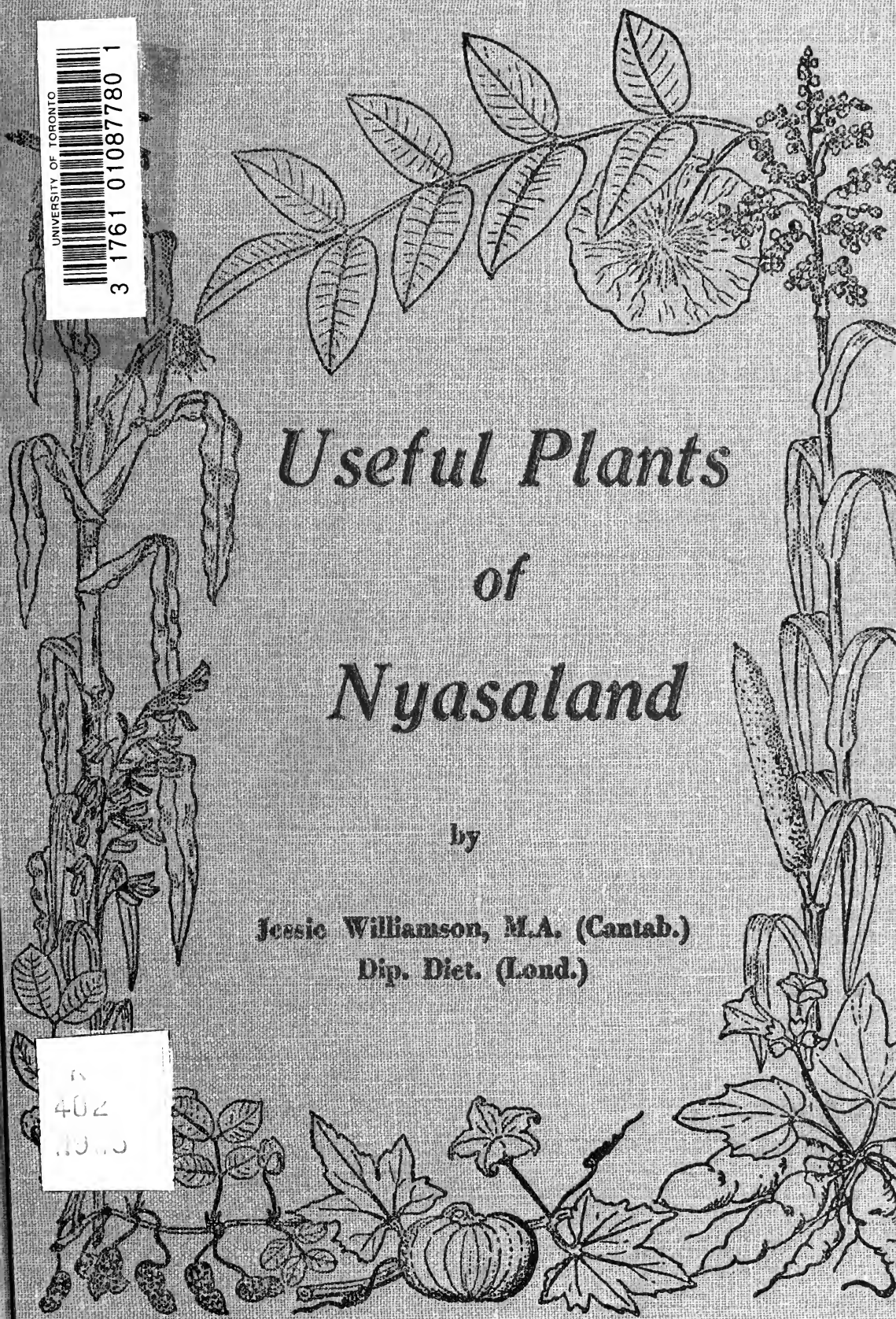

Useful Plants of Nyasaland

by

Jessie Williamson, M.A. (Cantab.)
Dip. Diet. (Lond.)

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JESSIE WILLIAMSON, M.A. (Cantab.)
DIP. DIET. (Lond.)

(Member of Nutrition Survey, 1938–39)
(Nutritional Investigator, Nyasaland, 1939–43)

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Contents

N.B.—Tea, coffee and tobacco have been omitted in the list as they were considered too well known to warrant inclusion.

Foreword

The honest are generally prepared to admit that the longer they have been in Africa the more they realize how little they know about it. Others are not so ready to acknowledge their ignorance and are all the more in need of enlightenment on that account. For all of us the tempo of modern times makes it very difficult to find the opportunity to delve into the detail of African affairs for ourselves.

There is no question of the need for greater knowledge of the things that affect the daily life of the African people. Not only does it make for more efficient work among them and for better understanding which is so essential, but it provides an interest and enjoyment which are in themselves a reward and a stimulus to further study.

We are very fortunate in Nyasaland that Mrs. Williamson has accumulated such a wealth of information on plants of day to day importance to its indigenous inhabitants and presented it in a form so easy to use and to understand. The majority of the items listed and described are eaten in one form or another at varying times and circumstances during the year. They are therefore very much the concern of the women who are the traditional gatherers and cookers of food. This makes the material in this book all the more valuable in that it sheds light into one of the darkest and most important corners of African life and better understanding of it will help to gain the confidence of the women on which so much of the progress in Africa depends.

Indeed it was only by the utmost patience over many years that Mrs. Williamson herself gained the confidence of the people—particularly the women—from whom she gathered much of the material for this work. She has provided us with a very necessary part of the foundation on which to build further understanding and progress.

ZOMBA, 24th February, 1955

R. W. KETTLEWELL
Director of Agriculture

Introduction

In the following pages will be found a descriptive account of plants, mostly indigenous, which are of use to the peoples of Nyasaland. The majority of the plants are used in some way or other as food.

The plants are listed under their botanical names in alphabetical order. Wherever possible, the common name has also been given as well as the vernacular names in a variety of languages. An index is provided to the vernacular and common English names and to the vernacular names of cooked dishes and processed foods. The plants have also been classified according to their uses; for example, those useful for their timber or for their edible leaves. A few of the plants have not been identified botanically and will be found at the end of the main list.

Much of the information was collected in 1938–9 when the Colonial Office Nutrition Survey was carried out in the Kota Kota District. The Survey was under the direction of Prof. B. S. Platt and it was he who first suggested the compilation of a list of this nature. The remainder of the information was collected by me between 1939–43 when I was working as a member of the Nutrition Unit, and when I had an opportunity of visiting many parts of the country. Various minor additions have been made during 1949–53. Mr. P. Topham, recently of the Nyasaland Forestry Department, Mr. W. H. Rangeley, of the Administration, and Dr. P. J. Greenway, of the East African Agricultural and Forestry Research Organisation, have also kindly supplied information.

The majority of the identifications of plants collected during the survey year were made by Dr. G. A. C. Herklots, now Principal of the School of Tropical Agriculture in Trinidad, and by Dr. P. J. Greenway, now Botanist-in-Charge of the East African Herbarium in Nairobi. Miss Owen of the Nutrition Survey also helped with some of the identifications. Since 1939, Dr. Greenway has named further collections and Mr. J. B. Clements, while he was Conservator of Forests in Nyasaland, identified a number of trees and shrubs.

The botanical descriptions of plants collected in the survey year were written by Dr. Herklots and his references are included under each plant. As the descriptions are not intended for purposes of complete identification, and as some of them are already very brief, I have shortened and simplified many others. In the case of plants collected since the survey year, only very brief descriptions are given, on the lines of, and in many cases copying, those of Dr. Greenway in his "*Swahili-Botanical-English Dictionary of Plant Names.*"

Mr. Topham has recently (1952) completed the revision of the "*The Check List of the Forest Trees and Shrubs of Nyasaland*" and has kindly allowed me to use the manuscript to revise my list.

During 1951–53, Dr. Greenway has completely checked the list from a botanical standpoint, and I should like to take this opportunity of thanking him most sincerely

for the time and effort that he has put into the task. With his very wide knowledge and long experience of the East African flora, he has unrivalled qualifications for such work.

I am also most grateful to Mr. G. Jackson, Ecologist to the Nyasaland Department of Agriculture, for the cover design and for the excellent line drawings which he has so kindly contributed.

Finally, I should like to thank Mr Edson Chidzalo of the Kota Kota District, who so ably and untiringly interpreted for me and without whom I should have been unable to collect much of the information that follows.

Some explanation is needed of the word " side-dish " which appears so often in the text. Many of the edible plants, leaves in particular, are cooked with abundant salt and other flavourings to form a dish called *ndiwo* in the south and *dende* in the north of the country. This is eaten in small quantities together with large amounts of rather tasteless porridge known as *nsima*. Often, owing to the communal eating habits of the people, there is a choice of several dishes of *ndiwo* at any one meal. The customary translation for *ndiwo* is " relish " but the term " side-dish ", often used to describe somewhat similar cooked dishes in Eastern countries, seems a better word to use.

A list of this nature is certain to be incomplete and to contain inaccuracies and is bound to need revising sooner or later. To assist in this work, any additions or corrections will be welcomed and should be sent to me c/o The Director of Agriculture, Zomba, Nyasaland.

KARONGA, NYASALAND, January 28th, 1954 J. WILLIAMSON

Bibliography

1. Oliver, D., *et al.* (1868–1937) *Flora of Tropical Africa*, 9 vols. London.
2. Watt, G. (1889–96), *Dictionary of the Economic Products of India*, 6 vols. and index, Calcutta.
3. Schumann, K. (1900) *Monographiun Afrikanischer Pflanzen-familien und gattengen V. Sterculiaceae Africanae.* Leipzig.
4. Macmillan, H. F. (1935) *A Handbook of Tropical Gardening and Planting*, London.
5. Baker, E. G. (1926–30) *The Leguminoseae of Tropical Africa.* 3 pts. Ostend.
6. Burtt-Davy, (1926–32) *A Manual of the Flowering Plants and Ferns of the Transvaal with Swaziland, South Africa*, Pts. I and II. London.
7. Hutchinson, J. and Dalziel, J. M. (1927–36) *Flora of West Tropical Africa*, 2 vols. London.
8. Anon. (1927–30) *Official Guides to the Museum of Economic Botany, Kew*, 3 vols. London.
9. Steedman, E. C. (1933) *Some Trees, Shrubs and Lianes of Southern Rhodesia*, Salisbury.
10. Steyn, D. G. (1934) *The Toxicology of Plants of South Africa; together with a consideration of Poisonous Foodstuffs and Fungi*, S. Afr. Agri. Ser. Vol. 13, S. Africa.
11. Burkill, I. H. (1935) *A Dictionary of the Economic Products of the Malay Peninsula*, 2 vols. London.
12. Dale, I. R. and Battiscombe, E. (1936) *Trees and Shrubs of Kenya Colony.* Nairobi.
13. Sampson, H. C. (1936) *Cultivated Crop Plants of the British Empire and the Anglo-Egyptian Sudan*, Kew Bull. Misc. Inform. Add. Ser. XII. London.
14. Imp. Forestry Inst. (1936) *Check List of the Forest Trees and Shrubs of the British Empire, No. 2, Nyasaland.* Oxford.
15. Dalziel, J. M. (1937) *Useful Plants of West Tropical Africa.* London.
16. Stapleton, C. C. (1937) *Common Transvaal Trees*, Union of S. Afr. Dept. Agri. For. Bull. No. 164. For. Ser. 5. Pretoria.
17. Greenway, P. J. (1939) *A Swahili-Botanical-English Dictionary of Plant Names.* Dar-es-Salaam.
18. Brain, C. K. (1939–40) *Trees and Wild Flowers on the Rhodesia Farm.* Pts. 1–12, Rhodesian Agri. Journ. Salisbury.
19. Rosedale, J. L. and Milsum, J. N. (1940) *Malay Leaf and Other Vegetables and their Analyses*, Straits Settlements Dept. Agri. Bull. No. 31. Singapore.
20. Hopkins, J. C. F., *et al.* (1940) *Common Veld Flowers*, Rhodesia Scientific Association. Salisbury.
21. Herklots, G. A. C. (1941) *Vegetable Cultivation in Hongkong.* Hongkong.
22. Clements, J. B. (1942) *Nyasaland Indigenous Timbers*, Nyasaland Agri. Quart. Journ. Vol. II No. 3.
23. Greenway, P. J. (1944–45) *Origins of Some East African Food Plants*, E.A. Agri. Journ. X p. 34–39; 115–119; 177–180; 251–256; XI 56–63. Nairobi.
24. Hutchinson, J. (1946) *A Botanist in Southern Africa.* London.
25. Tothill, J. D. (1948) *Agriculture in the Sudan.* London.
26. Brenan, J. P. M. and Greenway, P. J. (1949) Imp. Forestry Inst. *Check List of the Forest Trees and Shrubs of the British Empire, No. 5, Tanganyika Territory*, Pt. II. Oxford
27. Rangeley, W. H. (1950) Private communication.
28. Topham, P. (1950) Private communication.
29. Greenway, P. J. (1948) *The Pawpaw or Papaya*, E.A. Agri. Journ. XIII pp. 228–233, Nairobi.
30. Topham, P. (MS) *Check List of Trees and Shrubs of Nyasaland.*

Note—Since the type-script of this book was completed *Memoirs of The New York Botanical Garden*, Vol. 8, No. 3 was published in June, 1953.

This publication contains Vegetation of Nyasaland: Report on the Vernay Nyasaland Expedition of 1946 by L. J. Brass and Plants Collected by the Vernay Nyasaland Expedition of 1946 by J. P. M. Brenan of the Royal Botanic Gardens, Kew, and others. Further papers of this section are to be published by the New York Botanical Gardens. It is evident from the Brenan paper that some botanical names used in this book are already out of date.

Abbreviations used in the Text

C	=	ciCewa
E.A.	=	East Africa
G	=	General
G.C.	=	Gold Coast
He	=	ciHenga
Ml	=	Mlanje
Mg	=	Mangoci
N	=	ciNyanja
Ng	=	ciNgoni
Ngu	=	ciNguru
Nk	=	kyaNgonde (Karonga District)
R	=	Rhodesia
S.A.	=	South Africa
Se	=	ciSena
S.R.	=	Southern Rhodesia
Su	=	ciSukwa (Karonga District)
Sud	=	Sudan
To	=	ciTonga
Tt	=	Tanganyika
Tu	=	ciTumbuka
W.A.	=	West Africa
W.I.	=	West Indies
Y.	=	ciYao
*	=	Exotic.

DICTIONARY

1. Abrus precatorius L. (Papil.) Crabs' Eyes.
Kantubwi (Nk), *ulangawiu* (Y).

A much-branched climbing shrub with alternate pinnate leaves, leaflets in 10–15. pairs oblong or obovate, flowers small, white or purple in dense racemes, pods small 4–6 seeded, seeds bright scarlet and black at one end. Common Lake-shore areas.

Leaves pleasant tasting, often eaten raw (Karonga), said to be used as vegetable (E.A.), seeds if eaten whole are harmless but if crushed or macerated are extremely poisonous.

Ref. 17.

2. Acacia albida Del. (Mimos.) White or camel thorn, Apple-ring Acacia.
Nsangu (G), *msangumsangu* (Y).

A majestic tree, 60–80 ft. high with rounded crown and spreading branches, flowers white or cream in spikes, pods yellowish brown when dry, thick, usually spirally twisted. Found mainly below 2,000 ft., gregarious on rich alluvial lands, can be used as indicator of underground water supplies.

Trunks used for making canoes which last two to five years wood is yellowish-white, liable to attack by borers and white ants, used for long pick handles (R) and pestles and mortars. Fruits a valuable stock food. Said to yield a good gum; bark boiled and drunk to cure diorrhoea (Tt).

Ref. 14; 26.

3. A. campylacantha Hochst, ex A. Rich. (Mimos.) African cachechu tree.
Mgongolo (N), *mtete* (G), *mlonga*, *nyungwe* (C), *ntarula* (Nk).

A much-branched tree up to 60 ft. tall with spreading crown and dark grey bark. Found on good fertile lands, an indicator of fertile soil for tobacco and cotton.

Gum yields a good adhesive mucilage suitable for confectionery. The wood is of close texture and capable of taking a good polish; heartwood is infiltrated with resin and therefore more or less proof against borer attack, hard and used for mine shafting and building materials also for tool handles. Roots used for snake bite treatment and as part treatment for gonorrhoea (Tt).

Ref. 7; 14; 15; 26.

4. A. macrothyrsa Harms.
Mnkhumbu (N), *citongololo* (H), *nafungwe* (C), *cinyajuwe*, *cirima* (Y), *cipeta* (N,Y).

A tree up to 45 ft. high with white or brown reticulate bark; pinnae 6–24 with 15 to 50 pairs leaflets, flower heads golden yellow in much-branched panicles, fruits flat, oblong remaining on the tree. Found in *Brachystegia* woodland at 4,000–5,000 ft.

Medicine for diorrhoea made from roots. Leaves cooked as a side-dish. (Ekwendeni.)

Ref. 14; 26.

5. A. nigrescens Oliv. Knob Thorn Acacia.

Mkungu, nkunku (N), *nanyula* (Y).

A tree up to 50 ft. with rounded canopy, bark smooth in some localities and with raised knobs on trunk in others, flowers in long pendent inflorescences, pale yellow very conspicuous in July–August; pods linear oblong. Found commonly in Lake-shore littoral of Karonga District.

Wood very hard and termite resistant.

Ref. 14; 26.

6. A. spirocarpa Hochst. ex A. Rich.

Ncongwe (N).

A flat crowned tree up to 50 ft.; spines up to 4 ins. long, flowers white or pale yellow, globular, pod contorted. Common in rich alluvial soil in dry thornbush country in central Lake-shore littoral of Karonga District.

Bark used for string; pods eaten by cattle, sheep, goats and game, forming main food of cattle in winter period and can support high density of beasts (Mlali area, Karonga District).

Ref. 14; 26.

7. A. subalata Vatke (Mimos.).

Ciseo, namalenga (Y), *ngagaga* (N), *ciwiriri* (Nk).

Shrub or small bushy tree up to 25 ft. with short bole and densely branched rounded crown, stipular spines straight up to 2 ins. long, flowers globular, yellow sweet scented; pods oblong, thick dark brown about 9–14 seeds.

Pods much eaten by game and cattle, together with *A. spirocarpa* forming main food of cattle in Mlali, Karonga District, in the winter months.

Near Fort Johnston the dry pods are used for dyeing cloth. They are pounded and mixed with black *dambo* clay and the mixture plastered on to the cloth. When dry the cloth is washed and found to be dyed black. The roots are also used for dyeing. A decoction of bark and roots is drunk by Masai youths to acquire strength and courage; it has an intoxicating effect and is also used as an aphrodisiac; root used for impotence and leaves in pneumonia cases (Tt.).

Ref. 5; 14; 15; 26.

8. Acalypha senensis Klotzsch (Euphorb.).

Cigaga (C), *nyalisi, nyalisa* (Y, N), *cinyanya* (Y).

A hairy shrub or subshrub up to 6 ft., woody at the base with red-purple flowers. Medicinal for diorrhoea.

Ref. 26.

9. Adansonia digitata L. (Bombac.) Monkey Bread Fruit tree, Baobab tree.

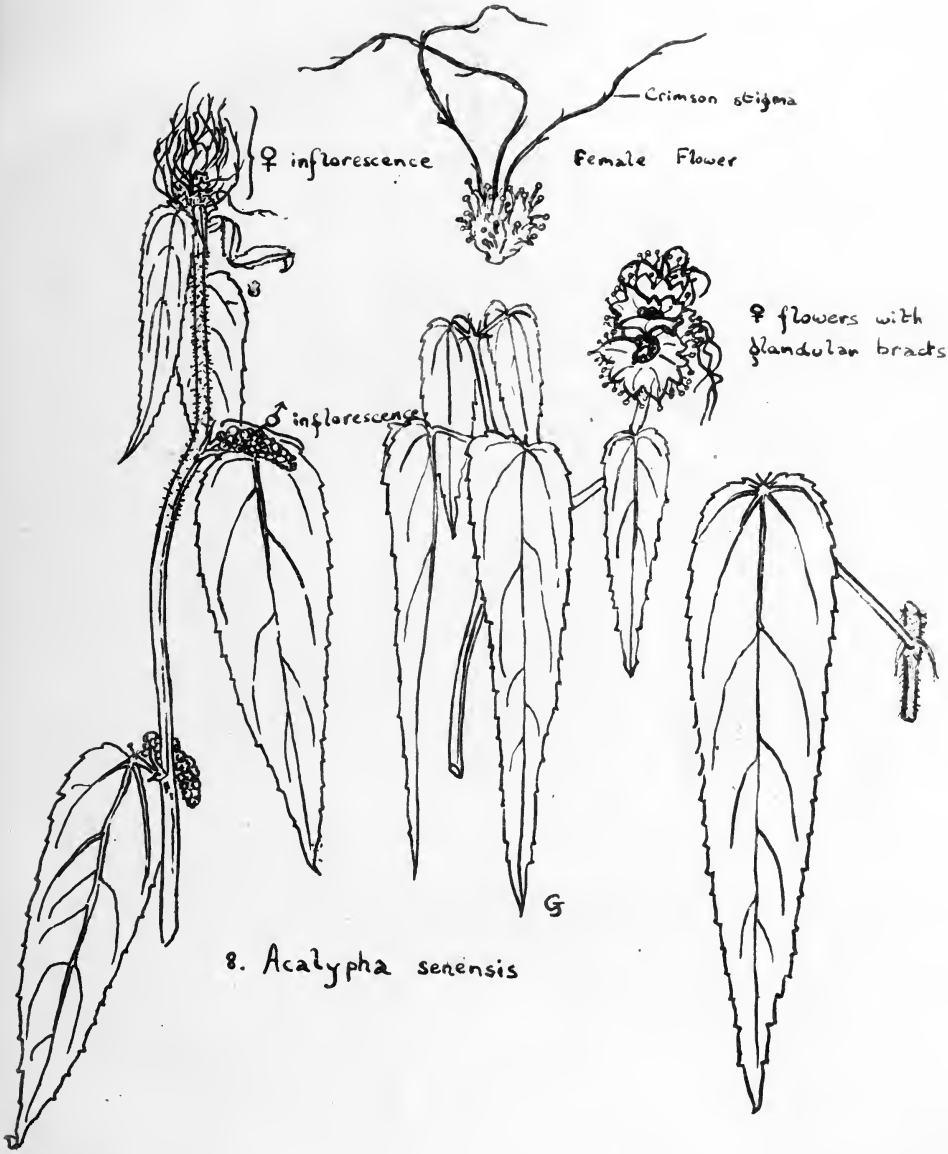
Mlambe (G), *mnambe* (N), *mlonje* (Y).

A tree up to 60 ft. of immense girth and stiff branching habit, it bears large white flowers and hard shelled fruits about 6 ins. long. Found widespread at lower elevations.

Acid pith of fruits is edible and can be used as substitute for cream of tartar for baking powder. The seeds are roasted and used instead of groundnuts to add to side-dishes (Fort Johnston). The scraped seeds and pulp make a good sweet " milk " if pounded and boiled with water.

Leaves are eaten cooked with potashes (Fort Johnston and Dowa Lake-shore). Timber soft and spongy. Many medicinal uses in W. Africa. The bark is used for rope and string.

Ref. 15; 17; 26; 27.



8. Acalypha senensis Klotzsch (Euphorb.).

218. Flacourtia indica (Burm. f.) Merr. (Flacourt.).

10. Adenia cissampeloides (Planch.) Harms. (Passif.).
Mlozi, mdozi (N), *mkuta* (Y), *mulozi* (Tu).

A liane climbing by means of tendrils with greenish-yellow flowers from October onwards. Found widespread in hilly country.

The leaves are used all over the country for a side-dish, the main stems and leaf stalks are thrown away, potashes are not usually needed for its cooking. The leaves are eaten frequently in September and October. The roots are dug and burnt fresh or dried and the smoke used to stupify bees when honey is being taken. The roots are also put round the entrance of huts to prevent snakes entering.

Ref. 7; 16; 26.

11. Adina microcephala (Del.) Hiern var. *galpinii* (Oliv.) Hiern. (Rubiac.).
Mwenya (C,Y), *conya* (N), *mgona* (To), *mugwina* (Su).

Medium to large evergreen tree with wide and straight trunk. Found almost exclusively along rocky stream banks in moister parts of lower mountain and plateau areas.

The wood is beautifully marked, hard and close-grained, not difficult to work but inclined to be short-grained and crisp. Used locally for building purposes of all kinds including bridges and is very suitable for heavy beams where great strength and durability are required. It comes next to *mbawa, Khaya nyasica,* in popularity with the native sawing industry and is the most prized tree for "dug-out" canoes on the Lake. In S.A. the timber is used for wagon construction and to a small extent for furniture. Weight 50–58 lb. per cu. ft. (overdry). The bitter roots are chewed by natives (S.R.) as a cure for colic or drunk in the form of an infusion. Fibrous twigs are used as toothbrushes in W.A.

Ref. 9; 14; 15; 22; 26.

12. Aerva lanata (L.) Juss. (Amarant.).
Cidyonko (C), *mloma wa mbuya* (Port Herald).

A perennial more or less branched herb up to 4 ft. tall with dense spikes of small white or yellow-white flowers. Found often on anthills, widespread.

The leaves are cooked with groundnuts as a side-dish and are used at all times of the year (Kasungu). The dried flowers are used for stuffing native pillows (Tt).

Ref. 17; 26.

13. Afrormosia angolensis (Bak.) Harms (Papil.).
Mbanga, mwanga (G).

Much-branched slender tree growing up to 30–50 ft., with bark flaking off, like that of a plane tree, fruit a small flat winged pod. Found in drier parts of lower mountain and plateau areas.

Has hard and durable timber but somewhat heavy. In fact it is so hard that it twists African axes and is hence left either untouched in native gardens or is deeply ringbarked to kill it. Its wood was used, until quite recently, for making native hoes *gõo* (C), before iron was used or in areas where iron was scarce. The remains of several such hoes that cannot be less than 90 years old have been found on the sites of villages wiped out by the Ngoni in the early 1860's. Used for pestles and at one time was much in demand locally for felloes and naves in wagon construction, very difficult to saw. Used for sleeper and native smelting, also for fuel for tobacco curing (Tt). The most rot, termite and borer-proof timber in Nyasaland. Difficult to burn but once alight burns with a great heat like coal with almost no ash at all.

Ref. 9; 14; 22; 26; 27.

14. Afzelia quanzensis Welw. (Caesalp.) Lucky Bean.

Mpapadende (Tu) (*dende* = cooked dish), *msambamfumu* (C), *mkongomwa* (Y). *mpapa* (Nk).

A fine tree up to 50 ft. often flat-crowned, white flowers and large woody pods containing black seeds with a red or yellow aril. Commonest in woodland on reddish well-drained soils.

The wood is hard and ornamental, has a good figure, works very well and takes a fine polish. Used for furniture and building (Tt.). It also bends well and Africans in S.R. use it for large ornamental drums. Leaves are commonly eaten in the Kasungu, Mzimba and Fort Johnston Districts and possibly elsewhere. They are used in September to December when young and are pounded and cooked with native potashes. They form a mucilaginous product, *thelele*, which is well liked. Chiefs are said to use an infusion of the bark to wash their bodies, hence the Cewa name, *msambamfumu*.

Ref. 17; 22; 26.

***15. Agave sisalana** Perrine (Agavac.) Sisal.

Khonje (N) a name in general use for any string or fibre.

An exotic succulent plant, native of Mexico, with more or less very large, spiny leaves, 5–6 ft. in length. Flowers are produced at about the seventh or eighth year after which the plant dies. Propagation is by bulbils or suckers; the plants reach maturity in three to five years after planting from suckers. At one time grown on a commercial scale in the Southern Province and now elsewhere in the country on a small scale.

An important fibre for ropes, mats, sandals, etc. A smaller leafed species, probably *A. angustifolia*, makes an almost impenetrable hedge even against big game.

Ref. 4; 26.

16. Albizzia adianthifolia (Schumach.) W. F. Wight (Mimos.).

This species has been much confused with *A. gummifera* q.v. and has been collected at Dowa by Greenway, 6369, who records it as a much-branched flat-crowned tree up to 40 ft. tall with very spreading branches, very rough finely reticulate bark, flowers in globular heads with greenish-white petals and crimson stamens. At Dowa it is locally common but scattered in secondary woodland broken by native cultivations on a dark reddish-brown loam.

Exudes a soft dark reddish-brown gum which becomes hard, very dark brown, almost black, on keeping.

17. A. anthelmintica (A. Rich.) A. Brongn. (Mimos.).

Cikololo (Y), *citale* (N).

Small much-branched deciduous tree up to 30 ft. with a rounded open crown and dark grey almost black bark, flowers in dense globular heads, greenish-white often produced when the tree is leafless. Pods narrow oblong, leathery, brown with thickened margins. Found in thornbush country, especially along seasonal rivers and in termite mound clump thickets.

Leaves eaten by stock. The bark is an important anthelminthic and purgative to Africans in Tt.

Ref. 17; 26.

18. A. glabrescens Oliv.

Nsenjere (N, C), *ntangatanga* (G), *cikwani*, *njoka*, (Y).

A much-branched, flat-crowned evergreen tree up to 80 ft. flowers greenish-yellow in dense globular heads, pods flat, oblong, glabrous.

Has a useful and ornamental timber used locally in the past for panelling doors, etc. Used for making native beds (Tt).

Ref. 14; 17; 22; 26.

19. A. gummifera (Gmel.) C.A. Sm. "Flat-crown tree."

Cikwani (G), *ntangatanga* (C), *mpumundo* (Y).

Hitherto this species has been much confused with *A. adianthifolia*, q.v. A medium or large, flat-crowned tree; bark probably usually smooth, pubescent rhachides becoming more or less glabrescent, pods flat papery more or less purple-brown, glabrous or subglabrous, slightly glossy. Found in subtropical evergreen forest, and in open grassland.

The timber is clean, light, soft and straight-grained easily carved into spoons, etc., used for native beds (Tt). It works well and has a golden finish. Weight 23–30 lb. per cu. ft. Used on the G.C. for charcoal. Bark exudes a clear insoluble gum.

Ref. 14; 17; 22; 26.

20. A. lebbek L. Benth. (Mimos.) "Woman's Tongue Acacia."

Mpepe (Y), *mtangamtanga* (G).

A native of tropical Asia and Africa, much-branched deciduous glabrous tree often planted in streets, up to 40 ft. high; flowers greenish-yellow clustered in long stalked globular heads; pods flat leathery and straw-coloured, rattling continuously in a wind hence the common name. Introduced to Nyasaland about 1912 and planted at Kota Kota, found also at Karonga. It does very well on deep soils at the lower elevations and there are few trees that can beat its growth under the right conditions but elsewhere in Nyasaland it does very poorly indeed.

The timber works well and takes a good polish, is highly valued, sometimes called East Indian walnut. Foliage can be used as fodder.

Ref. 14; 22; 26.

21. A. versicolor Welw. ex Oliv.

Nsenjere (C), *ntangatanga* (G), *dululu* (N, Y).

A tree up to 40 ft., with a rounded crown, flowers yellowish-green with crimson stamens in globular heads; pods large, somewhat leathery, reddish-brown, flat. Found throughout *Brachystegia* areas.

Useful and ornamental timber used locally in the past for panelling doors. Soap made from the roots, roots used as anthelminthic, root bark as a purgative and enema (Tt).

Ref. 17; 22; 26.

***22. Aleurites fordii Hemsl.** (Euphorb.) Tung Oil Tree.

A small tree of China growing to 20–30 ft. high, from the seeds of which tung oil is obtained. It has been planted in various parts of the Southern Province but has recently been replaced mainly by *A. montana*.

Ref. 16; 26.

***23. A. moluccana** (L) Willd. "Candle Nut Tree", "Indian Walnut."

An exotic tree of Malaya and the South Sea Islands, up to 45 ft. tall, much-branched; young shoots and leaves with rusty stellate hairs, leaves variable shape ovate and entire or 3–7-lobed and cordate at base. Planted and only found doing really well on the deep soils of the Lake-shore.

Children make imitation lanterns out of banana stems, placing in them a sliver of bamboo on which is spiked a number of the hard, oval, oily fruits, which they set alight and which burn steadily for a short time.

Ref. 27.

***24. A. Montana** (Lour.) E. H. Wils. (Euphorb) "Wood oil tree."

A tree of China from the seeds of which tung oil is extracted. It has been grown for some years on a commercial scale in the Southern Province and is now (1952) being planted extensively in the Northern Province.

Ref. 26.

***25. Allium ascalonicum** L. (Amaryll.) Shallot.

Anyezi (N).

Shallots are grown all over the country, mainly for sale to Europeans, but are being used in increasing amounts, especially in the Southern Province, by Africans. They are cut up and added to almost any kind of side-dish, particularly to leaves of different kinds. The leaves are also used as a side-dish with groundnuts added.

Shallots have a great advantage over onions for native use as they grow easily from off-sets.

***26. A. cepa** L. Onion.

Anyezi (N).

Onions are grown in many parts of the country but not so commonly as shallots. They are used in a similar way to the latter.

Ref. 23.

27. Allophylus africanus P. Beauv. (Sapind.).

Kandula, sangasi, msawasawa, (N), *mtsatule* (C), *mtatu, mtalawanda* (Y).

Usually a shrub 10–12 ft. high, often found in old gardens, glabrous or pubescent, sometimes becoming a tree 30 or more feet high, branching low down; flowers creamy-white in almost catkin-like racemes, sweet scented. Found on Konde Plains by river mouths on north shore of Lake Nyasa.

An infusion of the roots is used as medicine for coughs and colds and is also drunk by women at the time of menstruation.

Ref. 7; 14; 26.

28. A. alnifolius (Bak.) Radlk. (Sapind.).

A much-branched shrub or small tree up to 10 ft. tall, with small white, sweetly scented flowers, fruits small globular.

Leaves used as vegetable (Tt). A native medicine.

Ref. 14; 17; 26.

29. Alternanthera sessilis (L.) R. Br. (Syn. *A. achyranthoides* Forsk.) (Amarant.).

Kandudwa (C), *kambonti* (Nk).

A procumbent and ascending herb growing to 2 ft. or more, flowers very small white. Found widespread at all elevations up to 4,000 ft.

The leaves are edible, they are cooked by the aCewa with the addition of *matsukwa* (water from soaked maize).

Ref. 1; 6.

30. Amaranthus blitum L. (Amarant.) Wild Blite, see *A. lividus* L.

31. A. caudatus L. Love-lies-bleeding.

Ndangale (N), *ntatasika* (Y), *bondokhotwe* (Tu), *bonde, nyampamba* (Nk), *ndewere* (?).

An annual herb, erect up to 3 ft. tall with large narrow elliptic leaves and numerous spikes of small chaffy-yellowish or red flowers arranged in a dense terminal panicle.

The young reddish leaves are cooked as side-dish without potashes, groundnuts and tomatoes are added. The product is well liked. The leaves are known to be used commonly in both the Mlanje and Karonga Districts and are eaten occasionally in Fort Johnston District (Lake-shore).

Ref. 17; 23.

32. A. lividus L. (Amarant.) Wild Blite.

Bonongwe (N, Y), *enyewe* (Ngu), *bowa* (Se), *mberekete* (Tu), *bondwe* (To), *nteke, ufyongolomya* (Nk).

There appears to have been much confusion over the correct specific identity of some of the *Amaranthus* found growing in tropical Africa; recently all the specimens in the East African Herbarium named *A. blitum* L. have been reidentified as *A. lividus* L. by Dr. Suessenguth an authority on the *Amarantaceae*.

A glabrous much-branched small annual, rarely more than 15 ins. high; leaves up to 2 ins. long; many very small flowers in the axils of the leaves; fruit is small. Found widespread, a weed of waste ground and cultivated land.

The leaves are edible and are commonly used for side-dishes all over the country. They are soft and do not need soda or potashes, the cooked product is sweet tasting and much liked. Groundnuts improve the dish but the leaves are palatable without them. The leaves are available all the year where water is abundant.

***33. A. polygamous** L. Indian spinach.

An erect annual similar in appearance to *A. lividus*. It was tried out at Mwera Hill in 1940 and found to be little if any improvement upon the latter as far as yield and palatability of leaf are concerned.

34. A. spinosus L. Spiny Pigweed.

Ntatasika (Y). Other native names as for *A. lividus* L.

An annual herb growing to 3 ft., leaves are long petioled, blade 2–3 ins. long with two stipular spines in the axils of some of the lower leaves. Flowers in cylindrical spikes. Found as a weed of cultivated ground and waste places widespread throughout the country.

The leaf is edible and cooked in a similar way to *A. lividus*. The whole plant is often burnt and its ash used to mix with snuff and for the cooking of leaves.

Ref. 1; 6.

***35. A. tricolor** L. (Amarant.) Chinese spinach.

An erect annual with small leaves, similar in appearance to the native *A. lividus*. It was tried out at Mwera Hill (1940) and was found to be little if any improvement upon *A. lividus* as far as yield and palatability of leaf are concerned.

***36. Anacardium occidentale** L. (Anacard.) Cashew nut.

Mbibu (C), *msololikoko* (Y), *nkoloso* (Nk).

Native of tropical America; a much-branched tree up to 20 ft., with alternate evergreen leathery leaves, flowers small white in terminal panicles, fruit apple-like, from the end of which the grey-skinned nut projects. The apple is very juicy and

the tissue surrounding the kernel of the nut contains a very acrid oil. Found planted in the Lake-shore areas of Kota Kota, Karonga and Fort Johnston.

The kernels are eaten roasted or are pounded and added to side-dishes (Karonga). Raw spirit, *kacasu*, is distilled from the fermented juice of the apple. The oil extracted from the seeds has a preservative action *e.g.*, on fish nets. The juices from the fruit are used for tattooing (Tt). Young shoots and leaves are eaten in Perak.

Ref. 17; 19; 23; 26.

*** 37. Ananas comosus** (L.) Merr. (Bromel.) Pineapple.

Nanasi, cinanàsi (N).

Native of tropical America; the fruit is grown both for sale to Europeans and for local consumption. It seems to do well at all elevations particularly in Nkata Bay District. It grows readily from side shoots.

Ref. 23.

38. Anisophyllea sp. (Rhizophor.).

Macilikiti (N), *mahota* (Ng).

A tree with red edible fruits about 1 in. in diameter. (Mzimba).

39. Annona chrysophylla Boj. (Annon.) Wild custard apple.

Mposa (Y,N), *muroro* (Tu), *mponjela* (Y).

A spreading shrub or small tree growing to 15 ft., with large alternate oval softly pubescent leaves and inconspicuous green flowers, solitary in the axils of the leaves, fruits roughly spherical, yellow to orange somewhat fleshy. Found commonly all over the country at levels below 4,000 ft.; grows best where water is readily available.

The fruit is edible "considered the best of indigenous fruits in parts of tropical Africa, of an apricot flavour when ripe". Rope is made of the bark. Used as cure for pneumonia and various other diseases.

A dwarf form is recorded in which the plant is so small that the fruits grow literally on the ground, its fruits are said to be better eating than *A. chrysophylla*.

Ref. 1; 6; 7; 9; 12; 27.

*** 40. Annona** spp. Bullocks Heart; Custard Apple.

These exotic fruits are surprisingly common in villages where someone has troubled to plant a few trees. Generally speaking, they seem to do well only at the higher elevations above about 2,500 ft., but they occur also on the Lake-shore.

Ref. 27.

41. Anthericum sp. (Liliac.).

Shawawa, syawawa (name applied to many small swollen roots resembling groundnuts).

A perennial herb growing to 1 ft. high with numerous roots the terminals of which are swollen to the size of cherries.

Eaten by boys. (N.A. Kaluluma's area, Kasungu.)

42. Anthericum sp.

Kaluwatete (C).

A perennial herb with grass-like leaves, flowers $\frac{3}{4}$ ins. diameter, pinkish-brown outside, white inside.

The flowers are cooked as a side-dish. (Ekwendeni, Mzimba District.)

43. Anthocleista zambesiaca Bak. (Logan.) Cabbage tree.

Nguonguo (Y, N), *nkungubwi* (N), *mgolya* (Tu).

A tall slender tree with a crown of very large leaves at the apex, leaves evergreen, blade 18–30 ins. long, oblong, ovate.

Timber soft, useful for boxes.

Ref. 9.

44. Antidesma venosum E. Mey. ex Tul. (Euphorb.).

Mpungulira (N, Y, C), *mdundira*, *mpululu*, *mdyapimbwa* (Y), *cidiapumbwa*, *cidiafumbwa* (N), *sirika* (To), *kamanena* (Nk).

Much-branched small tree up to 30 ft., leaves more or less elliptic, alternate, simple, hairy below, male and female flowers greenish-white borne in spikes and axillary racemes 5 ins. long. Flowers in November and forms small yellowish-red fruits in December. Found at Lake-shore levels.

The fruits are edible, they are sweet, slightly acid tasting, and used for fish bait. An infusion of the roots mixed with others is used as cure for *khunyu* (C), epilepsy (?); and for colds and coughs, roots toxic and used in magic (Tt.).

Ref. 1; 7; 9; 12; 15; 26.

45. Apodytes dimidiata E. Mey. (Icacin.) Pear wood.

Lifefe (N, Y), *mzaza*, *mtututu*, *zuzuma* (Tu), *cimila*, *msuwi* (Y), *msusumba* (C), *mtibulo* (Mg), *katole*, *mnyembedwe*, *mcima* (N).

A much-branched evergreen shrub or tree up to 50 ft., with alternate leathery, long-stalked leaves, flowers small yellow-green in much-branched panicles at the ends of the branches, fruits small black berries. Found widespread at all elevations.

Wood even-grained and dense. It is greatly prized in S.A. for felloes in wagon construction, but it is also used for railway trolley work and to a small extent for turnery. It works without difficulty and to a fine finish. Weight 41–65 lb. per cu. ft.

Ref. 17; 22; 26.

***46. Arachis hypogaea** L. (Papil.) Groundnut, peanut.

Ntedza, *nsawa* (N), *ntesa* (Y), *manduwi* (Ngu), *syaba*, *matewere* (Tu), *mbalala* (To), *masyawala* (Nk).

An exotic from Brazil; a small annual trailing plant remarkable for its habit of burying its seedpods in the ground to ripen. It has a yellow pea-like flower. Believed to have reached Nyasaland from the Congo, via the Yao traders, and not up the Zambezi via the Portuguese.

Methods of Preparation:—

(1) *Nsinjilo*, *thendo* (N), *ndwelo* (Y), *kipomi* (Nk), *tendelo* (Tu). The nuts are lightly pounded and added to almost any kind of side-dish, particularly to leaves. They are also added to vegetables such as okra, egg fruit, green pawpaws and tomatoes and to almost any kind of edible fungi (*bowa*). If plentiful they are used in about the proportions of one part shelled nuts to three parts by weight of vegetable. They are added during the last few minutes only of cooking and are well stirred in. This is by far the most important use that is made of groundnuts by Africans in Nyasaland.

(2) Occasionally the nuts are boiled alone to serve as a side-dish or are boiled mixed with cowpeas.

(3) The nuts are roasted and then pounded with salt until a fine powder results. The mixture is then pressed into a cake which if left becomes very hard and can be stored for a considerable time. In this form it is known as *cibwandila* or *ciponde*

and serves either as side-dish or an extra food. This is a particularly convenient form of a sustaining food to take when going on a long journey. When needed a little is mixed with hot water and is ready to eat as a side-dish.

(4) The fresh nuts are boiled in their pods until soft. The kernels are then eaten as an extra food, *makata* (N), *cuwa* (Nk).

(5) A milky extract is made from the nuts by allowing water to percolate slowly through a pounded mass of them held in a sieve. The liquid is passed through several times and finally the nuts are given a thorough squeeze to extract as much liquid as possible. The milky liquid, *tuwe* (Kota Kota) is added to a variety of dishes such as boiled rice when the product is known as *msere* and is much liked.

(6) The nuts are well pounded in a mortar several times until they form a fine meal. The meal is then boiled with water for five to ten minutes and salt is added. It has now the consistency of thick pea soup and is eaten as a side-dish with porridge. In this form it is known as *thendo* (N), *dowe* (Tu,C), *citukule* (Y).

(7) Pounded groundnuts are added to mashed sweet potatoes or bananas to form a very popular food known as *futali* (Kiswahili). Bananas cooked with groundnuts are known as *mbaraga* by the Konde in Karonga. Pounded groundnuts added to mashed bananas makes one of the several forms of *mamboga*, the dish used by the Mohammedan Yaos in Fort Johnston to " break " their fast during the month of Ramadan. A thin gruel of maize flour is usually drunk at the same time as eating *mamboga*.

(8) Where finger millet is common a gruel from its fine flour is made and then pounded groundnuts are added. The product is known as *bala la nsawa* and is a popular sweet drink (Mzimba District).

(9) In the Mzimba District, groundnuts and maize flour are pounded together in a mortar, the mixture is then made into flat cakes which are boiled. They are known as *mikate*. (See also *Musa sapientum*.)

(10) Groundnut oil is much liked to add to many kinds of side-dish but it is little used in the villages except where nuts are very plentiful. It is bought to a considerable extent in towns.

Some men own primitive presses to extract the oil but still much is prepared by women. In the Southern Province, women crush the nuts in a mortar, not by a direct stroke as when pounding maize, but by twisting the stick against the side of the mortar. When sufficient oil has collected it is removed to a suitable container with the aid of a feather. After extraction of the oil, the residues, known as *cigonga* (N), are often used instead of whole groundnuts to add to side-dishes. In Karonga District women pound the nuts and then leave them to dry for some hours. They then squeeze the pounded mass on a stone and at the same time pour water, little by little, over it. The oil drips into a cup held in a suitable position. The groundnut cake is usually thrown to the fowls during times of plenty.

(11) Where there is great scarcity of side-dishes the leaves are cooked (Dowa foothills). They are tough and so need strong potashes to soften them, groundnuts and tomatoes are added.

Storage of the Nuts. (Native methods).

Kota Kota District. The nuts are left exposed to the sun for one to three months to reduce their moisture content and enabling closer storage, otherwise they would go mouldy, either on a stand made specially for the purpose or in a large basketwork frame placed on the top point of the hut roof. They are then stored in a small bin about 3 ft. high which is well plastered with mud.

Port Herald. They are stored on the top of the other grain on a stand in the hut. The stand is so built that a fire can be kindled underneath it from time to time.

Karonga District. (Misuku Hills). A basket is made about 3 ft. high of a conical shape. It is plastered with a mixture of mud and cow-dung and an earthen-

ware pot is inverted into the narrow neck and well plastered in. Mud and dung plastered groundnut containers prevent rats from entering and eating the nuts.
Ref. 23.

47. Argemone mexicana L. (Papaver.).
Mkumajalaga (Y).

A weed from America now naturalized, a prickly glaucous erect annual herb with yellow juice, leaves more or less embracing the stem, pinnately lobed with white midrib, flowers bright yellow, capsules smooth or bristly 3–4 cm. long. Found on the Fort Johnston District Lake-shore. The seeds are narcotic and are used to make native beer more intoxicating (Tt).

The leaves are cooked with potashes to soften them, pounded groundnuts are added and the product is well liked. Sometimes it is a little bitter particularly if grown in dry places.
Ref. 7; 17.

48. Arthrosolen sp. (Thymel.).
Kazinda (C).

A perennial herb about 1 ft. high, stem densely clothed with narrow leaves $\frac{1}{3}$ in. long, flowers bright yellow in a head. Found in grassland at 4,000–5,000 ft.

The leaves are cooked with potashes and form a slimy product, *thelele* which is well liked and is much eaten in some areas (Kasungu), it is also used in the Misuku Hills of the Karonga District.

49. Arundinaria alpina K. Schum. (Gram.) Mountain Bamboo.
Nsungwi (N), *mlasi* (Y), *musyombe* (He), *lulasi* (Nk) (all general names).

A bamboo growing gregariously with stems up to 40 ft. tall. Found between 5,000 and 8,000 ft. altitude, used for hut building and general wicker work.
Ref. 14; 17.

50. Asparagus sp. (Liliac.).
Katsitsimzukwa (N).

A herb growing commonly in the undergrowth of forests.

Roots used in native medicine.

51. Aspilia kotschyi Benth. & Hook. f. (Compos.).

An erect branched scabrid annual up to 4 ft. tall, leaves opposite, flowers dark purplish, solitary or few together in short stalked heads.

Used as a medicine for colds (Kasungu).

52. Astragalus abyssinicus Steud. (Papil.).
Nacilare (N, C).

A herb with erect stem growing 3–4 ft. high, sparingly branched, leaves compound, 2–8 ins. long with 10–15 pairs of leaflets, flowers bright yellow in large dense racemes, pods small somewhat papery.

The leaves are eaten cooked as a side-dish sometimes mixed with *mnadzi* (*Solanum nigrum*) and are known to be eaten occasionally in the Kota Kota, Dedza and Ncheu hill areas.
Ref. 1; 5.

***53. Bambusa vulgaris** Schrad. ex Wendl. (Gram.) Feathery or Golden Bamboo.
Nsungwi (N), *mlasi* (Y), *musyombe* (He), *lulasi* (Nk), (All general names).

Native of tropical Asia, growing in a dense clump with green or yellow and green-streaked unarmed stems up to 50 ft. tall. Planted in villages along the Lakeshore and also in the Misuku Hills in the Karonga District.

Used for building purposes and for pig fences.

54. Basella alba L. (Basell.) Ceylon spinach.

Mndele (C)

An erect herb with glabrous ovate or cordate, succulent leaves, clusters of small globose fruits with hard central seed surrounded by red, white or black fleshy tissue.

There is a plant, which is believed to be this, growing in the Kota Kota Hills near Cintembwe D.R.C.M. under the name of *mndele* (C) but it does not seem to be known in the rest of the country.

A variety from India, *Pooye Sag*, obtained from the E.A.A.R.S. at Amani was grown at Mwera Hill. It grew well under irrigation during the dry season but died out during the rains.

The leaves are edible and of good flavour when cooked.

Ref. 6.

55. Bauhinia fassoglensis Kotschy (Caesalp.).

Mphandwapansi (C), *mpandopansi* (N, C), *mpandakwaya* (N), *mkulumu* (Y).

A climbing woody plant, usually trailing over the ground, with a very large swollen underground stem which may grow to a depth of 8 ft. or more and which makes the plant difficult to eradicate; leaves bilobed kidney-shaped and measuring 2 to 4 ins. across, large light-yellow flowers in many flowered racemes, in flower from December for several months. Found widespread at elevations of 3,000–4,000 ft.

The pods are edible. They are usually eaten raw but when dry they may be cooked. They do not serve as a side-dish. Children are advised to eat the pods because they are supposed to be good for the stomach. Pods are also much sought after by elephants (Tt).

Ref. 1; 5; 12; 26.

56. B. petersiana C. Bolle (Caesalp.).

Mpando (C, N, Y), *mpandula* (N, Y), *muauwa*, *muuwa* (Y), *mpapa* (Nk).

