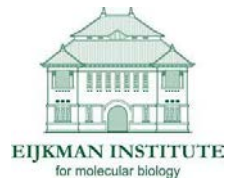


The Language of Malaria in Abui: An interdisciplinary investigation of healthcare practices in Alor, Eastern Indonesia

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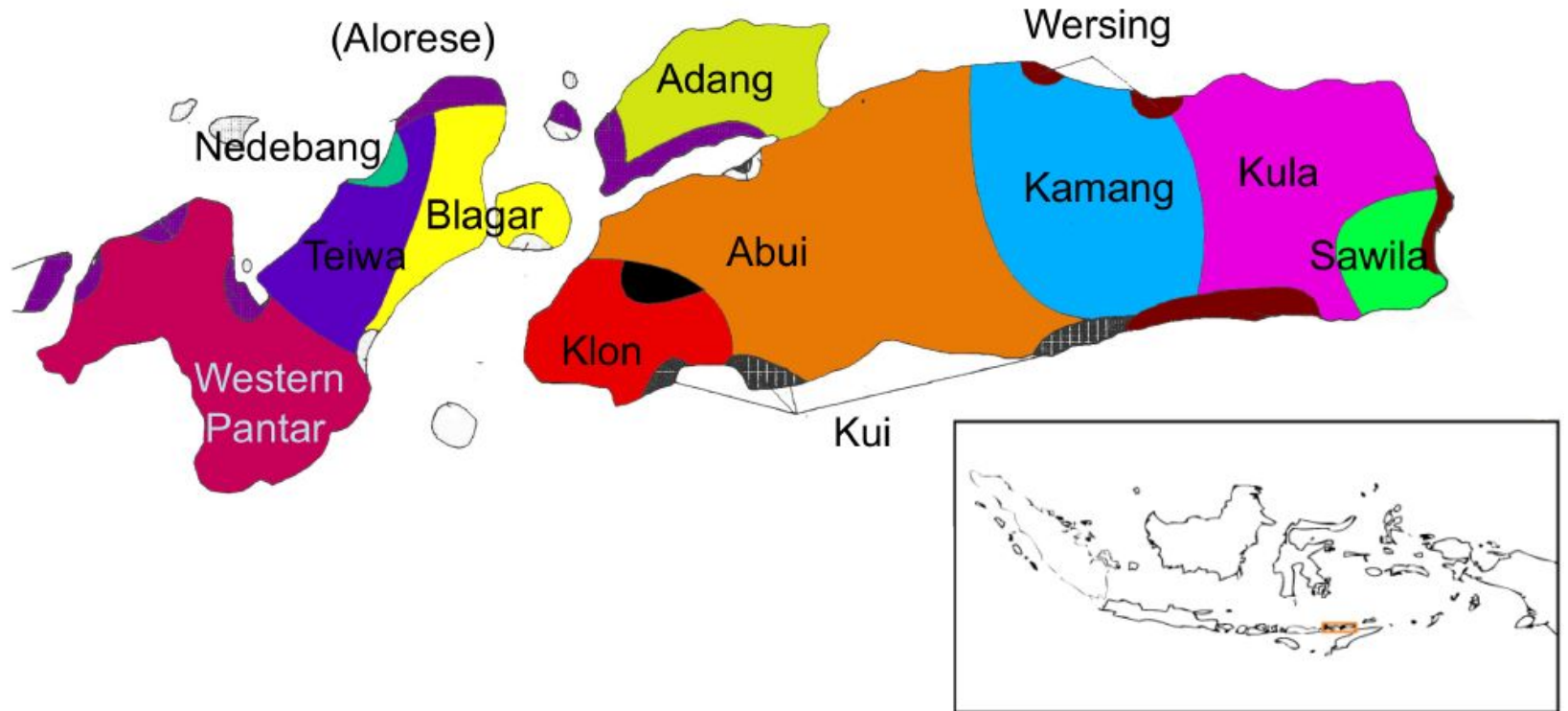


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Abui and the Alor-Pantar language family





