

## Traditional herbal drugs of Bulamogi, Uganda: plants, use and administration

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### Abstract

We present here an inventory of the medicinal plants of Bulamogi county in Uganda, including their medicinal use, preparation and administration modes. Fieldwork for this study was conducted between June 2000 and June 2001 using semi-structured interviews, questionnaires, and participant observation as well as transect walks in wild herbal plant collection areas. We recorded 229 plant species belonging to 168 genera in 68 families with medicinal properties. A large proportion of these plants are herbaceous. The medicinal plants are mainly collected from the wild. Some species, such as *Sarcocephalus latifolius* (Smith) Bruce, are believed by the community to be threatened by unsustainable intensities of use and patterns of harvesting. Particularly vulnerable are said to be the woody or the slow growing species. Herbal medicines are prepared as decoctions, infusions, powders, or as ash, and are administered in a variety of ways. Other concoctions consist of juices and saps. The purported therapeutic claims await validation. Validation in our opinion can help to promote confidence among users of traditional medicine, and also to create opportunities for the marketing of herbal medicines and generate incomes for the community. The processing, packaging and storage of herbal medicines is substandard and require improvement.

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### 1. Introduction

Traditional medicine (TM) occupies a central place among rural communities of developing countries for the provision of health care in the absence of an efficient primary health care system (World Health Organization, 1995; Sheldon et al., 1997; Teh, 1998; Shrestha and Dhillion, 2003; Tabuti et al., 2003a). The existence of TM depends on plant species diversity and related knowledge of their use as herbal medicines (Sheldon et al., 1997; Svarstad and Dhillion, 2000; Laird, 2002). In addition both plant species and traditional knowledge (TK) are important to the herbal medicine trade and the pharmaceutical industry, whereby plants provide raw materials, and TK the prerequisite information (Farnsworth, 1990; Johns et al., 1990; Sheldon et al., 1997; Dhillion and Amundsen, 2000; Carlson et al.,

2001; Dhillion et al., 2002; Laird, 2002; Nelson-Harrison et al., 2002). Unfortunately both plant species and TK are threatened in various ways. Medicinal plants species or their populations are threatened by habitat modification and unsustainable rates of exploitation (World Bank, 1992; Sheldon et al., 1997; Dhillion and Amundsen, 2000), while TK is threatened by loss of plant diversity (Farooque and Saxena, 1996; Tabuti et al., 2003b), urbanisation, modernisation and low income of traditional medicine practitioners (Tsey, 1997; Ugent, 2000; Tabuti et al., 2003a). Against this background it is important that immediate steps are taken to protect both plant species diversity and associated TK.

In an attempt to conserve traditional medicine knowledge, it is necessary that inventories of plants with therapeutic value are carried out, and the knowledge related to their use documented in systematic studies. These studies can have other values too for society besides conserving TK, for they can help to identify plants with market potential that can help generate incomes for local communities. Generation of

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incomes for local communities is seen as an important motivation for the conservation of local species (Shackleton, 2001). Further, studies related to herbal medicines can help to stimulate confidence in TM and enhance appreciation of herbal medicines among local communities. As a consequence local communities will have a higher appreciation of the value of their plant resources and take efforts to conserve them (Sheldon et al., 1997; Shackleton, 2001).

In this paper, we present an inventory of the known medicinal plants of Bulamogi county, in Uganda, and the TK pertaining to their use, including processing, preparation and administration.

### 1.1. Study area and the people

Bulamogi county is found approximately 220 km north-east of Kampala, the capital city of Uganda. It is located between 33°20′–33°38′E and 0°58′E–1°18′N at an altitude of 1052–1098 m a.s.l. (Uganda Government, 1963). The county has an area of approximately ca. 870 km<sup>2</sup> and is made up of five subcounties, viz. Nawaikoke, Gadumire, Namwiwa, Bumanya and Namugongo. Within each sub-county, there are several parishes, each made up of a number of villages.

Bulamogi has four major land use categories: non-uniform small-scale farmland (67.4%), wetlands (16.4%) dominated by *Cyperus papyrus*, woodlands (3.6%) dominated by *Albizia zygia*–*Combretum* spp.–*Hyparrhenia rufa* association, and *Albizia zygia*–*Combretum molle*–*Brachiaria decumbens* association, grasslands (2.6%) dominated by *Sorghastrum stipoides*, all other categories including bushlands take up less than 1% of the land area; the remainder of the area is open water (Langdale-Brown, 1959; Forest Department, 1997).

Bulamogi county has an estimated population of 150,000 people and a population density of 100–199 people/km<sup>2</sup> basing on the population census of 1990 (Statistics Department, 1992). The people of Bulamogi are subsistence peasant farmers whose main sources of income are crop agriculture, growing mostly sweet potatoes, maize, finger millet, cassava, sorghum, groundnuts, cotton, and fruit plants especially oranges and mangoes; some also practice livestock farming, fishing and timber felling (Anonymous, 2000).

### 1.2. Health care delivery in Bulamogi

According to Mr. M. Wambuzi, the Medical Assistant in charge of Namwiwa sub-county health centre, the most common ailments of Bulamogi include malaria, respiratory tract infections, intestinal worms, diarrhoea, diseases of the eye, anaemia, measles, itchy skin rashes, fungal infections, jaundice, tonsillitis, hernias, gastroenteritis, pyomyositis, bubo, salpingitis, syphilis, ulcers, and false teeth in babies 'biino'. Health care is provided by both orthodox and traditional medicine systems. The people routinely consult

traditional medicine practitioners (TMPs) for chronic and psycho-spiritual illnesses (Tabuti et al., 2003a). Traditional medicine practitioners are usually elderly men, older than 30 years and are commonly registered with traditional medicine healers associations. They have extensive experience of traditional healing, and learn the craft of healing by apprenticing under senior TMPs. Traditional medicine practitioners possess modest education usually comprising of primary level.

## 2. Methods

Fieldwork for this study was carried out between June 2000 and June 2001. Data was collected using semi-structured interviews, guided questionnaires, direct observations, and transect walks (see Martin, 1995). Prior to any contact with the local community this study was introduced to the County Officer—this introduction was always repeated when entering a new administrative area such as a sub-county or a village. Two research assistants were hired. The research assistants had grown up in the area and aided in interpreting the cultural norms and translating hidden meanings behind the said expressions during interviews. The research assistants were important also in winning the trust of respondents and establishing rapport; respondents were less suspicious of the motives of the study when interviewed in the presence of someone they knew. All respondents were paid a small fee of U Shs 5000–30,000 (ca. USD 3.0–18) as compensation for the time they spent answering our questions.

A pilot study lasting 3 weeks was conducted at the very beginning of the study. In the pilot study, key informants were identified by the help of the assistants and local politicians. Semi-structured interviews were conducted with 23 key informants. Following the pilot study, a detailed survey using a mixture of open- and close-ended questionnaires during face-to-face interviews was conducted.

Traditional medicine practitioners were selected based on their reputation, while household respondents were chosen through stratified sampling. In each sub-county, a respondent was randomly chosen from at least one village from each parish in the sub-county until at least 30 respondents had been included in the survey in each sub-county. Respondents included the head of household or the wife or the older children. Altogether 47 TMPs and 126 households respondents were included in the survey. Mr. Wambuzi, the Medical Assistant in charge of Namwiwa sub-county health centre, provided translations of the local disease names into their English or western-medicine equivalents. These were later confirmed by a physician originating from Bulamogi county, Dr. P. Waako.

The interviews were supplemented by participant observations and transect walks in wild herbal medicine collection areas. Plant voucher specimens were collected and are deposited at the Makerere University Herbarium.

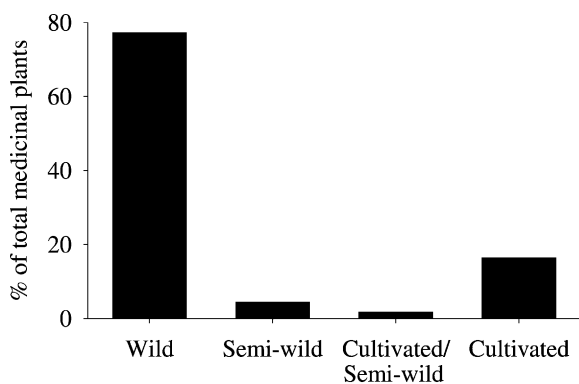


Fig. 1. Percentage of total medicinal plants harvested under different systems.

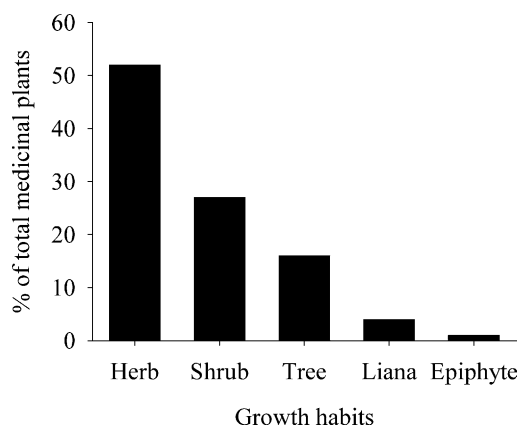


Fig. 2. Percentage of total medicinal plants with different growth habits.

### 3. Results and discussion

#### 3.1. Herbal medicine plants

In this study we recorded a total of 229 medicinal plant species, belonging to 168 genera in 68 families (Table 1). All species except *Cupressus lusitanica* Mill. (Cupressaceae) are angiosperms. Of the angiosperms, five families, Poaceae, Asparagaceae, Alliaceae, Zingiberaceae and Orchidaceae, are monocotyledons; the rest are dicotyledons. The largest proportion of medicinal plant species belong to the families Fabaceae (19%), Euphorbiaceae (7.5%), Asteraceae (5.8%) and Solanaceae (4.9%) in decreasing order of frequency of reported use. The large number of species recorded here points to a dependence on a wide diversity of plant species to treat ailments and also to the existence of a substantial amount of TK on herbal plants among the community.

