

## **The Ethnomedicine of the Haya people of Bugabo ward, Kagera Region, north western Tanzania**

Mainen J. Moshi<sup>1§</sup>, Donald F. Otieno<sup>2</sup>, Pamela K. Mbabazi<sup>3</sup>, Anke Weisheit<sup>3</sup>

<sup>1</sup> § Department of Biological and Preclinical Studies, Institute of Traditional Medicine, MUHAS, P.O. Box 65001, Dar es Salaam, Tanzania

<sup>2</sup> Department of Biological Sciences, Moi University, P. O. Box 1125, Eldoret - 30100, Kenya

<sup>3</sup> Faculty of Development Studies, Mbarara University of Science and Technology, P.O. Box 1410, Mbarara, Uganda

§ Corresponding author

Email addresses:

MJM: [mmoshi@muchs.ac.tz](mailto:mmoshi@muchs.ac.tz)

DFO: [dfotieno@yahoo.co.uk](mailto:dfotieno@yahoo.co.uk)

PKM: [pmbabazi@infocom.co.ug](mailto:pmbabazi@infocom.co.ug)

AW: [ankeweisheit@web.de](mailto:ankeweisheit@web.de)

### **Abstract**

#### **Background:**

The Kagera region, in north western Tanzania, is endowed with a strong culture of traditional medicine that is well supported by a rich diversity of medicinal plants. However, most of the plants in this region have not been documented nor evaluated for safety and efficacy. As an initiative in that direction, this study documented the knowledge on medicinal plant use by traditional healers of Bugabo Ward in Bukoba District.

#### **Methods:**

Key informants were selected with the help of local government officials and information on their knowledge and use of plants for therapeutic purposes was gathered using a semi-structured interview format.

#### **Results:**

In this study 94 plant species representing 84 genera and 43 families were found to be commonly used in the treatment of a variety of human ailments.

The family Asteraceae had the highest number of species being used as traditional medicines. The study revealed that Malaria is treated using the highest number of different medicinal species (30), followed by skin conditions (19), maternal illnesses and sexually transmitted diseases (14), respiratory diseases (11) and yellow fever, Herpes simplex and peptic ulcers (10).

Majority of the species are used to treat less than five different diseases/conditions each and leaves were the most commonly used part, comprising 40% of all the reports on use of plant parts. Trees comprised the most dominant growth form among all plants used for medicinal purposes in the study area.

#### **Conclusion:**

Bugabo Ward has a rich repository of medicinal plants and this reinforces the need for an extensive and comprehensive documentation of medicinal plants in the area and a concomitant evaluation of their biological activity as a basis for developing future medicines.

## **Background**

Traditional medicine is central to the provision of health care and supports well over 60% of the rural population in Tanzania [1]. Increasing population, poor economies leading to inadequate financing of the health sector and the emergence of new difficult-to-cure diseases continues to exert pressure on the health sector. Many developing countries continue to depend on traditional medicines as the main source of healthcare support for their rural populations. In the Kagera region, traditional medicine plays a significant role in the management of diseases like HIV/AIDS opportunistic infections [1]. Its place in the provision of healthcare services is well supported by the government, which enacted the Traditional and Alternative Healthcare Practice Act 2002, thus recognizing traditional medicine as being important in the healthcare of its people. However, despite legislation being in place, not much has been achieved in the documentation and evaluation of the vast resource of medicinal plants used by traditional healers. Among over 10,000 plant species that occur in Tanzania [2, 3], only slightly over 2,600 have been documented as being used in traditional medicine. Furthermore, despite these being documented there is very little that has been done in ascertaining their safety or efficacy so that they may be mainstreamed into the formal healthcare system. Given this background, there is need to increase efforts to document and evaluate the plants used in traditional medicine for safety and efficacy. The present study in Bugabo Ward, Bukoba district, north western Tanzania is therefore a continuation of on-going efforts to document medicinal plants in the Kagera region with the ultimate aim of evaluating them for biological activity and establishing how they can be mainstreamed into the social and economic development of Tanzania. .

## **Methods**

### **Description of Study area**

The Kagera Region lies between 1°-2°45' S of the equator and 30°25'-32°40' East, including waters of Lake Victoria. It is made up of 7 districts: Biharamulo, Bukoba, Chato, Karagwe, Mishenyi, Muleba, and Ngara and is bordered to the north by Uganda, to the west by Rwanda and Burundi and to the South by Mwanza, Shinyanga and Kigoma. It consists of a total area of 40,838 sq. km. of which 28,953 sq km. is land and 11,885 sq Km is covered by water bodies (Lakes Victoria, Ikimba and Burigi, and river Kagera and Ngono). It is Tanzania's 14th largest region and occupies approximately 3.2% of the total 883,527 sq. km. land area of Tanzania mainland. Most of the region receives good rainfall and has an excellent vegetation cover, making it likely to have an abundance of medicinal plants.

### **Data collection**

Prior to starting the field work, one researcher travelled to Bukoba to liaise with government officials to identify traditional healers who would participate in the study as key informants. The Regional Culture Office in Bukoba assisted in identifying traditional healers who were willing to participate in the study. They included a prominent traditional healer, Mr Didas Ngemera, his two brothers and parents. However, information was also recorded from other village members who volunteered to participate especially as the researchers walked through the village farms and bushes. Prior to the informants providing any information they were apprised of what the project entailed and their consent to participate in the research was then sought.