Takalelang

Fuisama

Mabetang

Google earth

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Malaria in Alor

- one of the most common diseases present in the Alor Archipelago (Du Bois 1944:25) with one of the highest infant mortality rates in Indonesia
- substantial evidence of malaria-resistant strains: more than 50% of the sampled subjects showed chloroquine resistance (Sutanto et al. 2009)
- high rates of non-compliance with the prescribed treatment, if government healthcare facilities are visited at all (Krentel 2008)



Paradox: malaria awareness in the Abui community

In 11 hours of in-depth interviews about personal medical histories, the word 'malaria' occurs only 4 times in the part conducted in Abui [DD.027].

In the interviews conducted in Malay, the word occurs 108 times and is used by all participants. Further distinction between 'malaria satu (1)' (*P. malarariae*) and 'malaria dua (2)' (*P. vivax/falciparum*).

Some people report that there was no malaria in the past, and comment on the rise of malaria and the introduction of mosquito nets [YM.023].

Some people are able to link malaria to native concepts when interviewed in Malay. In interviews conducted in Abui, no such attempts are made.

Malaria and mosquitoes

3 of the 11 participants in long-form interviews address the causality relation between mosquitoes and malaria.

- RD names mosquitoes as one of the causes of malaria [RD.221] and uses nets for protection [RD.225]
- YM has received health training and understands the etiology of malaria [YM.182], would welcome fogging [YM.265], but admits it's too expensive, regularly soaks mosquito net in repellent to increase its efficiency [YM.276], is aware of medication to treat malaria [YM.178] and advocates the use of nets in the neighbourhood [YM.199]
- **DD explicitly denies that malaria is caused by mosquitos and links it to an unhealthy, fatty diet** [DD.027]

Methodology: *ethnography first, survey second*

Guiding Principle: “ethnography first, surveys second” (Kreager) is derived from studies of aging in Indonesia

Benefit: familiarity with cultural categories and everyday conditions of life enables the development of more useful quantitative data (Ekawati & Puradiredja)

Structure: the life course as an organizational template: personal health histories (Delpada & Puradiredja)

Teamwork: local staff with basic linguistic training and linguists (NTU team)

Ethnobotany: local staff with basic linguistic training and linguists (Hawaii team)

Future work: vulnerability survey of the community (distribution of medical and plant knowledge and access to healers)

Work in progress

Disease conceptualization (NTU team):

- understanding of local supernatural conceptions of health and disease
- classification of diseases with symptomatic fever (NTU team)
- overview of treatment regimes (health-seeking behavior) (NTU team)



Botanical knowledge (Hawaii team):

- ethnobotanical documentation and expert classification of medical plants
- medicinal plants and symptom descriptions match health histories
- variation across the Abui speaking area (social dimension of medical knowledge)



Classification and analysis

To understand the native classification of malaria, we have included any conditions with fever symptoms.

We distinguish the following types of classification:

- Naming (structure and source)
- Symptoms (fever + other symptoms)
- Probable cause (in the native system)
- Health-seeking behavior
- Botanical knowledge

Information yield by language

information	AA	LAF	MA	ML	PF	TL	DD	EP	RD	RW	YM
malaria		+					+	+	+	+	+
conditions with fever (all)	+	+	+	+	+	+	+	+	+	+	+
magical causes (spells, magic)	+	+	+		+					+	+
natural causes (i): mosquitoes							+		+		+
natural causes (ii): fatigue, diet	+	+	+	+	+	+	+	+			+
treatment (i): healers	+	+	+	+	+	+		+			+
treatment (ii): prayer (modern religion)						+				+	+
treatment (iii): plants	+	+	+	+	+	+	+	+	+	+	+
treatment (iv): massage	+	+	+	+	+	+	+				
language choice	interview in Abui						interview in Malay				

(An etic) typology of disease names

disease describes something out of place (*taraai-dalifi-laaina* 'spleen's-tongue-sticks.out', *temata-sei* 'waist-drop')

disease term = reference to spell that causes disease
(*dieng-kasing*, lit 'pot-split', *ayo* 'civet cat', *takaya*)

disease term = name of plant involved in causing the disease
(*takaya*, *rahatai*)

disease term = name of plant used for treatment
(*kanaai kiki*, *fileei laang*)

Terminology potentially relevant to malaria

Most frequently cited fever-conditions are referred to as *tootatuuk* and include:

- *taraai-dalifi-laaina*: characterized by major spleen swelling
- *temata-sei*: fever condition combined with physical immobility
- *takaya*: probably cerebral malaria
- *dieng-kasing*: probably cerebral malaria (less severe?)

