Uras: Medicinal and Ritual Plants of Serampas, Jambi Indonesia

Bambang Hariyadi and Tamara Ticktin

Research

Abstract

Documenting indigenous healthcare practices provides insight into how human communities have adapted to their local environments and can guide culturally appropriate medical care. The Serampas inhabit the border of Kerinci Seblat National Park, Sumatra, Indonesia, and the only ethnobotanical study carried out there was in 1783. We identified the Serampas' conceptions of health and illness and the medicinal and ritual plants they use; and assessed how this has changed over the past two centuries. Participant observation and in-depth interviews were carried out with 36 respondents. The Serampas conceive of health and illness to be caused by external and internal factors and recognize **obat rajo** (king's medicine) and **obat ditawar** (enchanted medicine). They use > 127 medicinal plant species, which overlap with their 32 species of ritual plants. Most medicinal plants are gathered from shifting cultivation fields and secondary forests, > 50% are cultivated, and 40% are also food. The Serampas use 50% of the medicinal plants recorded in 1783.

Introduction

The Serampas are a group of indigenous people who inhabit the border areas inside Kerinci Seblat National Park (KSNP) in Midwestern Sumatra, Indonesia. They have occupied this region for many generations before the park was established in 1999 (Bonatz *et al*. 2006), and to some degree, they still practice and maintain their traditional life-style. This includes the ways in which they use and manage natural resources and their reliance on plants for resolving health problems. In his classical work, Marsden (1811) visited Serampas in 1783-1784, and recorded the use of plants there and across Sumatra. Although there have since been various ethnobotanical studies in other parts of Sumatra (Elliott & Brimacombe 1987, Grosvenor *et al*. 1995, Mahyar *et al*. 1991, Susiarti *et al*. 2005), none have been carried out with the Serampas. In this paper we address two main questions: (1) What are the Serampas' concepts of health and illness, and (2) What kinds of medicinal and ritual plants do they use. A secondary aim is to assess if Serampas medicinal and ritual plant use has changed over the past two centuries.

The erosion of medicinal plant knowledge has been reported from many parts of the world (e.g., Caniago & Siebert 1998, Estomba *et al*. 2006, Srithi *et al*. 2009) and documenting traditional healthcare practices and knowledge can be an important step in conserving it. In the context of government health centers established in Serampas and elsewhere, it can also help to guide culturally appropriate medical care (Ticktin & Dalle 2005). Documenting indigenous healthcare practices and medicinal plant knowledge also provides insight into the diverse ways human communities have adapted to their local environments.

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Material and methods

Ethnobotanical data collection

This research took place in the community of Serampas, a sub clan who inhabit the northeastern area of Jangkat Subdistrict, Merangin, Jambi, Indonesia (Figure 1). The term Serampas refers to both the people and the region that they inhabit, in southwestern Sumatra, Indonesia. The Serampas are thought to be culturally influenced by the Minang Kabau (West Sumatra), as they have some similar socioeconomic and cultural aspects (Cholif 1971). For example, in the Serampas' inheritance system, **sawah** (wetland rice fields) and houses are considered **harta berat** ("heavy possessions"), and are passed down exclusively to daughters. This inheritance system is closely related to that of the Minang Kabau, which is matrilineal. Serampas still have socioeconomic links to Minang Kabau today, mainly through trading. For example, most of cinnamon produced in Serampas is collected in Sungai Penuh city (Kerinci) before it is exported overseas through the Teluk Bayur port in West Sumatra. On the way back, Serampas traders take back various products such as processed food, agricultural tools, and cloth.

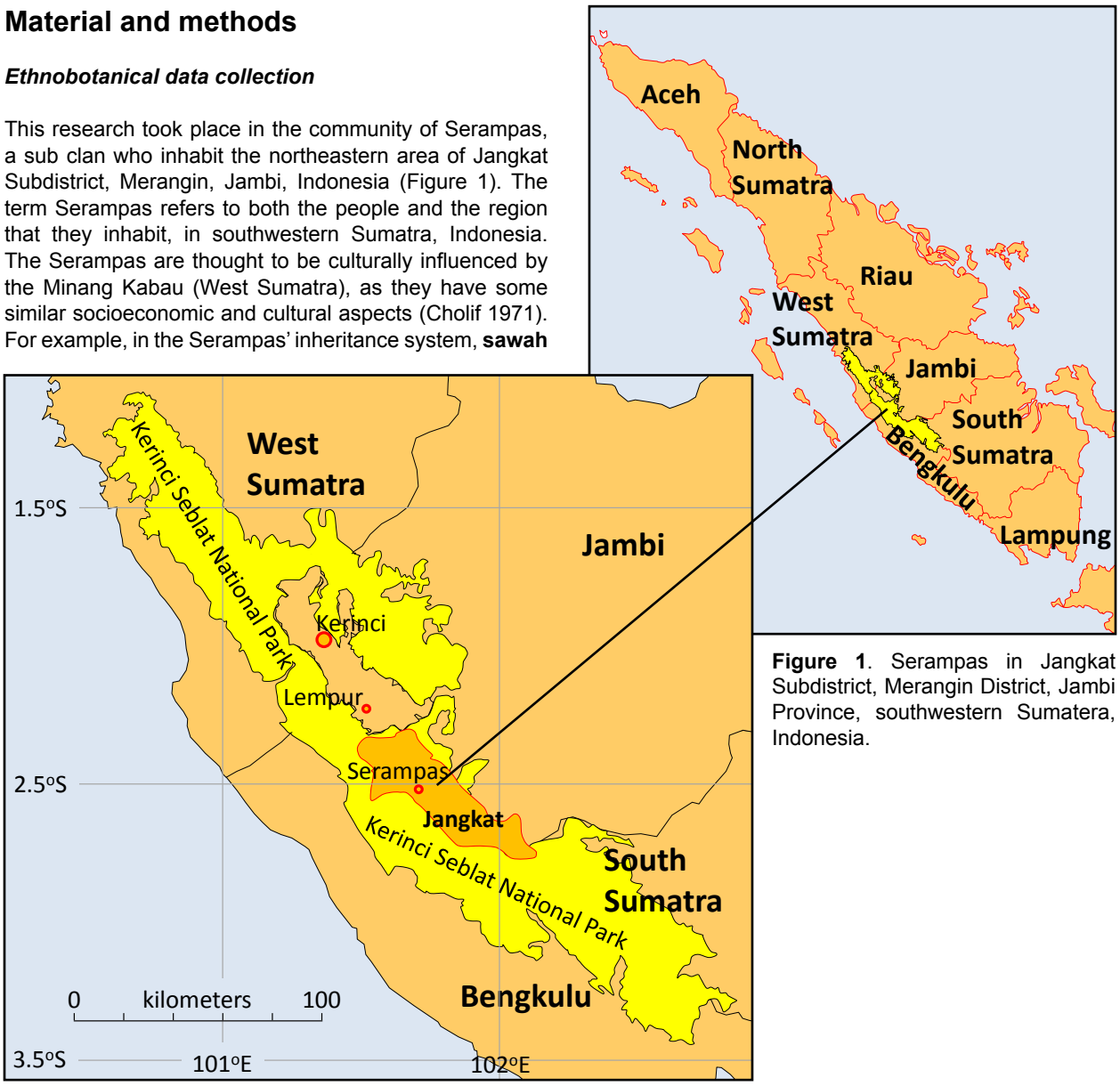

Figure 1. Serampas in Jangkat Subdistrict, Merangin District, Jambi Province, southwestern Sumatera, Indonesia.

