nok kracō̜k bān (urban habitat: *bān* = house compound)

nok kracō̜k nā (rice-field habitat; *nā* = rice-field)

The latter two have been equated with *Passer montanus malaccensis* and *Passer flaveolus*.

It may be expected that *nok* will appear as a first element in the terms applied to Passeriformes. This is, of course, the largest and most complex order of birds. The term *nok* is not co-terminous with it in both a positive and a negative sense. Coraciiformes and Pelicaniformes are also included as are pigeons, owls, swallows and other small orders. Some of the crow family are excepted, having the class name *kā* = crow, and some birds of prey.

However, in the Thai avian classification, a number of other important first element terms exist, of lesser frequency than *nok* but of wide significance nevertheless. These are *kai* = fowl and *pet* = duck. The examples which follow will show that the obviously apparent distinction between wild and domesticated is not the true one. It is of a more subtle nature and probably depends on selective emphasis in certain behavioural characteristics e.g. certain types are seen as walkers or swimmers rather than fliers, though in nearly every case the bird types involved do not have the characteristic of flightlessness.

Examples

kai = domestic fowl.

kai pā = jungle fowl (*pā* having the connotation: non-domesticated, wild).

kai taphao (*taphao* = junk) fowls of types originating in China

kai fā (*fā* = heavens). Lineated silver pheasant.

kai fā sī dāo (*sī* = colour, *dāo* = star). Grant's silver pheasant.

kai nam dam (*nam* = water, *dam* = black). Indian moorhen.

kai nam bāng sī damdāeng (*damdāeng* = reddish black). Bronze-winged jacana.

kai nam ok sī thao kāe (*ok* = breast, *thao kāe* = dark grey). Indian blue-breasted banded rail.

In some of the terms used for pheasants, jacanas and rails it might be said that a certain artificiality exists, perhaps involving back-translation influence from scientific terminology. The tendency applies in other areas as well.

An example of literary artificiality is to be found in *kai fā phrayā lō̜* = Siamese fire-back pheasant, where *Phrayā Lō̜*

is the name of a Thai epic hero. N.B. partridge = *nok kathā*; quail = *nok khum*.

pet = domestic duck

pet nam = teal

pet phī (*phī* = spirit) Little grebe

pet thēt (*thēt* = 'foreign') Muscovy duck

It is interesting that the 'water walkers', moorhens jacanas and rails should bear the first element *kai* and not surprising that the grebes (Podicipediformes) should be classed with the ducks (Anseriformes) probably on the basis of a rough approximation of their appearance at a distance and swimming and diving habits. N.B. *han* = goose.

A further term of antiquity is *nu'a* which in the Ram Khamhaeng inscription of 1296 A.D. appears to connote deer in general. Modern recorded combinations are:

nu'a sanan = Schomburghk's deer (now extinct) (see Stott P. 20)

nu'a sāi = Hog deer.

However, members of the genus *Cervus* are not fully covered by the class-name *nu'a*:

ikēng = Barking deer (*Cervus muntiac* = *Muntiacus muntjak*)

lamang = Brown-antlered deer (*Cervus eldii*)

kwāng = Sambhar (*Cervus unicolor equinus*)

kwāng as a class name also occurs in

kwang phā (*phā* = cliff) = Goral (*Nemochaedus hodgsoni*).

An alternative name for this species is

liang phā dāeng (*dāeng* = red, the goral having a rich brown coat).

Note also:

liang phā = serow (*Capricornus sumatrensis*)

Thus the goral may be classified in Thai as a variety of serow or a sub-class of Sambhar.

Nomenclature for non-indigenous creatures sometimes involves attachment to an existing class: e.g.

seal *māeo nam* (*māeo* = cat, *nam* = water)

zebra *mā lāi* (*mā* = horse, *lāi* = striped)

baboon *ling nā mū* (*ling* = 'monkey', *nā* = face, *mū* = pig)

ostrich *nok kracok thēt* (*kracok* = sparrow, *thēt* = 'foreign')

turkey *nok nguang* (*nguang* = trunk of elephant)

hippopotamus { *rāet nam* (rhinoceros + water)
{ *mū nam* (pig + water)
{ *chāng nam* (elephant + water)

chāng nam is also a mythical creature with the head of an elephant and the tail of a fish, appearing in MSS illustrations.