Ethnomedical information was collected in various parts of the larger Kagera region between 19th February and 2nd March 2008 with three days, i.e. 23rd to 25th being spent in Bugabo Ward. A team consisting of two cultural officers, a botanist, a pharmacologist, and a health laboratory scientist participated in the documentation of plants and collection of ethnomedical information. The information was collected using a semi-structured interview format [4] as the team walked, accompanied by the informants, through banana farms, the surrounding bushes and thickets of Buzi village and Bukombe forest, which is one of two sacred forests in Bugabo Ward that are owned by members of the Wazigu family who are traditional rulers of the area. This method was chosen because it gives one the freedom to pursue many lines of questioning [4]. Thus it was possible to complete profiles of medicinal plant species documented by collecting information on their common/local names, disease(s) treated, parts used, methods of preparation, dosage of treatment, frequency and duration of treatment and names of other plants, if any, which are mixed with each of the plants for the treatment of specific disease(s). Information was also recorded on the side effects or toxic manifestations of the herbal remedies used and whether there were antidotes that could be used against such toxic manifestations. Voucher specimens of the plants were collected and later identified by Mr. Selemani Haji of the Botany Department, University of Dar es Salaam. Duplicate vouchers are kept at the Herbaria of the Botany Department, University of Dar es Salaam and that of the Institute of Traditional Medicine, Muhimbili University of Health and Allied Sciences.

Claims made by our informants were corroborated through reports from the literature. Literature information was downloaded from the NAPRALERT Data base of the School of Pharmacy, University of Illinois at Chicago.

## Results

In the study 94 plant species representing 84 genera and 43 families were reported to be used as traditional medicines in Bugabo Ward (See Table 1). The families Asteraceae, Rubiaceae, Fabaceae, Acanthaceae, Euphorbiaceae, Moraceae, Lamiaceae and Verbenaceae comprised 52% of all the plants documented with Asteraceae topping the list with 12 species, the highest number recorded in any one family. All the other families each had less than ten species associated with the treatment of diseases documented. In the majority of the families, only 1-3 species are used and in some cases all the species come from the same genus. The highest number of plant species recorded as being used to treat a single disease condition or problem was documented for Malaria (30), followed by skin conditions (19), maternal problems (14), sexually transmitted diseases (14), respiratory problems (11), yellow fever, Herpes simplex and peptic ulcers (10). Only five species were recorded as being used in the treatment of at least five different ailments each, with the remaining treating four, three, two or only one disease condition each. In many of the plants the leaves were the most commonly used part, comprising 40% of all the reports on use of plant parts. This was followed by the stem bark and aerial parts (20%) and roots (13%). The rhizome and stem sap were the least used, comprising 1% each of all the reports on use of plant parts. The dominant growth forms among the plants recorded were trees, which accounted for 30.8% (29 species), followed by herbs 28.7% (27 species), shrubs 25.5% (24 species) and climbers 14.8% (14 species).

## Discussion

Majority of the species recorded in this study are used to treat one or two disease conditions only. However, there are species e.g. *Ageratum conyzoides*, *Iboza urticifolia*, *Senecio stuhlmanii*, *Solanum nigrum*, *Trichilia emetica* and *Zehneria scabra* which are used to treat up to five different diseases each while *Alchornea cordifolia*, *Euphorbia hirta*, *Garcinia buchananii*, *Indigofera drepanocarpa*, *Pseudospondia microcarpa*, *Synsepalum ceresiferum*, *Tricalysia coriacea* and *Vernonia amygdalina* each treat four different diseases. The treatment of malaria by traditional healers in Bugabo using up to thirty different species distributed in twenty genera is quite remarkable. If febrile convulsions are also grouped as a symptom for malaria, then two more plants, *Gynura scandens* and *Lantana trifolia* can be added to the list, raising the number of plants used for treating malaria to thirty two. No other disease is treated using such a wide range of species. Malaria seems to be the most prevalent problem in this area, possibly in existence for many years and its prevalence could have led to the accumulation of such a diverse knowledge of plants with claims of antimalarial activity. Antiplasmodial activity has been reported for *Ageratum conyzoides* [5, 6], *Alchornea cordifolia* [7, 8], *Aspilia Mossambicensis* [9], *Clerodendron myricoides* [10, 11], *Dissotis brazzae* [11], *Erythrina abyssinica* [12], *Vernonia brachycalyx* [13], *Gynura scandens* [14] and *Lantana trifolia* [15-17]. This validates the reported use of these species in the treatment of malaria by traditional healers in Bugabo. *Clausena anisata* is known to have anticonvulsant activity [18, 19] and also has angiotensin converting enzyme (ACE) inhibitory activity [20]. The former validates its reported use in the treatment of epilepsy and the latter, which is an established mechanism for lowering blood pressure, also validates its use by local healers in Bugabo in the treatment of high blood pressure. Other plants like *Canarium schweinfurthii*, *Dissotis brazzae*, *Isoglossa lacteal*, *Strombosia Scheffleri*, and *Whitfieldia elongata* which are used by traditional healers in Bugabo in the treatment of conditions like wounds, venereal diseases and gastrointestinal infections, had, until very recently, not been tested for biological activity. However, four of these (*Canarium schweinfurthii*, *Dissotis brazzae*, *Isoglossa lacteal* and *Strombosia Scheffleri*) have recently been confirmed to have antibacterial and one (*Whitfieldia elongata*) antifungal activity [21], which validates claims concerning their use as traditional medicines. In various cases documented in this study more than one plant species is used in the preparation of herbal remedies for the treatment of different ailments. For example to treat malaria, one of the herbal remedies involves mixing the roots of *Vernonia amygdalina* with the stem bark of *Sapium ellipticum* and the leaves of *Dalbergia nitidula*, *Desmodium salicifolium* and *Eriosema psoraleoides* then boiling them together and drinking the decoction. The use of more than one plant in preparing herbal preparations is normally attributed to the synergistic effect that extracts from the different plants are thought to have during treatment [22]. The prevalence in the use of leaves for the preparation of traditional herbal remedies in Bugabo Ward corresponds with what has been reported in other studies [23, 24].