#### 3.2. Herbal medicine harvesting and sustainability of use

Most herbal medicine plants grow wild (77.3%) and only 16.4% are cultivated (Fig. 1). Medicinal plants are collected from fallow land, cultivated fields or home gardens. Traditional medicine practitioners either collect herbal plants personally or hire collectors. All TMPs cultivate some medicinal plants, especially fast growing ones around their homes and shrines in order to have them within easy access. Other medicinal plants growing wild are protected where found ‘*kubitilya*’. Many of the medicinal species are herbaceous (52%) (Fig. 2).

All the different parts of medicinal plants are used when preparing medical concoctions. A significant proportion of the concoctions are made using leaves (37.3%) and roots (34.3%) (Fig. 3). Use of other plant parts is generally below 5%. In some cases the whole plant is used (8.2%). Overall, use of perennial parts and reproductive parts (flowers, fruit, seeds) is substantial at 42.4 and 6.8%, respectively.

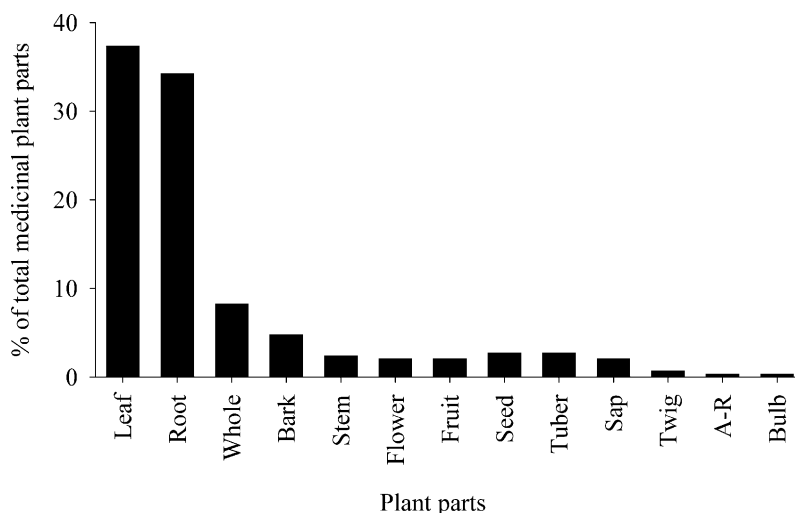


Fig. 3. Percentage of total medicinal plants parts used as medicines in Bulamogi county (A-R = aerial roots).

Table 1

List of medicinal plants showing growth habit, management status, malady treated, parts used, preparation and administration of herbal medicines

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration
<b>Acanthaceae</b>					
<i>Asystasia schimperi</i> T. Anders. (JRST 156, 376, 414) Nyante	H	W	Dermatitis	L	Warm to make poultice
			Snake bite	R	Chewed
			Worms	L	Powder drunk as/on tea
			Miscarriage	–	–
<i>Crabbea velutina</i> S. Moore (JRST 157, 323) Mbatyaimeku	H	W	Inflammation of finger toe	–	–
			Spirits	Wh	–
			Worms	L	Powder drunk as/on tea
			Protect job	Wh	Smoked
			Overcome criminal case	Wh	Smoked accompanied by a chant
<i>Dicliptera</i> sp. (JRST 324)	H	W	Reconcile with wife	R	Ritual
			Reconcile with wife	–	Ritual
<i>Dyschoriste radicans</i> (A. Rich.) Nees (JRST 83) Busonga songa	H	W	Spirits	L	Powder smoked and bathed
				R	Infusion instilled in nostrils
<i>Justicia exigua</i> S. Moore (JRST 142) Kabalela	H	W	Salpingitis	Wh	Infusion drunk
<i>Thunbergia alata</i> Bojer ex Sims (JRST 80, 240) Matamavu	H	W	Boils	L	Poultice applied
			Diarrhoea	L	Infusion drunk
<i>Anisotes</i> sp. (JRST 423) Basaja bakilana	H	W	Premature ejaculation	L	Infusion drunk
			Worms	R	Powder drunk as/on tea
			Protect garden	–	–
<b>Alliaceae</b>					
<i>Allium cepa</i> L. (NC) Butungulu	H	Cu	Diphtheria Snake bite	Bu Bu	Chewed Chewed
<b>Aloaceae</b>					
<i>Aloe wollastoni</i> Rendle (JRST 147, 258) Kikaka	H	W	Skin rash (itchy)	L	Infusion bathed or crushed leaf used as sponge
			Jaundice	L/R	Decoction drunk
			Chronic endomitritis	L	Infusion drunk
<b>Amaranthaceae</b>					
<i>Aerva lanata</i> (L.) Schult. (JRST 270, 295) Lwelya	H	W	Overcome criminal case	Wh	Smoke on broken earthen-ware pot
<i>Amaranthus hybridus</i> L. subsp. <i>hybridus</i> (JRST 415) Doodo omutukuliki	H	SW	Divorce wife	L	Smoked in pipe made from banana stem
<i>Amaranthus</i> cf. <i>spinosus</i> (JRST 406) Nkona mutwe/kalulya nkoko	H	W	Hypertension	Wh	Steamed on food
<i>Celosia trigyna</i> L. (JRST 266) Dagada	H	W	Vertigo	L	Infusion bathed
<b>Anacardiaceae</b>					
<i>Lannea schweinfurthii</i> (Engl.) Engl. (JRST 194, 204, 257) Musinga bakali	T	W	Sterility	B	Infusion drunk
<i>Mangifera indica</i> L. (JRST 99) Muyembe	T	Cu/SW	Diarrhoea	B/R	Decoction drunk

Table 1 (Continued)

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration
			Fever	L	Decoction drunk, steam body
			Amoebiasis	–	–
			Cough	B/L	Ash licked, decoction drunk
			Syphilis	B	Decoction drunk
			Muscular spasms	B	Decoction drunk
<i>Ozoroa insignis</i> Del. (JRST 401) Katikati (gwele)	T	W	Diarrhoea	–	–
<i>Rhus natalensis</i> Krauss (JRST 52, 300, 344) Busojole	S		Protect against ill luck	–	–
<i>Rhus vulgaris</i> Meikle (JRST 201) Busojole	S	W	Diarrhoea	L	Decoction drunk
			Measles	R	Infusion bathed
			Haemorrhoids	R	Decoction drunk, sitz bath
			Syphilis	R/L	Infusion drunk
			Antidote	R	Boiled in milk and drunk
			Sterility	R/L	Powder/decoction drunk
Annonaceae					
<i>Annona senegalensis</i> Pers. (JRST 302) Mulama omusaiza	S	W	Spirits	R	Smoked/infusion bathed
Anthericaceae					
Unidentified (JRST 435) Kasota sota	H	Cu	Snake bite	Tu	Decoction drunk
<i>Chlorophytum comosum</i> (Thunb.) Jacq. (JRST 31) Nalwebe	H	W	Sterility	Tu	Decoction drunk
			Crop yield	Tu	Planted at garden corners
			Protect garden	Tu	Planted at garden corners
Apiaceae					
<i>Steganotaenia araliacea</i> Hochst. (JRST 442) Mpujule/Kibundubundu	T/S	W	Spirits	L	Infusion bathed
			Haemorrhoids	R	Tie around anus
			Pyomyositis	R	Infusion drunk
			Lameness	L	Added to warm <i>Albizia coriaria</i> decoction
			Promote labour	L	Infusion bathed
			Chronic endometritis	R	Decoction drunk
Apocynaceae					
<i>Carissa edulis</i> (Forssk.) Vahl (JRST 36, 299) Mutwooga	S	W	Diarrhoea	R/L	Powder drunk as tea
			Amoebiasis	R/L	Infusion bathed
			Spirits	R	Powder smoked, infusion bathed
			Cough	R	Powder licked
			Promote labour	R	Decoction drunk
			Syphilis	R	Infusion drunk in <i>malwa</i> <sup>f</sup> , sitz bath
			Sterility	R	Infusion drunk
			Insanity	R	Decoction drunk
			Epilepsy	R	Powder drunk, bathed, smeared to body
<i>Catharanthus roseus</i> (L.) G. Don (NC)	H	Cu	Worms	R	Sap drunk by child
			Ulcers	L	Drunk in tea
<i>Thevetia peruviana</i> (Pers.) Schumann (JRST 7) Busitani	S	Cu	Snake bite	R	Infusion drunk

Table 1 (Continued)

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration
			Amoebiasis	–	Infusion bathed
			Hernia	R	Decoction drunk
Aristolochiaceae					
<i>Aristolochia elegans</i> Mast. (JRST 69, 320)	Li	W	Snake bite	R	Infusion drunk or root chewed
			Hernia	St	Decoction drunk
			Migraine	L	Sap dropped into nostrils
			Insanity	L	Sap dropped into nostrils
Asclepiadaceae					
<i>Cryptolepis sanguinolenta</i> (Lindl.) Schltr. (JRST 418, 437) Kafulu/muganga kiba	C	W	Diarrhoea	R	Decoction drunk
			Snake bite	R	Chewed, also rub at bite wound
			Hernia	R	Chewed
			Premature ejaculation. Colic pain in babies	R	Chewed
			Hypertension		Eaten with ground nut paste
<i>Gomphocarpus physocarpus</i> E. Mey. (JRST 388) Kyayo			Abdominal pain	Tu	Powder drunk on tea
<i>Mondia whitei</i> (Hook. f.) Skeels (JRST 162, 277) Mulondo	Li	W	Premature ejaculation	R	Chewed
Asparagaceae					
<i>Asparagus racemosus</i> Willd. (JRST 12) Mukila gwango	S	W	Burns	L	Dry leaves burnt to ash and applied
			Hydrocele in children, 'Katwiga'	Tu	Decoction drunk
			Kwashiorkor	L	Eaten with raw <i>Sesamum indicum</i>
			Migraine	L	Powder to incision using <i>Solanum</i> <i>incanum</i> seed
Asteraceae					
<i>Aspilia kotschyi</i> (Hochst.) Oliv. (JRST 207, 337) Nzilalume	H	W	Wounds	–	Powder applied
			Migraine	R/L	Drop sap into nostrils
<i>Bidens pilosa</i> L. (JRST 456), Kalala	H	W	Diarrhoea	L	Decoction drunk
			Snake bite	L	–
			Wounds	L	Sap applied to wound
			Eyes	L	Wash head not eyes
			Insanity	L	Drop sap into nostrils
<i>Chrysanthellum indicum</i> DC. (JRST 177) Kigele kyampiti	H	W	Jaundice	Wh	Infusion drunk
			Antidote	–	Infusion bathed
			Uterus (painful)	L	Powder drunk in milk
			'Italo'	Wh	Infusion bathed
			False teeth	L	Rubbed on gum
			Syphilis	Wh	Powder bathed
			Kwashiorkor	–	–
<i>Conyza sumatrensis</i> (Retz.) E.H. Walker (JRST 457) Kayala	H	W	Boil	L	Poultice applied
			Amoebiasis	L	Infusion; wash, drink
			Fungal infection	L	Crush and add paraffin and rub
			Insanity	L	Drop sap into nostrils
<i>Crassocephalum</i> cf. <i>montuosum</i> or <i>crepidioides</i> (JRST 223) Sekoteka	H	W	Lower hanged body	Wh	Ritual
			Uterine fibroids	Wh	Infusion drunk
			Abortion	L	Decoction drunk
<i>Dichrocephala integrifolia</i> (L.f.) O. kuntze (JRST 488) Kampuluguma	H	W	Amoebiasis	L	Infusion bathed and drunk
			Promote labour	Wh	Infusion bathed
			Insanity	L	Drop sap into nostrils
<i>Emilia coccinea</i> (Sims) G. Don (JRST 327) Mukasa	H	W	Septic ears	L	Drop sap into ears

