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Ethno-medicinal Resources Used By the Temuan in Ulu Kuang Village

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ABSTRACT Orang Asli is a term used for the aborigines in Peninsular Malaysia. This study reveals the ethno-medicines used by one of the tribes of Orang Asli, Temuan in Ulu Kuang Village, Gombak, Selangor, Malaysia. The study which was conducted through semi-constructed questionnaire found a total of 47 species of plants from 36 families, 7 species of mushrooms from 5 families, and 12 species of animals from 10 families being utilized as medicines by the villagers. Among the ailments treated, hypertension was shown to be the most treated ailment utilizing 12 species of natural resources in total. The most utilized species of plant, mushroom, and animal by the Temuan in Ulu Kuang Village for medicine are *Eurycoma longifolia*, *Lignosus rhinocerus*, and *Hystrix brachyura*, respectively.

INTRODUCTION

Natural resources such as plants, animals, and mushrooms play a vital role since ancient times to treat illnesses. In recent years, the research on ethno-medicinal resources has been extensive in order to develop new products and medicines to treat diseases. Medicines derived from natural resources posed a potentially safer and more reliable medicine than synthetically produced drugs.

The Temuan is one of the eighteen tribes of Orang Asli or aborigines in Peninsular Malaysia. They belong to the ethnicity of Proto-Malays who originated from middle Asia and settled in Peninsular Malaysia around 4000 years ago (Fix 1995; Lim et al. 2010). They have been utilizing the natural resources around them all this time for food, daily used materials – and medicinal purposes. The Temuan are known as *'Orang Bukit'* or Hill People among the Orang Asli since they reside in jungle areas near the hill side. Thus, they are among the most knowledgeable Orang Asli tribes on natural resources utilization, especially for medicinal purposes. This study gathered ethno-medicinal information from the Temuan in Ulu Kuang Village to treat and cure ailments. It is of great importance to record such traditional knowledge and publish the scientific data before it becomes completely depleted with the loss of natural habitats surrounding them and the passing away of the older generations.

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METHODOLOGY

The study was conducted in the year 2010 in Ulu Kuang Village, Kuang, Gombak, Selangor, which is located at N 03° 15' 46.0" E 101° 34' 59.5" and a total area of 121.46 hectares. The interviews were conducted with semi-constructed questionnaires among the villagers who possess the knowledge of medicinal usage of natural resources recommended by the head of the village or 'Tok Batin' and Malaysian Department of Orang Asli Development officers.

RESULTS AND DISCUSSION

The study reveals 47 species of plants from 36 families (Table 1); 7 species of mushrooms from 5 families (Table 2); and 12 species of animals from 10 families (Table 3) are utilized by the Temuan in Ulu Kuang Village, Gombak, Selangor, Malaysia for various medicinal purposes.

From the result, it shows that *Eurycoma longifolia*, *Lignosus rhinocerus*, and *Hystrix brachyura* are used in treating the highest number of ailments in comparison to other species of plants, mushrooms, and animals with four ailments treated, each. *Eurycoma longifolia* is used in treating muscle pain, diabetes, hypertension, and overall health using its leaf and