The dominance by trees as a source of many of the traditional medicines used in the study area can be attributed to the close proximity of Bukombe sacred forest where most of the plants used for medicinal purposes and other cultural rituals have been well conserved. One of these, *Haplocoelopsis africana* (Sapindaceae), is included in the 2006 IUCN Red List of threatened species, which makes the forest a very useful conservation area. Access into the Bukombe forest is controlled by the Wazigu family who are custodians of knowledge on rituals performed before accessing the forest. Even for this study a prayer had to be said at a shrine at the entrance of the forest before the team could be allowed to enter into the forest (see additional file 2). These rituals are well respected and together

with other cultural aspects, represent a good example of how cultural traditions can contribute to the sustainable use of medicinal plant resources.

### **Conclusion**

From this study it is quite clear that the Haya people in Bugabo are custodians of a rich heritage of traditional medicine knowledge. This calls for more initiatives to conserve this knowledge alongside the rich repository of medicinal plants found in the study area. Also, in the light of the therapeutic claims made on many of the plants documented in this study, some of which are validated by literature reports, there is need to conduct phytochemical and biological activity studies on the plants occurring in Bugabo to generate information that could be used in future drug development.

### **Competing interests**

The authors bear no knowledge of competing interests in the project, and share the aspirations of the local people of Bugabo ward to bring good healthcare services to their community.

Authors' contributions MJM, DFO, AW, PKM, carried out the design of the study, which is being implemented in Kenya, Tanzania and Uganda. MJM interviewed traditional healers in Bukoba Rural District, compiled the information which was subsequently synthesized by MJM and DFO to this final manuscript. All authors read, revised and approved the final manuscript.

### **Acknowledgements**

This work would not have been possible without the co-operation of Mr. Didas Ngerera and his family together with their village members who accepted to give us information on their medicinal plants. The family has committed itself to continue working closely with the Institute of Traditional Medicine, MUHAS to develop their ethnomedical resources. We thank the NAPRALERT Data base of the University of Illinois at Chicago for allowing us access and literature retrieval. We also thank Mr. Selemani Haji for identifying the plants and Mr. Superatus Chuma and Mr. Daniel Kamala for their contribution to this work. This collaborative Lake Victoria Research – (VicRes research) is financially supported by SIDA-SAREC through the Inter-University Council of East Africa (IUCEA). The project is VicRes Project No. 31 (see (<http://www.vicres.net>)).

## References

1. Kisangau, DP, Lyaruu, HV, Hosea, KM, Joseph, CC:  
Use of traditional medicines in the management of HIV/AIDS opportunistic infections in Tanzania: a case in the Bukoba rural district.  
*Journal of Ethnobiology and Ethnomedicine* 2007, 3:29.
2. Polhill, RM: Tanzania. In: Conservation of vegetation in Africa South of the Sahara  
Edited by: I. Hedberg and O. Hedberg.  
*Acta Phytogeographica Suecica* 1968, 54:320.
3. Brenan, JMP:  
Some aspects of the phytogeography of Tropical Africa.  
*Annals of the Missouri Botanical Garden* 1978, 65:437-478
4. Hamill FA, Apio, S, Mubiru, NK, Mosango, M, Bukenya-Ziramba, R, Maganyi, OW, Soejarto, DD:  
Traditional herbal drugs of southern Uganda. I.  
*Journal of Ethnopharmacology* 2000, 70:281-300.
5. Leaman DJ, Arnason JT, Yusul R, Sangat-Roemantyo H, Soedjito H, Angerhofer CK, Pezzuto JM:  
Malaria remedies of the Kenyah of the Apo Kayan, East Kalimantan, Indonesian Borneo: A quantitative assessment of local consensus as an indicator of biological efficacy.  
*Journal of Ethnopharmacology* 1995, 49:1-16.
6. Madureira MDC, Martins AP, Gomes M, Paiva J, da Cunha AP, do Rosario V:  
Antimalarial activity of medicinal plants used in traditional medicine in S. Tome and Principe Islands.  
*Journal of Ethnopharmacology* 2002, 81:23-29.
7. Mustofa VA, Benoit-Vical F, Pelissier Y, Kone-Bamba D, Mallie M:  
Antiplasmodial activity of plant extracts used in West African traditional medicine.  
*Journal of Ethnopharmacology* 2000, 73:145-151.
8. Banzouzi JT, Prado R, Menan H, Valentin A, Roumestan C, Mallie M, Pelissier Y, Blache Y:  
In vitro Antiplasmodial activity of extracts of *Alchornea cordifolia* and identification of an active constituent: ellagic acid.  
*Journal of Ethnopharmacology* 2002, 81:399-401.
9. Offulla AV, Rukunga GM, Chege GMM, Kiarie F, Muthaura CN, Githure JI, Kofi-Tsekpo WM:  
Antimalarial activity of fractions isolated from *Albizia gummifera* and *Aspilia mossambicensis* crude extract.  
*African Journal of Health Sciences* 1996, 3: (2), 44 – 46.
10. Gessler MC, Nkunya MHH, Mwasumbi LB, Heinrich M, Tanner M:  
Screening Tanzanian medicinal plants for antimalarial activity.  
*Acta Tropica* 1994, 56:65-77.
11. Omulokoli E, Khan B, Chhabra SC:  
Antiplasmodial activity of four Kenyan medicinal plants.  
*Journal of Ethnopharmacology* 1997, 56:133-137.
12. Yesenew A, Derese S, Irungu, B, Midiwo JO, Waters NC, Liyala P, Akala H, Heydenreich M, Peter MC:  
Flavonoids and isoflavonoids with antiplasmodial activities from the root bark of *Erythrina abyssinica*.  
*Planta Medica* 2003, 69:658-661.
13. Oketch-Rabah HA, Christensen SB, Frydenvang K, Dossaji SF, Theander TG, Cornett C, Watkins WM, Kharazmi A, Lemmich E:  
Antiprotozoal properties of 16,17-dihydrobrachycalyxolide from *Vernonia brachycalyx*.  
*Planta Medica* 1998 64:559-562
14. Blanc P, Bertrand P, Saqui-Sannes GD, Lescure R:  
Galactogenic properties of the African flora: *Sersalisia djalonenis* and *Euphorbia hirta*.  
*Annales de Biologie Clinique (Paris)* 1963, 21:829- 840.
15. Gupta MP, Arias TD, Correa M, Lamba SS:  
Ethnopharmacognosic observations on Panamanian medicinal plants.  
Part I. *Quarterly Journal of Crude Drug Research* 1979, 17:115-130.