A shrub or small tree with a climbing tendency, leaves kidney-shaped, flowers in racemes, handsome white or pink, pods large and woody. Widespread and in the Kota Kota area populating open pans where tsetse flies congregate to breed.

Ref. 27.

57. B. thonningii Schumach. See *Piliostigma*.

58. Bersama abyssinica Fresn. (Melianth.).

The following are considered to be forms of the above:—

B. maxima Bak.

Mkanga (C), *mblaka*, *ciwindu* (Y).

A large tree; widespread.

The leaves, together with those of sweet potato, are used as a cure for swelling of the legs. The leaves, together with the roots and bark of various other plants, are burnt and rubbed into an incision to cure headaches.

B. zombensis Dunkley.

Mcinji (Y), *nakatimba* (Mg).

Timber said to be useful.

Ref. 14.

***59. Beta vulgaris.** (Chenopod.) Beetroot.

A native of Europe ; grows well at all elevations. The leaves make a good side-dish and are much preferred to the roots by Africans. Like spinach beet the plant will live for two or more years.

***60. Beta vulgaris.** (Chenopod.) Spinach Beet or Swiss Chard.

A herb which produces a succession of large leaves with thickened green or white midribs. The plant does not seem to seed freely, if at all, in this country, but owing to its large tap root can survive for several years.

The leaf is edible, it cooks quickly and is of good flavour. The midribs are tougher and make a good vegetable if cooked separately. The leaves are well liked by Africans but unless it can produce seed in this country it is unlikely to be widely grown.

61. Bidens pilosa L. (Comp.). "Black Jack".

Cinomba, canonga (N), *kanzota, kaliputi* (C), *cisosoci* (Y), *namulepo* (Ngu), *chisokono* (Tu), *kabata* (Tu, To), *kapuninga* (Su).

An erect annual up to 5 ft. high, stem and branches quadrangular, leaves ovate mostly pinnately lobed, disk florets yellow, ligule of ray florets white, fruiting heads of black barbed achenes which cling tenaciously to clothing, etc. Extremely widespread, a weed of cultivated and waste ground.

The leaves are in very common use all over the country as a side-dish. When young, the whole shoot is cooked, while of older plants the leaves only are used. Potashes are not added, groundnuts and tomatoes are used when available. The cooked product has an unpleasantly aromatic taste and is not much liked. However, because of its abundance and the ease with which it is cooked, it is frequently eaten throughout the year. The leaves are often dried for use in the dry season.

Ref. 1; 7.

62. B. schimperi Sch. Bip.

Mbilidzongwe (C), *masanjala* (Y, N).

A herb growing up to 6 ft. tall with large yellow daisy-like flowers, leaves pinnate and deeply indented, often tripartite. Very common on old cultivated ground and is conspicuous as large yellow patches on the hill-sides during April and May.

The young shoots are cooked as a side-dish from December until March. They are broken up into small pieces and often cooked together with *Bidens pilosa*. The product is very bitter and is not liked and is only eaten when there is shortage of other side-dishes. Known to be eaten in the Kasungu, Kota Kota, Lilongwe, Ncheu and Mlanje Districts.

Ref. 1.

***63. Bixa orellana** L. (Bixac.) Annatto.

Kurri (G).

A much-branched small tree, native of tropical America, up to 25 ft. tall with alternate leaves and showy pink or rose flowers in terminal panicles, fruit a bright red softly spiny 2-valved capsule containing numerous round seeds covered with an orange powder. Cultivated as an ornamental shrub or as a hedge plant, grows well in the Lilongwe Hills at Mkhoma and in the Mzimba Hills at Livingstonia, also at the Lake-shore.

The powder covering the seeds is used as a dye for edible products such as butter and cheese. It is not a fast dye for cotton.

Ref. 17; 26.

64. Bombax stolzii Ulbr. (Bombac.).
Mtonjemanga (N), *ntumbati* (Nk).

A large tree 35–100 ft. high with loose rounded crown; fruits about 3 ins. long splitting on the tree to expose a reddish-brown floss; commonly planted in Karonga District for the floss which is used for stuffing cushions, etc.

Ref. 14; 26.

65. Borassus aethiopum Mart. (Palm.) Deleb palm, Palmyra palm.
Mvumo (G), *makoma* (To, He), *mkamu* (Tu).

A palm with a solitary slightly bottle-shaped stem up to 60 ft. tall, crowned with a head of large fan-shaped leaves, fruits large brown globular about 8 ins. diam. Said to fruit only after the bulge is reached and dropping only at night. Common in the Mzimba District and Fort Hill and in certain areas of the Luangwa Valley, few on the Lake-shore except at Monkey Bay and Salima.

Fruit much liked by elephants who prefer the hot fermented fruits that have laid on the ground for some days, they are said to chew the fruit spitting out the seeds. The fruits ripen in October–November, their seeds being surrounded by a bright orange fibrous juicy pulp which is also much liked by Africans who will go a long way to collect them.

The fruits are sprouted by covering a number of them in a pit, they sprout quickly and are ready to eat in about two weeks. The sprouted seeds are called *mselema* (Salima), See also *Hyphaene* spp. The leaves are sometimes used to make mats, but these are not so strong as those made from *Hyphaene* spp. The trunks and leaf stalks make good poles for roofs, etc.

Ref. 17; 22; 26; 27.

66. Boscia sp. (Capparid.).
Musaza (*cimwembe*), *mpetu* (C), *mudhlakono* (Ng).

A tree often found on stream banks.

The leaves are cooked as a side-dish (Misuku Hills, Karonga District). The roots are very popular to wear as love amulets and hence many trees die because their roots have been cut.

67. Brachystegia (Caesalp.).

This genus is represented by quite a number of species in Nyasaland and the identification of some of them is not easy, while their native names are many and very confused.

The genus consists of evergreen shrubs to deciduous trees up to 60 ft. tall, some with flat crowns; their leaves are pinnate the leaflets varying from very small to 1–2 ins. in size and arranged in 2–3 to many pairs, some when young are a beautiful red colour in September and October. The flowers are greenish, small, inconspicuous, arranged in racemes, spikes or even small panicles to be followed by hard flat woody pods that frequently dehisce with an explosive sound when the hard, flat, roundish-in-outline, brown, seeds are ripe.

The following are some of the more common species met with:—

68. Brachystegia bussei Harms (Caesalp.).
Mtwana (Y), *mseza* (C), *musumbu* (He), *ntudzu* (To).

Tree up to 50 ft. with rounded crown, young leaves bright red, turning bright or dark green.

Characteristic of low lying slopes with stony eroded soil but is found as high as 5,000 ft.

The trunk exudes a dark-brown coloured substance which is extremely adhesive and is used for bird lime (*ulimbo*). The fruits if pounded also give a strong bird lime. The wood is said to make very strong hoe handles and is used for plywood. An infusion of the roots and bark is used for stomach disorders.
Ref. 14; 26.

69. B. longifolia Benth.
Form A with pubescent leaves.
Mtambo (Y), *bobvu mombo* (C).
Form B with glabrous leaves.
Njombo, *mkukwe* (Y), *mombo* (N), *citowe* (Tu), *ciombo* (He).

Tree up to 50 ft. with spreading crown, flat or rounded, young leaves salmon-pink to blood-red turning green or bluish-green.

Characteristic of leached quartz sand on hills from the Lake-shore up to 5,000 ft.

A bark cloth known as *nyanda* or *ciwondo* was made as recently as 1918 and in out of the way places is still being made. The bark was stripped, soaked and beaten out. Blankets were made by sewing several strips together. The bark is used for making ropes.
Ref. 5; 14; 26.

70. B. spiciformis Benth. (Syn. *B. randii* Bak. f.)
Mpapa (Y), *cumbe* (N).

A very common tall and straight tree up to 50 ft., crown flat or sometimes rounded, giving the glorious red colour to the bush in the spring. The opening leaves are bright pink, they turn to red-brown and finally glossy green. Leaves alternate with 3–4 pairs of leaflets, flowers produced with the leaves, and are strongly scented hanging in tassels, fruit a flat pod splitting with some force and scattering the seeds when ripe. Common on isolated areas throughout the Lilongwe plain.

Used for poles which are not borer-proof. The smooth inner bark is used for binding purposes and for thatching twine. Decoction of the bark used as an eyewash for conjunctivitis; wood useful for sleepers, cross-grained hard to plane (Tt).
Ref. 9; 14.

71. B. tamarindoides Welw. ex Benth. Mountain Acacia, Redwood.
Musani (To, Tu).

A noble tree up to 40–60 ft. with umbrella-shaped crown, pale grey fairly smooth bark, graceful feathery semideciduous foliage showing marked sleep movements, flowers small greenish-white. Common in Mzimba District on poor soil.

Timber is valuable, reddish-brown and twisted so must be cross-planed, used for wagon hubs, naves and for building purposes (S.R.).
Ref. 9; 14; 26.

72. B. woodiana Harms (Caesalp.) "Prince of Wales Feathers."
Mombo (N), *njombo* (Y), *ciombo* (Tu).

A fair sized tree with rugged bark, highly ornamental with its fern-like hanging leaves which are a deep pink colour in spring, flowers in compound racemes in axils of leaves and produced with them.

Timber used for poles. Inner bark used for binding and for twine.
Ref. 9; 14.

***73. Brassica chinensis** L. (Crucif.) Chinese cabbage.
Tanaposi, *mpiru* (N).

There are a very large number of different kinds of Chinese cabbage, a native

of Eastern Asia; some form compact hearts and other loose heads. All of them bear bright green leaves of a soft texture like lettuce. One of the varieties is widely grown in the country, particularly in the Southern Province and in the hill areas of the Dedza and Ncheu Districts. The plants are grown from seed and do well when planted in May (Ncheu) and in good soil bear freely until October or November. The kind grown is a loose-headed type which bears large slightly fluted leaves, and as it grows during the period of great scarcity of other leaves, is of particular value. If on poor soil or if allowed to dry out, the plants seed very freely without producing any good leaves.

The leaves cook quickly without potashes to form a soft good flavoured product. Groundnuts and tomatoes are added if available. The leaves have a ready sale at various markets.

***74. B. juncea** Coss. Indian mustard.

Mpiru (N), *mbumbi* (Y), *kanganje* (Tu, To).

A native of India, an erect herb up to 3 ft. or more tall, leaves small, flowers yellow. A weed of cultivated ground and also cultivated. In the north a type is grown which has thick blue-grey cabbage-like leaves which may be an escape from cultivation. Fairly widespread.

The leaves are cooked as a side-dish. They are broken into small pieces and cooked without native potashes. They are often mixed with *mnadzi* (*Solanum nigrum*) or *luni* (*Gynandropsis gynandra*). The dish is much liked especially by the Ngoni. The leaves are also dried as *mfutso*. The seeds are used for oil (Fort Johnston). They are roasted, pounded and boiled with water. When cold, the woman preparing the oil puts one hand into the pot, the oil adheres to it and on withdrawal the oil is rubbed off with the other hand into a container. The oil is used to anoint the skin and to add to side-dishes.

***75. B. napus** L. var. **esculenta** DC. Swede.

Swedes were grown for several years at Mwera Hill at an elevation of nearly 5,000 ft. from 1940 onwards and did very well. They continued to bear leaves for several years when left undisturbed. The leaves are large and have an advantage over turnip leaves in that they are far less prone to insect attack.

The leaves are of more value for the African than the roots. The former make a good side-dish and do not need potashes or soda to soften them. The roots may also be used for a side-dish. They should be well boiled and then mashed with pounded groundnuts added to them. The mixture is palatable and is said by Africans to resemble cooked cabbage. Yellow-fleshed types of swedes are to be preferred from a nutritive point of view.

***76. B. napus** L. var. **oleifera** DC. Rape.

This Indian plant grows easily either from seeds or cuttings and produces a thickened underground stem from which arise abundant leaves. If kept well plucked it will continue to bear for several years without forming seeds. It does best at high elevations but can be grown as low as Lake level.

The leaves are used as cattle feed in many countries but if picked, when still fairly young, they make a very palatable side-dish with added groundnuts and tomatoes. Soda is not required for young leaves. The leaves resemble those of the turnip or Chinese cabbage in that they have a slightly "hot" taste and hence are well liked by Africans.

***77. B. oleracea** L. var. **bullata** DC. Cabbage.

Kabici (N).

A cultigen of Europe and Asia; cabbages are too well known to warrant description. They can be made to grow well at all elevations but do best at higher

levels. Green-leafed types such as the Savoy, are to be preferred to the white-hearted kinds from the nutritive point of view. Some types form good hearts when grown from side shoots.

The leaves are cooked for a side-dish and are very popular once the consumers have become used to the characteristic flavour. In native practice the cooking water is almost invariably retained, hence the product has rather a "strong" flavour and needs the addition of groundnuts and if possible tomatoes to improve the taste.

***78. B. oleracea** L. var. **acephala** DC. Kale; Borecole.

A cultigen of Europe; there are a large number of kales which produce abundant leaves along the length of the stem instead of forming a compact head. Four types were tried out during 1940/42 at Mwera Hill as follows:—

(*a*) *Marrow-stemmed.* A variety used in many countries as a cattle feed, if left uncut it will grow to a height of about 5 ft. producing very thick stems and abundant offshoots.

(*b*) *Thousand-headed.* This type is also used as cattle feed. As its name implies, it branches very freely but except for its thinner stems is scarcely distinguishable from narrow stemmed kale.

(*c*) *Cottagers' kale.* This is a smaller kind sometimes with purplish leaves, often grown in European countries as a winter green stuff. It produces a succession of soft good-flavoured leaves.

(*d*) *Scotch or curly kale.* Another smaller kind only differing from Cottagers' in the much crinkled appearance of the leaves.

All types grow easily from cuttings, a valuable character from an African point of view. All will survive with little care for several years and if kept well cut back will continually produce new side shoots with young tender leaves. Types (*a*) and (*b*) if left uncut form very large rank tasting leaves too tough for human consumption.

The young leaves of all kinds make a good side-dish with added groundnuts and tomatoes. Older leaves need soda or potashes to soften them. As an indication of their acceptance by the African, women came almost daily during 1941/42 from considerable distances to exchange maize bran for the leaves. This was when other kinds of side-dishes were very short during August to November in the Kota Kota Hills.

The kales do best at high elevations but with reasonable care can be made to flourish down to Lake level.

79. Bridelia micrantha (Hochst.) Baill. (Euphorb.).

Mpasa (C), *kapasa* (C, fruits), *msopa* (Y), *mlewezi* (To).

A tree growing to 50 ft. with dense widely spreading head, branches occasionally spiny, leaves are ovate, alternate, flowers small in axillary clusters appearing from September–October, fruits small oval black berries, ripening in December to February. Widespread in moister parts of lower mountain and plateau areas.

The fruits are sweet with a taste similar to black currants, they are eaten mainly by children. The timber is durable and the heart wood is said to be termite-resistant. The wood is bronzy-brown, mottled of great lustre, suitable for fence posts and furniture. The bark has medicinal properties and makes good charcoal. It is the chief food and host plant both in Nigeria and Uganda of the wild silkworm and has been cultivated for this purpose, grown either from seed or cuttings. The silk yarn is brownish in colour and is woven mixed with cotton.

Ref. 1; 9; 12; 14; 15; 16; 22; 26.

80. Burkea africana Hook. (Caesalp.) Rhodesian Ash.

Mkalati (N, Y, C), *kalinguti* (To), *kawidzu*, *kabidzu* (Tu).

A tree varying in size, depending on locality, attaining 50 ft., bark rough grey, leaves deciduous, alternate bipinnate, flowers in simple or branched spikes, sweet scented, white, pods small flat, one-seeded hanging in clusters. On heavier soils and sands of lower foothills.

Timber yellow with a dark heart, fairly resistant to ants and borers, heavy hard and compact and has small shrinkage; after seasoning is extremely hard to work. Used for furniture, wagons, poles, etc. Wood was formerly the only fuel permitted by custom in iron smelting in S. Nyasaland and is still so used in Rhodesia. Bark yields a gum of fairly good quality and is also used medicinally as an aphrodisiac.

Ref. 9; 14; 15; 22; 26; 27.

***81. Caesalpinia decapetala** (Roth) Alston (Caesalp.) Mauritius Thorn.

Mlunguzi (C, Y), *lunguzi* (G), *kapitagwilere* (C, Mkhoma).

A scandent thorny shrub or liane, native of India, pinnae in about six to ten pairs, leaflets almost symmetric oblong to oblong elliptic, flowers yellow in simple racemes, pods brown somewhat woody and recurved with the upper suture dilated into a narrow wing. Found in the Kota Kota and Lilongwe Districts.

A live hedge plant, makes an impenetrable barrier; often planted round kraals where, unless kept well in check, it flourishes to such an extent in the rich soil that it tends to fill the entire kraal, does not do well on poor land, best grown from seed. It is so thorny that it can best be likened to barbed wire.

Ref. 14; 26.

82. Cajanus cajan (L.) Millsp. (Papil.) Pigeon pea.

Nandolo (N), *mbelemende* (Y), *epweri* (Ngu), *mbwete* (Se), *mbenge*, *nyandolo* (Tu), *mtambe za miti* (To), *imbange* (Nk, Su).

A shrub growing to about 6 ft., characterized by thin straight branches and small trifoliate leaves. It bears yellow flowers and pods, 2–3 ins. long containing small yellow or grey pea-like seeds. It is prone to various insect pests hence in many parts of the country is grown each year from seed although it will continue to bear under favourable conditions for four or five years or longer. The plant resists drought well.

The peas are cooked in a variety of ways and are eaten either fresh or dried. The young seeds when boiled make an excellent vegetable for European use.

The following are the more important ways of preparing the peas:—

(*a*) Boiled in their skins as a side-dish.

(*b*) Mashed with their skins removed as *cipere*, they are preferred in this form as the skins are slightly acrid tasting.

(*c*) Boiled with whole maize.

(*d*) The very young pods are cooked with the help of potashes, pounded and t matoes are added and the mixture forms a side-dish (S. Province).

Cooking Times

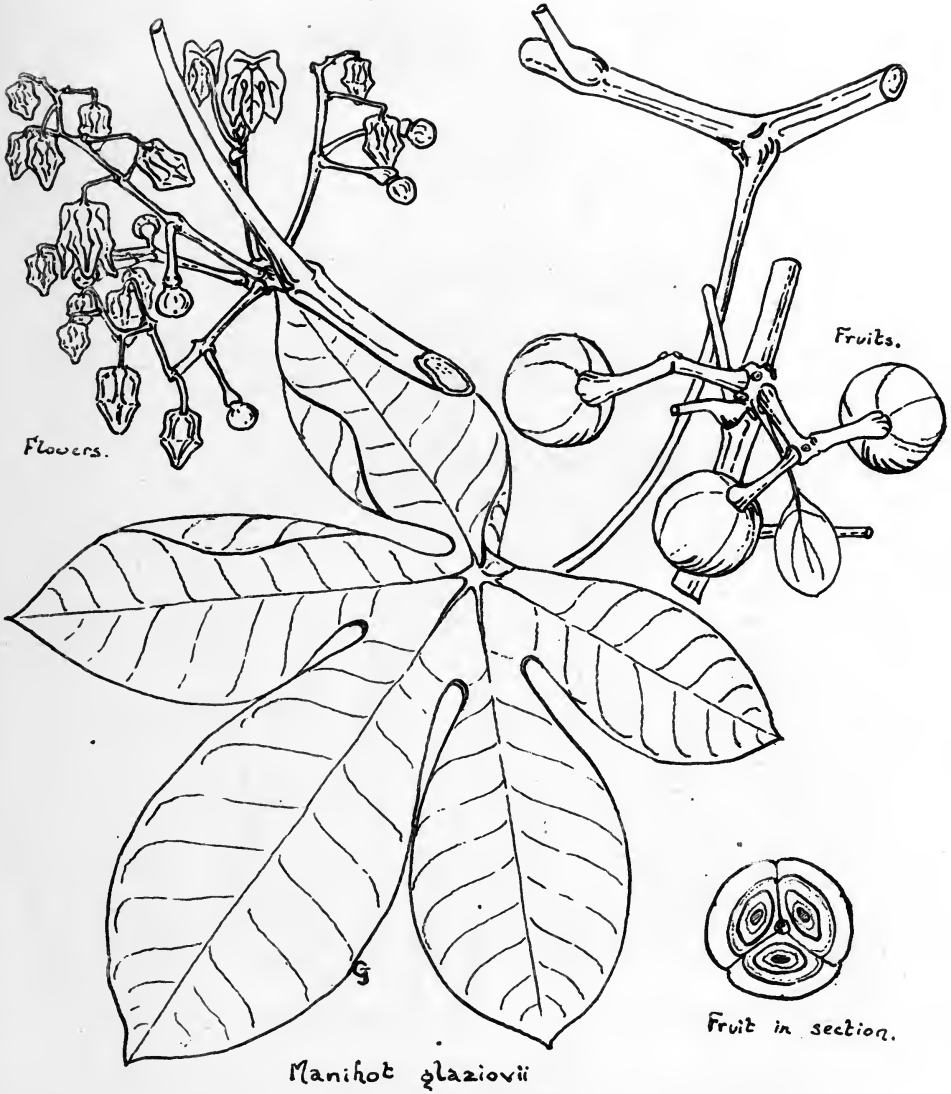
Dry unsoaked—four to five hours. The pot needs filling five times with water.

Dry soaked overnight—two to three hours.

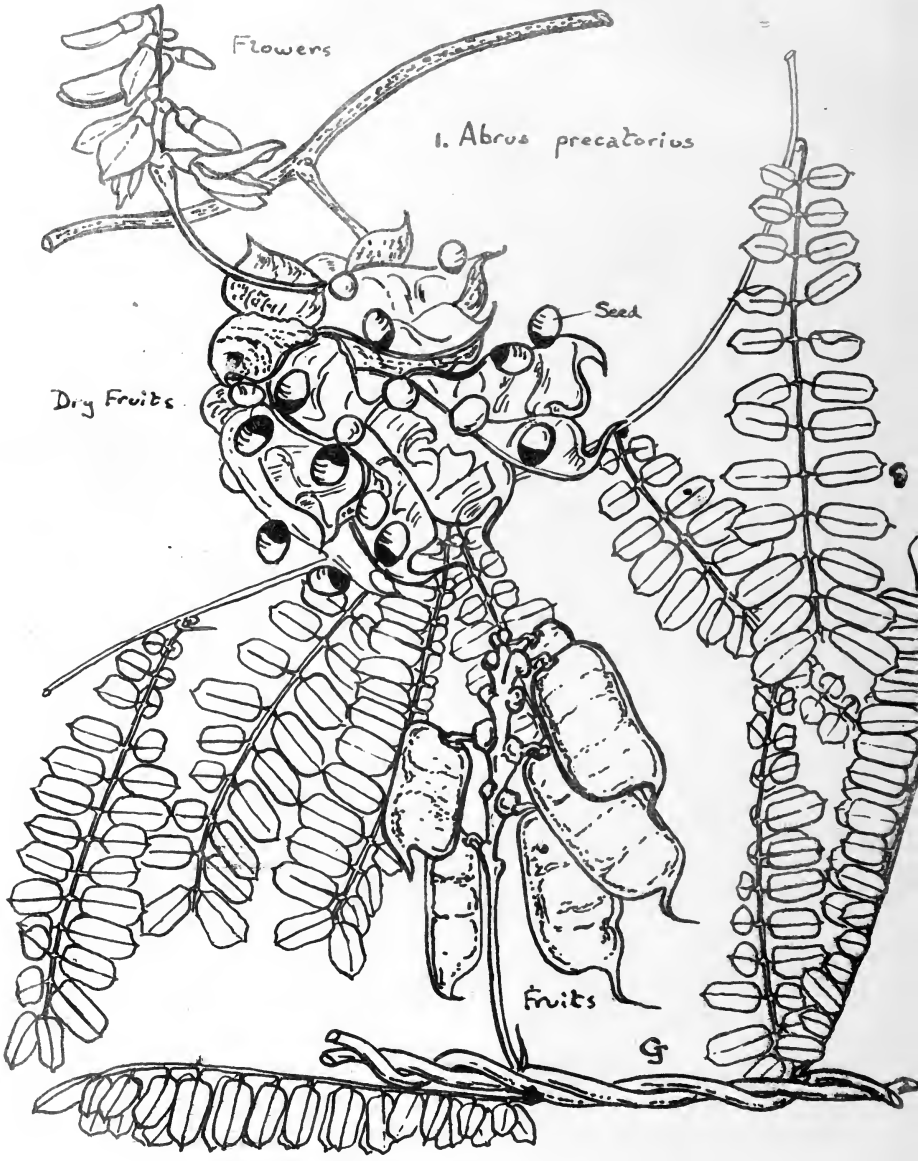
Fresh—one and a quarter to two hours.

The seed coat is tough and acrid tasting, difficult to remove. It may be removed in the following ways:—

(1) By parboiling and then pounding with wood ashes or by boiling with ashes.



300. Manihot glaziovii Mull. Arg. (Euphorb.).



1. Abrus precatorius L. (Papil.).

(2) By pouring on boiling water, leaving for five minutes and skinning by hand.

(3) By grinding and winnowing off the husks.

The acrid taste is mainly in the seed coat hence if a simple method could be found of removing the skins, the peas would probably be generally accepted. In India as one of the "*dhals*" they are an important food.

PALATABILITY.

There are marked tribal differences. They are well liked by the tribes in the Southern Province and in the far north but are seldom if ever eaten by the majority of Africans in the Central Province.

MEDICINAL USES.

The leaves, root and bark are mixed with pounded leaves of *msolo* (*Pseudolachnostylis maprouneifolia*), a little water is added and the resulting liquid poured into the ears as a cure for earache.

Ref. 2; 3; 4; 13.

83. Calotropis procera Ait. (Asclepiad.)

Citonje (N), *letaunde* (Y). French cotton, Dead Sea apple.

A laxly branched shrub with a lactiferous sap, up to 12 ft. with opposite, ovate, glabrous leaves, white or purple flowers in clusters, and inflated follicles containing numerous, flat, brown seeds which are tipped with long silky floss. Widespread at Lake levels, often on the sites of former villages. It is thought not to be indigenous to Nyasaland but to have been introduced by Indians who use it as an aphrodisiac.

The plants are burnt for salt. The latex has a somewhat caustic effect on the mucous membrane or tender skin. It is poisonous and it has been shewn to contain calatropin, a powerful heart poison. There are very many medicinal uses for the latex and bark in other countries. Fibre is used from it in the Sudan but it is costly to produce. The floss of the seeds is a form of vegetable silk and can be used as substitute for kapok in stuffing cushions but is inferior in buoyancy, does not stand rough usage and soon becomes waterlogged.

Ref. 14; 15; 17; 25; 27.

84. Canavalia ensiformis DC. (Papil.) Jack bean, Sword bean or Gotani bean.

Two forms of this bean are recorded, a bush form in the foothills up the Dwambazi River in an area rarely visited by Europeans, its fruits ripen as late as October and November, and was said to be poisonous and was planted as a deterrent to snakes; it had large white seeds. A climbing form, which is a robust woody perennial with purple flowers, bearing 9 ins. long thick-skinned pods containing large red thick-skinned beans. Grows well at Lake levels up to 5,000 ft. It has been observed growing luxuriantly as a creeper in one or two villages on the western border of the Mzimba District where the garden huts are each surrounded by a lion-proof stockade on which the people have planted it for ornament and to keep away lions but do not eat the bean.

It is well known that the beans may be eaten as a pulse, but care must be taken with some varieties as they may be slightly poisonous. The water in which they are boiled should therefore be changed.

The young pods are cooked as a side-dish. The beans when very young may be cooked with their skins on, when old the thick skins are removed. This is easily done by soaking and skinning by hand. The cooked product is of a coarse mealy texture and has little flavour. The beans were being eaten at the hospital at Fort Johnston in 1942 and were found to be easy to grow and very hardy. A few Africans nearby were also growing them, they were also found at Karonga.

Ref. 13; 27.

85. Cannabis sativa L. (Cannab.) Hemp, Bhang, Dagga, Ganja.
Mbangi (Nk), *camba* (N).

An aromatic annual herb, native of Asia, leaves alternate or the lower opposite, palmately divided into narrow spreading leaflets, flowers small greenish-yellow, in axillary cymes, many flowered in the male, few flowered in the female. It is suggested that the plant was imported by Indians in early or even pre-Portuguese times to the Zambezi Valley and is now grown in many parts of Nyasaland.

A valuable fibre, hemp. The young leaves and flowers are smoked as a narcotic in many countries under the name of *bhang* or *ganja*. The dried leaves are smoked in parts of this country and S.A. under the name of *dagga*.

Ref. 8; 27.

86. Canthium crassum (Schweinf.) Hiern (Rubiac.).
Mnonga (N, Y), *mkangandembo* (Y), *mvilo* (C), *mfilu* (Nk), *mbilima, macende a kalulu* (N), *mvingomba* (He, To).

Shrub or small tree with opposite large, somewhat leathery leaves which turn black as they dry, flowers yellow-green in axillary cymes, fruits fleshy about 1 in. or more in diameter 2-seeded. Growing scattered in *Brachystegia* woodland.

The fruits are sweet, ripen in December and are eaten by old and young alike. The roots have medicinal uses and an infusion of the leaves is sprinkled over women's bodies at the time of labour.

Ref. 1; 26.

87. Canthium sp. possibly **C. huillense** Hiern (Rubiac.).
Cisunkunthu (C).

A small tree.

The leaves are cooked with the help of potashes to form a slimy product, *thelele*, pounded groundnuts are added. The leaves are used when they are very young in September and November and are fairly well liked by old people but only eaten for lack of other leaves (Kasungu). The wood of the tree is burnt and the ash, *cidulo*, used for cooking purposes.

88. Capsicum annuum L. and **C. frutescens** L. (Solan.) Chillies and peppers.
Tsobola (N), *sabola* (Y), *mpiripiri* (N).

Herbs and small shrubs natives of Central and South America now naturalized in tropical Africa, mostly perennial producing fruits of varying size and shape, of an intense scarlet colour when ripe. Many of them are extremely acrid and " biting " to the palate and are used for flavouring purposes. There are several varieties of the " hot " kind *C. frutescens* in this country and they are especially common at lake levels. Cayenne pepper is the pulverized rind of *C. annuum*.

" Hot " kinds, *C. frutescens*. They are cooked with the side-dish, *e.g.*, with leaves, meat and in particular with fish. It is the privilege of the guest to say whether or not chillies shall be added to the dish. They are eaten raw with a side-dish by adults. This is often the case when children are to share the cooked dish. They are rubbed when still green on to fish before it is cooked. They are dried, powdered and cooked with the side-dish. They are added in the making of chutney, *sumo*, see *Lycopersicum esculentum*, tomato. Where and when other side-dishes are very scarce, the leaves are cooked for this purpose

Sweet chillies or peppers, *C. annuum* var. *grossum*. These are not grown as far as is known by Africans in this country. They grow easily from seeds although germination is slow in the cold weather. They do particularly well at low levels. The fruits are up to 6 ins. long and turn bright scarlet as they ripen while at the same

time the flesh sweetens. Unfortunately, the plants cross very readily with the "hot" kinds hence care must be taken to keep them well apart.

The fruits, either green or fully ripe, make a good side-dish when cooked with groundnuts; they may be used as an alternative to tomatoes to add to leaves when they are cooking. The skins of the fruits may be dried out to use later in the year as a side-dish. The ripe fruits are an extremely rich source of carotene (*provitamin A*). Paprika is the pulverized rind of this kind of pepper.

Ref. 13; 23.

89. Cardiospermum halicacabum L. (Sapind.) Heart seed.

Msendecere (N), (This name is more commonly applied to *Polygonum serrulatum.*)

A perennial slender herbaceous climber with biternate compound leaves and axillary 3-flowered long stalked umbels, with a pair of opposite spirally decurved tendrils from near the apex, capsules 3-angular inflated about an inch in diameter with spherical black seeds with a conspicuous heart-shaped aril.

The leaves are said occasionally to be eaten as a side-dish (Zomba).

Ref. 1; 7.

***90. Carica papaya** L. (Caric.) Pawpaw.

Papaya (N), *cipapayi* (To), *babaya* (Y).

A fast-growing herbaceous branchless, dioecious tree native of tropical America, attaining a height of about 15–20 ft. It bears a crown of very large, long stalked, palmate leaves from the axils of which the large green fruit are produced. It grows easily from seed and will bear at the end of the first year at Lake levels. Widespread up to 3,500 ft. and becoming naturalized in some places.

The ripe fruit is eaten as an extra food. The unripe fruits are cooked together with pounded groundnuts as a side-dish (S. Province). The unripe fruits are boiled, mashed with pounded groundnuts, chillies and salt to form *mamboga*, a dish used particularly during the month of fasting by Mahommedans, as a food with which to "break" the daily fast. (Fort Johnston). The young shoots and leaves are eaten (Malaya). An infusion of the root mixed with other roots is used as a cure for syphilis. The drug, papain, is obtained from the milky latex of the unripe fruits. The leaves are used to wrap round meat to make it more tender.

Ref. 4; 19; 23; 26; 29.

91. Carissa edulis Vahl (Apocyn.).

Nkolokolo (Y), *mpabulu* (N).

A much-branched evergreen spiny glabrescent shrub up to 12 ft. tall, leaves sessile opposite, leathery, flowers sweetly scented reddish-pink, long tubular, congested in umbels at the ends of the branches, fruit a large red berry, black when ripe; found near streams in *Brachystegia-Uapaca* savannah or in destroyed temperate rain forest sites. The berries are very sweet and edible, a medicine for intestinal worms in cattle and man (Tt).

Ref. 14; 17; 26.

92. Cassia petersiana Bolle (Caesalp.).

Mpatsacokolo (Ng, C), *ntelewe* (Y), *bwembanyani* (N), *ntantanyerere, ntowe* (G), *mnyasole* (To), *mtakanyerere* (He). See *C. singueana*, same native names.

A shrub or tree up to 40 ft. with pinnate leaves, yellow flowers and compressed hairy pods. Common up to 3,500 ft. or more on sandy soil.

The pods are edible, they are either eaten raw or a gruel is made from them by soaking and then boiling. The roots are used as a cure for various diseases, *e.g.*, coughs, colds, syphilis, stomach ache and as an anthelminthic (Tt).

Ref. 1; 5; 12; 26.

93. C. singueana Del. (Caesalp.).

Mpatsacokolo (C), *ntewelewe* (Y), *kadate* (Port Herald), *ntantanyerere* (C, Tu), *ndiapumbwa* (N), *tawetawe* (C).

A shrub or small tree up to 25 ft. with pinnate leaves, yellow flowers in corymbs, pods slightly compressed usually constricted, up to 4 ins. long. Common, often occurring on termite mounds especially in thicket areas.

The pods are edible, they are either eaten raw or as a gruel by soaking and then boiling them. The leaves are occasionally eaten (Port Herald).

Ref. 26.

94. Cassia sp.

Muwawani (C).

Said to be a large tree with white flowers.

An infusion of the root mixed with other roots and barks is drunk as a cure for colic and for venereal diseases, *linyoko* and *ntongo*. An infusion of the roots mixed with those of *matholisa* is said to be an abortifacient.

Ref. 14.

95. Ceiba pentandra (L.) Gaertn. (Bombac.) Silk cotton tree or Kapok.

Usufu (N), *mutunda* (Nk).

Native of tropical America and tropical West Africa, a tree up to 60 ft. tall with horizontally branched crown and more or less buttressed base, leaves palmate, flowers not very showy, white-or rose-coloured, flowering usually in December/January, fruits pendulous cucumber-shaped capsules, 4–6 ins. long but sometimes as long as 15 ins. depending on variety, turning blackish when ripe, usually splitting into four or five valves. Planted near villages in Lake-shore areas, *e.g.*, Kota Kota and Karonga.

The floss is used for stuffing mattresses and cushions and is very valuable for lifebelts owing to its buoyancy and non-absorbent qualities. The hairs are too smooth for spinning. In W. Africa the seeds are pounded or ground to a meal which is used in soup. The seeds contain 22–25 per cent. oil which can be used for lubrication, soap making or culinary purposes. The young fruits are eaten in Malaya and Ceylon.

In Kota Kota the wood is used for full-sized canoes which do not last more than a year or two and the wood is also a great favourite of children for making toy canoes.

Ref. 15; 26; 27.

96. Celosia argentea L. var. **cristata** (L). Kuntze (Amarant.) Cock's comb.

Ndangale (N).

An annual more or less branched herb, Indian in origin, up to 4 ft. tall with alternate linear to spatulate leaves and dense spikes of green, yellow or crimson flowers.

The leaves are cooked as a side-dish (Mlanje).

Ref. 23.

97. C. trigyna L.

Kaphikaulesi (N), (meaning cooked by lazy ones as it cooks quickly), *cinkhanya* (C), *nyasungwi* (T), *cala ca nkhwale* (Port Herald name for red kind), *nsanzazywale* (Port Herald, name for green kind).

A branched straggling herb up to 4 ft., flowers small, white in globular cymes arranged in linear panicles. Widespread, particularly at low elevations.

The young shoots and blades of older leaves are cooked occasionally as a side-dish without the use of native potashes. The cooked dish tastes bitter and is not much liked.

Ref. 1; 6; 23.

98. Ceratophyllum demersum L. (Ceratophyll.).
Mpusi, kasitsi (N).

A much-branched perennial herb found both floating and submerged in the Lake, in rivers and lagoons, leaves in whorls of five to twelve divided into linear segments often about an inch long, suitable for fish ponds.

99. Ceratotheca sesamoides Endl. (Pedal.).
Chewe, katate (N), *tobve* (Se), *cincesi* (T), *cinyololo* (T), *citengalalwa* (Nk), *zambwe* (S), *nkuyamani* (Y), *maope* (Ng). See *Sesamum angolense* with same native names.

A herb with erect slender stem up to 2 ft. tall. The leaves are grey on top and whitish underneath, flowers solitary, pale lilac, tubular, marked with purple lines, fruit a capsule up to three-quarters an inch long with two divergent horns at the apex. Found at elevations below 3,000 ft.

The leaves are cooked with the help of potashes to form a mucilaginous product, *thelele*, and are used all over the country. Pounded groundnuts are not added by some tribes as they do not mix in well with the cooked dish. The dish is commonly eaten by women particularly when they are eating *gaga*, a porridge made from a mixture of bran and flour. It is also given to invalids and young children as it is easily swallowed. The leaves are used as a substitute for soap. The cooked leaves, or the liquor from them, are thought to be a cure for both smallpox and measles.

Ref. 1.

100. Ceropegia papillata N.E. Br. (Asclep.).
Fwafwalingo (C), *liundumula* (Y).

A plant which climbs by means of its twining stems, leaves heart-shaped with very acuminate tips, hairy on both surfaces, flowers white in umbel-like cymes, corolla 1 in. long, dull green at the base, lighter above, the apical half of the lobes being blackish-green.

The roots and the raw leaves are eaten by boys. (Kota Kota Hills.)

101. Ceropegia sp.
Cang'ombe (N).

A creeping plant resembling *C. papillata* in appearance. Found in the Kota Kota Hills.

The leaves are cooked occasionally as a side-dish; they are not liked either by men or women.

102. Chlorophora excelsa (Welw.) Benth. & Hook. f. (Morac.).
Mvule (Y, N). African Teak, Iroko.

A giant dioecious tree up to 150 ft. tall in forest, smaller in savannah, shortly buttressed, with a more or less flat spreading crown, dark grey, rough bark, ovate alternate leaves containing a milky latex, female tree with stouter catkins and more spreading crown than the male. Uncommon, found only in the Misuku forests; has been planted in small numbers at Karonga and in the Nkuwazi Forest in the Nkata Bay District by the Forestry Department.

The timber is of great value, hard and durable but easy to work, takes a good polish, the heartwood is antproof and resistant to water and to fungoid diseases.

It is much used for cabinet work and building and for " dug-out " canoes. Bark makes excellent charcoal for irons (Tt).

Ref. 14; 17; 27.

***103. Chrysanthemum cinerariifolium** Vis. and **C. coccinum** Willd. (Comp.) Pyrethrum.

These plants, native of S.W. Asia, with their ornamental white flowers are grown extensively in Kenya and in parts of Tanganyika on a commercial scale. Trial plots have been grown successfully at high elevations in the Northern Province (Vipya and Nyika).

The Pyrethrum powder of commerce is the dried ground and powdered flower heads before they are fully expanded. It is used as a contact poison for insects and has the advantage of being harmless to man and animals.

Ref. 13.

104. Chrysophyllum fulvum S. Moore (Sapot.) Milk wood, Fluted tree.
Cifila (C, T).

One of the largest trees up to 180 ft. characterized by the fluting of the bole, its brown leaves and the milky fruit; straight, with wide spreading branches, leaves evergreen. alternate, simple, lower surface matted with brown hairs; flowers in axillary clusters, white, scentless; fruit an oval berry as large as a plum, 5-celled with milky glutinous flesh and flattened black seeds. Found in the moister parts of the lower mountain and plateau areas on Nchisi Mountain and Kota Kota Hills.

Monkeys are very fond of the fruit. Timber, light-coloured and of good density, useful for cabinet making and building purposes but there is much waste owing to fluting.

Ref. 9; 14; 26.

***105. Cicer arietinum** L. (Papil.) Chick pea, gram.

An annual herb, native of South Europe and Asia, growing to about one foot with small leaves and short pods containing one or two seeds. The seeds are very small, roughly spherical in shape with a conical projection at one end and are covered with a thick brown skin.

The seeds are edible but are not likely to become popular in this country as their skins are very tough and the leaf yield is very small.

Ref. 23.

106. Cissampelos mucronata A. Rich. (Menisperm.).
Cilambe, mtsitsi (N), *cilisya* (Y), *ndukwa* (Nk).

A climber with thin, strong hairy stems, leaves heart-shaped, soft and hairy on veins, up to 1½ ins. long, many flowers, small green, on long stalks. Found widespread at all elevations.

The stems are picked and wound into a coil, they are soaked in water for a day or are boiled and on drying are dark-brown in colour, and are used for binding the edges of baskets.

107. Cissus buchananii Planch. (Ampelid.).
Namwalicece (C), *ndemikangono* (Y).

A shrub about 3 ft. high with 5-palmate leaves, the lower surface of which is white with conspicuous brown veins.

The fruits are edible. The roots are eaten raw by children. The young stems are chewed for their sap. An infusion of the roots together with others is drunk

either alone or mixed with flour as a cure for *nyamakazi* (rheumatism and allied complaints).

Ref. 26.

108. C. cornifolia (Bak.) Planch.

Mbulunbunji (C), (Name merely refers to rounded fruits.) *mpelesya* (Y).

A shrub up to 7 ft. with stout rusty tomentose shoots with very swollen nodes, sub-erect from a woody base, grows after bush fires, rhizome thickened sometimes watery, flowering while leafless, fruits black-purple, one-third of an inch long, pointed

The sweet fruits are eaten by children from October–December. (Kasungu.)

Ref. 7; 15; 26.

109. C. jatrophoides (Welw.) Planch.

Mnuwakemunda, mwinimunda (N).

A small bush up to 3 ft. high, stem hollow, slightly ridged, covered with short hairs, leaves 5-foliate, and terminal clusters of inconspicuous flowers producing small fruits, a quarter of an inch in diameter.

The sweet fruits are ripe in October to December and are eaten by boys (Kota Kota Hills). The plants are left undisturbed in gardens, hence name *mwinimunda*, meaning owner of the garden.

110. Cissus sp. (Ampelid.).

Mwinimunda (N).

A tall herb up to 3 ft., leaves trifoliate, elongate, red, margins serrate, folded along thick midrib, stem cylindrical, smooth, tinged red or purple, fruits in terminal racemes about a quarter of an inch in diameter ripening in December (Ncheu).

The fruits are edible. The name means " owner of the garden " and the plant is always left undisturbed in a garden.

11'. Citrullus vulgaris Schrad. (Cucurbit.) Water melon.

Cimwela, vwende (N), *liticiti* (Y), *cimwamaji* (Tu).

An annual, stems glabrous or woolly, leaves triangular-ovate, 3–7 lobed, fruit variable in size from that of an apple to a man's hand, green striped or marbled, flavour bitter or sweet. It seems to grow best in sandy open situations where plenty of water is available such as near the Lake but can be grown at higher elevations, *e.g.*, Kota Kota Hills at 5,000 ft.

The fruit is eaten raw, the local variety has a crisp sweet flesh but otherwise is lacking in flavour.

Ref. 1; 6.

***112. Citrus aurantiifolia** (Christen) Swingle (Rutac.) Lime.

Ndimu.

Native of India and south-eastern Asia. Limes stand drought better than do most other citrus and are found in considerable numbers at many Lake-shore stations.

Ref. 23.

***113. C. limonia** Osbeck Lemon.

Ndimu.

A native of Eastern Asia; lemons grow easily, fruit early and can stand a period of drought. Hence in the few places where citrus trees are to be found, lemons and limes usually predominate, *e.g.*, Nkata Bay, Kota Kota and Karonga Lake-shores.

Apart from the many uses by Europeans, there is little use made of them by Africans although the children like to eat them.

Ref. 23.

***114. C. paradisa** Macf. (Rutac.) Grapefruit.

Grape fruit have been grown for some years by Europeans, particularly in the Southern Province.

***115. C. sinensis** Osbeck. Orange.

Mlalanji (N), *malalanji*.

A native of China; orchards have been established throughout the country by the Government Department of Agriculture and in the Southern Province by estate owners. A few orange trees are to be found scattered all over the country in the vicinity of administrative centres and mission stations and in a small number of cases, orchards have been established by native growers.

Ref. 23.

116. Clematis simensis Fresen. (Ranunc.).

Kongwe, cisa ca mabvu (N) (hornet's nest), *liundumula mbulambula, liumabula* (Y).

Liane with pinnate leaves, and cream or white flowers flowering in June. Found on forest edges and in bushlands from 3,000 ft. upwards.

The leaves are rubbed between the hands and the vapour inhaled as a cure for colds in the head.

Ref. 26.

117. Cleome monophylla L. (Capparid.).

Njerenjedza (C), *mwajerenjedza* (N), *nsonyo* (Y), *kazymwalonde* (Nk).

A hairy erect herbaceous annual, 1–2 ft. high, leaves simple 1–3 ins long, long and narrow, flowers in racemes on slender stems, small, white to pink with a dark spot at base. A host of the tobacco aphis. A weed of cultivation, common in villages particularly near cattle kraals.

The young shoots and flowers or the blades only of the older leaves are cooked together with pounded groundnuts and tomatoes to form a side-dish. The leaves are sometimes mixed with those of *luni* (*Gynandropsis gynandra*) or *bonongwe* (*Amaranthus lividus*). The cooked product is slightly bitter in the rains and still more so in the dry season and hence is not much liked. The leaves are known to be used occasionally in the following districts:—Kota Kota, Dedza, Ncheu, Fort Johnston, Mlanje, apparently at all elevations.

Ref. 20; 23.

118. Clerodendrum uncinatum Schinz (Verben.).

Likodza, likodja (C), *mkulakula* (Y).

A rambling shrub with softly pubescent, ovate leaves, recurved axillary spines and solitary axillary scarlet flowers, flowering in dry season, found in dry *Brachystegia* woodland.

The roots are used as medicine for bilharzia.

Ref. 9; 14; 26.

119. Coccinia palmata (Sond.) Cogn. (Cucurbit.).

Fwifwi mwanaleza (C), *mphwimphwi* (Ng), *mangulinjele* (Y). See *C. quinqueloba* for same native names.

A climber with lobed leaves and bifid tendrils; fruits ovoid 1–2 ins. long with smooth, bright scarlet skin. Common in the hills and foothills all over the country.

The fruits are eaten by children but are said to cause sore eyes. The leaves of this species are not eaten.

Ref. 6.

120. C. quinqueloba (Thunb.) Cogn.

Fwifwi (C), *mphwimphwi* (Ng), *cinkhaka* (N), *lukokoti* (Y), *mleza* (Ngu, Tu).

A climber with angular grooved, smooth stem; the leaves are 5-lobed, 3–5 ins. broad, bright green, studded with green papillae; flowers orange-pink, corolla 1 in. long, fruits ovoid, 1–2 ins. long with smooth, bright red skin. Found widespread.

The blades of the leaves are cooked with added groundnuts and tomatoes. Sometimes they are mixed with pumpkin leaves or with *kanzota*, (*Bidens pilosa*). The product is well liked. The season is from August to December. The fruits are eaten by children and because of their bright colour are thought to cause sore eyes. They are ripe from December to January. The roots are eaten as famine food but are poisonous unless carefully cooked. The leaves are fairly commonly eaten all over the country.

Ref. 1.

121. Cocculus hirsutus (L.) Diels (Menisperm.).

Namgoneka (Y), *cipapati* (Domira Bay).

A climbing shrub with thin stems, tomentose to glabrate oblong to elliptic leaves, flowers unisexual, inconspicuous, green, berries purplish-black.

Fruits used with the pods of *Acacia subalata* to give a blue dye (Fort Johnston). The stems which are fibrous and very whippy are dried in the sun, then soaked in water for a few days and then used for making very beautiful basket work-chairs and settees. (Domira Bay.)

***122. Cocos nucifera** L. (Palm.) Coconut.

The original home of this palm is uncertain, it grows to a height of 60 ft. or more, normally carrying a fruit spathe in each leaf axil. With its crown of feathery leaves which are frequently 20 ft. in length, it is one of the most graceful of the better-known palms. A few palms are growing at Kota Kota which are believed to have been planted by the first District Commissioner in 1896, they fruited regularly every year while alive and mature, but only four were alive and fruiting in 1947; the nuts were usually picked when unripe and rarely germinated if planted. Palms planted at Fort Johnston were fruiting well until they were nearly all drowned by the rise of the Lake level in the late 1920s and early 1930s. Plantings have been made at Mua but many of the nuts were dug up and eaten at the first attempts. Others were planted and are growing at the R.C. Mission at Port Herald and at Karonga where they are fruiting but only produce small nuts. The Agricultural Department is now establishing plantations in localities thought to be suitable. Hitherto coconut plantings in Nyasaland have been made from any unselected seed with low germination, owing to the nuts being picked from the palms and not allowed to fall when actually ripe.

Ref. 8; 23; 27.

123. Coleus esculentus (N.E. Br.) G. Taylor (Lab.) Kaffir Potato, Livingstone Potato.

Buye, buye wamthengo (N), *nyumbu* (Y), *njowera* (Tu, To), *njowe* (To), *cezani* (N. Lilongwe).

A herb growing to about 2 ft. with opposite leaves and yellow flowers, with thickened underground stems which grow like the fingers of a hand from a central

point. They are fairly commonly grown in the Ncheu District and in smaller amounts elsewhere, *e.g.*, Mlanje and Chinteche.

The tubers are edible, and are usually dug in March or April, they are first washed and then boiled in their skins. They are well liked by Africans and are said to make a good substitute for potatoes for European use.

Ref. 23.

