

INCANTATIONS AND HERBAL MEDICINES: ALUNE ETHNOMEDICAL KNOWLEDGE IN A CONTEXT OF CHANGE

MARGARET J. FLOREY

*Department of Linguistics, La Trobe University
Bundoora, Victoria 3083, Australia*

XENIA Y. WOLFF

*Botanical consultant
9441 Belair Rd, Baltimore MD 21236, USA*

ABSTRACT.—An analysis of healing practices among the Alune people of Seram Island, eastern Indonesia, reveals that in the pre-Christian era, healers treated illnesses and midwifery concerns with herbal medicines made from a wide range of plant, animal, and mineral matter. If a patient failed to respond to herbal medicines, the illness was considered to have arisen in ancestral reprisal for the misdeeds of the patient or to have derived from the destructive magic of sorcerers. In such cases treatment required divination of the source of the problem followed by the recitation of curative incantations in conjunction with (non-medicinal) aids. Conversion to Christianity early in the twentieth century led to the suppression of many pre-Christian practices, including traditional health care practices, and abruptly interrupted transmission of such knowledge. Concomitant with social changes, language shift to the regional Malay variety, Ambonese Malay, is also occurring. A contrast can be drawn between Alune villages which have, until very recently, been protected from rapid sociopolitical and linguistic changes by their relative remoteness in mountain locations, and villages which have relocated to sites nearer to the coast and have been subject to more intense processes of change. We compare the situation in two sites reflecting these different patterns. In both the inland location of Lohiasapalewa and the relocated coastal village of Lohiatata, the use of herbal medicines is associated with the pre-Christian era and transmission of this knowledge has greatly diminished. In Lohiasapalewa a very few elderly people covertly utilize curative incantations while villagers born following religious change have had restricted access to ancestral practices. As a result, use of curative incantations appears to have almost completely ceased at this site. A contrasting outcome is noted in Lohiatata where, in the absence of transmission of Alune practices and in response to the contemporary environment, younger people have transformed the form and function of incantations by seeking and utilizing such knowledge from the wider Moluccan community.

RESUMEN.— Un análisis de las prácticas curativas entre los alune de la Isla de Seram, Indonesia oriental, revela que antes de la era cristiana los curanderos trataba enfermedades y partos con medicinas herbarias compuestas de un rango amplio de materiales de plantas, animales y minerales. Si el paciente no respondió a las medicinas herbarias, la enfermedad se consideró una represalia para fechorías de la paciente o derivada de la magia destructiva de hechiceros. En tales casos, el tratamiento se exigió la divinación del origen del problema, seguido por la recitación de conjuros curativos junto con auxilios no medicinales. La conversión a la cristianidad temprano por el siglo xx llevó a la supresión de muchas prácticas

pre-cristianas, incluso a prácticas curativas tradicionales, y interrumpió bruscamente la transmisión de tal conocimiento. Junto con los cambios sociales, también está sucediendo el cambio de idiomas hacia la variedad regional de malay, el malay ambonense. Se puede sacar un contraste entre los pueblos alune que hasta recientemente han sido protegido de los cambios sociopolíticos y lingüísticos rápidos por su lejanidad en ubicaciones montañosas, y los pueblos que fueron reubicados a sitios más cercanos a la costa y que han sido sometido a los procesos de cambio más intensos. Comparamos las situaciones de dos sitios que reflejan estos padrones diferentes. En tanto la localidad del interior de Lohiasapalewa y el pueblo costero reubicado de Lohiatala, el uso de medicinas herbarias se relaciona con la era pre-cristiana, y la transmisión de este conocimiento ha disminuido bastante. En Lohiasapalewa, unos pocos ancianos utilizan furtivamente conjuros curativos, mientras que los poblados que nacieron después de los cambios religiosos han tenido acceso restringido a las prácticas ancestrales. Como consecuencia, el uso de conjuros curativos parece haber cesado casi completamente en este lugar. Un resultado contrastante se nota en Lohiatala, donde en la ausencia de la transmisión de prácticas alunenses y en respuesta al ambiente actual, los más jóvenes han transformado la forma y la función de los conjuros por buscar y utilizar tal conocimiento de la más amplia comunidad molucana.

RÉSUMÉ. — Une analyse des pratiques thérapeutiques des Alune de Seram, en Indonésie orientale, montre qu'avant l'arrivée du christianisme, les guérisseurs traitaient les maladies générales et les troubles obstétricaux au moyen de médicaments à base de plantes qui étaient fabriqués à partir d'une grande variété de produits naturels. Si un patient n'était pas réceptif à un traitement par les plantes, la maladie était considérée comme la répression d'un comportement individuel ou était attribuée à la sorcellerie maléfique. Dans de tels cas, le traitement exigeait une action divinatoire pour révéler la source du problème, suivie d'incantations curatives récitées de concert avec l'emploi de produits naturels. La conversion au christianisme au début du XXe siècle entraîna la disparition des pratiques thérapeutiques traditionnelles et mit fin brusquement à la transmission d'un tel savoir. Parallèlement à ces changements sociaux, on assiste également à un déplacement de langage vers une variété régionale de malais, le malais ambonais. On peut contraster les villages alune qui, jusqu'à tout récemment, ont été à l'abri des changements linguistiques et sociopolitiques soudains à cause de leur éloignement relatif dans des emplacements montagneux et les villages qui ont été réinstallés plus près de la côte s'exposant à un processus de changement plus intense. Cette étude compare la situation de deux sites qui reflètent ces deux modèles et examine dans quelle mesure le savoir linguistique et ethnoécologique peut être modifié à travers un processus de déplacement linguistique et de changement social. Dans la communauté intérieure de Lohiasapalewa, la connaissance et l'utilisation des incantations curatives semblent être disparues. Tandis que les gens plus âgés se souviennent et peuvent utiliser secrètement ces incantations, les villageois nés après les changements religieux n'ont qu'un accès limité aux pratiques ancestrales. La situation apparaît différente à Lohiatala, un village qui a été réinstallé dans un environnement côtier. Ici, en l'absence de transmission des pratiques alune et en réponse à l'environnement actuel, les jeunes gens ont transformé la forme et la fonction des incantations en cherchant et en utilisant le savoir de la communauté moluques élargie.

INTRODUCTION

Alune is an Austronesian language spoken in 26 villages in west Seram, in the eastern Indonesian province of Maluku. During this century, and particularly during the last 50 years, rapid sociocultural and economic changes resulting from increased contact with non-Alune peoples have occurred in the majority of these villages. During this period extensive changes have also occurred in health care practices.

The Alune assert that there are primarily two sources for illness - those which are attributed to a physical cause and those which result from the malevolent action of humans or supernatural beings practicing destructive magic. In earlier times, Alune healing practices involved either the use of herbal medicines made from plants and other matter or the recitation of incantations in conjunction with (non-medicinal) aids made of animal, plant or mineral matter. Illnesses attributed to a physical cause could be treated by herbal medicines or, in some cases, by the recitation of incantations. Similarly, midwifery practices drew on the use of herbal medicines and the recitation of incantations. However, illnesses resulting from the practice of destructive magic were amenable only to treatment by incantations following the divination of the source of the illness.

Contemporary Alune society is overtly Christian, with conversion to Calvinist Protestantism having occurred throughout this century. In the pre-Christian era, Alune cosmology focused on placating ancestral and local nature spirits, such as Tuale, the sun god, Dabike, the moon goddess, and spirits of the earth (*tapele*)¹ and sky (*lanite*). The goodwill of the spirit world was regarded as necessary for ensuring the health and vitality of the living and the productivity of the environment. This goodwill could be achieved and maintained, in part, through the chanting of incantations to invoke the spirits of ancestors or deities who could mediate on behalf of human beings. Religious change has resulted in the active suppression by missionaries and ministers of pre-Christian practices, including those relating to health care. Treatment of illness and injury today largely involves prayer, either as the sole healing tool or in combination with Western medicines which are administered by a regional health practitioner (known in Ambonese Malay as *mantri*). However, research undertaken in two Alune villages revealed a substratum of knowledge about both herbal medicines and incantations. There is evidence that some pre-Christian healing practices retain a role in present-day Alune society, although the distribution of such knowledge among members of the community and patterns of use have clearly changed.

We will first describe the two research sites and our research methodology. We will then discuss healing practices using herbal medicines, describing the illnesses amenable to such treatment, the ingredients, and the forms of treatment. We also discuss the use of herbal medicines in midwifery practices. Third, we consider healing practices involving incantations, describing the healers, sources of knowledge, illnesses treated, and methods of treatment. Finally, we examine the processes of change, analysing the role of several factors in changing health care practices and in changes in the transmission and distribution of knowledge.

RESEARCH SITES

Research was undertaken in two Alune villages, Lohiasapalewa and Lohiatata. Lohiasapalewa is located in the central mountain range of West Seram, at an altitude of approximately 650 m in sub-montane rainforest. The complete territory (*tapel lalei*) owned and occupied by the village comprises primary forest at varying altitudes, secondary forest at varying stages of regrowth, bamboo thickets, planted groveland, garden land, dry rice fields, sago swamps, grassland, and the settlement site of the village (cf. Ellen 1993a). By far the largest portion of village territory is primary and mature secondary forest.