There are also relationships between Serampas and Javanese culture, given the presence of some Javanese-associated cultural items and practices in Serampas culture, such as **redap gong** (a set of local traditional music instruments) and Depati Pulang Jawo, the title of the Serampas traditional leader. The tradition of washing local **pusakos** (heirlooms) in the annual heirloom festivity follows a similar tradition widely practiced by the people of Java.

It is estimated that the current population of Serampas is the 13th generation to inhabit the area. Bonatz *et al*. (2006) argued that the people have inhabited the region since about eleventh to thirteenth centuries AD. Campbell's expedition in 1804 confirmed that the population in the region was extremely dense compared to the surrounding areas (Marsden 1811).

Instead of Serampas or Serampei, local people prefer using the term Serampeh to distinguish their group from other ethnic groups. The name Serampas may also be associated with the Serampas River which passes through the northern territory of Serampas. According to local elders Serampeh may originate from **se** and **ampu**, meaning a group of unearthly, supernatural people. This notion is consistent with records of the earlier history of the Serampas. Neidel (2006) mentions that each village was ruled by the strongest person, typically measured by his supernatural power capability. Today most Serampas are Moslem but shamanism is still practiced and Serampas is still widely known as a sacred region (**daerah keramat**).

Administratively, Serampas is a group of five villages in the Jangkat subdistrict, under the governance of Merangin District, in the Province of Jambi. Two Serampas villages are within the territory of Kerinci Seblat National Park and the other villages are on the border of the park (Figure 1). The Serampas region dominated by undulating terrains is a part of Bukit Barisan, a mountainous chain that stretches along the western coast of Sumatra. The total population of Serampas is about 1,400,365, with population densities in each village ranging from 1.0 to 11.6 people per km^2. The Serampas make a living by practicing shifting cultivation, mainly to produce rice. Some of them also practice sedentary agriculture by growing rice in irrigated rice fields, **sawah**, especially in villages that have vast areas of flat land and enough water for irrigation. Recently, the Serampas have also incorporated some cash crops, mainly potatoes, cinnamon and coffee (Hariyadi & Ticktin 2012).

Between July 2005 and March 2006, in-depth interviews with prior informed consent using an open-ended questionnaire were conducted with Serampas local experts to collect data about plant use. A snowball method was applied to select the respondents (Bernard 2002) beginning with the village leader. In cases where a primary respondent suggested more than one secondary respondent, the person who was the respondent's strongest recommendation was selected. Some of the interviews involved repeat sessions with a respondent in order to obtain further clarification and/or additional information.

Respondents were asked a series of questions related to perceptions of health and illness, the medicinal plants they knew, their efficacies, and uses. All interviews were carried out by the first author using a mix of Indonesian and Serampas language. Participant observation with informed consent was also conducted with selected individuals in their private homes, **umo** (shifting cultivation rice fields), **sawah** (wetland rice fields) and at local cultural events such as **selamatan ruso**, **negak rumah** and **kenduri psko** to observe the common medicinal and ritual plants used. In this paper we present only those plant uses that were reported by at least three respondents.

All of the plants recorded during the interviews were collected in each village and vouchers were sent to, and identified by, plant taxonomists at the Herbarium Bogoriense (BO), Bogor, Indonesia. Permission to collect plants was obtained from the Ministry of Forestry. Duplicate vouchers are stored in the Biology Laboratory, the University of Jambi. Taxonomic grouping and scientific naming of the vouchers were verified with the TROPICOs database, Kew Checklist of Selected Plant Families and Index Kewensis under the online International Plant Name Index (www.ipni.org/).

Results and Discussion

The respondents included customary leaders, shamans, midwives, farmers, the park manager, local government officers and anyone who had knowledge of medicinal and ritual plants. The total number of respondents was 36, consisting of 15 respondents from the village of Tanjung Kasri and 21 from the village of Renah Kemumu. This included 16 women and 20 men. The age of respondents ranged from 31 to 84 years.

The Serampas healthcare system

Serampas healthcare combines knowledge and use of local medicinal plants with shamanism, under the guidance of the local customary system (**adat**). **Adat** requires **dukun** (traditional healers) to serve in a "customary medical team", providing health services to the whole community. The **dukun** mostly obtain their skills and knowledge through apprenticeships with their relatives and elders. The customary inauguration of the medical team usually takes place with a **kenduri psko**, an annual customary celebration. The team is called **dukun berempat jantan dan berempat betino** ("the four shaman women and four shaman men"), although this does not necessarily mean that the team must always consist of four men and four women.

In addition to the **dukun berempat jantan dan berempat betino**, there is another separate medical team entitled **dukun bulian tangan** (midwives). This team consists of midwives who devote their time to caring for pregnant women and their newborns. They provide health services to women from four-months of pregnancy up to 15 days after giving birth. Villagers perform **syukuran bayi**, a thanksgiving ritual to celebrate the newborn baby, usually around 15 days after the birth. In this ritual, a **dukun bulian tangan** who is taking care of the mother and the baby, is rewarded with a set of gifts, consisting of a **gantang** (a local measurement unit roughly equal to 2.5 kg) of black sticky rice and regular rice, a whole, cooked chicken, a set of items needed to make **pinang-sirih** [a quid of betel for chewing, consisting of betel nut, betel pepper leaf, **gambir** (*Uncaria gambier* (W. Hunter) Roxb.), lime, and a piece of tobacco] and some money. The amount of

the gift money is voluntary, and depends on the ability and willingness of the newborn's family.

Serampas' conceptions of health and illness

Some scholars have classified indigenous beliefs about disease into two main domains: those of naturalistic origin (disease caused by nature), and those of personalistic origin (disease caused by humans and/or supernatural) (e.g., Florey & Wolff 1998, Foster 1976, Gollin 2001, Mac Farlane 1981, Nurge 1977). For Serampas, the origin of diseases is similarly categorized into two main domains: internal factors (caused by the human body) and external factors (caused by "nature"). Spirits are considered external factors, part of the domain of nature. The internal factors consist of two main elements: cleanliness and fatigue, whereas the external factors include supernatural powers such as **orang gunung** (mountain people), **poyang** (ancestors) and **jin** (jinn, evil spirit) and extreme weather or climatic conditions such as large changes in local weather, very hot or cold weather, and/or too much (heavy) rain. Serampas maintain that supernatural powers may overlap with extreme weather conditions.

