which involved traders from both within and outside Maluku. What had begun as a mythically defined family of communities trading with one another had evolved into a thriving intraregional trade with the rise of various important nodes. Both Ternate and Tidore continued to attract trade as a result of their ability to maintain control of the major supplies of cloves and slaves. With this trade came the ability to import cloth from India and the archipelago, iron implements from Karimata and Tobunku, and other prestige goods in demand in eastern Indonesia. But with the introduction of the Dutch eradication policy and other trade restrictions, both Ternate and Tidore had to readjust their relationships with the Dutch in order to assure a steady supply of goods desired by their peripheries. The new demands made on the peripheral areas far exceeded the benefits which they now received from the center. The imbalance produced resentment in the periphery, but also the impetus to seek new sources of cloth, iron, and other desired goods. This led to the creation of new extensive trade networks linked by secondary ports bypassing those of the Dutch and the former central ports of Ternate and Tidore.

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NUAULU BETEL CHEWING: ETHNOBOTANY, TECHNIQUE, AND CULTURAL SIGNIFICANCE[1]

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ABSTRACT

Ways in which the betel quid and its constituent parts feature in the lives of the Nuaulu of south central Seram are described. The first part of the paper reviews the three main ingredients (areca fruits, betel pepper, and lime), the techniques employed in chewing, and the physical effects of these on the experience of Nuaulu subjects. The second part attempts to analyze some of the meanings attached to betel in social practice: in connection with curing and ancestral contacts, in the way in which it structures interaction and ritual, and in its symbolization of sharing; and how these are related to whatever changes in somatic states take place.

Hua puti matae	Unripe white fruit
Loi-loi en aie	Beautiful flower
Siu tasi osi	The pouch is raised and given
Momoi ia ne hua	My grandparent chews the fruit
Momoi ia ne hua	My grandparent chews the fruit
Hua kira kira	Chew the fruit
Siu siu tasi	Lift, lift the pouch
Ninai enie	Ascend to Aihisuru
Enie kaisunu	Descend from Aihisuru
Iama pori-porio	To Niamonai

(A free translation from the original Kepata Ararirane)

INTRODUCTION

The chewing of psychoactive betel, a term which usually implies the use of a "quid" comprising a mixture of *Areca*, betel pepper, and lime has in recent years generated some interest in the medical, ethnomedical, and psychiatric literature (e.g. Burton-Bradley 1979, Cawte 1985, Lepowsky 1982). As a cultural phenomenon it is also well-known to anyone who has conducted fieldwork in those areas where it is found, that is throughout south and southeast Asia and in most of Melanesia (Cawte 1985, Conklin 1958). In some parts of the world betel use is expanding (Hirsch 1990), elsewhere (as in urban Indonesia) it is on the decline (Reid 1985:529). But while there exist a few general works which review the subject in depth (Lewin 1889, Peeters 1970, Reid 1985, Rookmaaker 1905), as well as surveys of its attendant material culture (Thierry 1969), and a handful of ethnographic case studies (e.g. Onvlee 1933), in much of the area where it is found, it is part of a taken-for-granted backdrop and not a matter for detailed analysis—always present as part of something else but rarely a specific focus of attention. For all of Southeast Asia, only the monographical essay by Conklin on the Hanunóo (Conklin 1958) stands out as a notable contribution to the subject for a particular people.

In this paper I explore a range of ways in which the betel chew, its constituent parts, and the material paraphernalia associated with it feature in the lives of one eastern Indonesian people, the Nuaulu. The Nuaulu currently comprise a small population of sago-extractors, swidden cultivators, and hunters, located at various settlements in south Seram, in the province of Maluku. Nuaulu social organization is constituted around exogamous patriclans, each being divided into two complementary clan sections, or 'houses'. The clan sections are in relations of reciprocal ritual exchange, and each clan is in a similar relation with other clans, which includes a terminological presumption of marriage between bilateral classificatory cross cousins.[2] On present evidence, this is an unusual form of organization for the central Moluccas during the modern period; but in their betel-chewing practices the Nuaulu are widely representative of the region as a whole—at least this would appear to be so based on fragmentary accounts of the practice from elsewhere.

There are three essential ingredients in the Nuaulu betel mixture: the areca fruit (*kanai*), the betel pepper fruit (*kam*), and some form of slaked lime (*nosa*).[3] All three are necessary for the chew to be effective, and I shall deal with each of these in turn in Part 1 of the paper. I shall also consider the techniques employed in chewing betel and briefly review the clinical and pharmacological evidence as it relates to the condition of Nuaulu subjects and their own experiences. In the second and more discursive part of the

paper I try to analyze some of the meanings attached to betel in social practice. In doing so, one must, of course, begin with the same observation that concerned Conklin in his seminal study of Hanunóo chewing (Conklin 1958), namely the self-evidently vital role of the quid in initiating and promoting interpersonal relationships (including relationships with the supernatural), and as a way of structuring interaction. But what is striking about Nuaulu use of betel—though not in any particular way ethnographically peculiar—is the simultaneity of chewing as a mundane masticatory accompaniment of any social encounter and its periodic occurrence as a charged symbolic practice. I shall attempt to show how the betel quid becomes a condensed symbol of sharing, of ultimate consumption, and how this is related to the physiological effects of chewing which are experienced as an enhanced form of social knowledge. There is a short appendix on the material culture of chewing betel.

PART 1

Areca

Areca is a small genus of palms, the chief of which is the domesticated betel-palm (*Areca catechu* Linn.). Nuaulu grow this species from seed and it will bear fruit after 5 or 6 years. Thereafter it can provide fruit for another 20 years, productivity depending on the depredations caused by occasional bud rot. It will persist sterile for up to a further 35. Palms are consequently a resource which can be transmitted over several generations, and are typically regarded as clan property, though associated with particular households and individuals. They require little labor once they have grown above the height of the most persistent weeds, and those entitled to pick the fruits (immediate kin and affines) do so as and when they are ready. Though a palm of the rainforest undergrowth, *Areca catechu* will tolerate open conditions (Uhl and Dransfield 1987:416), and usually appears singly or in clusters around Nuaulu villages, in gardens in their third year after cutting (*nisi ahue*) and beyond, and in quite advanced secondary growth. It often appears interspersed with *Cocos nucifera* in what are otherwise predominantly coconut groves. Deserted upland village sites are also a continuing source of areca and there is evidence that they are actively propagated in these places. Palms grow well in such sites as the conditions approximate closely the favored habitat of their wild progenitors. Nuaulu believe certain upland areas of central Seram (such as in the vicinity of Manusela), and where the palm is found to an altitude of about 1500 meters, to be particularly rich in areca. I have not been able to substantiate such stories, but they may be

partly exaggeration linked to a remote location notable for extremes in many things. Despite the apparent ease of cultivation, the high value attached to quality sometimes results in serious conflict following theft or disputed claims to ownership.