Table 1 (Continued)

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration
<i>Guizotia scabra</i> (Vis.) Chiov. (NC) Kyotabakaile	H	W	Promote labour	L	Eaten as a vegetable
			Jaundice	L	Decoction drunk
			Sterility	Wh	Decoction drunk
			Amoebiasis	–	Infusion bathed
<i>Microglossa pyrifolia</i> (Lam.) O. kuntze (JRST 189, 356, 381) Kabilili akatono	S	W	Diarrhoea	L	Powder drunk as tea
			Snake bite	R	Infusion drunk; poultice
			Amoebiasis	R	Infusion bathed
			Premature ejaculation	R	–
			Promote labour	R	Infusion drunk
			Syphilis	R	Powder dissolved in water and drunk
			Migraine	R/L	Sap dropped into nostrils
<i>Solanecio angulatus</i> (Vahl) C. Jeffrey (JRST 237, 318) Mpozia/Izimya	H	W	Hydrocele	R	Decoction drunk
			Spirits	L	Smoked; infusion bathed
			Antenatal	L/Wh	Sitz bath
			Antidote	R	Smear body; powder drunk as tea
			Vertigo	L	Infusion bathed
			Boil	L	Poultice
			Lightening	L	Rub whole body
			Ritual of twins	L	Infusion bathed
			Septic ears	R	Sap to ear
			Diphtheria	Wh	Infusion drunk
<i>Sonchus schweinfurthii</i> Oliv. & Hiern (JRST 286) Nsombya	H	W	Diarrhoea	–	–
			Fever	L	Decoction drunk; steam patient
<i>Vernonia amygdalina</i> Delile (JRST 81), Lubilili	S	W	Measles	L	Decoction/infusion drunk
			Amoebiasis	L	Infusion bathed
			Hernia	R	–
			Influenza	L	Decoction drunk
			Convulsions	R/L	Decoction drunk
<i>Vernonia cinerea</i> (L.) Less. (JRST 297) Lukohe	H	W	Spirits	–	–
Balanitaceae					
<i>Balanites aegyptiaca</i> (L.) Del. (JRST 82, 138, 254) Mulugunyu	T	W	Measles	R	Powder dissolved and bathed
			Uterine fibroids	R	Powder drunk as tea
Basellaceae					
<i>Basella alba</i> L. (JRST 225) Nderema	H	W	Ulcers	L	Decoction drunk
Bignoniaceae					
<i>Kigelia africana</i> (Lam.) Benth. (JRST 6, 59) Muyago	T	W	Diarrhoea	R	Decoction drunk
			Measles	–	–
			Premature ejaculation	R(B)	Infusion drunk
			Cough	R	Infusion drunk
			Antidote	R	Powder drunk as/on tea
			Sterility	R/B	Decoction/infusion drunk
			Hypertension	Fr	Decoction drunk
Anaemia	Fr	Decoction drunk			
'Nfete' suspected TB	R	–			

Table 1 (Continued)

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration
			Uterine fibroids	B	Decoction drunk
			Warts in vagina/rectum	B	Warm and press back tissue
			Kwashiorkor	B	Infusion drunk and bathed
			Chronic endometritis	–	–
<i>Markhamia lutea</i> (Benth.) K. Schum. (JRST 465) Musambya	T	W	Diarrhoea	–	–
<i>Spathodea campanulata</i> P. Beauv. (NC) Munyalisha	T	W	Insanity	L	Smoked
			Diarrhoea	R	Decoction drunk
			Insanity	L/Fl	Wash patient
Cannabaceae					
<i>Cannabis sativa</i> L. (JRST 490) Njaye	S	Cu	Diarrhoea	L	Infusion drunk
			Measles	L	Decoction drunk
			Syphilis	L	Decoction drunk
Capparidaceae					
<i>Capparis tomentosa</i> Lam. (JRST 84, 208) Muzingani	S	W	Diarrhoea	R/L	Powder drunk as a tea
			Snake bite	R	Infusion drunk
			Hernia	R	Drunk from <i>malwa</i> <sup>f</sup> dregs
			Spirits	R	Powder bathed, smoked
			Haemorrhoids	R	Drink, use some to push back rectum
			Migraine	R	Infusion drunk, tie around head
			Sterility	R	Decoction drunk
			Itchy skin ' <i>Bisoli</i> '	R	Infusion bathed
			Uterine fibroids	R	Powder drunk as tea
			Cataract	R	Sap applied to eye
			Spirit called <i>Mukyeno</i>	R	Infusion drunk, bathed
			Stomach-ache	–	–
			Chronic endometritis	R	Powder drunk
			Convulsions	L	Decoction drunk
<i>Cleome gynandra</i> L. (JRST 4) Yobyoy	H	SW	Vomiting	Fl	Infusion drunk
			Antenatal/promote labour	R	Chewed
			Diphtheria	R	Warm and chew
			Septic ears	R	Sap dropped into ear
<i>Cleome monophylla</i> L. (JRST 378, 384) Kayobyoy yobyoy	H	W	Vertigo	L	Infusion bathed
<i>Maerua triphylla</i> A. Rich. (JRST 322) Muzinga kyalo	S	W	Protect home	R	Smoked
Caricaceae					
<i>Carica papaya</i> L. (JRST 506) Mupapali omusaiza	T	SW	Overcome criminal case	R	Ritual
			Cough	St	Ash licked
			Promote labour	R	Chewed
			Sterility	L	Powder
			Migraine	R	Sap into nose
			Snake bite	R	Chew, poultice applied to bite wound
Celastraceae					
<i>Maytenus senegalensis</i> (Lam.) Exell (JRST 73, 305) Muwaiswa	S/T	W	Uterine fibroids	R	Decoction/infusion drunk
			Convulsions	L	Infusion bathed, drunk
			Anaemia	R	Decoction drunk, smeared to body
			Chronic endometritis	R	Powder drunk
			Promote labour	R	Decoction drunk as tea



Table 1 (Continued)

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration
			Pyomyositis	R	Powder drunk in warm <i>tonto</i> <sup>g</sup>
			Migraine	R	Decoction drunk, root chewed
			Headache	R	Decoction drunk
			Sterility	R	Decoction drunk
			Worms	R	Decoction drunk
			Syphilis	R	Infusion drunk, sitz bath
Chenopodiaceae					
<i>Chenopodium ambrosioides</i> L. (JRST 228) Kafunya	H	W	Fever	L	Steam patient
			Spirits	L	Infusion bathed
			Vertigo	L	Infusion bathed
<i>Chenopodium opulifolium</i> Koch & Ziz (JRST 454, 461) Namuvu	H	Cu	Convulsions	L	Infusion bathed
			Fever	L	Infusion drunk, bathed
			Measles	L	Decoction drunk
			Amoebiasis	L	Infusion bathed
			Syphilis	L	Decoction drunk
Clusiaceae					
<i>Psorospermum febrifugum</i> Spach (JRST 145) Kanzilo nzilo	S	W	Diarrhoea	R/L	Powder drunk as tea
			Skin rash (Itchy)	R	Powder mixed with <i>bizigo</i> <sup>e</sup> to smear body
			Syphilis	R	Drunk as tea
			Itchy skin ' <i>Bisoli</i> '	R	Powder mixed with <i>bizigo</i> <sup>e</sup> to smear body
Combretaceae					
<i>Combretum collinum</i> Fresen. subsp. <i>Elgonense</i> (Exell) Okafor (JRST 57, 58, 365) Mukoola	T	W	Diarrhoea	R	Decoction drunk
			Promote labour	R	Infusion drunk
			Pyomyositis	R	Drunk from <i>malwa</i> <sup>f</sup> dregs
			Sterility	R	Decoction drunk
			Hydrocele in children, ' <i>Katwiga</i> '	R	Infusion drunk
			Epilepsy	R	Powder drunk, dissolved and bathed or mixed with <i>bizigo</i> <sup>e</sup> to smear body
<i>Combretum molle</i> G. Don (JRST 176) Ndaha	T	W	Gonorrhoea	R	Infusion drunk
			Protect against illness	L/R	Sawn in cloth of child
<i>Terminalia glaucescens</i> Benth. (JRST 48, 195, 409) Mukonge/musasa	T	W	Wounds	R	Powder applied
			Spirits	L	Infusion bathed
			Epilepsy	R	Powder drunk, dissolved and bathed or mixed with <i>bizigo</i> <sup>e</sup> to smear body
			Protect garden	R	Plant in garden
Commelinaceae					
<i>Commelina benghalensis</i> L. (JRST 16) Ilanda	H	W	Insanity	L	Boiled in meat
Convolvulaceae					
<i>Ipomea alba</i> L. (JRST 29, 137) Mpununuko	C	Cu	Protect against ill luck	Se/L	Seeds swallowed; infusion from leaves bathed; powder mixed with <i>bizigo</i> <sup>e</sup> to smear body
<i>Ipomea batatas</i> (L.) Lam. (JRST 494) Mboli	H	Cu	Snake bite	Tu	Chew
			Fatigue	L	Steam patient
<i>Ipomea hildebrandtii</i> Vatke subsp. <i>Grantii</i> (Bak.) Verdc. (JRST 361) Mwase	H/S	W	Spirits	R	Smoked