Foreign borrowing occasionally occurs:

whale *plā wan* (from whale)

lion *singtō* (Indic borrowing)

sealion *singtō thalē* (*thalē* = sea)

camel *ūt* (Indic borrowing)

giraffe *ūt lāi* (*lāi* = striped)

The 'trigger' for the term employed may be onomatopoeic *u'ng āng* = bull-frog; *tuk-kāe* = gecko; or poetic in flavour:

nok nāng nuan (*nāng* = lady, *nuan* = pale and beautiful) = seagull, tern

Extensions

nok nāng lom

nok nāng āen lom (*āen lom* = to breast the wind) Tropical house swallow

nok āen lek (*lek* = small) Eastern palm swift

There exist, also, several highly specialized systems of classification which have come into being because of the requirements of divination where *māeo* (cat) is one class term or for more practical purposes with reference, for example to horses, or for other purposes, none of which are strictly zoological.

The most extensive of these involves *chāng* (elephant). Types of elephant are described in great detail in illustrated and decorated manuscripts prepared in the palaces. These are the *Phrakhot-lakson* (*gajalakṣaṇa*), the Treatises on the Characteristics of Royal Elephants. A fine example, dated 1816 A.D., in the reign of Rama II, is in the Chester Beatty Library in Dublin. This manuscript contains a series of figures of sacred elephants and albino elephants, associated particularly with Siva, Vishnu and Indra. It then goes on to describe what appear to be actual types of elephant. This particular manuscript contains ninety such elephants in a formal standing posture within decorated borders. These have approved characteristics. Then follow forty elephants having unsatisfactory characteristics shown in naturalistic jungle settings. Many have obvious physical defects.

A typical example of the former kind is the *Chāng Niam*, a sub-class with three varieties:

> "This shows a picture of a *Chāng Niam*, of which there are three kinds, the characteristics of which will be set down. We shall now speak of the characteristics of the *Chāng Niam* according to established record. The first kind of *Chāng Niam* is called *Hatsadin*. It is the first of the three kinds dealt with. It is named *Manīcakrarāchā*. It is short in all relevant parts of the body. The summit mound of the head is beautiful and pleasing. The tusks are white, their length being two finger joints, not extending beyond the lower corner of the mouth. It is a bold fighter and will give victory whenever used in royal warfare.
>
> The second kind of *Chāng Niam* is perfect in every part. the body is shorter than that of the third kind. The tusks are beautiful to look at and are in the shape of fowls' eggs, stretching beyond the lips of the corner of the mouth. They are from five to two finger joints in length. It is named *Manīcakrarācha* and used by the king it has magical power. That is the second kind. There is a kind of elephant called *Chāng Niam trī*. It has physical characteristics which are in all shorter than other kinds of elephant. The tusks are short and look like the flower of a golden banana. They are extremely beautiful; everything is complete. The tusks stretch from beyond the front of the trunk by five finger joints. These are characteristic of the *Chāng Niam trī* which is bold in war and wins victories with all enemies dead."

In discussing the classification of flora it is useful to refer again to early documents. In the Sukhothai inscriptions a number of fruit-bearing plants are recorded. The basic uninomial form is *māk* which, as an item of nomenclature refers to the areca. This combines with a second element, in a similar structure to that which has been described in relation to the animal kingdom. *Māk* thus becomes a designator of class, combining with the second element to designate a sub-class:

māk khām = tamarind

māk phrāo = coconut

māk muang = mango

The form *māk* has been retained in Lao, though in some cases the lexical items in second element place are different, but in Central Thai the present forms are *makham*, *maphrāo*, *mamuang*. These and similar terms apply to plants which bear fruit taken into use by the Thai.