***124. Colocasia antiquorum** Schott. (Arac.) Taro, Elephant ear, Coco yam. *Ntembe* (N), *madumbe* (C), *koko* (Y), *lombo* (Y, T), *masimbi* (To, tuber), *liwindu* (Su, leaf), *makondo* (Su, tuber).

Native of India and probably other parts of south-east Asia.

An aroid with a tuberous root, leaves large, arrow-shaped. Widespread in damp places. The leaves of two varieties are commonly eaten in Mlanje. They are also in frequent use in the Ncheu and Karonga Districts. They are known and used occasionally in the Kota Kota, Mzimba, Nkata Bay and Dedza Districts.

The leaves are cooked with the help of potashes, the product has little flavour unless tomatoes and groundnuts are added. If the leaves are old they are pounded before cooking. The tubers are boiled and eaten as an extra food. The leaves contain crystals in varying amounts which cause considerable irritation in the mouth if eaten raw and hence require careful cooking. The distastefulness of the leaves protects them from raiding bushbuck and other animals. In some types both leaves and tubers are eaten while in others the leaves only are used.

Ref. 7; 15; 23.

125. Colophospermum mopane Kirk ex J. Leonard (Caesalp.) Mopane. *Tsanya, sanya* (G), *ntsono, mopani* (Tu).

A more or less branched tree up to 50 ft. tall, bark rough, grey, longitudinally furrowed, leaflets in one pair, butterfly shaped, flowers very small opening in spring with the leaves, fruit a small, flattish, kidney-shaped one-seeded pod. In open to closed woodland on grey clay soils overlying nodular concretions of limestone which are much waterlogged during the rains and become intensely arid in the dry season; common only in the middle Shire Valley and south-west of the Vwaza Marsh and occurring in the Mlali area of the Karonga District.

The timber is hard and full of resin and the grain has typically interlocked fibres. The texture is moderately coarse but even. The straw-coloured sapwood is sharply defined from the dark-brown heart wood. It is said to be very durable and resistant to termites, it has been used with great success locally for piles in bridge building. In South Africa it is used for props, etc., in mining, fencing poles, dissel-booms and felloes in wagon construction. A very good fuel tree, making excellent charcoal but has much ash which contains 50–60 per cent. lime. It has been observed that the Mpala antelope in Nyasaland and Northern Rhodesia is almost entirely confined to Mopane woodland. A good soil indicator because where found the soil is quite unsuitable for crops.

Ref. 9; 14; 22; 27; 28.

126. Combretum imberbe Wawra (Combret.).
Mnangali, msimbiti (N), *mkolongonja* (Y).

A large handsome deciduous tree up to 100 ft. with round regular crown, grey corrugated bark and silvery foliage, flowers in racemous panicles, yellow and sweet scented, fruit small, 4-winged turning red when ripe. Locally common on alluvial and black cotton soils in parts of the Rift Valley.

Timber is yellow and easily worked, ant and borer proof, used for all kinds of purposes on the farm (S.R.). Timber difficult to saw but a good turnery wood resembling ebony.

Ref. 14; 22; 26.

127. C. ternifolium Engl. & Diels (Combret.).

Kadale (Y), *kasewe* (Nk).

Coppice shrub to small tree 20 ft. high, smooth grey bark, leaves in threes, fruiting November, found gregarious on clay soils.

Fish poison, parts of the tree are powdered and sprinkled on the surface of river pools in the dry season.

Ref. 14; 26.

128. Commelina sp. (Commel.) Spiderwort.

Kasungwi, khovani (C), *kokwa* (Hc).

A small herbaceous plant with simple leaves sheathing the stems for about one inch at the base, intense blue flowers growing near water. There are several species differing in size and colour of flowers. Widely distributed all over the country near water.

Leaves very occasionally eaten when no other side-dish is available. They are cooked with the help of potashes and groundnuts are added.

Ref. 7; 15.

129. Commiphora sp. nr. *C. pilosa* Engl. (Burser.).

Khobo, khozyo (C), (N.B. *khobo* and *khozyo* may be different species).

A small tree which grows from stakes and hence is often planted for live hedges and cattle kraals.

The leaves are edible, they are pounded and cooked with the help of potashes. Groundnuts are added to the cooked dish which is well liked (Kasungu). Used as a live hedge. (Common in Ncheu District.) An edible caterpillar called *nyamakhobo* lives on the tree (*Ncheu*).

Ref. 14.

130. Copaifera. See *Colophospermum.*

131. Corchorus olitorius L. (Tiliac.) Jute, Jews' mallow.

Cilenzi (N), *kapilamoto* (C), *msakasaka* (Cimwambe). For other native names see *C. trilocularis* from which species it is seldom differentiated.

A much-branched herb up to 7 ft. tall with woody stem and alternate, usually long, lanceolate, acuminate, membraneous leaves, the base of the blade has two long tail-like processes each side of the leaf-stalk, flowers yellow, inconspicuous, solitary or in pairs from the axils of the leaves, fruit a long capsule with prominent beak at apex and numerous black seeds. Of widespread distribution.

It is seldom distinguished from *C. trilocularis* and is cooked in a similar way. The stems provide a strong fibre.

Ref. 1; 7; 15.

132. C. trilocularis L.

Denje (N), *linyololo* (Y, meaning slimy), *phinyu* (Ngu), *ntonono* (Se), *celewa* (Tu), *kankhumba* (To), *bwenka* (He, meaning slimy).

(Native names as for **C. olitorius**).

A much-branched annual, branching low on the ground, purplish, glabrous or hairy, leaves with two long tail-like processes each side of the leaf-stalk, flowers bright yellow, pods 2–3 ins. long with numerous seeds. A weed of cultivation found on grass plains, hillsides and roadsides.

The blades of the leaves are cooked with the help of potashes, the product is mucilaginous (*thelele*) and hence groundnuts are not often added as they do not mix in well. The dish is well liked but is eaten largely by women and children. It is commonly given to babies and invalids. Frequently eaten all over the country, particularly at lower levels, *e.g.*, Kota Kota, Karonga and Chinteche Lake-shore areas and at Port Herald.

Ref. 1; 6; 7; 15.

133. Cordia abyssinica R. Br. (Borag.).

Mbwabwa, mpefu, ngongoza (N), *mfumbang'oma, nkungwa, ntuthu* (C), *mkulukulu, msingati, nabukwe* (Y).

A much-branched evergreen tree, up to 50 ft., leaves alternate, ovate, almost orbicular, flowers in cymes forming a terminal panicle, white with funnel-shaped corolla, fruit, ovoid half an inch in diameter, smooth-skinned. Found in moister parts of the lower mountain and plateau areas on forest margins and along stream banks.

Heartwood is yellowish-brown, hard and takes a good polish, very difficult to saw. Used for grain mortars, beehives (Tt); fruits with sweet edible pulp; used as a shade tree for coffee (Tt).

Ref. 14; 22; 26.

134. Cordyla africana Lour. (Papil.) African plum.

Mtondo (Y, N).

A deciduous tree up to 80 ft. with a branched bushy crown and rough reddish brown bark, leaves alternate, pinnate, flowers small golden-yellow in numerous racemes of 6–12 flowers, fruits fleshy, yellow, the size of a lemon, usually containing two reddish-brown seeds. Found in the rift valleys below 2,000 ft. commonly in association with *Acacia albida* on light fertile alluvium generally suitable for maize. Very common in Dedza Lake-shore areas.

The fruits are edible, they have an unpleasant smell and are only eaten by old people except in times of hunger (*Mua*) but are much liked by elephants. They are ripe in November. The timber is said to be somewhat coarse-grained but very durable and is useful for rough constructional work, and is used in the making of native mortars, hence the name, *mtondo*. A gum resin exudes from the bark and is used mixed with water to make a kind of size or whitewash for houses (W.A.).

Ref. 14; 15; 17; 22; 26; 27.

*** 135. Coriandrum sativum L.** (Umbellif.) Coriander.

An annual herb, native of East Europe and Asia, which has been cultivated from very early times, seeds having been found in Egyptian tombs of 960–800 B.C. It is grown for the seed in a few places in the country, *e.g.*, Dowa, for sale to Indians.

The ripe seeds are used for seasoning food by Indians. They are also used to a small extent by Africans mixed with pounded turmeric and chillies to add to a side-dish.

Ref. 11; 23.

136. Crassocephalum rubens (Jacq.) S. Moore (Compos.).
Cinusi, cinunce (N), *cinunje* (Y), *cinusika* (To).

There are several plants passing under this name, they are either varieties of this plant or distinct species. Some are regularly eaten and others only when there is great shortage of foods for side-dishes.

A herbaceous plant, 1½–3 ft. high, flowers in heads, deep mauve colour, fruits with pappus of white hairs. Very widespread at all elevations, known to be eaten at Kota Kota Lake-shore and Chinteche.

The leaves and young shoots are cooked without the use of potashes, groundnuts and tomatoes are added. The product stings the mouth slightly and is not well liked. The leaves are crushed with a little water and rubbed on to cure earache.

137. Crossopteryx febrifuga (Afzel. ex G. Don) Benth. (Rubiac.).
Dangwe (N), *mkako* (Y), *muwaja iwoko* (He), *cumika* (Nk).

A tree 10–50 ft. with very dark, brown bark, opposite pubescent leaves, dense terminal cymes of small white sweetly scented flowers, fruits small, round, hard two-ovuled capsule containing winged seeds. Found in the drier parts of lower mountain and plateau areas on poor stony soil.

Wood not unlike pearwood, pale-brown to pinkish, of very fine texture, hard and durable. It saws and planes to a smooth finish, seasons well and takes a good polish. Weight is 57 lb. per cu. ft. (air-dry). Bark used medicinally (Tt).
Ref. 14; 17; 22; 26.

138. Crotalaria anthyllopsis Welw. ex Bak. (Papil.).
Jandalala (Ng), See also *Thunbergia* sp. for same native name.

A branched herb 1 ft. high, with hairy leaves, flowers yellow or purplish with darker veining.

The leaves are edible and are eaten during the rains (Kasungu).
Ref. 7.

139. C. cephalotes Steud.
Cisunkhunthu (T), see *Canthium* sp. with same name.

A slightly woody herb, 6–8 ins. high, often unbranched, densely silky, flowers small, yellow.

The leaves are cooked for a side-dish (Mzimba District).

140. C. florida Welw. ex Bak.? (Papil.).
Bwayaya (N), *cawaye* (Tu).

An undershrub with numerous slender branches, grey downy when young, trifoliate leaflets rather fleshy up to half an inch long, flowers bright yellow and numerous in terminal racemes, pods small one-seeded.

The leaves are pounded and cooked with the help of potashes, they form a mucilaginous product, *thelele*, which is liked by women but only eaten occasionally by men.
Ref. 1; 5.

141. C. intermedia Kotschy.
Zumba (N, Y, To), *lundale* (Tu).

An erect undershrub, 4–5 ft. high with ribbed branches, trifoliate leaves, leaflets long and narrow, flowers bright yellow with the standard conspicuously veined with

purple, pods about 2 ins. long, inflated containing many seeds. Is common in all districts north of Lilongwe but does not appear to be known in the more southerly districts.

The leaves are cooked with the help of potashes, the product is slimy and has an unpleasant flavour so that it is necessary to add groundnuts to make the dish palatable. The leaves are sometimes cooked mixed with *denje* (*Corchorus* sp.). The leaves are commonly dried in some places, *e.g.*, near Fort Manning, in the drier parts of the Lilongwe District and in Kasungu District.

Ref. 1; 5; 7.

***142. C. juncea** L. Sunn or San hemp.

An erect annual growing to about 5 ft. with bright yellow flowers, native of tropical Asia and Australia.

It is cultivated in many parts of the world for its fibre, which is used for making string, ropes and sacking. The plant is commonly grown as green manure, it is in common use for this purpose by Europeans but is little used as yet by Africans.

Ref. 13.

143. C. natalitia Meisn. (Papil.).

Thusya (N), *nakasewe* (Y), *lundale* (Tu).

An erect shrub with numerous long straight branches covered with a fine down, leaves trifoliate, leaflets a little over 1 in. long, flowers yellow 5–10 in terminal racemes, pods inflated about 1½ ins. long, flowers from May onwards according to elevation. Found widespread.

The leaves and the flowers are cooked with the help of potashes and form a mucilaginous product, *thelele*. The taste is unpleasant, but is improved when the flowers are mixed in but groundnuts are also needed. Known to be eaten in the Kota Kota, Kasungu, Mzimba and Dedza Districts.

Ref. 1; 5; 6; 26.

144. Crotalaria sp. cfr. *C. globifera* E. Mey.

Kanyaminyami (C), *lunyanyu* (Y), *sasa* (N).

A climbing shrub found in old gardens.

The roots mixed with other roots are burnt and the ash rubbed into an incision as a cure for backache. The leaves are rubbed on the head as a cure for headache.

Ref. 24.

145. Crotalaria sp.

Mdyakanjobvu (Tu), *zumba* (See **Crotalaria intermedia** for same name).

A herb found in old gardens.

The leaves are eaten from January to March (Kasungu).

146. Crotalaria sp.

Kapuku (N).

A herb with small leaves and yellow pea-like flowers.

The leaves are commonly cooked with the help of potashes to form a slimy product, *thelele* and used in the Mzimba, Nkata Bay and Kota Kota Districts.

147. Crotalaria sp.

Cimphako (C).

A herb with discolorous trifoliate leaves found in damp places.

The leaves are often used as a side-dish from May to November in the Dzenza and Lilongwe Districts.

148. Cryptolepis oblongifolia (Meisn.) Schlecht. (Asclep.).
Bwazi (C), *lambulwe* (Tu).

Erect branching shrub up to 4 ft., stems red brown, rough, yellow or yellowish-green flowers in many flowered cymes.

The leaves are cooked with potashes and form a slimy product, *thelele*, they can be found all the year round but are best in the rains (Kasungu).

Ref. 26.

149. Cucumis hirsutus Sond. (Cucurbit.).
Mkuwikuwi (N), *mkunguyanjila* (Y).

A perennial with a tuberous root, stiff angular stems, leaves very variable usually 3–5 ins. long, male flowers up to 1 in. in diameter, 1–3 together, female flowers solitary, fruits ovoid, 1½ ins. diameter, nearly smooth with a few scattered hairs, mottled green and white, seeds small.

The leaves are eaten from October to November, cooked in the same way as pumpkin leaves (See **Cucurbita maxima**). The fruits are eaten raw but are not much liked (Kasungu).

Ref. 1.

150. C. melo L. var. **cultus** Kurz.
Kayimbe (N), *mpombe* (Y), *luwimbe* (Ng).

The fruit is often spherical, about 3 ins. in diameter but may also be cylindrical, the skin is green and turns yellow as it ripens. Grown all over the country.

The fruits are eaten raw. The fruits are dried after removal of the seeds and are stored until needed. They then require to be cooked with potashes to soften them and with groundnuts to give them some flavour.

151. C. metuliferous E. Mey. ex Schrad.
Kangamkhwani (N), meaning like pumpkin leaves.

A herb found in the hills.

The leaves are cooked as a side-dish from September onwards in the Dzenza and Lilongwe areas.

152. C. sativus L. (Cucurbit.) Cucumber.
Mankhaka (N), *mangaka, masakasa* (Y), *uwimbi* (Tu), *makaka* (Su).

This is the common kind of cucumber grown in Europe. The variety usually grown in this country has a squat cylindrical-shaped fruit about 4 ins. long with slight raised projections on its surface. Widespread.

The fruit is eaten raw as an extra food. The seeds are pounded and are used instead of groundnuts to add to side-dishes.

153. Cucumis sp. aff. *C. dipsaceus* Ehrenb. Small prickly cucumber.
Cikanyanga, cikolowe (N), *cipokolo* (C), *ingolowe* (Y), *muhawa* (Ngu), *cikopa, kasongwe* (Tu).

A perennial herb planted in the maize gardens through which it trails. It bears prickly green fruit about 1½ ins. in diameter which are juicy inside and contain a number of seeds. They are grown very commonly in some hill areas, *e.g.*, Kota Kota, less so in the foothills and only occasionally on the Lake-shore.

The fruits are cooked as a side-dish. They are split in two ; the seeds are squeezed out and the remaining skin well washed to remove both seeds and the dirt which always clings to the fruit. They are then cooked in fairly strong potashes until soft (30 minutes) ; then pounded groundnuts and salt are added. If available tomatoes

are also added. The fruits are eaten from May to July and any surplus fruit are dried. They are split, the seeds are removed and the skins spread in the sun and left for 2–3 days. They are stored in earthenware pots for as long as a year. The seeds are occasionally dried, then pounded and used to take the place of groundnuts in side-dishes. The leaves are eaten when other side-dishes are very scarce, *e.g.*, Kasungu, they are mixed with *cipwete* (See No. 154) leaves.

154. Cucumis sp. Prickly cucumber.

Litapwito (Y), *khanyanga* (Ngu), *cipwete* (N, Tu).

An annual herb, which trails along the ground, planted in the maize gardens, the fruits are large, about 4 ins. long, they are very juicy and are covered by a tough skin on which are a number of stout prickles. The fruit turns from green to yellow as it ripens in April and June. Common at elevations over 4,000 ft.

The fruits are eaten raw including the skin when tender. The flesh is very refreshing, juicy and slightly acid-tasting and large numbers are eaten especially by children. The fruits are sometimes dried, they are split open, the seeds removed and the skins spread in the sun.

155. Cucurbita maxima Duch. (Cucurbit.) Pumpkin or squash.

Dzungu (N), *lyongu* (Y), *msuku* (Ngu), *tange* (Su), *jungu* (Tu), *tanje* (To), *mungu* (Nk).

An annual with large 5-lobed leaves and large yellow flowers, fruits very variable, one of the commonest kinds is disc-shaped about 9 ins. in diameter with green skin, yellow as it ripens. Very widespread throughout the Protectorate. Among the aCewa in the Kota Kota Hills, there is often a special pumpkin-planter in each village, usually an old woman known for her successful planting. They are planted in the stream-bed gardens, *madimba*, about September in the hills and the leaves are ready to pick in November. From this time onwards, leaves are available either from stream-bed gardens or main gardens until March or April depending on the lateness of the rains. Pumpkin leaves find a ready sale at markets or can be exchanged for maize.

The leaves, *mkhwani* (N), *liponda lya ndwelo* (Y), *mpangwe ya nyungu* (Tu), *cinkuwi* (To), *ilipwysia* (Nk), *matapa a minyuko* (Ngu).

The leaves are the most commonly eaten and the most universally liked of all edible leaves. They are picked when young and are cooked as a side-dish. The fibres from the outside of the stem and the back of the leaf are peeled off and the blades broken across by hand. Young leaves cook in under 30 minutes while older ones often need the addition of soda or potashes to soften them. The cooked leaf is of a mealy consistency and of a particularly agreeable flavour. When pounded groundnuts and tomatoes are added it is especially appetizing. When well-cooked pumpkin leaves are the side-dish then the Nyasaland African is happy, as he knows that he will then be able to eat enough *nsima* (porridge) to be really full (*wakhuta*).

Dried leaves, *mfutso*.

The leaves are dried towards the end of the rains whenever there is a sufficient amount available. For details of the process see *Vigna unguiculata*.

The flowers, *ciluwe* (N), *ujawe* (Y).

The male flowers, which are produced in abundance, are very commonly cooked. They are usually mixed together with some leaves. The outside calyx is removed before cooking and the flowers split in two.

The fruits are eaten as an extra food. They are cooked in the following ways:—

(*a*) The fruit is cut into four pieces and put into a pot with a little water. Banana leaves are placed on top and a second pot put on as a lid; thus the fruit is steamed. No salt is added. If the fruit is young it is cooked whole and all of it including the seeds are eaten.

(*b*) The pumpkin is peeled, cut up into fairly small pieces and boiled until soft, then pounded groundnuts and salt are added and the mixture well stirred. The dish is known as *mamboga* by Yaos at Fort Johnston and is often eaten to " break " the fast during the month of fasting of Mahommedans.

(*c*) A small variety known as *matanga* in the Lilongwe District (N.A. Chitukula) is cooked with added groundnuts and used as a side-dish.

(*d*) In some areas, *e.g.*, Ncheu and Dedza Districts, a few pumpkins are dried each year for use as side-dishes. The fruit is cut into strips and sun-dried and the dried product is called *zigonyongo*.

Trials of different varieties of pumpkins for native use.

Some ten varieties were tried out at Mwera Hill in 1941, many of these yielded well and produced very large fruits, some of them up to 50 lb. in weight. One of these, " Delicious " was very well liked as it was sweet and the flesh of a firm texture. " Large Orange " although sweet was too watery for adult tastes, " Jumbo " and " Golden Custard " were both rather tasteless and too watery, while the remainder, *i.e.*, " Hubbard Squash," " Turk's Cap," " Boer " and " Ironbark " were all liked.

The leaves of most of the varieties were palatable and the leaf yield was good with the exception of " Golden Custard ". The leaves of " Hubbard Squash " are very hairy and those of " Jumbo " are tough, hence both of these kinds need soda or potashes to soften them.

Unless, however, the varieties are kept well separated from each other they rapidly cross and produce all manner of types.

Ref. 23.

156. Culcasia scandens (Willd.) P. Beauv. (Arac.)

A climbing perennial plant sometimes procumbent, found only in evergreen forest, with spear-shaped leaves and greenish-white spathes which are followed by scarlet berries borne in dense spikes.

The long thin, but strong, stems are used as tying materials in hut-building (E.A.). The watery juice causes irritation of the skin and is used as a fish poison (W.A.). Has medicinal uses (W.A.).

Ref. 14; 15; 17; 26.

157. Cussonia kirkii Seem. (Aral.) Deadman's fingers, Cabbage Tree.
Mbwabwa (N, Y), *candimbo* (fruits, N., Y).

A tree growing to about 30 ft. characterized by its gaunt and ugly appearance when bare of leaves, leaves digitate, 7–9 foliate, petioles 5–7 ins. long, spikes of flowers 8–16 ins. long, densely covered with small flowers, fruits very small, round, black when ripe. The stem yields gum copiously when cut. Very common at altitudes of over 4,000 ft. especially where land has been cleared for cultivation as it is fire-resistant because of its thick corky bark. It is often left in maize gardens for its partial shade.

The ripe fruits are eaten in large quantities by children and the paths in the Kota Kota Hills are strewn with the long fruit stems during the season, February to March. An edible caterpillar, *mabwabwa*, feeds on the leaves. The wood is soft and worthless, it makes very bad firewood and emits an objectionable smell when burnt.

158. C. spicata Thunb. (Aral.) Cabbage tree.
Candimbo (Y).

A tree of palm-like appearance up to 50 ft., branching at the top with crowded leaves, bark thick, corky, grey with scars of old leaves, leaves evergreen, very large,

alternate, palmately compound, flowers on separate branches in umbels of spikes, fruit an edible drupe. Found widespread on all mountains carrying sub-tropical evergreen forest, some immense specimens up to 5 ft. in diameter are to be seen on Cholo Mountain in forest.

The fruits are edible. (S.R.) The wood is light, soft and white, used for making troughs and water gutters (Tt) and brakeblocks (S.R.).

Ref. 9; 14; 26; 27.

159. Cynanchum schistoglossum Schlecht. (Asclep.).

Mpuludwa (N), *mpululudwa* (N, Y), *mpululwa* (Tu), *mpululuzi* (N, To).

A climber with a slender twining stem, leaves elongate, oblong, thin textured with acute apex, flowers in umbel-like cymes very variable, flowers in May. Known to be used in the Kota Kota, Mzimba, Kasungu, Dedza and Ncheu Districts.

The leaf-blades are picked off and cooked usually with the help of potashes for a side-dish. The product is well liked and is commonly used in the rains. The leaves are also eaten raw (Mzimba).

160. Cyperus alternifolius L. subsp. **flabelliformis** (Rottb.) Kukenth. (Cyper.)

Cesa, cetsa (N).

A perennial leafless sedge with green stems up to 3 ft. tall and umbels of yellow, cinnamon or rust coloured spikes of flowers. Found widespread in the hills in wet and marshy places.

The plants are collected, dried and burnt and a solution of the ash, *cidulo*, used for the cooking of leaves and other vegetables. Another sedge, *kauju* (C. Kota Kota Lake-shore), *mlulu* (C), which is burnt for potashes, *cidulo*, is found on the Lake-shore. String is made from the leaves to sew *mpasa*, mats made from *bango* reeds, *Phragmites mauritianus*.

Ref. 17.

***161. Cyphomandra betacea** Sendtn. (Solan.) Tree tomato.

A small tree or shrub, native of Peru, growing to about 10 ft. tall. It grows readily from seeds and seems to do best at 3,000 ft. altitude but will grow up to 5,000 ft. where the fruits are slow to ripen.

The fruits may be eaten raw or cooked and make good jam. The rind has a distinctive and disagreeable flavour.

Ref. 17; 22; 23; 27.

162. Dalbergia melanoxylon Guill. & Perr. (Papil.) African Ebony.

Mpingo (G).

A much-branched thorny tree up to 25 ft. tall with alternate pinnate leaves, many small, white. sweet-scented flowers in terminal and axillary panicles, pods flat 1–2 ins. long. Found in open woodland and bush land at the lower elevations, the best stands being on the south-western side of Lake Chilwa in the Mlanje District.

The sapwood is very narrow, the heartwood is dark purple-black, very hard, dense, fine-grained, taking a beautiful polish, durable and usually resistant to insect attack. It is used for carving and is one of the best turnery woods in the world. Unfortunately, the tree grows only to a small size and heart rot often develops in the older trees. Used for walking sticks and carved ornaments (Tt).

Ref. 17; 22; 27.

163. D. nitidula Welw. ex Baker.

Mkulasinga (C), *mlungwe* (N, Y), *lungwe, nkolokolo* (Y), *mulengwe* (To, He), *muzembe* (Tu), *zinyabazo* (N).

A small tree up to 20 ft. with reticulate bark, pinnate leaves and white flowers in axillary panicles very conspicuous when in flower as they are usually produced when the tree is quite leafless. Common in the drier parts of lower mountain and plateau areas above 2,000 ft. altitude.

Wood used for pounding sticks and poles, very durable and termite resistant. An infusion of the roots is drunk as a cough cure. The leaves are rubbed on to cure abscesses.

Ref. 14; 26.

164. Dalbergiella nyasae Bak. f. (Papil.).

Mlembela (N, C), *mlundo, lundo, mulundu* (Y).

An erect, lightly branched tree up to 30 ft. tall with rough pale grey or black, longitudinally-fissured bark, leaves pinnate, leaflets in 6–10 sub-opposite pairs, flowers pale pink in dense, narrow panicles or racemes, pods about 3 ins. long, flat, oblong with a dense brown velvety fringe of hairs particularly on the upper suture.

An infusion of the bark mixed with that of *mkhuyu*, *Ficus* sp., and *kaumbu* (?) is drunk as a cure for dysentery. An infusion of the roots is drunk as a cure for chest complaints.

Ref. 14.

165. Datura stramonium L. (Solan.) Thorn apple, Stinking leaf.

A coarse annual with large irregular leaves, white or pale purple, tubular flowers and egg-shaped fruits covered with thick spines, seeds numerous brown or black. A common weed in the neighbourhood of cattle kraals, poisonous to stock and man.

The leaves and seeds contain amongst other alkaloids, hyoscyamin and hyoscine. Extracts are used in medicine for their antispasmodic, anodyne and narcotic properties, whilst the dried leaves are an ingredient of mixtures used in the manufacture of cigarettes and inhalations for the relief of asthma.

Ref. 8; 18; 27.

***166. Daucus carota** L. (Umbel.) Carrot.

A native of the temperate regions of the Old World; carrots do well at all elevations and are grown fairly extensively for sale to Europeans. They seed in the hills at 5,000 ft. (Kota Kota). They are seldom eaten by Africans except in some institutions. They make a good side-dish if well cooked and mashed with pounded groundnuts. The leaves are edible but, as far as is known, they are not used in this country.

***167. Delonix regia** (Boj. ex Hook.) Raf. (Caesalp.) Flamboyant, Flame tree.

A tree, native of Madagascar, growing to 60 ft. in height with characteristic spreading habit. It bears immense panicles of scarlet and orange flowers and when in full bloom is a magnificent sight. The pods are woody up to 18 ins. long, very, hard, with many elongated seeds. Planted near European habitations all over the country.

An ornamental tree, pods make good fuel for fires.

168. Dialopsis africana Radlk. (Sapind.).

Mtutumuko, ntalawanda (Y), *mjuju, mtalala, mlimbauta* (N), *musakala* (Nk), *ciwangalumya* (Nk, Su).

A tree somewhat resembling *Lannea*, 15–25 ft. high with dark brown bark, tending to peel off in flakes, twigs stout, leaves up to 10 ins. long, leaflets in 3–6

pairs, inflorescences about 1 in. long, dense, produced when tree is leafless, fruit tomentose about 1 in. in diameter.

A native medicine.

Ref. 14, 26.

169. Dichrostachys glomerata (Forsk.) Chiov. (Mimos.).

Cipangala (N).

A much-branched shrub up to 15 ft. tall, spreading from root suckers, with scattered spines, leaves bipinnate, leaflets small, numerous, flowers pink and yellow in small dense spikes, pods yellow, twisted, borne in a cluster on a long stalk.

Root chewed and used as an antidote to scorpion and snake bite also an aphrodisiac, leaves also used for scorpion bite (E.A.). Fruits sometimes used for fodder (W.A.). Stems and roots make excellent firewood and are used for walking sticks, axe-handles and bows (W.A.). Bark, especially from the roots gives a strong fibre. Produces gum of inferior quality (Tt).

Ref. 14; 15; 17; 26.

170. D. nyassana Taub. (Mimos.).

Namphangale (N), *cipisiawago* (Y), *cipangala* (N, *see* also *D. glomerata*), *kampangala* (C), *mpangala* (Nk).

A small tree up to 20 ft. similar to *D. glomerata* but leaflets larger, flower stalk up to 1½ ins., a noticeable feature, in the leaf axils. Found in dry parts of plateau area where grass is normally tall, *e.g.*, large areas from the Henga Valley to the Lilongwe.

Wood used for poles, it is very hard and hence is used for making sharpened pegs to drive into the ground when making holes for poles, also used for arrows. The root is burnt and the ashes rubbed into an incision to cure toothache. After there has been letting of blood to cure headache, the pounded leaves are placed over the site of the incision. An infusion of the leaves with various roots is drunk to cure *khunyu* (epilepsy?).

Ref. 5; 6; 14; 26.

171. Dioscorea bulbifera L. (Dioscor.) Air potato, Potato yam.

Fikengere (Nk).

A climber with leaves like those of the ordinary yam, bearing dark brown, angular tubers in the axils. The tubers are about 3 ins. long. Found in the Misuku Hills, Karonga District.

The tubers are eaten either boiled or roasted. There is a wild kind reputed to be poisonous.

172. Dioscorea spp. Yams.

Cilazi, mpama (N), *lipeta* (Y), *ciyao* (Tu, To), *fitugu* (Nk, Su).

There are very many species of yams differing widely in shape and colour of the tubers. The kind commonly seen in this country is planted to grow over hut fences and produces fairly regular, cylindrical-shaped, white tubers.

The tubers are eaten boiled or roasted as an extra food. They are often to be found for sale at markets ready cooked. They are much used as a substitute for European potatoes in other places, *e.g.*, W.A. and W.I.

173. Dioscorea sp. (Dioscor.).

Mpama wam'thengo (meaning wild yam).

A climber up to 20 ft. with alternate pairs of much reduced, fleshy leaves with thickened bases, very long internodes and occasional thorns.

The roots are edible.

174. Dioscorea sp.

Nandelele.

A climber resembling *mpama wam'thengo* (No. 173) in appearance but with shiny stems and even more reduced leaves. A man is reputed to have died near Mua Mission (Dedza Lake-shore), because he ate this in mistake for the wild yam.

175. Dioscorea sp.

Dzinyanya (N).

A climber with slender stems found at 2,000 ft.

The roots are eaten either raw or cooked with potashes, they do not serve as a side-dish (Dedza Lake-shore).

176. Diospyros mespiliformis Hochst. ex A. DC. (Ebenac.). Monkey guava *Msumwa* (N, Y), *mcenya, nyelenje* (Tu). Swamp ebony.

A tree up to 50 ft. tall with evergreen elliptical, alternate, leathery leaves and small, fragrant, white, axillary flowers, fruits subglobose up to 1 in. in diameter with hairy seeds. Found in the drier parts of the low foothills.

The wood is white to grey-pink slowly darkening to dark-brown, hard compact, fine and even in grain, very strong, fairly resistant to fungi and said to be almost termite-proof. It planes easily and turns well but will not take nails. In W.A. it is used for making rulers. Weight 50–65 lb. per cu. ft. air-dry. Fruit pulp soft and very sweet and is made into a fermented drink (Sud.). Many medicinal uses (Sud.).

Ref. 14; 17; 22; 26.

177. Diplorhynchus mossambicensis Benth. (Apocyn.).

Tombozi (G), *mtomoni* (Y), *mulimbo* (He), *mnyanyata* (He), *muntalembe* (Nk).

Small tree up to 20 ft. with graceful drooping foliage, bark thick and corrugated, yields milky sap, leaves deciduous, opposite, simple, ovate, yellowish green, flowers in terminal panicles, sweet scented, white and starlike, fruit characteristic not unlike a pod, but really a capsule later becoming woody, with two red-winged seeds. Found on soils of lighter texture in drier parts of the foothills.

The heart wood is durable. The latex is smeared over cuts in the body and is used for fixing arrow-heads in their sockets (S.R.) and for bird lime.

Ref. 9; 14; 26.

178. Diplorhynchus sp. cfr. **D. angolense** Buttn.

Thombozi nsanga (C).

A tree.

An infusion of the roots is drunk for various venereal diseases, *e.g., kaswente, cinzonono, njovera, cinyera.*

179. Disa sp. (Orchid.).

Cinaka, cikande (N). *See* also *Habenaria walleri* and *Satyrium* sp.

The tubers of four or five kinds of ground orchids, of which this is one, are used for side-dishes; they are found mainly in the hill areas of the country, *e.g.,* Kota Kota and Ncheu Districts. The tubers are variously shaped, some growing like fingers from a central point while others are unbranched, some are red in colour and others are white.

The tubers are cooked as follows:—they are washed, then pounded to remove the skin, dried in the sun and repounded. They are then boiled in a solution of native potashes (*cidulo*), the surplus liquid is squeezed out and the product left to dry. It is now a very firm jelly, reddish in colour and is usually sold in this form. To use as a side-dish, the jelly is cut into strips and boiled with salt. When it is cooked, pounded groundnuts are added. The dish is very well liked apparently because of its resemblance to meat, being red and having a texture like gristle. There is a considerable trade from the hill to the plains in these tubers (Ncheu).

VARIETIES (*Ncheu*). (*They are often used mixed together.*)

1. *Kamlaza, mlaza.* The plant has two leaves blotched with red as they get older and red flowers. This is considered to be the best kind.

2. *Madozo, ciputu.* The plant has only one leaf and is not a good kind.

3. *Kamwendo.* The plant is tall, has a pair of leaves, white flowers and white finger-like tubers, which are not liked as they do not make a firm jelly when cooked.

180. Dolichos buchanani Harms. (Papil.). Bully Beef Plant.

Nthupa, ndupa, tsulutsulu, cilowe ca ntupa, maluwa a cizuzu (N), (last three names are of the flowers.)

An erect herbaceous plant 3–4 ft. high, leaflets three with silky hairs, lanceolate or ovate-lanceolate, flowers in long racemes, purple, flowering before the rains break, while the leaves are still very young, large woody tuberous root streaked with red and white, hence the name. The plant is very common in hill areas. The flowers are known to be eaten in the following Districts:—Ncheu, Dedza, Lilongwe, Kota Kota, Dowa and Kasungu.

The flowers are cooked often with other leaves, *e.g., mtambe thengo* (*Vigna phaseoloides*) or with other flowers, *e.g., nkunga*, (*Sphenostylis* sp.). Potashes, *cidulo*, are usually used to soften the flowers and pounded groundnuts are added. Rat traps are cut from the roots and baited with maize. An infusion of the roots is sprinkled on native pots before firing to prevent breakages. A very popular kind of edible caterpillar, *mphalabungu*, feed on its leaves.

Ref. 5.

181. D. lablab L. (Papil.). Hyacinth Bean.

Mkhungudzu (N), *ngwingwisu* (Y), *kukusu* (Ngu), *mambamba* (Tu), *mankhamba* (Nk).

A climber, considered Asiatic in origin, commonly grown on hut fences, leaflets (3), membraneous, flowers in racemes, reddish or pale pink, the keel is abruptly incurved, pods narrowed at the base, beans ovoid, red, brown or black with prominent hilum. Grown in small quantities over most of the Southern Province and from Mzimba northwards; between these limits only very occasionally to be seen.

The beans are eaten as a side-dish. They are very hard and are said to take up to eight hours to cook but they may be ground before cooking (Karonga). They are also cooked with the skins removed as *cipere*. The skins are very firmly attached, hence the beans are first roasted, then ground between stones, then pounded, after which the skins are winnowed off. Inspite of this drastic treatment, the cotyledons of the bean remain unbroken. The young pods are occasionally cooked as a side-dish (Palombe). Red and white kinds are boiled in their pods and the beans eaten one by one as *makata* (Palombe), black kinds are too bitter for this. The beans are boiled twice and the third time are mixed with maize and again boiled to form *ngata* (Karonga). The leaves are occasionally cooked as a side-dish.

Ref. 1; 5; 6; 23.

182. D. lablab L. (Papil.). Wild Hyacinth Bean.

Nkhusa (N).

A wild form of the above grows in hilly areas, the beans are small and are not eaten.

The leaves are occasionally cooked as side-dish (Kota Kota Hills). An infusion is made of the leaves together with those of *mphosa*, (*Annona* sp.) and drunk by pregnant women to prevent miscarriages. At the same time a rope is made of the roots and worn round the waist.

Ref. 1; 5; 6.

183. D. trinervatus Bak.

Mkhwere (N), *cankhwere*, *cidyankhwere* (C).

A herb with a large spherical swollen root found widespread. Roots used as a soap substitute for washing clothes; very commonly used as an aphrodisiac, pounded with flour and mixed with the side-dish. Roots also used as cure for *nyangu*, a symptom of which is dropping off of the eyelashes and poor sight.

184. Dolichos sp.

Citimbwisi (C), *ciluwe ca citimbwisi*, name for flowers.

A shrubby herb.

The flowers and leaves are cooked as a side-dish, groundnuts are added and the product is much liked (Kasungu).

185. Dolichos sp.

Gulinga (Tu).

A creeper.

The roots are rubbed on the limbs to cure them of aches and pains.

186. Dombeya platypoda K. Schum. (Sterculiaceae).

Mnyangale (N), *namaluli* (Y).

A shrub growing to about 5 ft. with bright green, large, hairy leaves and clusters of flowers of an intense pink when they open, rapidly fading to a rather dingy brown. It springs up in maize gardens from February onwards and flowers in April and May (Kota Kota Hills), at elevations of about 4,000 ft. and over in open grassland.

The bark makes a very good binding material for building purposes, fences, etc. The pith is cooked, with the addition of potashes, to form a side-dish, pounded groundnuts are added (Dedza and Ncheu Hills).

Ref. 3; 26.

187. D. rotundifolia Harv. (Sterculiaceae). Wild Pear tree.

Naduwa (N), *nciu* (C), *ciwalikwa* (Y).

A much-branched, deciduous, pubescent tree up to 30 ft. with large, leathery, rounded, cordate leaves which are prominently reticulate below, flowers in branched umbels, of an attractive pale pink or white, usually produced when the tree is leafless in September. Widespread in grassland at 5,000 ft. alt.

The wood is used for tool handles, the bark from the young shoots is used for rope (E.A.).

Ref. 17; 26.

188. Dombeya sp.

Thoni (N).

A shrub 4–5 ft. high with pink flowers, found in the Dedza Hills.

The flowers are cooked as a side-dish, they are sometimes mixed with pumpkin leaves (Dedza).

189. Dorstenia sp. (Morac.).

Mbwangululu (Tu).

A herb with disc-shaped swollen roots 1½–2 ins. in diameter.

The leaves are cooked as a side-dish, from December to March (Kasungu). The product is not mucilaginous (*thelele*).

***190. Dovyalis caffra** (Hook. f. & Harv.) Warb. (Flacourt.). Kei Apple.

A much-branched, spiny tree, native of the Cape and Natal.

It is used in Kenya for live fences and was tried in 1942 at the Experimental Station, Mlanje, for this purpose. When green the fruits are pickled and when ripe made into jam (S.A.).

191. Ekebergia arborea Bak. f. (Meliac.).

Mabere ya ng'ombe, matekenya (N), *mtutumuko* (Y).

A deciduous tree up 30 ft. tall, leaves alternate, pinnate, leaflets in three pairs, somewhat stiff, flowers in axillary compound cymes, greenish-white, fruit a green berry about the size of a cherry.

The wood is soft, no apparent difference between heart and sapwood with central pith, used for bowls and pillows; an infusion of the roots used to cure pains in the chest (S.R.). The fruits are edible and ripen in December (Dedza and Ncheu).

Ref. 9; 14; 26.

192. E. velutina Dunkley.

Mziru (N), *mviru* (Tu), *mtutumuko* (Y), *juju* (N), *musefu* (Su).

Timber probably durable and useful, difficult to saw.

Ref. 14; 22.

193. Elaeis guineensis Jacq. (Palm.). Oil Palm.

Kanjindo (To).

A palm with the trunk either covered with the persistent leaf stalks or ridged with the scars of the fallen leaves, leaves borne in a crown in old specimens, often persisting on the stem in young palms, dark-green, long, pinnate; fruits in dense heads from the axils of the leaves. Numerous in parts of the Kota Kota District in swampy areas where it was first remarked on by Livingstone. In habit it is quite unlike the West African Oil Palm and has a small fruit with thin pericarp very much liked by monkeys and birds. The West African form has been planted in various parts of the country, particularly by missions, those at Zomba fruit heavily and those in the Port Herald District, planted by the Marist Fathers, have grown with success.

The oil is not extracted from the wild palm, in fact, its oil content is low.

A fat is extracted from the seeds of the W.A. Palm which is in very common use there. It is extremely valuable as a rich source of vitamin A. The fat is a bright orange colour and is almost tasteless and odourless. In cooking a slightly unpleasant flavour may develop, which can easily be disguised if flavouring such as onions or curry powder is added to the dish.

Ref. 14; 17; 23; 26; 27; 28.

194. Elephantorrhiza goetzei (Harms) Harms (Mimos.).

Citeta (N), *cikundulima* (Y).

A small spineless tree, up to 18 ft., leaves bipinnate with about 20 pairs of pinnae, each with 20–40 pairs of leaflets, spikes of brownish-violet flowers 4–5 ins. long, pods narrow up to 16 ins. long.

The roots have a high tannic acid content. They are crushed and stirred into ponds as a fish poison, the seeds are also poisonous. The bark is used for string. An infusion of the roots is drunk as a cure for *citeta*, a disease of women after childbirth.

Ref. 5; 10; 26.

195. Eleusine coracana Gaertn. (Gram.). Finger millet.

Mawere, lipoko (N), *usanje* (Y), *khakwe* (Ngu), *mulimbi* (Se), *lupoko* (Tu), *malesi* (Tu, Nk, Su), *mawe* (To).

A free-tillering erect annual grass believed to have originated from the wild *Eleusine indica* Gaertn. having been developed by selection at an early date in India, as there are many varieties there where it has long been cultivated. Attains a height of 2–3 ft. and carrying its small grain in a terminal whorl of straight or incurved spikes. An important grain, by most East African tribes considered to be fit as a food only for women and children, its most important use being for beer. Grown all over the country and in large amounts in the Mzimba and Karonga Districts.

The main use of finger millet in Nyasaland is for beer-making but it is also used for porridge wherever it is grown in large amounts, *e.g.*, the Mzimba and Karonga Districts.

The grain is stored in the heads; when flour is needed the heads are threshed with sticks and the grain separated by winnowing. The grain is then ground between stones, the woman kneels on the ground in front of a large flat stone and with a second smaller one grinds a small quantity at a time to a fine meal. A little water is poured on to help the grains stick together. Some of the coarse bran is usually winnowed off but the flour still remains a reddish colour. Some times the grain is roasted before grinding (Chinteche).

(1) Porridge, *nsima*. Water is boiled and the flour added rapidly and the mixture stirred for a few minutes only, it is not cooked as thoroughly as porridge made from maize or sorghum flour. In order to improve the flavour, maize flour or bran is occasionally mixed in with the flour before cooking. The porridge is rough in consistency and hence hard to swallow, it is therefore usually served with *thelele* (cooked mucilaginous leaves) as a side-dish to help it slip down. Because of its consistency it is not well liked and usually only eaten in times of hunger. It is said to cause constipation (Fort Johnston). If the flour is sieved and a fair proportion of the bran removed, the remainder makes an excellent porridge, especially if made with milk, for European consumption.

(2) Roast Finger Millet, *lipoko looca*.

Flour which is still slightly wet from the grinding, is made into a cake and put into the sheath of a maize cob or banana leaf. It is then roasted in ashes and eaten. This method is often used by hungry children.

3. Banana Cakes, *cibama* (Nk), *zitumbuwa* (N.A. Kaluluma's, Kasungu).

Flour is pounded with bananas and the mixture made into flat cakes and fried if oil is available, if not they are cooked dry in a pan.

4. Uncooked Flour and Water.

Mgodo, cigodo (N), *ngamba* (Y), *mperera* (N, meaning ground), *ciponde* (N, meaning pounded), *nthimpwa* Nk, Tu), *unya* (Y).

These are all names for a mixture of the raw flour and water. The grain may be pounded or ground, it is then mixed with water to form a hard cake called *ciponde* which may be stored for a day or more and is useful to travellers, or more water is added to form a thin gruel, *unya* (Y), used as a drink.

5. Malt, *cimera* and Beer, *peri, mowa*.

Finger millet makes a sweet malt and hence is preferred to any other grain for beer-making. Where it is scarce, efforts will be made to use at least a proportion

of it to mix with malt made from other grain such as maize. (See **Zea mays** for preparation of the malt and of beer).

6. *Cindongwa* (C), (Kasungu).

Maize bran is well pounded with water and the resulting milky liquid is boiled with some ground finger millet to make a thin gruel which is a refreshing drink.

7. *Phala la sawa*, GROUNDNUT GRUEL. (Used by the aTumbuka and aKonde).

The grain is ground and mixed with a little more than its own volume of pounded groundnuts. Water is boiled in a pot and the mixture poured in and boiled until thoroughly soft. It makes a very popular sweet drink.

There is a considerable exchange trade in finger millet for maize and other foods throughout the country.

Successive cropping of the same piece of ground with finger millet eventually leads to its abandonment through the increase of the wild *Eleusine indica*. It is a crop that will produce under the most adverse circumstance but it needs a fertile soil and a heavy rainy season to see it at its best when it is a heavy yielder. It is extremely drought resistant and it also has the advantage of not germinating in the ear if there is an unusually heavy rainy season as do the short term sorghums. In Nyasaland it is almost always planted as a late crop in February, this may be due to the fact that it is so drought resistant that it can be planted after the main hoeing of the maize crops is completed.

Ref. 13; 17; 23; 27.

196. Emilia coccinea (Sims) Sweet (Comp.).

Cinguwo (N) (See *Sonchus oleraceus* with same native name).

An herbaceous plant up to 3 ft., lower surfaces of leaves often purple, showy flowers in compact heads deep yellow or orange. Abundant in old cultivated ground with *Rhynchelytrum repens* and *Bidens schimperi*.

The leaves are very occasionally eaten as a side-dish. They have an unpleasant flavour and are disliked.

197. Ensete livingstonianum (Kirk) E.E. Cheesman (Musac.), Wild Banana.

Cizuzu (C).

A wild banana, the leaf stalk is red in colour, the fruits are about 4 ins. long containing a large number of black seeds. Widely distributed in Nyasaland, usually confined to the edges of evergreen forest, in gulleys and on steep forested hillsides where it receives protection from grass fires.

The fibre from the outside of the leaf stalk makes a strong string but is not used locally. The leaf stalk is slit into strips and makes good binding material for building purposes. A number were planted at Mwera Hill for fibre trials but the results appear to have been disappointing.

Ref. 27.

198. Entada phaseoloides (L.) Merr. (Mimos.) Sea Bean, Mackay Bean.

Mpagaga (N), *mkulumu* (G), *kanteresi* (Nk, name for seed only).

An immense liane with very stout stem and enormous 3–4 ft. long, segmented woody pods, containing 14–20 seeds. The dark brown shiny seeds are often to be seen on river banks or on the lake-shore having been washed down by rivers. The seeds are very large (2–3 ins. in diameter). Found in the hills of the Karonga and Nkata Bay Districts.

The stems are used for rope-making and for mats. The seeds are used for smoothing the surfaces of clay pots.

Ref. 15; 25; 26; 27.

199. Entandrophragma caudatum (Sprague) Sprague (Meliac.). Mahogany.

Napalali, *ngundangoma* (N), *nagalawe* (Y).

A much-branched, deciduous tree up to 60 ft. tall with a rounded crown, bark buff-grey, smooth, flaking off in large concentric rings, leaves pinnate, leaflets in 4–6 pairs, cordate long acuminate with long petiolules, flowers in long slender racemes almost as long as the leaves, fruit about 6 ins. long, a woody, five-valved capsule dehiscing apically, seeds glossy brown with an apical wing about 2 ins. long.

A dark brownish-red wood which owes its attractive grain to its numerous rings of parenchymatous tissue, has a whitish sapwood, is easy to work and seasons readily when not naturally defective, has more conspicuous ripple marks than almost any wood, when cut green has an unpleasant sour smell but this disappears on drying. In S.A. is used for furniture. Weight 46 lb. per cu. ft. (Air dry).

Ref. 14; 22.

200. E. stolzii Harms. Mahogany.

Mukarikari (Nk, Su).

A large tree up to 140 ft. tall with a lightly branched crown, leaves pinnate up to 12 ins. long, leaflets 4–7 pairs with short petiolules, oblong, flowers yellow-green in rather open panicles, fruit a blackish 5-valved woody capsule about 6 ins. long more or less beaked or pointed at the apex and dehiscing from the base upwards. Found in rain forest in the Misuku Hills, Karonga District.

A valuable and important timber tree (Tt).

Ref. 26.

201. Eriosema polystachyum Baker. (Papil.).

Cinkwisi (C).

A herb with trifoliate leaves and dense spikes of small pea-like flowers.

The roots are eaten raw by children from January to March.

202. E. shirense Bak. f. (Papil.).

Kambumukire (See also *Eriosema* sp. No. 203), *kabomola* (C).

A herb with hairy linear lanceolate, trifoliate leaves, flowers in an open raceme and small densely hairy pods.

The roots are eaten raw by children from January–March (Kasungu and Kota Kota foothills).

203. Eriosema sp.

Kambumukire (C) (See also *E. shirense*).

A herb with elongated (2 ins. long) swollen roots, glabrous leaves and dense racemes of small yellow flowers.