Table 1 (Continued)

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration
Crassulaceae					
<i>Kalanchoë densiflora</i> Rolfe (JRST 120) Kisanasana	H	Cu	Premature ejaculation	L	Eaten as vegetable
			Pyomyositis	R	Applied to incisions
			Jaundice	–	–
			Dermatitis	L	Warm and apply as poultice
			Epilepsy	L	Warm and drop sap into eye and nostril; infusion bathed
<i>Kalanchoë</i> sp. (JRST 238, 399) Ikonkomaza	H	Cu	Epilepsy	St	Decoction drunk
Cucurbitaceae					
<i>Cucurbita maxima</i> Lam. (JRST 519) Malibwa	H	Cu	Vertigo	L	Infusion bathed
			Toothache	L	Warm and chew
			Boil	L	Boil and prepare poultice
<i>Kedrostis foetidissima</i> (Jacq.) Cogn. (JRST 222, 420) Ziizi	H	W	Diarrhoea	L	Infusion drunk
			Measles	L	Decoction drunk
<i>Momordica foetida</i> Schumach. (NC) Ibombo	C	W	Anorexia	L	Boiled and eaten
			Diarrhoea	L	Infusion drunk
			Fever	–	–
			Measles	L	Decoction drunk
			Cough	L	Decoction drunk
<i>Zehneria minutiflora</i> (Cogn.) C. Jeffrey (JRST 167) Nambula kifo	H	W	Bad odours/breath	L	Infusion bathed
			Bewitch/confuse	Wh	Place in footsteps of enemy
			Uterine fibroids	Wh	Infusion drunk
			Divorce wife	Wh	Smoke in banana stem pipe
			Reconcile with wife	Wh	–
<i>Zehneria scabra</i> (L.f.) Sond. (JRST 134, 335) Kibalatulo	C	W	Hernia	Tu	Drunk in <i>malwa</i> <sup>f</sup> dregs
			Premature ejaculation	Tu	Infusion drunk
			Antenatal	Tu	Infusion bathed
			Sterility	Tu	Infusion drunk
			Uterine fibroids	Tu	Drunk with <i>malwa</i> <sup>f</sup>
			Bacterial sepsis	L	–
			Problem passing urine	Tu	Drunk with <i>malwa</i> <sup>f</sup>
			Uterine fibroids	Tu	Decoction/infusion drunk
			Hydrocele in children, 'Katwiga'	Tu	Added to warm water and drunk
Cupressaceae					
<i>Cupressus lusitanica</i> Mill. (NC) X-mas tree	T	Cu	Spirits	–	Smoked
Dioscoreaceae					
<i>Dioscorea dumetorum</i> (Kunth) Pax. (JRST 103, 184) Ididimya/Kilogologo	C	W	Worms	R	–
Dracaenaceae					
<i>Dracaena fragrans</i> (L.) Ker-Gawl. (JRST 350) Luhano	S	Cu	Lightening	L	Rub body
			Spirit called <i>Mukyeno</i>	–	–
<i>Dracaena steudneri</i> Engl. (JRST 18) Luhano olunene/Musimange	T	W	Cough	L	Ash licked

Table 1 (Continued)

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration			
<b>Ebenaceae</b>								
<i>Euclea divinorum</i> Hiern (JRST 227, 317) Kasalagala/Muda	S	W	Snake bite	R				
			Jaundice	R	Decoction drunk			
			Salpingitis	R	Powder drunk as tea			
			Remove spells	R	Powder applied to incisions			
			Arthritis	R	Powder applied to incisions			
			Miscarriage	R	Decoction drunk			
<b>Euphorbiaceae</b>								
<i>Acalypha bipartita</i> Muell. Arg. (JRST 236, 315) Helele	H/Ss	W	Snake bite	R	Poultice applied at bite wound			
			Sterility	R	Infusion drunk			
<i>Acalypha villicaulis</i> A. Rich. (JRST 92, 281) Kaiso kampanga	H/Ss	W	False teeth	Fl/Fr	Infusion drunk			
			Premature ejaculation	R	Decoction drunk; chew; toothbrush			
<i>Bridelia scleroneura</i> Muell. Arg. (JRST 102, 303, 321) Musasila	S/T	W	Divorce wife	L	Smoked			
			Hernia	B	Drunk on tea			
<i>Erythrococca bongensis</i> Pax. (JRST 209, 230, 314) Katikati	S/T	W	Insanity	R	Decoction drunk			
			Tonsillitis	R/L	Powder eaten with porridge			
<i>Euphorbia heterochroma</i> Pax. (JRST 119) Kakukulu	S	W	Spirits	–	–			
			Pyomyositis	Sa	Applied to incisions			
			Syphilis	St	Prepared in <i>mumbwa</i> <sup>h</sup> to smear body and apply to incisions			
			Migraine	St	Sap dropped into nostrils			
			Insanity	St	Sap dropped into nostrils and to incisions			
<i>Euphorbia heterophylla</i> L. (JRST 15) Kafadanga	H	W	Protect home	–	Plant in home			
			Worms	L	Decoction drunk			
<i>Euphorbia hirta</i> L. (JRST 30) Nakasando/Mukasa omukali/Kamamala	H	W	Sterility	Wh	–			
			Diarrhoea	Wh	Infusion drunk			
			False teeth	L	Rubbed to gum of child			
<i>Euphorbia prostrata</i> Ait. (NC)	H	W	Insanity	Wh	Infusion bathed			
<i>Euphorbia tirucalli</i> L. (JRST 421) Lukone	S/T	W	Tropical splenomegaly	Wh	Infusion drunk			
			Protect garden	–	–			
<i>Flueggea virosa</i> (Willd.) Voigt (JRST 43, 66) Lukandwa	S/T	W	Hydrocele in children, 'Katwiga'	R	Infusion drunk			
			Protect garden	R	–			
			Reconcile with wife	R	Ritual			
			Gonorrhoea	R	Infusion drunk			
			'Nfete' suspected TB	–	–			
			Hernia	R	Decoction drunk			
			Spirits	R	Apply to incisions; smoke			
			Migraine	R	Applied to incisions			
			Abortion	R	Decoction drunk			
<i>Jatropha curcas</i> L. (JRST 458) Kilowa	S/T	Cu	Hernia	–	–			
			Wounds	S	–			
			Promote labour	R	Infusion drunk			
			Retained placenta	R	Infusion drunk			
			Painful menstruation	R	Decoction drunk			
			Fatigue	L	Steam patient			
			Boil	L	Poultice			

Table 1 (Continued)

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration
			Toothache	L	Warm and massage gum
<i>Jatropha multifida</i> L. (JRST 61) Kahumpuli/Mukama	S/T	Cu	Protect home		Plant in a home
			Hernia	R	Infusion drunk
			Wounds	Sa	Apply to wound
			Antidote	R	Infusion drunk; mix in <i>bizigo</i> <sup>e</sup> and smear body
<i>Manihot esculenta</i> Crantz (JRST 483) Muhogo	H/Ss	Cu	Puerperal sepsis	Tu	Eaten raw
			Fatigue	L	Steam patient
<i>Micrococca mercurialis</i> (L.) Benth. (JRST 336) Kalyabakyala	H	W	Love potion	R/L	Powder put in gift to loved one
<i>Phyllanthus nummulariifolius</i> Poir. (JRST 183) Kabalila	H/S	W	Premature ejaculation	R/L	Infusion drunk
			Wounds	–	Powder mixed in <i>bizigo</i> <sup>e</sup> to smear body
<i>Ricinus communis</i> L. (NC) Mukakale	H	W	Colic pain in babies	L	Infusion drunk
			Dislocation	L	Massage joint
			Miscarriage	R	Decoction drunk
			Uterine fibroids	R	Decoction drunk
			Snake bite	R	Infusion drunk
			Premature ejaculation	R	Powder drunk as a tea
			Antenatal	L	Bathed
<i>Synadenium grantii</i> Hook. F. (JRST 121) Nandele	T	W	Haemorrhoids	R	Sit on
			Inflammation of finger/toe	Sa	Applied to inflammation
Fabaceae—Caesalpinioideae <i>Chamaecrista nigricans</i> (Vahl) Greene (JRST 13) Mukyusanjuba	H	W	Spirits	–	Smoke
			Promote labour	R	Infusion drunk
			Retained placenta	R	Infusion drunk
			Hypertension	R	Eaten with <i>Sesamum indicum</i>
			Reconcile with wife	R	Placed in footsteps of wife
<i>Piliostigma thonningii</i> (Schumach.) Milne-Redh. (JRST 34, 109) Mulama	S/T	W	Diarrhoea	R/L	Decoction/infusion drunk
			Pyomyositis	R/L	Powder drunk in warm <i>tonto</i> <sup>g</sup>
			Antidote	R	Powder drunk in tea
			Sterility	R	Decoction drunk
			Insanity	R	Smoked
			Vertigo	R	Infusion bathed
			Coma	L	Infusion drunk and bathed
<i>Senna cf. baccarinii</i> Choiv. (JRST 158), Lumanyo	S	W			
<i>Senna didymobotrya</i> (Fresen) Irwin & Barneby (JRST 68) Muvuvumila	S	Cu	Abortion	–	–
			Diarrhoea	R	Infusion drunk
			Fever	L	Decoction drunk, steam patient
			Pyomyositis	R	Powder applied to incisions
			Jaundice	L	Decoction drunk
			Syphilis	L/R	Powder drunk in tea
			Fungal infection	L/B/R	Rub body with crushed parts
<i>Senna occidentalis</i> (L.) Link (JRST 3) Kasagalyansasi	H	W	Hypertension	–	Rub body
			Salpingitis	–	–

Table 1 (Continued)