Lohiasapalewa is some 30 km from the north coast of Seram. Its nearest neighbors are the Alune villages of Riring, Manusa Manue, and Buria. At various times during this century, Alune villages have come under pressure to relocate from the mountains to the coast. The primary purpose of such relocation has been "pacification" — first by the Dutch colonial authorities and later by the Indonesian government — in order to make the villages more accessible to government authority and thus to enable the government to exercise greater control. While a considerable number of Alune villages succumbed to the pressure and relocated to either the north or the south coast, the villagers of Lohiasapalewa have successfully resisted all attempts to impose relocation upon them. In the 1950s and early 1960s a guerrilla conflict was fought in Central Maluku between the *Republik Maluku Selatan* (RMS) separatist movement and the Indonesian military forces. Fear of the forces on both sides of the conflict caused the villagers to abandon their houses throughout the thirteen years of this conflict, however they rejected government pressure to move to the coast and remained in the forest within their village territory. The villagers also resisted an attempt by local government authorities to relocate the village in 1970. The relative isolation of their location has meant that all generations of villagers in Lohiasapalewa remain Alune speakers and further means that limited knowledge of a few pre-Christian practices has been retained. In 1998, Lohiasapalewa had a population of 244 in 32 households.

The present-day villages of Lohiatata and Lohiasapalewa were formerly one village, located on the site of Lohiasapalewa. According to local history (Makerawe and Nikolebu 1988), in 1817 conflict within Lohiasapalewa led to the departure of a breakaway group which formed a new village, Lohiatata, in a large tract of forest approximately 20 km to the south. The historical relationship between the two villages is denoted by their retention of the name Lohia. The addition of the name of the major river in each region, the Tala and the Sapalewa, marks their contemporary separation. A significant bond remains between Lohiasapalewa and its daughter village, though there is now little contact between the villages, and the majority of villagers have not visited the other site. Unlike Lohiasapalewa, the villagers of Lohiatata were unable to resist the government's efforts to relocate them during the RMS conflict. In 1952 they were moved en masse to the south coast of Seram, where they dwelt in the non-Alune village of Hatusua for thirteen years. The present-day village of Lohiatata was established in 1964 following the restoration of peace. It is located approximately six km inland from the south coast of western Seram, on the southern border of Lohiatata's land and some 20 km from its former mountain location. Its nearest neighbor is the non-Alune village of

Waihatu, comprised of people from Lombok and Java who moved to Seram as part of the central government's *transmigrasi* program which aims to relocate populations to reduce pressures on the more overcrowded Indonesian islands. Further south are the non-Alune villages of Waesamu and Hatusua. Bordering Lohiatata's territory to the north are the Alune villages of Rumberu and Rumbatu. In 1992 Lohiatata had a population of 728 in 110 households.

Unlike Lohiasapalewa, which is located within sub-montane rainforest, the people of Lohiatata occupy lowland territory largely comprising secondary forest at varying stages of regrowth, planted groveland, garden land, sago swamps, grassland, and the settlement site of the village. While dry rice fields were planted in this location, the practice has been abandoned in recent years due to introduced pests from transmigrant wet rice fields. Lohiatata's former village site largely consists of lowland primary forest, mature secondary forest, bamboo thickets, planted groveland, and grassland. Products are still harvested from this site, particularly by older villagers.

In contrast to Lohiasapalewa, Lohiatata has undergone dramatic sociocultural and linguistic changes since the 1950s. The process of language shift to Ambonese Malay is well advanced in Lohiatata, and there are clear generational differences in knowledge and use of the Alune language and Alune practices (Florey 1991, 1993, 1997).

METHODOLOGY

The initial goal of research conducted by Florey in the lowland village of Lohiatata was the study of language shift and language obsolescence (Florey 1990). During the course of learning and analysing the Alune language and its changing patterns of use in Lohiatata, information concerning plant lore and pre-Christian sociocultural practices emerged. Although the recording of Alune plant names and their uses was not undertaken systematically during this period, information learned in the course of fieldwork provided an initial database on which later ethnobotanical research could build.

The investigation of incantations and their practice proved both more difficult and more intriguing by comparison. Information was initially gleaned, often inadvertently, through discussions with members of the community. While comments alluding to the role of incantations in pre-Christian life were quite frequent, direct requests for information were always met with a denial of any personal knowledge of them, often accompanied by a referral to other members of the community said to be more knowledgeable. Apparent contradictions emerged from early discussions. As Boulton-Smit (1992) noted for the Alune community of Manusa, many older Lohiatata consultants strongly rejected the notion that incantations were still used in the village and echoed a belief in God in place of the use of incantations and pre-Christian healing methods. However another perspective was expressed by an elderly man who stated that there are people in Lohiatata who still know how to use incantations: "They don't trust in God, but trust instead in their incantations." Statements such as the following were common:

"Yes, if we use that [incantations], we are not human, we can't choose between one thing and another. But because God works with us, we behave

in certain ways and must throw that [knowledge] away. If not, we will be ruined, ruined!"

However, after working in Lohiatata for approximately five months, an elderly villager expressed his willingness to discuss the use of curative incantations. During one research session, six incantations were recorded and a description was given of the way the incantations were used in conjunction with aids such as oil, water, or mineral lime. These data formed the basis for future exchanges of knowledge with other villagers. Florey found she was, in effect, able to trade this knowledge for further information concerning incantations. Towards the end of that field season, two principal research consultants and the family with whom Florey lived provided several incantations as gifts. In these ways, a corpus of 13 curative incantations was compiled, together with 15 incantations concerning topics beyond the scope of the present paper (such as hunting, harvest increase, and destructive medicine).

In 1992 research moved to the highland village of Lohiasapalewa. The purpose of the move was to base research in a site that was linguistically more conservative in order to compare language use in two quite different locations. Once established in this village, it became apparent that this was also a promising location in which to carry out extensive ethnobiological work. In order to undertake these specialized studies, two additional researchers became involved.² Ethnozoological work began in 1993, and Wolff commenced botanical work in 1994.

Botanical research began by checking with the principal research assistant, Mr. Wempi Manakane, the lexical database of botanical terms previously recorded in Lohiatata and Lohiasapalewa. We made a work plan each evening for the following day based on information already gathered and targeting the information we were still seeking. Information concerning herbal medicines is now largely restricted to a small number of older villagers in Lohiasapalewa. Such knowledge has been acquired by only a very few younger villagers in Lohiasapalewa who continue to value the ways of their elders. Hence our work plan entailed determining the location of people with specialist knowledge and the location of specific plants. We worked with these people around the village settlement, in nearby gardens, and at locations further afield in primary and secondary forest. Manakane arranged visits to villagers in their gardens and accompanied Wolff and Florey to field sites.

Lohiasapalewa is subject to heavy rainfall throughout the year, concentrated in the afternoon and evening. Therefore we set out for our planned research location shortly after sunrise and usually worked at the site(s) until early afternoon. For each plant, Wolff collected relevant samples, photographed the plant in situ, and recorded data such as leaf measurement, plant height, plant width, descriptions of flowers and fruits, and agricultural practices. Florey recorded Alune names and descriptive terminology for the plant, with respect to its morphology, stages of growth, agricultural practices, etc. Data were also recorded in Ambonese Malay and Indonesian when known. Extensive ethnographic notes were taken, including known uses of each plant and its importance in Alune life. We discussed agricultural practices, garden site selection and layout, and preservation techniques

for harvested crops with villagers in situ. We urged healers to discuss and demonstrate the use of plants for medicinal purposes. We took photographs as appropriate.

Plant samples were processed after returning from the field site by labeling each sample and pressing and/or preserving it in silica gel. Field notes were systematically organized. Ethnographic data were collated and cross-checked with relevant community members. For example, data concerning plants used in midwifery practices were discussed and verified with women with the inherited right to Alune midwifery knowledge. All linguistic data were checked with several Alune speakers.

Work also continued in the village, gathering information from people with specialized healing knowledge. Florey worked extensively with an elderly Lohiasapalewa man who had retained the knowledge and practice of healing incantations. Due to the sensitivity of this information, the work was undertaken in private. Incantations recorded previously in Lohiatata could not be cross-checked there because of the demise of the elderly consultants. Therefore, these data were checked with the Lohiasapalewa consultant, who also contributed eleven additional healing incantations and descriptions of their use.

Following the field research period, the collected data (plant samples, photographs, notes) formed the basis for plant identification by Wolff. Sources for identification included collections held in the Herbarium Bogoriense, the Smithsonian Institution Herbarium, and relevant published materials. As the plants were identified, the Latin names were incorporated into a larger database collating linguistic, botanical, and ethnographic information for each plant. This corpus forms the basis for the present paper.

HERBAL MEDICINES: TREATMENT OF AILMENTS WITH A PHYSICAL CAUSE

A wide range of common illnesses and injuries are known and named in Alune. An important contrast is drawn by the Alune between common illnesses which are perceived to have a physical cause, and ailments which are considered to result from the malevolent action of humans or supernatural beings practicing destructive magic. Ailments in the former category indicate the everyday health concerns of the community. They include: bleeding from wounds, burns, colds and influenza, cough and sore throat, diarrhea, ear infection, eye infection, fever, goiter, headache, head lice and dandruff, infected wounds, intestinal parasites, jaundice, muscular pain, sprains, broken bones, nausea, poisoning and snake bite, skin complaints (ichthyosis, scabies, irritant reactions to plants or insects, fungal infections), smallpox, toothache, and urinary tract infection. Appendix 1 describes in detail the preparation of medicines for the treatment of these diseases.

Women with the inherited right to practice midwifery address issues of conception, contraception, and delivery as well as treating a range of post-partum conditions. Treatments are provided for the following conditions: to prevent conception, to regulate menstruation, to end unwanted pregnancies, to assist conception of a male or female child (as per the parents' expressed desire), to speed a slow or difficult labor, to cleanse and/or strengthen a woman following birth, to remove post-partum blood clots, to heal a post-partum swollen belly, and to treat

engorged breasts. Appendix 2 describes in detail the preparation of medicines used by midwives. Where available, Alune names for ailments and gynecological or obstetric conditions are noted alongside headings in the appendices. The appendices also provide the Alune name, English name and Latin identification (when known) of plants, and their medicinal application.