- 16.** Klinar S, Castillo P, Chang A, Schmeda-Hirschmann G, Reyes S, Theoduloz C, Razmilic I:  
Biological activity of medicinal plants of Ica (Peru).  
*Fitoterapia* 1995, 66:341-345.
- 17.** Chhabra SC, Uiso FC, Mshiu EN:  
Phytochemical screening of Tanzanian medicinal plants. I.  
*Journal of Ethnopharmacology* 1984, 11:157-179.
- 18.** Adesina SK, Ette EI:  
The isolation and identification of anticonvulsant agents from *Clausena anisata* and *Afraegle paniculata*.  
*Fitoterapia* 1982, 53:63-66.
- 19.** Makanju OOA:  
Behavioral and anticonvulsant effects of an aqueous extract from the roots of *Clausena anisata* (Rutaceae).  
*International Journal of Crude Drug Research* 1983, 21:29-32.
- 20.** Duncan AC, Jager AK, van Staden J:  
Screening of Zulu medicinal plants for angiotensin converting enzyme (ACE) inhibitors.  
*Journal of Ethnopharmacology* 1999, 68:63-70.
- 21.** Moshi MJ, Innocent E, Masimba PJ, Otieno DF, Weisheit A, Mbabazi PK, Maria Lynes M, Meachem K, Hamilton A, Urassa I:  
Antimicrobial and brine shrimp toxicity of some plants used in traditional medicine in Bukoba District, north western Tanzania. Tanzania  
*Journal of Health Research* 2009, 11:23-28.
- 22.** Bussman RW, Sharon D:  
Traditional medicinal plant use in Northern Peru: tracking two thousand years of healing culture.  
*Journal of Ethnobiology and Ethnomedicine* 2006, 2:47.
- 23.** Yineger H, Yewhalaw D:  
Traditional medicinal plant knowledge and use by local healers in Sekoru District, Jimma Zone, Southwestern Ethiopia.  
*Journal of Ethnobiology and Ethnomedicine* 2007, 3:24.
- 24.** Pradhan BK, Badola HK:  
Ethnomedicinal plant use by Lepcha tribe of Dzongu valley, bordering Khangchendzonga Biosphere Reserve, in North Sikkim, India.  
*Journal of Ethnobiology and Ethnomedicine* 2008, 4:22.

**Table 1: Medicinal plants used in Bugabo Ward, Bukoba District**

<b>Species (Voucher No.) / Family</b>	<b>Vernacular name</b>	<b>Life form</b>	<b>Condition(s) treated</b>	<b>Part (s) used</b>	<b>Method of Preparation and administration</b>
<i>Acanthus pubescens</i> Engl. & Turill. (MJM 3028) / Acanthaceae	amatoju	S	malaria, galactagogue in both men and cattle	R, L	The roots are cut into small pieces and boiled with water or broth/meat. Two bowls are taken per day to treat gonorrhoea and syphilis
<i>Adhatoda englerana</i> (Lind.) C.B.Cl (MJM 3113) / Acanthaceae	ekishenda	S	coughs, treatment of warts	L, R	The leaves are put on fire to allow partial burning and then squeezed and 1 tablespoonful of the liquid obtained is given to children to treat coughs. Dry root powder is taken orally for treatment of warts
<i>Asystasia gangetica</i> (L.) T.Anders. (MJM 3016) / Acanthaceae	ekiingura / kinyegezi	H	appetite booster	L	Leaves are pounded then squeezed and the juices given to patients to improve their appetite. It is also fed to calves to boost appetite and make them grow well
<i>Isoglossa lactea</i> Lindau (MJM 3085) / Acanthaceae	omufoka	H	discolouration of the skin (loss of melanin), syphilis and other conditions	L	The leaves are boiled and the decoction drunk or applied topically
<i>Thunbergia alata</i> Sims (MJM 3030) / Acanthaceae	wankura	CL	weakness in pregnant women	WP	The whole plant is boiled and the decoction given to pregnant women as a drink to provide energy
<i>Whitfieldia elongata</i> (P.Beauv.) De Wild. & T.Durand (MJM 3062) / Acanthaceae	ekigenge	S	chicken pox, skin conditions, rectal prolapse	AP	Aerial parts are squeezed and a teaspoonful of the exudate given to a child or can also be applied topically. The exudate is also drunk for the treatment of rectal prolapse
<i>Pseudopondias microparpa</i> (A. Rich) Engl. (MJM 3041/3049) / Anacardiaceae	omuzilu / mziku	T	kidney problems, malaria, poor nutrition, peptic ulcers	SB	The fruits are used in the treatment of peptic ulcers. They are boiled together with aerial parts and roots of <i>Plumbago zeylanica</i> and aerial parts of <i>Oxygonum sinuatum</i> . A quarter to one glass of the decoction, depending on the severity of the condition is taken twice daily. A decoction made with the leaves combined with the leaves of <i>Ludwigia abyssinica</i> , <i>Sapium ellipticum</i> and <i>Maytenus Senegalensis</i> is used to treat GIT problems such as mucoid diarrhoea, peptic ulcers and chest infections
<i>Steganotaenia araliacea</i> Hochst. (MJM 3018) / Apiaceae	omulalankuba	S	herpes zoster, HIV/AIDS	AP	Dried aerial parts are powdered and applied to the skin using animal fat as a base. Decoction made from the aerial parts is also given to HIV/AIDS patients
<i>Rauvolfia vomitoria</i> Afzel. (MJM 3026/3114) / Apocynaceae	mnyabusind / enyam asindi / kinyabusinde	T	malaria/splenomegally/abdominal colics in children/ HIV/AIDS	SB, RB	For malaria the stem or root bark is boiled with water and drunk. When the decoction is given to children it makes them feel weak and hence they should also be given milk. The stem or root bark is ground and one teaspoonful of the powder is administered with porridge or tea. It can also be mixed with honey to mask the bitter taste