The Serampas perceptions of health and illness are influenced by the surrounding environment. Serampas believe that a harmonic relationship between people and nature, including invisible creatures, is required to keep people healthy. Indigenous groups elsewhere share similar conceptions of disease. For example, the Samburu, a traditional people who inhabit Mt. Nyiru, South Turkana, Kenya perceive that illness occurs when a kind of pollutant hinders or blocks one's digestion. The pollutant could be contaminated food, infection by sick people and as well as witchcraft (Bussmann 2006). The Asheninka in Western Amazonia perceive that a complex network of intertwined wills, as well as hunting and agricultural yields, define human health status. Any negative action such as an attack or harmful influence may induce an illness (Lenaerts 2006). Ahmad (2002) observed that people in Malaysia and some regions in Indonesia influenced by Islam, categorize disease into three main groups including common disease, uncommon/artificial disease, and fate. Common diseases include illnesses provoked by environmental factors, bad diet, germs and fatigue. Bad spirits and supernatural influences mostly cause diseases in the second group, whereas disease in the latter group is perceived as an individual's destiny.

Serampas generalist and specialist medicine

The Serampas recognize two types of medicine i.e., **obat rajo** (king's medicine) and **obat ditawar** (enchanted medicine). **Obat rajo** refers to medicinal plants that have general efficacy; common people may use the **obat rajo** without the presence of a **dukun**. For example, if someone is wounded while slashing bushes for shifting cultivation, one just grabs some leaves of **rumput bungo** (*Eupatorium inulifolium* Kunth), squeezes them and puts them on the injury. The Serampas believe that knowledge of these medicinal plants was handed down from their ancient kings. **Obat ditawar** is used to address any disorder caused by the external domain, mainly associated with supernatural powers. To prepare this kind of medicine, a **dukun** uses certain medicinal plants such as **bungo panggil** (*Clerodendrum buchananii* (Roxb.) Walp.) and **rumput sembuang** (*Eleusine indica* (L.) Gaertn.), as media to convey his powers to treat a patient.

In addition to the **obat ditawar**, the Serampas also carry out some practices to prevent harm from the 'external domain', especially supernatural powers. For example they keep a piece of **kunyit melai** (*Zingiber montanum* (J. König ex Retz.) Link ex A. Dietr.) with them, especially when traveling across the local forests, to protect them from bad spirits. People believe that the **kunyit melai** waste from washing heirlooms at a **kenduri psko** has much stronger efficacy for this purpose than regular rhizomes which have not been used in a chant. Serampas also cultivate **pandan singkil** (*Pandanus furcatus* Roxb.) in their back yards to keep bad spirits from coming around the house.

Besides **obat ditawar**, Serampas also recognize **bertenung**, a specific ritual to diagnose and heal a patient with an acute condition. It frequently involves the process of communicating with Serampas ancestors. After performing the ritual, a **dukun** usually receives an idea for a formula of medicinal plants to cure the patient. The healing may employ both **obat ditawar** and **obat rajo**.

Obat ditawar is mainly used to treat diseases associated with the external domain. The ritual of **bertenung** involves communication with the ancestors and is a type of holistic healing that combines the use of **obat rajo** and **obat ditawar**. A patient who recovers from a disease through the **bertenung** ritual has to perform **kenduri**, another ritual to express one's gratitude for their release from a serious disease. In doing so, the patient's family invites and serves a dinner for a number of people, mainly extended family and close neighbors (see also Anas 2006). Serampas believe that failure to perform the **kenduri** may induce the disease to "re-inhabit" the patient. At that feast, the **dukun** who treats the patient is rewarded with a chicken and a **gantang** of rice.

A similar technique of diagnosis is also practiced by the Dayak Ngaju and the Dayak Benuaq, indigenous groups of Central and Eastern Borneo (Klokke 1998, Sodikin 2005, Susiarti 2005). The local government in the latter region promotes the conservation of this traditional healing ritual, because it attracts tourists to visit the region (Susiarti 2005).

Knowledge of **obat rajo** is widely distributed among the people of Serampas and is common knowledge. In con-

trast, knowledge of **obat ditawar** is restricted to the local **dukun**. It is handed down over generations exclusively within the **dukun**' line of descendants. In general, young people are not interested in learning about **obat ditawar**, but a few young women have become interested in practicing shamanism through apprenticeships.

Some of the above practices are similar to those in other parts of Indoneisa and elsewhere. For example, in the community of Bogany in Northern Sulawesi, knowledge of medicinal plants is mainly held by local healers (Simbala *et al*. 2005) who learn by means of dreams and apprenticeships. As in Serampas, healers in this community are traditionally not permitted to receive money for any medical service they provide. It is believed that if they do, the efficacy of their healing will be lost and they will not be able to treat patients.

Serampas medicinal plants

At least 127 species of medicinal plants (Table 1), in 51 families, are commonly employed by Serampas for **obat**

Table 1. Medicinal Plants used by the Serampas, in Sumatra, Indonesia. Plant sources: C (cultivated); W (wild); SW (semi-wild). Plant habitats: F (forests); S (**sawah**, irrigated rice fields; SF: Secondary F; U (**Umo**, upland rice farm [rice-based shifting cultivation field]). Possible biomedical correlates (translations) are provided.

Scientific Name & Voucher number	Voucher number	Vernacular Name	Sources	Habitat	Serampas Disease Term	Possible Biomedical Correlate
Acanthaceae						
Andrographis paniculata (Burm. f.) Wall. ex Nees	ANS47	**Rumput Mempedu**	SW	U	**Sariawan**	Scurvy
Aphelandra sp.	ANS05	**Daun Sako**	C	U	**Memar**	Contusion
Graptophyllum pictum (L.) Griff.	ANS35	**Puding**	C	U	**Sakit Pinngang**	Back pain
Justicia gendarussa Burm.f.	ANS14	**Ranjau Ruso**	C	U/SF	**Sakit Kepala**	Headeach
Achariaceae						
Pangium edule Reinw.	-	**Kepayang**	SW	U/SF	**Sakit ggi**	Teeth problems
Acoraceae						
Acorus calamus L.	HH01	**Jerangau**	C	U	**Demam**, **Tangkal iblis**, **rematik**, **sakit perut**	Fever, Anti bad spirit, rheumatic, stomach
Amaranthaceae						
Amaranthus sp.	-	**Bayam**	C	U	**Kurang darah**	Anemia
Celosia argentea L.	ANS46	**Rambu abang/ kuning**	C	U	**Sakit kepala**	Headeach
Amaryllidaceae						
Allium cepa L.	-	**Bawang Merah**	C	U	**Masuk angin**, **sakit kepala**	Headache
Allium porrum L.	ANS03	**Bawang Gando**	C	U	**Sakit perut**	Stomach
Allium sativum L.	-	**Bawang putih**	C	U	**Sakit kepala**, **rematik**	Headache, rheumatic
Crinum cf. *asiaticum* L.	ANS08	**Jelipuk**	W	U/SF	**Sakit pinggang**	Back pain
Annonaceae						
Goniothalamus macrophyllus Hook.f. & Thomson	RKD30	**Akar Tunggal**	W	F/SF	**Gigitan ular**	Snake beat