Ingredients used in healing and midwifery practices.—The ailments listed above which are diagnosed as having a physical cause, and the conditions which fall within a midwife's care, can be treated with medicines made from plant, animal, or mineral matter found in the village territory. All herbal medicines minimally contain plant material and may also contain other ingredients. Sixty-two plants were identified as ingredients in medicines used to treat ailments which are diagnosed as having a physical cause, and a further 15 plants were identified as ingredients in medicines used in midwifery practices. Villagers in Lohiasapalewa asserted that, in earlier times, plants which could be used for healing (*ai 'watai*) were planted near the garden hut in each newly-established garden. This practice has diminished with increased access to Western medicines

In addition to plant materials, twelve plant by-products and non-plant ingredients used in medicines have been identified (see Table 1). In contrast to the extensive use of plant material in healing, very few medicinal recipes were recorded which use animal products. These animal products are mineral lime, turtle shell, egg, and honey. The lime is most commonly extracted from freshwater mussel shells (*lopon inai*) which are dried, baked, and pounded.

Preparation and application of medicines.—The application of herbal medicines varies according to the nature of the ailment and the ingredients used in the medicine. The medicine may be applied as a poultice or compress, rubbed on as a massage ointment, drunk as a potion, or infused. Very few treatments require eating specific foodstuffs; however, the *banana tema 'watnabane* (*Musa fehi*) is eaten as a treatment for jaundice and for bladder infections.

While an illness or injury may be treated by several different preparations, certain generalizations can be drawn about the treatment of particular illnesses or injuries. Bleeding is staunched with the application of a poultice made from one of a number of plants, primarily grasses which are readily available in the village residential area, as well as in gardens and secondary forest in which villagers may be working or hunting. Nausea is treated through the external application of stimulants: tobacco (*Nicotiana tabacum*), betel nut palm (*Areca catechu*), clove (*Syzygium aromaticum*). Oily substances are applied to treat irritant reactions to certain plants and animals: coconut oil (derived from *Cocos nucifera*), candlenut (*Aleurites moluccana*). Burns are treated with the application of gluey poultices. Colds and influenza are treated by rubbing the head with medicinal shampoos. Medicines for malaria tend to consist of bitter-tasting drinks. Urinary tract infections are cured by plants which color the urine a bright yellow.

Medicinal properties.—Most of the plants used for healing are held to have only one medicinal property. However, from our corpus eight plants serve multiple purposes and indicate their wider utility in healing (see Table 2).

CURATIVE INCANTATIONS

Despite the wide range of plant, animal, and mineral matter known and available as ingredients in herbal medicines, and the extensive range of illnesses and injuries which they can treat, the Alune acknowledge that there are ailments which remain resistant to a medicinal cure. If an injury or disease attributed to a physical cause persisted despite the application of herbal medicines, community members with special healing powers were called upon to divine the source of the ailment, which might then be rediagnosed as having been caused by destructive magic. Some such ailments were diagnosed as deriving from ancestral spirits in reprisal for the behaviour of an individual who had contravened social norms by committing, for example, adultery (*soune*) or theft (*mleane*). Ancestral spirits (*nitu matale*) might also exact retribution for the contravention of custom: for example, through a marriage between two people who were too closely related according to customary law, or through failure to keep a promise made to a dying person. Alternatively, illness might be diagnosed as arising from the malevolent acts of humans, or from evil beings (*lita*) who could harm and potentially kill humans by "sending" an illness or injury to a chosen victim.

In cases where ailments or injuries were rediagnosed as having been caused by destructive magic, incantations were employed to attempt to cure the patient. The recitation of incantations was usually accompanied by the use of plant or animal products, however the latter were regarded as an aid in the application of incantations and were not held to be herbal medicines. Similar practices have been widely reported throughout the Austronesian region (cf. Bolton 1994, Ellen 1993b, Errington 1986, Glick 1967, Ooy 1994, Taylor 1988). The use of incantations in Alune healing practices reflects attempts to understand, predict, and control the physical and spiritual environment.³

The healers and their sources of knowledge.—Healers with knowledge of curative incantations are known in Alune as *ma'aleru* 'one who heals', which derives from the verb *lerue* 'to heal by blowing an incantation over someone'. Healers must possess both the appropriate linguistic knowledge to perform the incantations together with a knowledge of the products (plant, animal, and mineral) which are aids accompanying the recitation of incantations. The *ma'aleru* could derive knowledge from several sources. Incantations were occasionally given as a gift and, very rarely, could be bought from a practitioner. The practice of selling incantations or giving them as gifts was uncommon because incantations were considered to be a source of wealth, and knowledge which is given away is lost to the former owner (cf. Valeri 1990).

More commonly, incantations were learned from parents or inherited from ancestors. However, while younger family members could study healing from their elders, they were unable to utilize the knowledge fully during their parents' lifetimes. Historically, each person or family owned their own healing incantations. Transmission could occur through a dream, as in the case of one young man in Lohiatata, who received his knowledge of healing incantations from his wife's (deceased) grandparents. This man asserted that it is potentially dangerous to receive knowledge directly from other people, but that to receive the information in a dream

parallels the way that biblical personages received divine inspiration. In his dream, transmission occurred at Lohiatata's former village site. Another young man in this village also received his healing knowledge from a dream. He dreamt he had a book with healing charms and woke and found this was real. Once he had learnt the incantations the book disappeared. Some knowledge of incantations was received from non-human sources. According to Alune historical mythology narrated in Lohiasapalewa, the common palm civet (*lau*, *ti'luline*) gave healers some of their knowledge of healing, and they are prohibited from eating this animal.

There are two categories of practitioners of midwifery in Alune society: the *biane* 'midwife', and the *ma'selu*, literally 'one who sees', a healer who assisted after childbirth by inspecting the newborn child and repairing physical problems, such as straightening crooked limbs. The *ma'selu* also carried out the task of ritually washing a woman and her newborn child before they left the birthing hut (*luma posone*) and returned to their house. The *ma'selu* then carried the baby home to his or her waiting family. Alune midwifery knowledge was derived from the cuscus (*marele*), however there are no prohibitions on eating this animal.

Ailments treated by curative incantations.—The corpus of incantations contains cures for the following ailments: bleeding, breathing difficulties, centipede bite, stomach ailment, fever (including fever caused by being caught in rain which occurs while the sun is shining), a convulsive disease (possibly epilepsy), and headache. Commonly, stomach ailments are thought to be caused by eating or stealing crops protected by an incantation (*'wate* — known in Ambonese Malay as *matakau*). Healers use incantations to treat wounds caused by a machete if divination reveals that the weapon was strengthened by a charm. In some cases the physical manifestation of the illness caused by sorcery is non-specific, but is amenable to treatment by incantations if the healer can divine the source. Midwives may use incantations during a prolonged and difficult labor if the childbirth problems are considered to derive from sorcery.

Divination.—The first stage in healing an illness presumed to have been caused by sorcery is determining the source of the ailment, a task which is undertaken by *ma'aleru* and *ma'selu* (cf. Ellen 1993b and Bolton 1994 for a discussion of divination in healing among the Nuaulu of south Seram). One man asserted:

"Previously, we used sorcery [to cause illness]. We would seek the source [of an illness] by using a length of wood. Probably the person was ill because of an evil spirit or because s/he sinned or whatever. Before we could heal the person, we would seek the source of the illness. I'd place a piece of wood in my hand. If the wood broke that would mean there was a problem and later the patient would tell the healer what s/he'd done to lead to the use of sorcery. Then the healer would be able to heal."

The process of divination is known in Alune as '*nau*. A *ma'aleru* uses various aids to assist this process. For example, as described above, a length of midrib from the sago palm which is used to build walls (*punale*), a length of stem from the *nipa'we* plant (*Hornstedtia* sp.), or a coconut fruit is held in the hand and squeezed. If it breaks, this indicates the ailment has been caused by sorcery. Some

healers may also go into a trance (*'basa*) and call upon a spirit to reveal the source of the illness. One man explained that his uncle had used a large white stone to call his personal spirit to assist in divination. He stated:

"In earlier times they worshipped, they didn't yet know about the Lord. They didn't know ..., the sun and the moon spirits they certainly knew, but about the Lord they didn't know, they worshipped [spirits]. Tall trees, large rocks, they had to worship [them]. Tradition meant that they worshipped that, only that. Then they worshipped their spirits or devils, they had to work that way because they trusted in rocks. Certainly their spirit came, and shortly it would reveal [the source of the problem], say this and this, like that."

Ingredients used as aids in the application of curative incantations.—Once the source of the problem and the nature of the ailment has been revealed the process of healing can commence. The specific pattern of application of curative incantations varies according to the ailment to be treated. The cure is very rarely effected by mere recitation of an incantation. In virtually all cases plant matter, plant by-products, and non-plant matter (such as water) are used as an aid to accompany the recitation of curative incantations.

Various parts of a plant may be used to aid the application of curative incantations, including the leaf, root, fruit, shell, rhizome, and sepals. The list of plants in Table 3 indicates the key role of ginger (*Zingiber officinale*) and the ingredients of a betel quid in the application of curative incantations. Where *se'u putile* or *se'u ta'unui* (*Z. officinale*, *Z. zerumbet*) are not available, they can be substituted with the plants *'wata muri* (*Costus speciosus*), *'wata muri 'berele* (*Tapeinochilus ananassae*), or *toune* (*Alpinia* sp.) (all members of the Zingiberaceae). The plant by-products and non-plant matter in Table 4 may also be used in conjunction with curative incantations:

Application of curative incantations.—Healers apply an incantation by "blowing" it over the patient. The whispering of the words protects ownership of the incantation by ensuring that it cannot be overheard and thus learned and later utilized by others present. Healers assert that an incantation is not efficacious if heard. The following sections exemplify some of the applications of incantations and the use of some plant, animal, or mineral matter in conjunction with curative incantations. Incantations are often addressed to the spirit who is considered to have brought the ailment.