Table 1: The plants used for medicinal purposes in Ulu Kuang Village

Botanical name	*Local name*	*Parts(s) used*	*Ailments treated*	*Preparation(s)*	*Administration*
Alpinia galanga (L.) Willd. (Zingiberaceae)	Sengkuas	Rhizome	*Tinea versicolor*	Raw	Topical
Amaranthus spinosus L. (Amaranthaceae)	Bayam Duri	Whole	Jaundice	Decoction	Bath
Andrographis paniculata (Burm.f.) Wall. ex Ness (Acanthaceae)	Hempedu Bumi	Leaf	Hypertension and diabetes	Decoction or infuse with water	Oral
		Root	Hematochezia	Decoction	Oral
Angiopteris evecta (Forst.) Hoffm. (Marattiaceae)	Paku Gajah	Tuber	Ringworm and *Tinea versicolor*	Comminute and infuse with coconut oil	Topical
Archidendron jiringa (Jack) I.C.Nielsen (Fabaceae)	Pokok Jering	Root	Hypertension and diabetes	Decoction	Oral
		Seed	Diabetes	Raw	Oral
Artabotrys sp. (Annonaceae)	Sembelit Betina	Root	Constipation and joint pain	Decoction	Oral
Artocarpus heterophyllus Lam. (Moraceae)	Nangka	Leaf	Scabies	Charred and infuse with oil	Topical
Averrhoa carambola L. (Oxalidaceae)	Belimbing Besi	Dried or fallen leaf	Hypertension and diabetes	Decoction	Oral
Bauhinia crudiantha (de Wit) Cusset (Fabaceae)	Akar Lepang	Exudates	Rashes on lips	Infuse with water or raw	Oral or topical
Capsicum baccatum var. *pendulum* (Willd.) Eshb. (Solanaceae)	Pokok Lada	Leaf	Ringworm	Parched and mashed with slaked lime	Topical
Cheilocostus speciosus (Koening) Smith (Costaceae)	Pokok Penduk	Stem	Antidote	Raw	Oral
Cinnamomum sp. (Lauraceae)	Medang Tijo	Leaf and root	Muscle stiffness or pain	Raw and infuse with coconut oil	Embrocation
Cleome viscosa L. (Capparaceae)	Bunga Maman	Shoot	Light-headedness	Raw	Oral
Cnestis palala (Lour.) Merr. (Connaraceae)	Sembelit Jantan	Root	Constipation and joint pain	Decoction	Oral
Cnestis sp. (Fabaceae)	Akar Sembelit	Root (twining root)	Hypertension and diabetes	Decoction	Oral
Cocos nucifera L. (Arecaceae)	Kelapa Muda	Young coconut milk	Shingle	Chanted	Oral
Crinum asiaticum L. (Amaryllidaceae)	Tembaga Suasa	Leaf	Fracture and sprained	Parched	Wrapped
Didymocarpus platypus C.B. Clarke (Gesneriaceae)	Meriyan Gete'h	Leaf	High fever	Decoction	Bath
Donax canniformis (G.Forst.) K.Schum. (Marantaceae)	Daun Bemban	Fruit	Boils and abscess	Raw	Oral
Durio zibethinus Murray (Bombacaceae)	Pokok Durian	Root	Hypertension and diabetes	Decoction	Oral
Eurycoma longifolia Jack (Simaroubaceae)	Tongkat Ali	Root	Muscle pain, diabetes, and hypertension	Decoction	Oral
		Leaf and root	Overall health	Decoction	Oral
Fagraea obovata Wall. (Loganiaceae)	Akar Tengkuk Jawak	Root	Asthma and cough	Decoction	Oral
Globba patens Miq (Zingiberaceae)	Tepus Pemulih	Exudates	Mouth ulcer	Raw	Topical
Hymenocallis speciosa (L.f. ex Salisb.) Salisb. (Alliaceae)	Pokok Demam Panas	Leaf	Jaundice	Decoction	Bath

Table 1: Contd.....

Botanical name	*Local name*	*Parts(s) used*	*Ailments treated*	*Prepara-tion(s)*	*Administra-tion*
Ixonanthes icosandra Jack (Ixonanthaceae)	Pokok Kayu Pagar Anak	Root	Fertility	Decoction	Oral
Labisia pumila (Blume) Fer.-Vill. (Myrsinaceae)	Kacip Fatimah	Leaf and root	Overall health	Decoction	Oral
		Leaf or root	Swelling (postpartum)	Decoction	Bath (leaf) or oral (root)
		Root	Postpartum	Decoction	Bath or oral
Lasia sp. (Araceae)	Akar Segenuali	Root	Carminative, hypertension, and overall health	Decoction	Oral
Leea indica (Burm.f.) Merr. (Leeaceae)	Pokok Membali or Pokok Memali	Leaf or shoot	Wound	Mashed	Poultice
Mallotus sp. (Euphorbiaceae)	Pokok Tembung	Leaf	Nose bleeding or blocked nose	Raw and rolled	Inserted in nostril
Mapania sp. (Cyperaceae)	Mengkuang Bantut	Shoot	Family planning	Raw	Oral with *Piper betel* L.
Mikania cordata (Burm.f.) B.L.Roxb. (Asteraceae)	Akar Ulan	Leaf	Wound	Mashed	Poultice
Mikania micrantha Kunth. (Asteraceae)	Daun Ulan	Leaf	Wound	Mashed with charcoal	Poultice
Molinera latifolia (Dryand.) Herb. e*x* Kurz (Hypoxidaceae)	Lembak	Exudates	Ulcer	Raw	Topical
Muntingia calabura L. (Muntingiaceae)	Daun Cere	Leaf	Diabetes	Decoction	Oral
Musa balbisiana Colla (Musaceae)	Pisang Hutan	Fruit's exudates	Ulcer	Raw	Topical
Musa sp. (Musaceae)	Pisang Abu	Pith	Congestive heart failure and hypertension	Decoction	Oral
Parkia speciosa Hassk. (Fabaceae)	Pokok Petai	Bean pod and seed	Diabetes	Raw	Oral
		Root	Hypertension and diabetes	Decoction	Oral
Phyllagathis rotundifolia (Jack) Blume (Melastomataceae)	Daun Semalam	Root	Overall health	Decoction	Oral
Piper porphyrophyllum N.E. Brown (Piperaceae)	Sirih Murai	Leaf	Febrifuge and cold	Mashed	Topical
Piper sp. (Piperaceae)	Sirih Camai	Leaf	Hypertension	Raw	Oral
Polyalthia bullata King (Annonaceae)	Tongkat Ali Hitam	Root	Asthma, diabetes, waist pain	Decoction	Oral
Smilax myosotiflora A.DC. (Smilacaceae)	Ubi Jaga	Rhizome	Fracture, overall health, muscle pain	Decoction	Oral
Tacca sp. (Dioscoreaceae)	Lebak Merah	Root	Hypertension	Decoction	Oral
Trevesia burckii Boerl. (Araliaceae)	Pokok Kia'	Root	Aches	Decoction	Bath
Zingiber montanum (J.König) Link ex A. Dietr. (Zingiberaceae)	Bonglai	Rhizome	Shingles, gout, and ascites	Chanted and grated	Topical
Zingiber officinale Roscoe (Zingiberaceae)	Halia	Rhizome	Contusions	Raw	Poultice
Zingiber sp. (Zingiberaceae)	Tepus Belang-Belang	Exudates	Carminative (children)	Raw	Topical