Scientific Name & Voucher number	Voucher number	Vernacular Name	Sources	Habitat	Serampas Disease Term	Possible Biomedical Correlate
Apiaceae						
Apium graveolens L.	-	**Seladari**	C	U	**Darah tinggi**	High blood pressure
Apocynaceae						
Alstonia scholaris (L.) R.Br.	ANS 2	**Pulai**	W	U/SF	**Malaria**	Malaria
Marsdenia tinctoria R. Br.	ANS06	**Tarum**	C	U	**Memar**, **demam**	Contusion, fever
Araceae						
Colocasia esculenta (L.) Schott	BHRD50	**Kambang**	C	S/ U	**Beri**	Beri-beri
Homalomena cordata Schott	ANS17	**Kanulau Merah**	C	U/SF	**Luko**	Injury
Araliaceae						
Schefflera sp.	BHRD01	**Spenehen**	W	U/SF	**Demam**	Fever
Arecaceae						
Areca catechu L.	-	**Pinang**	C	U	**Luko**	Injury
Calamus manan Miq.	BHR27	**Manau**	W	F	**Sariawan**	Ulcer
Cocos nucifera L.	-	**Kelapa hijau**	C	U	**Sakit Pinggang**	Back pain
Asparagaceae						
Cordyline fruticosa (L.) A. Chev.	BB18	**Jeluangan**	C	U/SF	**Demam**	Fever
Asteraceae						
Ageratum conyzoides L.	BHRK02	**Rumput Angi'**	SW	U/SF	**Luko**	Injury
Bidens pilosa L.	ANS24	**Jerambing**	SW	U	**Luko**	Injury
Dichrocephala bicolor (Roth) Schltdl.	ANS31	**Rumput Sapu**	SW	U	**Mempercepat melahirkan**	Inducer to give birth
Erechtites valerianifolius (Link ex Spreng.) DC.	BHRK03	**Rumput Gedang**	SW	U/SF	**Luko**	Injury
Eupatorium inulifolium Kunth	II08	**Rumput Bungo**	SW	U/SF	**Luko**	Injury
Mikania cordata (Burm.f.) B.L. Rob.	BHRK04	**Rumput Unggul**	SW	U	**Batuk**, **sakit kepala**	Cough, headache
Balsaminaceae						
Impatiens balsamina L.	ANS38	**Inai**	C	U	**Gigitan ular**	Snake beat
Bromeliaceae						
Ananas sp.	-	**Nenas Putih**	C	U	**Berak darah, ginjal**	Bloody Diarrhea, kidney problems
Cannaceae						
Canna indica L.	ANS02	**Sebih Putih**	C	U	**Demam**	Fever
Caricaceae						
Carica papaya L.	-	**Terung Pilo**	C	U	**Darah tinggi**	High blood presure

Scientific Name & Voucher number	Voucher number	Vernacular Name	Sources	Habitat	Serampas Disease Term	Possible Biomedical Correlate
Caryophyllaceae						
Drymaria cordata (L.) Willd. ex Roem. & Schult.	ANS49	**Rumput Sasi**	SW	U	**Penghilang noda**	Acne and fleck
Commelinaceae						
Aneilema vaginatum (L.) R.Br.	ANS73	**Rumput Patah Budi**	C	S	**Patah tulang**	Broken bones
Convolvulaceae						
Merremia peltata (L.) Merr.	BHRC08	**Akar Kembung**	SW	F/SF	**Batuk**	Cough
Costaceae						
Costus speciosus (J. König) Sm.	ANS25	**Petawar**	C	U/SF	**Stres**	Stress
Crassulaceae						
Kalanchoe pinnata (Lam.) Pers.	DD201	**Sedingin**	C	U	**Bisul**, **demam**	Abscess, fever
Cucurbitaceae						
Cucumis sativus L.	-	**Timun**	C	U	**Darah tinggi**	High blood presure
Cucurbita moschata Duchesne	ANS37	**Prenggi**	C	U	**Sakit gigi**	Teeth
Lagenaria siceraria (Molina) Standl.	ANS16	**Labu guci**	C	U	**Ambeien**	Hemorrhoids
Dioscoreaceae						
Dioscorea alata L.	ANS32	**Ubi Arang**	C	U	**Membersihkan darah**, **obat kuat laki-laki**	Cleaning the blood after giving birth, improve men stamina
Euphorbiaceae						
Aleurites moluccanus (L.) Willd.	-	**Buah Kereh**	C	U/SF	**Memar**, **bengkak**	Contusion, swelling
Mallotus paniculatus (Lam.) Müll. Arg.	BHRH27	**Kulit Angin**	W	U	**Sakit mata**	Eye
Manihot utilissima Pohl	-	**Ubi kayu**	C	U	**Kurang darah**	Anemia
Fabaceae						
Cassia alata L.	II05	**Gelinggang**	C	U/SF	**Panu/Kurap**	Ringworm
Erythrina subumbrans (Hassk.) Merr.	ANS21	**Dadap Duri**	C	F/SF		Diabetes
Millettia sericea Wight & Arn.	RKG28	**Akar Serampal**	W	F/SF	**Luko**, **infeksi**	Infected hurt, injury
Vigna sinensis (L.) Savi ex Hassk.	-	**Kacang Panjang**	C	U	**Kurang darah**	Anemia
Gesneriaceae						
Aeschynanthus albidus (Blume) Steud.	ANS34	**Daun Inggap**	W	F/ U/ SF	**Luko**	Injury

Scientific Name & Voucher number	Voucher number	Vernacular Name	Sources	Habitat	Serampas Disease Term	Possible Biomedical Correlate
Hypoxidaceae						
Curculigo latifolia (W.T. Aiton) Dryand.	BHRA32	**Daun Matahari**	W	U/SF	**Penelap tidur**	Sleeping stimulant for kids
Lamiaceae						
Clerodendrum philippinum Schauer	ANS30	**Sekambing**	SW	U	**Malaria**	Malaria
Clerodendrum buchananii (Roxb.) Walp.	ANS09	**Bungo Panggil**	C	U	**Gangguan iblis**	Bad spirit
Coleus amboinicus Lour.	GG02	**Peladang Angi'**	C	F/SF	**Beri**	Beri-beri
Ocimum basilicum L.	ANS13	**Telasih Hijau**	C	U	**Demam, mempercepat melahirkan**	Fever, Inducer to give birth
Orthosiphon spicatus Benth.	-	**Sungui Kucing**	C	U	**Sakit pinggang**	Back pain
Pogostemon cablin (Blanco) Benth.	-	**Nilam**	C	U	**Luko**	Injury
Pogostemon menthoides Blume	ANS10	**Peladang Abang**	C	F/SF	**Beri-beri**	Beri-beri
Pogostemon villosus (Roxb.) Benth.	ANS117	**Peladang Hutan**	C	F/SF	**Demam**	Fever
Vitex trifolia L.	ANS01	**Kayu Timah**	W	U/S	**Malaria**	Malaria
Lauraceae						
Cinnamomum burmannii (Nees & T. Nees) Blume	ANS35	**Kulit manis**	C	U/SF	**Sakit perut**	Stomach
Malvaceae						
Abelmoschus manihot (L.) Medik.	ANS39	**Ubi dewa**	C	U	**Sakit pinggang**, **Sakit perut**	Back pain, stomach
Ceiba pentandra (L.) Gaertn.	ANS32	**Kapuk**	C	U/SF	**Sakit kepala**	Headeach
Hibiscus spathulatus Garcke	-	**Bungo Rayo Putih**	C	U	**Paru-paru**	Lungs
Marantaceae						
Donax canniformis (G. Forst.) K. Schum.	ANS20	**Bemban**	W	F/ U/ SF	**Bisul**	Abscess
Donax grandis (Miq.) Ridl.	BHRD43	**Jemban**	W	F	**Bisul**	Abscess
Melastomataceae						
Melastoma candidum D.Don	BHR84	**Seduruk**	SW	U/SF	**Luko**	Hurt
Melastoma malabathricum L.	BHRA42	**Seduruk Hitam**	SW	U	**Batuk**	Cough
Melastoma sp.	ANS24	**Segerem**	SW	U/SF	**Batuk**	Cough