Picalima nitida (Stapf.) T.Durand & H.Durand (MJM 3075/3095) / Apocynaceae	mukanshe/omukanshe	T	maternal care during pregnancy	SB	The stem bark is pounded and soaked in water. The infusion can be used by a pregnant woman to purge spirits
Ageratum conyzoides L. (MJM 3023) / Asteraceae	mwigara/omwigara / katabataba	H	coughs, constipation / peptic ulcers and fibroids and women with difficulties to conceive	R, L	Roots are chewed fresh as an anti-acid and antiseptic. Leaves are boiled and decoction taken as tea
Aspilia mossambicensis (Oliv.) Willd (MJM 3056) / Compositae	eshurwa	H	malaria, tonic, hypoglycaemic	WP	Aerial parts are mixed with those of Centella asiatica, boiled and the decoction used for the treatment of malaria
Bidens biternata (Lour.) Merr. & Sherff (MJM 3155) / Compositae	rwongwe / ongwwe akakurura/kakurura / obukurura	H	malaria, yellow fever	L	The leaves are boiled with water and the decoction drunk
Bidens pillosa L. (MJM 3129/3207) / Compositae	akakurura / kakurura / obukurura	H	wounds and warts	L	The leaves are boiled with the leaves of Solanum nigrum and decoction drunk until warts disappear.. The leaves of the two plants can also be baked under fire and then used for wound dressing
Bidens schimperi Sch.Bip. (MJM 3039) / Compositae	orwangwa	H	yellow fever	L	The leaves are pounded, cold extracted and extractive administered orally three times a day until recovery
Crassocephalum mannii (Hookf) Milne (MJM 3020/3060) / Compositae	akagango-akake	H	febrile convulsions in children, malaria or heart problems	AP	Aerial parts are pounded and boiled in water and the decoction administered orally. It is also applied topically e.g. by bathing in it.
Crassocephalum vitellinum (Benth.) S. Moore (MJM 3046) / Compositae	ekishenda	CLH	peptic ulcers, prevent miscarriage	AP	The aerial parts are boiled and the decoction is taken regularly as a treatment for peptic ulcers. A decoction made with aerial parts mixed with the roots of Alchornea cordifolia, Sapium ellipticum, Acanthus pubescens and Emilia javanica is used to prevent miscarriage
Gynura scandens O.Hoffm. (MJM 3083) / Compositae	ekizimya muliro	CLH	fever, febrile convulsions	L	The leaves are squeezed or pounded and then boiled with water. The decoction is given to children to drink and at the same time the juice extracted from the leaves is applied on the body using a sponge to lower high temperatures
Senecio stuhmannii Klatt (MJM 3043/3134) / Compositae	eirarire/kikarabwe/kikarabo/ Omugango	CL H	wounds, swellings, coughs, stiff neck, poisoning	L	The leaves are pounded and used as an antiseptic dressing for wounds or rubbed on the neck. For coughs the leaves are baked with salt and chewed. The leaves and charcoal made from the stem are used as an antidote for poisoning

Vernonia amygdalina Del. (MJM 3101) / Compositae	omubilizi	S	febrile convulsions, fever, malaria and mastitis in cows	R, L	Leaves are squeezed and the exudate administered. For the treatment of mastitis in cattle, the leaves are pounded and put in drinking water. For the treatment of malaria and febrile convulsions a decoction of the roots is mixed with the stem bark of Sapium ellipticum ,and the leaves of Dalbergia nitidula, Desmodium salicifolium and Eriosema psoraleoides and drunk
Vernonia brachycalyx O.Hoffm. (MJM 3047/3161) / Compositae	mkurajjwa / omuwa	S	guinea worm, backache	AP	Aerial parts are burnt and the ash applied to the knee where the worm is haboured. For treatment of backache – the leaves are mixed with those of Pappea capensis, boiled and about 2 tablespoonfuls of the decoction given to the patient three time a day
Markhamia zanzibarica (DC.) Engl. (MJM 3089) / Bignoniaceae	omushambya	T	yellow fever, dysentery, mucoid diarrhea	SB	The stem bark is mixed with that of Mangifera indica, Maesopsis eminii and Erythrina abyssinica then boiled and a half a glass of the decoction administered daily for the treatment of yellow fever, or mixed with Bidens pilosa , Psidium guajava , Harungana madagascariensis, and the rusty yellow part of banana leaves and then boiled and decoction taken
Canarium schweinfurthii Engl. (MJM 3036)/Burseraceae	muubani wakiume/omubafu	T	malaria, syphilis	SB	The bark is ground into powder and boiled and decoction drunk
Garcinia buchananii Bak. (MJM 3065) / Clusiaceae	msharazi	S	venereal diseases, dysentery, HIV/AIDS, malaria	SB, R	The stem bark or roots are boiled with a small amount of water and concentrated to half volume or mixed with roots of Tragia furialis for the treatment of malaria. The decoction of the roots or stem bark is also used as treatment for venereal diseases
Bryophyllum pinnatum (Lam.) Kurz. . (MJM 3107) /Crassulaceae	kikugwa/chikugwa	H	cold/flu and coughs in both children and adults	L	The succulent leaves are wrapped in banana leaves and baked under fire. The baked leaves are then squeezed and the exuding juice administered to patients orally
Momordica foetida Schumach. (MJM 3090) / Cucurbitaceae	orwirwa/orwikura	CL	skin conditions/ chicken pox	AP	The aerial parts combined with those of Whitfieldia elongate are crushed together and the juice squeezed out and administered to children with chicken pox..The exudates are also applied topically to treat skin lesions resulting from chicken pox
Zehneria scabra (L.f.) Sond. (MJM 3025/3150) / Cucurbitaceae	akabindizi	CL	skin diseases, gonorrhoea, syphilis, cleansing uterus before a child is delivered, malaria	L	Leaves are boiled and decoction drunk. To treat malaria a decoction is made from boiling the leaves combined with the roots of Trichilia emetica, Alchornea cordifolia and Sapium ellipticum, of which one cup is administered three times a day for up to 7 days