Use of betel quid. The components of a betel quid (leaf of a betel vine, fruit of the areca palm, and mineral lime) can be used to treat a headache. The healer chews a betel quid and gives it to the patient to chew. The skin of a young fruit of the areca palm is brushed across the head of the patient and the healer massages the head of the patient four times, pressing across the forehead and down from scalp to forehead. The healer recites the following incantation:

*ntua 'ete ntua 'ete,
esi-'ete leu ulu buai
au 'ete leu ulu buai*

Old man biter, old man biter,
its bite returns to his head,
my bite returns to his head.

<i>mata bina 'ete,</i>	Old woman biter,
<i>esi-'ete leu ulu buai</i>	its bite returns to her head,
<i>au 'ete leu ulu buai</i>	my bite returns to his head.
<i>esi-'ete 'uru mise</i>	Its bite is strong and powerful
<i>satu lupa mo batu napane</i>	like the sandstone and the
<i>batu 'wale</i>	solid slippery stones.

Use of mineral lime. Lime can be used in conjunction with curative incantations to treat several ailments. One incantation is used by a healer to staunch heavy bleeding from a wound: the first line is repeated four times. As the incantation is recited mineral lime is rubbed around the wound:

<i>e-hmolile leta, lala'we leta</i>	As the flow of water in the gutter ceases, so the bleeding ceases.
<i>ile lala'we leta talu, soli'ele noma</i>	The blood completely ceases flowing and remains that way.

Use of chilli pepper (*Capsicum frutescens*). In staunching bleeding from a wound, one practitioner wraps ginger and eight chilli peppers in a leaf, heats the bundle on the fire and applies it as a poultice on the wound while reciting the following incantation:

<i>'wamlua peilu</i>	As the ant [...] ⁴
<i>lala'we seli la'wai</i>	so blood is renewed in the wound.
<i>lala'we sa seli</i>	The blood rises and is renewed,
<i>la'wai 'loto'ele lupa lane salati</i>	the wound closes up as the rack above the hearth (is enclosed by soot).
<i>mutu 'au sela 'wate</i>	The wound is healthy [...].
<i>'loto'ele lupa lane salati</i>	[It] closes up as the rack above the hearth (is enclosed by soot).
<i>mutu 'au soli'e</i>	The wound remains healthy.

Use of heat. In order to treat ailments which exhibit symptoms of heat such as fever or burns, heat is an ingredient in the cure. A smouldering log is placed near the patient while the incantation is recited four times. The fire is then extinguished with cold water, and the log is thrown into a nearby river or stream:

<i>auwe tetu 'wele</i>	The fire falls on the water,
<i>e-muti soli'ele, mata soli'ele</i>	it remains cold, remains dead.
<i>au muti musute</i>	The fire is cooled of its heat,
<i>mata soli'ele muti soli'ele</i>	it remains dead, remains cold.
<i>au dulu soli'ele</i>	The fire continues to diminish.
<i>soli'ele bei X</i>	It stays away from [name of patient].
<i>nanai muti sa'a 'wele mutine</i>	His/her body is cool like cold water.

Use of water. The following curative incantation is used to treat breathing difficulties, manifested either by illnesses such as asthma or when someone is

thought to be dying. The healer blows the incantation over a container of water, then drinks a little before brushing the remainder over the patient's body:

<i>manu nusa inai</i>	The birds of the mother island (Seram)
<i>e-mei betu'we ile lalei</i>	are coming to awaken his/her soul.
<i>betu banu lupa manu nusa inai</i>	Arising and beginning to lean like the birds of the mother island.
<i>na'wai i-leu soli'e</i>	His/her breath keeps returning.
<i>betu banu lupa manu nusa inai</i>	Arising and beginning to lean like the birds of the mother island.
<i>na'wai i-leu soli'e</i>	His/her breath keeps returning,
<i>betu banu soli'e</i>	[s/he] continues to arise and lean.

Use of the *sonatene* plant, *Codiaeum variegatum*. This plant is used in conjunction with a curative incantation to treat fever. Two pieces are cut from the tip of the plant, brushed on the patient from the head down to the legs, then the plant is thrown far away in a westerly direction (i.e. the direction of the sunset):

<i>ntua 'era'eni</i>	Old man illness,
<i>e-tati musute bei mlete mosole</i>	he lowers the heat from high up in the forest.
<i>e-tati musute bei X meije</i>	He lowers the heat from [name of patient].
<i>e-dulu soli'e</i>	It keeps descending.
<i>e-leta soli'e</i>	It is completely healed.

Healing by exorcism (*hela'e*). In cases of persistent illnesses in young children, the *biane* may heal by performing an exorcism (cf. Prentice 1981 concerning exorcism among the Timugon Murut of Sabah). As an incantation is recited, the spirit causing the illness is "pulled" from the child's body and drawn into the healer's body through a deep body massage. The movement of the malevolent spirit into the healer's body is visible through her shivering and trance-like state. The accompanying chill in the *biane*'s body is said to result from her body heat transferring to and healing the child. The *biane*, an adult with stronger powers than the malevolent spirit, can then expel the illness from her own body.

PROCESSES OF CHANGE: FACTORS AFFECTING HEALING PRACTICES

A number of factors are implicated in the process of changing health care practices among the Alune. Perhaps the greatest effect has been wrought by conversion to Christianity, which began in western Seram early in the twentieth century, occurring first in the more accessible coastal regions (for example, in 1902 in the transplanted coastal village of Murnaten) and later in the inland villages (1925 in Lohiatata's former village site, 1935 in Lohiasapalewa). Christianity was brought to Lohiatata by a man named Marten Supulatu, who was related to people in Lohiatata (including the traditional midwife). He had spent time in the coastal

villages of Hatusua and Waesamu and was converted to Christianity there before going as a missionary to Lohiatala⁵.

The Alune language appears to have been feared by missionaries, and speaking Alune was strongly discouraged as it was seen as a vehicle for the promulgation of pre-Christian beliefs. On occasion, use of Alune resulted in physical punishment. Conversations recorded with villagers in Lohiasapalewa and Lohiatala provide plentiful evidence that pre-Christian sociocultural beliefs and practices were also actively suppressed by the church. Such knowledge has become devalued over time by villagers, and they have ceased transmitting indigenous practices to later generations (cf. Florey n.d.). Although some young people express an interest in learning pre-Christian skills, older people are refusing to teach them in order that such knowledge is forgotten. One man asserted:

"Yes, all of it will be lost. Because now we trust in the Lord Jesus ... but if we [live as we did formerly] we would no longer know Jesus."

With conversion to Christianity, Alune healers participated in religious ceremonies held to symbolize the abandonment of their knowledge. In 1979 the minister in Lohiatala held a village-wide ceremony at the time of the laying of the foundation of the new church. Each family was required to contribute a coin over which they prayed in their home with the minister and the church committee. The families took an oath that they would no longer use incantations, and understood that God would punish them with death within three days if the oath were broken. All families then gathered in the old church building while the coins were secretly buried by the minister and his committee beneath the foundations of the new (permanent) church.

However not all members of the community were prepared to abandon their knowledge. Several elderly men resisted, but later events forced their compliance. One such event concerned a man whose wife was gravely ill. He was told to destroy his knowledge of incantations or she would die. He agreed to the process, and went to the church at midnight to pray with the minister. The minister had stated that a gun would be fired following the prayer as a sign that the man had abandoned his non-Christian practices. A bullet was loaded but the gun would not fire. The prayers were then repeated, but again the gun would not fire. The minister accused the man of concealing knowledge. His son told the story as follows:

"So the minister prayed. After praying he put in a bullet and fired. It didn't make a sound. They prayed again. He [i.e. the minister] said, 'Father, it's not finished.' Father said, 'It is.' However, there was more. Father finished [disposing of his knowledge] again. He fired a second time (father himself fired the gun), but the gun again didn't make a sound. They said, 'Hey, mother is ill, she's at home dying.' If father didn't dispose of all his knowledge mother would die. Finally father disposed of it all. Finally after the third time it was disposed of. The minister prayed again and the gun fired: it was over. Therefore it was okay. It was immediately forgotten, even if he does it again, even if father still remembers he can't use his knowledge again."

In a similar event another man later disposed of his knowledge by burning the red cloth worn during rituals which 'contained' the knowledge. This event took place at the church with a visiting minister from the neighboring island of Nusa Laut. The cloth took three attempts before it would burn.

The Alune are clearly aware that this knowledge remains accessible to former practitioners. One consultant acknowledged, for example, that there are people in Lohiatata who retain traditional knowledge but choose not to use it any more:

"That's true, there are still those who know but are no longer allowed [to use their knowledge]."

Traditional midwifery healing knowledge has also been suppressed by the church as a facet of pre-Christian practices. However, this knowledge was not disposed of in the above-mentioned ceremony in Lohiatata. Instead, the minister made a pact with the oldest midwife that Alune midwifery practices would cease in that village upon her death.

The villagers of Lohiasapalewa underwent similar ceremonies to dispose of their traditional healing skills, including midwifery practices. Despite these overt displays of abandoning non-Christian beliefs, it is apparent that some incantations continue to play an important role in contemporary life in some Alune villages. A Lohiatata man explained the need to retain the knowledge and use of incantations, both for healing and for self defence. He cited the case of one young man who is in the army and has been taught incantations by his father both to protect and to heal himself. However, he noted:

"That doesn't mean you can disregard the Lord. The Lord comes first, then this [knowledge of incantations], comes later."