Areca fruits grow in clustered branches. Although Nuaulu believe that all three ingredients in a chew are necessary for it to be effective, it is above all the size and quality of the areca fruit which is considered to matter most. An experienced and discerning chewer has the knowledge and ability to recognize a good product from an inferior one (and to explain why) and also to understand that the seeds of some fruits on an individual tree may be unpleasant—causing tightness in the throat and choking—and are therefore to be avoided. It is a know-how derived from practical experience rather than from the application of a few simple rules, as varieties of *kanai* are ill-defined owing to much cross-pollination by insects, and polymorphous in relation to the size and shape of the fruits. However, it is usually possible to distinguish round and long varieties, and to grade according to size. Nuaulu recognize six focal kinds, all of which appear to be varieties of *Areca catechu*. These are set out in Table 1. In addition to classifying *kanai* into different natural kinds, an individual fruit is identified according to its age. Young fruits are small and green (*kanai wanie, kanai ikine; wani-* meaning 'younger same sex sibling' and *ikine*, 'small'), in contrast to those which are old and hard (*kanai mene*, 'dry' *kanai*), the seeds of which require pulverizing. The seeds can be chewed in the ripe or unripe state, are sometimes picked young and sometimes old, depending on fancy and presence. Nuaulu use fruits from other related species of *Areca* if *catechu* is unavailable.

In his *Herbarium Amboinense* (see de Wit 1959), Rumphius lists 6 kinds of Pinanga, a generic term he takes from the Malay *pinang*, meaning areca fruit. Two of his species we would now bring together as races of *Areca catechu*: his Pinanga alba and Pinanga nigra. This would appear to cover the color range of Nuaulu *kanai*. A third Rumphian species, Pinanga silvestris glandiformis, equates with the wild *Areca glandiformis*. A. *glandiformis* Lmk—the Moluccan form—is used by the Nuaulu as a substitute for *catechu* but is said to leave a bitter taste. The remainder are not of the genus *Areca* at all, though they are palms: namely, *Actinorhytis calapparia* (Bl.) (HA Pinanga calapparia), *Mischophloeous vestiarius* (HA Pinanga silvestris e Buro), *Pinanga punicea* (Bl.) Merr. (HA Pinanga silvestris glandiformis), *Calyptrocalyx spicatus* (Lmk) Bl. (HA Pinanga silvestris globosa), *Gronophyllum microcarpum* Scheff. (HA Pinanga silvestris oryzaeformis), and *Drymophloeus saxatilis* Bl. (Mart.) (HA Pinanga silvestris saxatilis).

Table 1. Internal division of the Nuaulu category *kanai* (*Areca catechu*).

	NUAULU TERM	ENGLISH GLOSS	DIAGNOSTIC FEATURES
1	*ia nenane*	pron. + *neni*? 'dizzy' The term is also applied to a species of *Hibiscus*	L = approx. 4.5 cm (dried leaf sheath used as wrapper for sacred objects)
2	*nopane*		yellow fruit, larger than 1, considered best variety
3	*makawana*	'stay up late', allusion to seance	larger than 2
4	*pona*		larger than 3
5	*putie*	'white'	size as in 2, young fruit white in color
6	*kakaue*	*kaka* 'older same sex sibling'	

In addition to the various uses to which the fruit is put, Nuaulu also occasionally eat the cabbage and sago of *A. catechu*. The dried leaf sheath or spathe is employed as a wrapper (*hakinohai*), and is considered superior to the banana leaf for this purpose.

Betel pepper

As with areca fruit, betel pepper (*kam*) is distinguished according to whether it is young and green (*kam honue*) or old, brown, and tough (*kam aiea*). Irrespective of the condition of individual fruits, Nuaulu recognize at least six natural kinds. These are set out in Table 2.

There are a large number of representatives of the genus *Piper* known from the central Moluccas. In his *Herbarium Amboinense*, Rumphius lists 11 kinds of *Piper* to which he attaches the labels Sirium, Sirifolium, or Siriboa (< Malay *sirih buah*), and which it is reasonable to assume served from time to time as potentiating agents in the betel quid. Of course, not all of these would have been of Moluccan provenance. They are listed in Table 3.

Of all the forms of *Piper* known from the Moluccas, and including those documented by Rumphius, only *Piper betle* is domesticated. Nuaulu grow it from cuttings which mature within the year. A single plant can be used for 10–12 years without taking the vine off its support, usually a coconut trunk

on the village periphery, in a garden or grove. It requires relatively little attention, though may be infected with foot rot linked to leaf lesions, leaf spot, wilt and powdery mildew, and infested by the usual range of bugs, mites, and aphids. Other species of undomesticated *Piper* are occasionally used: certainly *stylosum*, *reinwardtianum*, and *forstenii*, probably *amboinense*, *sarmentosum*, and *retrofractum*, and possibly also *caducibracteum*, *decumanum*, *gelalae*, *arborescens*, and *umbellata*. These latter are all reported for either Seram or Amboina, though none were collected in the field or apparently specifically labelled by the Nuaulu. Though some species are considered unsuitable for chewing, indeed may result in nausea, the leaves and roots (for example of *caninum*) are used in folk remedies or cosmetics.

Table 2. Subdivision of the Nuaulu category *kam*.

	NUAULU TERM	*PIPER* VARIETY	DIAGNOSTIC FEATURES	VOUCHER REFERENCE
1	*niane* 'village'	*betle* L.		5
2	*apane*	*forstenii* C.DC	large leaf, fruit not chewed	726
3	*sisinate*	*reinwardtianum* (Miq.)	large leaf, small fruit, leaf chewed	727
4	*hau*	prob. *amboinense* C.DC	small leaf, leaf only chewed	728
5	*malaka* 'Malacca'	prob. *retrofractum*	large leaf, leaf only chewed	729
6	*hanate* 'west wind'	*caninum* Blume	fruit red and very hot long leaves, long fruit, roots used to scent coconut oil	761
7	*ine*	*stylosum* Miq.	medium leaves, small fruit	222
8	*wane* 'string'	prob. *sarmentosum* Roxb.	small leaf, globular fruit	329

Table 3. Species of *Piper* described by Rumphius as Siri.