Similarly constructed sets occur with common first elements, e.g.

man = plant with tubers

man sampalang = cassava, *man kāeo* = yam bean

man thēt = sweet potato, *man chu'ak* = lesser yam

phak = vegetable

phak bung = *Ipomoea aquatica*, frequently cultivated

thua = bean, pea

thua khrā = sword bean, *thua din* (*din* = earth) = peanut

ya = grass

ya khā = lalang, *ya phrāek* = creeping grass, 'Bermuda' grass

wāi = vine

wāi khom = rattan

tāeng = creeping or climbing plants usually of the family Cucurbitaceae

tāeng mō = water melon, *tāeng thai* = musk melon

som = bearing sour fruit, citrus

som ō = pomelo, *som cīn* (*cīn* = Chinese) sour orange

wān = plant, often with rhizomes, widely used in the Thai pharmacopoiea

wān nam = sweet flag, *wān sām rǭi rū* (*Hydnophytum formicarium*)

Terms for varieties frequently refer to physical characteristics or habitat: e.g.

phak bia lek (*lek* = small)

phak bia khiao (*khiao* = green)

Further members of the set are:

yai = large *nǭi* = lesser *nam* = aquatic

pā = wild *nā* = field habitat *bān* = cultivated

thēt or *farang* = of foreign origin.

Naming of plants is often achieved by means of independent uninomial forms: e.g.

khing = ginger *bua* = lotus, lily (having many subclasses)

sak = teak *phrik* = capsicum

saparot = pineapple *nǭina* = custard apple

These enter the classificatory system as appropriate: e.g.

phrik khī nū (*khī* = excrement, *nū* rat) = small type of chilli.

An interesting feature of Thai plant classification is the existence of a group of terms which are applied as prefixes to plant names or class-names. The most ubiquitous is the term *ton* = trunk. So common is this term that it is sometimes taken as a class designator: e.g.

ton in *ton sak* = teak tree.

A tree in its erect state is normally referred to as *ton* but the term is applicable to any plant which is seen to extrude upwards from the earth. Thus *ton* may come before the class-name designator: e.g.

ton yā khā = stem of lalang grass

ton man sampalang = stem of cassava

ton wāi = stem of cane cf. *wāi ton* = a school cane

Ton may, of course, be prefixed also to uninomial forms and it is from this usage that *ton* appears as a pseudo first element in a binomial sub-class term: e.g.

ton tān = sugar palm *ton phō* = *Ficus religiosa*

ton yāng = rubber tree *ton lamut farang* = sapodilla

The contrast with *mai* will serve to demonstrate the status of *ton*, and indeed of *mai*, as members of a prefixed set having functional significance: e.g.

ton sak = a teak tree referred to in growth

mai sak (*mai* = wood, timber) = teak wood in board, in manufactured objects, or as logs in the river.

Further members of the set are illustrated thus:

luk makhu'a thēt (*luk* = fruit, *makhu'a thēt* = tomato) tomato fruit

met makhu'a thēt (*met* = seed) = tomato seed

dōk makhu'a thēt (*dōk* = flower) = tomato flower.

Finally, attention should be called to the structural similarity of expressions which are descriptive and expressions which are classificatory. The following series may be compared and contrasted:

Descriptive	Classificatory
plā hàeng (*hàeng* = to be dry) = dried fish	*plā thū* = white mullet
plā yāng (*yāng* = to smoke) = smoked fish	*plā mu'k* = squid (*mu'k* = ink)

nok tɔ̄ (*tɔ̄* = to use as decoy) = decoy bird

nok khao = dove (*khao* = mountain)

In descriptive situations the second element is usually of a basically verbal rather than of a nominal nature. In primarily taxonomic situations the second element of binomial structures is usually nominal in basic character.

NOTE

1. In this paper, the transcription, which is not fully detailed, is according to the General System of the Royal Institute of Thailand except that short vowels are unmarked and long vowels carry a macron.

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RESTRICTED FAUNAS AND ETHNOZOOLOGICAL INVENTORIES IN WALLACEA[1]

Roy F. Ellen

... the fuss made by anthropologists and philosophers about relativism - the doctrine of the egalitarian democracy of all judgement, knowledge and theory - is founded in a mistake and that the fact that our minds are, indeed, socially structured does not entail the proposition that, intellectually, anything and everything goes.

(Macrae 1976)

The title I have chosen may suggest that my subject is an obscure and highly specific one. I hope to be able to demonstrate that it is, in fact, highly relevant and general. It is so because it addresses itself to a particular instance of the problem of the relationship between the environment as it is perceived by a specified community of South East Asians and the environment as delineated by contemporary biological science. It concerns the relationship - both similarities and differences - between what have been variously described as cognitive, cognized, perceived, conscious or home-made models and interpretative, operational or scientific ones (Rappaport 1963:159, 1968:237, Bates 1960:554, Brookfield 1969, Lévi-Strauss 1953:526-7, Ward 1965:113).