Language shift from Alune to Ambonese Malay has also contributed to the demise of healing incantations in Alune. Linguistic skill is a key element in the performance of curative incantations. Efficacy depends, at least in part, on accurate recitation. Valeri (1985:3) similarly discusses the "paramount importance" to the Huaulu of Seram of exact recital of magical charms. For older members of the Lohiatata community where language shift to Ambonese Malay is progressing rapidly, fluency in Alune is an essential component of healing practices. They assert, therefore, that younger people are unable to learn pre-Christian healing skills because they are not Alune speakers. Middle-aged members of the Lohiatata community, who speak a non-standard variety of Alune (cf. Florey 1997), discussed the dangers involved in reciting incantations imperfectly. One man in this age group had inherited healing skills from his father. Although an Alune speaker, he was not prepared to become a practitioner because of his awareness of non-standard features in his use of this language.

Both language shift and the suppression of pre-Christian practices are clearly implicated in the loss of traditional healing methods, including the use of herbal medicines and the recitation of incantations. However, the process of loss has been compounded by lifestyle changes which have reduced opportunities for young people to be exposed to the skills possessed by their parents and ancestors. Time constraints imposed by contemporary village life, including involvement in church

and state projects undertaken in the village, are greatly reducing time available for horticultural practices in both Lohiasapalewa and Lohiatata. Villagers in both sites now rely to a much lesser extent on the harvesting of forest resources and to a much greater extent on the planting of a limited range of cultivated plants (Wolff and Florey n.d.). Children are therefore spending less time in the forest with their parents and are not learning about plant and animal resources or the wide range of traditional uses of plant species indigenous to this environment. This situation is exacerbated by the time which younger Alune villagers spend away from the village for purposes of education and employment. In Lohiatata, the move to their lowland village site has further reduced access to traditional plant resources because of the different ecology of the new site. A considerable number of the forest resources which were exploited in the mountain village are not found in the coastal zone and the majority of villagers of all ages in Lohiatata have a very limited knowledge of the ecology of interior Seram which characterises the traditional Alune world of their ancestors.

CONTEMPORARY HEALING PRACTICES

In both Lohiatata and Lohiasapalewa today, illness and injury are treated first by prayer, usually intoned in the home alongside the patient and his or her family by a church elder, or, in more serious cases, by the minister with all deacons and deaconesses. Where available and affordable, Western medicines may form a part of the healing treatment. When ailments remain resistant to prayer and Western medicine, some Alune in both sites will call upon elderly villagers to prepare an appropriate herbal medicine. If these strategies all fail, villagers may ask a *ma'aleru* to divine the source of the illness and to heal with incantations. Due to the suppression of these practices by the church, the work of *ma'aleru* and *ma'selu* is carefully concealed from the non-Alune ministers appointed to Alune villages and from Alune villagers whose beliefs in Christian precepts are more complete.

A comparison of contemporary healing practices in the two sites reveals some interesting differences. People in Lohiatata who were born after 1950 were raised either in the non-Alune village of Hatusua or in the relocated coastal village site of Lohiatata. Their knowledge of pre-Christian practices has been affected by three processes: interrupted transmission brought about through the suppression of such knowledge following conversion to Christianity, lack of knowledge of traditional plant resources, and language shift to Ambonese Malay. In Lohiasapalewa, transmission of knowledge to younger people has been affected by the first two processes but to a much lesser degree by language shift because the Alune language is still spoken by all generations.

In Lohiasapalewa, several consultants born between 1920 and 1940 were willing to discuss pre-Christian Alune healing practices and, in the case of one elderly man and one woman, to recite curative incantations. One of the villagers who recited incantations, and the few villagers willing to discuss the use of incantations, requested secrecy during these discussions. Only the elderly man who had spurned the public process of disposing of pre-Christian knowledge appeared unperturbed by the possibility that others may know he was revealing this information. His lack of concern was not shared by other members of the household in

which recording took place. Although they had consented to and arranged the meeting, they carefully concealed its purpose.

No villager born in Lohiasapalewa after 1940 was willing to discuss pre-Christian practices of any kind, including healing practices. Questions seeking such information were invariably met with a commentary on the use of Christian practices in place of all practices during the "period of darkness" which preceded conversion. The process of conversion to Christianity began in 1935 in Lohiasapalewa: villagers who were adults at that time appear to have been the last in this site to have transmitted knowledge of curative incantations to younger villagers. Despite having the linguistic skills necessary for the recitation of incantations, it appears that the success of conversion to Christianity in Lohiasapalewa has been such that younger people have no knowledge of curative incantations.

In Lohiatata, consultants who were willing to discuss pre-Christian Alune healing practices and recite incantations were born between 1910 and 1930. As noted earlier, these recitations of incantations followed a fieldwork period of approximately five months during which personal knowledge of healing practices was denied by all villagers. Once closer relationships had been established with consultants in this generation, they appeared proud to display their knowledge and, during our discussions, did not exhibit the same caution noted in Lohiasapalewa.

Villagers born in Lohiatata between 1930 and 1950 were, like their counterparts in Lohiasapalewa, unwilling to recite incantations. However, unlike the Lohiasapalewa middle-aged group, Lohiatata villagers were willing to discuss pre-Christian practices. These discussions were placed within two contexts. One group of villagers denied any personal knowledge of Alune healing practices but cited specific people within the village who were known to be *ma'aleru*, *biane*, or *ma'selu* and usually gave descriptions of the ways in which healers had treated various ailments. A second group couched their discussion in the framework of present-day Christian practices or the use of Western medicine. It is interesting to note that conversion to Christianity began in 1925 in Lohiatata. Transmission of Alune healing practices appears to have been interrupted by that process, and, as in Lohiasapalewa, villagers who were adults at the time of conversion seem to be the last to have transmitted knowledge of curative incantations.

Lohiatata villagers born after 1950 in their refugee site of Hatusua or in the relocated village of Lohiatata were, like those in their grandparents' generation, willing to recite incantations and to discuss patterns of use. However the structure and function of incantations used by this age group differs dramatically to those used by their grandparents. Incantations tend to be destructive rather than curative, they are usually recited in Malay or other non-Alune languages, and the incantations are often written rather than memorised. Further, recitation of incantations by this generation is usually not accompanied by the use of aids made from plant or animal matter. In clear contrast to the healing practices of older Alune people, it is the words themselves in incantations owned by younger people which hold the power and carry the ability to heal.

Parental knowledge is not the source for incantations recited by young Alune people in Lohiatata. The language of the incantations and the functions for which they are used strongly suggest the influence of the world beyond the immediate

Alune environment. Unlike their parents and grandparents, who were raised in the relative isolation and protection of the mountain village, young people in Lohiatata are confronted by the apparent hostility of a non-Alune world. They have reacted to the environment in which they now live by learning and utilizing pan-Moluccan knowledge of incantations.

CONCLUDING REMARKS

An analysis of health care practices in the Alune villages of Lohiasapalewa and Lohiatata reveals that, in the pre-Christian era, healers (*ma'aleru*, *biane*, and *ma'selu*) began the process of treating ailments and midwifery concerns with herbal medicines made from a wide range of matter, including plants, plant by-products, animal by-products, and minerals. If the patient failed to respond to herbal medicines, the illness was considered to have arisen from ancestral reprisal for the misdeeds of the patient or to have derived from the destructive magic of sorcerers. In such cases treatment first required the divination of the source of the problem followed by the recitation of curative incantations in conjunction with aids made of plant, animal, or mineral matter.

Conversion to Christianity in both sites led to the suppression of the Alune language and pre-Christian health care practices, and abruptly interrupted transmission of such knowledge. Herbal medicines are now rarely used and the knowledge of ingredients and methods of preparation is in decline. Villagers rely largely on the healing power of prayer and, where available, Western medicines. While older people in Lohiatata and Lohiasapalewa remember and may covertly utilize curative incantations, villagers born following religious change have had restricted access to ancestral practices. In Lohiasapalewa, knowledge and use of curative incantations appears to have almost completely ceased. In Lohiatata, in the absence of transmission of Alune practices and in response to the contemporary environment, younger people have transformed the form and function of incantations by seeking knowledge from the wider Moluccan community.

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NOTES

1. A glossary of Alune terms and English translations is provided in Appendix 3.
2. A description of Alune ethnobiology (Florey, Healey, and Wolff, with Manakane) is in preparation.
3. This paper focuses on incantations used in what Taylor (1988:426) terms "curative medicine". A more complete analysis of Alune incantations, which are very extensive in number and function, is given in Florey (1998).
4. Parentheses indicate verbs for which a translation is not known either to the linguist or to contemporary Alune speakers. The difficulty of interpreting some of the lexemes used in incantations is also addressed by Taylor (1988) and Fox (1975).
5. Social change and the impact of Calvinism in Seram is also discussed in Grzimek (1991, 1996).

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APPENDIX 1: PLANTS USED IN TREATMENT OF ILLNESSES

Bleeding (*nasu* "to bleed from the nose").

- 'amu lebu* leaf of betel vine (*Piper* sp., Piperaceae). Medicinal use: the leaf is chewed, mixed with mineral lime, and placed on a wound to staunch bleeding. This leaf is considered more efficacious than certain grasses in staunching bleeding.
- 'wah'nalu inai* buffalo grass (*Digitaria* sp., Poaceae). Medicinal use: the grass is chewed, mixed with mineral lime, and placed on a wound to staunch bleeding.
- osane* (*Dicranopteris* sp., Gleicheniaceae). Medicinal use: the leaf is chewed, mixed with mineral lime, and placed on a wound to staunch bleeding.
- palate* kind of tall grass (Poaceae). Medicinal use: the grass is chewed, mixed with mineral lime, and placed on a wound to staunch bleeding.

palise common snakeweed (*Stachytarpheta jamaicensis* = *S. dichotoma* Vahl, Verbenaceae).