1	Sirium frigidum longifolium	Piperaceae
2	Sirium frigidum rotundifolium	*Piper bantamense* Blume
3	Sirium arborescens tertium alterum	*Piper amboinense* (Miq.)
4	Sirium arborescens tertium	*Piper arborescens* Roxb.
5	Sirium decumanum	*Piper decumanum* L.
6	Sirium decumanum album	*Piper reinwardtianum* (Miq.)
7	Sirium termestre	*Piper sarmentosum* Roxb. ex Hunter
8	Sirium (Sirifolium) sylvestre	*Piper caducibracteum* L.
9	Sirifolium	*Piper betle* L.
10	Siriboa	*Piper betle* L.
11	?Siriboa sylvestre	*Piper gelalae*

SOURCE: H. C. de Wit 1959:397

Lime and lime-making

Nuaulu produce mineral quicklime by burning shells (*kotu nosa*, 'burning lime'). They use a fire (*usa nosa*, 'lime fire') or kiln (*nosa hatai*) which produces the required draught. Heat and evenness of burn is achieved by stacking graded fuels in a particular fashion, and the whole structure is supported by two lengths of sago leafstalk (*tope*), which raises the pile sufficiently to allow adequate ventilation. On this are placed seven or so layers of split dried bamboo, each layer running in alternate directions. Shells are placed on top and the whole covered in coconut shells. Once the fire has thoroughly burned-through, and while the ashes are still hot, prepared banana leaves are roughly dried over the rekindled fire and used to wrap around the partly reduced shells, forming a package of at least three thicknesses. At this stage slag—that is, obviously black unburned shell (BM 1972 As 1.145)[4]—is removed, since it leaves what chewers regard as an undesirable impurity in the end-product. What remains will still contain visible but minute pieces of unburned shell which cannot be easily removed by physical separation. In order to eradicate these, the residue (BM 1972 As 1.144) is then placed back in the hot ashes and covered over with other ashes, where it is left for between one and a half and two hours. During this period the fire may be fed by the addition of further dried bamboo and coconut shells. The higher the temperatures reached, the faster and more efficient the conversion. Judging from comparisons with bonfires of similar

fuels used elsewhere in pottery-making, temperatures must reach mean maxima of between 600° and 900°C (Tobert 1984:147–148).

The shells give roughly their own weight in powdered lime, most of which is calcium oxide, with some unconverted calcium carbonate. Prepared lime is kept dry rather than damp, wrapped in banana leaves and stored in baskets above the fire at the west end of each house. It may also be put in large bamboo internodes (*atihuie nosa*) with sago midrib stoppers (e.g. BM 1972 As 1.37, H = 20 cm), or in small long-necked bottle gourds, about 14 cm high (BM 1972 As 1.139) and 12 cm stoppered bamboo phials (BM 1972 As 1.140). Those with incised decorations are known as *atihuie nikate* (As. 1.142) 'patterned bamboo container'.

Nowadays, the raw material used for lime-making is largely seashell, though formerly it would have been freshwater and, to a lesser extent, terrestrial shell. Mollusc shell of whatever origin is between 93 and 99.80 percent calcium carbonate. In marine forms, this occurs predominantly as calcite crystals and in terrestrial forms as argonate. This makes no difference to the process of conversion (Nicol 1960:640). However, terrestrial and freshwater molluscs in the humid tropics tend to have, on average, thinner shells, owing to the fact that they have to withstand less pressure and other forms of turbulence and rough treatment than marine shells. For this reason, marine shells provide proportionately more lime. Of the 39 shelled mollusc species reported by the Nuaulu as having uses, 18 were said to be used in lime-making, though this probably underestimates the total number of different species used for this purpose. Of these, 11 were marine species and 7 freshwater or terrestrial. Most were gastropods, though the marine species included clams of the genera *Tridacnes*, *Tridacna*, and *Periglypta* (Ellen 1990b:300–311). Elsewhere on Seram, lime is made by breaking coral or limestone, and burning it in a kiln at somewhat higher temperatures to drive off the carbon dioxide. Lime made in this way is sometimes acquired by Nuaulu (BM 1972 As 1.146) through trade with the nearby Muslim settlement of Sepa.

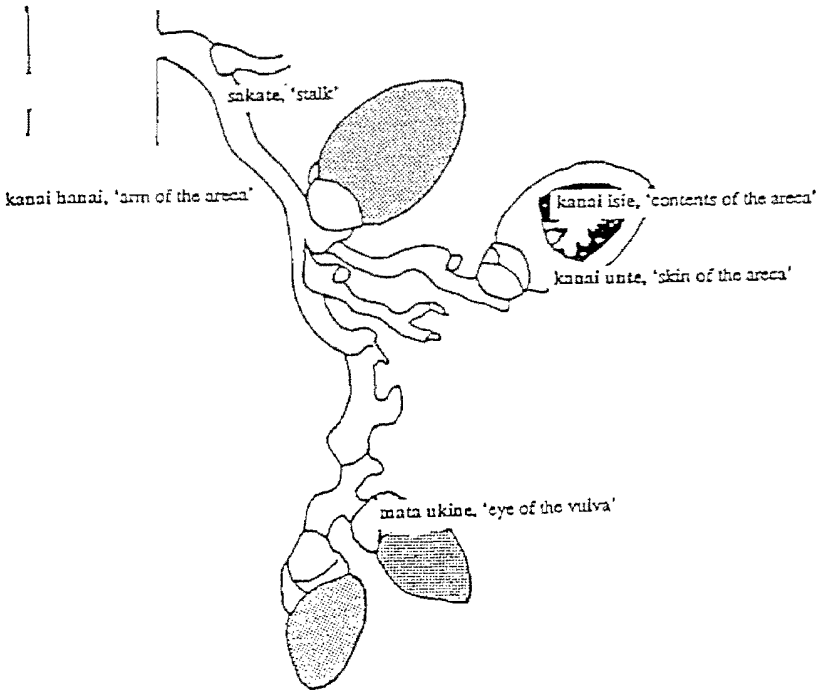
The technique of chewing betel

The Nuaulu possess a specific transitive verb, *pota*, for betel chewing. The imperative is *potaia kanai!* 'chew betelnut'. Thus, *kanai* (*Areca* fruit) stands metonymically for the whole quid. *Kanai* is also used metonymically (often to include tobacco) in contexts in which it is used as an offering, as when placing the ingredients (*aunutu kanai*) in the thatch of a garden hut prior to, say, cutting sago palms. I return to this particular usage below. Elsewhere, as in the passage of the Kepata Ararirane (the tug-of-war song) which prefaces this paper, a classifier for fruit (*hua*) is employed as a synecdoche

for both the *Areca* fruit and the betel quid as a whole. Only rarely is a nontropic term used to refer collectively to all betel ingredients, and then it is a relatively clumsy juxtaposed uninomial (*kanai-kam-nosa*), as in *tasi kanai-kam-nosa*, the betel pouch.

Areca is collected by breaking off a stalk of the inflorescence, or a branch of the rachis (*sakate*) with attached fruits from the rachis itself (*kanai hanae*). The fruits are then cut off at the stem below the vestigial perianth. This part of the fruit, the old flowercase, is referred to by Nuaulu as the *mata ukine*, literally 'the eye of the female pudenda' or 'vulva'. The various parts mentioned so far in the process of detachment are illustrated in Figure 1.

Figure 1. Nuaulu terminology for parts of the Areca inflorescence.