Some speakers also observe that fever is associated with physical exhaustion and often follow hard field labour, harvesting, or work in the forest.

taraai-dalifi-laaina

Literally: 'spleen-its-tongue-stick.out'

Symptoms: swollen, palpable spleen [DD.007, LAF.142, PF.577] reddish skin, high fever [DD.026, DD.007, PF.576, RW.065] with immediate shivers [AA.194, LAF.136], dizziness [DD.026], blurred vision [DD.026, AA.411], headache [DD.026, DD.007], sweat [DD.026], immobility [AA.411], nephroptosis (floating kidney) [AA.411, LAF.142]

Frequency: one of the most common conditions in the area, most people have suffered from it [PF.595]

taraai-dalifi-laaina

heel taraai nu latukoi hen lang faring. Hene iti buku akan taaha do ko faring kul hooksiyeeise.

‘the spleen (fever) is very common. In this land many people always suffer from it’

Cause: fatty diet [PF.581–588]

Treatment: massage [PF.593] OR modern medicine obtained from the clinic or hospital [PF.600]

Suspected pathogen: *Plasmodium vivax*, an often chronic condition which can lead to severe disease and death due to splenomegaly (a pathologically enlarged spleen)

temata-sei

Literally: 'waist-come.down' (calqued < Mly. turun pinggang) (describes symptom, and predicts treatment)

Symptoms: physical fatigue, inability to walk, muscle loss [DD.007], and lasting headache which may lead to loss of consciousness [DD.011]

Cause: not identified, perhaps related to diet [PF.581–588]

Treatment: Treat with coconut oil, lubricate from feet to the waist [DD.013]

Suspected pathogen: Chronic *Plasmodium falciparum*. Muscle weakness and loss (Cachexia) is common in chronic malaria caused by *P. falciparum*

takaya

Etymology: unclear; some suggest a possible connection to Malay *takai* 'steal' [YM.025]; name also refers to a plant, the 'palm lily' or 'ti plant' (*Cordyline fruticosa*)

Symptoms: high fever, bleeding from nose, disorientation [AA.196], dizziness [YM.042], afternoon high fever [LAF.30], excessive sweat [YM.042, YM.118], shivers [AA.196, EP.176], cold [EP.176], fatigue [EP.176], itchiness [YM.118], coughing out blood [YM.118], shortness of breath [YM.118], hemorrhagic stroke [YM.245], severe headache [YM.234]

Cause: magic spell with the same name, created with leaves of *takaya* plant



ti plant
(*Cordyline fruticosa*)

takaya

Treatment: mixture of traditional herbal and healer's intervention; chewed ginger is spit on the patient [LAF.005], hands are clapped near his head [LAF.031], or the patient is slapped twice [LAF.033]

Suspected pathogen: Cerebral malaria caused by *Plasmodium falciparum*; cerebral malaria is the most severe neurological complication of infection with *P. falciparum*.