Medicinal use: to treat bleeding wounds, the bitter-tasting leaves are chewed, placed on a wound, and held in place until bleeding ceases. The leaf poultice causes intense stinging. Other leaf poultices are considered more effective cures for bleeding.

si'wa mau kind of **si'wa'we** fern (*Selaginella* sp., Selaginellaceae). Medicinal use: can be used to staunch bleeding. The leaves are chewed and placed on a bleeding wound, which causes intense stinging but quickly staunches the bleeding.

Blood pressure.

samu labu sea trumpet (*Cordia subcordata* Lam., Ehretiaceae [Boraginaceae]). Medicinal uses: treatment of high blood pressure.

Burns (**popa'e**).

lutune Malay apple (*Syzygium malaccense* (L.) Merr. & Perry, Myrtaceae). Medicinal use: in treatment of burns, the young leaves are chewed and then spat on the burn. The poultice has a gluey quality and sticks until dry.

me'u abile kind of thorny creeper. Medicinal use: in treatment of burns, the bitter-tasting leaves are chewed and then spat on the burn. The poultice has a gluey quality and sticks until dry.

Colds & influenza (**nobale**).

labale Spanish thyme (*Coleus* (= *Plectranthus*) *amboinicus* (Lour.) Sprengel, Lamiaceae). Medicinal use: in treatment of influenza or colds, leaves of planted variety are cleaned and mixed with water, then crushed in the hand before being rubbed on head of patient.

buna 'o'laene hibiscus (*Hibiscus rosa-sinensis* L., Malvaceae). Medicinal use: in treatment of influenza or colds, the leaves are rubbed in water then squeezed in the hands until frothy. They are then rubbed on the crown of the head until the head feels warm.

me'u 'waetute kind of vine (Apocynaceae). Medicinal use: colds or influenza treated by soaking the leaves in warm water and then rubbing the head of a sick child to ease his or her breathing.

Cough (**'buse**) & sore throat.

ai tosile kind of tree (*Boehmeria* sp., Urticaceae ?): very small fruit, inedible. Medicinal use: the root is scraped clean, then grated and squeezed through a cloth. The fluid is mixed in a glass with warm water, then drunk to treat bronchitis or a dry cough. It is asserted that when the child defecates one can see in the feces the remains of something which was caught in the throat and is causing the cough.

'mulene kind of plant (*Wollastonia* (= *Wedelia*) *biflora* (L.) DC., Asteraceae). Medicinal use: in treatment of coughs, the leaves are boiled in two glasses of water until the water reduces to one glass. The water is then drunk by the patient. Alternatively, the plant can be eaten mixed with gnetum (*Gnetum gnemon* L., Gnetaceae) leaves.

musi, lemone orange, lemon (*Citrus* spp., Rutaceae). Medicinal uses: 1) Citrus juice is mixed with sugar and salt and drunk early in the morning to treat cough. 2) To treat sore throat, mineral lime is rubbed on cut half of fruit which is then placed in the ashes until juice boils and then rubbed on chest and throat.

ma'inu tuae anai (e)si='wele honey. Medicinal use: mixed with egg and palm wine and drunk as a medicine to treat cough and sore chest.

Diarrhea (**lale 'lusute**).

ete buai kind of fibrous plant, caesar weed (*Urena lobata* L., Malvaceae). Medicinal use: in treatment of diarrhea, the fruit is cleaned then boiled in two glasses of water until it reduces to one glass. It is then drunk by the patient.

ni'wel (e)si=lamuti root of coconut palm (*Cocos nucifera* L., Arecaceae). Medicinal use: to treat diarrhea the young root of the red variety of coconut palm is cut, boiled with two glasses of water until ca. one glass has evaporated, then root is discarded and cooled water is drunk. Children are treated with one spoonful of the medicine. A further dose can be given if required.

papai papaya tree (*Carica papaya* L. Caricaceae). Medicinal use: dry seeds are chewed then spat out as a treatment for diarrhea.

sala' opoi young seed of the salak (*Salacca edulis* Mal. [= *S. zalacca* [Gaertner] Voss], Arecaceae). Medicinal use: in treatment of diarrhea, the young white seed is peeled, scraped, and the fluid is then squeezed out through a cloth. The fluid is then drunk by the patient, who is also given a lot of water to drink.

Ear infection (*sonale*).

'amu la'a leaf of betel vine (*Piper betle* L., Piperaceae). Medicinal use: in treatment of infective discharge from ear, the leaf is chewed and the saliva mixed with fluid extracted from the leaf is dripped into the ear together with one or two drops of tea tree oil (derived from *Melaleuca quinquenervia*, Myrtaceae). The ear is plugged with a piece of clean cloth.

'amu mala'a leaf of betel vine (*Piper betle* L., Piperaceae). Medicinal use: in treatment of infective discharge from ear, the leaves are pounded and the fluid is squeezed out and mixed with mineral lime then inserted into the ear.

Eye infection (*mata 'erale*).

barwane members of the onion family (*Allium* sp., Alliaceae). Medicinal use: in treatment of sore eyes, a cut piece of onion is rubbed underneath the eye to cause the eye to water.

Fever (*lalelune*) & malaria.

ai lite kind of tree. Medicinal use: the bitter-tasting sap is boiled and drunk to lower fever or treat malaria.

jarak loini (Euphorbiaceae). A recently introduced plant for which there is no Alune term (and which therefore is referred to by a combination of the Malay term and the Alune word for leaf). Medicinal use: in treatment of fever, the leaf is heated over coals then pounded to soften, placed on torso and covered with a cloth.

lasete langsung (*Lansium domesticum* Jack, Meliaceae) Medicinal use: a piece of bark is peeled from the tree, cleaned, and boiled. Approximately half a glass of the bitter-tasting water is drunk as often as required to treat malaria. Symptoms are said to improve in two to three days.

me'u 'wamate kind of ground vine (Commelinaceae). Medicinal use: in treatment of fever, the plant is stripped of its root and dried leaves, then cleaned and boiled in two glasses of water. It is reduced to one glass then drunk by the patient.

Goiter (*mo'a posile*).

tapana parasitic creeper (Loranthaceae). Medicinal use: this plant is said to cure goiter.

Headache (*ulu 'erale*).

'weiye culilaban (*Cinnamomum culitlawan* (L.) Kosterm., Lauraceae). Medicinal use: the bark of the tree is peeled, then chewed to soften and applied to the forehead or temples to treat headache. The bark sticks firmly and can only be removed once dry.

usue kind of plant (*Laportea* sp., Urticaceae). Stem and underside of leaf cause extreme itching, burning sensation, and blistering of skin. Medicinal use: wiped across forehead to treat headache.

Head lice (*utu*), dandruff (*sobule*)

alale kind of plant (*Elatostema* sp., Urticaceae). Grows to about 1 m with small fruit and thin stem. Medicinal uses: 1) Stem is pounded with a rock and rubbed on wet hair. It foams like a shampoo and is used to treat dandruff or head lice. 2) Stem is cut and pounded to extract the sap which is used as conditioner to make curly hair manageable and easier to comb.

hlia kind of plant. Medicinal use: leaves are pounded and wrapped on hair to treat head lice.

Infected wound (*hauni*).

pia sago (*Metroxylon sago* Rottb., Arecaceae). Medicinal use: cold sago gelatin is applied to infected wounds in order to draw out pus. The wound is cleaned, then sago gelatin is applied and left on overnight. If necessary a second application is used.

soi buai (e)si=matai fused sepals on fruit of the betel nut palm (*Areca catechu* L., Arecaceae)). Medicinal use: this part of the fruit is baked until burnt, then ash is squeezed over navel of newborn baby once umbilical cord is cut and tied. The medicine is applied daily until the navel is dry to prevent infection.

Intestinal parasites (*tilatine*).

samu labu sea trumpet (*Cordia subcordata* Lam., Ehretiaceae [Boraginaceae]). Medicinal uses: roots are dried on smoking rack, one quarter glass of scraping is mixed with warm water, then drunk for treatment of intestinal parasites.

Jaundice.

tema 'watnabane kind of banana (*Musa fehi*, Musaceae). Medicinal use: people are fed this fruit as a treatment for jaundice.

Muscular pain, bruising, sprains, broken bones.

unine tumeric (*Curcuma domestica* [= *C. longa* L.], Zingiberaceae). Medicinal use: to replenish the strength of a man or woman who has been doing hard physical labor, the root is grated, boiled with coconut milk, palm sugar, ground pepper, coriander, cumin, and tamarind, then drunk on several consecutive mornings.

'wapa kind of plant (*Crinum* sp., Amaryllidaceae). Medicinal use: in treatment of muscle pain or sprains, a plaster or compress is made from the stem of the plant. The outer stem is peeled and a thin strip of the inner pith (which has layered skin like an onion) is heated to soften and applied to the sore part of the body. It is left in place for one or two days.

'welamau lemongrass (*Cymbopogon citratus* (DC.) Stapf, Poaceae). Medicinal use: in treatment of sprains or cracked bones, the base of the stem is pounded, mixed with coconut, wrapped in a leaf and heated among coals on the hearth until the fluid boils. Once the mixture has cooled it is put on the injured limb and wrapped in cloth. This is repeated until the injury has healed.