The roots are eaten raw by children from January to March (Kasungu District).

204. Erythrina abyssinica Lam. (Syn. *E. tomentosa* R. Br.) (Papil.), Kaffir Boom, Lucky Bean.

Muale, *mbale* (C), *mlindimila* (G).

A tree growing to a height of about 50 ft., often with a flattish rounded crown, bark thick, corrugated, corky; leaves, deciduous, compound with three leaflets, terminal one large and rounded; flowers large, 2 ins. long, red, showy in dense racemes produced before the leaves from September to October; fruit a thick, woody, constricted pod, seeds bright red with a black aril Found in drier parts of lower mountain and plateau areas.

Wood soft, pithy, useless as timber, used for carving spoons, drum barrels, toys and beehives. Good for fencing poles, sprouts if cut just before flowering and forms a useful hedge owing to its thorns. An infusion of the bark is drunk by those who suffer from the affliction of " calling out in the night ". (aCewa). Said to be a host of the coffee borer.

Ref. 14; 26.

205. E. humei E. Mey.

Cimutu (C), *mkwingusu* (N, Y), *muale* (N).

A shrub found in the hills.

An infusion of the root is used to cure dysentery and for stomach disorders.

206. Erythrophleum guineense G. Don (Caesalp.) Ordeal Tree, Sassy Bark, Red water Tree.

Mwabvi (G), *mwai* (Y), *cikoazozo* (To).

A much-branched tree up to 75 ft. tall with spreading crown, grey, rough, fissured bark, leaves bipinnate, glossy, flowers in spikes yellowish-white, pods flat, black woody 3–4 ins. long, remaining half-open on the tree without scattering the seeds. Found in southern Districts, mainly a river-bank species but under conditions of high rainfall in Nkata Bay District is found in large numbers growing on raised ground.

The wood is said to be very durable and resistant to termites. In the past it has been used locally for structures in which heavy beams are required, also for felloes in wagon construction. Sleepers made of it are used on the Trans-Zambesia Railway. The bark was used as an ordeal poison. The poisonous substance is highly soluble in water and forms a red coloured decoction.

Notes on *mwabvi* written in English by a Yao from Fort Johnston (1938).

" A tree growing by the stream side, according to the native point of view, there are the male and female trees all growing by the above place. The bark of the tree which is much used for drinking in the trials of criminals such as in witchcraft (very common), theft, adultery, etc., therefore the difference is this, the bark of the male *mwabvi* is the only one that is used for the trials."

" If there is a continuation of deaths at a village and after trying lots there is still doubt as to the cause of the deaths, the head of the family has to report to the village headman, who also afterwards brings the man who is reported to the principal headman, who after hearing his case gives his approval as to the taking of the Ordeal poison. The head of the family goes out early or at night and also secretly to a certain native doctor commonly known by the natives as *mapondera*, one who knows how to break off the bark from the tree and who knows according to the position of how the bark falls from the tree, he can tell whether there will be death of criminals or not. If the bark falls with the outer part first to the ground, it is an omen that some criminal will die. If sideways first or with the inner fine part first, it is a good omen, all who drink it are innocent. The doctor cuts some of the bark, takes this and pounds it in a mortar and he keeps on murmuring some magical songs and curses to give effect to the poison. After all this, he hands it over to the man who pays some money or a goat or fowls."

How to drink *mwabvi*:—

" A path is hoed up in the bush and all the members to drink take turns one at a time. Each curses himself while mentioning the charge of the accusation and after drinking, walks from one end of the path to the other end. All innocent vomit before reaching the other end and always the criminals die just before they are halfway. Such who die are always supposed to be the cause of the deaths or to be witches or wizards.

"Sometimes a husband is not sure that his wife has become pregnant by him and he may accuse his wife of adultery. Then two fowls are brought, one representing the husband, this is always a cock and a hen to represent the wife. Each are given *mwabvi*, if the husband is right in his accusation, the hen dies and the cock survives. If the husband is wrong, the cock dies and the hen escapes.

"About thefts, the accused has to drink the *mwabvi* himself. If not guilty he vomits, if guilty he dies.

"These practices are now prevented by Government but they used to be so, long ago before the white men came but it must be noted that everyone who drinks the male *mwabvi* bark gets poisoned for even the ignorant native knows that it is poisonous."

There is a physiological reason why the poison may to some extent be selective of criminal and innocent. The guilty is in such a state of fear that he secretes adrenalin, the normal secretion of a frightened person, to such an extent that the muscles of his stomach do not contract and reject the poison, while those of the innocent who has implicit faith that he will vomit, will contract and cause him to do so. The amount of the poison, however, has to be nicely adjusted as too small amounts might be insufficient to cause vomiting even on the part of the innocent.

Ref. 14; 15; 26.

207. Euclea fructuosa Hiern (Ebenac.).

Msanama (N).

A much-branched evergreen tree up to 30 ft., alternate or subopposite, obovate, oblong, glossy leaves with reflexed margins, flowers, small yellowish-green in short racemes in the axils of the leaves, fruit a small pea-like, hairy berry.

A black dye used for native mats is obtained from the roots; the branches are used for toothbrushes as they are said to make the lips and mouth very red. (E.A.). A tree used for the same purpose was seen at Mzimba. The wood is useful.

Ref. 9; 14; 17; 26.

208. Eulophia sp. = Davies 727 (Orchid.).

Nkonko (Tu).

An orchid growing to about 6 ins. high with an irregularly-shaped swollen root or tuber.

The roots are rubbed on to cracked pots to mend them.

209. Euphorbia tirucalli L. (Euphorb.). Milk bush.

Nkhadze (N), *mngaci* (N, Y), *ngaci* (C).

A shrub with much-branched succulent stems, perfectly smooth and round in cross section and generally yellowish-green in colour. Under natural conditions often forms a small tree up to 30 ft., narrow leaves to half an inch long occur on the very young tips, inconspicuous small yellow-green flowers and trilocular fruits. It exudes a white latex. Widespread, it is either solitary or gregarious, in dry areas throughout Nyasaland, very commonly planted on graves.

A live hedge plant, its latex which is extremely irritating to the eyes and may cause temporary blindness, protects it from browsing animals. The branches are bruised and thrown into water to poison fish (E.A.).

Ref. 17; 18.

210. Euphorbia sp. = Miss Barker 436. (Euphorb.).

Cikhawo (N).

A herb with long tapering tap root, dark brown in colour.

The roots are eaten raw by children from January onwards into the dry weather. (Kasungu and Lilongwe Districts).

211. Fadogia odorata K. Sch. (Rubiac.).

Mkumbakumba (N).

A small shrub, flowering in October, fruits small, green, yellow when ripe (December, Ncheu). Widespread on cleared ground in Ncheu District.

The fruits are edible.

212. Fagara nitens Hiern. (Rutac.).

Mlunguculu, mcodzi (C).

A small thorny tree usually found growing on ant hills. The leaves are known to be eaten in the foothills of the Lilongwe, Ncheu, Fort Johnston and Kota Kota Districts.

The leaves are occasionally eaten as a side-dish. They are not cooked on the fire in the usual way but boiling water is poured on them and the mixture is stirred at the side of the fire. The timber is probably useful and durable, bows are sometimes made from it.

Ref. 14; 22.

213. Faurea saligna Harv. (Prot.) African Beech.

Cinsense (C), *mseje, mtatasika* (Y), *ciere* (To).

Shrub or tree up to 50 ft. tall, bark rough, grey, foliage evergreen, and flower spikes greenish appearing in October. The foliage turns a beautiful colour in autumn. Found in the lower mountain and plateau areas.

The timber is most handsome with marked reticulate grain and when cut on the quarter shows a conspicuous figure due to the very broad rays. It is commonly used for furniture in S.A. It is said to be termite resistant. Weight about 45 lb. per cu. ft. It is a good charcoal wood (S.R).

Ref. 9; 14; 22; 26.

214. Ficus mallotocarpa Warb. (Morac.).

Mtsuka mbizi (C) (meaning to wash the dishes), *mpumbi, mpumbumbi* (Y), *mtundu*) (N).

A much-branched tree up to 60 ft. tall with whitish trunk and evergreen, alternate, ovate leaves densely pubescent below, fruits sometimes in separate crowded panicles borne on the lower part of the trunk or sometimes on the same tree, solitary in the axils of the leaves, figs globose covered with fine, soft hairs. Found in foothills, often in native gardens.

The leaves are used for sandpaper and the fruit is edible.

Ref. 26.

215 F. natalensis Hochst.

Much-branched evergreen tree up to 50 ft. sometimes epipyhytic, leaves up to 3 ins. long, papery, shiny; fruits about half an inch in diameter, locally common in forest patches.

Bark used for cloth, to induce lactation and to cure influenza (Tt), fruits eaten by birds.

Ref.

216. F. ovata Vahl.

Mlambi (Su).

Large frequently epiphytic tree with broad crown, leaves large up to 10 ins. long, fruits 1–2 ins. in diameter, frequently cultivated by Africans in Tt. and in Misuku Hills in Karonga District for the bark which it yields; the trees are coppiced to produce along strips of bark, which is used to make the traditional garments of the aSukwa women. The garment consists of a belt about 4 ins. wide stiffened with a strip of harder bark inside and coloured with various bright designs, looped over this belt at back and front is a very long strip of bark softened and sewn with string into a thick belt; sap used for bird lime.

Ref. 26

217. Ficus spp. Wild figs.

Nkhuyu (N), *ndawa* (Y), *kacere* (Y, N), *mpumbi* (Y).

There are a very large number of species of figs in the country. They may be small or large trees and the leaves are variable but all have milky latex and characteristic fruits.

Many of the kinds have edible fruits, some of the latter reaching almost the size of the cultivated kind. They are, however, lacking in flavour and very seedy. The leaves of at least one species, *kacere*, are eaten (Kasungu). The small sprouting leaves are picked in September or October, and cooked sometimes with the help of potashes. An infusion of the bark of a large leafed kind, *nkhuyu*, is mixed with the bark of the wild banana, *cizuzu*, and washed on the breasts of women when they are lactating to increase the supply of milk. It is also used mixed with the bark of *mlembela* and *kaumbu* as a cure for dysentery. The leaves of *F. capreaefolia* Del. are rough and used as a substitute for sand paper. The latex of some kinds is used for bird lime. The wood of most is soft and of little value. Widespread at all elevations.

Ref. 14.

218. Flacourtia indica (Burm. f.) Merr. (Syn. *F. hirtiuscula* Oliv.) (Flacourt). Indian Plum.

Ntudja (N), *nthudza* (C), *mtawa*, *ndawa* (N), *mtumbusya* (Su), *dawi* (Nk).

A much-branched, small tree usually spiny, leaves are rotundate or obovate elliptical, midrib and long curved lateral veins are rather prominent below, berries on short axillary or terminal branches, about half an inch in diameter, purple black when ripe. Known to be eaten in the Kota Kota and Zomba Districts. Common in *Brachystegia* woodland up to 5,000 ft. Flowers from September to October, fruits ripen in June–July.

The fruits are edible with a pleasant flavour. An infusion of the roots is drunk as a cure for pneumonia.

Ref. 6; 26.

219. Flemingia rhodocarpa Baker. *See* **Moghania.**

220. Fleurya aestuans Gaudich. (Urtic.). Stinging nettle.

Kwisa (N), *likaswa*, *likasa* (Y).

A herb resembling a nettle up to 4 ft. or more high with panicles of small, green or greenish-red flowers. Known to be growing in the hills of the Kota Kota District.

The outer fibre is used for string for traps and for threading beads.

Ref. 7, 14.

221. Garcinia spp. (Guttif.).

Mpimbi (N), *ntundira* (Y).

Evergreen, small or large trees, usually easily recognized by opposite, simple, thick leaves and resin-covered buds. The young branches are winged or sharply angled. In mountain forests, *e.g.*, Zomba, Mlanje and Nchisi Mountains.

The fruits are edible, those of *G. mlanjiensis*, Dunkley, are excellent but very acid. The wood is hard, probably durable and useful, difficult to saw. Weight about 53 lb. per cu. ft. "An aqueous extract from the roots is drunk to relieve chest pains." *G. buchananii* Bak. Gamboge is the solidified exudation of most species.

Ref. 12; 14; 22 and 28.

222. Gardenia manganjae Hiern (Rubiac.).

Mfukula, mdyanjima (meaning eaten by monkeys), *mzondo* (N), *mdiokola, mkoma, ntowitowi, mdogodya, mtsece* (Y).

A shrub with opposite leaves, elliptical up to 4½ ins. long, flowers solitary, axillary, corolla funnel-shaped, 3 ins. long, white with brown spots, flowering from mid-September to October and fruiting in April. Lower elevations below about 3,000 ft.

The fruits are edible.

Ref. 12; 14; 27.

223. Gladiolus spp. (Iridac.).

Tombolilo (N).

This name is given to many species of gladiolus that are so common, particularly in the hilly parts of the country. The young juicy stems of some are chewed and the corms form a popular "whizzer" for children to play with.

224. Glycine javanica L. (Papil.).

Yembe (C).

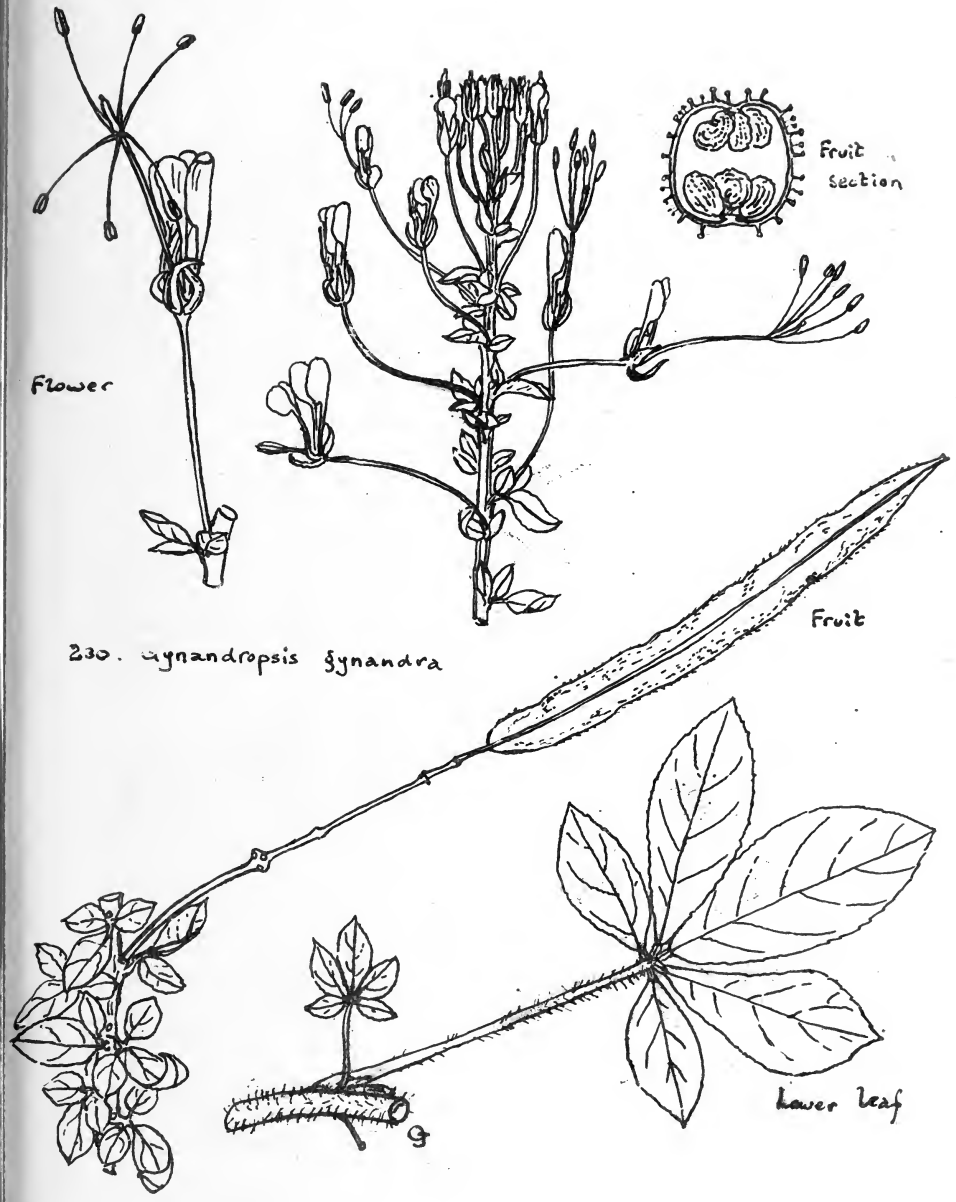
A perennial herb with slender climbing stems thinly pubescent, leaves alternate pinnately trifoliolate, terminal ovate acute, lateral usually unequal sided, flowers small in 3–6 ins. long stalked racemes, pod linear narrow about 1 ins. long nearly straight. Common in grassland and open bushland throughout the country.

The leaves are cooked as a side-dish, they are not slimy and are much used.

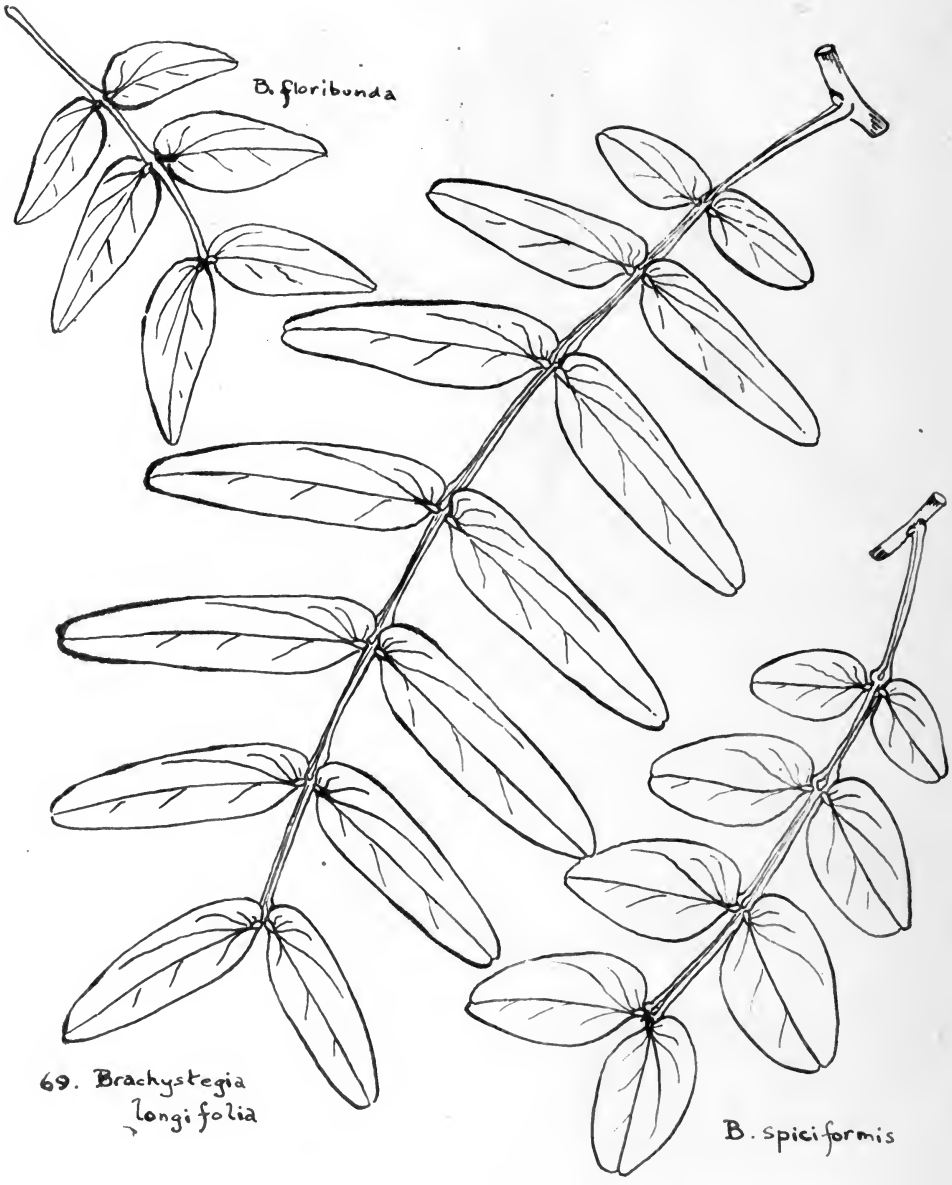
***225. G. max** (L.) Merr. Soya bean.

An annual, 2–3 ft. high, flowers are small and self-fertilized, seeds, 3–6 in a pod, resemble peas and may be black, brown, yellow, green or mottled, according to variety. Native of Central and East Asia. Grown in considerable amounts in the Southern Province.

The soya bean has been used for centuries in the East and during the past few years its value has been realized in the Western countries. It has been grown for some years in Nyasaland and varieties have been found which do well and which are palatable. The beans contain a saponin, which is poisonous and which is found in varying amounts in the different kinds. In the East the beans are always eaten in some processed form, *e.g.*, as curd or milk. White kinds are less bitter than black skinned varieties and many so-called edible varieties appear to be in constant use in other countries, *e.g.*, America and South Africa, cooked in the plain, boiled form with no deleterious consequences.



230. Gynandropsis gynandra Briq. (Capparid.).



67, 69, 70. **Brachystegia species,** (Caesalp.). Pinnate leaves of *B. floribunda*, *B. longifolia* and *B. spiciformis*. Note leaflets with angle nerves, a conspicuous feature of the genus.

The following are a few of the very large number of kinds suitable for eating:—"Herman," "Easy Cook," and some of the non-shattering kinds known as "Hernon." The soya bean has a texture entirely different from the other pulses, such as beans and peas, familiar to the African. It contains a high proportion of protein and of fat and when cooked does not become very soft and floury but retains its firm consistency and form. This latter fact is probably its greatest drawback against the use of the bean by Africans. They are used to beans which crumble readily between the fingers when they pick them up with a lump of porridge and they quite naturally assume that the beans must be insufficiently cooked when in actual fact they are well cooked.

Methods of Cooking Soya Beans:—

1 Boiled as a Side-dish.

By far the simplest method is to boil in the usual native way. The varieties differ considerably in the length of boiling required, the kinds mentioned above take from 3–4 hours before they are well softened and even so they retain their shape. They may be accepted cooked in this way and it is always worth trying. Experiments (*) have been carried out in Salisbury and it is reported that although there was some difficulty at first, the beans have now been successfully introduced into the rations for labour. A start was made by mixing small amounts 5 per cent. of soya beans with cowpeas and by gradually increasing the amounts of the former. At the end of six months equal quantities of soya and cowpea were used.

2. *Cipere*, Boiled and Mashed Beans with Skins removed as a Side-dish.

The skins are very easily removed after soaking, the beans can then either be pounded or ground and boiled until soft. They froth up considerably during the process. Soya beans, however, because of the firm texture do not make good *cipere* and are not likely to be very popular in this form.

3. The use of Soya Bean Meal to Improve the Food Value of Porridge, *nsima*.

This is probably the best way to use soya beans in native diets. Unfortunately, the method is at present only applicable to large scale feeding in institutions such as schools, hospitals and prisons or in the case of labour where the gang is given a cooked meal or is issued with meal and not whole maize.

(*a*) *Use of roasted meal.*

The beans should be roasted for some minutes and then ground or pounded. The resulting flour is palatable and also stores well. It may be used in amounts up to 20 per cent. (10 per cent. is recommended) to mix with any other kind of flour. It makes a very palatable product with cassava flour, the latter is of such poor nutritive value on its own, as it consists almost entirely of starch, that the addition to it of protein-rich soya meal is important.

(*b*) *Use of unroasted meal.*

Soya beans may be used in the proportion of up to 20 per cent. mixed with maize meal, without detracting from the palatability of the product. Amounts of 5–10 per cent., however, if used constantly are sufficient to improve the diet materially. The beans should be milled mixed with maize in order to prevent possible clogging of the plates due to the oiliness of the bean. The mixture will not keep for more than 3–4 days depending on the temperature because of the large amount of fat in the beans which tends to go rancid.

Unroasted meal is *not suitable* to mix with cassava flour as the short cooking usually given to the latter is not enough to cook the bean meal.

4. Roasted Soya as a Substitute for Groundnuts in Side-dishes.

Roasted and pounded soya beans may be used as an alternative to groundnuts in the preparation of various kinds of side-dishes, particularly of leaves. The product

(*) *Rhodesian Agricultural Journal Vol.* 48, 9th September, 1941.

is not nearly as palatable as when groundnuts are used, in fact its presence is difficult to detect and when added in amounts of 1 lb. soya to 5 lbs. of leaves, boys at Mwera Hill in 1942 did not realize that anything had been added to the leaves. A mixture of soya and groundnuts was tried, which although not as good as the full amount of groundnuts was pronounced as being quite good. This practice could be adopted to eke out scant supplies of groundnuts with no loss to the nutritive value of the diet.

5. Soya Bean Milk and Curd.

Milk made from soya beans and the curd from the thickened milk are both used extensively in Eastern diets. Although there seems little likelihood of African women adopting such methods under village conditions yet there is a place for the use of both products at training centres and schools.

A method suitable for this country was in use at the Jeanes Training Centre in 1942. The procedure is as follows:—

> The beans are soaked overnight and the skins removed by rubbing between the hands and washing. The beans are then pounded until pulpy, mixed with water in the proportion of one cup of pulp to three cups of water and the mixture boiled for about 30 minutes. The liquid is strained off and salt or sugar added to taste. The milk is then ready for a drink for young children or for the other purposes to which cows' milk can be put. It should be stored in a cool place. The pulp left over can be used straight away as the basis for soup or may be dried and stored.

Soya milk contains about the same proportions as cows' milk of fat and protein but only one-tenth the amount of calcium, hence it must not be used as a substitute for the latter in infant feeding unless extra calcium is given.

Soya curd is precipitated from the milk in a number of ways using various chemical agents. Any acid, however, such as vinegar, will produce a curd or the milk will thicken naturally if left overnight in a warm place. The curd should be stirred and an equal amount of boiling water added. After 10 minutes, it should be drained through a muslin bag.

The curd has the appearance of very soft cheese and can be used mixed with vegetables in the oriental way. It could be used in this country either as an extra food or with other ingredients as side-dishes. The curd is a food of relatively high protein content, *i.e.*, 10 per cent. Moreover the protein is in a form in which it is almost completely digested (*), only about one twenty-fifth part remains undigested as compared with about one-fifth part of the protein of other legumes. Thus the curd provides a cheap source of good value protein of high digestibility.

6. Fresh Soya Beans as an Extra Food.

The green beans, either boiled for five minutes in their shells, then shelled and reboiled or boiled for 25 minutes in their shells, have a pleasant flavour and crisp texture. Children in Hawaii (*), are said to eat them with as much enjoyment as they eat sweets.

Other kinds of beans are already eaten in the country in this way, *e.g.*, *mikowe*, hence there should be little difficulty in introducing soya cooked in this way.

7. Roast Soya Beans as an Extra Food.

Africans very commonly eat roast maize, *cimanga cokazinga*, soya beans roasted in the same way are palatable and are readily eaten by all who have strong teeth.

Ref. 8; 23.

226. Grewia woodiana K. Schum. (Tiliac.).
Tensa, tenza (G), *tesa, mtesa* (Y).

(*) Japanese foods commonly used in Hawaii. Hawaii Agricultural Experimental Station Bulletin No. 68.

A small tree with ovate leaves up to 3½ ins. long, sepals yellow found widespread often by streams, flowering in November (Ncheu).

Fruits edible, very small like kaffir corn, *mapira*.

Ref. 14.

227. Gossypium spp. (Malvac.) Cotton.

Thonje (N), *masapa* (Nk), *lithonje* (Y).

A number of species are involved but probably the most important are the two New World species *G. barbadense* L. and *G. hirsutum* L. The crop is grown for export in the Lower River and Lake-shore areas, it does not do well at much above 2,500 ft. although a cotton was observed in villages on the western border at about 3,500 ft. altitude. This was almost tree-like and although growing on very poor and sandy soil it had most remarkably vigorous growth and a real abundance of bolls remarkably free from insect pests, its local name was *tonjemanza*.

It is not known when cotton was introduced into Nyasaland, and from whence, but there are constant references to cotton in Livingstone's Journals and he remarks on the quite remarkable quantities being grown by Africans and to the industry in weaving the cotton into a coarse cloth. In "*The Zambezi and its Tributaries*" published in 1865, Livingstone states on page 464 of the 1st Edition that he saw a garden with one side 630 paces and that many gardens were from one to three acres in size. He refers to the cotton as being of very superior quality. This must have been along the Murchison Cataracts. On page 111 he is more informative saying "Three varieties of cotton have been found in the country, namely, two foreign, and one native. The *tonje manza*, or foreign cotton, the name showing that it has been introduced, is of excellent quality". Further on, he states, "The *tonje cadja*, or indigenous cotton is of shorter staple, and feels in the hand like wool". Livingstone keeps referring also to the amount of cotton weaved into cloth and mentions the that the *tonje cadja* makes a far stronger cloth than the exotic cotton.

Ref. 27.

228. Grumilea ungoniensis K. Schum. & K. Krause (Rubiac.).

Mcenjedi (Y), *cisunkunthu* (N), See *Crotalaria cephalotes* of same native name.

Shrub or small tree with young branches covered with white hairs.

The leaves are cooked with potashes for a side-dish. They form a slimy product, *thelele*, which is liked by old people.

Ref. 26.

229. Gymnosporia senegalensis (Lam.) Loes. (Celast.).

Mpelu (N), *mpabulu* (Y), *ligoga*, *mpakula* (Y, N).

An armed or unarmed, much-branched shrub or small tree sometimes up to 25 ft., leaves alternate, very variable in shape and size, flowers small, white or pink in axillary, solitary or fasicled cymes, fruit a two-valve, lemon-yellow capsule splitting and exposing small red seeds. Common throughout the country.

Clements says the wood is yellowish, hard-straight, grained and durable. It tends to split during seasoning but planes and saws well, possibly a useful boxwood. Weight about 45 lb. per cu. ft. Many medicinal uses in W.A.

Ref. 14; 17; 22; 26.

230. Gynandropsis gynandra Briq. (Capparid.) Cats' whiskers.

Luni (N, To), *nsila* (Y), *mutaka* (Tu, Nk).

An annual, growing to 2 ft. or more, leaves with long stalks 5-foliate, flowers white or pale pink with very long protruding stamens hence the English name,

fruit, a capsule up to 4 ins. long. Flowers in December to February in the hills. throughout the year where water is available. It is one of the many hosts of the tobacco aphis. Very widespread at all elevations, particularly at about 2,000 ft., It is cultivated round the huts in many parts of the country.

The leaves make a very good spinach for European use and are probably the most popular of all wild leaves for side-dishes. In order to pick them, it is the native custom first to ask permission of the owner of the garden. The young shoots of leaf blades of older leaves are cooked without soda or potashes, groundnuts and tomatoes are added. Sometimes it is cooked mixed with *mnadzi*, (*Solanum nigrum*), or *mpilu*, (*Brassica* sp.). It may also be cooked mixed with green cowpea pods and onions (Port Herald) or fish (Mua). The former mixture with onions is very appetizing. The leaves are rubbed on the skin as a cure for *cibayo*, pneumonia.

Ref. 6; 7; 15; 23.

231. Gynura rubens (Jacq.) S. Moore. See **Crassocephalum.**

232. Habenaria walleri Reichb. f. (Orchid.).

Cinaka, *cikande* (N). *See* also **Disa** sp. and **Satyrium** sp.

A slender herb up to 2½ ft., flowers large, white, in few flowered racemes. In marshes and grasslands, in the Kasungu District.

One of the several orchids which are dug up for their tubers. (See **Disa** sp. for details of preparation.)

233. Harungana madagascariensis Lam. (Hyper.).

Mbuluni (N), *mtunu*, *ntununga* (Y), *mtumu* (He, To), *msuwasuwa* (Su, Nk).

A much-branched tree up to 30 ft. tall with spreading canopy and opposite discolourous leaves, terminal panicles of small greenish-white flowers and small orange berries. Found in moister parts of lower mountain and plateau areas clearings in evergreen forests are rapidly colonized by this species.

An orange dye is obtained from the stem and branches and is used for dyeing native mats (E.A.) and for colouring the traditional bark cloth belts of the aSukwa women. Many medicinal uses; root bark used for developing the breasts and interrupting the menses. (Tt).

Ref. 14; 15; 17; 26.

234. Heeria muconata *Bernh* ex Krauss (Anacard.).

Mbewe (Y).

A much-branched shrub or tree up to 20 ft., leaves alternate or ternate, oblanceolate, under surfaces silvery, flowers, small white in panicles, fruits, small, black and fleshy.

An infusion of the root bark is used for dysentery. (E.A.).

Ref. 14; 17; 26.

235. H. reticulata (Bak. f.) Engl.

Mbewe (N, Y), *ntukambako* (Tu), *namasira* (N), *msimbiti* (To, He), *masimya* (Nk).

A much-branched, finely pubescent tree up to 30 ft. tall, leaves, alternate or ternate, somewhat variable from lanceolate, prominently but finely reticulate below, flowers small, white, in much-branched panicles at the ends of the branches, fruit, a small 2-lobed, shiny, black berry. Common in forest fringing rivers of lower mountain and plateau areas.

Wood resistant to termites and used for native huts and bedsteads (E.A.). An infusion of the bark used to cure dysentery, the powdered bark used for inflammation of the eyes. (E.A.). An infusion of the roots mixed with others used to cure various venereal diseases and also colds.

Ref. 14; 17; 26.

***236. Helianthus annuus** L. (Comp.) Sunflower.

An annual, native of N. America, growing to a height of about 6 ft. with very large handsome flowers which become very heavy and hang down as the seed ripens. Grown in small amounts all over the country.

The seeds contain up to 30 per cent. oil which, cold pressed, is one of the best edible oils and is in demand for salads and margarine making. The oil has drying properties but is greatly inferior to linseed in this respect. Seeds are also used as poultry feed and chopped up plants are sometimes used as fodder and as a silage crop.

237. Heteromorpha arborescens Cham. & Schlect. (Umbellif.).

Khozyo thengo (C), *cikolola, kapoloni* (N).

A shrub or small tree up to 20 ft. leaves very variable, flowers small in compound umbels up to 5 ins. across, fruits straw-coloured; three winged. Widespread and fairly common in moist plateau or mountain grassland and in temperate rain forest remnants.

An infusion of the root mixed with others is drunk to cure colds on the chest and also for one of the various venereal diseases (*mtongo*).

238. Hibiscus acetosella Welw. ex Fic. (Malvac.).

Limanda (N), *lumanda* (Tu), *linyololo* (Y, name for all mucilaginous leaves).

A herb with leaves growing rather close to the ground, the leaves are shiny with narrow, red, serrate margins. The flowers are showy and yellow coloured. Very commonly used in villages in the Kota Kota and Kasungu Districts and northwards, either not known or does not grow in the Southern Province. Often protected when growing near huts.

The leaves are cooked as a side-dish with the help of potashes. Pounded groundnuts and tomatoes are added whenever available. The product is mucilaginous, sometimes only a little potashes, *cidulo*, is added so that the leaves are little broken up, it is eaten in this form particularly by lactating women who believe it to be a lactagogue. It needs a strong kind of plant ash if the leaves are to be completely softened. The product is very well liked both by men and women and permission must be obtained before picking the leaves from other peoples' land.

239. H. cannabinus L. Deccan or Bombay hemp, Java Jute.

Sonkhwe (N), *kolokondwe* (Su), *nyaduwa* (Port Herald).

An erect branched annual, more or less beset with spiny tubercles, leaves on very long stalks, deeply palmately 5–7 lobed, flowers with epicalyx of 5–7 linear segments, corolla yellow with purple centre, large and showy, fruits ovoid capsules with numerous seeds. Very widespread at all elevations.

The leaves are very occasionally cooked as a side dish with the help of potashes. The flowers are also sometimes cooked. The fibre obtained from the bark or bast of the stems, is an important article of commerce in India. It is valued as an efficient substitute for jute (*Corchorus*) but superior in quality for manufacture of cordage, sacking or any of the coarser textiles.

Ref. 15.

240. H. diversifolius Jacq.

Catata (N), *khuluza*.

A shrub up to 10 ft. high covered with short red prickles, flowers deep purple or yellow with red centre about 2 ins. in diameter, flowering October to November (Ncheu). Seen only near Mlanda Mission, Ncheu.

The flowers are cooked as a side-dish with added groundnuts. Bark used for string for sewing mats, woody parts used as fire sticks instead of matches (Tt).

Ref. 26.

241. H. esculentus L. Ladies' fingers, Okra, Gombo.

Nathando, cilunguthando, thelele lobzala, thelele la amwenye (N).

A hairy cultivated annual herb growing to 5 or 6 ft. tall, leaves on long stalks, cordate, palmately 5-lobed, epicalyx of 9–12 linear segments, calyx, tubular, 5-toothed, corolla large, yellow with a purple spot at the base, fruit, a capsule 4–6 ins. long, smooth or hairy containing many seeds. The plant is very easily grown from seed and does particularly well at low elevations. It is very commonly grown in the Southern Province, to a lesser extent as one comes north to Ncheu, Dedza and Lilongwe Districts, and then scarcely at all until one reaches Karonga District where a few plants are to be found.

The young fruits are very frequently cooked as a side-dish. They are first sliced and then cooked with soda or potashes, tomatoes are added and sometimes groundnuts. Among some tribes groundnuts are omitted as they do not mix in well with the mucilaginous product (Southern Province). The fruits are also cut into small segments and dried for use later in the year (Ncheu). The leaves are occasionally used as a side-dish, either cooked separately or mixed with the fruits. They also need potashes and form a slimy product. The bark yields a good fibre.

Ref. 15; 23.

242. H. physaloides Guill. & Perr.

Thelele thengo (N), *wemphe* (Ng).

A hispid undershrub, growing to 5–6 ft. tall with numerous chalky secretions near the base of the lower side of the leaf, flowers yellow with red base which turns violet. Flowers from October onwards until at least April (Mlanje). Known to be in use near Blantyre, Mlanje and Fort Johnston.

The flowers are sometimes cooked with other leaves as a side-dish, the product is mucilaginous. Yields a short white fibre of good strength.

Ref. 15; 26.

***243. H. rosa-sinensis** L. Rose of China.

A shrub native of Asia up to 30 ft. with large, red, showy flowers, it is often cultivated for ornamental purposes. Cultivated in areas of European settlement.

The leaves and flowers are sometimes cooked as a side-dish. (Blantyre). The leaves are first pounded and then cooked with soda or potashes.

Ref. 26.

***244. H. sabdariffa** L. Roselle, Guinea or Jamaica sorrel.

Cidede (C).

A cultivated annual growing 4–5 ft. tall, slightly branched often purplish stem, leaves variable, lower ones undivided, upper generally large, palmately 5-lobed, flowers with epicalyx of 8–10 linear segments, calyx cup-shaped, longer than epicalyx, as it ripens becomes a deep scarlet colour, fleshy; corolla yellow, large; fruits, ovoid capsules about 1 ins. long with numerous seeds. The plant is very common in N.A. Mponda's area near Fort Johnston, where it is grown for sale to Europeans and also for ornamental purposes. It is occasionally to be found at lower elevations in the Kota Kota and Lilongwe Districts as the aCewa use both the fruit and the leaves. It grows at Karonga but seems to be seldom used.

The fleshy calyx is cooked as a side-dish by the aCewa (Kota Kota), potashes are used and pounded groundnuts are always added as the dish is sour tasting.

The product is also very mucilaginous. The leaves are cooked occasionally by the aCewa as a side dish, they are also cooked with potashes and form a slimy product. Both leaves and fruits are occasionally dried (Lilongwe District). The calyx is commonly used by Europeans, it is best stewed with other fruit as the product cooked alone is very acid. It also makes very good jelly.

Ref. 13; 15.

245. Hibiscus sp.

Cimkakala (N, C), *cimkakate* (C).

An annual herb known to be used in the Kota Kota and Lilongwe Districts.

The leaves are cooked with the help of potashes, groundnuts are always added otherwise the mucilaginous product is very sour. The dish is well liked.

246. Hirtella sp. near **H. bangweolensis** (R.E. Fr.) Greenway (Rosac.).

Mphungumutu (N).

A tree with almond-shaped fruits having a velvety surface.

The fruits are edible and are ripe in December. Found at the Lake-shore (Kota Kota).

247. Holarrhena febrifuga Klotzsch. (Apocyn.).

Mkwale (G), *thombozi cipeta, kacamba, mkalancamba* (N), *ciwimbi* (Y). (By confusion with *Rauvolfia*.).

A small tree up to 25 ft. with latex; leaves elliptic to oblong 2–6 ins. long, often hairy beneath, showy compact inflorescence at end of axillary shoots, flowers white, sweetly scented, fruits very slender, 10–12 ins. long follicles. Found widespread at the middle and lower altitudes chiefly on alluvium.

The fruit juice is drunk raw as a cough cure. An infusion of the roots is used as stomach medicine and for the cure of various diseases. It is the " quina " of the Portuguese of Mozambique used as a tonic and febrifuge. Equal quantities of the root with those of *Ostryoderris stuhlmannii* are cooked for a long time, salt added and drunk as a cure for lumbago (*Msana* N).

Another tree of the same name, *thombozi*, with smaller leaves and milky latex which grows in short grass, is also in use as a native medicine.

Ref. 14; 26; 28.

248. Hyparrhenia dissoluta (Steud.) C.E. Hubbard ex Hutch. (Gram.). (Syn. *H. ruprechtii* Fourn.). Yellow thatching grass.

Kampiti, cilela.

Tufted, perennial grass 3–12 ft. high with straw-yellow stems and blue-green foliage.

A good thatching grass, also used for reed-work.

249. H. filipendula (Hochst.) Stapf, Fine thatching grass.

Kanyece, nyumbu (C), *kanyumbu* (Tu).

A perennial 3–5 ft., rarely 7 ft. high. Used for thatching.

250. H. nyassae (Rendle) Stapf, Bush thatching grass.

Kamphi, nyumbu (C), *kanyumbu* (Tu).

A tufted perennial 2–3 ft. high.

251. H. rufa (Nees) Stapf — Zebra Grass; Giant thatching grass.

Gogolo, cipeta (N), *nyumbu* (C), *kanyumbu* (Tu).

A tufted perennial grass 6–12 ft. tall, found on good lands.

Used for thatching and for fodder when cut back or kept low by grazing.

Ref. 15; 17.

252. Hyphaene spp. (Palm.). — Doum palm.

Mgwalangwa (G), *makoma* (Tu); *mkomakoma, magwebe, migwalangwa* (three last names for fruits).

Branched or unbranched palms depending on the species, up to 35 ft. tall with fan-shaped leaves borne in a terminal crown; flowers, small in cylindrical branched, catkin-like spikes; fruit roughly oblong or pear-shaped, brown and glossy, about 3 ins. diameter. Found in rift valleys, mostly below 2,000 ft. and at Lake-shore.

The fibrous cover of the seeds is chewed mainly by children for the sweet juice that it contains. The fruits are sprouted by covering them in a pit in December and by March the seeds have germinated and are ready to eat. The sprouted seeds are called *mselema* (Salima) see *Borassus aethiopum*. The trees are tapped and the sap allowed to ferment to make a drink called *ncema* (Y). As the tapping of the trees leads indirectly to their destruction the practice is now forbidden by law so that the making of *ncema* is much restricted. The leaves are used to make mats, rice bags, etc.; they are split into thin strips, which are plaited and later sewn together. For a mat a cylindrical structure is first made which is then slit down one side and the edges bound thus forming the familiar sleeping mat, *mkeka*. Young leaves and roots are eaten by cattle.

According to the "*Flora of Tropical Africa*" 8: 119–123 (1901). *H. crinita* has an unbranched stem whilst *H. coriacea* Gaertn, is branched and may be found in Nyasaland. Another *Hyphaene* in Nyasaland is *H. ventricosa* Kirk which is unbranched and swollen in the middle, not unlike a *Borassus*. A very fine photograph was taken by Kirk in 1860–61 of a stand of *H. ventricosa* in Elephant Marsh and reproduced in Prof. Coupland's book "*Kirk on the Zambezi*" p. 250 (1928) there is a'so a sketch facing p. 138. Kirk says of *H. crinita* that it is common 200 miles up the Zambezi also at the south end of Nyasa and on the River Shire*.

253. Iboza riparia (Hochst.) N.E. Br. (Lab.).

Cingambilo (G).

A succulent shrub up to 12 ft. tall with opposite stalked cordate-ovate, deeply and often irregularly crenate membranaceous leaves, flowers small white, pink or mauve in dense whorls in lax, terminal, much-branched panicles normally flowering when quite leafless. Growing amongst rocks on rocky river banks and in moist places in grassland chiefly between 4,000 to 6,000 ft. altitude.

Said to be a powerful anthelmintic. Used as a contour plant in the Ulugurus (T.).

***254. Indigofera** sp. (Papil.).

Denje? (See **Corchorus** sp. for plant of same native name).

A herbaceous plant with small pinnate whitish leaves, 1–3 cm. long, found in old gardens, seen at Zomba.

The leaves are said to be cooked as a side-dish.

255. Inula glomerata Oliv. & Hiern (Comp.).

Mabwani, mzabwani (N, C), *liweya* (Y).

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*Dr. Kirk on the "*Palms of East Tropical Africa*" Journ. Linn. Soc. Bot. 9: 235 (1866)

A perennial herb with very large leaves, about 2 ft. long; capitula densely clustered in a large open panicle.

An infusion of the root, mixed with many other kinds, is used to cure *nyamakazi*, rheumatism and allied pains, and *cipeta*, one of the forms of venereal disease. It is also drunk by women while menstruating.

***256. Ipomoea batatas** (L.) Lam. (Convolv.) Sweet potato.

Names for tubers. *Mbatata, cimungulu* (N), *kholowa* (Ngu), *mbambaira* (Se) *mtotomera, mbwete* (Tu), *mbohole* (To), *imbatata* (Nk).

A cultivated perennial creeper, rooting freely at the nodes and producing stems up to 6 ft. long; forming a dense cover on the ground and having tuberous roots, native of America. Very widespread at all elevations.

(1) *The tubers* (potatoes).

They are universally popular and are eaten as an extra food. They are eaten boiled or roasted in their skins. They may be mashed after boiling with pounded groundnuts to form a very popular dish, *futali* (kiSwahili). In the Misuku country of Karonga District, large quantities are eaten and they often take the place of porridge for the main meal of the day. In some places, they are stored in covered pits often dug under the hut verandah (Blantyre). They are not dried in Nyasaland but the two following methods are in use in Tanganyika:—

(*a*) The tubers are boiled, peeled or whole, made into very thin flat cakes and dried gradually in the sun for about four days. When needed they are broken up and boiled. (From Mrs. G. M. Culwick).

(*b*) " In Unyamwezi, natives boil sweet potatoes first, then peel and slice them and dry them in the sun. The dry chips are semi-transparent and very palatable and I have found them an acceptable iron ration on *ulendo* " (M. J. Fortie, letter to the Editor *E.A.A. Journal*, Jan., 1941.)

There are many varieties differing in flavour and digestibility according to native accounts. Some varieties have yellow flesh and these are to be preferred to the white kinds from the nutritive point of view as they contain provitamin A.

(2) *The Leaves.*

Names: *kholowa* (N), *ntolilo* (Y), *dontomo* (Se), *cipolwa* (Tu), *cibwaka* (To), *mbwaka* (He) (Tu).

Preparation for eating.

A bundle of the long trailing stems are gathered, from these the leaves and their attached stalks are peeled off. They are cooked without soda or potashes, groundnuts and tomatoes are used whenever available. The product is black, somewhat unpleasant tasting and rather slimy. To prevent the extreme softening of the leaves, they are very frequently left on the hut roof in the sun for several hours before cooking. aCewa women often cook the leaves in the liquid in which maize has been soaked, *matsukwa*. When cooked in this way it is said to be a lactagogue.

Men often object to eating the leaves because of their unpleasant flavour, they are, however, said to be good when they are picked young while sprouting after the dry weather. The leaves are much eaten in the Southern Province and seem to be well liked by the tribes there. They are not very popular, though widely eaten, among the tribes further north and are not eaten at all by the aKonde in Karonga District.

They are an extremely valuable standby for side dishes as the plants produce leaves for almost the whole of the year except for a short time during the dry weather. The leaves are dried and eaten by old women when short of a side-dish. They are left to dry in the sun with no preliminary cooking.

The leaves of certain kinds are preferred to others for eating. Thus, in the Kota Kota District, those of the white tubered kind are much preferred to those of either of the varieties, *Joni* or *Kamciputu*.

Ref. 23.

257. I. eriocarpa R. Br. (Convolv.).

Kholowa thengo (N, Y), *pundi* (S, Port Herald), *dowolowo* (He), *lilowolowo* (Nk).

A herbaceous annual, stem long, slender, prostrate or high twining; leaves variable up to 5 ins. long; flowers in dense clusters, corolla quarter of an inch long, white with purple eye or rose or purple; fruits a globose capsule half an inch diameter, two or four seeded. In flower and full fruit at end of May at the Lake-shore. A weed of cultivated lands found at lake-shore and other low elevations.

The leaves are cooked with groundnuts or sesame to form a popular side-dish.

258. I. pes-capraea (L.) Roth.

Msaula (Y), *malandalala* (Nk).

A straggling perennial on sandy foreshores with very long stems up to 25 ft. or more, leaves simple, suborbicular to elliptic conspicuously emarginate at the apex, thick up to 4 ins. long, bright green, flowers purple, 3 ins. diameter, fruits spherical, $\frac{3}{4}$ ins. in diameter.

Stems used for ropes for pulling in fishing nets, the pounded leaves are also rubbed into the nets to encourage the fish to enter.

259. I. reptans (L.) Poir.

Lilowolowo (Nk), *dowolowo* (He).

A perennial creeper with long slender stems rooted in sand, leaves cordate, lanceolate or hostate, abundant purple flowers, 2 ins. diameter.

The leaves are cooked with groundnuts or sesame oil to form a popular side-dish.

260. Ipomea sp.?

Cikalandembe (Port Herald).

The leaves are exposed to the sun for a short time to harden them and then cooked with only a little water, groundnuts are not added.

261. Ixora narcissodora K. Schum. (Rubiac.).

Msisita (Y).

A shrub with large oblong leaves to 8 ins. long, flowers white, large up to 3 ins. smelling like narcissi, found in swampy forest at 1,000 ft. (Tt).

Wood probably useful and durable.

Ref. 14; 22; 26.

262. Jateorhiza palmata (Lam.) Miers (Menisperm.) Calumba Root.

Njoka (Y).

A climbing perennial herb with thick fleshy yellow roots and hairy stems and leaves, leaves alternate broadly rounded in outline and palmately 5-lobed, cordate at base. Male flowers yellow-green minute in compound racemes, fruits ovoid thinly hairy. Found on alluvial soils in forest and bushland at low altitudes.