It is a clinical syndrome characterized by coma, with long term brain damage and neurological conditions including aphasia [AA.227, LAF.029], amnesia [YM.118], and schizophrenia-like conditions [YM.244, LAF.029]. (cf. Idro et al. 2010; Rénia et al. 2012)



ti plant
(*Cordyline fruticosa*)

dieng-kasing

Literally: 'split pot' (i.e. 'pot shard')

Symptoms: shortness of breath, severe headache, bleeding from nose [LAF.045]

Cause: magic spell (*saak*), which involves placing a shard of a broken pot on a tree branch

Treatment: herb named *dieng kabela ba hepikaai foka* (lit. pot cracked REL his-head big) is pounded and mixed with water and then poured on the head of the patient [LAF.049]; lime is mixed with water, empowered with a spell and poured on patient's head (own observation)

Suspected pathogen: Cerebral malaria caused by *Plasmodium falciparum*; possibly less severe than *takaya*

fileei laang

Literally: '*fileei* grass', i.e., 'cogon grass' (*Imperata cylindrica*)

Symptoms: Swollen face [AA.071, AA.180], small red blisters on body [AA.093, MA.127], fever [RD.23, MA.335], pus in the ear [TL.057–061]

Cause: unclear

Treatment: crawl under or bathe with the *fileei* grass [MA.144; AA.096]. If a stronger remedy is needed, bathe in water that infused with ground-up *kapok* tree bark/tamarind [MA.148, 150]

Suspected pathogen: Chickenpox caused by *Varicella zoster* virus



I. cylindrica

kanaai kiki

Literally: 'pili nut flower'

Symptoms: high fever [TL.067], big blisters on body [AA.082]

Cause: unclear

Treatment: bathe in water infused with leaves/bark/root of a barren *pili* nut tree [MA.161, 405], the water can also be ingested [MA.405]; single-seeded fruits can also be used (women avoid eating the double-seeded fruits)

Suspected pathogen: Possibly cowpox caused by *Vaccinia* virus



kala-kala

Literally: 'widow'

Symptoms: fever and rash with small red blisters

Cause: unclear

Treatment: Gather spiral roots of *asi munum he ataiipa* bush and place around wrist. Once the rash disappears get kaboi heica, a kind of wild banana with seeds. Bathe the patient with the water from this banana. If no resolution is observed then get some onions, garlic, and *hanuong* (*Acorus calamus*) and roast them. Then chew them till the contents come out and press this mixture into the patient's rear (*hiek fafung*) [Dorkas10.27]

Suspected pathogen: measles virus (local Malay *serampa*)



A. calamus rhizome

Treatment regimes and Abui healers

Healers are generally elderly members of the community. They each employ a range of techniques, unique to each healer. Some healers had training in modern healthcare and are able to identify modern conditions and recommend the corresponding modern treatment. A healer's knowledge is considered personal and not revealed or disseminated easily [AA.951], although exceptions exist [AA.183].

Their treatment regimes includes:

- prayer (*mook* or *mingtaai*), before consumption of traditional medicine or massage
- herbal medication (*daweng*)
- massage (often accompanied with mantra-like prayer)
- empowerment of medication or water (*hane fanga* 'say its name')

Treatment may be repeated on even days. It is taboo to talk about the healing procedure, because the condition may recur. Healers sometimes receive payments for their service (gongs, livestock, utensils).

Reasons to use magic spells

to prevent undesirable behaviour: the casting of the *takaya* spell to deter fruit theft:

- *'(He got it because) your father protected his betel tree, but he took it and got that disease (Takaya)'* [LAF.030]

to punish(?) someone they hate [PF.139] or are jealous of [YM.125] by casting the *soltan* spell

- *'where people have enmity with one another, people who hate us, sometimes they use a black magic to make us sick; then we will get sick'* [PF.139]
- *'Then I thought that there must be someone who jealous to us. That's my thought. We thought about that and we also had a discussion about that. I, myself also had that thought. How could he die suddenly?'* [YM.125]

parallels with Basso (1969) and Taylor (1990), a.o.

Magic spells *liel*

Magic spells were (are?) used for retribution, self-defence or property protection.
Note frequency of plant references in spell names.