'welamau musi citronella grass (*Cymbopogon nardus* (L.) Rendle, Poaceae). Medicinal use: as a massage oil, which is extracted from the pounded stem and leaves.

ma'otu luma pagoda flower (*Clerodendrum* sp., Verbenaceae). Medicinal use: to treat sprains or bodily aches following falls or to speed the healing of broken bones, the midrib of the leaf is heated to soften, pounded until fine and easy to compress, rubbed with coconut oil, then the entire leaf is applied as compress and covered with a cloth. The compress is applied at night and removed in the morning. This forms a very strong-smelling ointment. Only the variety with the reddish midrib is used medicinally.

maralane (e)si=tu'une deer fetus. Medicinal use: to strengthen the body, the fetus is added to distilled palm wine. To prepare, the fetus is washed twice in distilled wine, which is later discarded. Prepared fetus is added to container of palm wine which is drunk sparingly as needed.

maralane (e)si=tamu Achilles' tendon of deer. Medicinal use: to strengthen the body, the tendon is added to distilled palm wine. To prepare, the Achilles' tendon is washed twice in distilled wine, which is later discarded. Prepared Achilles' tendon is added to container of palm wine which is drunk sparingly as needed.

mayana kind of plant (*Plectranthus scutellarioides* (L.) R. Br., Lamiaceae). Medicinal use: to treat swelling in limb, a leaf is rolled between hands until soft, then mixed with mineral lime and rubbed on the wound. The plant can be repeatedly applied until swelling reduces.

minyak kayu putih tea tree oil (derived from *Melaleuca quinquenervia* (Cav.) S. T. Blake, Myrtaceae). This is a commercially purchased product for which there is no Alune term (and therefore it is referred to by the Malay term). Medicinal use: to treat bruising following a fall, a young child's head and entire body is firmly massaged with the oil.

mou tapele kind of vine (*Aglaonema commutatum* Schott, Araceae). Medicinal use: to treat muscular pain and sprains, young leaves are heated over a fire to soften them, then coconut oil is rubbed on the leaf and the leaf is applied to the sore muscle or sprain as a compress. It is said to feel cool and fresh. The epidermal layer is also used as a compress for sprains: it is removed, cleaned and grated then put on the sprain and wrapped with cloth.

popole cluster fig (*Ficus racemosa* L., Moraceae). Medicinal use: young leaves of the red variety of cluster fig are used to treat body pains. The leaves are boiled in coconut milk until the milk has completely evaporated. The sore part of the body is wrapped with the leaf and then covered with cloth.

usue kind of plant (*Laportea* sp., Urticaceae): stem and underside of leaf causes extreme itching, burning sensation, and blistering of skin. Medicinal use: rubbed on limbs to treat muscle pain.

Nausea (*iba*).

ai inai aini clove tree (*Syzygium aromaticum* (L.) Merr., Myrtaceae). Medicinal use: stomach is rubbed with clove to treat nausea.

pa'u tobacco (*Nicotiana tabacum* L., Solanaceae). Medicinal use: stomach is rubbed with tobacco to treat nausea.

soi betel nut palm (*Areca catechu* L., Arecaceae). Medicinal use: seed is chewed as a treatment for nausea (including morning sickness).

soi 'berele betel nut palm (*Areca catechu* L., Arecaceae): fourth and final stage of growth of the fruit. Medicinal use: stomach is rubbed with this fruit to treat nausea.

Poisoning (*male*) & snake bite.

ai sa'ale kind of plant, said to be a kind of cluster fig (*Ficus racemosa* L., Moraceae). Medicinal use: a cure for poisoning. The fruit of the tree is eaten to extract the liquid, which constitutes the cure, and the skin is spat out.

'wata muri crepe ginger (*Costus speciosus* (Koenig) Sm., Costaceae [Zingiberaceae]). Medicinal use: the stem of the plant is used either to treat or prevent snake bite. It is pounded then rubbed over the body which deters snakes from biting. If bitten, the pounded stem can be rubbed on the wound.

tema amine kind of banana (*Musa acuminata* Colla, Musaceae). Medicinal use: sap taken from a small plant is drunk to treat bite of death adder (*Acanthophis* sp.). The medicine is said to cure through inducing vomiting.

Skin complaints (*ndu'ane, busale*).

ai inai clove tree (*Syzygium aromaticum* (L.) Merr., Myrtaceae). Medicinal use: as a cure for scabies, the skin is rubbed with a mixture of clove, shallot, ginger, Chinese chive, and the components of a betel quid (sirih leaves, fruit of the areca palm, mineral lime).

- ai tetu ndu'ane** kind of tree (*Rhynchoglossum obliquum*, Gesneriaceae). Medicinal use: leaves are rubbed on the skin to treat scabies (**ndu'ane**). Its name literally means "the tree with scabies leaves."
- bawan lala'we** shallot shallot (*Allium cepa* L. (aggregatum group), Alliaceae). Medicinal use: as a cure for scabies, the skin is rubbed with a mixture of clove, shallot, ginger, Chinese chive, and the components of a betel quid (sirih leaves, fruit of the areca palm, mineral lime).
- 'amu** leaf of betel vine (*Piper* sp., Piperaceae). Medicinal use: as a cure for scabies, the skin is rubbed with a mixture of clove, shallot, ginger, Chinese chive, and the components of a betel quid (sirih leaves, fruit of the areca palm, mineral lime).
- 'apul tubui** shoot tip of the autumn pumpkin vine (*Cucurbita pepo* L., Cucurbitaceae). Medicinal use: form of treatment for early stages of skin disease (ichthyosis, tinea). The affected part of the body is scraped until it becomes a bleeding wound. A mixture of mineral lime and shoot tips from a pumpkin plant is then applied.
- 'ucai loini** Chinese chive (*Allium tuberosum* Rotter ex Sprengel, Alliaceae). Medicinal use: as a cure for scabies, the skin is rubbed with a mixture of clove, shallot, ginger, Chinese chive, and the components of a betel quid (sirih leaves, fruit of the areca palm, mineral lime).
- leite** coconut oil (derived from *Cocos nucifera*). Medicinal use: a) As a cure for itching and blistering of the skin caused by contact with the hairy caterpillar (Lepidoptera), the skin is rubbed with coconut oil. b) As a cure for itching caused by spines on stem of giant bamboo, the skin can be rubbed with coconut oil.
- milu** candlenut (*Aleurites moluccana* (L.) Willd., Euphorbiaceae). Medicinal use: as a cure for itching caused by spines on stem of giant bamboo, the skin can be rubbed with oil from the candlenut.
- popole putile** cluster fig (*Ficus racemosa* L., Moraceae). Medicinal use: ichthyosis may be treated in its early stage. The affected part of the body is scraped until it becomes a bleeding wound. The sap from the base of a petiole is dripped on to the wound. This treatment cannot be used if disease is too extensive as it would create too large a wound.
- se'u tinai** rhizome of ginger (*Zingiber officinale* Roscoe, Zingiberaceae). Medicinal use: as a cure for scabies, the skin is rubbed with a mixture of clove, shallot, ginger, Chinese chive, and the components of a betel quid (sirih leaves, fruit of the areca palm, mineral lime).
- soi** betel nut palm (*Areca catechu* L., Arecaceae). Medicinal use: a) As a cure for scabies, the skin is rubbed with a mixture of clove, shallot, ginger, Chinese chive, and the components of a betel quid (sirih leaves, fruit of the areca palm, mineral lime). b) As a cure for itching and blistering of the skin caused by contact with the hairy caterpillar (Lepidoptera), the skin is rubbed with chewed fruit of the areca palm. c) As a cure for itching caused by spines on stem of giant bamboo, the skin can be rubbed with chewed fruit of the areca palm.
- totlaine** kind of plant. Medicinal use: in treatment of fungal infections (known in Ambonese Malay as *mata ikan*) which cause painful sores under fingernails. Outer bark is scraped away, then the inner bark is scraped and put on the wound. The bark has a gluey consistency, and sticks more effectively as it dries.
- usue** kind of plant (*Laportea* sp., Urticaceae). Stem and underside of leaf of this plant cause extreme itching, burning sensation, and blistering of skin. Medicinal use: used to treat the severe itching, hives and paraesthesiae caused by contact with the *hlatene loini mayaune* (*Laportea* sp., Urticaceae). The reaction may be minimised if the affected part of the body is immediately rubbed with leaves from this plant.

Smallpox (*uwane*).

lotine kind of plant (*Euryclides amboinensis* (= *Proiphys amboinensis* [L.] Herbert), Amaryllidaceae). Medicinal use: treatment of smallpox, which reached epidemic proportions in Lohiasapalewa in earlier times. A plaster or compress is made from the leaves and placed on the wounds. The leaf is heated to soften, rubbed with coconut oil, then applied to the wound and left in place for one or two days to draw pus from the wound. This plant is always replanted in new gardens to ensure its availability.

Toothache (*nise 'erale*).

tapua 'otote creeping oxalis (*Oxalis corniculata* L. Oxalidaceae). Medicinal use: in treatment of nerve pain in teeth, or soreness from erupting teeth in a young child. The leaves are washed, then placed in warm water to soften (for approximately 20 minutes). Then the plant is discarded and the patient gargles several times with the water.

tolun nise ma'erale nipple fruit (*Solanum mammosum* L., Solanaceae). Medicinal use: the name of the plant (literally "the sore tooth eggplant") derives from its use as a treatment for toothache. A clay pot is heated on fire and seeds from this plant are then baked in the pot. One end of a strawlike petiole from a papaya tree is placed over the burnt seed and the smoke is inhaled onto the sore tooth. It is asserted that the pest which is causing the toothache will fall out and into the pot.

Urinary tract infection (*tili senete*).

palate kind of tall grass (Poaceae). Medicinal use: the leaves of the grass are tied around the waist as a treatment for urinary tract infections, and left in place until cured.

putune along-along (*Imperata cylindrica* (L.) Beauv., Poaceae). Medicinal use: the root is used to treat urinary tract infections. The root is pounded until soft, then boiled in two glasses of water until reduced to one glass. The liquid is mixed with 2-3 spoons of honey and drunk.

seae ta'unui spiny fruited pick-a-back (*Phyllanthus urinaria*, Euphorbiaceae). Medicinal use: leaf is used to treat stomach ailments, and kidney and bladder problems, such as blood in the urine.

tema 'watnabane kind of banana (*Musa fehi*, Musaceae). Medicinal use: fruit is used as a medicine to cleanse the bladder and make urine very yellow.