In the normal way, when individual areca fruits come to be used by Nuaulu chewers, the perianth (at the stalk end) is first removed and the fruit split lengthwise with a parang. The soft endosperm of the young fruit is separated and the fibrous husk discarded. Neither the husk nor its contents is prepared in any other way before use. A small piece of endosperm is placed in the mouth and chewed. A spear or "catkin" of aromatic betel pepper fruit is then dipped into the lime and the end to which the lime has adhered bitten off. The ingredients are masticated for about 15 minutes, stimulating a profuse flow of bright red saliva, which is decorously spat out (or less decorously drooled) on the ground to the side. After a while the quid begins to lose its flavor and is expectorated. The only unusual component in the Nuaulu chew, and this is found throughout the Moluccas, is the use of the young fruit spears instead of the leaves of *Piper betle*. This practice is reported by Galvão (Galvão 1971[1544]:57) for as early as 1544 (see also Heyne 1950[1927]:6). Although the pepper leaf is sometimes used, it is not common. Occasionally Nuaulu may add tobacco to the quid, and especially if the areca fruit is young, it may sometimes be chewed without pepper or lime.

The quid is chewed for taste and the gentle changes in body and mind which it induces. Indeed, most of the organic matter which enters the mouth is in due course evacuated and relatively little digested. The local and specific physiological effects include contracted pupils and an increased secretion of tears, sweat, and saliva; the general somatic consequences are a feeling of well-being and relaxation, an increased capacity for activity, stimulation of talkativeness, and the intensification of feelings of sociability (Burton-Bradley 1979:482). The emotional changes are normally restricted to mild euphoria, though continued use is reported to make some users excitable, especially if their resistance to stimulants is reduced through under- or malnourishment (Cawte 1985:84). Nutritionally, inorganic analysis of *Areca* has yielded K, Ca, Mg, Na, Fe, Cu, Zn, Mn, and Co; while *Piper* has yielded K, Ca, Mg, Ma, Mn and Co. It is not known whether these make any useful contribution to trace elements in short supply, but it seems unlikely. It is more certain that the quantities of calcium consumed through the intake of lime are comparatively much greater, and this may turn out to have some measurable effect.

On the negative side, it has been suggested that chewing betel is linked to oral cancer. This is unproven, and the condition may have as much to do with irritation caused by caustic lime (Burton-Bradley 1979:485, Cawte 1985:83). Certainly, use of too much Nuaulu lime routinely causes a burning sensation in the mouth. Looked at under a low-power binocular microscope, the lime contains tiny spinicules of unburned shell which might occasionally rupture membranes lining the mouth or erode tooth surfaces. Betel may also

have some detrimental effect on thiamine levels (Lepowsky 1982:334). It is reported that excessive chewing results in pathological lose of appetite, continual salivation and, if swallowed in large amounts, dizziness. Chewing may affect the teeth (e.g. Burkill 1935:228), though this is most probably caused by the abrasive effects of lime rather than the chemical properties of the quid. Indeed, the balance of opinion is that dental caries and plaque are reduced amongst chewers due to fluorides and the bactericidal effects of essential oils in the betel pepper (Hada et al. 1989; Jatisatienr 1986:56; Moller, Pindborg, and Effendi 1977). In some cases, chewing is known to have become addictive, and very rarely it may give rise to toxic psychosis (Cawte 1985:84). For the most part though, constant spitting minimizes toxicity.

Areca fruits contain the alkaloids arecoline, arecaidine, guracine, arecolidine, guvacoline, isoguvacine, and choline (Burkill 1935:227). Arecoline is mildly narcotic but not toxic, acting like nicotine on the central nervous system, and can produce paralysis. The astringency comes from tannin. Arecoline is hydrolyzed to arecaidine by alkaline calcium hydroxide (slaked lime), released by the addition of water in the saliva. The amino acids arecaidine and guvacine appear to enhance the sedative effect of gamma aminobutytric acid in the brain (Lodge et al. 1977), slowing down reaction times. Although the areca derivatives appear to be the most active constituent of the chew, we should not underestimate the impact of volatile essential oils (mainly betel-phenol isomers of eugenol (42.5 percent) with lesser amounts of other oils, and terpene-like substances), and perhaps also potassium nitrate, present in the betel pepper (Burkill 1935:1766, Cawte 1985:83). Moreover, essential oils present in the leaves of *Piper betle* have been shown (Rawat, Banerjee, and Balasubrahmanyam 1989) to have carminative, antiseptic, and antifungal properties. If tobacco is chewed with the quid, then nicotine must be added to the list of active ingredients.[5]

Old people with few or no teeth must first either pulverize the hard old areca fruit in a mortar (*nesune*), slice off manageable bits with a blade, or employ some form of grater. On one occasion I witnessed an old oval pomade tin being used in this way. The lid had been punctured in six or seven places and gratings conveniently accumulated in the base of the tin which was periodically emptied. Employing this or some other method, a red paste is then made by mixing the areca slithers or gratings with the remaining ingredients, together with some spittle. It is this preactivated mixture which is chewed. The mortars used are identical in form to those used in food preparation, being made either from wood (usually hard *Endospermum* wood: see e.g. BM 1972 As 1.37) or coconut shells (*sahaunue*). The pestle is known as a *masaisa kanai*, and may be made of wood, stone, or occasionally metal. I have seen large bolt shanks from

wrecked vehicles being used in this way. An alternative means of preparation for those who cannot do it for themselves is prechewing by another person. It is common to come across the quid being prechewed by an adult and then given to children, chewed by a husband for a wife (and vice versa) or by a woman for her sister.

PART 2

Social uses of the quid[6]

Nuaulu people chew betel many times a day, and there is no one other than small children who do not chew. Chewing is therefore in the normal way an unmarked, unselfconscious, and wholly unremarkable aspect of ordinary daily experience. It is among the most intimate of activities, to the extent—as we have seen—of related persons prechewing for each other. In this respect it is rather like delousing, which is an often public exchange which takes place only among close kinfolk or lovers. The betel chew ingredients are essential elements of hospitality offered to whomever is nearby when one wishes to chew. Reciprocally, friends and kin do not hesitate to request ones betel ingredients. At informal meetings of adult males (*lowe*) it is always available and passed around; during cooperative labor—such as housebuilding—it is an expected part of workplace culture. Chewing betel is therefore quintessentially both a required ingredient of, and therefore a metaphor for, sharing. The physiological properties of the chew only serve to intensify the experience of shared communion, having the effect of dissolving individuality into a common blurred state of awareness. It is therefore the absence of betel which will be remarked upon, its denial which is significant, and its detachment from the commonality premeditated. Thus, the first and most conspicuous secular circumstance in which betel-chewing moves from the mode of "obviousnesses"[7] to the reified is when it is offered to special guests and dignitaries from outside. Non-Nuaulu will always be offered betel, and this offer assumes mutual trust and friendship. But, paradoxically, by offering someone unrelated the intimacy associated with chewing betel, you make yourself vulnerable to attacks of sorcery. It is for this reason that the ingredients of the quid, or the expectorate, are regarded as among the most favored materia maleficum of sorcerers (Ellen 1989).