Roots used by the Yao as an anthelmintic. An important local industry in the Lindi District of Tanganyika where the roots are collected by the natives and exported as Calumba Root to drug markets in Europe.

***263. Jatropha curcas** L. (Euphorb.) Physic or Pulsa nut.

Msatsimanga, msapatonje (N), *satsimanga* (C), *masawasa*. (?)

An erect stiffly branched small tree up to 20 ft. tall, native of tropical North America, leaves alternate, glabrous or pubescent only on the nerves beneath, ovate-rounded shallowly 3–5 or 7 lobed or entire widely cordate at the base flowers yellowish-green; fruit ellipsoid about 1 ins. long, black when ripe. Common in villages in the Dedza and Ncheu Districts.

Oil from the seeds used for anointing purposes (Tt) and for lamps by children (Dedza District), plants, seeds and oil have a number of medicinal uses (Tt); the seeds are very poisonous; planted by some Africans to mark sites of graves (Tt), used for fences (Tt and Dedza District).

Ref. 7, 26.

***264. J. gossypifolia** L.

A shrub up to 6 ft. high, native of tropical America, with thick branches and 3–5 lobed green leaves tinged with purple, leaf margins and stalks with stalked glands.

Cultivated as a hedge plant and for medicinal purposes. (Zomba and the Lower Shire.)

265. Juniperus procera Hochst. ex A. Rich. (Cupress.) Pencil Cedar, E. African Juniper.

Cangalumwe (To).

A large, evergreen tree up to 150 ft. tall with straight trunk sometimes up to 35 ft. in girth. Found only in a very small patch on the Nyika Plateau in the Mzimba District, and is a relic of a rather more extensive area destroyed by fire. It has been planted successfully on Zomba Plateau and in Limbe but the rate of growth is slow.

The reddish-brown wood is soft and fragrant with a fine even grain except in very old trees. It works and polishes well but is rather brittle, is very durable, resists damp and insect attacks and is used for building work, furniture, cabinet making, shingles, posts and casings for lead pencils.

Ref. 14; 22; 26; 27.

266. Jussiaea abyssinica (A. Rich.) Dandy & Brenan (Onagrac.). (Syn. *Ludwigia prostrata* sensu Oliv.).

A herb or weak shrub, straggling or erect up to 10 ft. high often with red stems, glabrous except for minute hairs on margins and midribs of leaves, leaves alternate, lanceolate to elliptic-lanceolate, variable in size, flowers appearing as though in axillary clusters, sepals and petals four, the latter small, yellow, fruit capsules linear oblong up to 3/4 ins. long containing numerous minute seeds.

The leaves are edible (Mzimba District).

267. Justicia sp. (Acanth.).

Kalokola, nasungwi (C), *namolobwe, nakalasi* (N), *kamusani* (Nk).

A herbaceous plant 2–3 ft. high, erect; flowers with lower lip a quarter of an inch broad, white with purple heart-shaped centre, white veins bounding and crossing it. There is a larger leafed species which is not eaten. Common in the hills and foothills all over the country.

The leaves, young shoots and flowers are cooked as a side-dish, usually without the use of native potashes. The cooked product is bitter and is not liked by men. Women, however, often eat it especially with porridge made partly from bran, *gaga*.

268. Justicia sp. (Acanth.).

Kanyelenyezi (N, C).

A small marsh plant; the flowers are pink to mauve.

The leaves are occasionally cooked as a side-dish with the help of potashes. (Hill areas, *e.g.*, Kota Kota Hills.)

269. Justicia sp.

Kangena.

A herb growing near water to a height of 1 ft.

The leaves are cooked as a side-dish.

270. Justicia sp.?

Kapoli (C)

The leaves are edible and are not slimy when cooked. (Mvera, Dowa District).

271. Kaemferia rosea Schweinf. ex Benth. & Hook. f. (Zingiber.).

Manjanu, kurri (N), *mbilicira* (Y).

A perennial herb growing to about 18 ins. high, leaves about four with long distinct, channelled petioles not fused to form a false stem; blade moderately firm under 1 ft. long, 4–5 ins. broad; flowers, many in a raceme at the end of a long slender stalk, out at the same time as the leaves, usually rose-red, lip 1½–2 ins. broad. Found at low elevations all over the country.

There is at least one other turmeric-like plant in the country, *cikasu* (Fort Johnston); it has white roots and leaf bases are fused to form a false stem, in this resembling true turmeric, *Cucurma longa* L.

The roots are dried, powdered and used to flavour dishes such as beans or meat. The powder is also added to boiled rice, together with pounded groundnuts when making *msere*. Sometimes a tuber is cooked inside a chicken to give it a good flavour and to colour it.

272. Khaya nyasica Stapf ex Bak. f. (Meliac.) Red Mahogany.

Mbawa (G), *muwawa* (C, To).

A forest tree, sometimes attaining a height of 150–200 ft., with very long straight trunk running up to a considerable height before branching, it is much buttressed and has an enormous crown of glossy foliage, bark light-grey, thick; leaves compound partly deciduous, alternate; flowers in axillary cymose panicles, small white; fruit, a large capsule opening by four valves scattering the winged seeds. Found on stream banks and moister parts in lower mountain and plateau areas, not found north of Nkata Bay.

The timber is reddish in colour, soft and fissile; easy to work, takes a fine finish and polishes well with little trouble. Shrinkage is sometimes troublesome if the wood is not fully seasoned. This is the most popular of local furniture and cabinet woods and it is the main species cut in the native sawing industry. It is also used largely in framing, panelling, etc. Weight 35–45 lb. per cu. ft. Infusion of bark drunk for colds (Tt).

Ref. 9; 14; 22; 26.

273. Kigelia aethiopica Decne (Bignon.), Sausage tree.

Mvunguti (G).

A much-branched deciduous tree up to 50 ft. tall, with a rounded, spreading crown, leaves ternate, pinnate, leaflets 7–11; flowers, large reddish-purple in lax pendulous panicles; fruits up to 2 ft. long, cylindrical, grey-brown, hairy, containing

numerous, small, oval seeds embedded in a very fibrous pith. The flowers are fertilized by bats. Found in savannah forests of the rift valleys mainly below 2,000 ft. and on fertile soils.

Squirrels are said to be very fond of the fruits, whether they actually eat the pulp and seeds is not certain but Africans say they gnaw off the end of a fruit to get at the sap upon which they become quite tipsy. Rhinoceros also eat the fallen fruits biting chunks out of them.

The wood is used for making stools (E.A.) for hoe handles, mortars and drums (Nyasaland). The trunk is regarded as one of the better canoe woods, and it is a protected canoe tree in most districts on the Lake-shore. The root is soaked with various other roots and the liquid drunk as a cure for syphilis; an infusion of the leaves with other leaves is a cure for another venereal disease, *kaswende* (N); the bark is pounded, sifted and boiled and mixed with *cipembere*, (*Randia* sp.,) and *mbambanjoma* and then used as a balm for sores. Locally where stones are scarce, the fruits are frequently used as fire stones for standing pots on a fire as they seem completely fire-proof.

Ref. 14; 17; 26; 27.

274. K. pinnata (Jacq.) DC. Cucumber tree.

Mvunguti (G), *muungutwa* (Y).

A fine straight tree 20–50 ft. high, only growing to perfection below 3,000 ft. Bark thick, smooth, dark-grey, leaves seven or nine large leaflets, 5 ins. long, terminal one the smallest; flowers on long pendulous stalks, bell-shaped, 2½ ins. long, intense crimson or claret coloured inside and velvety; fruits 12–20 ins. long, on long stalks sometimes weighing 8 lb.

Wood, soft, yellowish or whitish, suitable for boxes. Roasted fruits are put into native beer to ferment it, the fruit is also said to be poisonous.

Ref. 14; 17; 18; 26.

275. Kirkia acuminata Oliv. (Simarub.)

Mtumbu (G), *ntunduwa* (?).

A small tree up to 30 ft. with smooth grey bark; leaves semi-deciduous, somewhat clustered at the ends of the branches, alternate multifoliolate, leaflets subopposite or alternate, obliquely lanceolate serrulate, red in winter; flowers greenish-white, small, forming a broad leafy panicle; fruits dry oblong, separating at length in four linear oblong one-seeded cocci. Found on the poorer soil of the rift valleys.

Much used for live fence posts. The timber is useful, sapwood is wide and light-grey in colour, the heartwood is greenish-brown. The wood has a most attractive figure due to the very numerous growth rings which are wavy and irregular, the result is a pleasing, "burr walnut" effect. Although it is severe on cutting tools, it is comparatively light in weight. Shrinkage is small and the wood seasons fairly easily if cut in thin sizes, thick sizes retain their moisture for exceptionally long periods. In South Africa the wood is used for furniture. Weight 33–44 lb. per cu. ft.

Ref. 14; 22; 28.

276. Lachnopylis sambesina (Gilg) C.A. Sm. (Logan.) Wild lauristinus.

Nakawaka (Y).

A tree 40–50 ft. tall, stem square with brown hairs; leaves evergreen in whorls of three, simple, on very short leaf stalks, blade 2½–3 ins. long, oblong ovate; flowers in dense terminal cymose panicles, small white, sweet scented; fruit a capsule containing numerous small seeds. Found in forest of high mountain areas.

Wood is useful.

Ref. 9; 14; 26.

***277. Lactuca sativa** L. (Comp.) Lettuce.

Saladi (N).

Lettuces are grown fairly commonly in towns for sale to Europeans and are occasionally cooked by Africans for a side-dish. The product is soft and well liked if pounded groundnuts have been added.

278. Lagenaria vulgaris Sp. (Cucurbit.) Gourd.

Mphonda (N), *mbonda* (Ngu), *jungu*, *mswera* (Tu), *matakale* (Nk, pl.), *madyaundu* (Su), *ciko* (N, for kinds to be used as gourds).

An annual, usually allowed to straggle over the ground, flowers white; fruits of varying shapes, some edible and some used only for gourds, some have a prolonged base to the fruit which forms a natural handle to the gourd. Common at Lake levels and to a lesser extent at higher elevations all over the country.

The fruits of some kinds are cooked to eat as an extra food. The leaves are cooked as a side-dish among some tribes, *e.g.*, aTonga whose name for the leaves is *ntondwe*. The ripe fruits are boiled then the seeds are scraped out and the gourd allowed to dry out to use as a receptacle for beer, milk or for ladling-out purposes.

Ref. 6.

279. Landolphia kirkii Dyer (Apocyn.), Rubber vine.

Mpila (N, Y, To) (See *Manihot* for same native name), *matwatwa* (He, name for fruits).

A scandent shrub or liane, containing latex with evergreen, opposite, small lanceolate to oblong leaves and panicles of small white or very pale pink flowers and speckled globular fruits, about the size of an orange. Found commonly in Chinteche District with its high rainfall, also found in other places to a lesser extent, *e.g.*, Nchisi Forest.

The latex forms an inferior rubber when collected and allowed to coagulate and was at one time considered one of the most important rubber plants of East Africa. The fruits are edible.

Ref. 14; 17; 26.

280. L. parvifolia K. Schum.

Kapwati (N, C, Y), *matwatwa* (Nk, He), *liwungo* (To).

A much-branched, climbing shrub with tendrils of modified inflorescences from the branch forks, young branches more or less villous, rusty; leaves, small oblong to lanceolate, fruit like a small orange, 1–2 ins. in diameter, greenish-purple, seeds up to half an inch long. Found in Lake-shore areas.

The fruits are edible (Kota Kota).

281. Landolphia sp.

Makombe (N), *mkombe* (C, N).

A liane with globular fruits 2–3 ins. in diameter which exude a white latex.

The fruits are edible.

282. Lannea discolor (Sond.) Engl. (Anacard.), Livelong.

Ciumbu (Y), *sidyatungu* (N).

A fair-sized tree, distinguished by the numerous catkin-like spikes appearing before the leaves; bark reddish-grey and smooth; leaves, deciduous, alternate, pinnate, petiole 6–7 ins. long, leaflets in 2–5 pairs with a terminal one, ovate, under surface whitish; flowers in bunches in terminal spikes, male spikes being longer and looser than female; fruit, purple, the size of a pea with a solitary seed.

The fruit is eaten after peeling off the skin (S.R.). Useful for poles, will sprout again if cut at the proper time and can be used as a livehedge (S.R.).

Ref. 9; 14.

283. L. fulva (Engl.) Engl.

Kitongomilo (Nk).

Shrub or straggling bushy tree up to 70 ft. tall with simple ovate to elliptic or trifoliolate leaves densely tomentose beneath, inflorescence up to 6 ins. long, fruits small red.

Fruits eaten by children in December on the Lake-shore of Karonga District. Bark tough used as string in Tt.

Ref. 14; 26.

284. L. schimperi (Hochst. ex A. Rich.) Engl.

Kaumbu, ciumbu (N,C).

Small tree with dark, rough, reticulate bark, young leaves densely covered with pinkish-brown or salmon-pink tomentum, leaflets in 3–4 pairs ovate to elliptic, flowers yellow or yellowish in narrow spike-like racemes.

An infusion of the bark mixed with that of *mkuyu*, (*Ficus* sp.,) and *mlembela*, (*Dalbergiella nyasae*,) is drunk as a cure for dysentery. An infusion of the roots or bark is drunk to cure diorrhoea and the roots alone are used to cure syphilis. Bark used for string (Tt).

Ref. 14; 26.

285. L. stuhlmannii (Engl.) Engl. (Anacard.).

Cirusa. (N,Y).

A much-branched shrub or tree up to 40 ft. tall with coarsely reticulate bark and spreading crown, alternate pinnate or pinnately trifoliate leaves, leaflets very variable in size; flowers yellow green, dense in simple or branched racemes at the ends of the branchlets; fruits ovoid, fleshy.

The fruits are edible. The tree has a useful timber (E.A.).

Ref. 14; 17; 26.

286. Lantana salviifolia Jacq. (Verben.).

Nakasonde (Y).

A shrub up to 8 ft. high, dark-green ovate leaves, globose flower heads which become elongated with a few very small white or pinkish flowers near the top, flowering from January onwards; fruits in small heads turning purple when ripe. Widespread, common in burnt or cleared forest land.

Fruits are eaten as a famine food. An infusion of the leaves are used as eye medicine (S.A.).

Ref. 14; 15; 18; 26.

287. Lasiosiphon kraussianus (Meisn.) Burtt Davy (Thymel.), Yellowheads.

Katupe (C), (name used also for other fish poisons).

An erect perennial herb up to 1½ ft. in height, growing often on burnt ground before the rains, hairy; leaves simple, oval, opposite; many small, yellow flowers in heads at ends of stems, each head surrounded by 6–10 involucral bracts, flowers from September to the rainy season.

A fish poison; the plant is pounded up and scattered in river pools during the dry season; it is very potent and dangerous to livestock. Certain tribes in S.R.

use the plant for treating wounds and bruises. Zulus are said to use it as a remedy for snakebite and sore throat.

Ref. 14; 20.

***288. Lens esculenta** Moench. (Papil.) Lentil.

An annual herb, native of the Orient, cultivated for its seeds in India and China. The seeds are small, spherical and readily split on removing the skin into the familiar orange coloured cotyledons, in which form they are on the European market and commonly used for soup making.

Eaten by both Europeans and Indians and are grown to a very small extent in this country for sale to Indians, *e.g.*, Mzimba.

289. Lightfootia sp.? (Campan.).

Cisiso (C), *ciswayo* (Ng).

A herb whose leaves are cooked as a side-dish with potashes to form a slimy product, *thelele*. The dish is not bitter and is well liked (Mzimba and Kasungu Districts).

290. Lippia asperifolia Rich. (Verben.)

Mcamsi (N), *mcasi, mcenjema, cisunganjeu* (Y).

A much-branched shrub up to 15 ft. tall with opposite or ternate strongly aromatic lanceolate crenate leaves, flowers small white in dense globose heads from the leaf axils, fruits small dry. Very common in the hills.

The roots are mixed with other roots and an infusion of them drunk as a contraceptive. The roots are mixed with those of many other plants, *e.g., manja atali,* (*Pavetta crassipes*) and *mlungalunga, nchangwe, kathyothyo* and *mbambang'oma* to cure the disease, so common among the aCewa, called *mdulo,* which is thought to be caused by breaking various native rules of sexual conduct. The patient's head is covered and he is told to hold it over the pot in which the brew has been heated. At the time of the first menstruation of girls, *wakula msinkhu,* they drink an infusion of its roots mixed with those of *futsa,* (*Vernonia amygdalina*) *katunga* and *mcengwe.*

The plant is also used as a cure for madness, *misala.*

Ref. 14; 26.

***291. Litchi chinensis** Sonner. (Sapind.), Litchis.

A much-branched evergreen tree native of Southern China, up to 100 ft. with alternate, leathery, pinnate leaves, leaflets in 2–4 pairs; flowers, small, yellowish-white in short panicles; fruit, crimson, ovoid with a thick, warted skin containing a large seed covered with white, fleshy, sweetly-acid aril.

Trees have been planted near Salima, Mzimba and at Zomba and in some of these places they are fruiting well.

The fruit is edible, resembling a grape somewhat in flavour; in India and China they are often dried.

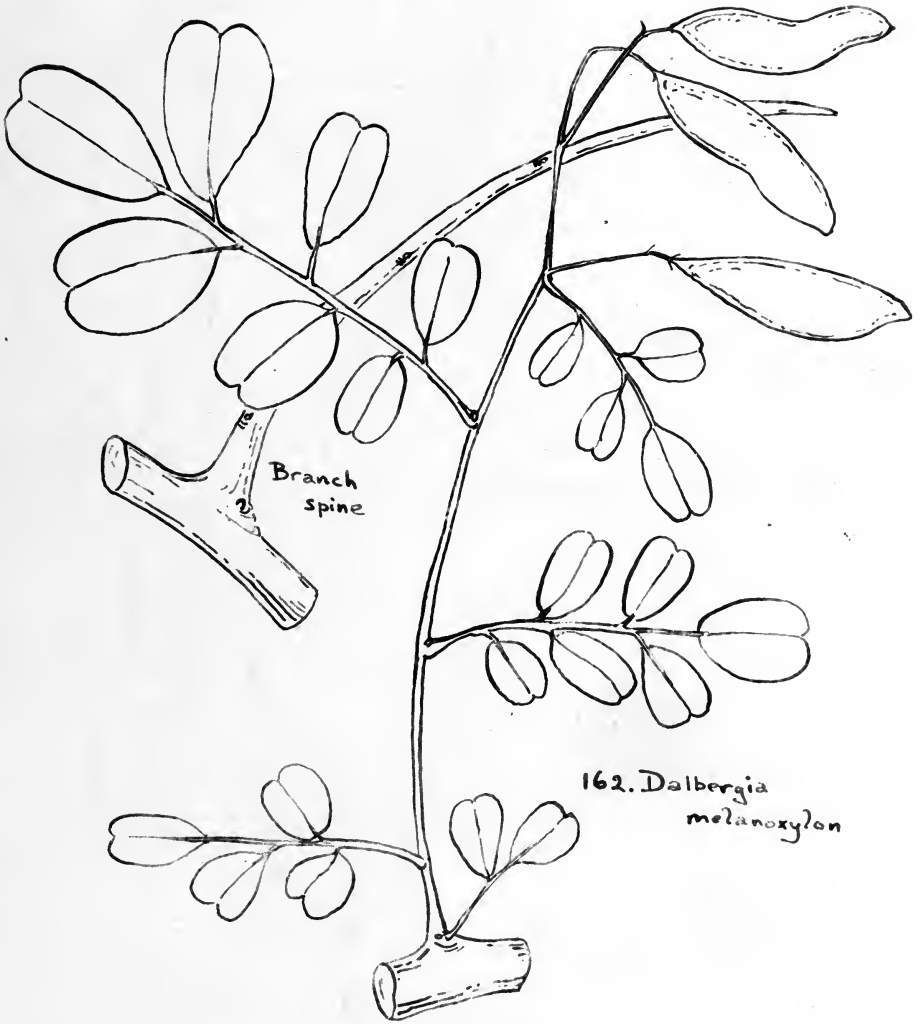
Ref. 17; 23; 26.

292. Loranthus spp. (Loranth.) Mistletoes.

Thonga (C).

Parasitic shrubs with normally very showy flowers, found growing on a wide range of tree or shrub hosts, fruits berries, attractive to birds who spread the parasite on to other trees.

Bird lime, *ulimbo,* is made in large quantities from the berries (Kota Kota District).



162. Dalbergia melanoxylon Guill & Perr. (Papil.).

The mixture is left in the sun for three or four days, during which time presumably acid fermentation sets in with the production of a weak kind of vinegar. The mixture is then bottled and is said to keep for a couple of months provided that from time to time, it is again exposed to the sun. It is eaten with beans, meat or leaves.

(4) When leaves are being dried to make *mfutso*, a few tomatoes are often added to improve the flavour of the product.

(5) Tomato leaves are occasionally cooked when other leaves are very scarce. They are not liked as they have an unpleasant flavour, they are sometimes mixed with okra, *Hibiscus esculentus* (Mayani, Dedza District).

Ref. 23.

***297. Malus pumila** Mill. (Syn. *Pyrus malus* L.). (Rosac.). Apple.

Apples have been planted in several parts of the country but do not do well except at high elevations. A good large green kind which cooks well is growing at Chintembwe D.R.C. Mission in the Kota Kota Hills at 5,000 ft. but most of the kinds grown are lacking in flavour. A few trees are to be found planted by Africans. Apples are not good fruits to encourage for native use as they are poor sources of vitamins C and A.

***298. Mangifera indica** L. (Anacard.). Mango.

Embe or *yembe* (kiSwahili), *mango* (N).

A much-branched evergreen tree native of East tropical Asia, up to 60 ft. bearing large quantities of edible fruits, ripe from October to February according to elevation and variety. There are several kinds in the country, some very good large ones (Karonga) but the common one has small (3–4 ins. long), fruits which are often fibrous and taste of turpentine. The mango is the commonest of all the fruit trees except bananas in the country. It is almost impossible to prevent trees from springing up wherever the large stones have been thrown down. Hence, wherever mangoes have been introduced by European or Arabs in the past, trees are now to be found in large numbers within easy walking distance of the centre. They do particularly well at low elevations and are slow to ripen their fruits at much above 3,500 ft.

The fruits are eaten raw by young and old alike and are very much liked. The leaves are occasionally cooked for a side-dish (Mtwalo Jere's, Mzimba). They are tough and hence need to be pounded and cooked with potashes. The timber is used for boat and canoe building, also for window or door frames (Tt).

In the Nkata Bay District mangoes grow freely but are said to fruit rarely, their poles are sometimes used for building and also for firewood.

During a food survey at a Kota Kota Lake-shore village, during the mango season, it was found that all the villagers, adults and children, were eating an average of ten fruits a day at the height of the season and one child reached the record of 28 on one day!

Ref. 17; 23; 26; 27.

***299. Manihot esculenta** Crantz (Euphorb.) (Syn. *M. utilissima* Pohl). Cassava, manioc.

Cinangwa (N), *inangwa* (Y), *mpwani* (Ngu), *mayao* (Tu), *cigawo* (To), *amayabo* (Nk), *kayabo* (Su), *falinya* (Se), *njumbula* (Ng).

A shrubby perennial, native of Central America, 5–10 ft. high, leaves 3–7 lobed, capsule 6 winged, forming numerous elongated underground tubers which are ready for digging after about ten months' growth. There are a very large number of

varieties differing in the bitterness of the tubers. Cultivated mainly at Lake-shore levels. The tubers and leaves are edible, the dried stems are an important fuel in entirely deforested areas.

THE TUBERS. (Names as above.)

The bulk of the cassava grown in this country is converted into flour from which porridge, *nsima*, is made.

PREPARATION OF FLOUR.

(*a*) *Kota Kota and Chinteche Lake-shore areas.*

The tubers, about 100–150 lb., enough for a week's supply for the family, are dug and put into a waterhole often on the foreshore or in a stream to soak for two or three days until they are sufficiently soft to be easily peeled. The same waterhole is often used repeatedly so that the water becomes full of starch grains and foul smelling. The tubers are usually taken out early in the morning and made into a heap at the waterside. The very thin outer, and thicker white inner skins are peeled off with a knife. The tubers are tested at this stage and if sweet kinds are needed to roast as *cipuya*, they are selected now. The peeled tubers are washed and as much water as possible squeezed out of them. They are then carried back to the village where they are spread on stands to dry. They are left for two to four days. At this stage they are in the form of brittle whole tubers called *kondooli*. If flour is needed quickly the tubers are torn into shreds while still wet and the fibrous core thrown away. These shreds dry quickly and are pounded immediately into flour. The dry tubers are very brittle and easily pounded to flour in the usual native mortar. It is necessary to sift off the fragments of fibrous central core, *nsece*. The pounding is very light work compared with that of pounding maize. Fresh flour is prepared each day otherwise it tends to absorb water and become lumpy. In the rains there is sometimes no opportunity to dry the tubers and for several days no flour can be prepared or eaten.

(*b*) *Southern Province.* (*Zomba, Mlanje, Fort Johnston.*)

Another method of preparing the flour is to make *makaka* as opposed to *kondooli*. To do this, both thin and thick layers are peeled off and the tubers sun-dried without preliminary soaking. The dried tubers which are often very discoloured are then pounded to flour.

(*c*) *Karonga District.* (*aKonde method.*)

The tubers are peeled, soaked in cold water for two or three days in large pots kept especially for the purpose. They are then taken out and pounded after the removal of the central core. When soft, the pulp is formed into neat little cones about 2 ins. high and dried in the sun. In this form it is known as *kadonosya*, it is very easily pounded to flour when needed. *Kondooli* is also made by the aKonde.

COOKING OF PORRIDGE, *nsima* (N).

Water is put on the fire in an earthenware or metal pot and a handful of flour shaken on top to show when the water is thoroughly boiling. Then flour is added rapidly in handfuls until about two-thirds of the total has been used. The mixture is well stirred. After about one minute, the pot is removed from the fire, the very thick glutinous mass stirred and turned over with a stick and the rest of the flour added. The pot is propped between the woman's feet and very vigorous stirring continued for about five minutes, by which time the *nsima* is ready to serve. The food baskets are sprinkled with water and the porridge ladled into them.

The porridge is now a solid mass of almost rubberlike consistency, of a dirty brown colour and often pronounced disagreeable smell. Sometimes the entire cooking of the porridge is carried out at the fireside. These methods are used because cassava flour is very liable to burn when left on the fire for a longer period. Africans who are used to cassava porridge like it well enough but those accustomed to maize usually grumble for sometime until they themselves become used to eating

it. Because of its consistency, it is more difficult to eat enough to give the feeling of completion, *wakhuta*, than with maize porridge, hence it is more important than with the latter, that the side-dish should be of a suitable kind. Thus fish or well cooked leaves are much liked with cassava porridge, while beans are not nearly so popular.

Tubers of sweet tasting varieties are often wrapped in banana leaves after they have been soaked, and roasted in ashes. They are called *cipunya* Kota Kota, *cipumu* (Tu), *cinbofwa* (Nk).

Boiled cassava mashed well with pounded groundnuts and salt, makes a form of *mamboga* (Y), the food often used by Mohammedans especially to "break" the fast during Ramadhan.

Tubers of sweet-tasting kinds are often roasted without previous soaking, *cinangwa coocha* (N). In this form they are often on sale at markets.

Sweet tubers are often eaten raw, they taste rather like coconut.

Beer is commonly made from cassava flour, wherever it is available. For its method of preparation, see *Zea mays*. The beer goes sour more quickly than that made from other flours and hence there are many opportunities in areas where it is brewed, to distil raw spirit, *kacasu*, from such spoiled brews.

The tuber peelings when burnt make a "strong" ash which is used particularly in the cooking of tough leaves.

THE LEAVES

Cigwada, *ntapasya* (Y), *ntapasa* (N), (Y), *matapacagwa* (Ngu), *ncokobwe mayani* (To), *icigwada* (Nk).

Young leaves, usually from one year old plants are picked. The women learn by experience which plants give bitter leaves and avoid these kinds. The stalks are thrown away and the blades pounded in a mortar until well broken up. A concentracted solution of potash (*cidulo*) is prepared often from cassava peelings and put in a pot. The leaves are added and boiled, the mixture froths up considerably and needs continual stirring. After about 20 minutes the mixture is soft and because of the added alkali is of a bright green colour. Pounded groundnuts and salt are added and after a few minutes the dish is ready to serve. Groundnuts are most necessary otherwise the product is rather bitter. Where the latter are available, cassava leaves are well liked but in places, as at Kota Kota or the Chinteche Lake-shore, where for long periods groundnuts are not available, the leaves are heartily disliked and often the women will not bother to cook porridge if there is only *cigwada* for a side-dish.

The leaves are occasionally cooked without the use of soda or potashes, in which case the product is almost black in colour and rather stringy.

Cassareep.

This product is much used in the making of well-known sauces and the famous "pepper pot" of the West Indies. It is made by extracting the liquid from soaked bitter varieties and boiling it until a thick brown liquid results.

Ref. 4; 23; 27.

***300. Manihot** spp. (Euphorb.), Tree cassava.

Mpira, *mpira wa cizungu* (N), *kapanti* (Tu), *ntengere* (Ncheu).

There are a number of varieties of cassava in the country which range in size from a shrub little bigger than the ordinary kind to a tall tree. One kind, very common in N.A. Mponda's area in Fort Johnston, grows to a height of about 15 ft., has a rounded crown and is called *mpira* (Rubber) while at Mua Mission, in the Dedza District, there is an avenue of tall trees which are also called *mpira*. Possibly one of these kinds is *Manihot glaziovii* Muell. Arg. Ceara rubber. Found more or less all over the country, more common at elevations below 3,500 ft.

The leaves of all kinds seem to be eaten under a variety of names. In many places they are called by the same name as ordinary cassava leaves, *e.g.*, *cigwada* or *ntapasya*, while at Port Herald they are called *gonabwino* meaning sleep well. The leaves are cooked in a similar way to those of ordinary cassava. They are picked when very young whenever possible.

301. Margaretta rosea Oliv. (Syn. *M. whytei* K. Schum.) (Asclep.)

Ncence (Tu).

A perennial lactiferous herb with roots like big sweet potatoes, up to 15 ins. tall with solitary or few stems, leaves opposite, linear lanceolate up to 4 or more ins. long, thinly pubescent; flowers small golden-yellow, rose, red, or pinkish-mauve in umbels terminating the stems; fruits follicles, often solitary 2–3 ins. long, lanceolate, acuminate into a beak, thinly pubescent. The roots are eaten in famine time from December to February. They are soaked, dried and pounded to flour, from which porridge is made. They are also eaten boiled and are not bitter.

302. Markhamia acuminata (Klotz.) K. Schum. (Bignon.).

Katsongole, *kamsongole* (N).

Shrub or small tree up to 30 ft. with drooping branches; bark grey, leaves deciduous, alternate, pinnate; flowers deep purplish-brown, sweet scented; fruit a capsule up to 15 ins. long with winged seeds.

Timber is durable and is used for rafters, etc.

Ref. 9; 14; 26.

303. M. obtusifolia (Bak.) Sprague.

Msewa (G), *mwanambewe* (N), *waramba* (Nk).

A much-branched suckering shrub or small tree up to 25 ft. with opposite, compound, brownish tomentose leaves; racemes of golden-yellow, funnel-shaped flowers and long, yellow-brown, strap-shaped fruits containing winged seeds. Common in drier parts of the low foothills.

The wood is used for hut building and for making native beds. The roots are used medicinally for children with convulsions (E.A.).

Ref. 14; 17; 26.

304. Melochia corchorifolia L. (Sterculi.)

Cipondavu, *cipondafuu* (Y) *cikondavu* (To) (meaning where the hippo treads,) *cibwatiko* (To).

An erect branching herb or undershrub; leaves 1–3 ins. long with hairs on the under surface; flowers numerous in dense stalked cymes, petals white, shorter than the sepals; fruit a 5-valved capsule. The plant flowers and fruits in June.

Known to be eaten at Kota Kota and Chinteche Lake-shore. The thin, rapidly wilting leaves are cooked as a side-dish. A solution of plant ashes is used, pounded groundnuts may or may not be added. The product is slimy, hence the leaves are often mixed with another *thelele* (*Ceratotheca* sp.). The dish is well liked.

305. Mikania scandens (L.) Willd. (Comp.) Climbing Hempweed.

Matholisa (C, N), *civumulo* (C), *liundumula* (Y).

Scandent or twining shrub, leaves opposite ovate to deltoid, pubescent below, flowers white or pale pink in corymbose panicles. Found on forest margins and edges of grasslands.

An infusion of the roots mixed with those of *muwawani*, (*Cassia* sp.) is said to be used as an abortifacient. An infusion as above but with roots and bark of *mwaye*, (*?Strychnos spinosa*) is drunk to cure colic, *ncofu*. An infusion of the roots with

those of *maonde* in addition is drunk to cure one of the venereal diseases, *ntongo*. The roots with other roots and the heads of two snakes, *kalikwiti* and *songo*, are burnt and the ashes rubbed into an incision as a cure for snake bite. Has been used as a cover crop to prevent soil erosion. Leaves can be used as cattle fodder.

Ref. 14; 15; 26.

306. Mimusops sp. (Sapotac.)

Njolokwe.

A large tree found in short grass country, flowers in November.

The fruits are edible.

307. Moghania macrophylla (Willd.) O. Ktze (Papil.) (Syn. *Flemingia rhodocarpa* Baker).

Damate (C), name given because leaf sticks to the hands, *kumata* = to plaster, *mbuto ya cule* (C); a place for frogs.

A shrub with trifoliate leaves, white or pink flowers in short crowded racemes. It bears a large number of small pods covered on the outside with a bright orange powder which can easily be rubbed off. Known in the hills of the Kota Kota and Zomba Districts.

The orange powder is believed to be the "*waras*" of the East Coast Africans who use it to dye silk a yellow colour and for dyeing bamboos for baskets but is not suitable for dyeing cotton. The pods are squeezed with water or boiled and give an orange coloured liquid used by children as ink. An infusion of the roots is drunk as a cure for dysentery and also for *utumbidwa* (N), a disease of young children when they are weaned early, due to the birth of the next child. The hole from which the roots are dug is left and forms a suitably damp place for frogs to live in, hence one of the vernacular names.

308. Momordica foetida Schum. & Thonn. (Cucurbit.).

Tungwi (*Ml*).

A creeper from a stout perennial root; male flowers in umbel-like cymes, female solitary on long stalks, corollas very pale yellow; fruit about 3 ins. long, yellow or pale orange when ripe, covered with soft prickles, bursting and exposing seeds in a red pulp; flowers in March (Mlanje), leaves available all the year.

The young shoots are cooked, often mixed with pumpkin leaves for a side-dish (Mlanje). The product is bitter and so is usually refused by men. It is eaten by women and is said to go well with bran porridge, *gaga*.

***309. Moringa oleifera** Lam. (Moring.) Horse radish tree.

Camwamba (N), *kangaluni* (N, Dedza Lake-shore), *sangoa* (Port Herald).

A small tree, native of India and Arabia, about 25 ft. high, bark pale; leaves 2–3 pinnate; flowers paniculate strongly scented, petals white with yellow dots at base, pods up to 13 ins. long, slender, 9-ribbed, seeds 3-winged. Commonly planted in villages at low elevations in Karonga, Kota Kota, Fort Johnston and Lower Shire Districts.

The leaves with or without the flowers are cooked as a side-dish. They are first pounded then cooked in a solution of potashes; pounded groundnuts and tomatoes are added. The product is well liked. The fruits are used by Indians for flavouring purposes. An oil is obtained from the seeds known as "oil of Ben or Behen" suitable for lubricating watch springs and other delicate machinery. It is considered valuable for ointments and the best fatty oil is of use in perfumery, owing to the fact that it is of a clear colour, tasteless and without odour, it also keeps for almost any length of time without becoming rancid. Used as a live fence tree.

Ref. 7; 8; 23; 26.

***310. Morus alba** L. (Morac.). Mulberry.

Mapulesi (N), *matibeni* (Tu).

Native of Asia; several kinds of mulberries have been planted and are growing in various parts of the country. They are mostly of a shrubby kind bearing rather small fruits but a tree variety is known in at least one place, *e.g.*, Mlanda D.R.C.M., Ncheu District. Planted at all elevations in villages near places of European settlement.

The fruits are eaten raw mainly by children. Where there is scarcity of a side-dish, the leaves are cooked, *e.g.*, parts of Lilongwe and Kota Kota Districts, but are not much liked.

311. Mucuna aterrima Holland (Papil.). Velvet or Bengal bean.

Kalongonda (N), *kalikonda* (Ngu), *tangale* (Y), *ukazi mudzi* (To).

A climbing bean grown to a small extent in the country. The beans have very thick skins. They are well known all over the Southern Province but are only grown in small amounts. They are also occasionally grown at Fort Johnston and in the Nkata Bay District.

The beans are cooked for a side-dish. They are bitter and hence the cooking process is laborious. The beans are first boiled and the water discarded, the process is repeated for as many as six times. By this time the skins have become detached and the beans are soft and more or less tasteless. They seem to be well enough liked. The leaves are not eaten.

312. M. pruriens (L.) DC. (Papil.) Buffalo bean.

Citedze (G), *lekwanya* (Y).

A climbing herb with pinnately trifoliate ovate leaflets, flowers in short stalked racemes, petals dark purple, flowering from March to June; pods clustered 5–6 seeded, densely clothed with brown silky bristles which cause intense irritation to the skin. Common especially in the hills.

A famine food, the beans are cooked by repeated boilings and throwing away of the water. There is a story of how the aNgoni in one of their raids found beans ready in the pots and so ate them. They were so incapacitated as a result that the aCewa finding them in this state were able to punish them appropriately; possibly the beans were of this species.

Ref. 17.

313. Mucuna sp.

Dema (N).

A shrub found in the hills which has a very large white tuberous root. It flowers from November to December. Very common in the Kota Kota Hills.

The root, when cut up and soaked for several days, gives a milky liquid which is a good insecticide. It can be used for spraying plants or for killing fleas on dogs. A native practice is to hollow out a root and to fill it with drinking water for the fowls to keep them free from disease.

314. Mundulea sericea (Willd.) A. Cheval. (Papil.).

Lusyunga (Y).

A much-branched shrub or small tree up to 25 ft. with alternate pinnate leaves, leaflets in 6–10 pairs, flowers mauve to lilac up to 1 in. long in dense terminal racemes, pods slightly woody narrow, up to 5 ins. long; young bark is greenish-brown, smooth but becomes very corky and much fissured and yellow with age.

The bark is used as a fish poison.

Ref. 16; 17; 23.

315. Musa livingstoniana Kirk (Musac.) *see* **Ensete.***

316. M. paradisiaca L. and **M. sapientum** L. Plantains and Bananas.

Nthoci (N, tree), *ntocci* (N, fruit), *ligombo* (Y), *makobwe* (Tu), *ndoci* (To), *amatoki* (Nk).

Many varieties of both bananas and plantains are grown throughout the country. The smaller sweet varieties are often grown for sale to Europeans only. As far back as 1875 Dr. Laws remarked on the fact that the Ladies-finger banana was one of the commonest varieties on the Karonga Lake-shore.

(1) The preparation of banana flour; in the past among the tribes of Karonga District, *e.g.*, the aKonde and aSukwa, porridge made from banana flour was an important food. The practice, however, is gradually dying out and little flour is made at the present time except by old people. The unripe plantains are peeled, dried on the hut roof for two to three days and then pounded. The porridge made from the flour is sweet in taste. Occasionally in times of hunger, banana flour is made in other parts of the country, *e.g.*, Kota Kota Hills in 1940.

(2) *Mbaraga*, this is a dish in very common use among the aKonde. Bananas or plantains are peeled, boiled and mixed with a variety of foods such as fish, meat, beans or milk curds, *mukaka* (Nk).

(3) Boiled banana cakes, *cibama* (Nk), *mikate* (N), *bumuntha* (Kota Kota), ripe bananas are pounded and mixed with almost any kind of flour, *e.g.*, cassava, rice, maize or finger millet. The mixture is made into flat cakes and wrapped in banana leaves and boiled. These cakes are very often on sale at markets.

(4) Fried banana cakes, *zitumbuwa*, a mixture is made as in (3) of pounded bananas and maize or cassava flour. The mixture is made into flat cakes about 4 ins. in diameter and 1 ins. thick and these are fried usually in groundnut oil. The following are the amounts of ingredients used and cost in 1938 of cakes made by a Zomba woman for sale at the market:—

Bananas in skins	..	..	13 lb. costing 6d
Maize flour	..	..	10 lb. ,, 6d
Groundnut oil $1\frac{1}{3}$ pt.	..	..	,, 9d.

Total cost 1s–9d from which 48 cakes were made selling at two a penny.

(5) Roast bananas,—unripe bananas or plantains either in their skins or peeled are very commonly roasted in ashes.

(6) *Futali* (kiSwahili), *mamboga* (Y).

Raw ripe bananas or more often, cooked bananas are mashed with pounded groundnuts and sugar or salt until a smooth mixture results. The dish is very well liked.

(7) Raw bananas are very popular and large numbers are eaten whenever available, they are also a favourite food to give to young children.

KINDS OF BANANAS, KARONGA, 1942.

Amatoki = any kind of banana or plantain,
Amatoni = ripe bananas,
Ingaya = banana plant.
Ambele ga bazungu = yellow thick, *Halale* = coarse yellow,
Indifumwela = short, thick, yellow, *indoke* = yellow, large,
Ingongomola = yellow, large, *mwenirondo* = small, yellow,
Ndifu = short, dark, sweet, yellow, *ndyali* = small, sweet, yellow,
Pamala = red, sweet.

*See E. E. Cheesmans, "*Classification of the Bananas, 111 Critical Notes on Species*," Kew Bull. 1948 pp. 145–153.

Kabunthu (N),
Kachisi (N),
Magombo = general term (Y), name for commonly grown coarse variety,
Makumbukwa (N, Y),
Mlanya (Y, N, C) meaning long,
Namkawa (C), meaning fallen, because of its very heavy branches,
Nasiri (Y), *kasizi* (Y),
Sukali (N), meaning sweet kind.

Ref. 23; 27.

317. Myrianthus arboreus P. Beauv. (Morac.).

Ciwele (C), *makwakwa* (N), *mwanja* (Y), *mufwisa* (Su).

A small or large evergreen tree growing to 80 ft., with short bole and rounded crown; branches and petioles with soft hairs intermixed with longer hairs; leaves 5–7 palmate, leaflets to 20 ins. long, pith with large mucilage cells, ultimately hollow and inhabited by ants; female flowers golden-yellow; fruit compound yellow when ripe and about 4 ins. in diameter. Known to grow near Zomba, in the Kota Kota Hills and Matipa Forest in the Misuku Hills, Karonga District.

The fruits are edible very juicy and refreshing, reminiscent of pineapples; one of the best wild fruits in Nyasaland. Wood, yellowish-white, rather soft, fibrous and difficult to work, used for fencing (W.A.). Roots used for throat-aches (Tt).

Ref. 9; 15; 26.

318. Nesaea sp. (Lythrac.).

Kwete (C).

A herb growing to 8 ins. high found in damp places, flowering in November (Dedza).

The leaves are very occasionally eaten cooked with potashes, they form a slimy product, *thelele* (Dedza).

319. Nidorella microcephala Steetz (Comp.).

Sungubuwa (Tu).

A herb growing to 2 ft. found in gardens. Found in the Kasungu District and elsewhere.

The leaves are eaten during the dry weather until December (N.A. Kaluluma's area, Kasungu District). Potashes are not used in the cooking.

320. Nymphaea calliantha Conrad (Nymph.). Water lily.

Cikolwa, *cikorwa* (C).

A water plant with leaves and flowers floating and rhizomes and roots embedded in the mud; flowers, large usually pale lilac colour. In lagoons and other stagnant waters.

The rootstock is edible. The flattened head of the flower stalk is edible and also the seeds (Kota Kota).

321. Olax dissitiflora Oliv. (Olac.).

Msemandodo, *nandolo* (N), *mselecete*, *ciwambola* (Y).

A much-branched, glabrous, evergreen tree to 20 ft. tall with somewhat pendulous branchlets; leaves, alternate, lanceolate, flowers yellow-green, small on slender stalks, solitary or up to 4 ins., short racemes in the axils of the leaves.

The leaves are crushed and the liquid strained and mixed with coconut oil for use as an emetic (E.A.).

Ref. 14; 17; 26.

322. Olea chrysophylla Lam. (Oleac.).

Nakatimba (*Mg*).

An evergreen tree up to 50 ft., leaves up to 3 ins. long, very densely scaly beneath, flowers small white in very scaly, many-flowered panicles up to 3 ins. long, common in subtropical rain forest and upland bushland.

A very fine fuel tree, used for making charcoal, wood extremely durable and strong, difficult to work; heartwood cooked and drunk as an infusion like tea by the Masai; twigs and leaves burnt by the waSonjo as a fumigant; roots used for rheumatism, fruits edible and sweet, much liked by the large green pigeon.

Ref. 14; 26.

***323. O. europea** L. (Oleac.). Olive.

This tree, native of the Mediterranean region, has been planted at Cholo at 3,000 ft. altitude and at Mwera Hill at 5,000 ft. At the former place they were grown for about 15 years but fruited indifferently if at all and have now been cut out, those at Mwera Hill are beginning to fruit and if they bear well a very valuable source of oil will be made available to the African.

Ref. 13; 27.

324. Oncoba spinosa Forsk. (Flacourt.). Snuff-box tree.

Mtsece (C), *msewe*, *mtawa* (Y), *sewe* (Nk).

A glabrous shrub or tree with straight spines, leaves elliptic, up to 2½ ins. long; flowers, showy white, fragrant, 2 ins. diameter, coming out in November (Ncheu); fruits, globular about 2 ins. in diameter, narrowing at the stalk end. Found in forests up to about 3,000 ft. altitude.

The fruits are boiled and the contents are scooped out with a stick. They then serve as very useful receptacles for snuff and are sold at two a penny. At one time the dried fruits made one of the favourite cock-boxes worn by Ngoni men, a custom that is now dying out. An infusion of the roots mixed with that of *kaweleka* is drunk by barren women in the hope that they may have children. An infusion of the roots mixed with those of *mpungulira*, (*Antidesma venosum*), *mlunguchulu*, (*Fagara nitens*) and the leaves of *naphangale*, (*Dichrostachys*) is drunk as a cure for *khunyu* (epilepsy?). The wood is hard, light brown, takes a good polish and is suitable for inlay and cabinet work.

Ref. 7; 14; 15; 26; 27.

***325. Opuntia dillenii** (Ker Gawl.) Haw. (Cactac.) Prickly Pear.

Kaloga (Dedza).

A much-branched, leafless, succulent shrub, native of sub-tropical America, up to about 6 ft. tall with oval jointed green spiny stem, spines sometimes up to 2½ ins. long, usually shorter, yellow or brown; flowers showy, lemon-yellow, clustered at the apex of the branches; fruits usually pear-shaped or globose, purplish or green and juicy. Some species are spineless. Found in many villages particularly Mphunzi (Dedza), Chintembwe (Kota Kota Hills).

Planted to discourage lions. The fruits when skinned can be eaten, they have seeds embedded in pleasant-tasting, sweet, crisp flesh. The stems of spineless types make good fodder. The soaked stems can be used in soap-making.

Ref. 13; 17.

326. Oreobambos buchwaldii K. Schum. (Gram.) Large green bamboo.

Tolanje (G), *liulawe* (Y, name used for any soft, hollow bamboo).

Bamboo with weak, hollow, green stems up to 50 ft. tall sometimes dying out a year after flowering at other times persisting. Found in open parts of evergreen rain forest and said to be recorded at Nchisi and Kaning'ina.

Stems used for pig fences and for making flat, plate-like baskets (Tt).

Ref. 14; 26; 27.

327. Ormocarpum sp. (Papil.).

Phuluphulu (N), *lunemera* (Y), *pulumwe* (Su).

A small tree with pinnate leaves growing at all elevations.

The small leaflets are plucked from the stems and pounded. They are then cooked with the addition of potashes and form a slimy product, *thelele*. The dish is fairly well liked. The leaves are known to be eaten very commonly in the Mzimba District and fairly commonly in Kota Kota, Karonga and Fort Johnston Districts.

328. Oryza sativa L. (Gram.). Rice.

Mpunga (G).

An erect tillering grass, 2–4 ft. high, with shallow spreading root system demanding characteristically a high soil moisture content; grain borne in loose panicles. Rice was in cultivation in East Africa before the arrival of the Portuguese and Livingstone refers to it on the Dowa Lake-shore.

Except in parts of Karonga District, where large amounts are consumed, rice is a luxury food for Africans. It can readily be sold at relatively high prices either to Europeans or Indians and so in most places is a cash rather than a food crop.

Preparation of the Grain.

The grain is stored unthreshed in bins made of bamboo or raffia palm which are well plastered. About one month after harvest, the grain is beaten out with sticks and the " padi ", *mpunga wosapuntha*, is now ready to pound. If it is too hot from exposure to the sun it is allowed to cool off to prevent too great a breakage of the grain. The grain is then pounded in a mortar. The husk is winnowed off and the grain re-pounded until separation of the husk is complete. During the process a fairly large proportion of the grain is broken. These small fragments are separated from the whole grains and are used for making flour.

The grain is prepared for eating in the following ways:—

(1) Porridge, *nsima*.

Flour is prepared by pounding and alternate sifting through a fine sieve. When water is boiling in the pot, the flour is quickly added with stirring, the whole process taking about ten minutes. The product is of a soft consistency and is said not to have so much " staying power " as maize or cassava porridge. After eating the former, an African is hungry again after a few hours while a morning meal of the latter will sustain him all day. Except in parts of Karonga District, rice porridge is seldom made.

(2) Boiled rice, *mpunga wa mphumphu*.

The rice is well washed by rubbing between the hands and kneading in a flat basket while water is poured over. The process is repeated two or three times until the water is clear. Thorough washing has the advantage of removing the loose grains of starch so that the rice grains separate when well cooked, but it has the disadvantage from the nutritive point of view, that a considerable amount of vitamin B1 which is present largely in the outer layers of the grain, is also lost in the water.

The grain is then put in boiling water and allowed to cook until it is found to be sufficiently soft when squeezed between the fingers.

An alternative method, used at Kota Kota, is to put very little water in the pot with the rice and after ten minutes boiling to cover with banana leaves and to put hot ashes on top of them. The pot is then left at the side of the fire for one to two hours until the rice is soft.

In this form rice is eaten with certain well-liked side-dishes, *e.g.*, fish, meat or well-cooked leaves. The dish is served with the other food poured on top of the rice not in a separate dish as is the custom with maize porridge.