root (Table 1). *Lignosus rhinocerus* meanwhile is used in treating postpartum, cough, cold, and asthma using its sclerotium (Table 2), and *H. brachyura* is used to treat asthma, breathlessness, stomach diseases, and high fever using the quill, gall, faeces, and meat, respectively (Table 3). Overall, twelve different species of natural resources are used in treating hypertension using 11 species of plants and one species of animal, making it the most commonly treated ailment using the natural resources in the village studied. Most of the medicines are prepared through decoction and most are taken orally with 25 and 44 medicines, respectively.

Table 2: The mushrooms used for medicinal purposes in Ulu Kuang Village

Mycological name	*Local name*	*Parts(s) used*	*Ailments treated*	*Preparation(s)*	*Administration*
Amauroderma sp. (Ganodermataceae)	Cendawan Sawan	Stipe	Epilepsy	Raw	Wore like necklace
		Whole	Baby cries late at night	Raw	Wore like necklace
Auricularia auricula-judae (Bull.) Quél. (Auriculariaceae)	Cendawan Memeh	Whole	Febrifuge	Charred	Topical
Coprinus sp. (Agaricaceae)	Cendawan Kaki Satu	Whole	Pruritis and *Tinea versicolor*	Mashed	Topical
Lignosus rhinocerus (Cooke) Ryvarden (Polyporaceae)	Cendawan Susu Harimau	Sclerotium	Postpartum	Concocted with *Polyalthia bullata*	Oral
			Cough, cold, and asthma	Decoction	Oral
Microporus xanthopus (Fr.) Kuntze (Polyporaceae)	Cendawan Pengering	Whole	Contraceptive	Mashed with *P. betel* extract and chanted	Topical
Pycnoporus sanguineus (L.) Murill (Polyporaceae)	Cendawan Be'reng or Bereh	Whole	Wound and sore	Charred and concocted with oil	Topical
Termitomyces clypeatus R.Heim (Lyophyllaceae)	Cendawan Susu Pelanduk	Whole	Lassitude and febrifuge	Boiled	Oral

A total of 40 ailments are treated using plants where the most frequently treated ailment is hypertension using eleven species of plants followed by diabetes with nine species of plants (Table 1). The most frequently utilized plant part is root from 17 species followed by leaf from 15 species of plants (Table 1). Among the species of plants used by the villagers, only *Angiopteris evecta* which is used for ringworm and *Tinea versicolor* belong to the Pteridophytes group while the others are either monocotyledon (16 species) or dicotyledon (30 species). The mushroom species on the other hand are utilized by the Temuan villagers in treating 13 ailments (Table 2). The whole part of mushroom is frequently utilized specifically from 6 species of mushrooms. Two species of mushrooms can be used in treating fever which is the most frequently treated ailment using mushroom species, namely *Auricularia auricula-judae* and *Termitomyces clypeatus*. Eleven ailments meanwhile are treated using animal species (Table 3). Among them, the most frequently treated ailment is breathlessness with four species of animals, *Achatina fulica, H. brachyura, Ratufa bicolor* and *Scolopendra* sp., followed by asthma with three species, using the same species as breathlessness except for *R. bicolour.* Among the parts of animals used, the most frequently utilized part is meat followed by gall from 6 and 2 species of animals, respectively. Overall, the most utilized families are Zingiberaceae (Table 1), Polyporaceae (Table 2), Boidae, and Channidae (Table 3).