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration
<i>Senna septentrionalis</i> (Viv.) Irwin & Barneby (JRST 386) Kazaana	S/T	W	Hernia	R	Chewed
			Promote labour	R	Infusion drunk
			Syphilis	R	Decoction drunk
			Diphtheria	R/L	Chew, infusion drunk
			Retained placenta	R	Infusion drunk
			Vertigo	L	Infusion bathed
<i>Senna siamea</i> (Lam.) Irwin & Barneby (JRST 262) Cassia	S/T	Cu	Fatigue		
			Snake bite	R	Infusion drunk
<i>Senna singueana</i> (Del.) Lock (JRST 10, 250, 276, 284) Musumbila bafele	S/T	W	Snake bite	R	Infusion drunk
			Hernia	R(B)	Infusion drunk, chew root
			Spirits	R	Smoked
			Syphilis	R	Decoction
			Antidote	R(B)	Infusion drunk, chew root
<i>Tamarindus indica</i> L. (JRST 8) Mukoge	T	W	Make a lost person to return	L	Smoked
			Syphilis	R	Decoction drunk
<i>Tylosema fassoglensis</i> (Schweinf.) Torre & Hillc. (JRST 50) Kiyugeyuge	H/S	W	Uterine fibroids	B	Decoction drunk
			Antenatal	R/B	Decoction/infusion bathed, sitz bath
			Haemorrhoids	B	Tie around anus
			Jaundice	Fl	Powder drunk on tea
			Syphilis	R(B)	Drunk from <i>malwa</i> <sup>f</sup> dregs
			Sterility	R(B)	–
			Hypertension	Fl	Powder drunk in tea
'Nfete' suspected TB	R	Powder applied to incisions and dissolved to drink			
			Uterine fibroids	R(B)	Drunk with <i>malwa</i> <sup>f</sup>
			Elongate <i>labia minora</i>	L	Crush and use to pull
			Diarrhoea	R	Decoction drunk
Fabaceae—Faboideae					
<i>Abrus precatorius</i> L. (JRST 72) Kasisiti	Li		Conjunctivitis	Se	Swallow
			Abdominal pain	L/R	–
			Protect one against dangers	Se	–
			Gonorrhoea	R	–
			Immunity against measles	Se	Tie around child
			Premature ejaculation	L/R	Powder and decoction drunk
<i>Crotalaria aculeata</i> De Wild. (JRST 212) Kasamba ndege	H/S	W	Syphilis	L	Infusion drunk
			Spirits	L	Smoke
			Pyomyositis	R/L	Powder applied to incisions
			Protect garden	R	Plant in corners
			Divorce wife	L	Smoke in pipe from banana stem
			Protect job	Wh	Smoked
<i>Crotalaria glauca</i> Willd. (JRST 283) Lweto	H	W			
<i>Crotalaria incana</i> L. (JRST 397) Mukaile aligisa	H	W	Syphilis	L	Infusion drunk
<i>Desmodium gangeticum</i> (L.) DC. (JRST 309) Kaganila akatono	H	W	Premature ejaculation	R	Chew
<i>Desmodium tortuosum</i> (Sw.) DC. (JRST 379)	H	W	Uterine fibroids	–	–
			Attain good luck	–	–

Table 1 (Continued)

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration
<i>Desmodium triflorum</i> (L.) DC., 21, Kabamba itaka	H	W	Promote labour	R	Infusion drunk
			Vertigo	–	–
<i>Desmodium velutinum</i> (Willd.) DC. (NC) Mukomamawanga	H/S	W	Cataract	L	Apply sap to eye
			Sterility	R	Decoction drunk
<i>Eriosema glomeratum</i> (Guill. & Perr.) Hook. f. (JRST 14, 33) Nakasabi	H	W	Premature ejaculation	R	Chewed
<i>Erythrina abyssinica</i> Lam. (JRST 26) Mpirigiti/Musitisiti/kihehete	S/T	W	Amoebiasis	B	Infusion bathed
			Spirits	R	Powder bathed, smoked
			Sterility	R	Decoction/infusion drunk
			Chronic endometritis	B	Powder drunk
			Uterine fibroids	R	Powder drunk with <i>malwa</i> <sup>f</sup>
			Bubo	R	Powder applied in incisions
			Deafness	R	Decoction dropped in ear
<i>Indigofera arrecta</i> A. Rich. (JRST 291, 358) Kyeyo ekisaiza	H/S	W	Dysentery	R	Warm in embers and chew
			Snake bite	R	Poultice
			Pyomyositis	Wh	Crush in paraffin to make poultice
			Diphtheria	R	Decoction drunk, root chewed
			Vertigo	L	Infusion bathed
<i>Indigofera circinella</i> Bak. f. (JRST 387) Nfunyi	H	W	Promote labour	R	Warm and chew
			'Nfete' suspected TB	R	–
<i>Indigofera dendroides</i> Jacq. (JRST 357) kyeyo akikali	H	W	Overcome criminal case	–	A chant recited
			Muscular spasms	L	Crush in paraffin and massage
			Pyomyositis	Wh	Crush in paraffin and massage
<i>Indigofera emarginella</i> A. Rich. (JRST 426) Muiza bagya	H/S	W	Antidote	R	Chewed
			Comma	–	–
<i>Indigofera garckeana</i> Vatke (JRST 287) Mukitimbo	S	W	Snake bite	R	Infusion drunk, root chewed
<i>Indigofera</i> sp. (JRST 368)	C	W	Hernia	R	Chew
			Premature ejaculation	R	Powder licked
<i>Pseudarthria hookeri</i> Wight & Arn. (JRST 62, 63, 140) Luganila	H/S	W	Uterine fibroids	–	Decoction drunk
			Snake bite	R	Infusion drunk
			Promote labour	R	Infusion drunk, warm root chewed
			Retained placenta	R	Infusion drunk
			Ringworm of the scalp	L	Crush in paraffin and rub skin
<i>Tephrosia linearis</i> (Willd.) Pers. (JRST 199) Keyo akomukisiko	H	W	Backache	R	Powder applied to incisions
			Premature ejaculation	L	Dry, crush mix in <i>bizigo</i> <sup>e</sup> and rub on penis
<i>Tephrosia vogelii</i> Hook. f. (JRST 220) Muluku	H	Cu	Wounds	L	Powder or sap/poultice applied
<i>Vigna mungo</i> (L.) Hepper (JRST 49, 264) Coloko/mpindi ensaiza	H	Cu	Itchy skin ' <i>Bisoli</i> '	L	Infusion bathed
			Premature ejaculation	Se	Cook add potash and eat
<i>Vigna unguiculata</i> (L.) Walp. (JRST 60, 263, 285) Ikote/mpindi enjahirwa	H	Cu	Boils	L	Poultice applied
			Wounds	L	Poultice

Table 1 (Continued)

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration
<i>Zornia glochidiata</i> DC. (JRST 292, 329) Kasatila	H	W	Spirits Tropical splenomegaly	L Wh	Bathed, smoked Infusion drunk, massage painful area
Fabaceae—Mimosoideae					
<i>Acacia seyal</i> Del. var. <i>fiatula</i> (Schweinf.) Oliv. (JRST 20, 310) Mufuhanduzi/muwela manyo	S/T	W	Snake bite Amoebiasis	R R/B	– Infusion drunk and bathed
<i>Acacia hockii</i> De Wild. (JRST 44) Kashiono/kasone	S/T	W	Epilepsy	R	Powder drunk, bathed, smear
			Dysentery	L	Add salt to infusion and drink
			Diarrhoea Jaundice	R Fl	Infusion drunk Powder mixed in tea and drunk
<i>Acacia macrothyrsa</i> Harms (JRST 351) Muhologoma	S/T	W	Syphilis	R	Powder drunk as tea
			Warts in vagina/rectum	L	Warm and push tissue back
			Convulsions	–	–
<i>Acacia senegal</i> (L.) Willd. (JRST 77, 290) Katasubwa	S/T	W	Spirits	R	Smoke
			Epilepsy	R	Powder smoked; dissolved and drunk; mixed with <i>bizigo</i> <sup>e</sup> to smear body
			Protect garden Remove spells	R(B) R	Plant in garden Powder applied to incisions
<i>Acacia</i> sp. (JRST 211) Luzibila mbogo	S/T	W	Stop theft of cattle	R	Planted in krall
			Spirits	L	Bathed
			Migraine	R	Incise and smoke
<i>Acacia</i> sp. (JRST 485) Mukongoito	T	W	Diarrhoea	R	Decoction drunk
<i>Albizia coriaria</i> Oliv. (484) Musita	T	W	Snake bite	R	Infusion drunk
			Diarrhoea	B	Infusion drunk
			Snake bite	L/B	Infusion drunk
			Amoebiasis	R/B	Infusion bathed
			Pyomyositis	R	Added to warm <i>tonto</i> <sup>g</sup>
			Syphilis	B	Decoction drunk
<i>Albizia zygia</i> (DC.) Macbr. (JRST 261) Mulongo	T	W	Lameness ( <i>Butenge</i> )	B	Warm concoction to massage limb
			Uterine fibroid	B	Decoction drunk
			Diarrhoea	B/R	Infusion drunk
<i>Albizia</i> cf. <i>malacophylla</i> (JTST 51) Kalongo longo	S/T	W	Cataract	R	Sap applied to eye
<i>Mimosa pigra</i> L. (JRST 466) Luhule	S	W	Migraine	R	Apply to incisions
			Spirits	L	Infusion bathed
			Syphilis	R	Powder drunk as tea
<i>Mimosa pudica</i> L. (JRST 460) Kalagala wewumbe	H	W	Migraine	R	Apply to incisions
			Antidote	R	Mixed with <i>bizigo</i> <sup>e</sup> to smear body
			Protect garden	R	Plant in corners of garden
<i>Mimosa pudica</i> L. (JRST 460) Kalagala wewumbe	H	W	Premature ejaculation	L	Infusion drunk
			Measles	L	Infusion drunk
Flacourtiaceae					
<i>Oncoba spinosa</i> Forssk. (JRST 443) Mubeye	S/T	W	Epilepsy	R	Powder sniffed and licked
Hyacinthaceae					
<i>Albuca abyssinica</i> Jacq. (JRST 326) Ziila	H		Pyomyositis	Bu	Incise