Scientific Name & Voucher number	Voucher number	Vernacular Name	Sources	Habitat	Serampas Disease Term	Possible Biomedical Correlate
Meliaceae						
Aglaia odoratissima Blume	BHRK05	**Lenzat Hutan**	W	F/SF	**Malaria**	Malaria
Toona sinensis (A. Juss.) M. Roem	BB15	**Surian Tanam**	C	U/SF	**Sakit gigi**	Teeth problems
Moraceae						
Artocarpus heterophyllus Lam.	-	**Nangko**	C	U	**Sakit gigi**	Teeth problem
Ficus geocarpa Teijsm. ex Miq.	BHRK06	**Bekung**	W	F/SF	**Sariawan**	Ulcer
Morus sp.	ANS27	**Telap**	W	F/SF	**Luko**, **Gatal-gatal**	Hurt, itchy
Musaceae						
Musa sp.	-	**Pisang Dingin**	C	U	**Sakit Perut**	Stomach
Musa sp.	-	**Pisang Itam**	C	U	**Demam**	Fever
Musa sp.	-	**Pisang Kabu**	C	U	**Sakit Perut**	Stomach
Musa sp.	-	**Pisang Lidi**	C	U	**Demam**, **demam berdarah**, **sakit perut**	Fever, dengue, stomach
Musa sp.	-	**Pisang Sembatu**	C	U	**Cido**	Fatigue
Myrtaceae						
Psidium guajava L.	-	**Jambu Kreh**	C	U	**Luko**	Injury
Oxalidaceae						
Averrhoa carambola L.	ANS22	**Gelimbing**	C	U	**Sakit pinggang**	Back pain
Pandanaceae						
Pandanus cf. *furcatus* Roxb.	BHR104	**Pandan Singkil**	C	U/SF	**Tangkal iblis**	Protecting from bad spirit
Pandanus sp.	-	**Pandan**	C	U	**Diare**	Diarrhea
Phyllanthaceae						
Baccaurea lanceolata (Miq.) Müll. Arg.	BHRH09	**Mpaung**	W	F/SF	**Kutu air**	
Bischofia javanica Blume	BHRD04	**Batang Bintang**	SW	F/SF	**Luko**, **sakit perut**	Injury, stomach
Phyllanthus urinaria L.	ANS48	**Sedukung Anak**	C	U/ SF/S	**Sakit pinggang**	Back pain
Piperaceae						
Piper betle L.	-	**Sirih**	C	U/SF	**Sakit mata**	Eye problems
Piper nigrum L.	-	**Merica**	C	U	**Sakit kepala**	Headache
Piper sp.	BHRD69	**Sirih hantu**	W	SF	**Gatal-gatal**	Itchy
Piper umbellatum L.	ANS15	**Gumbo**	W	U/SF	**Sakit perut**	Stomach
Poaceae						

Scientific Name & Voucher number	Voucher number	Vernacular Name	Sources	Habitat	Serampas Disease Term	Possible Biomedical Correlate
Andropogon nardus L.	-	**Serai**	C	U	**Ginjal**, malaria, **sakit pinggang**, **panas dalam**	Kidney problems, back pain, malaria, scurvy
Dendrocalamus asper (Schult. & Schult. f.) Backer ex K. Heyne	-	**Buluh Betung**	SW	U/SF	**Beri-beri**	Beri-beri
Eleusine indica (L.) Gaertn.	ANS40	**Rumput Sembuang**	SW	U/SF	**Mengusir iblis**	Exorcise of Bad spirit
Gigantochloa hasskarliana (Kurz) Backer ex K.Heyne	BHRK26	**Buluh Kapal**	SW	F/SF	**Melahirkan bayi**	Birth delivery
Hymenachne amplexicaulis (Rudge) Ness	II06	**Sekumpai**	C	U	**Stres**	Stress
Imperata cylindrica (L.) Raeusch.	-	**Lalang**	SW	U/SF	**Malaria**	Malaria
Leersia hexandra Sw.	ANS33	**Rumput Bento**	SW	U/SF	**Cido**	Fatigue
Oryza sp.	-	**Ketan Hitam**	C	S	**Gigitan lebah**	Bees beat
Paspalum conjugatum P.J. Bergius	BHRA43	**Rumput Kinat**	SW	U/SF	**Luko**	Injury
Saccharum officinarum L.	-	**Tebu Hitam**	C	U	**Demam**	Fever
Rubiaceae						
Coffea arabica L.	-	**Kopi**	C	U/SF	**Sakit Pinggang**	Back pain
Morinda citrifolia L.	-	**Mengkudu**	C	U	**Sakit pinggang**, **darah tinggi**	Back pain, high blood pressure
Nauclea calycina (DC.) Bartl.	BHRG56	**Kiro Munting**	W	F/SF	**Luko**	Injury
Plectronia horrida (Blume) Benth & Hook.f. ex Kurz	BHRF17	**Ngelo**	W	SF/F	**Demam**	Fever
Rutaceae						
Citrus aurantiifolia (Christm.) Swingle	ANS37	**Limau kapas**	C	U	**Batuk**	Cough
Citrus limon (L.) Osbeck	ANS38	**Limau Padang**	C	U	**Demam**	Fever
Citrus reticulata Blanco	ANS36	**Limau manis**	C	U	**Beri-beri**	Beri-beri
Citrus sp.	ANS39	**Limau Kunci**	C	U	**Demam**	Fever
Clausena excavata Burm.f.	RKK54	**Cerek**	SW	F/SF	**Beri-beri**	Beri-beri
Sapindaceae						
Nephelium lappaceum L.	-	**Rambutan**	C	U	**Sakit kepala**	Headache
Simaroubaceae						
Picrasma javanica Blume	RKJ32	**Medang Garu**	W	U/S	**Sakit pinggang**	Back pain
Solanaceae						