In particular, it brings together two levels of ethnozoological enquiry: the relation of natural species to man in terms of the objective biological dimension, and the study of human knowledge, conceptualization and classification of those same species (Bulmer 1975:9). In terms of the operation of the environmental and social formation to which they relate we are concerned with what Maurice Godelier (1972:10-1) has termed intentional and unintentional rationalities. The difference between the formal ethnoecological formulation of the relationship, exemplified by much of the work of Harold Conklin (Vayda and Rappaport 1968:489-492), and that of Godelier (and of systems theory) is that the former is envisaged as static and concerned primarily with the structure of perceived linguistic and para-linguistic domains. The latter is concerned with the relation of social action to perception, or - in the language of cybernetics - objective energy flow to information. My own approach to this topic is very much preoccupied with categories and their classification in use situations and not as abstract conceptions, and I am only too aware of the objections raised to the presentation of apparently definitive mental maps and rigid taxonomies (Ellen 1975:201-2, 218-23, Wallace 1962). What interests me is people as users, not collectors, although I recognize that use involves varying degrees of abstraction.

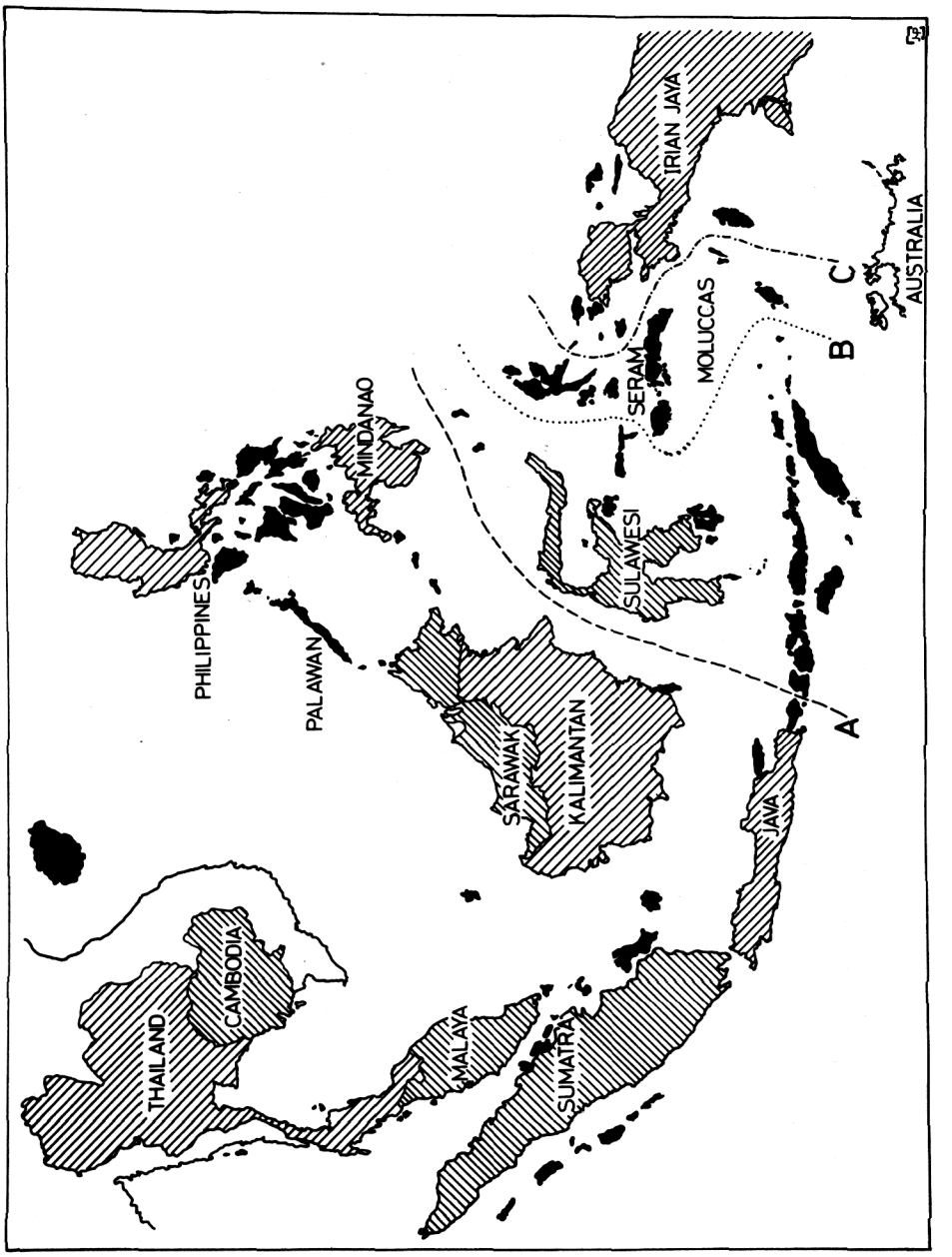

Figure 9. Wallacea and adjacent areas, showing Wallace's Line (a), Weber's Line (b) and the western boundary of the Australian region (c). Re-drawn from Darlington 1957:462.

This then is the theoretical context in which what I have to say is set. My problem though is a much more restricted and ethnographic one. I shall attempt to explore the relationship between the diversity of natural animal species on Seram, in the Central Moluccas of eastern Indonesia and the structure and extent of the inventories of animals used by one group (fig. 9) of the indigenous population (the Nuaulu) in the south central part of the island. Through an examination of a narrow problem - whether what is upheld to be a naturally restricted fauna for certain vertebrate groups is reflected in local inventories - I hope to tackle broader issues relating to the factors which determine the degree of differentiation in systems of biological classification.

Species Diversity in Wallacea

The faunas of the Oriental (south and east Asia) and the Australian (New Guinea, Australia and the Pacific) zoogeographic regions are extremely different, and where they meet in insular South East Asia has long been of fascination to zoologists (see fig. 1). In fact, 'Wallace's Line', the supposed boundary between the Oriental and Australian faunas has been the focus of generations of zoologists after its existence had been first suggested (Darlington 1957:462, 471). As first drawn by Alfred Russell Wallace (1860), the line ran between Bali and Lombok, between Borneo and the Celebes, and between the Philippines and the Sangi Talaud