(3) *Msere.*

The rice is boiled as in (2). A milky extract of groundnuts is made by pouring water several times through some pounded nuts held in a basket while at the same time stirring the mixture. The liquid is known as *tuwe* (Kota Kota) and is mixed with the cooked rice and salt is added. Alternatively the pounded groundnuts may be boiled with water for five minutes and then added to the rice without straining. Pounded turmeric, *manjanu*, may be added with, on occasions, a little groundnut oil. Sometimes the rice is eaten plain with only salt added or if available either sugar, the juice from sugar cane, *asali* or honey. In all cases some extra liquid, either water or oil is added, so that the product is of a soft consistency distinct from the dry state of ordinary boiled rice. In Karonga District, curds, *mukaka*, are often mixed with rice.

The following quantities were used by women in 1938:—

(*a*) Kasamba, Kota Kota.

Rice	3 lb.
Groundnuts	10 oz.
Onions	2 oz.
Tomatoes	3 oz.
Groundnut oil	1 oz.
Salt	3 oz.

(*b*) Blantyre.

Rice	4 lb.
Groundnuts	1 lb.
Salt	1½ oz.

(4) Rice gruel, *phala la mpunga* (N), *uje* (Y).

Rice is boiled for a long time with much water until it is very soft, salt is added and sometimes pounded groundnuts and tomatoes. Rice is given in this form to young children, invalids and the aged.

(5) Banana cakes, fried, *zitumbuwa*, boiled, *bumuntha* or *mikate.*

Rice flour is ground until very fine, it is then kneaded with water until soft, either pounded banana, sugar or sugar cane juice is added. The mixture is made into flat cakes, which are fried in groundnut oil or wrapped in banana leaves and boiled for one to two hours. In Karonga District, the flour is sometimes leavened by adding yeast from beer.

(6) Uncooked rice, *cigodo* (N), *cikatu*, *gamba* (Y) (stiff consistency), *unyu* (Y, liquid consistency), *mankhunkhu* (N), *mangungu* (Y).

The above names are given to variations of the dish, produced by mixing uncooked rice with water in varying proportions. The rice is first soaked for about half an hour in cold water and then eaten, *e.g.*, *mankhunkhu*, or it may be pounded until very soft and eaten thus without salt or sugar, sugar cane juice, *asali*, honey, or pounded bananas may be added, *e.g.*, *cigodo*, *cikatu*. If much water is added *unyu* (Y) is produced.

(7) Sweet beer (Karonga District).

Beer is brewed with rice flour using finger millet as malt. (See *Zea mays* for method of preparation.)

(8) Malt for beer.

Sometimes malt from rice is used in beer-making.

As has been said before, the high price of rice precludes its use to any great extent. It is, however, a very popular food among, for example, the well paid clerks in Zomba and Blantyre, who like to eat it two or three times a week. It is also much used for festivities such as weddings.

Ref. 13; 23; 27.

329. Osteospermum monocephalum (Oliv. & Hiern) T. Norl. (Comp.). (Syn. *Tripteris monocephala* Oliv. & Hiern).

Cimvulo (N), *nakamoto* (Y).

An erect, lightly branched, perennial herb up to 2 ft. tall, leaves opposite to alternate, rather variable in shape from narrowly elliptical to linear, entire or distantly dentate, flower heads solitary with yellow ray and disc florets, achenes 3-winged. Locally common but scattered at the higher elevations.

Medicinal, the roots are burnt and the ash rubbed in to heal cuts.

330. Ostryoderris stuhlmannii (Taub.) Dunn ex Bak. f. (Papil.).

Mulondo, mlonde (N), *mtutumuko* (N, Y).

A deciduous tree up to 50 ft. tall with a rounded branched crown, bark tending to flake, trunk exuding a red kino (gum), leaflets in 4–9 pairs oblong to ovate-oblong; flowers in panicles produced with the leaves, petals white-veined with pale pink or green veins, pod flat up to 7 ins. long with a broad wing aroond the margins. Locally common around the Lake-shore.

Wood used for sleepers (Tt).

Ref. 14; 26.

331. Ottelia ulvifolia (Planch.) Walp. (Hydrochar.)

A water plant with submerged leaves; flowers usually projecting above the water, yellow or white; leaves oblanceolate, subacute, gradually narrowed into a winglike petiole, about 12 ins. long by 2½ ins. often much smaller; spathe compressed, narrowly oblong, elliptic, 2-winged, shortly lobed; fruit about as long and enclosed in the slightly expanded spathe. Shallow still lakes and ponds, *e.g.*, Kasamba Lagoon, Kota Kota District.

A valuable plant for fish ponds as it is entirely submerged and is eaten by herbivorous fish.

332. Oxalis sp. (Oxalid.).

Shawawa (roots, C), *katukula* (Tu, leaves).

A small herb found growing among undergrowth in wooded areas. The roots are swollen, about the size of a pea and have a loose sheath covering them resembling that of an onion. Widespread.

The leaves are occasionally cooked as a side-dish (Kasungu). They are softened with potashes and form a mucilaginous product, *thelele*. The dish needs pounded groundnuts otherwise it is sour. The roots are eaten raw by boys in March and April.

333. Oxygonum atriplicifolium Martelli (Polygon.).

Kalasaweni, kafupa (C), *kaciwanga* (Tu), *seselesya* (N).

A herb growing to about 1 ft. with small flowers and three spined fruits which stick to the feet when walking, found widespread.

The leaves are cooked with potashes and form a slimy product, *thelele*.

334. Oxytenanthera abyssinica Munro (Gram.) Common bamboo.
Nsungwi (N), *mlazi, liulawe* (Y), *musyombe* (He), *lulasi* (Nk) (All general names).

A bamboo with stems, up to 30 ft. or even 50 ft., leaf sheaths overlapping, blades oblong, lanceolate, rounded to a contracted base, very acutely acuminate, spikelets in dense globose, axillary clusters. Flowering is periodic and spasmodic, usually flowering gregariously after which the plants die. It seeds profusely, the stems often being weighted down by the seeds. It reproduces itself from seed without difficulty. It is recorded that there is at Lilongwe a form which flowers and fruits every year but does not die, this has now been widely distributed all over Nyasaland. Forms clumps in the foothill forests under rather moist conditions under varying altitudes. Also found on termite mounds under drier conditions.

Very widely used for all kinds of building purposes and basket-work. The seeds are an important food, particularly in times of famine, they are said to be very similar to rice in flavour.

Ref. 14; 26; 27.

335. Pachystela brevipes (Baker) Baill. (Sapot.).
Mpimbi, mpuso (N, Y), *mpimbinyolo, citore* (N), *msuwi* (Y), *mkumbu* (To).

Much-branched evergreen tree up to 60 ft. tall with a very fluted trunk, large leaves up to 12 ins. long; flowers clustered in the axils of the leaves; fruits yellow, oval about 1 ins. long with a thick skin, fleshy layer and almond-like seed ripening in September. Found near Zomba.

The fruit has acid-sweet edible pulp. The wood is reddish-yellow, darker in the heart and durable, used for rice mortars and pestles (W.A.).

Ref. 14; 15; 26.

336. Parinari curatellaefolia Planch. ex Benth. (Rosac.).
Mbula, muula (N, Nk, tree), *maula* (N) or *mpembu* (Y) fruits.

A small tree up to 40 ft., leaves alternate, ovate, prominent parallel branch veins, white tomentose beneath; flowers in panicles, grey to buff, fruits red-brown, 1½ ins. long, reddish mealy pulp with a large single seed, found widespread from about 3,000 ft. to 5,000 ft. Very common in Misuku Hills, Karonga District.

The ripe fruit is edible, the brown pulp has a pleasant sweet taste, more particularly if the fruits are picked and then stored for a few days until they are thoroughly ripe. It is one of the best of the wild fruits and it is eaten in very large quantities especially by children. It ripens in October and November (Dedza). The fruits are also pounded with water and the liquid obtained thickened with flour to make a gruel, *phala la maula.* The wood is hard, durable and heavy, is pale brown to yellow-red, somewhat difficult to saw and plane. It is very suitable for building and furniture and is also used for poles, mortars and for charcoal.

Ref. 6; 7; 14; 15; 26.

337. P. holstii Engl. Rough-skinned Plum.
Nguluwe (Y) tree and fruit, *muula* (C), *mpembu* (Y), *macende a nguluwe* (N fruit), *mkanjula* (To), *mukatana* (Su).

A large evergreen forest tree up to 150 ft. with or without buttresses with pale tomentose branchlets and inflorescences, fruit ellipsoid about 1½ ins. long, red brown with rough warty surface, found in forests and on river banks.

The red, sweet fruits are edible, they are ripe in November, they have a peculiar flavour not unlike that of the Avocado pear. Wood is used locally for planks and building timber, furniture, etc. The ashes of the bark and wood are used in the preparation of hides for tanning. The shell and pulp of the fruit are used in dyeing.

Ref. 14; 26.

338. P. mobola Oliv. (Rosac.).

Muula (N, tree), *maula* (N, fruits), *mpembu* (Y, fruits). Names as **P. curatellaefolia.**

An evergreen tree up to 30 ft., leaf base often sub-cordate, leaves similar to those of *P. curatellaefolia*, flowers in dense panicles, grey to rusty tomentose. Found scattered in *Brachystegia* forest; also forms clumps and in Mlanje District there are considerable areas of closed forest or scrub. Very common in Misuku Hills, natural regeneration is produced from root suckers.

Fruits, edible, very good like small russet apples. The seeds of this species or *C. curatellaefolia* make an excellent substitute for almonds. Timber, white, hard, with a red heart, can be used for poles, cannot be sawn as full of silica, if sawn green, warps. In this country except where native custom has respected the tree as at Fort Manning, the timber is generally of too small size to be valuable.

Ref. 6; 9; 14; 16; 26.

339. Parkia filicoidea Welw. ex Oliv. (Mimosac.). African locust bean.

Mkundi (N, Y), *mgundi* (Y), *musyepwa* (Nk), *skapya* (He).

A tall tree of deciduous forest growing to 75 ft. with spreading branches, bipinnate leaves, scarlet flowers in spherical balls on hanging peduncles which are 12 ins. long; flowers at the end of September and fruits in December onwards; fruit a pod, 8 ins. long, somewhat fleshy, strap-shaped with thick seeds like runner beans. Found in forests fringing rivers from Lake level to 5,000 ft. Often a solitary "relic" tree on hills as at Nchisi Forest, found throughout the country but never abundantly.

The yellow sticky pulp round the black seeds is eaten, the seeds are also used for famine food. No poisonous substances are present in pulp or seeds. The timber is easily worked and is used for mortars, poles, etc. The tree is planted at the eating and meeting place, *bwalo*, of aCewa villages for shade. An infusion of the bark is mixed with *cesa*, (*Cyperus alternifolius*) root and drunk to cure a disease of women after child birth, it is also used to cure madness, *misala*. The whole fruit is a good fodder for stock.

Ref. 12; 14; 15; 26.

***340. Passiflora edulis** Sims. (Passifl.). Passion fruit, Granadilla.

Magalengendele (N).

A climbing shrub, native of Brazil, very easily grown from seed which thrives even on poor soils at elevations from Lake level to 5,000 ft. and possibly higher. The fruits of the kind commonly grown are ovoid with purple skins which wrinkle as the fruit ripens. There are at least two other species in the country. P. *ligularis* Juss., Sweet Granadilla, with a similar fruit but yellow when ripe and with a longer fruit stalk and *P. quandrangularis*, L. Granadilla, or Square-stemmed Granadilla with an oblong 5–9 ins. long yellowish-green pulpy fruit. Commonly planted by Europeans all over the country but as yet by few Africans. *P. edulis* is now naturalized on Zomba Mountain.

The fruits of all three are edible. *P. edulis* should be encouraged for native use as it is very hardy, bearing several crops in the year for several years in succession. The juice of the fruits is rich in vitamin C and as it is often of a deep orange colour, it is likely to be a good source of the carotenes.

341. Pavetta crassipes K. Schum. (Rubiac.).

Manja atali (N, meaning long fingers), *lilumi la ng'ombe* (N), *lilaka lwa ng'ombe* (Y), (both meaning tongue of an ox.), *muzu-uyu* (Nk).

Robust shrub or small tree, twigs thick up to 9 ft. tall with long up to 12 ins. sword-shaped leaves, locally common on hillsides clothed with *Brachystegia*.

The roots are used to cure a disease called *mdulo* or *tsempho* that plays a very large part in native life. The leaves and roots are boiled together and the vapour also inhaled as a cure for colds. Leaves used to treat gonorrhoea (Tt). The plants are burnt for potashes for cooking purposes.

Ref. 26.

342. P. schumanniana F. Hoffm. ex K. Schum. (Rubiac.).

Mpumba (C), *mpambo* (N), *cikokolowanga*, *njiliti* (Y).

Shrub up to 10 ft., leaves up to 4 ins. long.

An extract of the bark is used to cure a disease of women, *citeta* or *mwini*.

343. Pennisetum purpureum Schum. (Gram.) Elephant grass or Napier fodder.

Nsenjere (N).

A grass with reed-like stems, sometimes branching, common in sandy alluvium near streams, attaining 1 ins. in diameter but in uplands at 5,000–6,000 ft. only reaching a height of 5–6 ft. Leaves sharp-edged, flower, a spike, bulrush-like often not producing seed. Widespread at all elevations.

The stout pithy stems are used for hut walls, fences, etc., sometimes for thatch. Provides a useful fodder, stands cutting well and is a good draught resister, if cut when not above 4 ft. yields a good hay, suitable also for ensilage. Is capable of manufacture into good quality paper.

Ref. 15.

344. P. typhoides (L.C. Rich.) Stapf & Hubbard, Bulrush or Pearl Millet.

Macewere (N), *muzundi* (Y), *nashasha* (Ngu), *ucewere*, *nyauti* (Tu).

A grass cultivated for its seed which it bears in characteristic long heads. There are a number of different varieties grown, mainly in the Lower Shire where it is harvested in about March. The grain is very small and of an olive green colour. Common in the Lower Shire, only grown in small amounts in the rest of the country.

This, with Finger Millet and Guinea or Kaffir Corn, were the three main food crops until 70 or 80 years ago throughout Nyasaland, evidence of which is the frequency of old grinding stones in old village sites everywhere.

Storage of the Grain. (Port Herald).

The grain is stored on a stand usually inside the house, under which a fire is kindled from time to time. It is kept here for about two months on the head, then the heads are pounded and the freed grain stored in very large globular rush baskets which hold 200–300 lbs. of grain. They have a small aperture at the top which is closed when they are filled. They are hung either inside the hut or on the verandah.

Preparation of the Flour.

If the grain is still on the heads, a bundle of these is taken, broken across and put into the mortar. The contents are then pounded slowly as the heads are very likely to spring out. The grain is sifted off from the debris and the latter thrown away. The grain is given two poundings as with maize. The first, *kukonola*, is a short one after which the bran is shaken off. A little water is added and the grain well pounded until it sticks together in a mass. Now it is turned into a flat sifting basket, broken up by hand and as it dries the bran is shaken off. The grain is now free from bran, *madea*, and is called *mphale*. The *mphale* is washed well and then pounded, *kutibula*, to form a fine flour. The latter is spread on a mat to dry in the sun.

Methods of Use.

(1) The flour is made into porridge, *nsima*. The latter is dark coloured but well liked. In the Lower Shire it is eaten very commonly from March until the sorghum ripens in May and June.

(2) *Cigodo*. The flour is mixed with water and eaten raw.

(3) *Cimera*. The grain makes good malt for beer.

(4) The flour is used for beer. (See **Zea mays** for method of preparation.)

(5) Banana cakes, *mikate*, are made by pounding the flour with bananas then boiling them.

Ref. 23; 27.

345. Pentarrhinum insipidum E. Mey. (Asclep.).

Cindewe (He).

A climbing perennial with glabrous or puberulous stems, leaves opposite, stalked, cordate-ovate, acute, with rounded basal lobes, glabrous; flowers inconspicuous, yellow-green, produced laterally from the leaf axils on 1–3 ins. long stalked corymbs which elongate into a raceme; fruits follicular usually solitary 1–3 ins. long, lanceolate, acuminate into a beak, covered sparsely with small soft spines; found on river banks.

The leaves are eaten as a side-dish (Mzimba District) and the roots are used for medicine.

346. Pentarrhinum sp.?

Kafungo, cindewe (He).

A climber found in the hills in gardens.

The leaves are cooked as a side-dish, often mixed with *mpuludwa*, (*Cynanchum schistoglossum*) and the roots are used as medicine.

347. Pentanisia schweinfurthii Hiern (Rubiac.) Rhodesian Forget-me-not.

Ngulungundi (N).

A small, erect, branched herb with simple leaves borne in pairs, oval, narrowing to a sessile base, about 1 ins. long with two or three stipules; flowers in heads, tubular, small, blue or lilac. Widespread at high elevations, *e.g.*, 5,000 ft. in Kota Kota and Misuku Hills.

Leaves commonly cooked as a side-dish in the dry season in hill areas; potashes are used.

***348. Persea americana** Mill. (Laurac.), Avocado pear.

Much-branched evergreen tree up to 50 ft. high; native of Central America and the West Indies. The fruit becomes pale green with tinge of yellow or red when ripe; it is pear-shaped with a thin somewhat brittle skin and a very large hard seed. Between the skin and seed is a thick layer of greenish-yellow pulp of the consistency of butter.

The fruits are eaten by Europeans, usually served with salt and vinegar but can also be used for fruit salad with other sweet fruits. As the fruits contain a high percentage of oil they would form a valuable addition to the African diet, either eaten raw or mixed with other foods to form a side-dish.

Ref. 26.

***349. Phaseolus acutifolius** A. Gray var. **latifolius** Freem. (Papil.). Tepary bean.

A cultivated annual herb with small pointed leaves and small pods with seeds resembling miniature haricot beans. Native of Arizona and Mexico.

The beans are edible, they are of good flavour but do not cook as quickly as haricot beans. The leaves are edible but are tougher than those of the haricot.

They are unlikely to become popular for native use unless they are found to flourish in places where haricots do not do well.

***350. P. aureus** Roxb. Green and yellow Gram.

Mphodza (N), *mbweso* (Y), *namurovo* (Ngu), *mposo* (Tu), *kakhoma*, (Tu, To), *imposo* (Nk).

A cultivated annual, native of India, with small leaves and a number of very slender pods about 2–3 ins. long, radiating out from the stem at a single point. The seeds are extremely small (700 to 1 oz.) and are either bright green or yellow in colour. Grown to a small extent in the Southern Province and to a lesser extent in the far north of the country, very seldom seen between these areas.

The seeds are cooked for a side-dish. The product is of good flavour but the large number of rather tough skins which become detached during the cooking, makes the dish rather unpalatable. Gram is also cooked as a side-dish with the skins removed as *cipere*. The skins are removed by grinding, the seeds are then boiled until soft and well stirred. The product is soft and of good flavour and is very well liked. Gram is said to make a good dish to serve with rice. (N.A. Chikumbu's area, Mlanje District.) Neither the pods or leaves are eaten.

Ref. 26.

***351. P. lunatus** L. Lima or butter bean.

Kamupanda, *mayemba* (C), *ntambohodo* (N), *makwera* (N), *cimbamba*, *mandondo*, *mamberemende* (Tu), *mankhamba* (Su).

A biennial twining herb of South American origin, frequently planted to grow on hut fences, leaflets 3, ovate, acute or acuminate; flowers in axillary racemes, white or violet, seeds flat, half-moon shaped, colours white, red or speckled black.

The beans are edible, they are bitter in varying degrees, some kinds, *e.g.*, butter beans, scarcely at all, while others, *e.g.*, *mayemba*, another large white kind, is definitely bitter. Much of the bitterness is in the skins and as they are also tough, they are often removed before cooking and the beans served as *cipere*. The small-seeded kinds are common in the Southern Province, grown in small amounts in nearly all the villages to climb on hut fences. A large-seeded kind, *mayemba* (C), is grown occasionally in the Kota Kota District and in the rest of the country the beans are well known but only rarely grown.

Cooking Times.

Dry, unsoaked beans 2–2½ hrs., water is added 2–3 times.

Dry, soaked beans 1½–2 hrs.

The young pods are cooked as a side-dish, groundnuts and tomatoes are added if available (Southern Province). The leaves are eaten when young, particularly of a small kind, *makwera* (Kasungu).

Results of cooking and palatability trials of some varieties of Lima beans, Mwera Hill, 1941.

(*a*) Native *mayemba*, beans large white or black speckled, slightly bitter, skins moderately tough, white kinds less bitter than coloured.

(*b*) Butter or Madagascar, large flat white, good flavoured, skins soft and tasteless.

(*c*) Bush Lima, small white, flat, good flavour, skins moderately tough.

(*d*) *Moki*, small, white, flat, good flavour, skins moderately tough.

(*e*) *Pebugale*, variable shape, some rounded, some flat, small white, very slightly bitter, skins tough.

(*f*) *Pegya*, shape variable, some rounded domed and angular, pale pink, speckled red, slightly bitter, skins tough.

The leaves of all these kinds are edible but show varying degrees of bitterness according to season.

Ref. 13; 23.

***352. P. vulgaris L.** (Papil.). Kidney, French, Haricot bean.

Mbwanda, *cimbamba*, *kayera* (N), *mphwanda* (Ngu), *ncungu* (Tu), *njunga* (To), *indima* (Nk), *malima* (Su).

Cultivated annuals, native of tropical America, varying from small bushy types 1 ft. high to climbing or spreading plants extending 4 or 5 ft. There are a very large number of varieties in the country, mostly of the dwarf bushy type, they differ in size, shape and colour of the seeds. Most of the kinds have the typical kidney-shaped seed but a few, *kanumbulunji* (C), a bean fairly commonly grown in the Kota Kota District, has a rounded seed resembling in shape that of the Bambarra groundnut.

A large red-seeded kind, *cimbamba*, is very popular. The beans can be grown successfully at all altitudes but the main bean producing areas are in the hills and foothills. Hence in the Southern Province on the whole, they are scarce; in the Mzimba and Karonga hills they are very plentiful while in the rest of the country they are in fair supply.

Methods of Cooking.

(1) The Beans (for names *see* above). They are the most popular of all the kinds of beans for a side-dish.

(*a*) They are boiled until very soft, the product is of good flavour and the skins soft and tasteless.

(*b*) The skins are removed by soaking and the beans boiled until soft. They are then well mashed often with a special stick kept for the purpose, to form *cipere*. Oil or pounded turmeric, *kurri*, may be added.

(*c*) The fresh beans are cooked as a side-dish.

(*d*) The beans are boiled together with whole maize from which the bran has been removed, to form *ngata* (Karonga District). This is a popular food among the aKonde and aSukwa.

(*e*) Among the aKonde, beans are cooked with bananas to form *mbaraga*, this dish may form one of the main meals of the day.

(*f*) They are often eaten boiled either fresh or dried with no accompanying porridge. They may be cooked for this purpose either shelled or in the pods, *makowe*.

(2) The Young Pods. *Ziteba*, *mateba*.

In the Southern Province green immature beans, *ziteba*, *mateba*, are commonly eaten as a side-dish. The pods are broken across, boiled until soft when pounded groundnuts are added with occasionally onions in addition. They are often mixed with leaves. In the rest of the country, the Africans think it wasteful to use the young beans and prefer to let them all mature. Provided, however, that water is available the plants will continue to bear for a considerable time if the green beans are frequently picked so that a supply of a side-dish can be kept up. Green beans were found very useful in the feeding of the boarders at Mkhoma D.R.C.M. schools (1942) and their use might well be extended to other institutions such as hospitals and prisons.

(3) The Leaves. *Khwanya* (N), *liponda lya mbwanda* (Y), *matapa a mphwanda* (Ngu), *cinyamula* (Tu), *cinguyani* (Nk), *cikundya* (Su).

The leaves are very commonly cooked as a side-dish. They are gathered young, boiled until soft, then pounded groundnuts are added. If the leaves are old, some

soda or potashes are needed. The leaves are often left in the sun a few hours before cooking. The reason given for this is that it makes them less bitter. The cooked dish is well liked in spite of its slight bitterness and the leaves are of sufficient value to exchange for maize or groundnuts in the villages.

Any surplus of leaves at the end of the rains is dried as *mfutso*. (See **Vigna unguiculata** for method of preparation.)

Results of Cooking and Palatability Trials, Mwera Hill, 1941.

Some 14 varieties of beans were tested for cooking times and palatability. There was little variation in cooking times; there were minor differences of flavour and toughness of skin, "Canadian Wonder" and a small white kind, "Amani No. 1268," seemed to be best for flavour and also had the softest skins.

The varieties ranged in size from 50 to the oz. for a local kind called *kanabulunji*, to 125 to the oz. for a dark red Kenya kind. The leaves of all kinds were palatable with no apparent differences in flavour or texture.

Ref. 13; 23.

***353. Phoenix dactylifera** L. (Palm.) Date Palm.

There is a small plantation of this palm in cultivation in the Bwanje Valley and a few have been grown successfully at Kachebere R. C. Mission in the Fort Manning District. The Bwanje Valley palms were planted by the celebrated Sergeant Major Ali Kiongwe, a Zanzibari whom Sir Harry Johnston had taken on his expedition to Kilimanjaro and who he re-employed in 1889 to accompany him to Nyasaland as his headman. Ali Kiongwe was a coastal Swahili of Zanzibar who served with the British Central African Rifles in Somaliland and is said to have kept a few seeds of his date ration. On eventual retirement he made his home in the Bwanje Valley; tradition has it he settled with 33 wives, planting the date seeds he brought from Somaliland and taught his wives how to fertilize the date flowers on the female palms. As far as is known the descendants of Ali Kiongwe still hawk dates each year in Nyasaland.

There is some difficulty in the fertilization of dates as the proportion of male palms is small and the pollen is produced before the stigma of the female palm is receptive, therefore flowers of male palms must be picked and kept in a tin for 4–5 weeks and then used to fertilize by hand. The palm grows freely up to altitudes of 4,000 ft. In North Africa, dates are found near oases and where there is irrigation so that they receive more water than the 8 ins. of rain that is prevalent in that area. Seeds from packet dates germinate readily but the palm does not breed true from seed. The best palms are grown from suckers. It is suggested that the fertile damp parts of the Lower Shire would be a good place for the palms.

The uses of the palm are numerous, besides a food it provides matting, rope, timber, etc.

Ref. 23; 27.

354. P. reclinata Jacq. (Palm.) Wild date palm.

Kanjedza (N, Y). (Both large and dwarf forms.)

A palm with solitary or tufted stems up to 30 ft. tall, crowned with a graceful head of bright, green, somewhat spine-tipped pinnate leaves, leaflets linear, lanceolate; flowers small, cream, in much-branched panicles produced in the axils of the leaves; fruits, small, oval, bright scarlet turning black when ripe.

The young leaves are much sought after by Africans for making mats and fine baskets (E.A.).

Ref. 14; 17; 26.

355. Phragmites mauritianus Kunth (Gram.). Reed grass.

Bango (N).

A tall water grass up to 30 ft. high, with culms erect, many noded, leaf sheaths overlapping one another tightly, somewhat spiny leaf tips and heads of white or buff flowers. Widespread near water on the margins of lakes and rivers.

For many building purposes, *e.g.*, grain bins, walls of huts, roofing, fish traps, fences; split to make *mpasa* mats. The roots are used as medicine for various maladies.

Ref. 17; 26.

356. Phyllanthus guineensis Pax (Euphorb.).

Mtanthanyelele (C, N), *mtandanyelele* (N, Y).

A shrub up to 10 ft. found on sites of old gardens in the hills.

An infusion of the root and bark, mixed with the young leaves of *mpandanjobvu*, is used to bathe the eyes when they are sore. The roots are pounded with those of *kangaluche* and *mthunda* and the bark of *katsongole* (*Markhamia acuminata*), and rubbed into an incision as a cure for rheumatic fever.

357. P. muellerianus (O. Kuntze) Exell. (Syn. *P. floribundus* (Baill.) Muell. Arg.).

A shrub, small tree or scandent climber, leaves ovate elliptic or ovate, glabrous, often with recurved stipular spines, flowers numerous in leafless racemes arising from the axils of leafy shoots, fruits small, fleshy berry-like turning black as they ripen.

Eaten by some tribes, many medicinal uses in W.A.

Ref. 15; 17; 26.

***358. Physalis peruviana** L. (Solan.). Cape gooseberry.

Jam, jamu (N).

An annual herb, native of South America, bearing large numbers of small berries, yellow when ripe and enclosed in an inflated calyx. It spreads rapidly by seed and hence is found growing wild in the vicinity of European habitation.

The fruit is edible and very popular among children. It makes good jam and is often eaten stewed by Europeans.

359. Piliostigma thonningii (Schumach.) Milne-Redhead (Caesalp.) (Syn. *Bauhinia thonningii* Schumach.), Camel-foot.

Citimbe (N, Y), *msekese* (C, To), *munthukutu* (He), *cinthukutu* (He, Nk).

A small tree of rather shrubby growth, up to 25 ft. leaves deciduous, 2-lobed, wing-shaped, flowers in racemes opposite the leaves, pistillate flower large showy pink, fruit a large woody pod about 6 ins. long. Very common on Karonga Lake-shore on rich alluvial soils.

Bark used for string and rope, unripe pods used as a soap substitute (Tt). Timber is useful for poles. Pods form a good cattle food. Seed contains oil. An infusion of the roots mixed with other kinds of root is used for the cure of various diseases including stomach ache, rheumatism and venereal diseases. An infusion of the bark is used for the cure of an infection of the gums called *ciseye* (C). An infusion of the root mixed with the root of the wild cow pea is said to be a contraceptive, it is drunk for seven consecutive days during which no intercourse is allowed. The leaves are also used medicinally. They are mixed with those of *mpandanjobvu* and the liquid used to relieve the inflammation from sore eyes.

Ref. 9; 26.

360. Piptadenia buchananii Baker (Mimos.).

Mkweranyani (C), *msenjere* (C).

A tree up to 100 ft., usually buttressed at base, pinnate leaves; flowers cream pubescent in elongate spikes; pods linear oblong seeds oblong, winged. Found in moister parts of the lower mountain and plateau areas. It forms closed forest on the lower mountains of the Southern Province where the rainfall is high and extends down the streams.

The timber is light, moderately hard and durable. The grain typically has interlocked fibres; the texture is rather coarse but even. The sapwood is wide, white to grayish-white in colour and is not durable. The heartwood is light to darkish-brown with a golden-brown tinge. It has been used locally in the past for general building purposes. In South Africa it is used in bridge construction and is said to be a handsome wood for furniture. Opinions differ as to usefulness of timber, bole splits very easily in felling and wood soon attacked by borers (Tt).

Ref. 14; 26.

361. Pistia stratiotes L. (Arac.), Water lettuce.

Kakombwe (N).

A floating stemless herb with a tuft of fibrous roots, found on still water, ponds, lagoons, etc., and at the edge of the Lake. Leaves sessile in a rosette, 1–5 ins. long, 1–2 ins. broad with rounded apex, more or less hairy on both sides, pale green in colour. Widespread along the shore of the Lake and mouths of rivers.

The plants are collected, dried and then burnt for the ash, *cidulo*, the soluble part of which is used for cooking purposes.

***362. Pisum sativum** L. var. **arvense** Gams. (Papil.), Field pea.

Sawawa, *kabaifa* (N), *ndozi* (C, Tu), *tuware* (Su), *amangangaya* (Nk).

A cultivated annual herb, not known in a wild state, possibly Mediterranean in origin. The commonly grown type in this country spreads along the ground to about 2 ft., has small leaves, white flowers and small (200 to 1 oz.), yellow or brownish seeds. Grown in hilly areas all over the country.

The peas are grown in some parts, *e.g.*, Ncheu towards the end of the rains in February and March while in Dowa and Kota Kota Hills, they are mainly grown as a cold season crop in the stream-bed gardens, *madimba*, large amounts are also grown in the Misuku Hills of Karonga District in the cold season.

Cooking:—

(1) The Peas (names as above).

(*a*) The peas, fresh or dry are boiled as a side-dish. The flesh and skins are both soft and of good flavour so that the cooked product is very well liked.

(*b*) After removal of the skins by soaking, the peas are boiled and mashed to form *cipere*.

(2) The Leaves, *nzera* (C), *ndozi* (N), *liponda lya sawawa* (Y), *mpangwe ya ndozi* (Tu).

The young shoots, together with the tendrils, are cooked for a side-dish. They soften quickly and with the addition of groundnuts are very well liked where they are grown as a winter crop. They are of particular value if planted in a succession from April onwards, for they will then give leaves until August, *i.e.*, during the time when other leaves are very scarce. Where, however, they are grown earlier in the season, *e.g.*, Ncheu, they are not so highly valued, presumably because pumpkin and many other leaves are still available. Pea leaves are a very good source of vitamin C even after cooking.

The pods are not eaten in this country.

Trials of Different Varieties of Field and Garden Peas.

Trials were made at Mwera Hill in 1941 on the following three field types:— the commonly grown Nyasaland type, Mauritius pea and *Miselesele* from Uganda, and on two kinds of garden pea, *i.e.*, " Daisy " and " Pride of the Market ". Only very minor differences could be detected between the three field types, all took about two hours to cook when dry and the product was soft and of a good flavour. They were all small yellow-brown peas. Of the two garden kinds, " Daisy " was definitely a slower cooker and not such a good yielder as " Pride of the Market ". The leaves of all kinds were soft and palatable when cooked.

Leaf yields.

One trial was made of the comparative leaf yields of " Pride of the Market," native pea and Mauritius. A woman picked the leaves as she normally would for her own use. The peas were planted in March in a hill garden, *mtunda*, and the leaves were picked during April and May until they were too old to eat. The yield from the two field types was about three quarters of a short ton per acre and of the garden type about half a ton. In the stream bed gardens, *madimba*, the peas will yield for a longer period, usually up to three or four months.

Ref. 13; 23.

363. Podocarpus milanjianus Rendle (Podocarp.), Yellow wood.

Nkanguni, *mkute* (Ml), *nkaci* (Y).

A fine evergreen tree growing to 100 ft. with bole of 20 ft. or more; bark smooth, thin, grey coming off in strips, leaves alternate simple linear; male flowers in axillary catkins, female flowers axillary, consisting of a scale bearing a naked ovule; fruit a so-called cone consisting of a seed with a hard shell. Only rarely found in mountain evergreen forest, *e.g.*, Mlanje and Matipa (Karonga District) and then only of small size.

Timber is valuable for all purposes especially railway sleepers.

Ref. 9; 22; 26.

364. Polygonum barbatumL (Polygon.).

Cikungu ufa (N), *kungu ufu* (Tu) (Both meaning floury-skin, from the white hairy leaves.).

A perennial herb with slender hairy, erect stems, leaves, lanceolate, narrowed to the base, usually hairy on both sides, 4–6 ins. long; spikes of very small flowers, cylindrical slender, 2–3 ins. long, bracts conspicuous, ciliate with rigid bristles. Known to be used in the Kasungu and Mzimba Districts, found usually on stream banks.

The leaves are cooked as a side-dish with the help of potashes. They are bitter if growing on dry land but good flavoured when grown near water.

365. P. plebeium R. Br. (Polygon.).

Kasabwe (C).

A herb growing to 6 ins. with minute flowers found in damp places. The leaves are cooked with potashes and groundnuts. The product is slimy, *thelele*, but is well liked because it has a good smell, *fungu*. (Kasungu). The leaves are bitter when grown in dry places.

366. P. serrulatum Lag.

Nsendeka (Y), *nsendekere*, *nsendecere* (N), *musendeka* (To), *muswente* (Tu, Nk), *msendeka* (C).

An annual herbaceous plant; stem slender, glabrous 2–3 ft., erect, decumbent at base; spikes slender with small pink flowers. Very widespread in moist places. It is known and eaten all over the country.

The leaves are cooked with the help of native potashes and form a slimy product, *thelele*, pounded groundnuts are needed because the leaf is bitter. The leaves are often mixed with *kasadzula*, (*Smithia* sp.). The product is not much liked but because of its abundance is probably eaten fairly frequently.

367. Popowia obovata (Benth.) Engl. & Diels. (Annon.).

Mfulafula (N, fruits), *mcinga* (N, tree), *kombe* (N), *mkatamu* (Y).

Straggling coppicing shrub, leaves obovate, elliptic, rounded at the apex, sub-cordate at the base, fruits constricted between seeds, scarlet with 1–3 seeds, ripe in April. Found at the Lake-shore, *e.g.*, Dedza and Shire Valley.

The fruits are edible; Stems used for withies (Tt).

Ref. 9; 14; 26.

368. Portulaca oleracea (L.) (Portulac.), Common purslane.

Matakoatsanu (N), *mataga atsanu* (Y), *matakaoali* (To), *matakogawaoli* (Nk),. (All these names mean literally " the buttocks of the wife of a chief " from the shape of the leaf.), *kokwa* (Tu).

An annual herb with prostrate succulent branches, leaves fleshy, alternate or sub-opposite, ¼–1½ ins. long; flowers small, yellow in terminal sessile, few-flowered, solitary or loosely and cymosely panicled heads; petals 5. Widespread, particularly at low elevations.

The leaves are cooked without potashes; sometimes *bonongwe* (*Amaranthus lividus* L.), is mixed with them. The product is soft and well liked but does not seem to be often eaten. The leaves are eaten raw as salad by the French.

369. Pouzolzia hypoleuca Wedd. (Urticac.).

Mulusa, *thingo* (N), *licopwa* (Y), *lucopwa* (He), *lukayo* (Nk), *wazi* (To).

An erect shrubby perennial with alternate simple leaves, broadly ovate, 3-nerved at the base, covered with a white felt on the lower side; monoecious, rarely dioecious; flowers in dense sessile axillary clusters. Found widespread at Lake levels; the plant is often cultivated in the fishing villages.

The fibre from the bark is very strong and string made from it is used for fish nets. " The fibres are stripped off the branches, dried and separated into narrow strips. Two of these are placed close together and spun into a single thread by a rolling movement of the hand on the thigh. The fishermen are extremely dexterous at this operation and produce a surprisingly neat thread." From "*Report on the Fish and Fisheries of Lake Nyasa.*" Bertram, Borley and Trewaras, 1942.

Ref. 14; 26.

370. Protea abyssinica Willd. (Proteac.). Sugar Bush.

Nkulukulu (Y).

A small tree or bush about 12 ft. high, bark deeply corrugated, dark brown, leaves deciduous, alternate, simple, glabrous, blade linear-lanceolate; flowers white in dense, terminal heads surrounded by fleshy, silvery bracts; fruit and achene with hairs and persistent style. Common in drier parts of lower mountain areas at about 4,000 ft.

A good firewood.

***371. Prunus armeniaca** L. (Rosac.). Apricot.

Native of the Asiatic sub-tropics. There are apricot trees bearing well at several of the D.R.C. Mission Stations at elevations of over 4,000 ft., *e.g.*, Mlanda and Kongwe. The trees are said to bear well when planted so that they are exposed to the wind.

Trees planted at Mwera Hill in 1939 started to bear in 1943.

Apart from its value fresh, the dried fruit is one of the most popular of all dried fruits and commands a high market price.

Ref. 13.

***372. P. communis** (L.) Fritsch (Syn. **P. amygdalus** Stokes) Almond.

Probably Persian in origin; trees were planted at Mwera Hill in 1939. They began to bear in 1941.

Ref. 13.

***373. P. persica** (L.) Stokes, Peach.
Picesi (N).

Probably a native of China; many kinds of peach are grown by Europeans in the country at altitudes of about 4,000 ft., particularly by D.R.C. Missionaries. There are several good varieties now established at Mwera Hill Experimental Fruit Station. A small-fruited rather bitter tasting one is very common in many of the hilly parts of the country. It is very hardy and grows either from seed or stake. It bears in 3–4 years and is a good type for native use as it has deep yellow flesh and is likely to be rich in carotenes. Many of the sweeter more juicy kinds which are often preferred by Europeans have pale or white flesh and so are probably almost devoid of carotenes. The hardy bitter kind is used as a stock on which to graft or bud the other varieties.

The fruits are eaten raw and are very popular. Children invariably begin to eat them when they are hard and green with the result that unless trees are abundant in the villages, the ripe fruit is never seen.

Ref. 13.

374. Pseudolachnostylis maprouneifolia Pax (Euphorb.).
Msolo (G).

A small tree growing to 20–40 ft., young branches pubescent, leaves lanceolate or oblong, slightly narrowed to an obtuse apex up to 2½ ins. long and 1½ ins. broad; the unripe fruit is almost round slightly trilobed, 2 cm. diameter, with a few scattered hairs, shining pale yellow, ripens in June. Found in the drier parts of low foothills on soils of light texture.

The fruits are edible and can be used to dye bark cloth. The roots and bark are mixed with *ntebankhuni* (an insect which protects itself in the cocoon stage by a case of fine twigs and which is poisonous to cattle) and burnt. The ashes are rubbed into an incision as a cure for tumours, *citupsya*. The leaves are pounded with the root, bark and leaves of pigeon pea, water is added and the liquid poured into the ear as a cure for earache. An infusion of the roots, mixed with those of *kaumbu* (*Lannea schimperi*), *kamwamadzi*, *mbundaculu*, and sometimes with flour, is drunk as a cure for diorrhoea or dysentery. Wood used for making charcoal (Tt).

Ref. 14.

***375. Psidium guajava** L. (Myrtac.), Guava.
Guwawa (N).

Native of tropical America. Shrub or small tree up to 25 ft., flowers white, fruits with white, yellow or red flesh. Guava trees have been planted at many European centres, such as Bomas and Mission stations, hence there are usually abundant trees in the villages in the vicinity of such centres as the trees grow very readily from seed. Found at all elevations, does particularly well at some Lake-shore stations, *e.g.*, Kota Kota.

The fruit is well liked eaten raw. It is a good source of vitamin C.

Ref. 23; 26.

376. Psorospermum febrifugum Spach (Hyperic.)

Mtsiloti (N), *msilanyama* (Y).

A shrub or small tree, branchlets usually rusty tomentose when young, sometimes glabrous, flowers small, green, white or yellow, with small round, red fruits, the bark has an unpleasant smell.

The roots are used for wounds. The bark is pounded and mixed with castor oil and used for ointment to cure skin diseases, *mphere*. The aCewa and possibly other tribes believe that the shrub has protective properties and hence when they are building a new village, they bury some of its roots at all four points of the compass surrounding the village to protect it against witches and lions. For this reason the wood is not used for other purposes nor is it burnt for firewood.

Ref. 7; 15; 26.

377. Pterocarpus angolensis DC. (Papil.) African Teak; Bloodwood; Sealing wax tree.

Mlombwa (G), *mtumbati* (Y), (Nk).

A medium-sized, beautiful tree up to 60 ft. high with long bole, bark, rough almost black in colour. Whenever the tree is cut or damaged, the red sap exudes and dries into a red mass, hence the common names. Leaves pinnate, flowers in October or November, with clusters of deep yellow pea-like flowers, sweet scented and containing honey, appearing before the new leaves come; very characteristic fruit, an orbicular pod, $3\frac{1}{2}$ ins. in diameter broadly winged with a tuft of bristles in the centre over the cavity where the single seed lies embedded. Found characteristically where there is decomposing rock, *cifomboti*, near the surface, mostly in low foothill areas but also at Lake levels.

A very durable timber and one of the most valuable found in Africa. It is a good substitute for Indian teak, which it somewhat resembles, although not so straight-grained. It works well and takes a fine polish but sometimes is apt to be somewhat cross-grained and therefore difficult to finish except by scraping. It shrinks remarkably little in drying from the green condition. It is very resistant to termites and decay. It is used for high class furniture, joinery, naves and other purposes. Locally it has been used very successfully in boat-building because of its low shrinkage and durability. The bark is valuable for tanning and the Greek fishermen at Fort Johnston used it in the 1930s until they discovered they had to buy the whole tree if they wanted to strip the bark. It will grow from stake if planted in November (Kota Kota).

Ref. 9; 14; 22; 26; 27.

378. P. polyanthus Harms (Papil.).

Ndiraniya (Y), *mlelaniya, nacase* (N).

Tree to 40 ft. tall with irregular crown, leaflets 13–17 oblong to ovate or oval, panicles ample many-flowered, flowers yellow and orange, pod obliquely oval to semiorbicular broadly-winged, central part thickened, without bristles.

Timber probably durable and useful, easy to work.

Ref. 14; 26.

379. P. rotundifolius (Sond.) Druce.

Mbalisa, balitsa, mpale (N), *mlelesi* (Y), *mbongosi* (C).

A tree, leaflets 3–5 broadly ovate shining silky beneath or on both sides, pod elliptical without bristles. Widely but sparsely distributed at middle altitudes often on alluvial soils.

Has a timber of medium weight, light colour and works well but is very difficult to saw.

Ref. 14; 28.

380. P. stolzii Harms.

Mkulo (C, Tu), *mkuru* (To, He), *depa* (He), *mpale* (Nk).

Tree up to 80 ft. tall, trunk dark brown with pale stripes, leaflets usually 5–9 sometimes up to 11, oblong to ovate, glabrous and somewhat shining above; flowers cream to orange in panicles; pod suborbicular broadly-winged glabrous, central thickened part without bristles. Somewhat uncommon, occurring more commonly in the Chinteche District than in other parts of the Protectorate.

Wood red, mahogany-like, one of the most beautiful of all cabinet woods.

Ref. 14; 22; 26.

***381. Punica granatum** L. (Punicac.), Pomegranate.

Cimanga ca cizungu (N, name means English maize from the resemblance of the seeds inside the fruit, to maize grains.).

A shrub with coral red flowers and characteristic fruits. Native from Persia to N.W. India. It is grown in this country by Europeans as a hedge plant, *e.g.*, in Blantyre and various of the D.R.C. Missions stations. It is propagated by cuttings.

The fruit is edible and the roots are used as medicine for worms in cattle.

Ref. 23; 26.

382. Pygeum africanum Hook. f. (Rosac.).

Dadzi (C), *msisita, mkunu* (Y), *mzumira* (Tu, C), *mndondole* (Ng), *mpeuma* (Mg).

An evergreen rain-forest tree said to reach 100 ft., with alternate ovate lanceolate leaves, racemes of yellow flowers and dry fruits. In mountain forests over 5,000 ft.

Has a useful timber, the heartwood is red, strong, durable with fairly straight grain. It planes and saws very well and attains a good polish. Weight about 48 lbs. per cu. ft. (airdry).

Ref. 14; 17; 22; 26.

383. Pyrenacantha sp. (Icacinac.).

Mcende.

A scandent and climbing shrub with long stems having clusters of small fruits about half an inch long at intervals along the length of the stem.

The fruits are eaten (Dedza Lake-shore).

***384. Pyrus malus** L. see **Malus pumila** Mill.

385. Randia sp. (Rubiac.).

Cipembere. (?)

A tree, the roots of which are used as medicine for the stomach and eyes.

386. Ranunculus multifidus Forsk. (Ranunc.), Buttercup.

Khobedi.

A buttercup with swollen tubers and small yellow flowers, found in damp places, flowering in October (Dedza).

The leaves are very occasionally cooked as a side-dish (Dedza and Lilongwe Districts). The roots are eaten by boys (Dedza).

*387. **Raphanus sativus** L. (Crucifer.) Chinese or Giant Radish.

An annual native of Europe and Asia, erect bearing abundant, hairy, dark green leaves and having a white, tuberous root. It seeds readily and the seeds are easy to collect and germinate well (Mwera Hill, Kota Kota District), hence it may prove a valuable plant for native use.

In China the roots are eaten. They are usually peeled and sliced in soups or cooked with meat. The leaves make a good side-dish. They have a slightly stinging effect on the tongue as of turnip leaves and hence were called *mpiru* at Mwera Hill and were well liked. They grow well during the time of annual shortage of green stuff and should be encouraged for native use.

Ref. 21.

388. **Raphia ruffia** (Jacq.) Mart. (Palm.), Raphia palm.

Ciwale, viwale (G).

A palm with solitary stem up to 25 ft. with erect pinnate leaves up to 20 ft. or more long; fruiting inflorescence pendulous with oval, cone-like fruits which are covered with shining glossy brown scales. Common at Lake levels but grows well even at 5,000 ft.

The solid, very strong midrib can be put to a variety of uses and has the advantage of being very light, thus it serves well for roof or tent poles. It is very soft and easily cut to make doors and furniture which considering their lightness and softness, are remarkably strong and last for years. A tying material is prepared from the tips of the young expanded leaves making the raphia or bast of commerce (E.A.). A wax of high importance covers the lower side of leaflets and has been used or is fit for local manufacture of floor and boot-polishes (Tt). The seeds are slow to germinate unless the thick outer layers are removed, exposing the roots of the embryo. Seeds treated in this way are found to germinate well; some 40 or so were growing well at Mwera Hill in 1943.

Ref. 14; 17; 26.

389. **Rauvolfia caffra** Sond. (Apocyn.). (Syn. **R. natalensis** Sond.).

Ciwimbi (N), *ngwimbi, mwimbi* (Y), *mvumbamvula* (C) *nyensani* (Tu).

A tree up to 40 ft. with spreading crown, leaves in whorls of 2 or 3, 5–12 ins. long, glossy on the upper surface; white flowers borne in cymes at the ends of the secondary branches of large umbels, 4 ins. long; fruits half an inch in diameter. Moist parts of the lower mountain and plateau areas, common along water courses in the Kota Kota Hills.

A light soft whitish wood used for making native spoons; worth a trial for boxes, good for firewood.

Ref. 12; 14; 22; 26.

390. **Rhoicissus erythrodes** (Fresn.) Planch. (Ampelidac.).

Mpeza (C), *mpelesya* (Y), *mpesya* (Tu), *mpete* (N).

A bushy climber, long branched, leaf-opposed tendrils, leaflets 3, lower surface of leaflets hairy; many flowered, fruits small, size of a pea containing many seeds, purple when ripe. Known to be eaten near Fort Johnston and in the Mzimba District.

The fruits are edible, they are sweet and juicy but leave the mouth rough as do sloes.

Ref. 14; 26.

391. Rhynchosia sublobata (Schumach.) Meikle (Papil.) (Syn. **R. caribaea** non (Jacq.) DC.) Auct.

Mbutoyacule (C).

Stems suberect from a woody rootstock or twining, grey, pubescent with axillary racemes of yellow-red, streaked flowers.

An infusion of the roots is drunk by boys and girls at the time of puberty.

392. Rhus natalensis Bernh. ex Krauss. (Anacard.).

Mtatu (Tu), *mapirankukute* (C) (Meaning millet-to-be-chewed from its resemblance to **Sorghum** sp., *mapira*), *mpilakukuru* (Y).

A much-branched shrub up to 20 ft. tall, leaves 3-foliate somewhat leathery, cuneate at base, obtuse or emarginate at apex, dark-green above paler beneath, flowers small cream or pale green in short axillary panicles. Common in the Zomba District, also found in the Ncheu and Kota Kota Hills.

The small edible fruits are eaten by children, they ripen in September–November.

393. Ricinodendron rautanenii Schinz (Euphorb.).

Mkomwa (N), *mkangaula* (Y).

A large tree with a broad crown, leaves digitately 5–7 foliolate.