The uses of the quid, over and beyond its role as an intensifier of individual and collective experience, arise as a consequence of these things, and make no sense except in relation to them. The only exceptions are the claims that the betel chew gives a pleasant odor to the breath, cleanses the mouth after eating, attractively stains the lips, strengthens the teeth, and (despite no apparent nutritional value) does have some important hunger-reducing properties which permit the chewer to increase concentration, work longer, and avoid fatigue. Whether or not these properties are technically demonstrable, Nuaulu use betel in this way on long journeys, in order to ward off hunger where there are few opportunities for proper eating. Some peoples chew betel in times of fasting or when subject to intense food taboos (e.g. Hirsch 1990) but this is not true of the Nuaulu.

We may conveniently divide the social uses of the betel quid into four categories: (1) as a material for divination, (2) as a substance which can be used to heal, (3) as offerings to ancestral and other spirits, and (4) as a marker whose consumption usually signifies the establishment or re-establishment of ordinary sociality. Readers may note certain substantive and structural similarities between (1) and (2), and between (3) and (4). These may be indicative of underlying patterns, though they are not pursued to any extent in the present brief account.

1. Betel in divination

Betel quid ingredients are used in two forms of divination: *nau kanai* and *nau nosa*. The first of these is regarded as the most powerful and involves, in addition to the areca fruit, the use of the betel pepper spears. The technical details of divination have no place in this account, other than to mention that the magical residues—the husks of areca (*kanai unte*) and lime—can never be discarded, since they have acquired sacred essence through use. This often explains the presence of large quantities of such materials in house lofts or in garden huts.

2. Betel in curing

In a general way, betel is used in the curing of many illnesses, through its prominent role is in spirit mediumship. A medium in his or her capacity as a materialized ancestral spirit (*saruana*) takes areca, chews it, and then mixes it with ginger and coconut oil. It may be passed to the patient to chew, or it may be spat onto the affected parts as a fine spray (*suisene*), blown into the ear, or spat onto a red cloth which is then rubbed over the patient. But betel should not be understood as merely a "cool" potion used by a medium to effect a cure. It is also an essential part of the process by which spirit familiars are attracted and, once attracted, hosted; and also a very practical way of somehow boosting that altered state of consciousness which ideally exists on such occasions and which we call a "trance."

Areca fruit is also used in much more specific, illness-related, treatment (*nori-nori kanai*). Preparations are used for diarrhea and other intestinal

disorders, and it has long been known that extracts of areca have beneficial effects on tapeworm infestation (Fang et al. 1949). It also has bactericidal properties which are effective against dental caries and plaque. Spat onto and rubbed into bruises and cuts, the betel expectorate serves as a mild antiseptic and the masticated quid is commonly pressed into open wounds and ulcers to form a kind of artificial scab tissue. Leaves of the betel pepper are also used on ulcers, boils, and bruises, and to clean wounds. Such specific treatments—available for hunting dogs as well as for humans—are inherited as part of esoteric clan and clan-section knowledge, and are seldom regarded as being effective without the appropriate magical formulae.

3. Offerings of betel

The basic element of most ritual, either in the form of an offering to ancestral spirits or as a gift to guests consuming the ritual, is a platter of betel-chewing requisites and tobacco, known as a *papue*. In all cases, the basic ingredients are virtually identical: areca fruits, betel pepper fruits, lime, tobacco, and a receptacle. In some offerings the tobacco is replaced by coconut oil. The principal differences are in terms of the amounts involved, the kinds of receptacle, display of the items, and their quality. Thus, in most offerings, the amounts involved are very small, often small slivers carefully prepared with a parang, the tobacco is usually home-grown (sometimes with *ai kau* leaves (*Xerospermum*) used as wrappers), and the container a dried *wainite* leaf (*Languas speciosa*; see e.g. BM 1972 1.242). By contrast, when the *papue* is consumed by humans, several areca and betel pepper fruits are carefully displayed on a china plate, sometimes the lime is in a small container (*koinane*), and the tobacco and *ai kau* is replaced by trade cigarettes.

Offerings are made on a routine basis when clearing primary forest, hunting, and cutting sago. Additionally, gifts of *papue* may be made to ancestral spirits on the occasion of installing ritual paraphernalia in a sacred house, such as the basket in which spirits of clan ancestors are said to reside (*sokate*), and which hangs beneath the sacred loft at the eastern end of the house. Each sacrifice is accompanied by a short invocation to the appropriate ancestral spirits, and always includes the formula:

Hokamu mai pota kanai	Come hither, chew this areca
Ruku matapako	Smoke this tobacco

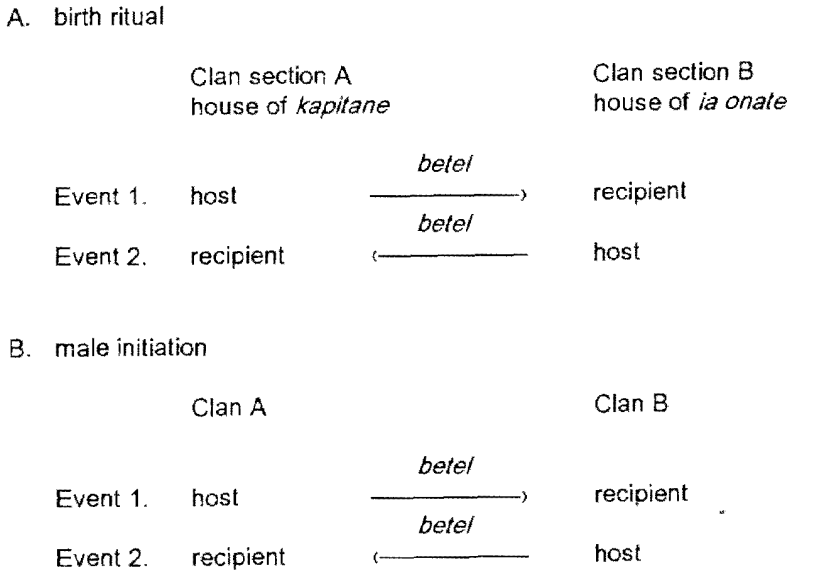
In some contexts, the pouch (Plate 1a) used to carry betel-chewing requisites serves as a proxy for the ingredients themselves. For example, after a successful hunt, the severed tongue of the captured animal is placed on top of the pouch together with the right hand of the hunter and an invocation is offered to the ancestors. Similarly, after ceremonially installing a fireplace in the village ritual house (*suane*), two pouches are deposited as an offering to the ancestral spirits, and remain there until the building itself collapses.