- *ara liel* (firewood) to protect firewood
- *batamal liel* (papaya) to protect papaya
- *boi-upi* fruits of *Sterculia parviflora*, to causing swelling of testicles (protects fruit trees)
- *fahai* (wooden crocodile totem) causes death on sea
- *ayut-kul* (deer-skin) brings about an epilepsy-like condition
- *fiyaa* (candlenut) placed on tree branch and causing ulcer in throat and suffocation
- *wii-bikat* (stone-pebble) same as *fiyaa*
- *kabala-kiika* (cloth-red) to cause house fire
- *loku* (person/doll) to cause epilepsy or possession-like behavior
- *soltan* (?) sudden death
- *adik-beeka* (pandanus-bad) causes leprosy
- *mur-kongkat* (citrus-green.bean) for crop protection against pests
- *bataa-ai* (tree-root) love spell
- *kapur-air* (Mly. lime water) counterspell for various diseases
- *lahatang* (bamboo meshwork) causes nose deformities (like with syphilis)



paha kiika spell on
candlenut tree
(causing loku)

Plant treatment regime of *tootatuk*

Causes: spleen swelling [LAF.136], consumption of oily food (coconut, fried corn; canary nuts) [LAF.144]

Symptoms

- High fever accompanied by shivers, unconsciousness [AA.196, LAF.136]
- Stomach and intestines (*takin*) are swollen and shifted from their position by the swollen spleen [LAF.142]

Treatment

- Smash and grind *asimuyumil* leaves, tie it to patient's left waist [LAF.136]
- Tie *tantupak* (a kind of plant that looks like *lawuna*) to patient's waist [LAF.136, DD.036]; side effects: *tafungdi* 'skin burns'
- Drink extract from smashed *bataamal* (papaya) leaves [DD.036]
- Drink boiled extract from *tuli* (?) leaves [RW.061] or use *jarak nuts* (*Jatropha curcas*) [RD.063]
- Drink boiled *kayu ular* (lit. snake wood, *Strychnos* sp.?) [RD.213]
- Usage of *fota* (*Morinda tinctoria*; *Morinda citrifolia*) [TL.215]

Massage treatment of *taraai-dalifi-laaina*

Metaphor: spleen out of place (*laaina* 'stick out') > back to place (*haliel* 'lift')

Healer: *hataang-palaata* (cold-hand) [PF.593], life-long healing practice acknowledged to sap life energy and shorten healer's life

Massage goal: when spleen is massaged, it should touch the lungs (very unpleasant feeling)

taraai dowiir ba hepanut ba di mia hane fanga, tekalei nu hen o hene taraaiso.

'The way to give a massage to the spleen is first, apply some water in our stomach, then press the spleen inward while saying the mantra (lit. its name), until (we touch) the lungs, that's how our spleen should be.' [PF.588-590]

TL combines massage with Christian prayer [T.165] and describes her personal conversion as the start of her massage practice [TL.165]. Normally, the massage skill is transferred from another healer [TL.170 - 181]

Massage was the most common treatment for various diseases in the mountains (before resettlement to the coast) [TL.208ff]

Magical treatment regime of *takaya*

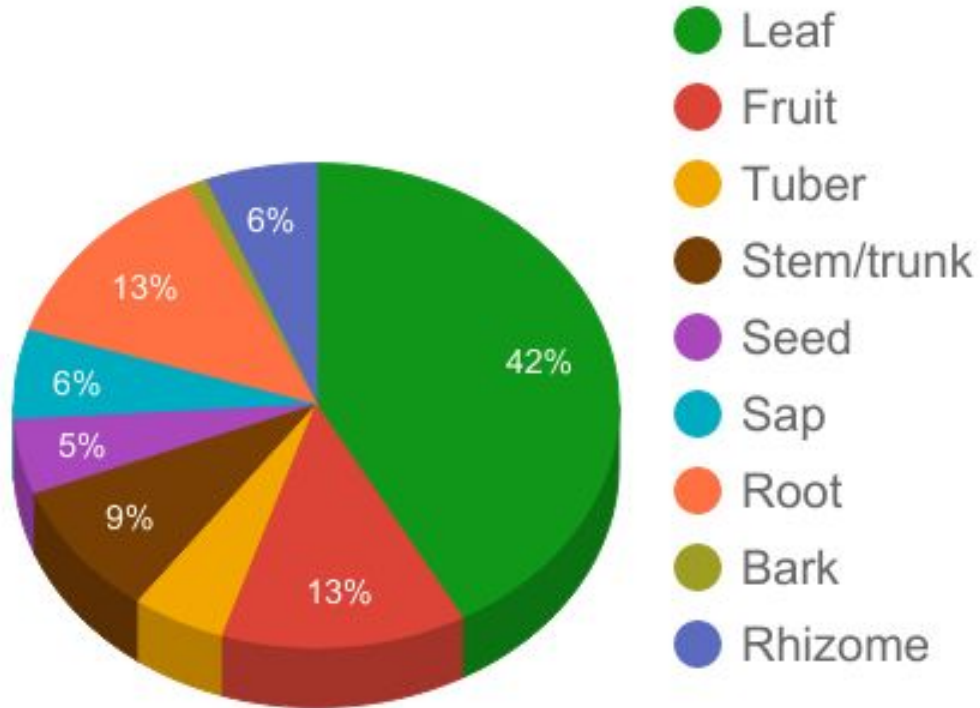
Case description [LAF.005, LAF.028]