APPENDIX 2: PLANTS USED BY MIDWIVES

Childbirth & postpartum treatment.

ai 'opi robusta coffee (*Coffea canephora* Pierre, Rubiaceae). Medicinal use: strong coffee is given to a woman in labor to speed a slow delivery. Coffee is also drunk post-partum to cleanse the uterus.

ba'u'upe infusion or sauna: made from leaves of clove, nutmeg, lemongrass, papaya, and citrus. Medicinal use: encourages sweating and speeds the healing process in someone recovering from an illness or following a difficult childbirth which has left the mother pale and weak. Leaves are boiled together in a pot until the water is reddish and the pot is then placed inside an enclosure made from matting; the patient inhales the fragrant steam and bathes in the water. Patient remains within the sauna for as long as possible: she may emerge to cool down, then re-enter. The sauna may be used over a period of several weeks, though it is considered dangerous to use it more than once a week. The water from the sauna may be drunk to assist in a particularly difficult childbirth. Older people insist that this water must not be carelessly disposed of, but be treated with respect. An alternative kind of sauna can be made by heating stones until red hot, then placing them under a bed base made of sago leaf midribs. The patient is enclosed with matting and water is poured over stones.

boro kind of plant (*Colocasia* sp., Araceae). Medicinal use: the leaf is used as a treatment for a protracted and difficult labor. Water or cold tea is poured into the center of the leaf and the patient drinks the fluid directly from the leaf. If the placenta is slow in being expelled, the leaf is tapped once on the head of the woman, then brushed the length of the front of the body before being thrown away.

unine tumeric (*Curcuma domestica* (= *C. longa* L.), Zingiberaceae). Medicinal use: to replenish the strength of a woman who has just given birth, the rhizome is grated, boiled with coconut milk, palm sugar, ground pepper, coriander, cumin, and tamarind, then drunk on several consecutive mornings.

lahlate nutgrass (*Cyperus rotundus* L., Cyperaceae). Medicinal uses: used in a steam bath as a post-partum treatment; the leaves of the grass are boiled together with clove leaves, nutmeg leaves, lemongrass, and citrus tree leaves, then placed inside a sauna made of matting. The woman squats over the infusion for about five minutes to cleanse herself and regain strength.

musi munine makrut lime (*Citrus hystrix*, Rutaceae). Medicinal use: the fruit is used as a post-partum treatment for swollen belly; up to 10 fruits are cut in two and baked on the coals of a fire until the juice boils. Lime is rubbed on a plate, then the juice is squeezed on to the plate and mixed with mineral lime until smooth. The paste is then rubbed on the belly below the navel.

me'u 'a'ale kind of thorny creeping vine (*Smilax* sp., Smilacaceae). Medicinal use: the leaf is used as a post-partum treatment for swollen belly. The soft, young leaves are boiled in two glasses of water until reduced to one glass, then drunk.

minyak kayu putih tea tree oil (derived from *Melaleuca quinquenervia* (Cav.) S. T. Blake, Myrtaceae). This is a commercially purchased product for which there is no Alune term (and therefore it is referred to by the Malay term). Medicinal use: 2-3 drops of oil are added to warm water to cleanse a woman who has just given birth. A cloth rinsed with the water is used to massage her belly to remove blood clots.

popole cluster fig (*Ficus racemosa* L., Moraceae). Medicinal use: young leaves of the red variety of cluster fig are used to treat women who have just given birth. The leaves are boiled in coconut milk until the milk has completely evaporated. The lower body is wrapped with the leaves and then covered with cloth.

Conception (*mluti*).

ai tetu bina white kyllinga (*Cyperus kyllingia* ?, Cyperaceae). Medicinal use: this plant is used by women who desire a female child. The leaf is tied over the belly of the woman and left in place until it dries and falls. Its name means "the tree which drops females." The plant is said to be effective during the first three months of pregnancy.

seae ta'unui spiny fruited pick-a-back (*Phyllanthus urinaria*, Euphorbiaceae). Medicinal use: this plant is used by women who desire a male child. The topmost leaf is discarded, and the second leaf is said to provide the male child. The leaf is tied over the belly of the woman and left in place until it dries and falls. This plant has small round green fruit which people say resemble testicles. Its alternate name, *ai tetu mo'wai*, literally means "the tree which drops males." The plant is said to be effective during the first three months of pregnancy.

Contraception and abortion.

'ampala opoi immature pineapple (*Ananas comosus* (L.) Merr., Bromeliaceae). Medicinal use: abortifacient. The skin is peeled from a young fruit, which is then grated and squeezed to extract its juice. The juice is boiled with two glasses of water until it reduces to one glass, then is mixed with ash from the hearth and drunk to induce abortion. This abortifacient is used only within the first two months of pregnancy: after that time a) abortion is considered dangerous to the mother and b) the fetus is considered human.

- lahlate** nutgrass (*Cyperus rotundus* L., Cyperaceae). Medicinal uses: leaves are cut and dried for one day, then boiled, and the water is drunk to induce abortion. This is not preferred as an abortifacient as it is said to damage the uterus and cause infertility.
- putune** alang-alang (*Imperata cylindrica* (L.) Beauv., Poaceae). Medicinal use: the plant is used as a contraceptive or abortifacient. Alang-alang and **tapana** (*Loranthus* sp., Loranthaceae) are pounded and boiled together in two glasses of water until reduced to one glass, then drunk. Midwives advise women to drink the mixture two weeks after menstruation to prevent conception. The mixture is used to space children in a family.
- seae ta'unui** spiny fruited pick-a-back (*Phyllanthus urinaria*, Euphorbiaceae). Medicinal use: leaf of plant is used as an abortifacient. Ten leaves are boiled in water until approximately one glass of water remains, and then drunk to induce abortion.
- tapana** (Loranthaceae). Medicinal use: the plant is used as a contraceptive or abortifacient. Alang-alang (*Imperata cylindrica* (L.) Beauv., Poaceae) and tapana are pounded and boiled together in two glasses of water until reduced to one glass, then drunk. Midwives advise women to drink the mixture two weeks after menstruation to prevent conception. The mixture is used to space children in a family. It is said that this plant can make men impotent, and can make young women who have not yet had a child infertile.

Breastfeeding.

- 'bue lala'we** rice bean (*Vigna umbellata* (Thunb.) Ohwi & Ohashi, Fabaceae). Medicinal use: treatment to help the flow of milk from engorged breasts (**laesa**). The leaves are washed, rubbed to soften, mixed with mineral lime and rubbed on breast. The treatment is repeated several times if necessary.

APPENDIX 3: GLOSSARY OF ALUNE TERMS

ai 'watai	a plant which can be used as a medicine; a plant which has healing properties
biane	midwife
hela'e	to exorcise; to remove an evil spirit from a person through the use of incantations
'basa	to be possessed: to go into a trance in order to determine the cause of an illness or the source of a problem
'era	to be ill, be in pain
'nau	the process of divination: to try to find the source of an illness or problem using a variety of aids
'nipa'we	kind of plant (<i>Hornstedtia</i> sp., Zingiberaceae), used as a tool in divination
'wate	protection charm
lanite	sky
lau	common palm civet, principally arboreal. Healers who use incantations may not eat this animal because it is asserted that the civet cat gave them some of their knowledge of healing
lepate mlerude	a healing register spoken prior to treating certain injuries with incantations
lerue	to heal by 'blowing' an incantation over someone

<i>lita</i>	evil spirit, devil
<i>lopon inai</i>	mineral lime. Mussel shells are a common source of mineral lime which is used in a betel quid: the shells are dried, baked, and pounded to extract the chalk
<i>luma posone</i>	birthing hut
<i>ma'aleru</i>	one who heals by reciting incantations
<i>ma'amlea</i>	thief
<i>ma'selu</i>	a healer who assisted after childbirth by inspecting the newborn child and repairing physical problems, such as straightening crooked limbs. Literally: "one who sees"
<i>marele</i>	cuscus (generic), <i>Phalangeridae</i> . Cuscus are linked with myths and rituals related to life-giving and preserving, including the origin of Alune midwifery knowledge
<i>mleane</i>	theft
<i>ni'wel (e)si=buai</i>	fruit of the coconut palm (<i>Cocos nucifera</i> L., <i>Arecaceae</i>), used as a tool in divination
<i>nitu matala</i>	spirit of the dead, ancestor
<i>nulu</i>	to massage, rub (body, not head)
<i>ose'e</i>	to massage, rub one's temples
<i>punale</i>	the midrib (leaf petiole-rachis) of the sago palm which is used to build walls; used as a tool in divination
<i>soune</i>	to commit adultery
<i>tapele</i>	earth
<i>tapel lalei</i>	territory: the complete territory owned and occupied by a village, including primary and secondary forest, groveland, gardens, and settlement sites
<i>ti'luline</i>	common palm civet, terrestrial. Healers who use incantations may not eat this animal because it is asserted that the civet cat gave them some of their knowledge of healing

BOOK REVIEW

Population Dynamics of a Philippine Rain Forest People: The San Ildefonso Agta. J. D. Early and T. N. Headland. University Press of Florida, Gainesville. 1998. Pp. 208. \$39.95 (cloth). ISBN: 0-8130-1555-3.

This book is based on over 40 years of demographic and ethnographic work among the San Ildefonso Agta. The quality of the publication certainly reflects the authors' profound intimacy with the study population. In just over 200 pages that include 80 tables, figures, maps, and black-and-white photographs, Early and Headland meticulously craft an outstanding book, a must-read for anyone interested in tropical rain forest peoples. It makes a superb addition to any demography, ecological anthropology, or geography course syllabus.

The 12 chapters are divided among six themes. In Part 1 they introduce the study population and provide the essential ethnographic data. In Part 2 they discuss how historical forces have shaped the trajectory of the Agta in general, and