4. Betel consumption as a ritual marker

In rites of passage, betel is significant in three respects: (1) in its absence during the initial and central phases of the rite, (2) in the prominence attached to its consumption by participants who receive it as a mark of reintegration into normal life, and (3) in the abstinence from chewing observed by the structural hosts of a ritual event. In these last two roles, it articulates the key social exchanges which underpin the ritual. Thus, in the birth ritual (as in menstrual seclusion) a woman is denied betel for the duration of her confinement in the menstruation hut. Only when she emerges and when mother and baby have been reintegrated into the house does the mother consume betel. The same applies to smoking. In the ceremony the mother is offered betel (supplied by her eldest brother) by the wife of the head of the complementary clan section. Thus, the officiant is the wife of the *kapitane* if the recipient comes from the 'house' of the *ia onate*, and the officiant is the wife of the *ia onate* if the recipient is from the 'house' of the *kapitane*. The officiant does not share in the rite, but indicates ("*pota, pota, pota* ...") when the others should begin. All guests present share in the rite, but most of the betel requisites prepared for each guest—as with food provided at a feast—remain untouched and are distributed to the households of the guests for later private consumption.

The pattern of betel use at birth rituals provides us with a model for what takes place at other life-crises. In both male and female initiation ceremonies, neophytes are denied betel while in ritual seclusion or in a liminal condition, but are ostentatiously reintegrated into social life by being administered betel under ceremonial conditions, in a way which enforces clan and clan section interdependence, and which highlights the sharing involved in taking betel. In male rituals, for example, betel passes not between clan sections, but between clans, and the relationship established between officiant and neophyte (*morite*) is one which continues throughout life, is reproduced in subsequent generations, and parallels the ideal symmetric movement of women between clans. This reciprocal social passage of betel at birth and the onset of male adulthood is summarily diagrammed in Figure 2.

Figure 2. The social passage of betel in ritual.



In death, the ritual abstinence is not that of the subject, but rather that of the pallbearers who accompany the corpse to the cemetery, and who then have to be reintegrated following their exposure to mystical danger. In this context, the betel is provided by the affines of the deceased and administered by the head of the opposite clan section.

CONCLUSION

Chewing the betel quid is quintessentially part of the humdrum of ordinary Nuaulu life, one of the "obviousnesses" around which social interaction is structured. Paradoxically, it is this obviousness which makes it such a powerful symbol and elevates it above the ordinary. Because it is so commonplace, and because it is constantly passing between persons, it serves to express shared communion. That it induces a psycho-physiological condition in which individual personhoods seems to merge only highlights this. Much of Nuaulu knowledge is aimed at bringing about recognizable changes in somatic states, in the form of harming magic and curing. No wonder then that, with its clear-cut psychoactive property, the betel quid is

regarded as a knowledge-generating substance *par excellence*. The sociality so produced is metaphorically internalized; in a very potent and literal way consumed. In consuming betel, the sociality it stands for is incorporated in the personal identity of the consumer, unifying individuality and commonality (Douglas and Isherwood 1980, Gell 1986:112). This almost classic Durkheimian form of social integration is also fundamentally exemplified in its androgyny. Whereas most signifiers in Nuaulu symbolic discourse can be expressed in the idiom of a complementary gender metaphor, the betel quid and its ingredients are neither exclusively male nor female. Whether the areca is female and the betel pepper male, or vice versa (Jordaan and Niehof 1988), appears variable. What is more important is that both together convey mature and complete ritual personhood, an interpretation which is supported by its special role in both male and female initiation rites, where the point at which betel is first consumed in a ceremonial context is elaborated at some length. There is no better example within the Nuaulu scheme of things of what James Fox calls a "primary" symbol, a general signifier which occurs repeatedly and through which a range of interlinkages organize other symbolic elements (Fox 1975:119).

What is significant about Nuaulu rituals that feature the betel quid (which means, in some sense or another, virtually all rituals), is the movement from chewing to nonchewing, and back to chewing again. Since chewing is ubiquitous, its cessation and denial become the more remarkable. Moreover, the chewing in ordinary communion is unstructured and unrestricted, while ritual intermission leads to chewing which is structured and restricted, premeditated and reflexive. Thus, in practical terms, it is crucial to know when to chew and when not to chew. The structural significance of breaks in an otherwise continuous consumption of betel through time—a kind of symbolic punctuation—is complemented by its periodic passage in ritual between clans and clan-sections, thus integrating social life both diachronically and synchronically.

There is one final characteristic of Nuaulu betel-chewing which requires comment. Chewing betel and smoking are the main drugs used for stimulation and relaxation. Traditional forms of alcohol, known in Ambonese Malay as *sageru* 'palm beer', and *sopi* 'palm wine', are well-known to the Nuaulu, though they claim never to have manufactured them for themselves. There are no bans on its consumption, and Nuaulu will occasionally get very drunk when visiting Christian villages where it is freely available. The same is true of bottled beer and of a variety of dubious brands of commercially available liquor. But what Nuaulu recognize is that the physiological consequences (no doubt culturally mediated) of such intoxicants are antithetical to those of the betel quid. Whereas the first is socially disruptive, "agonistic" to use Schwimmer's term (Schwimmer 1982),

and results in lack of social control and aggression; the second is—as we have seen—integrative and wholly controlled in its effects, underscoring the complex exchanges and values of social life rather than undermining them.

APPENDIX: THE MATERIAL CULTURE OF CHEWING BETEL

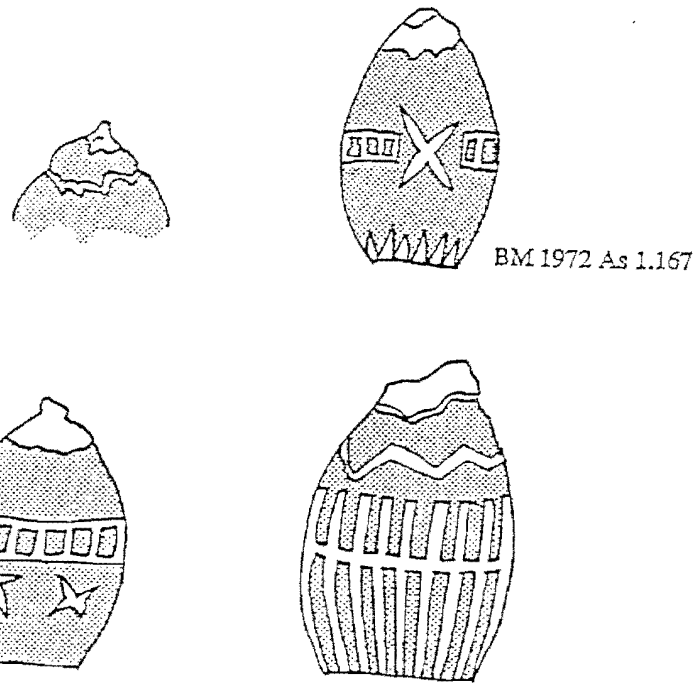
Some of the purely technical features of the material culture of Nuaulu betel-chewing have already been discussed, but in addition, and as might be expected with a drug which has such a central cultural role, the physical paraphernalia of chewing is often the object of aesthetic elaboration. This happens in two primary ways: the decoration of areca fruits and the use of containers for betel-chewing requisites.