Scientific Name & Voucher number	Voucher number	Vernacular Name	Sources	Habitat	Serampas Disease Term	Possible Biomedical Correlate
Brugmansia candida Pers.	BHRK64	**Kecubung**	C	U/SF	**Sakit mata**	Eye problems
Capsicum frutescens L.	-	**Cabe**	C	U	**Sakit pinggang**	Back pain
Datura fastuosa L.	-	**Bunga Cubung**	C	U/SF	**Sakit mata**	Eye problems
Nicotiana tabacum L.	-	**Tembakau**	C	U	**Masuk angina**, **sakit gigi**	Catching a cold, teeth problems
Physalis angulata L.	ANS109	**To'em**	SW	U/S	**Sakit pinggang**, **darah tinggi**	Back pain, high blood pressure
Solanum indicum L.	ANS124	**Terung Rimbang**	C	U	**Sakit mata**	Eye
Solanum melongena L	ANS71	**Terung Pandan**	C	U	**Sakit perut**	Stomach
Solanum sp.	-	**Terung**	C	U	**Sakit pinggang**	Back pain
Solanum sp.	ANS128	**Terung akar**	C	U	**Sakit perut**	Stomach
Symplocaceae						
Symplocos fasciculata Zoll.	BHR123	**Jirak**	W	U	**Demam**	Fever
Urticaceae						
Laportea stimulans (L.f.) Miq.	RKD302	**Jelatang Bulan**	W	F/SF	**Sakit Mata**	Eye
Poikilospermum suaveolens (Blume) Merr.	ANS26	**Akar Rundang**	W	F/SF	**Beri-beru**	Beri-beri
Vitaceae						
Leea indica (Burm.f.) Merr.	RKA12	**Batang Bali**	W	SF	**Bisul**	Abscess
Zingiberaceae						
Alpinia galanga (L.) Willd.	-	**Lengkuas**	C	U	**Panu**, **kurap**, **sesak napas**	Inhalation problem, ringworm
Alpinia sp.	BHRD49	**Puar**	W	U/SF	**Gatal-gatal**	Itchy
Curcuma longa L.	-	**Kunyit**	C	U	**Bisul**	Abscess
Kaempferia galanga L.	-	**Sicekur**	C	U	**Demam**, **rematik**, **sakit perut**	Fever, rheumatic, stomach
Zingiber officinale Roscoe	-	**Sepede**	C	U	**Gangguan pernafasan**	Inhalation problem
Zingiber purpureum Roscoe	GG10	**Kunyit Melai**	C	U	**Demam**	Fever

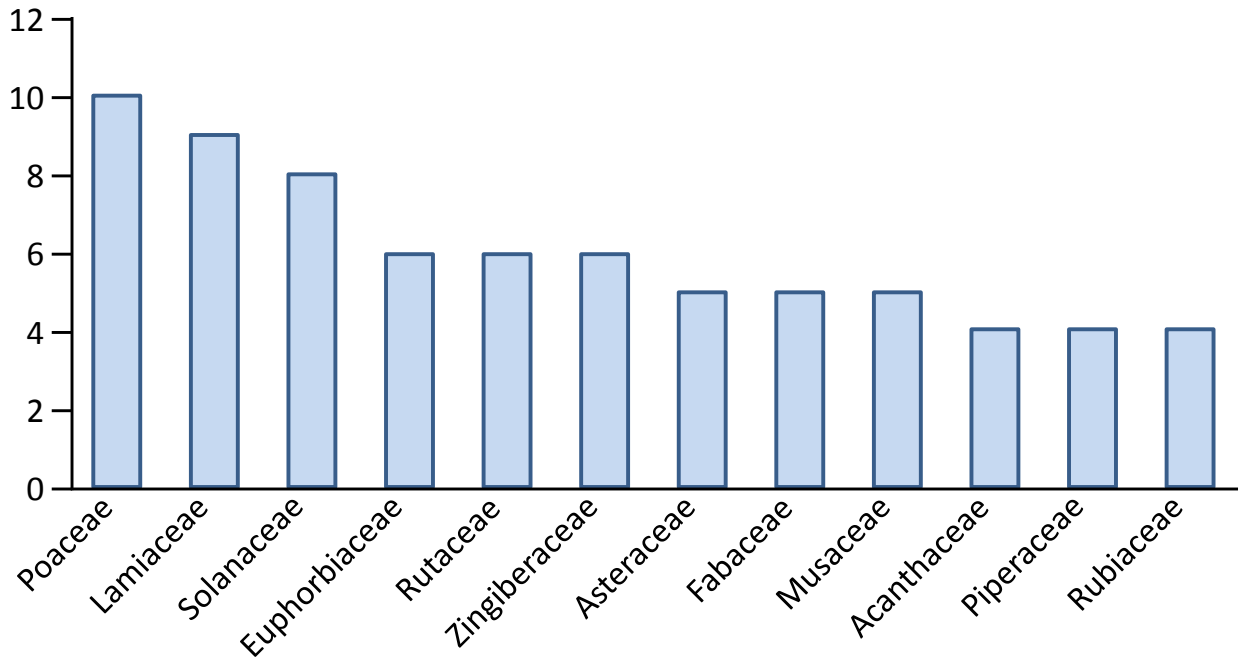

Figure 2. Most important medicinal plant families used by the Serampas, in Sumatra, Indonesia.

rajo and/or **obat ditawar** (Figure 2). Moreover, more than half (62%) of the medicinal plants are cultivated species and 53 species (40%) are edible plants, mostly belonging to cultivated taxa (41 species). The number of medicinal species used by Serampas falls within the range reported for other indigenous groups in Indonesia. For example, the Dayak Benuaq in Eastern Borneo use 60 species of medicinal plants (Susiarti 2005), while the Ransa Dayak in Western Borneo are reported to use 250 species. The high proportion of cultivated species is consistent with other indigenous pharmacopeias (Hanazaki *et al*. 2000) and the large overlap between medicinal and edible plants has been discussed by Etkin and Ross (1991). Logan and Dixon (1994) suggest that people learn the medicinal value of plants in their endeavor to obtain food.

Among the 127 species in the Serampas pharmacopeia, **kunyit melai** (*Zingiber purpureum* Roscoe) is one of the most extensively used to heal various diseases. People use the **kunyit melai** either as **obat rajo** or **obat ditawar**. This Zingiberaceae species is also an essential component of various **uras** (ritual plants), including for bathing the Serampas heirlooms. The people of Tanjung Jabung Barat, a mixed Malay ethnic group on the eastern Coast of Sumatra also use **kunyit melai** (or **bunglai**), as well as *Kaempferia galanga* L. and *Acorus calamus* L. as protection from bad spirits, especially for children (Susiarti *et al*. 2005).

The Serampas use medicinal plants that grow in various vegetation zones including old-growth forests, secondary forests, **umo** and **sawah**. The great majority (51%) of medicinal plants they use are obtained from **umo** (Table 2). On the other hand, only two medicinal plant species grow exclusively in local old-growth forests or very old secondary forests: **manau** (*Calamus manan* Miq.) and **jemban** (*Donax canniformis* (G. Forst.) K. Schum.). The sap of the **manau** is used to treat **sariawan** (ulcers), whereas fruit of the **jemban** is commonly used to treat abscesses.

The Serampas engage more with **umo** and secondary forests than with other vegetation zones and these are also much closer to settlements than are old-growth forests. These findings are consistent with other studies that show that agricultural areas and secondary forests tend

Table 2. Habitats of medicinal plants used by the Serampas, in Sumatra, Indonesia.