Islands, and the Moluccas. Later authors have debated the position of the line, especially the northern portion of it. Thomas Henry Huxley, for example, who named Wallace's Line, thought it should split the Philippines, putting Palawan in the Orient and the rest of the Philippines in the Australian region. Other authors have doubted the existence of the line altogether, maintaining that no definite boundary between the two sets of faunas can in fact be drawn. More recently an entirely new line has been proposed separating those islands with a majority of Oriental animals from those with a majority of Australian ones. This line of 'faunal balance', based on the proportion of Oriental to Australian elements is known as Weber's Line (Darlington 1957:471), and the area between it and the original Wallace's Line designated Wallacea (Dickerson *et al.* 1928:101). Still more recently it has become customary to refer to the entire area from Wallace's Line eastwards to the boundary of the Australian region[2] - the area straddling the line of faunal balance - as Wallacea. It is both inappropriate and unnecessary to enter into further details of the debate here and Ernst Mayr has authoritatively documented its history (1944). For the purposes of this paper it is sufficient to state that the area designated Wallacea, including Celebes, the Moluccas and most of the lesser Sundas, is a zone of zoogeographic transition, and that connected with this it exhibits a curious paucity of terrestrial vertebrates.

Wallacea shows a considerable overlap of Oriental and Australian groups of amphibians, mostly different families, at least from Bali. The frogs of tropical Asia, from India to the continental islands of Sumatra, Java and Borneo include at least four families and 37 or more genera. About twelve of these genera reach the Philippines and they include most of the frogs of those islands. All the tropical Asiatic families and at least nine of the genera range beyond Java and Borneo towards or into the Australian region, but they follow no single pattern and have no common limit. The frogs of New Guinea are dominated by *Litoria* and *Nyctimystes*, within the region of 61 to 100 species, and by microhylids, of which two sub-families with between 8 and 11 genera and 70-100 species are almost confined to New Guinea and nearby islands. Also on New Guinea are a few Australian myobatrachids, several true *Rana* and a few other ranids of the sub-family Cornuferinae. Thus New Guinea displays a significant radiation in frog species. On the other hand, the Moluccas, while possessing a generally similar amphibian fauna, is less diverse. There are a few *Litoria*, two genera of microhylids and a few *Rana* and Cornuferinae. In fact, the Moluccas, Lesser Sunda islands, Celebes and south Philippines represent a zone of transition between the Orient and New Guinea, and across Wallace's Line Oriental and Australian frogs overlap in a broad and complex way (Darlington 1957:147-8, 150, 153, 469 as revised by Menzies and Stimson: personal communications 1976).