The wood is very light, soft and spongy and fairly straight-grained. The colour is yellowish-white throughout with no visible distinction between sap and heartwood. It is very similar to Balsa wood, (*Ochroma*) but finer in texture, slightly heavier and generally superior. Probably useful for light packing cases. Weight 11 lbs. per cu. ft. (Oven-dry).

Ref. 22.

394. Ricinus communis L. (Euphorb.), Castor oil plant.

Msatsi (N), *nsatsi* (N, fruits), *mayembayemba* (Nk), *impuria* (Su).

Commonly a shrub 8–12 ft. high but capable of forming a stout trunk and becoming a tree up to 30 ft. high. Leaves large, palmately 5-lobed. There are many forms and races. The plant flowers in March–April and fruits in May–June (Kota Kota Hills). The capsule is 3-seeded, usually spiny, seeds generally mottled, grey with brown-purple streaks, they have a white protuberance, aril, at the narrow end. Fruit ripens in four to ten months according to variety, seeds contain approximately 50 per cent. of oil calculated on entire seed. The seeds are poisonous. Very widespread, often found in the gardens of old women.

Among the aCewa and possibly other tribes, only women who have stopped child bearing are allowed to extract the oil. Oil extracted by women of child-bearing age is thought to be able to cause *mdulo*, a disease of great importance among the aCewa and bound up with rules of sexual conduct. Thus the old women have the monopoly of trade in a village and no one will buy except from them.

The seeds are pounded, boiled with water and the oil skimmed off (Karonga). The oil is always rubbed on the skin of babies at birth and is used to put on wounds. Its use for constipation seems of recent date and only known to a few. It is also used to anoint the skin and in some of the Missions, the making of soap with castor oil is taught.

Ref. 15; 26.

395. Rubus spp. (Rosac.) Blackberries, raspberries.

Mpandankhuku, nkandankhuku (N).

Several species of brambles occur wild at different elevations, either as shrubs or rampant climbers. *R. ellipticus* Sp., a native of Asia, is naturalized on Mlanje Mountain and a European species has run wild at Livingstonia and it can be a pest in gardens.

The fruits are mainly eaten by children.

396. Rumex nepalensis Spreng. (Polygon.).

Qakazea (Ng).

A perennial herb with long strap-shaped leaves, flowers in racemes forming long lax panicles.

The leaves are cooked as a side-dish occasionally (Mzimba District). An infusion of the root cooked with flour to make gruel is used to cure pneumonia, *chilaso*. An infusion of the roots with those of *mbuto ya cule* (*Rhynchosia sublobata*), is drunk to cure dysentery. The roots mixed with other roots are used to cure *njowera*, a venereal disease.

397. Saccharum officinarum L. (Gram.) Sugar cane.

Nzimbe (N), *mlungo, muwa* (Y), *mihali* (Ngu), *misale* (Tu), *njuwa* (To).

A tall perennial grass, some varieties growing to 15 ft., resembling a bamboo in appearance with solid internodes. The flowers, (arrows), are long feathery spikes making a cane field in arrow a very beautiful sight. Cane is propagated by "sets". These consist of one or two joints of the fully grown cane. Grown on a small scale in patches in low damp places at low elevations all over the country. Considering how popular a food it is and how easily grown, it is remarkable that more is not planted.

The stem is chewed raw for its juice. Occasionally the juice, *asali*, is extracted by pounding and added to a gruel of maize or other flour or used to mix with flour to make flat cakes, *zitumbuwa*, when fried or *mikate* when boiled. Cane is on sale in season at all the local markets.

398. Satyrium sp. (Orchid.).

Cinaka, cikande (N). See also **Habenaria** sp. and **Disa** sp.

This is one of the many kinds of orchids which are dug up for their tubers. For methods of use see *Disa* sp.

399. Scilla sp. (Liliac.).

A plant with onion-like bulbs about 3 ins. in diameter from which a gluey substance, *ulimbo*, can be obtained. It is used for catching small insects (Kaluluma's area, Kasungu District).

400. Sclerocarya caffra Sond. (Anacard.).

Mfula (N, Y), *mtondowoko* (Y), *musele* (Nk).

A fair-sized, handsome tree up to 45 ft. high; dioecious, the pistillate tree is conspicuous in May with its yellow edible fruits, the size of a plum with a strong odour when ripe. The staminate tree is a beautiful sight is October (S.R.) with its red catkins coming out before the leaves; bark smooth and reddish-grey. Found is rift valleys where soil is mainly infertile, common near Port Herald.

The fruits are edible, acid tasting with turpentine-mango-like flavour. Elephants are very fond of the fermented fruits, which they pick up from the ground. The kernels are used pounded to add to a side-dish (Port Herald). They are good to eat and children crack the nut to get at it.

Squirrels store the nuts in great quantity and gnaw at the hard shell to get at the kernel inside.

Beer is made from the fermented fruit (S.R.) and it is very rich in vitamin C A gum exudes from the bark, which when mixed with soot is used as a substitute for ink (S.R.). The fruit makes a good jelly. The timber is of medium weight, grey-brown with good figure; fairly durable and is used for dugout canoes. Probably useful for structural purposes and furniture.

Ref. 9; 14; 22; 26; 27.

***401. Secale cereale L.** (Gram.), Rye.

A grain crop only known in cultivation, it has been tried in various parts of the country and found to do well. It has been grown successfully in a small way for some years in the Southern Province, sowing the seed at the end of February or early March on the ordinary dry agricultural soils. It is a crop well suited to light sandy soil and will grow under conditions of considerable soil acidity. On the Vipya it gives heavier yields by far than maize and it is tough or tougher than finger millet in the way it resists drought and can produce a crop.

The flour makes good porridge for African use when mixed with an equal amount of maize flour. If used alone the product is said to taste too sweet for most palates. It is not as glutinous as wheat and has an advantage in this respect for porridge making. The grain can also be used sprouted as malt for beer. For European use, the flour ground whole in an ordinary maize mill and mixed with equal quantities of wheat flour makes good bread. This mixture with the addition of 10–20 per cent. soya meal makes an excellent loaf.

Ref. 13; 23; 27.

402. Secamone sp. probably **S. whytei** N.E. Br. (Asclepiad.).

Bwazi (C).

A herb growing to about 4 ft.

The leaves are cooked as a side-dish in parts where there is extreme shortage, *e.g.*, Kasungu. The fibre is used for string.

***403. Sechium edule** Sw. (Cucurbit.). Chayote, Shosho, Chocho.

Citungula (Y), *ngowe* (N).

This plant, native of the West Indies, was apparently introduced into the country in about 1928 by a French Father from Madagascar and is now fairly widely distributed. It is a climber which bears large, yellowish-green fruits about 6–8 ins. long, with deep furrows longitudinally. The fruit contains a large single seed and after it has lain for a short while on the ground the young root and shoot begin to show themselves. The fruit should only be partly covered with earth when it is planted. Does very well at high elevations, *e.g.*, Mwera Hill at 5,000 ft.

The fruit when boiled resembles a gourd in consistency and in lack of flavour. It is used for a side-dish in the Southern Province, the fruit is cut into small pieces, boiled till soft when onions and pounded groundnuts are added. The product is very appetising and well liked. The tubers, especially of 2–3 year old plants are cooked and eaten as a delicacy in the Dutch East Indies.

Ref. 13.

404. Securidaca longipedunculata Fresn. (Polygal.), Tree violet.

Bwazi (N), a generic name applied to a great many string-producing plants, *cosi*, *ciguluka* (Y), *njefu* (To), *nakabwazi* (N), *muluka* (He), *muwuluka* (Tu, Nk).

A shrub or small tree up to 20 ft. in height, bark grey and slightly rough, or smooth with sometimes spiny branchlets; leaves deciduous, alternate, simple;

flowers in terminal spreading racemes or on short lateral shoots sweet scented showy, purple; fruit winged turning pink as it ripens, resembling the fruit of a sycamore. Found at about 4,000 ft. altitude, *e.g.*, near Fort Hill and Mzimba.

Wood hard and borer-proof. Used for fuel and poles. String is made from the fibre. Before the days of old car tyres, as a source of string for nets, there was a trade to the Lake in it. Nowadays it is used mainly for threading beads to make necklaces. In the past, a coarse kind of cloth, *dewere*, was woven from it. The roots with those of *mlozi* (*Adenia cissampeloides*), and *matholisa* (*Mikania scandens*), are hung on the walls of a hut to keep snakes away and the same medicine is used to cure snake bite. The leaves are eaten when sprouting (Mzimba District).

Ref. 14; 26.

405. Sesamum angolense Welw. (Pedal.).

Cewe, mkuya, citowe thengo, mtsukanthomba (N), *nkuyamani* (Y), *cincesi* (H), *nyolo-nyolo, maope* (Tu), *zambwe* (Su), *cikalenda* (Ncheu).

A herb with erect stem 3–8 ft. high, leaves very numerous, linear, oblong to sublanceolate, 2–4 ins. long, subtomentose; flowers shaped like those of the foxglove, brilliant purple, 2–2½ ins. long; fruit a capsule, obtusely quadrangular and 4-sulcate, finely pubescent, beak short and broad, seeds blackish. Flowers from May to July. Widespread to 7,000 ft., at its best at about 3,500 ft.

The leaves are cooked and form a very slimy product, *thelele*. In some areas groundnuts are not added as they do not mix in well. The dish is often eaten by women particularly when they are eating bran porridge, *gaga*, and occasionally by men. It is one of the common dishes to give to babies and invalids. The leaves are used as a substitute for soap. The leaves are pounded with water and the liquid poured into the eyes and also over the ears, nose and mouth to cure smallpox, hence name *mtsukanthomba*. An infusion of the roots is drunk at the time of labour to hasten delivery.

406. S. orientale L. (Pedal.). Sim sim, Gingelly, Sesame, Benniseed.

Citowe (N), *mkwiyu* (Y), *namuhangwa* (Ngu), *mcesi* (Tu), *lidonya* (Ng), *bununya, usambia* (Su).

A much-branched annual, growing to 5 ft., with more or less mealy, glandular, heteromorphous leaves; flowers about 1 ins. long, obliquely campanulate, white, pinkish or tinged with purple and produced from the axils of the upper leaves; capsule shortly beaked about 1 ins. long, seeds pale brown to almost black, sometimes white, very small. Grown in considerable amounts in the Lower Shire and Karonga Districts. A small amount is grown in the Chinteche and Mzimba Districts and it is found occasionally in the rest of the country.

The oil is extracted and added to side-dishes or sold to Indians. The pounded seeds are also added to side-dishes as an alternative to groundnuts. The oil is used for anointing the body. The leaves, *umpeza*, are cooked as a side-dish (Port Herald).

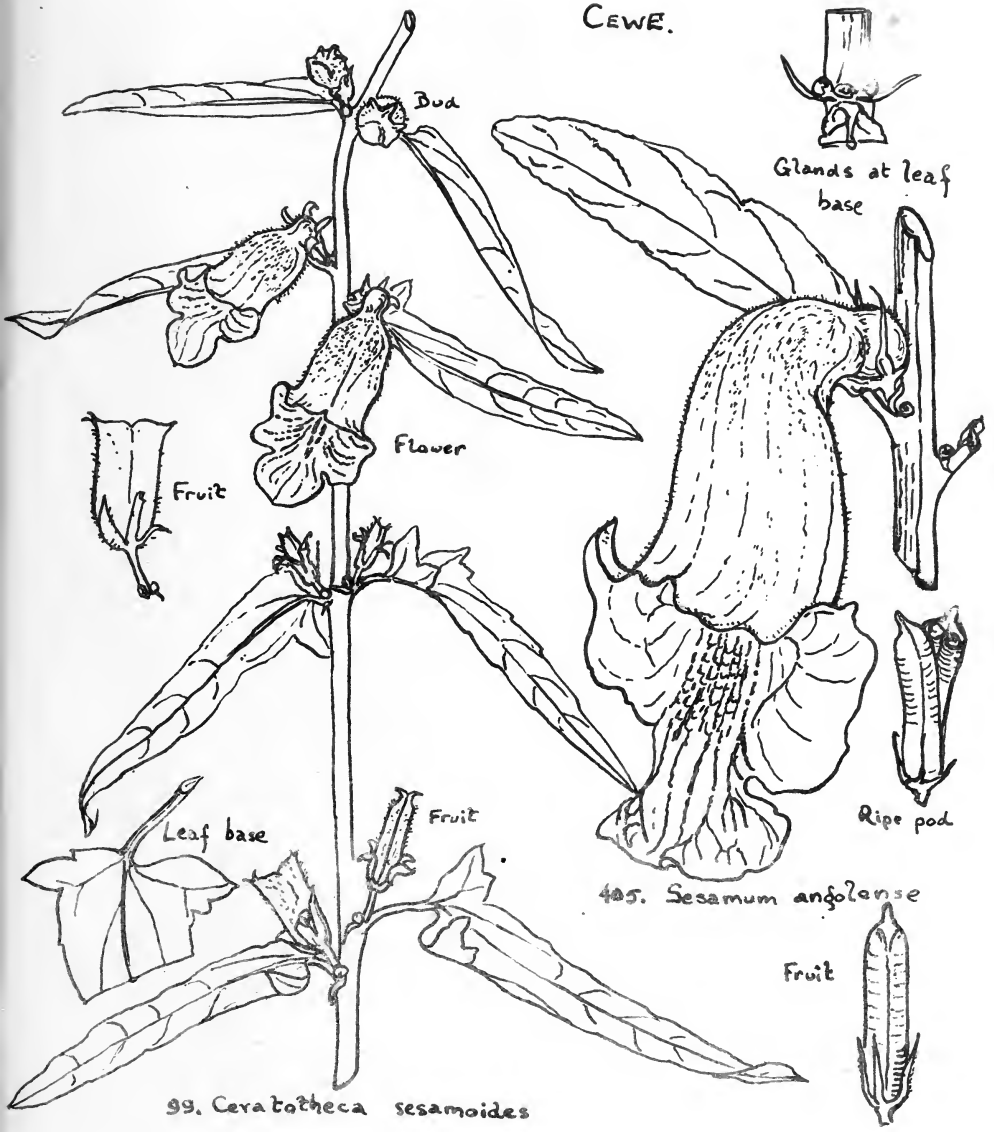
Ref. 13; 17; 23.

407. Sida alba L. (Malvac.).

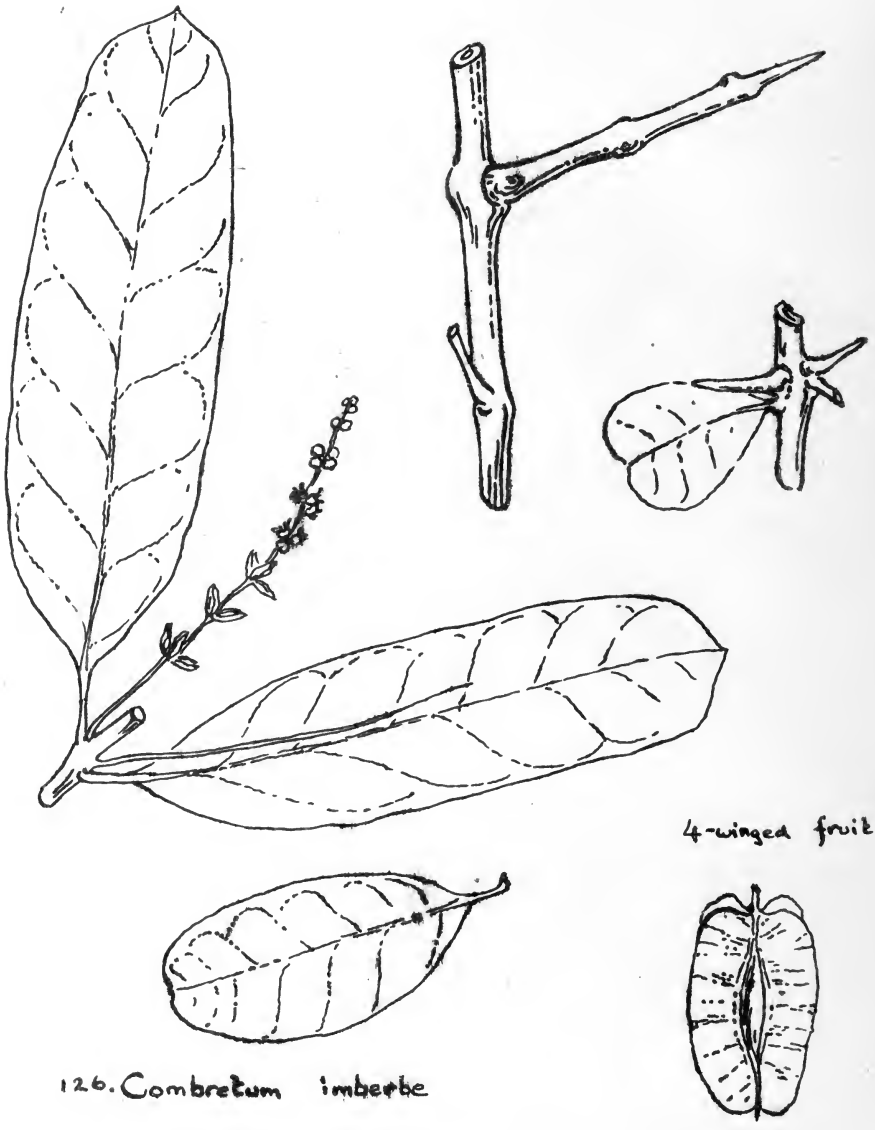
An erect woody herb growing to about 2½ ft., flowers solitary or clustered, small, yellow, fruit of five carpels, shortly beaked. A widespread weed.

The leaves are cooked as a side-dish in the Mzimba District. The stems are strong and several bound together are used as cross supports for grass on hut roofs (Kota Kota District).

Ref. 26.



99 and 405. Ceratotheca sesamoides Endl. (Pedal.), **Sesamum angolense** Welw. (Pedal.), showing two and one beaked fruits respectively. Both species have vernacular names in common.



126. Combretum imberbe Wawra (Combret.). Note branch spines.

408. Smithia elliotii Bak. f. (Papil.).

Kadzulo, kasadzula (N).

An annual with erect stems, leaves 2–2½ ins., leaflets in 6–9 pairs, racemes 3–6 flowered with conspicuous brown bracts; pod with 1–4 joints. The leaves are very commonly eaten in Kota Kota, Dowa and Dedza Hills, especially towards the end of the dry weather. They were sufficiently in demand in N.A. Tambala's area, Dedza District, in November, 1942, to be on sale at the markets.

The leaves are cooked as a side-dish. The leaflets are very small and it is rather a tedious process plucking them from the stem, hence the names from *kusadzula* meaning to pluck. The leaflets are cooked with the help of potashes and keep their form even when cooked. Groundnuts are not added. The cooked product is so slippery that most of it runs back into the dish when the lump of porridge is dipped in; hence a little goes a long way. The dish is frequently eaten by women and children and is often cooked for babies and invalids.

409. Solanum aculeastrum Dunal. (Solan.).

Mtundu wa matungwi (C).

A shrub or small tree which grows to about 20 ft. with stout thorns on stems and leaves; leaves green on top and almost white on under surface; flowers potato-like, pale mauve; fruits large spherical, 2 ins. in diameter round, green when young. Easy to grow from seed and is said to make a very good live hedge.

Ref. 26.

410. S. nigrum L. Black Nightshade.

Mnadzi (N), *mnesi* (Y), *msaka, musaka* (Tu), *inafu* (Su).

A herbaceous annual growing to 2ft. high with yellow-centred white flowers, small, black, spherical fruits the size of currants, in bunches. Widespread all over the country at all elevations especially in rich soils near cattle kraals.

The leaves are cooked as a side-dish. The old stems are thrown away, the rest bunched in the hand and broken across, a solution of potashes is sometimes used to soften them. During the dry weather the first cooking water is thrown away as the leaves are extra bitter then. The leaves are often cooked with *luni* (*Gynandropsis gynandra*), or with *mpiru*, (*Brassica sp.*). The product is slightly bitter tasting but because of its abundance is used fairly commonly. The ripe berries are eaten by children and are sometimes collected and made into jam (S.R.). The green immature berries are definitely poisonous.

***411. S. melongena** L. (Solan.), Egg fruit, brinjal.

Mpilingana (Y), *magringala* (Ml), *bringanya* (Karonga).

A shrubby herb native of south-eastern Asia, growing to 3 ft. with potato-like flowers and globular fruits. The latter vary in size and colour according to variety, purple kinds are common. They grow at all elevations but do best at low levels. They are grown commonly by Europeans and by Africans in the Southern Province and to a small extent in Karonga District.

The fruits are cooked as a side-dish. They are sliced, boiled until tender and then mixed with pounded groundnuts. In Karonga, they are cooked mixed with pumpkin or cowpea leaves or with meat or groundnuts. The fruits cooked in various ways are often eaten by Europeans. They are of better flavour if salted overnight.

Ref. 13; 23.

***412. S. tuberosum** L. Irish Potato.

Mbatata wa cizungu, matetesi, kacewere (N), *kholowa a cizungu* (Ngu), *mbambaira, mciwile* (To), (Tu) *katofeniya* (Nk), *ndofanya* (Su), (Last three named derived from the German, *kartoffel*).

A native of the Andes, potatoes are commonly grown for sale to Europeans in places where the climate is suitable. Grown in the hill areas in the Central Province and Northern Province and in small amounts wherever cold enough.

The tubers are occasionally eaten by Africans but they are said to be tasteless, *kuzizila*, and are not nearly so much liked as sweet potatoes. The leaves are cooked as a side-dish in places where there is shortage of other leaves, *e.g.*, Kota Kota Hills in dry season.

Ref. 13; 23.

413. Solanum spp. (Solan.).

There are a large number of plants belonging to this genus, many of which have edible fruits, the following are some of them:—

(*a*) *Nthula* (N) possibly *S. aculeastrum* Dunal.

A shrub up to 6 or 8 ft. high of vigorous growth, thorns on stems and backs of leaves, undersurface white with hairs; fruits ridged 2–3 ins. long, green turning to yellow. The shrubs are often found in villages in the Central Province, *e.g.*, Dedza and Ncheu Districts.

The fruits are cooked as a side-dish. They are put in hot ashes for a moment, after which the thin outer skin is peeled off. This reveals the flesh which is bright apple-green in colour. It is sliced off leaving the central seedy part to be discarded. The flesh may be eaten raw or the strips added to a cooked mixture of pounded groundnuts and tomatoes and heated up, not cooked, and eaten as a side-dish.

(*b*) *Madwanzi* (N).

A shrub with large green leaves, it has no thorns and flowers in November (Ncheu).

The fruits are sliced, sometimes mixed with leaves and cooked as a side-dish. The fruits are roasted whole and eaten (Ncheu).

(*c*) *Imphwa* (Ncheu) = *nthula* (Lilongwe).

A shrub with oval fruits, 1½–2 ins. long, smooth, yellow when ripe.

The fruits are cooked as a side-dish (Ncheu).

(*d*) *Zimphwa* (N., Mlanje), *mbwanyanya* (Y).

A shrub with prickly leaves, the fruits vary in size from a hen's egg to a duck's egg, striped light green. They are ripe in March and April (Mlanje).

The fruits are sliced and cooked and when soft, pounded groundnuts are added. The dish is well liked and the fruits sufficiently popular to be on sale at the markets (Mlanje).

(*e*) *Matungwi* (C), *nthula zazikulu* (N).

A prickly shrub with oval fruits, green with stripes ripening to deep orange.

The fruits are eaten raw by children (Mvera, Dowa District).

(*f*) *Mtungwi* (C), *nthula zazing'ono* (N), *malanza* (leaves).

Very common in the Kota Kota and Ncheu Districts, the fruits and leaves are cooked occasionally as a side-dish.

(*g*) *Malanza* (N), *makwenda* (Y).

A shrub growing to 3 ft. very commonly found on waste ground.

The fruits when young are sliced and cooked with groundnuts as a side-dish (Mlanje).

414. Sonchus oleraceus L. (Comp.).

Cinguwo (N), see *Emilia coccinea* for plant with same native name.

A coarse erect annual 1½–3 ft. high, stem with waxy bloom; leaves ovate or oblong, simple or lobed, 1–6 ins. long; flower heads yellow. Found in gardens and waste places, widespread.

The leaves are eaten cooked, see **Emilia.**

415. Sorghum vulgare Pers. (Gram.), Guinea corn, kaffir corn, giant millet. *Mapila* (N), *mapemba* (Y), *namuve* (Ngu), *gonkho* (Se), *amapemba* (Nk), *cidomba* (Tu), *cipira* (Su).

There are many kinds cultivated varying greatly in habit and size. Large quantities are grown in the Lower Shire, a fair amount in the rest of the Southern Province and southern part of Central Province and in Karonga District while small quantities are grown in the rest of the country.

Preparation of Flour.

The grain is stored in the heads. When required the latter are threshed with sticks and the grain separated from the debris by winnowing. The grain is given two poundings, first the bran is removed, then the remainder is well washed and given a second pounding or grinding to produce a fine flour. The bran is softer than that of maize so only the coarse fraction of it is thrown away and the remainder kept to mix with the flour. No soaking or sometimes a very short one (Karonga, 15 minutes) is needed, hence flour can be made at short notice. See *Zea mays* L.

(1) Use as food.

(*a*) Porridge, *nsima*. The method of preparation is the same as for maize porridge. A gruel is made and boiled for about 10 minutes, then more flour is added until the required consistency has been reached, the whole process takes about 20 minutes. The product is softer than maize porridge and has not the latter's staying power. It is in this respect like rice so that several meals of it are needed a day.

(*b*) *Madea, gaga*, bran porridge. The bran is well liked and porridge is made using some of it mixed with the flour. Men will eat it whereas they often refuse maize bran porridge. It is also eaten raw mixed with water.

(*c*) *Cigodo, ntimphwa, unyu*. A mixture of flour with water in varying amounts is eaten as *cigodo* or drunk as *unyu*.

(*d*) Malt, *cimera*. Malt is commonly made and used with almost any kind of flour to make beer.

(*e*) Fresh grain, *mapira awisi*. Heads of fresh grain are picked, left in the sun for a day or two to allow the glumes to open, then beaten with sticks and the sweet grain eaten raw. Where small amounts only are grown it is eaten almost exclusively in this way. Only certain kinds are eaten thus, *e.g.*, at Fort Johnston, *lupira* is not eaten fresh while *mapemba* is often eaten in this way.

(*f*) Cakes, *mikate*. Boiled flat cakes are made from a mixture of the flour either with bananas or honey.

(*g*) The stalks, *misinde, misale*. Some varieties are grown solely for the sweet juice that their stems contain, and are chewed like sugar cane.

(*h*) After the grain has been harvested, the young sprouting leaves, *maleka a mapira*, are cooked with the help of potashes and form a slimy product, *thelele*.

(2) All varieties of sorghum can form a red dye, especially where the plant has received an injury. This dye is used throughout tropical Africa for colouring mats, dyeing leather, etc.

Ref. 13; 23.

416. Sorindeia obtusifoliolata Engl. (Anacard.).

Sasola (N), *mgwego, mpilipili* (Y), *ntalawanda* (N, Y), *nyembedwa* (C), *musele* (Nk).

A glabrous evergreen tree up to 70 ft. high with alternate pinnate leaves, leaflets usually in four pairs; flowers, small in long pendulous panicles from the trunk and branches; fruits in drooping clusters, oval, fleshy, half an inch diameter, green, ripening to yellow. Found on Dedza Lake-shore.

The fruits are edible.

Ref. 14; 17; 23.

417. Sphaerosicyos sphaericus (E. Mey.) Hook. f. var. **tomentosa** Cogn. (Cucurbit).

Cipuzi, ishyalele (Y).

A climber with angled, nearly glabrous stems, leaves 2–6 ins. long, thick and leathery, rough to the touch, 5-lobed to or below the middle, leaf stalk with two conical, horn-like processes at the apex; racemose male flowers, corolla white 3–6 ins. in diameter, calyx tube short, downy; female flowers solitary; fruit ovoid green marbled with yellow, smooth and hard. Known to be growing in the Kota Kota District.

The leaves are cooked occasionally as a side-dish. The fruits are cut open and used as a soap substitute. The fruits are hung in pigeon cotes to encourage the birds to lay.

418. Sphenostylis erecta (Bak. f.) Hutch. ex Bak. f. (Papil.).

Nkhunga (N), *mlali* (N, flowers), *ngunga* (Y).

A bushy herb with trifoliate leaves, leaflets ovate-acuminate to oblong-lanceolate; flowers yellow, clustered at end of long stalks. Common in the Kota Kota and Dedza Hills.

The flowers, *mlali* (Dedza) and occasionally the leaves, are cooked as a side-dish often mixed with those of *ntupa*, (*Dolichos buchananii*). The beans have been eaten in the past in times of hunger. The long roots, 2–3 ft. long, are twisted and a red liquid exudes in considerable quantity. This is used to mend cracks in pots and to paint on pots to make them waterproof. The fibres from the root are also used for string and for mats.

419. S. stenocarpa (Hochst. ex A. Rich.) Harms (Papil.). Yam Bean.

Cinkhoma (Tu), *nkhoma* (C).

A procumbent and climbing perennial herb with tuberous roots, leaves trifoliolate, leaflets stipellate, oblong or ovate to linear lanceolate; flowers several together in a congested raceme which elongates in fruit, petals cream or creamy pink; pods straight, compressed, linear with thickened sutures, many seeded.

The tubers are eaten mostly by children but also by adults (Kasungu and Kota Kota Districts). The tubers are boiled or roasted. They are sometimes cooked mixed with green maize and are said to taste rather like European potatoes.

Ref. 13; 23.

***420. Spinacia oleracea** L. (Chenopod.), Spinach.

This is the true spinach, native of S.W. Asia, bearing long-stalked dark green leaves. It seeds freely at 5,000 ft. (Mwera Hill).

The leaves make a good side-dish with the addition of groundnuts. As long as the plant can be prevented from seeding early by suitable cultivation, it is a good type for native use.

Ref. 13.

421. Sterculia africana (Lour.) Fiori (Stercul.).
Mgoza (G), *citondo* (To), *muyamba* (Nk).

A spreading much-branched tree up to 50 ft. tall, liver coloured, green or whitish patchy bark, with cordate, roundish or 3-lobed, nearly glabrous leaves, lobes entire, acuminate; flowers, small yellow, red striped inside, in axillary panicles, usually produced when tree is leafless; fruit of 3–5 follicles arranged in a star, splitting open to expose numerous seeds with scarlet arils and stinging hairs. Common in rift valleys below 2,000 ft., mainly in fertile soil which has often been opened up for cultivation.

A strong fibre is obtained from the bark which is used for making rope or tying material for huts.

Ref. 14; 26.

422. S. appendiculata K. Schum. (Stercul.).
Njale (N, Y).

A conspicuous tree up to 80 ft., with a pale, smooth, yellow-green bark and round crown; leaves alternate, long-stalked, cordate with 3–5 long acuminate lobes; flowers small, yellow-green in much-branched panicles; fruit star-shaped follicles containing smooth black seeds. In rift valley below 2,000 ft. usually on ground opened up for cultivation, riverain forests.

The wood is soft and easy to work but is not durable. The leaves are eaten as a side-dish (Port Herald).

Ref. 14; 17; 23.

423. S. quinqueloba (Garcke) K. Schum.
Msetanyani (G), *nemwajani* (Y), *mgoza* (To, He), *mpepe* (Se).

A small to large tree up to 70 ft., bark smooth yellow to white tending to flake off, leaves large long stalked, 3–7 lobed, grey hairy beneath less so above, flowers in many flowered large panicles. Common in hot dry rocky areas of the foothills of the rift valley escarpment, and very conspicuous when leafless.

The timber is hard of a reddish colour and reputed to be a fine furniture timber but is very little known.

Ref. 14; 23; 27.

424. Stereospermum kunthianum Cham. (Bignon.).
Kafupa (C), *kabvunguti* (N), *nkokonasimba* (Y), *nlakanjobvu* (C), *mwanambewe* (N).
The various names refer in some way to the long thin cylindrical fruit.

A small tree up to 45 ft. growing in dry situations, bark scaly, dark grey or whitish; leaves pinnate up to 1 ft. long, leaflets ovate up to 5 ins. long and 2½ ins. wide; flowers, bell-shaped, 1 ins. long and fairly bright mauve; tree almost leafless when in flower; fruit capsules, narrow, up to 2 ft. long giving the tree an untidy appearance. Known to be in the foothills of Kota Kota and Karonga Districts.

The roots are used to cure a disease called *ntikwitikwi*, possibly asthma, the bark as a medicine for ulcers. A good ornamental tree.

Ref. 14; 23.

425. Strophanthus kombe Oliv. (Apocyn.) Kombe arrow poison plant.
Kombe (G), *mbolo* (N).

A liane up to 10 or more feet long with grey or black rough stems, dotted with large white lenticels, leaves opposite, elliptic or ovate elliptic, rough to the touch; flowers in terminal cymes on short branches, petals yellowish-white with tails 3–5 ins. long; fruits, paired woody follicles at right angles to each other and containing numerous fawn coloured, silky seeds with long stalked tufts of hairs.

An arrow poison is obtained from the seeds (E.A.) and they are of commercial importance for medicinal purposes in Europe, Nyasaland being the main source of supply.

Ref. 14; 17; 26; 27.

426. Strychnos spinosa Lam. (Logan.), Kaffir orange.

Name of tree, *mteme* (N, C), *dzai* (C), *mtonga* (Y), *malopali* (Ngu), *msongoli* (Tu), *musongola*, *kapula* (Nk), *katogulu* (Su).

Name of fruits, *mateme* (N), *mwai* (C), *matonga* (Y), *mazaye* (To).

A small thorny tree growing to 15 ft., leaves in opposite pairs, about 1½ ins. long and 1 ins. broad; flowers in dense terminal cymes; large, green, spherical fruits with an extremely hard shell, up to 6 ins. in diameter, they take several months to ripen from April or May until November. Very widespread in drier parts of the lower mountain and forest areas, often left in maize gardens because of the fruit.

The fruit are gathered when ripe and usually thrown on the ground to break them open. The seeds are surrounded by juicy, acid, pleasant, tasting flesh and are refreshing to suck. If they are kept in the mouth too long, a bitter taste develops and the seeds themselves are poisonous. The flesh is also said to be poisonous if not fully ripe. An infusion of the root and bark with that of *muwawani* (*Cassia* sp.), and *matholisa* (*Mikania scandens*), is drunk as cure for colic, *ncofu*. An infusion of the roots as above with *maonde* in addition is drunk to cure a venereal disease. The leaves are mixed with those of *kaphavunba wang'ono* and used to cure *nsanga*, cataract (?).

Other species with edible sweeter fruits are *kabenzi*, *kabezi*, (Kota Kota Lakeshore), *magonkhomwala* (Dedza and Lilongwe), a tree with thorns but with smaller fruit is *mkunyukunyu* (N), *mkyiki* (Y).

Ref. 9; 14; 26.

427. Syzygium cordatum Hochst. ex Sond. (Myrtac.) Water Boom.

Nyowe (N), *mcisu*, *nyonwe* (Y), *mnyonmwe*, *nanyole* (Ml), *katope* (C, To, He), *nyengere* (Nk).

A large, flat topped tree up to 50 ft. high, young branches sharply quadrangular, almost winged; leaves nearly round, cordate at the base, often clasping the stem, 2–3 ins. long and 1½–2½ ins. wide, shiny thick and leathery, light green colour; masses of showy white flowers in broad terminal cymes. Common in moister parts of the lower mountain and plateau areas.

The small dark purple, one-seeded berries are edible. The wood is white with a red heart, easily worked and borer proof, suitable for doors. Wood smoke used for smoking milk gourds on account of its aroma (Tt).

Ref. 9; 14; 26.

428. S. guineense (Willd.) DC. Water Berry.

Mbunguzi, *mpeuma* (Mg), *ntepera* (Y), *katope* (To, He), *mfuwa* (He).

A tree with several slender, erect stems growing to a height of 75 ft., bark grey, rough, flaking off; leaves opposite, simple; flowers, greenish-white, sweet-scented in a broad terminal cyme, coming out with the leaves; fruit a red or purple berry, the size of a plum. Usually near streams and rivers or where the water table is near the surface, hence the common name of water berry, but also found in dry places.

The fruits are edible and of good flavour. The timber is pale red, turning darker on seasoning, hard, strong and easy to work, is reputed to be very durable.

Ref. 9; 14; 20; 22; 26.

429. S. owariense Benth. (Myrtac.).
Mafuwa (N), *mfowo*, *musu* (C), *katope* (C, Tu), *muwuwu*, *mpambwesu* (Y), *katubwi* (To).

A many-stemmed tree to 15 ft., leaves thickly-leathery ovate-elliptic, 3–6 ins. long by 2–3 ins. broad, leaf stalk half to one inch long; flowers white in terminal and axillary panicles, larger than those of *S. guineense* which it closely resembles. Common in dry areas at the middle altitudes mixed with *Brachystegia* or *Combretum-Acacia*.

The fruits are edible.

430. Swartzia madagascariensis Desv. (Papil.), Snake bean.
Cinyenye (Y), *kampango* (N), *dzungu*, *mulundu* (Tu, To, He), *caronde* (Nk).

A bushy tree up to 45 ft. with dense rounded crown, conspicuous in winter with its long, brown, hanging snake-like pods; flowers white, showy with a single large crinkled petal; leaves alternate, pinnate, 9–13 leaflets; pods 5–12 ins. long, filled with a mass of yellow tissue; bark thick and corrugated. Common in drier parts of the lower mountain and plateau areas.

The pods are used as cattle feed (S.R.), they are said to have a high saponin content and are used as a fish poison either alone or with *Mundulea sericea*. The timber is heavy and dense, excellent for turnery work. It is favoured by Nyasaland Africans next to *mpingo* (*Dalbergia melanoxylon*), for making curios. Used for charcoal (Tt).

Ref. 9; 14; 18; 22; 26; 28.

431. Tacca involucrata Schum. & Thonn. (Taccac.).
Dinde (Y, N), *dinda* (To).

A tuberous rhizome up to 1 ft. long, buried in the ground to a depth of about 7 ins.; from it arises a single leaf stalk about 20 ins. long and a single inflorescence, the base of which is sheathed by the overlapping leaf stalk till above ground level; leaves large, divided into three forked branches, final segments ovate to lanceolate; flowers, many in an umbel with long purple filaments, bracts 4–6; fruit a berry, almost round, three-quarters to one inch long. Known to be eaten occasionally at Kota Kota, Chinteche and Dowa Lake-shore areas.

The roots are ground with water and washed with at least three changes of water as they are said to be poisonous. The starch is then allowed to settle at the bottom of the container. The starch is made into a gruel, *phala*, and used for the sick and for babies.

432. Talinum caffrum (Thunb.) Eck. & Zey. (Portulac.).
Mlelamvula.

A herb with long fleshy leaves; fruits capsules about half an inch diameter with black shiny seeds.

The leaves are cooked as a side-dish.

433. Tamarindus indica L. (Caesalp.), Tamarind.
Bwemba (N), *mkwesu* (Y), *nkwesu* (Nk).

A tree up to 60 ft. with rough grey bark and rounded crown; leaves pinnate; flowers, yellow or striped with dark red or brown; fruits sausage-shaped pods about 4 ins. long, fleshy and covered with a russet or grey skin. Found everywhere along the lower areas in deep soils in the hotter and drier climates such as the Lake-shore and Shire Valley.

The acid-tasting brown flesh round the seeds is eaten when ripe especially by children. It is also mixed with a thin gruel to make a refreshing drink. The pulp is used for cleaning copper and brass (E.A.). The young bark yields an inferior kind of rope or string (E.A.). The young stems are used as walking sticks (E.A.).

The sapwood is wide, pale yellow, heartwood is narrow, dark brown, tough, hard, cross-grained and difficult to work, liable to crack in seasoning. It bends well and takes a good polish. In Kenya it is used for boat-building. Weight 58 lb. per cu ft. (airdry). A blood red gum is obtained from the trunk and branches (E.A.). A piece of the bark is soaked with some maize and the liquid given to fowls and pigeons to drink; this according to local native belief (aCewa) ensures that if the birds stray or are taken by some predatory bird that they will return. An infusion of the roots mixed with a variety of others is drunk to cure *linyoka*, a venereal disease.

Ref.: 14; 17; 22; 23; 26.

434. Telfairia pedata (Sm.) Hook. (Cucurbit.), Oyster-nut.
Matandu (Su).

A climbing perennial plant with stem up to 60 ft., alternate smooth, pedate leaves and purplish flowers; fruits ridged, the size and shape of a Rugby football, containing numerous large, round flat, yellowish fibre-covered seeds. Known to be cultivated in the Misuku Hills in Karonga District at a height of about 4,000 ft.

The kernels of the nuts are pounded and added to a side-dish (Misuku). An oil is extracted which is much esteemed by some tribes especially by lactating women (T.T.).

Ref. 17; 23; 26.

435. Temnocalyx obovatus (N.E. Br.) Robyns (Rubiac.)
Maso a ng'ombe (N), *meso ga ng'ombe* (Y) (both meaning eyes of cattle), *memenela, njoga* (Y), *msamba ana* (N), *candantala* (Tu).

A herbaceous perennial, somewhat woody, 2–3 ft. high, sometimes in clumps, with 3-angled, slightly pubescent stems; leaves opposite; flowers, single or paired axillary, three quarters to one inch long, the corolla greenish-yellow with white lobes, In flower and bearing fruit in November (Kota Kota Hills).

The fruits are edible. The roots together with those of two shrubs, *damate* (*Monghamia*), and *kapilapila*, are used as medicine to add to infants' gruel. The medicine is to kill the creature that is believed to be twisting the babies' intestines. The roots are also given when a child is ailing of *utumbidwa*, thought to be caused by too early weaning due to a further pregnancy. The father may also suffer from the same disease and hence takes the same medicine.

436. Tephrosia nyasae Bak. f. (Papil.).
Ombwe.

A hairy shrub with pinnate leaves about 6 ins. long, leaflets in 6–10 pairs oblong; flowers purple in dense racemes; pods rust coloured.

The plant is used for stupefying fish preparatory to catching them. See **Tephrosia vogelii.**

Ref. 14.

437. T. vogelii Hook. f. (Papil.).
Mthuthu (G).

A herbaceous shrub 8–10 ft. high, with a dense yellowish or rusty covering of short hairs; dense, stalked racemes of conspicuous red, purple or white flowers; pods furry containing numerous seeds.

The leaves, branches and pods are pounded and thrown on the surface of the water, causing any fish it may contain to rise, stupefied or dead, in a few minutes. The fish are quite wholesome to eat. Valuable as an insecticide, there is 15 per cent. tephrosin in the leaves and 30 per cent. in the seeds.

Ref. 13; 14; 26.

438. T. zombensis Bak.

Katupe (N), *mtutu, kapweso* (Y).

An erect woody shrub, leaf stalk and young branches tawny coloured, hairy; leaflets 7–8 pairs, silvery silky beneath; flowers in dense sessile, terminal clusters; pods 1½ ins. long covered with long, soft, red-brown hairs. Commonly planted in villages.

The seeds and leaves are used for stupefying fish, see **T. vogelii.**

Ref. 14.

***439. Terminalia catappa** L. (Combret.), Indian Almond.

Mkungu (kiSwahili, Kota Kota).

A tree, native of India, up to 40 ft. high, with horizontal branches; leaves large, alternate or in whorls, dark green, shiny, leathery; fruits oval, fleshy, green to yellow, up to 2 ins. long with a hard shelled seed. Often planted as an avenue tree (E.A.) but most untidy on account of the frequency with which it sheds its leaves. There are a few fine trees at Kota Kota.

The kernel of the seeds and the fleshy part of the fruit are edible and are eaten especially by children (Kota Kota).

Ref. 4; 11; 17; 26.

440. T. sericea Burch. (Combret.).

Napini (C), *mpini* (N), *nyapini* (To), (names all meaning hoe-handle,) *nalinsi* (N), *mpururu* (Tu).

A tree up to 40 ft. tall with spreading branches, bark striated, leaves deciduous, opposite and alternate, simple, leaf stalk 2–5 ins. long, blade 6 ins. long and 2½ ins. wide, oblong ovate, entire, under-surface white with down; flowers in axillary pendulous racemes, sweet scented; fruit winged, turning pink, one-seeded. Common at lake levels and in the foothills, a few at higher elevations.

Wood yellow but opinions differ as to its durability, some claiming that it is ant and borer proof and others not. Another says it saws and planes easily but for its susceptibility to borers it would probably be used more. It is used occasionally for canoes but because of its lack of durability is not popular. Its most important use to the natives is for axe and hoe handles.

Ref.: 9; 14; 22; 26; 27.

***441. Tetragonia expansa** Murr. (Ficoid.). New Zealand spinach.

Native of S.E. Asia and Australasia; a sprawling prostrate annual with fleshy bright green leaves and stems; if allowed to dry out it seeds freely, the seeds are large and are produced in the axils of the leaves.

The leaves make a good side-dish but need the addition of groundnuts. They cook quickly so that soda or potashes are unnecessary.

A good type of spinach for native use provided that water is abundant.

442. Thespesia garckeana F. Hoffm. (Malv.) (Syn. *T. rogersii* S. Moore).

Mtowo (N), *mtawa* (Y), *nto-o* (Nk, Su).

A shrub or tree up to 30 ft. tall, leaves palmately 3–5-lobed, stellately hairy, flowers yellow tinged with red, large, fruits ovoid globose, seeds softly villous.

The wood is used for bows.

Ref. 9; 14; 26.

443. Thunbergia lancifolia T. Anders. (Acanth.).

Mlombwe, mndombwe (N), *jandalala* (Ng), *mwanaluni* (Y).

An herbaceous plant with erect stem 2–3 ft. high, glabrous except at the nodes; leaves vary from linear-lanceolate to oblanceolate; flowers are tubular, mauve; capsule covered with fine hairs. Fairly common at high elevations.

The leaves are cooked as a side-dish. Although the leaves appear to be very tough, potashes are not used to cook them. Some of the aCewa women cook them in the sour liquid, *matsukwa* (C), obtained after maize has been soaked and in the Lilongwe District (near Dzenza, D.R.C.M.), they are eaten mixed with potato leaves. The product is not much liked and only cooked occasionally.

444. T. oblongifolia Oliv.

Mlombwe, mnombwe (N), *mwanakazi* (Tu), *jandalala* (Ng).

An herbaceous plant with erect stem, hairy on the internodes; leaves ovate, sessile, leathery, shiny, fringed on the margin with soft hairs; calyx smooth; flowers, mauve with yellow throat. Widespread at higher elevations, is very conspicuous when flowering in November in the Kota Kota Hills.

For uses see **T. lancifolia.**

445. Thunbergia sp.

Cipere dodza (C).

The plant is used as a cure for a skin disease, *cipere.*

***446. Toona ciliata** M. Roem. (Meliac.). (Syn. *Cedrela toona* Roxb.), Cedrela, Toon tree or Red cedar.

Native of tropical Asia, a much-branched tree up to 50 ft. with greyish-white more or less smooth bark, leaves pinnate, glabrous or nearly so, leaflets lanceolate to ovate-lanceolate; flowers small white paniculate; fruits an oblong capsule, seeds winged at both ends.

Planted as an avenue tree but sometimes used for afforestation.

Ref. 14; 26.

447. Treculia africana Decne (Morac.) African bread fruit.

Lyaja (Y), *njayi* (C), *mjaya* (N), *majaja, maja* (Y), names of the fruit.

An evergreen forest tree up to 80 ft. tall, with whitish latex, glabrous, dark-purple branchlets; green spherical fruits, immature and mature up to a large size, often abundant on the trunk and larger branches.

The fruits attain 18 ins. in diameter and weight 18–30 lb., the seeds are numerous, buried in spongy pulp. Collected by Kirk on the western side of Lake Nyasa and known at the Kota Kota Lake-shore where the seeds are eaten. Recorded also in the Nchisi Forest, along the Dwambazi River and elsewhere but generally speaking a rare tree in Nyasaland.

The seeds are extracted after macerating the fruit in water and are ground to a meal and cooked to add to soup in (W.A.). Almond milk is made from the meal and used in Portuguese African colonies. The roasted seeds are palatable to European tastes. An edible oil can be extracted from them. The blue monkeys are very fond of the fruits and extract the seeds. The heartwood is yellow with very narrow, pale sapwood, very dense, fairly elastic and flexible, rather heavy, of fine even structure, suitable for furniture and well suited for wood carving, turnery and inlay wood. It is on the market as African boxwood, but is not exploited in Nyasaland owing to its scarceness.

Ref. 14; 15; 26; 27.

448. Trema guineensis (Schum. & Thonn.) Ficalho (Ulmac.).

Mpefu (N), *majanjajuni, yesa* (Y), *mpesi* (To), *msakasa* (He), *musyasya* (Su).

A much-branched quickly growing shrub or small tree up to 50 ft., trunk smooth white or pale grey, with alternate ovate-oblong leaves; flowers small greenish, clustered in the axils of the leaves; fruits small, black fleshy; a pioneer species of rapid growth in areas cleared of forest and bush, common in evergreen forest and bush in high rainfall areas.

The leaves are used as a substitute for sandpaper. Leaves crushed mixed with lemon and strained and liquid drunk for cough (Tt). Rope, or string is dyed black and rendered waterproof by rubbing with the fresh bark.
Ref.: 14; 17; 26.

449. Trichilia roka (Forsk.) Chiov. (Meliac.). (Syn. *T. emetica* Vahl).
Msikitsi (N), *msicisi* (Y), *mshunguti* (Nk), *ndilolo* (Nk, name for fruits).

A much-branched evergreen tree up to 50 ft. tall with up to 11-foliate alternate leaves; flowers greenish-white, densely clustered; fruits globose, green, opening on the tree to show the black seeds largely covered with a scarlet aril. The fruits ripen in January to February and continue on into April. Common at Lake levels, very abundant at Karonga Lake littoral and common at elevations of 3,000 ft. in the moister areas of the rift valleys. It likes a deep fertile soil with plenty of water.

Hot water is poured on the seeds; they are left to soak for a few hours and then rubbed between the hands. A sweet milky liquid is extracted from the arils which can be used as a drink or added to suitable side-dishes or mixed with bananas (Karonga). Livingstone refers to the extraction of oil from the seeds along the lower end of Lake Nyasa, and Africans say that before the coming of Europeans the seeds provided an important source of oil for oiling the body and there is no doubt it was so used all along the Lake-shore and the Shire Valley. The oil is still used to rub on the hair (Karonga). The seeds yield a variable amount of fat up to 64 per cent. In Portuguese East Africa, it is called *mafurra* oil or tallow and is used for soap-making at Lourenco Marques and also in S. Tanganyika. It can also be used as cooking fat. The bark is said to act as an emetic. A decoction (of the bark?) acts as a mild purgative and was widely sold as *Ntapo* (a purge for all witchcraft) and the commercial invasion of *Ntapo* came from Portuguese East Africa about 1932 and swept South and Central Nyasaland. The timber is useful, light and soft. It is easily worked and nails and polishes well. It darkens considerably under linseed oil when it somewhat resembles Indian Teak. Unfortunately, it is somewhat susceptible to attack by borers. In South Africa it is used for furniture and general purposes. Weight 31–37 lb. per cu. ft. (Oven dry).
Ref.: 14; 15; 17; 22; 26; 27; 28.