Table 1 (Continued)

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration
<b>Hymenocardiaceae</b>					
<i>Hymenocardia acida</i> Tul. (JRST 200, 307) Mukanaga	S	W	Remove spells Spirits	R R	Powder drunk in tea Powder smoked; bathed
<b>Lamiaceae</b>					
<i>Coleus comosus</i> A. Rich. (JRST 308)		W	Spirits	–	–
<i>Hoslundia opposita</i> Vahl (JRST 92, 313, 403) Nfodo	S	W	Snake bite  Hernia  Haemorrhoids Jaundice Sty	R  R L L Fr	Chew; and make poultice Added to hot tea and drunk Push back rectum Infusion drunk Squeeze sap into eye
<i>Leonotis nepetifolia</i> (L.) Ait. f. (JRST 438) Susuni	Ss	W	Fever Amoebiasis Divorce wife  Diarrhoea Migraine Migraine	L L L  L R L	Infusion bathed Infusion bathed Smoke in pipe made from banana stem Infusion drunk Instil drops in nostrils Instil drops in nostrils
<i>Leucas martinicensis</i> (Jacq.) R. Br. (JRST 440) Kasusuni	H	W			
<i>Ocimum gratissimum</i> L. (JRST 298) Mujaja	H	SW	Fever Jaundice	L L	Steam patient Decoction drunk
<i>Ocimum lamiifolium</i> Benth. (JRST 78) Kakuba nsili	S	W	Spirits	L	Powder bathed; smoked
<i>Tetradenia riparia</i> (Hochst.) Codd (JRST 180, 419) Kiyongobela	S	W	Spirits	L	Powder bathed; smoked
<i>Tinnea aethiopica</i> Kotschy & Peyr. (JRST 306) Nakaganda	S	W	Hypertension	L	Eaten with ground nuts or <i>Sesamum indicum</i>
<b>Loranthaceae</b>					
<i>Phragmanthera usuiensis</i> (Oliv.) M. Gilbert (JRST 71, 144) Mugulukila gwo muvule	E	W	Spirits  Migraine	Wh  –	Powder dissolved in water and bathed; smoked  –
<b>Malvaceae</b>					
<i>Hibiscus sabdariffa</i> L. (JRST 498) Musayi	S	Cu	Anaemia	L	Decoction drunk
<i>Sida schimperiana</i> A. Rich. (JRST 191) Kagabo	H/S	SW	Vertigo  <i>Mwoyo ogwa gwile</i> Diphtheria	L  – R	Infusion bathed  – Put in <i>bizigo</i> <sup>e</sup> , rub in mouth
<i>Sida urens</i> L. (JRST 331)	H/S	W	Back ache Frigidity	R –	Massage back Place in a bundle of firewood
<i>Urena lobata</i> L. (JRST 190) Bikadantama/Kitama tama	H/S	W	Snake bite Amoebiasis Crop yield Diarrhoea	L – R L	– – Plant in garden Infusion drunk
<b>Meliaceae</b>					
<i>Azadirachta indica</i> A. Juss. (JRST 518) Neem	T	Cu	Fever Cough	– L	– Decoction drunk



Table 1 (Continued)

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration
<i>Pseudocedrela kotschy</i> (Schweinf.) Harms (JRST 301) Mubumbu/Mwase omusiaza	T	W	Liver cirrhosis Spirits	R R/L	Powder drunk as tea Smoked, infusion bathed
<i>Turraea robusta</i> Gürke (JRST 182)	T	W	Uterine fibroids	R	Powder drunk as tea
<b>Menispermaceae</b>					
<i>Chasmanthera dependens</i> Hochst. (JRST 5, 185) Mugesela/Lubowa	Li	W	'Italo'	R	Infusion bathed, applied to incisions
			Protect home	St	Plant in home
			Success with studies	St	Applied to infusions
			Lower hanged body	–	–
			Promote labour	R	Infusion drunk
			Retained placenta	R	Infusion drunk
<i>Cissampelos mucronata</i> A. Rich. (JRST 339) Kavamagombe	Li	W	Diarrhoea	R	Decoction drunk
			Antidote	R	Drunk as tea
			Remove spells	R	Powder added to incisions
<b>Moraceae</b>					
<i>Ficus glumosa</i> Del. (JRST 25) Mukoko	T	W		B	Tie around waist
<i>Ficus natalensis</i> Hochst. (JRST 477) Mugaile	T	SW	Snake bite Promote labour	L R/A-R	Infusion drunk Infusion drunk; aerial root chewed
			Cataract	R	Apply sap to eye
			Septic ears	L	Apply sap to ear
			Retained placenta	R	Infusion drunk
			Hiccup	A-R	Infusion drunk
<i>Milicia excelsa</i> (Welw.) C.C. Berg (JRST 500) Muvule	T	W	Wounds Hypertension	Sa Sa	Applied to wound Eaten with <i>Arachis hypogaea</i> or <i>Sesamum indicum</i>
<b>Musaceae</b>					
<i>Musa × paradisiaca</i> L. var. <i>paradisiaca</i> (NC) Kigogo	H	Cu	Measles Cough Antidote	Sa Fr –	Drunk Ash from petiole licked
			Overcome criminal cases	L	Ritual
			Dislocation	L	Massage with used banana leaves
<i>Musa × paradisiaca</i> L. var. <i>sapientum</i> (NC) Kisubi	H	Cu	Cough	Inf	Decoction drunk
<b>Myrtaceae</b>					
<i>Eucalyptus</i> spp. (JRST 471) Kalitunsi	T	Cu	Cough Migraine	B R	Decoction drunk Powder tied around head
<i>Psidium guajava</i> L. (JRST 479) Mapela	T	SW	Diarrhoea Cough	L L	Decoction drunk Decoction drunk
<b>Orchidaceae</b>					
<i>Diaphanthe fragrantissima</i> (Reichb. F.) Schltr. (JRST 193, 105, 242) Mugulukila gwo mukunyu	E	W	Migraine	L	Apply to incision
<b>Oxalidaceae</b>					
<i>Oxalis corniculata</i> L. (JRST 491) Kanunambuli	H	W	Premature ejaculation	Wh	Infusion drunk
<b>Passifloraceae</b>					
<i>Adenia cissampeloides</i> (Hook.) Harms (JRST 360) Lugelogelo	Li	W	Snake bite Pyomyositis	R R	Chew Applied to incisions; infusion drunk

Table 1 (Continued)

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration
			Sterility	R	Infusion drunk
			Insanity	L	Infusion bathed
			Bad luck (clear)	–	Talisman
			Chronic endometritis	R	Decoction drunk
<i>Passiflora edulis</i> Sims (NC) Katunda	C	SW	Measles	–	–
Pedaliaceae					
<i>Sesamum angustifolium</i> (Oliv.) Engl. (JRST 252) Mugosegose	H	W	Hypertension	L	Eaten with <i>Arachis hypogaea</i> or <i>Sesamum indicum</i>
<i>Sesamum indicum</i> L. (JRST 210) Mugose	H	Cu	Cough	Se	Eaten as sauce
			Promote labour	Se	Eaten as sauce
			Sterility	Se	Eaten as sauce
Phytolaccaceae					
<i>Phytolacca dodecandra</i> L'Hérit. (JRST 540) Ikobokobo	S	W	Itchy skin rash	L	Infusion bathed
			Abortion	L	Infusion drunk followed by a glass of milk
Plumbaginaceae					
<i>Plumbago zeylanica</i> L. (JRST 382) Katekele/Kacekele	H	W	Ulcers	–	Powder drunk on tea
			Spirits	L	Infusion bathed
Poaceae					
<i>Cymbopogon citratus</i> (DC.) Stapf (JRST 526) Chai subu	G	Cu	Influenza	L	Steam patient
<i>Cynodon dactylon</i> (L.) Pers. (JRST 46, 129, 246) Lufafa/Lukafa	G	W	Fever	–	–
			Tonic	L	Steam patient
			Diarrhoea	L	Infusion drunk
<i>Eleusine coracana</i> (L.) Gaertn. (JRST 1) Bulu	G	Cu	Haemorrhoids	Se	Porridge drunk
			Pyomyositis	–	–
<i>Imperata cylindrica</i> (L.) P. Beauv. (JRST 124) Lubembe	G	W	Snake bite	R	Chew
<i>Panicum maximum</i> Jacq. (JRST 2) Bitinde	G	W	Wounds	L	Apply sap
			Sterility	Se	Sitz bath
<i>Pennisetum polystachion</i> (L.) Schult. (JRST 17) Idulyenke	G	W	Wounds	L	Powder
			Pyomyositis	R	Incision
<i>Saccharum officinarum</i> L. (NC) Bikajo	G	Cu	Hiccup	St	Decoction drunk
			False teeth	St	Rub ash to gum
<i>Sporobolus pyramidalis</i> P. Beauv. (JRST 76) Nakaselye	G	W	Snake bite	R	–
			Promote labour	R	Infusion drunk; chewed
			Retained placenta	R	Infusion drunk; chewed
			Migraine	R	Applied to incision
			Cataract	R	Infusion dropped into eye
<i>Zea mays</i> L. (NC) Duma	G	Cu	False teeth	St	Rub ash to gum
Polygalaceae					
<i>Polygala</i> cf. <i>Sadebeckiana</i> (JRST 148) Mbajilawo	H	W	Wounds	L	Sap
			Spirits	L	Infusion bathed
<i>Securidaca longipedunculata</i> Fres. (JRST 93, 347) Mukondwa	S/T	W	Diarrhoea	R/L	Powder drunk as tea
			Snake bites	R	Infusion drunk
			Fever	–	–
			Measles	R	Decoction drunk
			Hernia	R	Chewed; infusion drunk

Table 1 (Continued)