Cause: the patient stole from a betel tree protected by a *takaya* spell [LAF.030]

Symptoms: patient walked around naked [LAF.005], was mentally unstable, acting insane, aphasic [LAF.029], with high fever in the afternoon [LAF.030]

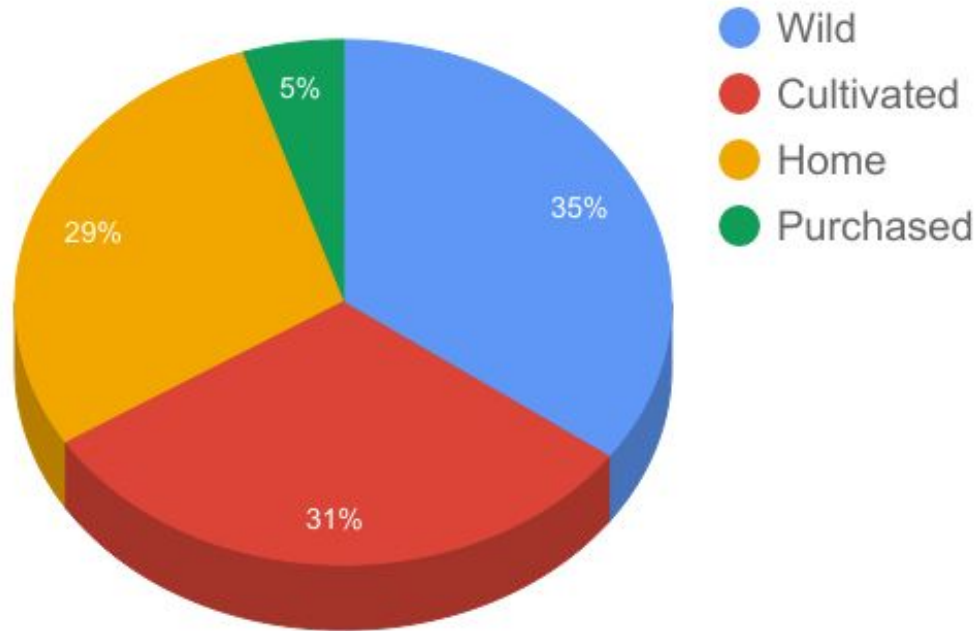
Treatment: chewed ginger is spat on patient [LAF.005] and hands clapped close to his patient's [LAF.031], patient is slapped twice [LAF.033]

Which parts of medicinal plants are used



(after Usman 2011)

Sources of medicinal plants



(after Usman 2011)

Plant identification

- During 6 weeks field work in 2016 we collected ~500 Abui plant names, roughly 200 identified to at least family level, most to genus level
- Almost all information is new, much not found in existing dictionaries (Kratochvíl & Delpada 2014)
- Several hours of recordings about plants, with transcription ongoing
- Most plant names are indigenous (not borrowed from Austronesian)
- We matched 38 Abui names to list of “old” plants in Verheijen (1988), and only 4 of them look like possible loans
- Even many new plants have indigenous names (‘tomato’, ‘pineapple’, ‘pumpkin/squash’, ‘tobacco’)