Fimbristylis hispidula (Vahl) Kunth. (MJM 3045) / Cyperaceae	ndeju	H	fractures	L	The leaves are pounded and soaked in water and as much as possible of the infusion taken
Scleria bulbifera A. Rich (MJM 3217) / Cyperaceae	Enki	H	urinary obstruction (prostate?)	RZ	Underground rhizomes pounded, squeezed and the exudate drunk
Alchornea cordifolia (Schumach.) Müll. Arg. (MJM 3109) / Euphorbiaceae	mjururuzi/omuju ruruzi	T	gonorrhoea, syphilis, febrile convulsions and malaria	R, L	Leaves are mixed with those of Sapium ellipticum, Kigelia africana, Zehneria scabra, Acanthus pubescens, Emilia javanica and Oxygonum sinuatum, boiled and the decoction taken daily for the treatment of malaria
Euphorbia hirta L. (MJM 3022/3184) / Euphorbiaceae	omushesha/kahy aburimbe	H	galactagogue, hypertension, warts, cataract (local application)		The milky exudates are applied topically to the eyes to remove cataracts. The aerial parts are mixed with those of Solanum nigrum, Bidens pilosa, and Oxygonum sinuatum and boiled. The decoction is then orally administered daily for the treatment of warts. A decoction of aerial parts alone is used by mothers to enhance lactation
Euphorbia tirucali L. (MJM 3029) / Euphorbiaceae	ikonora	S	skin disease and galactagogue	AP	The aerial parts are pounded or boiled with water then applied topically (for abscess) or taken orally as a galactagogue.
Macaranga monandra (L.) Muell. (MJM 3082) / Euphorbiaceae	mshakoenyoni/mshakwanyoni	T	low haemoglobin level	SB	The stem bark is boiled to make a decoction in combination with the leaves of Bidens pilosa and green coffee beans
Sapium ellipticum (Krauss) Pax (MJM 3130/3105) / Euphorbiaceae	orushasha	T	malaria	L, SB, R	A decoction is made by boiling the roots with those of Trichilia emetica and Alchornea cordifolia together with the leaves of Zehneria scabra. The decoction is then administered orally three times a day for up to 7 days
Tragia furialis Bojer (MJM 3014) / Euphorbiaceae	engenyi (Upupu)	CL	impotence, boost libido	L	The leaves are mixed with the roots of Elaeodendron buchananii, Vernonia brachycalyx and Desmodium ramosissimum and boiled in water. One glass of the decoction is then administered daily until effect can be observed
Abrus precatorius L. (MJM 3013) / Fabaceae	kaligaligo	CL	coughs	L	Leaves are pounded together with ginger to make a thick paste which is squeezed and the exuding liquid given to children for coughs
Cassia mimosoides L. (MJM 3031/3060) / Fabaceae	bushenganziru/ akanwe akake	H	fracture/antibacterial, cleaning of the uterus by pregnant women		Aerial parts are pounded and mixed with animal fat and applied topically or can be taken orally. They are also pounded with the leaves of Cassia polytricha (Fabaceae) and the paste tied around a fracture to promote healing

Desmodium ramosissimum G.Don. (MJM 3053) / Fabaceae	kasikasiki	H	low libido	R, L	Roots and leaves are boiled with those of Tragia furialis and Clerodendrum buchananii in water and one glass of the decoction administered daily to increase libido
Entada abyssinica A. Rich. (MJM 3102) / Fabaceae	mwiganjula	T	swollen stomach (ascites)	SB	Stem bark boiled with water and decoction taken orally
Erythrina abyssinica DC (MJM 3245) / Fabaceae	omulinzi	T	alcoholism, malaria	FL, SB	The flowers are mixed with those of Dracaena fragrans dried and then ground into a powder which is then put into the brew or alcoholic drink being taken by the patient without his / her knowledge. The stem bark is boiled with water and the decoction used for malaria
Indigofera drepanocarpa Taubert (MJM 3055) / Fabaceae	mbabazi	CL H	chronic malaria, venereal diseases, wounds, tonic	R	The roots are boiled in water and a cup of the decoction taken three times a day
Sesbania macrantha Phil. & Hutch. (MJM 3106) / Fabaceae	omubimba	S	syphilis and miscarriages in women	L	the leaves are boiled and one cup of the decoction taken three times a day. The leaves can also be mixed with those of Zehneria scabra, and the roots of Sapium ellipticum and Alchornea cordifolia, boiled and the decoction taken orally
Dovyalis abyssinica (A. Rich.) Warb. (MJM 3033) / Flacourtiaceae	omuyebe	T	cough	SB	The bark is boiled in water together with the leaves of Abrus precatorius and the decoction administered orally
Leonotis nepetifolia (L.) Ait.f. (MJM 3104) / Lamiaceae	kitaterante	H	malaria, febrile convulsions	AP	The aerial parts are boiled in water and the decoction taken orally three times daily for up to 5 days
Ocimum gratissimum L. (MJM 3123) / Lamiaceae	kashwagara	H	blotting, wounds	L	One teaspoonful of dry leaf powder is taken with tea or food
Tetradenia riparia (Hochst.) Codd (MJM 3112/3125) / Lamiaceae	mkono wankhanda/ kiswija/ omushunshu	H	ulcers, tonsils, wounds, malaria, insect bites	L	A decoction is made from the leaves and drunk or the leaves are pounded and used for dressing wounds. For malaria the leaves are boiled with water and a glass of the decoction taken three times a day
Hugonia castaneifolia Engl. (MJM 3074) / Linaceae	kinyamarobo	CL W	given to pregnant women to improve health of fetus	AP	The aerial parts are cut into small pieces and boiled when fresh with water. The decoction is administered to pregnant women regularly
Anthocleista grandiflora Gilg (MJM 3241) / Loganiaceae	mgabaigana	T	malaria	SB	The dried stem bark is boiled and a cup of the decoction taken three times a day for 5-7 days depending on severity