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration
			Pyomyositis	R	Powder drunk in warm <i>tonto</i> <sup>g</sup> ; applied to incisions
			Antidote	R	Drunk on tea
			Insanity	R	Infusion to nostril; applied to incisions
			Influenza	B/R	Sap/powder dropped in nose
			Headache	R	Applied to incisions on temple and also sniff
<b>Polygonaceae</b>					
<i>Oxygonum sinuatum</i> (Meisn.) Dammer (JRST 122), Nkenge	H	W	Premature ejaculation	R	Chewed
<i>Rumex abyssinicus</i> Jacq. (JRST 395) Kiwele	H		Fungal infection	Tu	Rubbed on skin
<b>Ranunculaceae</b>					
<i>Clematis hirsuta</i> Perr. & Guill. (JRST 179) Mpangula	C	W	Insanity	L	Infusion bathed
			Achieve good luck	R	Talisman
			Reconcile with wife	L	Ritual
<b>Rhamnaceae</b>					
<i>Helinus mystacinus</i> (Ait.) Steud. (JRST 159), Muiza bagya		W	Comma	L	Infusion; drunk, wash
<i>Ziziphus abyssinica</i> A. Rich. (JRST 115) Namukodolya	T	W	Hydrocele	R	Infusion drunk
			Itchy skin ' <i>Bisoli</i> '	R/L	Infusion bathed
<b>Rubiaceae</b>					
<i>Coffea canephora</i> Froehner (NC) Myanyi	T	Cu	Backache	Se	Massage back
			Measles (immunity)	R	Tie around child
			Cough	L	Decoction drunk
			Jaundice	L	Infusion drunk
<i>Gardenia ternifolia</i> Schumach. & Thonn. (JRST 74, 202, 255) Lukoole/Kawuna	S/T	W	Snake bite	R	Infusion drunk
			Migraine	R	Apply to incisions; and some into nostrils
			Antidote	R	Powder drunk on tea
			Insanity	R	Sap applied to incisions and into nostrils
			Protect garden	St	Planted in garden
			Achieve god luck	R	–
<i>Sarcocephalus latifolius</i> (Smith) Bruce, 279, 348, Mutamatama	S/T	W	Hernia	R/Fr	Powder drunk
			Premature ejaculation	R	Infusion drunk
			Spirits	L	Dry leaves smoked
			Pyomyositis	R	Powder drunk in warm <i>tonto</i> <sup>g</sup>
			Antidote	R	Infusion drunk
			Vertigo	R/Fr	Powder drunk on tea/bathed
			Protect garden	R	Plant in garden
			Achieve good luck	–	Blow powder from palm
			Backache	R/Fr	Powder drunk on tea
			Uterine fibroids	R	Decoction/infusion drunk
<b>Rutaceae</b>					
<i>Citrus aurantifolia</i> (Christm.) Swingle (JRST 521) Bulimawa	T	Cu/SW	Cough	L	Decoction drunk
			Tonic	Fr	Honey added to decoction and drunk
<i>Citrus limon</i> (L.) Burm. f. (JRST 520) Niimu		SW	Cough	Fr	Decoction drunk
			Tonic	Fr	Honey added to decoction and drunk

Table 1 (Continued)

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration
<i>Citrus sinensis</i> (L.) Osb. (JRST 475) Mucungwa	T	Cu/SW	Influenza	Fr	Decoction drunk
			Diarrhoea	B	Decoction drunk
			Snake bite	R	Chewed; infusion drunk
<i>Clausena anisata</i> (Willd.) Benth. (JRST 269, 345) Munawaidudu/Mufunya idudu	T	Cu	Spirits	Tw	Steam patient
<i>Teclea nobilis</i> Del. (NC) Luzu	T	W	Be popular	Tw	Toothbrush
			Amoebiasis	R	Talisman
<i>Zanthoxylum chalybeum</i> Engl. (JRST 364), Mutala irundu	T	Cu/SW	Crop yield	R	Planted in garden
			Pyomyositis	R	Infusion drunk
			Sterility	R	Infusion drunk
			Uterine fibroids	R	–
Sapindaceae					
<i>Cardiospermum grandiflorum</i> Sw. (JRST 486) Lwambula	C	W	Spirits	R	Smoke
<i>Cardiospermum halicacabum</i> L. (JRST 45) Kambula	C	W	Measles	L	Infusion drunk
			Amoebiasis	L	Infusion drunk; bathed
			Spirits	L	Infusion/powder bathed; drunk
			Vertigo	Wh	Infusion bathed
			Achieve good luck	L	–
			Convulsions	L	Infusion bathed
			Chronic endometritis	L	Decoction drunk
Ritual of twins	L	Infusion bathed			
Insanity	L	Infusion bathed			
Simaroubaceae					
<i>Harrisonia abyssinica</i> Oliv. (JRST 64, 88) Lushaike	S	W	Snake bite	R	Infusion drunk
			Fever	L	Infusion
			Hernia	R	Decoction/infusion drunk
			Wounds	L	Infusion applied to wound
			Spirits	R/L	Smoke
			Syphilis	R	Decoction/powder drunk on tea
			Migraine	R	Apply to incisions; and some into nostrils
			Antidote	R	Decoction drunk in <i>tonto</i> <sup>e</sup>
			Insanity	R	Infusion instilled into nostrils
			Remove spells	R	Powder applied to incisions
Failure to sweat	R	Powder drunk in tea			
Protect garden	R	Planted in garden			
Solanaceae					
<i>Capsicum frutescens</i> L. (JRST 473) Kalali	H/S	SW	Migraine	R	Drop into nostril
			Hernia	Fl	
			Protect garden	R	Planted in garden
<i>Datura stramonium</i> L. (JRST 288, 404) Kalulu	H	W	Arthritis	Fr	Incise
<i>Nicotiana tabacum</i> L. (JRST 505) Taba	S	Cu	Stop drinking	Se	Add to drink
<i>Physalis lagascae</i> Roem. & schult. (JRST 328), Ntuntunu entono	H	W	Snake bite	L	Chew
			Migraine	L	Drop sap into nose
			Measles	–	Infusion bathed
			Vertigo	Wh	Infusion bathed

Table 1 (Continued)

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration
<i>Physalis peruviana</i> L. (JRST 504) Ntuntunu enene	H	W	Anorexia	Fr	Infusion drunk
			Vomiting	L	
<i>Schwenkia americana</i> L. (JRST 341) Kamugobe (Ganda)			Spirits	L	Smoked and infusion bathed
<i>Solanum anguivi</i> Lam. (NC) Katunkuma	S	Cu	Protect garden	R	Plant in garden
<i>Solanum incanum</i> L. (JRST 56) Ntonka	H	W	Snake bite	R	Infusion drunk
			Amoebiasis	–	
			Premature ejaculation	R	Powder added to tea
			Cough	Fl	Eaten with <i>Sesamum indicum</i>
			Diphtheria	R	Chew
			Cataract	Fl/Fr	Smoke eye using a hot stone
			Stop premature ejaculation	R	Decoction with salt drunk
			Gonorrhoea	R	Infusion drunk
			Hydrocele in children, 'Katwiga'	R	Infusion drunk
			Backache	R	Powder applied to incision
<i>Solanum lycopersicum</i> L. (JRST 452) Nyanya entono	H	Cu	Liver cirrhosis	R	Infusion drunk
			Vomiting	L	
<i>Withania somnifera</i> (L.) Dunal (JRST 405) Lufumba ntamu	S	Cu	Premature ejaculation	R	Powder drunk on tea
			Bubo	R	–
Strychnaceae					
<i>Strychnos innocua</i> Del. (JRST 332) Muhondo	S/T	W	Protect against illness	L	Sawn in cloth of child
Tiliaceae					
<i>Corchorus olitorius</i> L. (JRST 112) Mutele	H	W	Muscular spasms	L	Crush in paraffin
<i>Corchorus olitorius</i> L. var <i>incifolius</i> Aschers. & Schweinf (JRST 359) Mutele omutono	H	W	Warts	Wh	Squeeze and rub
			Fungal infection	L	–
<i>Grewia trichocarpa</i> A. Rich. (JRST 45, 139), Mukoma	T	W	Elongate <i>labia minora</i>	L	Leaves crushed and used to pull
			Amoebiasis	R	Tie around child
Typhaceae					
<i>Typha domingensis</i> Pers. (NC) Musaala	Sd	W	Cough	Wh	Ash licked
Urticaceae					
<i>Obetia radula</i> (Bak.) B. Jackson (JRST 501) Musihango	T	W	Premature ejaculation	L	Boil root and chew (no pounding)
			Cough	R/L	Powder/ash licked
Verbenaceae					
<i>Clerodendrum fuscum</i> Gürke (JRST 9, 32, 90) Kinanvuma	S	W	Diarrhoea	L	Decoction drunk
<i>Clerodendrum myricoides</i> (Hochst.) Vathe (JRST 271, 383) Kawololo/Kakonge	S/T	W	Diarrhoea	R	Infusion drunk
			Spirits	L	Bathe
			Antidote	R	Powder added to tea; mixed in <i>bizigo</i> <sup>e</sup> to smear body
			Uterine fibroids	R	
			Antidote against witchcraft	R	Infusion drunk; applied to incisions
<i>Lantana camara</i> L. (JRST 453) Kapanga	S	W	Measles	L	Decoction drunk
			Wounds	L	Sap applied
			Migraine	L	Sap into ear

Table 1 (Continued)

Family, name (voucher no.), local name <sup>a</sup>	Growth habit <sup>b</sup>	Status <sup>c</sup>	Malady	Part used <sup>d</sup>	Preparation and administration
<i>Lantana trifolia</i> L. (JRST 221, 402), Kasekela nyonyi	S	W	Cough Amoebiasis	L	–
<i>Priva flabelliformis</i> (Mold.) R.Fern. (JRST 393) Kakwata nkoko	H	W	Diarrhoea Premature ejaculation	L L	Infusion drunk –
<i>Vitex ferruginea</i> Schumach. & Thonn. (JRST 85) Mukelemba	S	W	Bad body/mouth odour	L	Infusion bathed
Vitaceae					
<i>Cissus quadrangularis</i> L. (JRST 123) Kayunga magumba	Li	W	Bone setting	St/L	Poultice
<i>Cissus rotundifolia</i> (Forssk.) Vahl (JRST 312) Gego	Li	W	Insect bites	L	Apply ap to bite wound
<i>Cyphostemma adenocaula</i> (A. Rich.) Wild & Drumm. (JRST 235) Kabombo	Li	W	Amoebiasis Spirits Ritual of twins	L L Wh	Wash Wash Bathe
<i>Cissampelos mucronata</i> A. Rich. (JRST 533) Kinya	C	W	Haemorrhoids	R	Tied around anus
Zingiberaceae					
<i>Aframomum alboviolaceum</i> (Ridley) K. Schum. (JRST 108) Matungulu	H	W	Premature ejaculation Haemorrhoids	R R	Infusion drunk Drunk in finger millet porridge
Zygophyllaceae					
<i>Tribulus terrestris</i> L. (JRST 372) Nkenge omunene	H	W	Septic ears	L	Drop to ear

<sup>a</sup> NC: not collected.