Rank by family

Family	No.	%
Poaceae (Grass)	39	14%
Fabaceae (Bean)	26	9%
Araceae (Aroid)	25	9%
Musaceae (Banana)	20	7%
Arecaceae (Palm)	15	5%
Cucurbitaceae (Cucumber)	14	5%
Rutaceae (Citrus)	13	5%

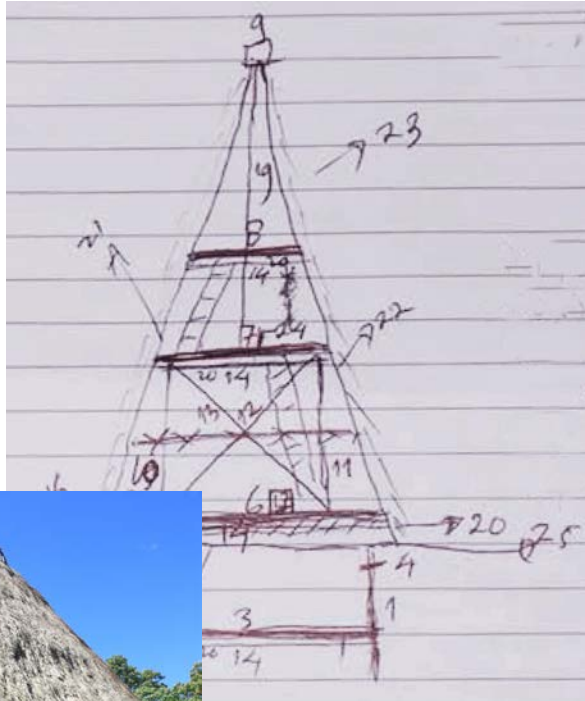
Family	No.	%
Euphorbiaceae (Spurge)	12	4%
Moraceae (Mulberry)	11	4%
Anacardiaceae (Mango)	10	4%
Malvaceae (Cotton)	9	3%
Solanaceae (Tomato)	8	3%
Asteraceae (Sunflower)	6	2%
Apiaceae (Carrot)	5	2%
Convolvulaceae (Sweet Potato)	5	2%
Dioscoreaceae (Yam)	5	2%

Medicinal plants

- Only a fraction of Abui plants have identified medicinal uses
 - Usman (2011) survey of 70 households identifies 58 medicinal plants, to which we have added several more, still representing < 20% of identified plants
- All participants disclose some medicinal plant knowledge in the interview, regardless of the language in which it is conducted.
 - However, knowledge of plant use in other domains is much richer and more widely distributed.
 - e.g., food, shelter, ..



Non-medicinal plant knowledge



25 house part names and sources



7 lexical roots referring to tuber and root crops

Conclusions (1)

- There may be a fundamental distinction between “ordinary” disease and those that reflect supernatural agency.
 - Supernatural cause needs supernatural response (plant treatment insufficient)
 - More dangerous diseases tend to have a supernatural agent
 - Skin diseases and less dramatic diseases tend to have plant treatments
- High degree of plant-disease syncretism, and the pervasiveness of plant names in magic spells, suggests an important role for plants in treatment regimes.

Conclusions (2)

- Abui disease description appears to make distinctions that resemble the two main forms of plasmodium (*P. vivax*, *P. faciparum*)-- yet without reference to mosquitos.
- The greater number of topics in the Abui interviews shows the value of conducting health research in indigenous languages.
- The way healing practice proceeds, the uncertainty it seeks to resolve, and the secrecy that surrounds practice indicate a drawn out process. We can hypothesize that clinical practice will not get anywhere without better understanding of the purposes and procedures of local healing (cf. Beiersmann et al. 2007).

Future work

- Complete text corpus (transcription ongoing)
- Confirm plant identification
- Collect and deposit specimens in herbaria
- Refine typology of disease terminology
- Documentation of healing practices
- Epidemiological surveys
- Comparative work with related languages

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“LENDOLA”



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