Much of the Oriental reptile fauna extends towards Australia, with progressive subtractions increasing with distance. Oriental and Australian reptiles overlap in the eastern part of the archipelago, but the principle extensions into and across the transition area are all made by Oriental reptiles, some of which range (with progressive subtractions) across all the islands and into Australia. The primarily Australian reptiles range only to the Moluccas (*ibid.* 193, 198). But although there would appear to be a definite reduction of species in the area of overlap, there seems to be no corresponding extensive radiation of any group in New Guinea, as there is with the amphibia, although there are some endemic genera and many endemic species.

There is also some transition of mammal faunas between the tropical Orient and Australia, even across water-barriers. Most native Oriental mammal fauna, excepting murid rodents and bats, stops on Borneo and Java; rather smaller fractions of it reach Celebes and Bali, and little or none of it reaches the Moluccas and outer Lesser Sundas. Certain shrews, monkeys, viverrids, pigs and deer extend to some of the Moluccas, Lesser Sundas and Timor, but there is some doubt about their natural limits, many having probably been introduced by man. Murid rodents extend across the islands to Australia and Tasmania. In the opposite direction, most marsupials stop on New Guinea and its coastal islands, rather smaller numbers reach the Aru

and Kei islands, a still smaller number reach the other Moluccan islands (including Seram and Buru), and only the cuscus (*Phalanger*) extends to Celebes. Thus there is little overlap of Oriental and Australian mammals, making for a low species diversity index. In fact, if the Oriental species of the Moluccas and Timor are introduced, the only natural overlap is on Celebes, where two species of *Phalanger* occur with a small variety of native Oriental mammals. The doubtful details are not very important. What is significant is the fact that, excepting murids and bats, the mammals of the Moluccas and outer Lesser Sundas are very few, and for the most part, not much differentiated and probably recent (*ibid.* 340, 468-9).

In summary, a comparison of the faunas of New Guinea and Seram, and the Moluccas in general, indicates that the land vertebrates of these islands - with the possible exception of birds - are surprisingly little differentiated, while in New Guinea there is selected but significant differentiation among certain groups. The terrestrial mammals (except murids) of Wallacea show little differentiation. The frogs include no endemic genera and few endemic species. Reptiles, murids, bats and also birds seem to include more distinct endemics. This comparison is in part subjective, being based on our rather limited current knowledge of this area, but there can be no doubt about the low level of endemism for the non-murid terrestrial mammals of the Lesser Sundas (*ibid.* 469-70). The comparative situation for New Guinea as a whole and Seram is shown summarily in Table 1.

The Nuaulu Ethno-Zoological Inventory

Some indication has been given of the pattern of species diversity in the region, and it has been established that in the Moluccas at least there is little endemism and diversity for the groups in question. It is now necessary to compare this to the folk-inventories of the indigenous population, taking the case of the (not necessarily representative) Nuaulu of Seram. The classes of animals chosen - amphibians, reptiles and mammals - have been selected partly because to use any larger sample would require more work than is justified by the importance of the propositions being tested, partly because the distributional discontinuities with which we are interested are best displayed and understood with respect to these groups, and partly because (with the possible exception of certain invertebrate groups) they represent that part of the Nuaulu ethno-zoological corpus on which my own data are most complete.

Before discussing the lists of Nuaulu categories which correspond to selected orders of biological taxa, I should mention briefly one further point. This concerns the very idea of an 'ethnozoological inventory' and what attempts to quantify it imply. My own work on Seram has stressed perhaps more than the published work of others the variation between individuals

TABLE 1

Summary of the definitely-recorded native amphibians, reptiles and land mammals of the New Guinea region and Seram. The first figure in each column refers to New Guinea, the second to Seram. Data extracted from Darlington 1957:335 (following Tate), Laurie and Hill 1954, information provided by Mr A.F. Stimson (personal communications to Ellen 1971-6), and that obtained during the course of ethnographic fieldwork between 1969 and 1975.