Areca fruits collected for important feasts (such as male initiation rituals) may be specially prepared and decorated. The stalk is removed as close to the fruit as possible and the fruit case is cut off as high as possible. Decorated fruits are known as *kanai maka nikate* or *kanai tari-tari* (Figure 3 here; also BM 1972 As 1.166-167).

The designs chosen are a mixture of traditional ones associated with particular clans and new innovative designs with no particular association. Some of the traditional designs appear to be quite abstract, while others have clearly named components. Those illustrated in Figure 4 are mostly clan Matoke designs made by Saniau and Latulesi from Rohua. The patterns in 4a through to 4h and 4k contain common design elements which may be recombined in different ways. In 4f, the elements were described to me by Saniau as *sapu* (a sign carved in a tree), *kapunte* (a belt), and *wesiwemane* (lit. 'forest of the Nuaulu people'). The pattern in 4i was produced by Wasale after he had been taught to write his own name. The design in 4j is also the work of Wasale and features—from left to right—a stereotyped Ellen, a star, a monitor lizard, and an airplane. The design in 4l (preserved as BM 1972 As 1.166) shows stylized male and female forms alternating with houses. In the female, the two spots on either side of the neck are the breasts, the protuberance between the upper and lower limbs a 'belt' (*kapunte*).

There are various receptacles used for the combined betel-chewing ingredients, and some of these are illustrated in Plate 1.

Figure 3. Areca fruits with incised decoration produced for Nuaulu male initiation ceremonies in Rohua.



BM 1972 As 1.167

Boxes made from pandanus leaves (*takanasi koai totue*) are used for this purpose, nowadays stitched in a zigzag pattern with black trade thread. They are dyed red (using *kasupa*, *Bixa oyellana* L.) or yellow (using *kunie*, *Fibraurea chloroleuca* Miers.), they come with or without lids, and they are about 18.5 cm in length (Plate 1b). Another kind of lidded box used for this purpose, with a string to sling over the shoulder, is known as *sau upa*. These are generally made from sago palm spathe and rattan (Plate 1c), but I have also seen them made from the wood of *Mimusops elengi* L. Some clan-section houses have brass sirih-pinang containers of the Javanese or Malay type, which they call *misititane* (Plate 1d). They are treated as valuable heirlooms, but are not usually considered *monne* 'sacred'. I have never seen them in use, even on the most important of ritual occasions. Similar brass dishes known as *tanane*, of which there were several in the village of Rohua, are regarded as *monne*.

Figure 4. Designs used in decorating areca fruits used at Nuaulu male initiation, 9 March 1971 (Fieldnotes 71-13-37, 71-15-55).

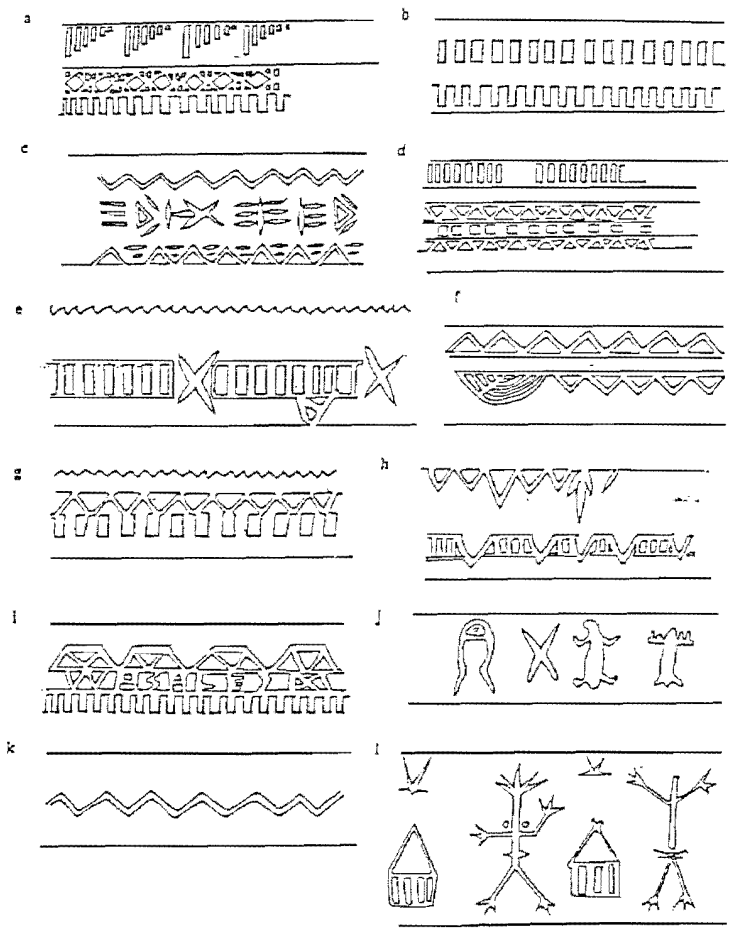
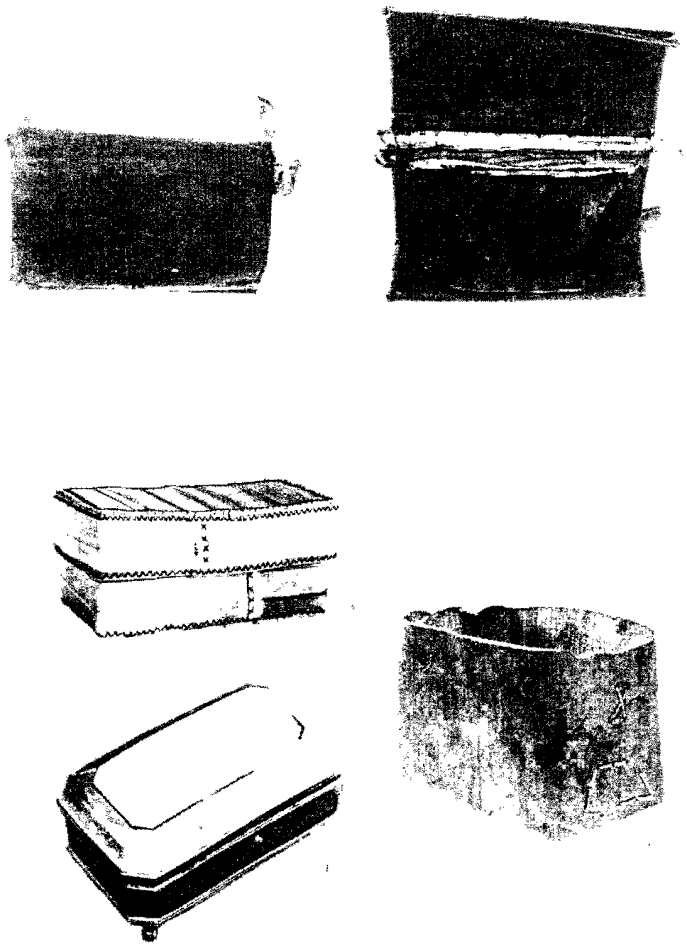