Certain species such as *Donax canniformis* which is used for boil and abscess in this study is also used by other tribe of Orang Asli in Peninsular Malaysia such as the Jakun of Endau Rompin who also used it in treating boil (Johor Biotechnology and Biodiversity Corporation 2007). Meanwhile, the Malays of Machang, Kelantan used the species *Polyalthia bullata* in treating diabetes (Ong and Nordiana 1999) which is one of the ailments treated by the Temuan in this study using the very same species of plant. Chang and Lee (2001) and Lee and Chang (2007) meanwhile revealed that *Pycnoporus sanguineus* is used in Malaysia in treating wound, which is similar to the result of this study where it is used for wound and sore. The Temuan of Ulu Kuang Village used the species *A. paniculata* in treating hypertension and diabetes using the decoction or infusion of its leaf and hematochezia or bloody stools using its root's decoction. In Malaysia, it is also generally used in treating hypertension and diabe-

Table 3: The animals used for medicinal purposes in Ulu Kuang Village

Zoological name	*Local name*	*Parts(s) used*	*Ailments treated*	*Preparation(s)*	*Administration*
Achatina fulica Ferussac (Achatinidae)	Siput Babi	Meat	Asthma and breathlessness	Boiled with salt	Oral
Channa gachua Hamilton (Channidae)	Ikan	Meat	Increase wound healing	Concocted with *Zingiber officinalis*'s rhizome and *Allium cepa*'s bulb	Oral
Channa striata Bloch (Channidae)	Ikan Haruan	Meat	Increase wound healing	Cooked	Oral
Hystrix brachyura L. (Hystricidae)	Landak	The black part of the quill	Asthma	Charred and concocted with oil	Topical
		Gall	Breathlessness	Dried and infuse with water	Oral
		Faeces	Stomach diseases	Dried	Oral
		Meat	High fever	Cook	Oral
Manis javanica Desmarest (Manidae)	Tenggiling	Scale	Diseases caused by exposed to sun shower	Raw	Worn as charm
Nycticebus coucang Boddaert (Lorisidae)	Kokang	Fur and bones	Wound	Comminute or raw	Poultice
Python brongersmai Stull (Boidae)	Ular Ipong or Ular Tesang	Meat	Cold	Skinned, cut, and cooked	Oral
Python reticulatus Schneider (Boidae)	Ular Sawa	Gall	Various diseases including hypertension	Dried and infuse with water	Oral
Ratufa bicolor Sparrmann (Sciuridae)	Tupai Mengas	Liver	Breathlessness	Dried	Oral
Rhinoplax vigil Forster (Bucerotidae)	Burung Tekok	Casque	Detect poison	Raw	Made into ring
Scolopendra sp. (Scolopendridae)	Lipan Api	Meat	Asthma and breathlessness	Skinned and grilled	Oral
Termes sp. (Termitidae)	Sarang Anai-Anai	Nest	Fertility	Raw (without termites)	Topical

tes (Rukayah 2006; Samy et al. 2009), where for example, the Malays took the decocted or fresh leaf orally specifically to treat hypertension (Ong and Nordiana 1999; Ong and Norzalina 1999) or the infusion of the whole plant for hypertension, diabetes, and fever (Ong et al. 2011b). Meanwhile, *Parkia speciosa* which is used for diabetes and hypertension in this study is also used for treating diabetes in Malaysia (Ong and Norzalina 1999; Faridah and Shamsul 2004; Samy et al. 2005). In comparison, a recent study by Ong et al. (2011a) showed that even among the Temuan tribe, there exists a very different utilization of natural resources in treating ailments where, only seven species of plants are used by both villages namely *Cheilocostus speciosus, Globba patens, Labisia pumila, P. speciosa, Phyllagathis rotundifolia, P. bullata,* and *Zingiber officinale*; where all of them are used in treating different ailments in both Temuan villages. For example, *P. speciosa*'s root is used in treating toothache in Jeram Kedah village, whereas in Ulu Kuang it is used for hypertension and diabetes even though it holds the same vernacular name in both villages, *Petai*. This shows the diverse knowledge of the Temuan tribe where even between neighbouring states in Malaysia, the differences of the same natural resources utilization can be seen clearly. The result also shows that the villagers in Ulu Kuang village still retained their knowledge and utilization of natural resources where they still relied on them in treating conditions from wound and fertility to chronic diseases such as hypertension, diabetes, asthma, and congestive heart failure. The importance of natural resources to the villagers could also be noted from their utilization of natural resources for the ailments related with their beliefs where some of the species are worn as necklace (*Amauroderma* sp.) for babies who cry late at night, or charm (*Manis javanica*) to avoid diseases from sun shower, or made into ring and worn in detecting poison (*Rhinoplax vigil*).

CONCLUSION

The knowledge of the Temuan people should be appreciated so that the knowledge and natural resources that they use can be conserved and utilized in the future. Further studies however are needed in order to determine the chemical constituents in the natural resources mentioned in the results for its efficacy in treating the ailments respectively and thus can be used in producing the medicine in treating the ailments mentioned in the results.

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