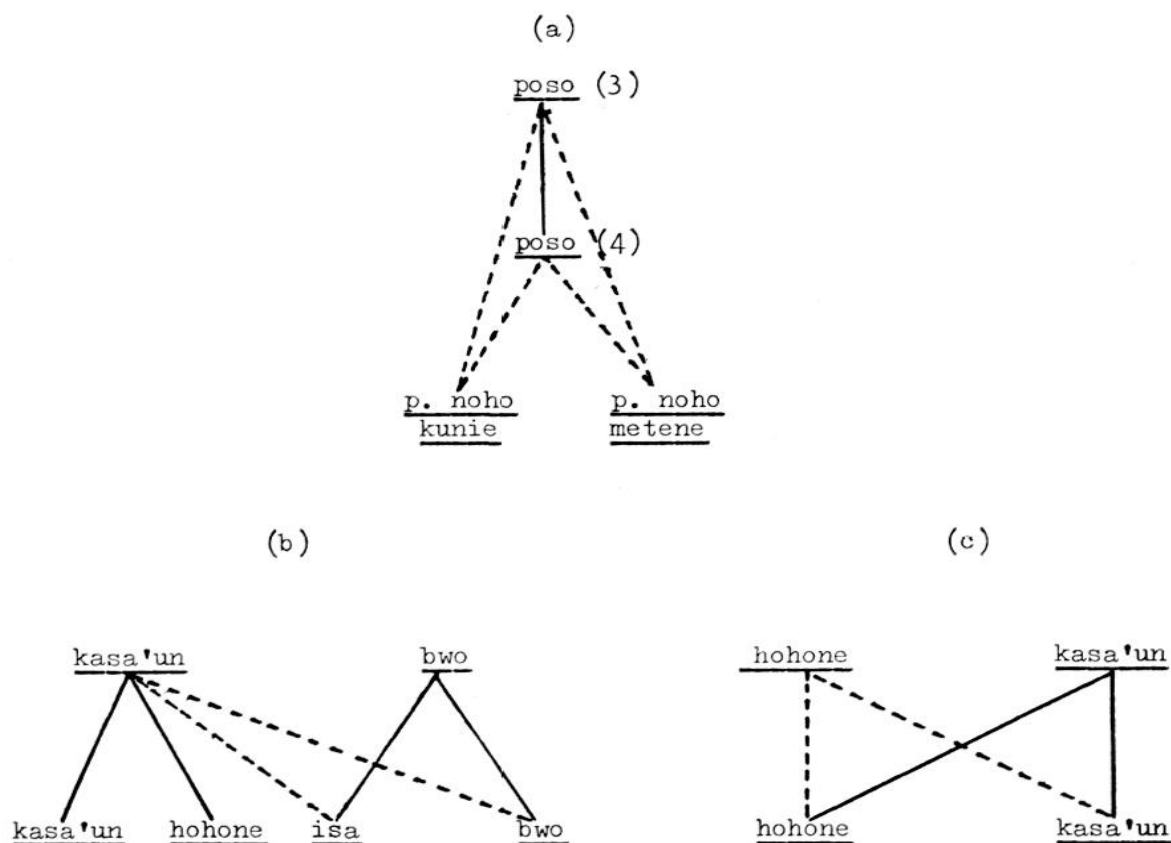


Figure 4.— Types of variation in the Nuauulu classification of lizards

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