Plate 1. Nuaulu receptacles used for combined betel chewing ingredients and related paraphernalia: *a*, pouch of red fabric and basketry used by initiated males, W = 26 cm; BM 1972 As 1.137. *b*, pandanus leaf box, L = 18.5 cm; BM 1972 As 1.135. *c*, sago palm spathe container, L = 18 cm; BM 1972 As 1.136. *d*, brass sirih-pinang box, L = 19 cm; Ellen, personal collection Photo credits *a-c*, Museum of Mankind, London.



The most important and ubiquitous receptacle for betel-chewing requisites is, however, the *tasi kam-kanai-nosa*, literally 'betel pepper-areca fruit-lime pouch' (Plate 1a). The pouch consists of a basketry frame over which is stretched red trade fabric. The lid which folds over the front and is secured with a commercial button consists of sago spathe, again covered with red cloth. It is usual for an outer pocket to be unlined and filled with five bamboo phials and stoppers. A carved bar between the basketry interior and lid is used to attach a red fabric shoulder strap. Pouches are usually about 26 cm wide, often decorated, and, in addition to betel-chewing requisites, regularly contain tobacco, *Xerospermum* leaves used as tobacco wrappers, and fire-making equipment. All initiated men have such a pouch, and the pouch itself may be an item of ritual and symbolic significance. The pouch used at male initiation ceremonies (*tasi matahene*) is particularly elaborate and symbolically salient. I have already noted how the pouch itself may be used as a proxy for the ingredients it contains in certain offerings, and a similar usage is found in its role in curing seances, where the pouch is placed on an affected body-part. There is clearly a connection between aesthetic complexity and the shift from being an attribute of matter with mystical significance to being of mystical significance on its own account.

NOTES

1. This is an extended and slightly modified version of a paper given at the fourteenth annual conference of the Society of Ethnobiology in St. Louis, 13–16 March 1991. It is based on field research conducted under the auspices of Lembaga Ilmu Pengetahuan Indonesia (the Indonesian Institute of Sciences) between 1969 and 1990 and funded variously by the Social Science Research Council (UK), the London–Cornell Project for East and Southeast Asian Studies, the Hayter Travel Awards Scheme, the Central Research Fund of the University of London, the Nuffield Foundation, University of Kent at Canterbury, and the British Academy. The British Academy also made it possible for me to attend the St. Louis meeting. I would like to thank Brian Durrans and Imogen Lang for access to specimens in the Museum of Mankind depository; David Field, Sylvia Fitzgerald, Leonore Thompson, and Brian Stannard for permissions and assistance at the Royal Botanic Gardens Kew, and Alice Peeters and Natalie Tobert for their generosity in supplying published and unpublished materials.

2. See e.g. Ellen 1978, Ellen 1986, Ellen 1988, Ellen 1990a.

3. Throughout this paper "betel" and "betel chewing" is understood to refer to the custom as a whole. Occasionally, "betel" occurs in passages as a synonym for the "quid," more correctly the "betel quid." The term "betelnut" is a confusing folk English term for the areca fruit, and has been avoided.

4. References in parentheses preceded by BM 1972 As indicate specimens of Nuaulu material culture deposited by the author in the British Museum (Museum of Mankind), London. In some cases, indicative measurements have also been supplied.

5. Reid (1985) draws together some of the recent pharmacological and clinical research, though by no means all of it, and only part of which I have here explicitly referred to. Convenient summaries of the chemical composition of both *Areca catechu* and *Piper betle*, and some of their effects, are to be found in the relevant entries to *The wealth of India* (Anon. 1969).

6. This part of the paper provides only a selective and summary treatment of the subject. The different ingredients of the betel quid are used in many ways by the Nuaulu, ranging from the mundane (areca husks as teeth cleaners) to the exotic (the placing of an areca fruit in the mouth of a corpse). Also, some kinds of areca and betel pepper are taboo for certain clans and persons, such as *kanai putie* for Somori women; while chewing is prohibited for people engaged in particular activities, such as making ritual objects, and for all women in menstrual seclusion. Betel is used in most ceremonial contexts, and especially in rites of passage. Here I look at a few illustrative cases which give only an impression of the rich complexity of the rituals of which they are part, or the diversity of ways in which the quid or its components are employed.

7. The term is one I owe to Maurice Bloch who, in an unpublished paper delivered on "The resurrection of the house amongst the Zafimaniry of Madagascar," employs it as a device to evince those often taken-for-granted practices and artefacts which are not necessarily notable in themselves, or necessarily marked linguistically, but which constitute a set of traits underlying, and therefore making sense of, much structurally elaborated, reflexive, and linguistically articulated cultural behavior.

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ETYMOLOGY, ENTOMOLOGY, AND NUTRITION: ANOTHER WORD FROM PIGAFETTA

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1. INTRODUCTION

In January 1522, the last surviving ship of Magellan's fleet skirted the coasts of Alor, Pantar, and Timor The *Victoria* was laden with the cloves of North Maluku and manned by a crew of sixty, including two pilots from Tidore. In those turbulent waters, one of the pilots who had boarded the ship at the direction of the sultan of Tidore spoke to Pigafetta of a nearby island, Arucheto, where dwelt a tribe of naked midgets, long-eared and hairless subterranean cave-dwellers capable of running at great speeds and singing with subtle, thin voices.[1] (See Bausani 1972:56.) Truly a *strana leggenda*, as Bausani (1972) called it—a seaman's tale for the credulous Italian who recorded it for us! Still, one element in the story rings true and, indeed, constitutes a familiar statement of East Indonesia nutrition. This short note will consider the probable diet of the Arucheto folk as related by the Moluccan pilot. At the same time it will propose a solution to an etymological problem noted by Bausani (1972).

The Moluccan pilot may have told Pigafetta a tall tale, but when he described the food of these imaginary (?) unacculturated people, he surely drew on his personal knowledge of the foods of Maluku. As Pigafetta recorded it (Bausani 1972:56, trans. by Collins):

> they live in subterranean caves and eat fish and something which comes from [*nasce*] between a tree and its bark; white and round, rather similar to preserved coriander, it is called *ambulon*.[2]

The identity of this comestible, *ambulon*, is the focus of this brief paper. In the first part, we discuss three possible interpretations of *ambulon*. In the second part, we offer an etymology for the term.