Hibiscus cannabinus L. (MJM 3054) / Malvaceae	kakungiri / lukingiri	H	wounds, cleansing uterus	AP	The leaves are pounded and used for wound dressing. They are also boiled with water and the decoction is taken orally presumably to treat intrauterine infections
Hibiscus fuscus Garcke (MJM 3017) / Malvaceae	omusinga	S	polio	L	The leaves are pounded then mixed with fat (Ghee) and massaged on the affected area
Dissotis brazzae Congn. (MJM 3098) / Melastomataceae	katuntunu	H	syphilis, malaria	AP	The aerial parts are mixed with those of Solanum nigrum, boiled and the decoction administered orally
Dissotis rotundifolia (Sm.) Triana (MJM 3038/3244) / Melastomataceae	obweee / obweheee / marwa	H	giddiness, malaria and alcoholism	AP, L	The leaves are boiled with water and the decoction administered orally or the leaves are squeezed and the juice expressed is taken with beer / alcoholic drinks to help control alcohol dependency
Trichilia emetica Vahl. (MJM 3066) / Meliaceae	omushunguti / omujunguti	T TB	epilepsy, malaria, gonorrhoea, syphilis	SB, R, L	Stem bark / leaves are boiled in water and decoction administered.  In the treatment of gonorrhoea and syphilis the roots are boiled together with the roots of Alchonea cordifolia, Sapium ellipticum, Zenheria scabra, Acanthus pubescens, Emilia javanica and Oxygonum sinuatum and the decoction drunk.
Bersama abyssinica var engleriana (Gürke) F. White (MJM 3108) / Melianthaceae	muhinguza / omuh inguza	T	body spasms, parasitic worm infestation	R, SB	A decoction is made by boiling the roots and stem bark
Xymalos monospora (Harv.) Baill. (MJM 3040) / Monimiaceae	kamagaliko	T	coughs	L	Leaves are pounded together with ginger to make a thick paste or squeezed and the juice produced given to children for coughs
Antiaris toxicaria (Pers.) Lesch. (MJM 3063) / Moraceae	omujuju	T	used for superstitious purposes	WP	The whole plant is used as a charm
Ficus asperifolia Miq. (MJM 3071) / Moraceae	ekijuhuju / omuku ruguta	S	throat ulcers	L	Leaves are boiled and the decoction drunk
Ficus exasperata Vahl (MJM 3091 / 3131) / Moraceae	msomolo	T	warts, throat conditions	SP	The stem sap is applied locally to treat warts while the leaves are boiled and decoction taken for throat conditions
Ficus thonningii Bl. (MJM 3086) / Moraceae	mugwa / mugwi	T	swollen painful feet (athlete foot rot)	L	The leaves are pounded, soaked in water and the infusion used for washing feet
Maesa lanceolata Forssk. (MJM 3080) / Myrsinaceae	mzilanyama / omu zilanyama	T	small pox and chicken pox	L	The leaves of the plant are pounded and the extract applied topically as an antiseptic for the treatment of rashes.

Eugenia capensis (Eckl. & Zeyh.) Sond. (MJM 3094 / 3066) / Myrtaceae	omtukuza	S	removal of excessive water from the uterus of pregnant women (hydrofoetalis)	AP	The leaves are boiled with leaves from plants like Vernonia bradycalyx and Strombosia scheffleri and the decoction is drunk by pregnant women to reduce excessive amniotic fluid
Ochna Schweinfurthiana F.Hoffm (MJM 3076) / Ochnaceae	mkomanshanje	T	chest problems and skin rashes	L	Extracts from the leaves are applied topically for skin rashes while for chest problems the leaves are boiled with water and the decoction taken orally
Strombosia scheffleri Engl. (MJM 3032) / Olaceae	mmarara / omumarara	T	treatment of diarrhea	SB	Stem bark is boiled with water and the decoction taken orally
Jasminum dichotomum Vahl (MJM 3084) / Oleaceae	kigoyagoye	CLW	severe malaria	L	The leaves are boiled and the decoction drunk or they are dried and ground into a powder which is then licked
Ludwigia abyssinica A. Rich. (MJM 3024) / Onagraceae	runyamiga / omul alankuba	H	HIV/AIDS, fungal infections	L	The leaves are boiled and the decoction drunk
Plumbago zeylanica L. (MJM 3015) / Plumbaginaceae	enkira/ enkila	S	peptic ulcers	AP	The aerial parts are boiled in water with the stem bark of Pseudonpondias microcarpa and aerial parts of Oxygonum sinuatum and the decoction drunk
Oxygonum sinuatum (Meisn.) Dammer (MJM 3061) / Polygonaceae	nyawaija/ enyawaija	H	wounds, warts	L	The leaves are burnt and the ash licked
Portulaca spp. (MJM 3099) / Portulacaceae	lumwaga	H	blotted stomach. Used by pregnant women to reduce gas from the stomach	AP	The aerial parts are boiled in water and used as tea. The leaves have an almost sweet or slightly salty taste.
Maesopsis eminii Engl. (MJM 3034) / Rhamnaceae	omuumura	T	constipation	SB	The bark is soaked in a local brew and the infusion taken orally
Rubus rigidus Sm (MJM 3103) Rosaceae	mkelele	S	syphilis	AP	The aerial parts are boiled in water and the decoction, drunk
Chassalia umbraticola Vatke (MJM 3027) / Rubiaceae	mwataibale/ mwat abazimu / kivumbasi	S	mental illness	L	The leaves are mixed with the leaves of Euphorbia tirucali and Ocimum suave then boiled and the decoction given to patient in the morning to drink
Hymenodictyon parvifolium Oliv. subsp parvifolium (MJM 3100) / Rubiaceae	mazi ge nkeremeka (infant stool)	CLW	malaria, chest problems involving difficulty to breath in young children	AP	The aerial parts are pounded and boiled then given to children to drink
Oxyanthus speciosus DC. (MJM 3070) / Rubiaceae	mwanikibira	T	low heamoglobin levels, tonic, dizziness	L	Leaves are boiled and the decoction is drunk