<sup>b</sup> C: herbaceous climber; Li: Liana; H: herb; S: shrub; Ss: sub-shrub; Sd: sedge; T: tree.

<sup>c</sup> Cu: cultivated; SW: semi-wild; W: wild.

<sup>d</sup> Information not provided (–); A-R: aerial root; B: bark; Bu: bulb; E: epiphyte; Fl: flower; Fr: fruit; G: grass; Inf: inflorescence; L: leaf; R: root; R(B): bark of root; Sa: sap; Se: seed; St: stem; Tu: tuber; Tw: twig; Wh: whole.

<sup>e</sup> *bizigo*: petroleum jelly.

<sup>f</sup> *malwa*: beer made from *Eleusine coracana*.

<sup>g</sup> *tonto*: beer made from *Musa × paradisiaca* L. var. *sapientum*.

<sup>h</sup> *mumbwa*: see text.

An important observation is that, 29% of the herbal medicines are harvested from perennial plant parts of woody species (see Table 1).

The selection of perennial plant parts such as roots, tubers, bark and stem or reproductive plant parts, especially of woody or slow growing species, for use as herbal medicines can threaten plant populations or species viability (see Dhillion and Amundsen, 2000; Dhillion and Gustad, 2003; Shrestha and Dhillion, 2003). This assumption is supported by respondents' observations, that some species, such as *Sarcocephalus latifolius* (Smith) Bruce (Fig. 4), are becoming rare because of unsustainable harvesting intensities and practices. *Sarcocephalus latifolius* has all but disappeared in four of the sub-counties, and remains only in Nawaikoke sub-county. In order to be able to determine the effects of exploiting plants for medicine, there is a need to carry out quantitative studies on amounts of plants harvested and also assess quantitatively the distribution and abundance of the most important medicinal plant species (Shrestha and Dhillion, 2003).

Many of the herbal medicine plants of the Balamogi, such as *Vernonia amygdalina* Delile and *Milicia excelsa* (Welw.)

C.C. Berg have other uses in the community, and are used in ethnoveterinary medicine, as food, as cattle fodder or as firewood. This is significant in the context of plant conservation. The repetitive use of plants, albeit, in different contexts by people, emphasises their value within the consciousness of communities and people take care to protect such plants (Etkin, 1998, 2002).

### 3.3. Herbal drug preparation and administration

The herbal plant species recorded here are used to treat diseases in 16 disease systems (Table 2). Herbal medicines are prepared in a variety of ways. Concoctions normally consist of mixtures of more than one species, and are prepared in the form of decoctions or infusions; some are ground to powders or burnt to ash. In some concoctions juices are extracted from plants by chewing or pounding. Sap may also be used. Some phyto-medicines are mixed with clay soil and sun-dried to make a 'mumbwa'. To administer the 'mumbwa', it is rubbed on a piece of small broken earthenware pot 'kagyo', and the ensuing powder dissolved in water and dispensed.



Fig. 4. Heavily debarked *Sarcocephalus latifolius* (Smith) Bruce tree.

Table 2

Number of plant species used to treat maladies within different disease systems

Disease system	Number
Cardiovascular system	9
Digestive system	63
Ear nose and throat	13
Eye diseases	10
Female genital system	
Gynaecological	43
Obstetric	29
Male genital-urinary system	30
Musculo-skeletal system	29
Nervous system and mental disorders	58
Respiratory system	25
Skin diseases and subcutaneous tissues	31
Infectious diseases	36
Parasitic diseases, not of the digestive system	4
Specific diseases and conditions, miscellaneous	58
Specific symptoms not mentioned elsewhere	30
Childhood diseases and conditions	33
Psycho-spiritual	76

Phytomedicines are stored in small bottles or polythene bags (Fig. 5).

For some of the herbal drugs, processing starts with sun drying. Sun drying may be followed by pounding after which the material is ground using a local grinding stone. The sun drying is done un-hygienically on bare ground (Fig. 6) making the product potentially harmful as fungi and bacteria may grow on the plant tissue. The process is also probably wasteful and much material may be lost during all stages of processing. In order to improve on the hygiene and safety of herbal medicines, it may be necessary to construct drying racks. Similarly simple processing technology needs to be introduced to conserve the plant material.

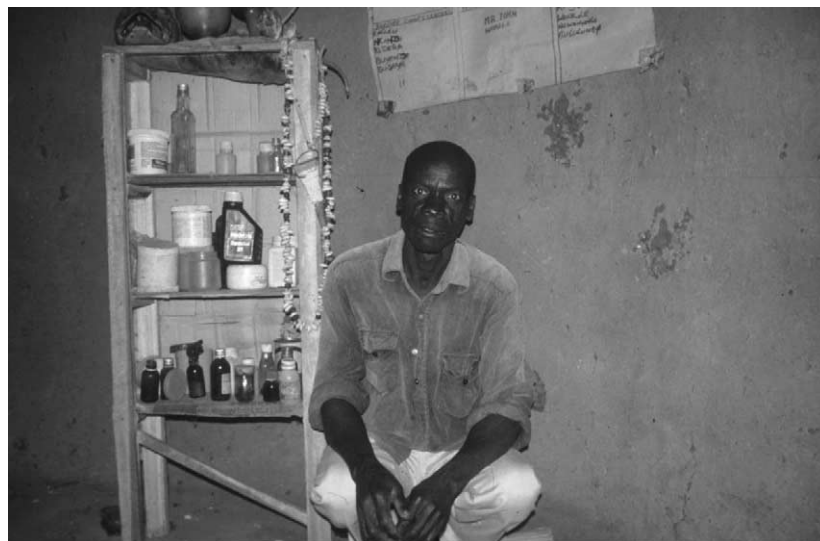


Fig. 5. Mr. Hamada Mubinge, a TMP of Budini-Mission, Namugongo sub-county, and his herbal medicines packed in bottles.



Fig. 6. Sun drying of herbal medicines.

Herbal drugs are administered in different ways: infusions and decoctions are either drunk, bathed, or applied topically to the skin; powders are usually drunk as teas, or are mixed in petroleum jelly and smeared on the body, they may also be licked or applied to incisions; ash is commonly licked. Some herbal medicines are mixed and drunk from traditional beers ‘*tonto*’ and ‘*malwa*’ made from *Musa × paradisiaca* L. var. *sapientum* and *Eleusine coracana* L. Gaertn., respectively. The smoking of plants or their parts, or powders on ‘*kagyo*’ or in clay pipes is a regular mode of expelling or appeasing spirits, eliminating curses and spells and treating chronic illnesses. Treatment of such spiritual conditions and illnesses also involves washing with or sprinkling of concoctions onto patients, recitation of incantations and sacrifices. The boiling of medicinal plants and then using the ensuing vapours to steam patients is frequently employed to treat fevers. Phytomedicines may also be applied as poultices after pounding and/or warming over hot embers.

Claims over therapeutic values of medicinal plants and concoctions made using them, require evaluation to determine their efficacy and assess potential toxic effects. The value of validation is that when the biological efficacies and safety of traditional medicines are confirmed, confidence among users of these medicines is created. And this in turn encourages greater reliance on traditional medicine in primary health care (World Health Organization, 1978, 1987). Validation can also create a herbal medicine market, with possibilities of adding value to medicinal plants. The likely income from marketing of medicinal plants can create potentials for benefit sharing, and this has been known in some cases to encourage plant conservation among communities (ten Kate and Laird, 1999).

The validation should ideally be carried out in two phases. First, an evaluation of the claimed cures may be carried out

by monitoring patients under the care of traditional medicine practitioners, as is done in Mali (Diallo and Paulsen, 2000). In our view, this is a cheap and pragmatic approach that is suited to the African situation. In Mali the Department of Traditional Medicine has been able to develop what they call improved drugs, some of which have been patented (Diallo and Paulsen, 2000). The Malian experience could be replicated in Uganda with obvious benefits. The next phase would be to subject promising herbal treatments to rigorous research and development encompassing laboratory analysis and clinical trials to determine their efficacy, safety and doses (see World Health Organization, 2000). There is an ongoing project in Uganda that is studying some of the toxicological properties in selected medicinal plants and some of the species mentioned here may be recommended for inclusion.

#### 4. Conclusion

A large number of plant species, mainly from the families Fabaceae, Euphorbiaceae, Asteraceae, and Solanaceae are used as herbal medicines. The traditional preparation practices of herbal medicines are un-hygienic and need to be controlled for product safety. The therapeutic claims over these herbal medicines have not yet been evaluated for efficacy. These claims must be validated in order to raise confidence among clients of traditional medicine, and to also help create markets for some of the phytomedicines. In Mali, they have developed a simple model of evaluating herbal medicines (Diallo and Paulsen, 2000); we recommend that this model be evaluated for possible replication in Uganda. Promising plants would then be adopted in further research and development to evaluate their active ingredients, safety and to determine doses. The



marketing of phytomedicines would require detailed assessments of resources quantities, productivity potential, sustainable harvesting methods, domestication possibilities, evaluation of market potential of promising species, and importantly, the setting up of equitable benefit sharing regimes (ten Kate and Laird, 1999; Dhillion and Ampornpan, 2000; Dhillion and Amundsen, 2000; Shrestha and Dhillion, 2003).

It appears that exploitation of herbal medicines is unsustainable. There is need to quantify harvesting rates, as well as existing abundances and distribution of key medicinal plants to determine whether this is true. The local community of Bulamogi is the owner of the information presented in this paper, and any benefits that may arise from use of this information must be shared with them.

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