Vegetation Type	Number of Species	Percent of total
Umo	65	51%
Secondary Forest & **Umo**	31	24%
Old-growth forest & Secondary Forest	18	14%
Umo & **Sawah**	4	3%
Old-growth Forest	2	2%
Old-growth forest & Secondary Forest & **Umo**	2	2%
Sawah	2	2%
Secondary Forest	2	2%
Secondary Forest & **Umo** & **Sawah**	1	1%
Total	127	100%

to be the preferred areas for medicinal plant collection due to accessibility and the biochemistry of weedy species (Salick *et al*. 1999, Stepp & Moerman 2001). Specifically, important medicinal plants should be abundant and easy to find when needed, and weedy species growing in nearby agricultural plots or fallows typically are. In addition, weedy species tend to be high in bioactive secondary compounds that act as defenses against herbivory (Stepp & Moerman 2001).

The Poaceae, together with the Lamiaceae and Solanaceae are the most important medicinal families used by Serampas (Figure 2). Although the Poaceae tend to be underrepresented in many pharmacopeias (Stepp & Moerman 2001), it is an important family in other Southeast Asian pharmacopeias (e.g., Elliott & Brimacombe 1987, Gollin 2001). **Serai** or lemongrass (*Cymbopogon nardus* (L.) Rendle) is an example of an important Poacease species used by Serampas. It is widely used to treat many different ailments including back pain, beriberi, diabetes, hepatitis, and malaria and to induce recovery of the mother after giving birth. Lemongrass has antifungal activity against human pathogens (Rodov *et al*. 1995, Yousef *et al*. 1978) and possesses antibacterial properties (Asthana *et al*. 1992, Kim *et al*. 1995).

In addition to **serai**, Serampas midwives use the young stem of **buluh kapal** (*Gigantochloa hasskarliana* (Kurz) Backer ex K. Heyne), another Poaceae species, to ease the birthing process. The midwife fills up three internodes of the **buluh kapal** with water from a local river, and then blesses the water. Pregnant women drink the water over the course of their pregnancies to ease delivery. The Serampas also use the boiled stem of **buluh betung** (*Dendrocalamus asper* (Schult. & Schult.f.) Backer ex K. Heyne, Poaceae) to treat beriberi. People in Lombok Island, Eastern Indonesia use the same species to treat high fever, although alkaloid tests of the leaves and stems of the bamboo did not show positive results (Hadi & Bremmer 2001). **Rumput sembuang** (*E. indica*) is another common medicinal grass species in Serampas. Some **dukun** employ leaves of this species to expel bad spirits.

Changes in Serampas use of medicinal plants over time

A number of medicinal plants used by Serampas today were also recorded by Marsden (1811) to have been used in the 1700s. Unfortunately, Marsden mostly used vernacular names without providing corresponding scientific names. This made it difficult to track the change in use of most species, since the vernacular names recorded were not recognized by Serampas today. Of the plants

Table 3. Change over time in Serampas' use of medicinal plants in Sumatra, Indonesia. Marsden's era refers to the plants documented in his 1783-1784 study (Marsden 1966).

Local Name	Scientific Name	Family	Uses	
			Marsden's Era	Serampas Today
Ampadu-bruang	Unknown	Unknown	Disorders in the bowels	Unknown
Chapo	*Blumea balsamifera* (L.) DC.	Asteraceae	Medicine	
Daun sedingin	*Kalanchoe laciniata* (L.) DC.	Crassulaceae	Headache, fever	Medicine, rituals
Galangale	*Kaempferia galanga* L.	Zingiberaceae	Medicine	Medicine
Golinggang	*Cassia alata* L.	Fabaceae	Ringworm	Medicine
Kabu	Unknown	Unknown	Itching	Unknown
Kachang prang	*Dolichos ensiformis* L.	Fabaceae	Pleura	Unknown
Laban	*Vitex altissima* L.f.	Lamiaceae	Medicine	Unknown
Lada Panjang	*Piper longum* L.	Piperaceae	Medicine	Unknown
Lagundi	*Vitex trifolia* L.	Lamiaceae	Anti-bad spirit, medicine	Medicine, rituals
Lampuyang	*Amomum zerumbet* L.	Zingiberaceae	Medicine	Medicine
Paku lamiding	*Polypodium* sp.	Polypodiaceae	Medicine	Unknown
Pisang ruko	*Musa* sp.	Musaceae	Medicine	Edible inflorescence
Sikaduduk	*Melastoma* sp.	Melastomataceae	Foot disorder	Unknown
Siup	Unknown	Unknown	Leprosy	Unknown
Sudu-sudu	*Euphorbia neriifolia* L.	Euphorbiaceae	Medicine, poison	Unknown
Tummu	*Costus arabicus* L.	Costaceae	Medicine	Medicine

that Marsden provided scientific names for, about half are still used today by Serampas (Table 3). If this is representative of the larger list, then Serampas pharmacopeia may have been much larger in the past. A few of the taxa that are still commonly used as medicinal plants today include **kayu timah** (*Vitex trifolia* L.), **sicekur** (*Kaempferia galanga* L.), **gelinggang** (*Cassia alata* L.) and **sedingin** (*Kalanchoe laciniata* (Lam) Pers.). However, for the latter, the Serampas used a different genus from that mentioned by Marsden (*Bryophyllum pinnata* (Lam.) Oken)

The Serampas clearly still depend heavily on traditional medicine and this is likely due in part to their isolation. The local government installed Puskesmas Pembantu, a small health service center in the village of Tanjung Kasri in 1995. The center is solely operated by a temporary government-paid midwife. Still, people from other Serampas villages such as Renah Kemumu have to walk about four to six hours to reach the center. It is common for the center to close for several months because of the lack of a midwife willing to live in such an isolated region. In the event of a serious disease, Serampas will visit a hospital in the closest city, but the difficult access and costs make it unaffordable for most people.

Uras: The Ritual Plants

In Serampas language, **uras** or **ureh** refer to a group of plants used for special purposes such as blessing a particular project or treating or protecting humans, livestock and crops from “diseases” and bad spirits. To some degree the **uras** overlap with the **obat ditawar**. **Uras** are always present at every important cultural occasion. Different occasions require **uras** in different quantities and compositions. Local **orang tuos** (elders) guide the common people in the formulation of particular **uras**, although commonly **orang tuos** themselves procure plant materials for the **uras**. A number of traditional events that involve **uras** include establishing a new house, initiating slashing of the forest to develop **umo**, initiating rice planting, protecting the rice crop from pests and diseases, initiating the rice harvest, initiating rice storing in the **bilik**, exorcising bad spirits inhabiting a person’s body, and bathing local heirlooms during the **kenduri psko** celebration.

The **uras** plants include at least 28 species belonging to 19 families (Table 4). The main **uras** families are Arecaceae, Lamiaceae, Poaceae and Rubiaceae. **Pinang** (*Areca*

Table 4. **Uras** (ritual) plants used by the Serampas, in Sumatra, Indonesia.