	Families		Genera		Species	
AMPHIBIA	5	3	18	5	151	8
REPTILIA				35		43
Testudines	3	2	5	3	9	3
Crocodylia	1	1	1	1	2	1
Sauria	6	5	30	17	116	20
Serpentes	5	4	25	15	71	18
MAMMALIA				29		41
Monotremata	1	0	2	0	4	0
Marsupialia	4	2	24	2	47	3
Insectivora	0	1	0	1	0	1
Chiroptera	6	3+	21	14+	45+	20+
Carnivora	0	1	0	2	0	2
Artiodactyla	1	2	1	2	1	3
Rodentia (murids)	1	1	20	4	56	9

TABLE 2

Biological and Nuaulu inventories for amphibians, reptiles and terrestrial mammals. Provisional figures based on best information available at time of writing.

Class and order	Number of genera recorded for Nuaulu area during fieldwork	Number of species recorded for Nuaulu area during fieldwork	Number of Nuaulu primary taxa	Number of Nuaulu terminal taxa	Di ti in
AMPHIBIA	5	8	6	7	
REPTILIA	27	32	16	45	
Testudines	3	3	2	3	
Crocodylia	1	1	1	1	
Sauria	10	12	7	21	+7
Serpentes	13	16	6	20	+2
MAMMALIA	20	24	14	28	
Marsupialia	1	2	1	4	
Insectivora	1	1	1	1	
Chiroptera	9	11	1	9	
Carnivora	4(2)	4(2)	5(2)	5(2)	
Artiodactyla	2	2	2	4	
Perissodactyla	(1)	(1)	(1)	(1)	
Rodentia (murids)	2	3	3	4	

in both their knowledge of lists of categories and the ways they arrange them in classifications. It has also indicated individual variation in knowledge and classification through time and according to changing contexts (Ellen 1975). Consequently, rather than treat the inventory as some kind of objective record of the extent and nature of corporate community knowledge for various animal groups, it must be viewed honestly as the sum of the partial knowledge of a number of individual informants. This knowledge is sometimes expressed as that of 'the ideal speaker-hearer' (Werner and Fenton 1973:540). However, great care must be taken in using a concept of this kind, since not only is information on categories applied likely to be less than exhaustive for both any one individual and the group as a whole, but the sample may in other ways be statisfically unrepresentative of the total community. Informants chosen may be particularly knowledgeable in some areas and not others, and categories elicited may differ not because informants vary in the degree to which they apply labels to natural species, but because of the context in which names are elicited by the ethnographer. In compiling the lists used in this paper I have tried to take these various points into account. The inventory is of all names elicited for categories applied to terminal taxa (that is the lowest level of discrimination between perceived natural kinds). It excludes obvious synonyms (e.g. *mara kokowe* = *mara-hanai-putie* = *Phalanger maculatus* ♂), contractions (e.g. *mara-makinete* = *mara'inete* = *P. orientalis* ♂), descriptions of individual animals rather than taxa and terms for developmental phases and sexes.

Table 2 presents information on Nuaulu inventories for amphibians, reptiles and land mammals, compared with the numbers of biological classes and orders. The first two columns of figures give the number of genera and species respectively recorded for the Nuaulu area during fieldwork over a period of approximately 22 months between January 1970 and September 1975. For the purposes of the table the Nuaulu area is understood as that part of south central Seram which can be described as the Nuaulu exploitative environment in its widest sense, that is the greater part of the land mass between Elpaputih Bay in the west and Teluti Bay in the east, south of the watershed formed by the central mountain spine of the island. Ecologically it therefore includes the heavily populated and cultivated coastal strip, the secondary forest surrounding areas of settlement, mature lowland, swamp and montane forest over 1000 metres and the major Nua-Ruatan watercourse system (Ellen 1973:28, map 2). The figures in these columns are based largely on those for preserved specimens obtained in the field, or by close observation (as in the case of the large game animals). Only in a number of instances, for example the viverrids *Viverra* and *Paradoxurus* (the Malay civet and the common palm civet), has it been necessary to include animals for which no observations are on record sufficient to enable at least generic identifi-