Pavetta refractifolia K.Schum. (MJM 3079) / Rubiaceae	mwanga	S	mental confusion	AP	A decoction is made from the roots combined with those of Vernonia brachycalyx and drunk
Rytigynia uhligii (K.Schum. & K.Krause) Verd. (MJM 3044) / Rubiaceae	rulokola	S	paralysed limb	L	Leaves are pounded and then applied or massaged on affected area
Tricalysia coriacea (Benth.) Hiern. (MJM 3064 / 3170) / Rubiaceae	mshekela kibira / mwanikibira / omumwanikibira	T	yellow fever (jaundice); skin diseases, epixstasis, malaria	R, L	Leaves / roots are boiled and decoction drunk
Vangueria apiculata K.Schum. (MJM 3048) / Rubiaceae	kirongomani/ mtigunda	S	diabetes	SB, L	A decoction is made using the leaves mixed with those of Dracaena steudneri
Vangueria infausta Burch. (MJM 3139) / Rubiaceae	amabungo / mabungo/ kirongomani / mtig unda	T	malaria, diabetes	L, SB	The fruits and seeds are burnt and then eaten or the leaves boiled in water together with leaves or stem bark of Dracaena steudneri (Agavaceae) and the decoction drunk
Teclea nobilis Del. (MJM 3049) / Rutaceae	omuzo	S	worms	L	The leaves are pounded and dried into a powder and mixed with the leaf powder of Sapium ellipticum. The resultant powder is then licked
Clausena anisata (Willd.) Benth. (MJM 3046) / Rutaceae	kata teramunyanya	CL H	epilepsy, high blood pressure	R	The roots are boiled in water and the decoction administered three times daily
Allophylus chaunostachys Gilg (MJM 3081) / Sapindaceae	orutete/akatete	CL W	colds, swelling of legs and warding off spirits	L	The leaves are boiled and the decoction drunk as a cold remedy and to treat swollen legs. Bathing with an infusion of the leaves is believed to ward off bad spirits
Haplocoelopsis africana F. O.Davis (MJM 3078) / Sapindaceae	mkuzanyana	T	malaria and spasms	SB	Dried stem bark is boiled with water and the decoction taken three times a day
Synsepalum brevipes (Bak.) Pennington (MJM 3035) / Sapotaceae	omukaraito / mkaraito	T	malaria	SB	The stem bark is ground and boiled and the decoction administered twice daily for one week
Synsepalum ceresiferum (Welw.) Pennington (MJM 3077 / 3097) / Sapotaceae	omumo	T  TB	malaria, venereal diseases,  and urinary tract infections	SB	The stem bark is boiled in water and decoction taken orally
Capsicum frutescens L. (MJM 3170) / Solanaceae	karumali	H	insomnia, impotence	L, FR	The leaves are boiled and the decoction used to treat insomnia while a decoction of boiled fruits is used as treatment for impotence

Solanum nigrum L. (MJM 3021) / Solanaceae	shwiga / shwiga/ntura / butura	H	worms e.g. hookworms (safura), ring worms; warts, blood pressure, bed wetting in children	L, FR	For ringworm the leaves are pounded and applied topically. The leaves can also be pounded and baked under fire before being used for dressing a wart. To treat wetting of the bed in children, ripe fruits are given to them to eat
Pteryogota mildbraeii Engl. (MJM 3067) / Sterculiaceae	muzimya/muzimia	T	for spiritual functions	L	The leaves are boiled with water and used for bathing as a way to ward off bad spirits
Trema orientalis (L.) Blume (MJM 3052) / Ulmaceae	omuwuwe/omuuwe	S	yellow fever, low levels of haemoglobin	AP	Leaves are pounded and boiled with the leaves of Combretum collinum (Combretaceae) and Erythrina abyssinica . (Fabaceae), and the decoction used to treat yellow fever. An infusion from the leaf is used as a haematinic
Centella asiatica (L) Urb. (MJM 3059) / Umbelliferae	mbatama/kutikwimo	H	malaria and recurrent fever, headache	AP, L	Aerial parts mixed with a local brew and patient given a bowl or cup to drink to treat malaria and recurrent fever. For headaches, the leaves are rubbed on the forehead
Girardinia diversifolia (Link) Friis (MJM 3019) / Urticaceae	akajumbura akaki / akanyango	S	breathing problems	L	The leaves are pounded, squeezed and the juice administered orally
Clerodendrum cephalanthus Oliv. var. cephalanthum / Verbenaceae	maiko	S	eye problems	R	The roots are boiled in water with the roots of Bridelia micrantha and the ensuing steam directed into the eyes through a narrow aperture
Clerodendrum myricoides (Hochst.) Vatke. (MJM 3198) / Verbenaceae	omurajio	S	malaria, febrile convulsions, abdominal colics	SB, R	The stem bark or roots are boiled in water and half a teaspoonful of the decoction is administered orally
Lantana trifolia L. (MJM 3042) / Verbenaceae	kashekelaaku	S	febrile convulsions	L	The leaves are pounded, boiled with water and the decoction administered to children

CL = Climber, CLW = Climber wood, CLH = Climber herb, H = Herb, S = Shrub, T = Tree, AP = Aerial part, FL = Flower, L = Leaves, R = Root, RB = Root bark, RZ = Rhizome, SB = Stem bark, SP = Stem sap, WP = Whole plant, FR = Fruit