Purpose of the ritual	Family	Scientific Name	Vernacular Name
To expel the inhabited **orang gunung**	Acanthaceae	*Lepidagathis* sp.	**Limbang Hantu**
To initiate slashing, expel the ‘forest keeper’	Actinidiaceae	*Saurauia javanica* (Nees) R. D. Hoogland	**Sa’em**
	Asteraceae	*Enydra fluctuans* Lour.	**Sakrau**
	Rubiaceae	*Psychotria rostrata* Blume	**Puding Hutan**
To protect the rice	Arecaceae	*Pinanga latisecta* Blume	**Pinang Hutan**
To expel the rice seed’s pests	Rutaceae	*Clausena excavata* Burm.f	**Daun Cerek**
To treat ‘diseased rice’	Acanthaceae	*Justicia gendarussa* Burm.f.	**Ranjau Ruso**
	Arecaceae	*Caryota mitis* Lour.	**Risi**
	Lamiaceae	*Coleus amboinicus* Lour.	**Peladang Anyik**
		Pogostemon menthoides (Blume) Reinw.	**Peladang Abang**
	Lauraceae	*Cinnamomum javanicum* Blume	**Kayu Usang**
	Liliaceae	*Disporum chinense* D. Don	**Tundu’en**
	Marratiaceae	*Angiopteris evecta* (G. Forst.) Hoffm.	**Paku Liman**
	Moraceae	*Artocarpus elasticus* Reinw. ex Blume	**Terap**
	Poaceae	*Bambusa* sp.	**Aur Gajah**
		Hymenachne amplexicaulis (Rudge) Nees.	**Sekumpai**
	Rubiaceae	*Plectronia horrida* (Blume) Benth. & Hook.f. ex Kurz.	**Ngelo**
	Unknown	Unidentified	**Papit**
To expel bad spirits	Apocynaceae	*Marsdenia tinctoria* R. Br.	**Daun Tarum**
	Lamiaceae	*Plectranthus galeatus* Vahl	**Peladang Hutan**
To treat sick cattle	Araceae	*Acorus calamus* L.	**Jerangau**

Purpose of the ritual	Family	Scientific Name	Vernacular Name
To initiate rice harvesting	Costaceae	*Costus speciosus* (J. König) Sm.	**Patawa**
	Cyperaceae	*Scleria purpurascens* Steud.	**Sepiding**
	Liliaceae	*Pleomele elliptica* (Thunb.) N.E. Br.	**Respang**
	Malvaceae	*Microcos florida* Burret	**Kayu Pasak**
	Opiliaceae	*Lepionurus sylvestris* Blume	**Kayu Hijau**
	Poaceae	*Centotheca lappacea* (L.) Desv.	**Rumput Rabun**
	Rubiaceae	*Plectronia horrida* (Blume) Benth. & Hook.f. ex Kurz.	**Ngelo**

catechu L.) is used extensively for various purposes. The nut of this species is not only chewed by people, but also plays a role in almost all important cultural-ritual events. The habit of chewing betel is not exclusive to the Serampas; it is widespread in other parts of Indonesia and also in Malaysia (Christensen 2002, Reid 1985). In addition to **pinang**, **sekumpai** (*Hymenachne amplexicaulis* (Rudge) Nees.), **sakrau** (*Enydra fluctuans* Lour.), **kunyit melai** (*Z. purpureum*) and **jerangau** (*A. calamus*) are the most common ritual plants, especially for expelling or protecting oneself from a bad spirit.

Besides **kenduri psko**, Serampas recognize another annual customary ritual that involves a number of **uras** plants and is held in the **rumah gedang** on the 12th of Rabiul Awal, (the fourth month of the Islamic calendar). This event involves many more **uras** plants than that of **kenduri psko** and engages people throughout the village. In addition to commemorating the birthday of Prophet Muhammad (most Serampas are Moslem), the event involves making "mass **uras**" to bless the whole community. Every household prepares a number of **uras** plants and brings them to the **rumah gedang** to be blessed by the local **orang tuos**. Right after the ritual, villagers take the consecrated **uras** plants and spread them throughout their rice fields as well as other farmlands. Villagers believe that the **uras** will help protect their crops from diseases and pests, including "the invisible pests".

Jemput padi or the rice harvesting initiation is another common ritual that employs the **uras**. The purpose of this ritual is to secure the entire process of rice harvesting from destruction by bad spirits, especially the **orang gunung**. Serampas worldview holds that **orang gunung** are present everywhere, although people cannot identify their presence. Villagers believe that the **orang gunung** also want to enjoy the yellowish matured rice that is cared for by the villagers. The ritual of **jemput padi** is devoted to avoiding any intervention of the **orang gunung** during the harvesting season. Normally the season lasts from a week to a month. Some elders believe that failing to perform this ritual will enable the **orang gunung** to come and harvest the rice invisibly, causing a great quantity of the rice to disappear mysteriously. Different **orang tuos** may employ different plants for the ritual. The commonly used plants are **patawa** (*Costus speciosus* (J. König) Sm.), **sepiding** (*Scleria purpurascens* Steud.) and **kayu hijau** (*Lepionurus sylvestris* Blume).

To some degree the **uras** plants overlap with the **obat ditawar** medicinal plants. A mixture of **uras** plants is commonly used to protect and treat living beings from unresolved diseases and bad spirits. Other cultures also use the same species for both medicine and ritual (e.g., de Albuquerque 2001) and rice spirits are recognized in various cultures that engage in shifting cultivation of rice (e.g., Christensen 2002, Dove 1985).

The number of ritual plant species used by Serampas is lower than in some other parts of Indonesia. For example, the Dayak Iban and the Kelabit, indigenous groups from Northern Borneo, use 97 and 111 species respectively (Christensen 2002). A number of changes in Serampas as well as in the surrounding regions including exposure to modern agriculture, education and healthcare practices, and the introduction of Islam, have influenced the sociocultural environment in Serampas. These changes have likely gradually affected the Serampas traditional farming system and worldview that ultimately affects the number of ritual plants being used.

Conclusions

The Serampas continue to rely heavily on medicinal and ritual plants and have an extensive pharmacopeia. Both their conceptions of health and illness and the medicinal plants they use share similarities with other cultural groups in Indonesia and elsewhere, but there is also much that is unique to the Serampas. Illness is perceived as an inconvenient condition that is caused by internal and/or external factors. In addition to keeping one's body fit, Serampas seek to maintain harmonic relationships with nature, including the spirits, in order to maintain healthy lives.

Since most medicinal plants are collected from fields and secondary forests associated with shifting agriculture, a decrease in this practice, as has occurred across Indonesia with the increase in palm oil and other plantations,

would greatly decrease the availability of local medicine. While knowledge of **obat rajo** is still widely distributed among the Serampas, in general young people are not interested in learning about **obat ditawar** anymore. Still, the few young women who have become interested in practicing shamanism will continue to carry on these traditions. This documentation of knowledge of medicinal plants has been returned to the Serampas in the written form in an effort to help conserve it (see Hariyadi in press). Future research on the biochemistry of some Serampas medicinal plants and more in depth studies of how Serampas medicinal and ritual plant traditions are currently changing and adapting with the recent changes in land-use practices, would be of value.

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