450. Trichodesma zeylanicum R. Br. (Borag.).
Dungumwamba (Port Herald).

An annual much-branched herb, with very rough lanceolate leaves and small white or pale blue flowers. Common everywhere as a pioneer in abandoned cultivations at lower elevations.

The seeds yield an oil which might be of commercial importance if the Africans could be induced to harvest the plants. The leaves are cooked as a side-dish, they are not slimy and pounded groundnuts are added. (Port Herald.)
Ref. 17.

451. Tripteris monocephala Oliv. & Hiern see **Osteospermum**.

452. Triumfetta annua L. (Tiliac.).
Khatambuzi (C), *sungini* (H), *ugunga* (Su).

An annual with erect, slightly hairy stems, 1–2 ft. high; leaves generally on long stalks, ovate, acuminate, 3-nerved, 4–5 ins. by 2–4 ins.; flowers, small bright orange; fruit, round the size of a pea, covered with hooked prickles, 4-seeded. Abundant in woodland in half shade in hill areas, known to be in use in Kota Kota, Kasungu, Mzimba and Karonga Districts.

The leaves are occasionally cooked as a side-dish. They need potashes to soften them and the product is mucilaginous, *thelele*, groundnuts are not usually added. The fruits stick to cloth and are used to decorate head-dresses for dancers.

453. T. rhomboidea Jacq.

(Not the edible *khatambuzi* but possibly also known by this name.)

Herbaceous or shrubby, up to 4 ft., varying much in habit and leaves, stalk of lower leaves nearly as long as blade; leaves polymorphous; flowers, yellow, numerous in cymose clusters, fruits rounded, the size of a small pea, 3–5 valved, covered with smooth hooked conical prickles so that the fruit easily adheres to clothing. Open ground especially edges of woodland, common in the Kota Kota Hills.

It is used occasionally for string. " Yields a strong bast fibre which if carefully prepared from well-grown plants would find a market as a substitute for jute " *Imperial Institute Report*, September, 1909.

454. Tulbaghia cameroni Bak. (Amaryllid.).

Katsopi (N).

A tuberous-rooted herb growing to about 1 ft. with an umbel of 3–4 small white flowers, sweet-smelling; leaves strap-shaped, flowering in November.

The flowers are cooked mixed with *mlozi*, (*Adenia cissampeloides*), and *fwifwi* (*Coccinia quinqueloba*), as side-dish. The product is slimy, *thelele*. (Dzenza and Mkhoma, Lilongwe District.) The leaves are also cooked as a side-dish (Dowa foothills).

455. Turraea nilotica Kotschy & Peyr. (Meliac.).

Msindila (C), *mkulabala* (N, Y).

A branched deciduous shrub up to 8 ft. tall, leaves obovate to obovate-lanceolate up to 7 ins. long by 3½ ins. wide, more or less hairy, flowers yellow in sessile to subsessile, several to many flowered, umbelliform racemes which are produced when the tree is leafless. Known to occur in the Kasungu District.

The fruits are said to be eaten by children (Kasungu). The leaves when fresh can be eaten by cattle without dire results, when dried are said to be extremely poisonous to man and cattle, in the latter the symptoms very much resemble those of Rinderpest (Tt).

Ref.: 14; 26.

456. Uapaca kirkiana Muell. Arg. (Euphorb.).

Msuku (G), *mompangwe* (*cilambia*).

A much-branched evergreen tree up to 40 ft. tall with large, leathery, strongly ribbed, obovate or obovate-elliptic alternate leaves, glossy above, woolly pubescent beneath at length glabrous; flowers of separate sexes the males yellow, flowering in March; fruits yellow, subglobose about 1 ins. in diameter with several seeds, ripening in October to December. Very common all over the country on drier poor soils, particularly on leached quartz sand or shallow immature soils.

The fruits are edible; they have a pleasant sweet taste and are collected in basketfuls and taken to the villages for all to eat. The fruits are sometimes pounded with water and the extract used to make gruel, which serves as refreshing drink, *phala la masuku*. The fruits have sufficient value to be sold or bartered. Cakes are made in the Dedza District as follows:—the ripe fruits are squeezed and water is added to the pulp, then flour and sometimes egg are added and the mixture made into flat cakes and fried. A similar kind of cake is made using the fruits of *Strychnos spinosa* (*mateme*), instead. The timber is of a pleasing appearance resembling American birch but of a deeper reddish colour and with more figure. It is of medium weight, fine in the grain and compact. It works easily and polishes well. It is fairly resistant to termites and boring insects. The timber is useful for general building purposes. Weight about 40 lb. per cu. ft.

Ref. 9; 14; 22; 26.

457. U. nitida Muell. Arg. (Euphorb.).

Kasokolowe (N, Y, To), *mselecera, msecela, mtoto* (Y), *msuku mpinini* (Nk), *msalinja, msanyinja* (He).

An evergreen tree up to 50 ft. high, leaves crowded towards the ends of the branches, lanceolate or oblong lanceolate rounded at apex, up to 4½ ins. by 2¼ ins., entire, leathery, smooth, shiny above; fruits greenish yellow axillary, 3-celled, globose about ½ ins. diameter; flowers from March onwards and fruits in November and December. Widespread in *Brachystegia* woodland. In the Nkata Bay District foothills on swampy soil which does not become regularly inundated, it grows to over 60 ft. tall in closed forest.

The fruits are edible. The wood is used for making beds and is a useful structural timber.

Ref. 14; 22; 26; 28.

458. U. sansibarica Pax.

Kasakolowe (N), *mtoto* (Y), *msokolowe* (C).

A laxly-branched, glabrescent evergreen tree up to 40 ft. high, with large, dark green, leathery, alternate, obovate or obovate oblong leaves; flowers yellow usually solitary on long stalks in the axils of the leaves, the males and females separate on the same tree; fruit globose the size of a plum.

The fruit is edible.

Ref. 14; 17; 26.

459. Urena lobata L. (Malvac.), Bun ochra.

Msapatonje (Y), *kolokondwe* (Su).

A stiff erect herb up to 10 ft. high, covered with stellate hairs, with very variable leaves which can be linear-oblong to sub-orbicular with 3–4 lobes, coarsely toothed, whitish below; flowers, pink, about 1 ins. long, axillary solitary or clustered fruits, globose of five obtuse 3-sided indehiscent carpels covered with hooks. Widespread as a weed at all elevations.

A fibre is obtained from the stem, the flowers are eaten as a side-dish (Misuku Hills).

Ref. 14; 17; 26.

460. Urginea altissima Baker (Liliac.).

Nthunga, meaning spear.

A bulbous perennial herb, bulb brown, flowers greenish-white, many in a dense cylindrical raceme 1–2 ft. long on a rigid stalk 3 ft. long produced before the leaves, leaves 5–6 lanceolate glabrous 1–2 ft. long. Widespread between 2,500–6,000 ft. altitude.

Has medicinal uses.

461. Utricularia thonningii Schumach. (Lentibular.).

A submerged aquatic herb, floating close to the surface, stems over 1 ft. long; leaves variable, 3–6 partite with appendages at the base of the leaf blade, rays up to 1½ ins. long, threadlike, usually solitary from the lower part of a pinna; floating leaves in a false whorl of 6, linear-oblong to oblong, 1 ins. long; racemes few to many flowered, corolla yellow or white with purple veins, flowers in June. (Kota Kota). Shallow waters near the Lake.

A useful plant for fishponds.

462. Uvaria sp. (Annon.).

Ukonde (C), *luwau, dilakomwe.*

A small tree, growing in sand often near water; leaves, leathery, 3 ins. long; fruits, elongated, 1½ ins. long with hard stone, skin and flesh red when ripe, fruiting from December onwards and known to grow at Kota Kota Lake-shore.

The fruits are edible, sweet tasting and are used as a dye for cloth. The wood is used for game traps.

463. Vangueria tomentosa Hochst. (Rubiac.), Wild Medlar.
Msilu, mzilu, mvilu, mbilima (N), *mpulukututu, mfulukutu, mkangandembo* (Y), *magurunguru* (Nk).

A tawny, tomentose, small tree up to 25 ft.; leaves opposite, ovate-oval, downy, round at base, narrowed at the apex, greenish above, paler beneath; flowers greenish, tubular, parts in fives, a quarter of an inch long; fruits, rounded, smooth up to 1¼ ins. in diameter, 5 seeded, ripe in February. Widespread.

The fruits are edible, the brown pulp round the seeds tastes somewhat like stewed dried, apple-rings. " An excellent fruit tree surpassing the medlar." Roots are used as anti-snake bite remedy also boiled and liquid drunk as an anthelmintic (Tt).
Ref. 14; 26.

464. Vangueria sp.
Matembela (N), *mlembedwa.*

A tree having edible fruits known to be growing at Kota Kota Lake-shore.

465. Vellozia spp. (Velloziac.), Brooms and brushes.
Swakala (Ml.), *ciceu, cewo* (N), *cejo, misuwaci* (Y), *cipieya* (Cilambya).

Branched woody shrubs up to 10 ft. tall with very stiff fibrous stems which are crowned at their apices with a tuft of grass-like leaves, flowers yellow, to mauve even white, tubular. Widespread found on rock domes and slopes, rarely in arid grassland, flowering just before the rains.

The stems make effective scrubbing brushes and pot cleaners. Pieces of stem about 18 ins. long with one end frayed out make good whitewash brushes, also natural torches.
Ref. 14; 27.

466. Vernonia amygdalina Del. (Comp.), Bitter leaf.
Nsangusangu, msangusangu (Y), *futsa* (N), *tsoyo* (C).

A freely-branched shrub, 6–10 ft. high, leaves, alternate, lanceolate, narrowed at both ends, acute; flower heads in dense much-branched globose or pyramidal, terminal panicles, 4–12 ins. in diameter, corolla white, seeds hairy. Widespread.

The plant is burnt and the ash is used for cooking purposes. It has very many medicinal uses; an infusion of the roots is used as abortifacient, the abortion is said to follow three days after taking the medicine. It is also said to prevent further pregnancies, hence to be used with discretion. An infusion of the roots with those of *msiloti* (*Psorospermum febrifugum*), *mtanga, kamkande, mabwani* (*Inula glomerata*), *namwalicece* (*Cissus* sp.), *msekese* (*Piliostigma thonningii*), is drunk as a cure for *nyamakazi*, (rheumatism and allied complaints). An infusion of the roots with those of *khozyo* (*Commiphora*), *kathyothyo* and *mchangwa* is drunk to cure colds and coughs. An infusion of the roots with those of *muwawani* (*Cassia* sp.), *mtunda, kankhande,* (*Ziziphus mauritiana*) and *mwemba* is drunk to cure a venereal disease, *linyoka.* At the time of an aCewa girl's first menstruation she drinks an infusion of the roots mixed with those of *kathyothyo, mcengwe, katonga* and *canzi* (*Lippia asperifolia*). The roots are also used as medicine for a skin disease, *cipere* and also for yaws. The leaves and stems are dried and powdered and mixed with ground tobacco leaves to make snuff. When women want their beer to be " strong " they rub the insides of the pots with the leaves. This is said to make the brew more intoxicating and hence more popular. The dry stems are often used for lids of grain stores, *nkhokwe,* as they are light and strong. The stems are used for tooth cleaners (W.A.) and as a chew stick.
Ref. 14; 15; 26.

467. V. glabra Vatke (Comp.).

Camasala, namoto (N), *mtsitsi* (C), *cilisya, msangula* (Y).

A glabrous herb up to 4 ft. tall, leaves alternate sessile oblong-lanceolate to oblong, serrate 3–4 ins. long; flowers blue to purple in terminal corymbose panicles. Common and widespread especially in abandoned cultivations.

Used medicinally for stomach complaints.

468. V. shirensis Oliv. & Hiern (Comp.).

Futsa wa mwamuna, fusa, nguwawe (N).

A shrubby herb smaller than *V.amygdalina* with a large root.

The roots and pounded leaves are boiled in water and the liquid drunk as a cure for indigestion, *kubanjila m'mimba.* An infusion of the roots with those of *cilambe,* (*Cissampelos mucronata*), is used to cure a venereal disease, *songeya.* The leaves with those of *cilambe* are rubbed on to cure a swelling.

469. Vernonia sp.

Dambwe.

A herbaceous plant 2–3 ft. high. Common in old gardens near streams.

The leaves are said to be used as a side-dish.

470. Vigna fischeri Harms (Papil.).

Mukho, mikho (N).

A climbing herb resembling *V. phaseoloides* in appearance, its pods are long, narrow and densely hairy; flowers purple. Common in the hills.

The flowers are eaten cooked either alone or with the leaves of *Vigna phaseoloides* (*Mphunzi*, Dedza District). The roots are edible; boys dig them up, peel them and chew the fibrous part to extract the sweet juice. They are eaten in February and March.

471. V. phaseoloides Baker.

Mtambe thengo, citambe (N), *likundewa* (Y), *mtanthe* (Tu), *kankhundekhunde* (He).

A herbaceous plant with slender stems, wide climbing and downy; 3 leaflets, finely downy below, laterals very unequal-sided; flowers 2–4 on apex of downy flower stalk, up to 4 ins. long, corolla reddish-purple with sweet scent, pod thin 4–4½ ins. long, nearly straight, finely downy. Growing throughout the country and especially common in hill areas.

The leaves are cooked as a side-dish. If tough, potashes are used, the product is well liked if groundnuts are added. Often the leaves are exposed to the sun before cooking to lessen the bitterness. One of the most commonly used wild leaves. The beans are occasionally eaten by children. The root is used as a contraceptive. An infusion is made of it together with that of the root of *msekese* (*Piliostigma thonningii*), the liquid is drunk for seven successive nights during which time there must be no intercourse.

472. V. reticulata Hook. f. (Papil.).

Camaweya (Tu).

A herb with wide climbing stems covered with conspicuous spreading grey or brown hairs, leaves alternate, pinnately trifoliolate, dark green often with a silvery stripe down the centres, end leaflet oblong or lanceolate acute up to 6 ins. long. the two lateral similar, scarcely unequal-sided, all covered with adpressed grey silky hairs; flowers pea-like, pinkish-mauve several clustered together on the end of a long hairy stalk; legume linear straight up to 3 ins. long, densely clothed with glossy dark brown velvety bristles, black when mature. Found in gardens and bushland.

The leaves are eaten from January to March cooked without potashes.

473. V. unguiculata (L.) Walp. (Syn. *V. sinensis* Endl.), Cowpea, Kaffir bean, Black-eyed pea.

Khobwe, *nseula* (N), *ngunde* (Y, Tu), *inandala* (Nk), *isokolo* (Su).

A variously prostrate, procumbent or climbing herb; leaflets 3; flowers in 6–12 flowered racemes; pods pendulous, long, narrow in clusters.

At least two types are recognized in the Southern Province, *nseula*, with smaller pods and beans, as distinct from *ngunde* or *khobwe* with larger pods and beans. Grown all over the country at all elevations, particularly where *Phaseolus vulgaris* does not flourish.

A. The beans and pods.

The seeds, dried or fresh, are cooked as a side-dish. They may be boiled in their skins or with the latter removed as *cipere*. They take about 2–3 hours to cook when dry and about 1 hour when fresh. They are boiled together with whole maize or maize from which the bran has been removed by pounding. The mixture, *cingowe*, is commonly eaten by the aCewa in the Kota Kota District especially during the hoeing season. The same dish, called *ngata* is in common use among the aKonde in Karonga District and often takes the place of the main meal of the day. The fresh pods are boiled and when soft, the beans are eaten one by one as an extra food, *mikowe*. The young pods are commonly cooked for side-dishes in the Southern Province, they are eaten cooked alone or mixed with the fresh beans or with other leaves.

The skins are rather tough and there is a slight acrid taste to the beans but in spite of this, the beans are well liked, especially where haricots are not to be found. The beans are well liked by Europeans in the West Indies, especially in the form of soup.

Cooking and Palatability Trials.

Three kinds of cowpeas were tested, the local variety, small (200 to 1 oz.) with purple markings and two kinds from Salisbury, *nyemba* I and *nyemba* II. The former was fawn-green and the latter fawn with fine purple markings. They were both larger beans, (130 and 140 seeds respectively to 1 ounce) than the local kind.

All three kinds took 2½–3 hours to cook, the flesh was soft in a very much shorter time but cooking was continued until the rather tough skins split. They all had the distinctive slightly acrid flavour which is mainly in the skin.

B. The leaves.

Mtambe (N), *makangata* (Y), *matapa a khobwe* (Ngu), *masamba a nyemba* (Se), *mpangwe ya ngunde* (Tu), *mintambani* (To), *iciunkhundya* (Nk), *liwoga lya sokolo* (Su), *khwanya* (Kota Kota Lake-shore), *mkhwani* (Port Herald).

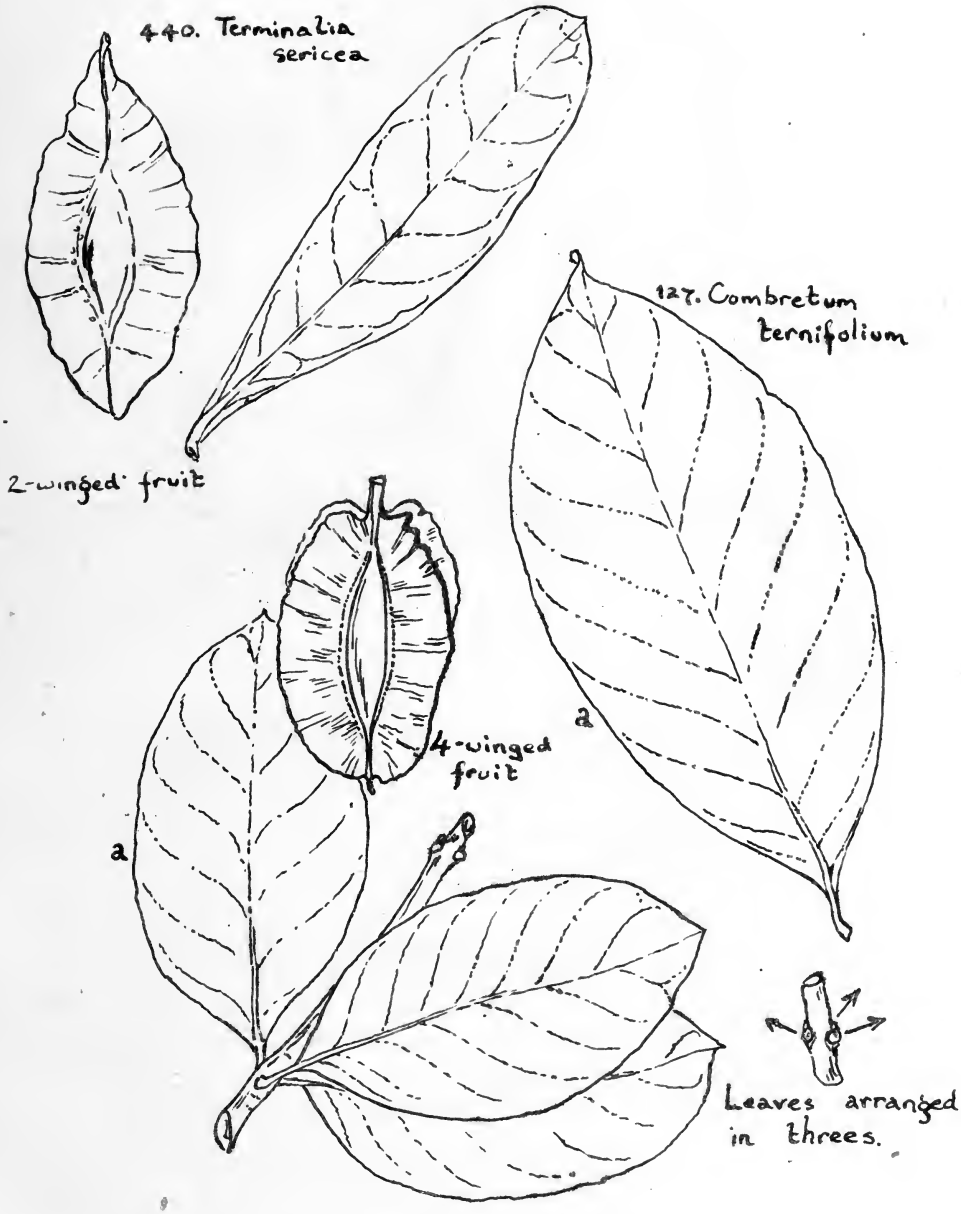
(1) *Fresh leaves.*

The young shoots and the blades of the older leaves are cooked as a side-dish. If the leaves are getting tough or are needed quickly, a small amount of soda or potashes is added. Sometimes the leaves are left in the sun before cooking to lessen their bitterness. The product is very well liked, provided that groundnuts and tomatoes are added. Yao and Mang'anja women do not use the leaves to any great extent, they prefer the green beans. The other tribes, however, make great use of the leaf, which is in season from February to April (Kota Kota District).

(2) *The dried leaves, mfutso.*

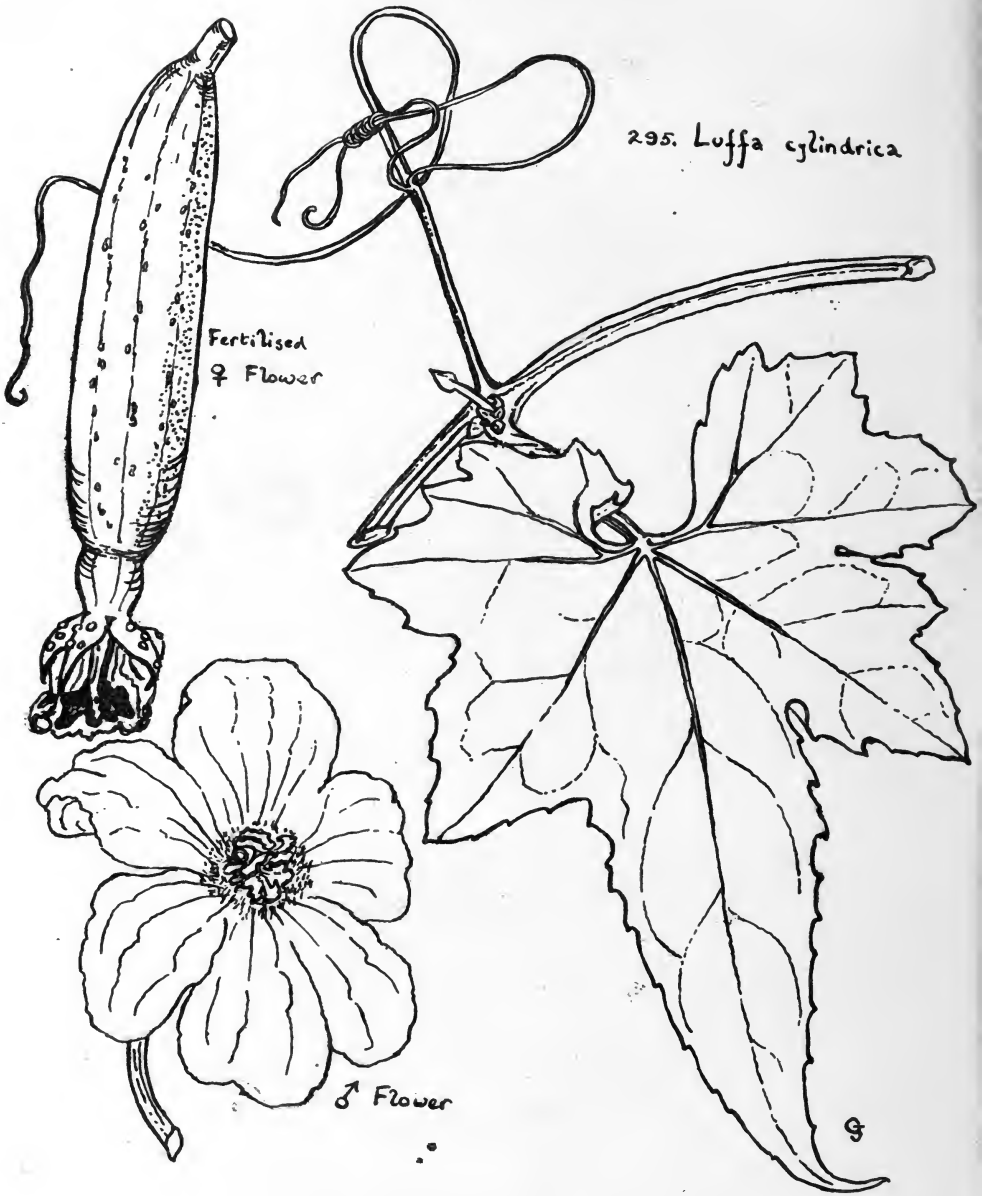
Dried leaves are prepared for use later in the year during the dry season. The preparation begins as soon as they are plentiful and the weather is suitable.

Several baskets of leaves are picked; this takes a long time so that the women usually leave for the garden early and come back to the village at about midday. They then remove the stalks and spread the leaves for a preliminary drying in the sun. Various reasons are given for this first drying, that otherwise the leaves will



127. Combretum ternifolium Engl. & Diels. (Combret.).

440. Terminalia sericea Burch. (Combret.). Note difference between typical 4-winged fruit of *Combretum* and elliptic winged fruit of *T. sericea*.



295. **Luffa cylindrica** (Lour.) Roem. (Cucurbit.).

taste bitter, that they will break up too much in the final drying process or that the leaves will start to decay when left overnight and spoil the taste of the product. Incidentally this drying reduces the bulk of the leaves considerably and so allows more to be packed into the pot.

After two to three hours in the sun, the leaves are put back in the baskets and left outside the hut on the verandah until the morning. They are then packed very tightly into a large earthenware pot (4 gallon) and a little cold water (1–2 pints) added. After about 20–30 minutes on a wood fire, the water boils but the temperature of the leaves, except at the bottom is still low. When the mass is steaming vigorously it is turned over with a stick and after about 40–50 minutes from the start (*i.e.*, 10–20 minutes steaming), the pot is removed from the fire by which time there is very little water left. The leaves are now soft and slightly yellow in colour. They are spread on a mat in the sun to dry for the rest of the day and if necessary for a further one or two days.

The leaves when freshly dried are very crisp and good to eat, hence the women often take the mats into the bush to dry the *mfutso* for fear passers-by in the village should take too heavy a toll. After three or four batches of leaves have been dried, there is enough to make up into balls, *cikwatu*, the size of a football. These are covered with the leaves of *masuku*, (*Uapaca kirkiana*), sewn together or bound with string and hung up in the hut until required. One ball weighs from 3–5 lb. in weight.

Other leaves that are commonly used for *mfutso* are:—

(*a*) Pumpkin leaves, these are not always given a preliminary drying and after boiling take longer to dry than cowpea leaves.

(*b*) Haricot bean leaves, these are dried in the same way as those of cowpea.

(*c*) At least three kinds of wild leaves are dried, *e.g.*, *Bidens pilosa*, (*kanzota*,) a *Hibiscus*, (*limanda*) and a *Crotalaria*, (*zumba*). These are usually dried without a prel minary boiling.

(*d*) Sweet potato leaves are dried without steaming; they are not very popular except with old women.

Mfutso has a commercial value and balls were sold in 1938 for 6d to 1s depending on their size.

Leaves are dried in large amounts by women living where there is a long dry season particularly by aNgoni and aCewa women living in the Central Province and in the Mzimba District of the Northern Province. Women in the Southern Province seldom make *mfutso*.

THE COOKING OF DRIED LEAVES, *mfutso*.

The dried leaves are put in cold water and boiled for about an hour. Then tomatoes, groundnuts and salt are added as with fresh leaves. The cooked dish is well liked.

The flavour of *mfutso* is much improved if some tomatoes are dried together with the leaves. They are split open or cut across, mixed well with the leaves and dried with them.

Cowpea leaves are the most commonly dried of all the leaves.

Ref. 13; 23; 27.

474. Viola abyssinica Steud. (Violac.).

Katongolola (N).

A herb with slender prostrate flowering stems, rooting at intervals; leaves heart-shaped, petals forming a sac. Found at high elevations.

The leaves are occasionally used as a side-dish (Kota Kota Hills).

475. Vitex doniana Sweet (Verben.) (Syn. *V. cuneata* Thonn.).

Mpindimbi, *mpyumbya* (N), *msimpsya* (C), *mbindimbi* (Tu, fruits).

A much-branched deciduous tree, up to 50 ft. leaves 5-foliate, leathery, smooth; leaflets wedge-shaped, entire all distinctly stalked; corolla bell-shaped white and violet hairy, tube as long as the calyx, densely bearded in the throat; fruit, almost black, as large as a plum. Widespread.

The fruits are eaten as a famine food. The wood is yellowish-white to pale brown, even and straight-grained, soft, moderately durable, easy to work but does not take a polish. It nails satisfactorily and does not split. It must not be exposed to damp and is not suitable for purposes calling for great strength. It is suitable for boxes, interior fittings, the bottoms of drawers, upholstery, etc. Weight about 53 lb. per cu. ft.

Ref. 14; 22; 26.

476. V. mombassae Vatke (Verben.).

Mpyimpya, mpsympsya (N), *makuku* (Tu), *ntonongoli* (N or Y), *mserakunyama, cipindimbi* (Y), *mpunungu* (Mambwe).

A shrub or small tree with densely hairy branches; leaves 3–5 foliate, the end leaf 2–3 ins. long; cymes dense, axillary branches hairy, calyx bell-shaped, pale blue densely hairy outside; fruits as large as a plum, with a calyx three-quarters of an inch in diameter, skin and flesh dark purple almost black with a large stone. Found at low elevations, *e.g.*, Kota Kota Lake-shore.

The fruits are edible and much liked as they are sweet. Used for making concoction for strengthening and flavouring tobacco (Tt).

477. Vitex sp.

Msungututu.

A tree with palmate, thick, opposite, downy leaves and edible fruits.

478. Voandzeia subterranea Thou. (Papil.) Bambarra groundnut, Groundbean.

Nzama (N), *njama, sugama* (Y), *eto* (Ngu), *niumu* (Tu, Su), *zyama, njuwu* (To), *isugu* (Nk).

A cultivated annual plant; the flowers are borne above the ground and by the growth of the flower stalk the pods are buried underground. There are many varieties differing among other points in the size and shape of the bean. The bean is characteristically rounded in shape.

The beans are cooked as a side-dish, either with skins on or without as *cipere*. They are usually eaten when fresh. The fresh beans are commonly boiled in their pods and the beans are eaten one by one as an extra food, *mikowe, makata*. They are sometimes roasted then pounded and eaten as an extra food. They may be cooked with whole maize as *ngata* (Karonga District).

There are several customs relating to their use. One common among the aNgoni in the Mzimba District relates to the second cultivation of the beans. After the flowers have appeared the practice is to heap the earth on top and bury them. Thus everyone may sow the beans but only those who have already buried a child of their own may " bury " the beans, presumably there is some connection in the African mind between the two burials and fear for the safety of one's own family. In the Kota Kota District, a custom still prevails among some of the people of not selling the beans, they must always be given freely.

The pods and leaves are not eaten.

Ref. 13.

479. Widdringtonia whytei Rendle (Cupress.), Mlanje cedar.

Mkungusa (G), *mpongo* (Ml).

A tall tree reaching a height of 140 ft., with clean trunks 90 ft. long and 5½ ft. in diameter. Found in closed forest, as an overwood above other montane evergreen

forest, *e.g.*, on the high plateaux of Mlanje Mountain at an elevation of 5,000 to 7,000 ft. The forests are scattered mainly in small areas over the massif. It also grows in highly successful plantations on Zomba Mountain.

The timber comes first in local importance because of its general utility and because it is found naturally in gregarious stands on Mlanje Mountain. The wood is of a pale reddish colour, straight-grained, works easily, is fragrant and is highly resistant to attacks by termites, borer and fungi. Weight 38–45 lb. per cu. ft.

Ref. 14; 22.

480. Wormskioldia longipedunculata Mast. (Turner.), Rhodesian pimpernel. *Katambala* (N), *nakatambala* (Y).

A herbaceous plant, 6–18 ins. high; leaves, simple, narrow up to 4 ins. long; flowers bright orange-scarlet or vermilion, in long stalked inflorescences, flowers open towards 10 a.m. and close before sundown; pods long and narrow. Widespread, very common by roadsides.

The leaves are occasionally cooked as a side-dish. They are tough and are first plucked from the stem leaving behind the still tougher base of the leaf. They are then pounded and cooked with the help of potashes, and sometimes pounded groundnuts are added. The product is slimy, *thelele*. An infusion of the roots is used as a cure for sore eyes. The leaves are rubbed on the strings of bird traps to make the latter difficult to see.

481. Xymalos monospora (Harv.) Baill. (Monimiac.), Lemon wood. *Nakaswaga* (Y), *mblaka, cikakalaka* (Ml), *mpekeso* (Su).

A fairly large evergreen tree growing to 50 or 60 ft. with red sap, with a diameter 1–2 ft., bark grey with well-marked oval scars; leaves opposite or alternate, simple, petiole short, blade oblong-lanceolate; flowers in axillary, many flowered racemes or panicles; fruit a rounded bright red berry. Forests of high mountain areas, usually an understorey shrub up to 20 ft. and often a local dominant.

The fruits are edible (S.R.). The wood is well marked and can be used for furniture, used for bee-hives and hut poles (Tt).

Ref. 9; 14; 26.

482. Zanha golungensis Hiern. (Sapind.).
Mkwidio (N, Y).

A large tree up to 80 ft. tall, twigs and leaves glabrous, leaves compound up to 12 ins., leaflets in three to six pairs elliptic entire, more or less acuminate at apex many-nerved, inflorescences subcorymbose on the ends of stalks up to 5 ins. long, flowers inconspicuous small, green; fruit a small, ellipsoid, orange coloured berry with a solitary stone.

The fruits are edible (Blantyre and Zomba) and the wood is suitable for furniture and building purposes.

Ref. 26.

***483. Zea mays** L. (Gram.) Maize, Indian corn. *Cimanga* (N), *imanga* (Y), *nahebwe* (Ngu), *mapiramanga* (Se), *cingoma* (To), *ifirombe* (Nk).

A stout annual grass up to 10 ft. tall, not known in a wild state but occurring throughout the tropics and subtropics of America, distinct races being localized in different areas. The sexes are in different inflorescences on the same plant the males in large terminal panicles, the females the " cobs " in the axils of the lower leaves enveloped by large membranous bracts, leaves sheathing over 3 ft. long and 4 ins. wide. Cultivated throughout Nyasaland and taking from four to five months from planting until harvest.

Maize is the staple food of the bulk of the Africans in the country. There is little doubt that as far as Nyasaland goes maize is a relatively recent staple food, because Lacerda in the 1790's refers to maize as does Livingstone some 60 years later but both give the staple crops as being the millets, such as fingermillet and the sorghums.

There is little difference from tribe to tribe in the methods of preparation.

The Preparation of Maize Flour.

The process takes place in the following stages:—

(*a*) The grain is stripped from the cob by twisting against a second cob. Any badly weevilled grain is removed.

(*b*) The bran is removed in the first heavy pounding, *kukonola*.

(*c*) The grain is soaked in hot water for several days, *kubviika*.

(*d*) The softened grain is pounded to flour, *kutibula*.

(*e*) The flour is spread on a mat to dry.

The First Pounding, *kukonola*.

About 30 lbs. of grain (three mortarfuls) is pounded at a time. This produces enough flour to last an average household four or five days. The first pounding is very hard work and takes about six hours for one woman to do alone.

A small amount of grain is tipped into the mortar and some liquid, either water or preferably the sour rather slimy liquid, *cisunje*, *matsukwa*, left from the soaking of the previous batch of maize is added. When the bran has started to come away from the grain, the mortar is filled and the pounding begun in earnest. When it is judged to be ready, the contents are tipped into a flat sifting basket, *licero*, and the bran shaken off on a mat. The grain is then carefully picked over by hand and any grains with bran still attached are separated to be repounded, *kuphwanya*. Sometimes at this stage whole grains, which have had the bran removed, are picked out and are boiled in this form as *ntakula*, *cingowe* or mixed with beans as *cingowe*. The grain is now given a short final pounding, *kupunthila*, to remove any fragments of bran and is then ready for soaking. It is now called *mphale*. A fraction, *mitama ya mphale*, consisting of small broken bits of grain may now be separated and boiled as a separate dish.

Soaking of the Grain.

About two gallons of water are heated in a large earthenware pot almost to boiling point. It is taken off the fire and the pounded grain, *mphale*, tipped in. the pot is covered over usually with another pot and left for at least two days. If flour is needed in a great hurry, the maize can be pounded after only one day's soaking but the product is hard and not well liked. Usually grain is taken out on the third day, sufficient for the day's needs, and on each successive day until the pot is empty. Usually enough is soaked to last four or five days. The longer the soaking period, the softer the grain and the easier to pound. As soaking proceeds, various changes caused by micro-organisms occur in the maize, and there is a strong smell of fermentation and the maize itself tastes sour unless the water is changed every day or two. One of the tests of a good housewife is whether or not she washes the *mphale* pot well so that the flour does not taste sour.

Second Pounding, *kutibula*.

Some soaked grain is taken from the pot, washed well in at least three changes of water until the grain is clean. It is then tipped into the mortar and pounded, *kusinja*. From time to time, the contents of the mortar are tipped into a basket and the flour sifted, *kusefa* or *kusela*, through fine wire sieves or winnowed off. The grain is then repounded until all that remains is a small amount of hard fragments

which are hard to pound. They are known as *misere* (N) and when boiled form one of the principle snacks of the pounders and any children who happen to be nearby. The second pounding gets progressively easier as the grain softens. To pound the soaked grain from 30 lbs. of maize takes about seven hours usually spread over four or five days.

In the Mzimba and Karonga Districts, there are slight differences in the preparation of flour. The bran is removed as before but the grain is then soaked in cold water instead of hot and left for a longer period, up to a week. Then the grain is usually pounded to flour all on one day instead of on successive days.

Mixed Flours.

Where there is an alternative staple food grown, it is common practice to use a mixture of flours for porridge, *nsima*. Thus in the Mzimba and Karonga Districts, cassava flour is mixed with maize flour in proportions of about one in three. In the Kota Kota foothills cassava or kaffir corn, (*mapira,*) flour are mixed with maize flour and in times of hunger, finger millet will also be used in this way.

The Bran, *Madea*

A heap of bran is collected on the mat on the day of the first pounding. If there is a famine, all the bran is kept. If food is very plentiful, all is thrown to the fowls. Usually, however, a fraction consisting of large flakes of tough bran, *mankhupete*, is winnowed off and thrown to the fowls. The remainder, consisting of fine flakes of bran together with considerable amount of the germ and broken grain, is kept. The aCewa women and probably those of other tribes, winnow off a fraction containing most of the germ, *mdzoole*. This they boil and eat as a separate dish. Whether this fraction is separated or not, the rest of the fine bran is spread in the sun, very thoroughly dried and stored in a pot. Often the bran is kept overnight before drying, it then ferments slightly, *kusasa*, and has a better taste and is also said to make " harder porridge " than if dried on the day of pounding. After drying, the bran is further pounded and sifted to form a fine meal. In this form it is used to mix with flour in proportions varying from one part bran to eight of flour to as much as one part bran to one part flour in times of hunger. On the average one part of bran is added to about two parts of flour. After pounding and sifting of the bran, there remains a fraction, *mitama ya madea*, of small bits of grain and particles of bran and germ. This *mitama* is usually soaked and pounded to flour or may be cooked as a snack.

Where maize is scarce, *e.g.*, parts of the Mzimba and Ncheu Districts, beer is made from bran instead of from flour.

Yields of the Various Products of Maize.

Experiments were carried out during 1939 to determine the proportions of the various fractions of the grain obtained as a result of pounding maize under village conditions. The results are shewn in the Table below.

	Expt. I		*Expt. II*		*Expt. III*	
Weight of sample of maize ..	22 lb.	..	4½ lb.	..	4½ lbs.	
	%		%		%	
Flour	49.5	..	51.0	..	60.5	
Small pieces of endosperm (*mitama*) ..	8.8	..	7.6	..	7.0	
Coarse inedible bran ..	5.6	..	7.5	..	6.4	
Fine edible bran	14.5 } 24.0	..	16.2 } 26.4	..	18.7 } 30.1	
Germ with fine bran ..	3.9	..	2.7	..	5.0	
Waste	18.7	..	15.6	..	2.4	

Owing to the fact that water is added during the pounding, the water content varies during the process. These weight changes have been allowed for in the above results.

In Experiment 1, the pounding was done by a woman under ordinary village conditions where there is wastage at all stages. Grain spills over the edge of the mortar during pounding; some of the grain is invariably scattered beyond the confines of the mat during the many siftings; fowls are continually hanging around to get their share and to a lesser extent goats and dogs take a toll. Even in still weather the loss is considerable, *e.g.*, nearly 20 per cent., but is increased when there is a high wind that blows the flour from the mat while it is drying.

Experiments II and III were carried out on a smaller scale and were performed carefully to avoid waste as far as possible.

Although these results are only approximate, the figures in III are in fairly close agreement with those given in more carefully conducted experiments carried out in Tanganyika* under outdoor conditions with minimum of preventable loss, hence it can be assumed that the results of Experiment I give a fair approximation for pounding under ordinary village conditions.

The Milling of Maize.

There are several mills in the country of the pulverizer type which produce a fine meal which includes the whole of the bran: thus there are no milling losses. Commonly, however, for the feeding of labour and the inmates of such institutions as hospitals, schools and prisons, a small handmill of the Colonist type is used. Provided that the plates are fairly new and the grain is put through three times, a fairly fine meal results. Even so on inspection it will be found that much of the bran is still in relatively large flakes. If a handmill is used, it is recommended that the meal be sifted. It was found that after sifting 10 lb. of meal, 1½ lb. (15 per cent.), was coarse bran and 2½ lbs. (22 per cent.) consisted of coarse meal, *mitama*. The *mitama* can either be remilled to flour or used to make gruel, *phala*.

Flour From Green Maize, *citibu* (C).

In times of shortage of food, flour is prepared from the fresh grain. If the grain is still soft, it is cut from the cob with a knife, given a preliminary pounding, dried in the sun for a few hours and then pounded to flour. When the grain is drying out, it is known as *ciwazo*, it is pounded to remove the bran and the rest of the grain pounded to flour after drying in the sun. The bran is soft so is not thrown away but mixed again with the flour for porridge.

Methods of Cooking Maize

(*a*) *To make porridge, nsima.*

The pot, usually earthenware in villages and metal in towns, is half filled with water and put on the fire. Two or three handfuls of flour are mixed with cold water to a smooth paste and when the water is boiling, the mixture is poured in and well stirred to form a thin gruel, *phala*. It is left to boil for 5–10 minutes. A gourdful of the gruel is then taken out and flour added rapidly, a handful at a time, with repeated stirring by means of a wooden stick. The mixture is by this time very stiff. After a further five minutes, the gourdful of gruel previously removed is poured back with further stirring and beating. More flour is added until the consistency is judged to be correct. Some tribes, *e.g.*, the aNgoni, like their porridge a good deal softer than others. The product is always sufficiently hard for it to be possible to break off lumps cleanly from the main mass. The total time of cooking from the adding of the first handful of flour until the removal of the pot from the fire is 15–20 minutes.

Sometimes the gourdful of gruel is not removed and flour merely added until the right consistency is reached. In either method the final stirring often takes place after the pot has been taken from the fire. The pot is propped firmly between

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* "*The preparation of Maize flour in Tanganyika Territory.*" R. R. Scott, South African Medical Journal, June 9th 1943.

the feet and a very vigorous figure of eight stirring movement done, using the edge of the pot as a fulcrum. The making of good porridge, *nsima*, is a highly skilled task and one for which the African girl prepares herself by starting to make it at an early age.

As soon as the porridge is ready, the well-washed food baskets or bowls are sprinkled with water and the porridge divided out into them by means of a large wooden spoon, *cipande*. The mass is very carefully smoothed into an even dome-shape with the help of water to give it a finished appearance. It is now ready to send to the eating place, *bwalo*, together with the smaller bowls of side-dishes which have been previously cooked. Should any porridge be left over, it is usually given to the children cold next morning and it is called *nkute*. In times of hunger, it is remade into porridge by boiling with some more flour.

(*b*) *Porridge containing bran, madea* or *gaga*.

When maize is scarce, a proportion of fine bran meal is mixed with the flour. It is cooked as follows:—a handful is added to boiling water, after a few minutes, the remainder is added and the whole boiled for about 10 minutes with continual stirring. The consistency is stiffer than that of porridge. It is not considered a suitable food for men and even women are often ashamed to admit that they eat it. It is, however, said to be more sustaining than ordinary porridge and gives more strength for hoeing. Women eat it fairly frequently, especially when the maize in the grain store is getting low. It is the custom for women of most tribes to eat more of it when they are pregnant than at other times and also to eat it for a few days after the birth of the baby (aCewa women) as it is thought to be a lactagogue. Certain side-dishes, such as the slippery leaves, *thelele*, are suitable to eat with it.

The true host when offering *nsima* to his guest shows courtesy by referring to it deprecatingly as *gaga*.

(*c*) *Porridge made from milled meal, mgayiwa*.

In institutions and in increasing amounts where fine meal is procurable, it is being used for porridge. The method is the same as for *gaga*. As the meal has had no soaking to soften the grain and to start off the various biochemical break-down processes, it needs a good deal longer cooking than either *nsima* or *gaga*. This point is not always realized and hence there are justifiable complaints of the indigestibility of the product due to insufficient cooking. Because of the large amount of indigestible bran present, larger weights of maize meal are needed to satisfy the the appetite than of flour.

(*d*) *Gruel for infants and invalids*.

Gruel is fed to babies from birth and is given to the aged and the sick. A handful of flour is put into boiling water in a pot on the fire. The mixture is well stirred and after a considerable range of time of boiling (1–10 minutes), the pot is removed and stirring continued for another five minutes. The consistency is adjusted by adding more water or flour as the case may be. A very watery gruel is given to young babies and progressively thickened until it reaches the consistency of the porridge eaten by an adult.

Cooking of the Various Fractions of Maize Separated During Pounding.

The different parts of the grain are prepared by the women during pounding and in consequence are almost exclusively eaten by them, the girls who help them and the young children who stay all day in the villages.

(*a*) *Cingowe, mangungu*.

The whole grains with bran removed, picked out by hand after the first pounding are boiled until soft. Salt, sugar and occasionally groundnuts, beans or tomatoes may be added. They are occasionally cooked with milk instead of water.

(*b*) *Cindongwa, misere.*

Sometimes small fragments of broken grain are separated at the first pounding. Much more commonly those left after the second pounding usually called *misere*, are boiled until soft with water. The product has much the consistency of semolina of wheat and is one of the first dishes that a little girl learns to cook. It is used by many of the Dutch Missionaries as a porridge for breakfast.

(*c*) *Germ meal gruel, phala la gaga, mdzoole.*

A fraction rich in germ is sometimes separated from the bran. It is then boiled and eaten with no further additions.

Cooking of Whole Grain Maize.

Unpounded maize is always at hand in the grain store except in times of hunger and hence it forms the commonest snack.

(*a*) *Roasted or parched maize, cimanga cokazinga or cooca.*

The cobs are roasted whole, *cimanga cooca* or the grains are stripped off, *cimanga cokazinga*, and held on a tin or piece of pot in the fire. The grains of some kinds, popcorn, *mbuluuli*, swell up and burst the skin; these kinds are especially well liked.

(*b*) *Cimanga copulitsa.*

As above in (*a*) except that the grains are covered over with ashes and are pulled one by one from the ashes and eaten.

(*c*) *Boiled maize either alone or with beans, cingowe, makande, cimanga cophika, ngata.*

The whole cob may be boiled, *cimanga cophika*, until the grains are soft (3–4 hours). In this form maize is often taken on journeys. More often the grain is stripped from the cob and boiled either alone or with beans, *ngata*. Salt may be added.

(*d*) *Cifumbu* (C), *kutukutu* (Y), *cigodo* (N).

The grains are roasted, pounded until very fine and salt is added. The mixture is eaten thus by the aged and toothless.

(*e*) *Green corn, mealies, cimanga caciwisi, mondokwa, dowe.*

The favourite method is to roast the cob contained in its sheath, in the ashes, *cimanga cooca*. The cobs are also very commonly boiled *cimanga cophika*. For the toothless whether old or young, the cob may be pounded while still in its sheath until the grains are broken and soft and then roasted in the ashes. In Karonga the grain is ground when fresh, then wrapped in a banana leaf and boiled. In this form, *cipipi*, it can be eaten with a side-dish or relish.

Dried green maize, cimanga cofutsa (N), *muvusarere* (Ngu).

Green maize can be kept for the best part of a year by par-boiling it and then hanging the cobs in bundles of four or five on the roof or on a tree to dry. When thoroughly dry, they are stored in an earthenware pot. When needed they are reboiled and are said to taste almost as good as when fresh.

The Use of the Liquid from Soaked Maize, *matsukwa, cisunje.*

Both the aCewa and the aNgoni women use the sour liquid obtained from soaking maize for various purposes. For example, they cook leaves such as those of sweet potato and a wild one *mlombwe* (*Thunbergia* sp.) in this liquid and they frequently make gruel with it especially if they have a baby feeding at the breast.

Potashes from maize products.

The empty sheaths and cobs of maize are very commonly burnt and the liquid obtained from allowing water to percolate through them is called *cidulo* and is used for softening and flavouring leaves.

Green maize stems, misinde, miswaga (Y).

The juicy stems of maize are extremely popular and are chewed in large quantities especially by children. A sweet drink is made from them when they are plentiful. The stalks are broken across and pounded, then soaked in water and the extract thickened to make a gruel with flour. Sometimes pounded green maize is added to the sweet juice instead of flour. The drink is boiled and strained and consumed while still hot.

The Brewing of Beer, *mowa, peri.*

To brew beer, flour and malt from sprouted grain are needed. The flour in most common use is maize flour followed by cassava with finger millet and maize bran taking third place.

Much the most popular malt is made from finger millet, because it gives a sweet product. Maize is also in common use with kaffir corn, bullrush millet and rice used locally.

The process in broad outline is the same in all parts of the country hence a detailed description will be given of brewing as carried out in the Kota Kota District and a few notes added on brewing in other districts.

Maize Beer as Made in the Hills and Foothills of the Kota Kota District.

Maize flour is used with a mixture of maize and finger millet malts.

Preparation of Malt, *cimera.*

(*a*) *From maize.*

The shelled grain is soaked for a day, the water poured off and the grain put in a large earthenware pot. It is covered with leaves and left for two to three days according to temperature until germinated. The grain is stirred daily during sprouting to prevent matting, then dried in the sun for a short while. In some cases it may be completely dried at this stage especially when it is to be used for sweet beer, more often it is put back into the pot and left for 3–4 weeks when it is more thoroughly sundried and either used at once for sweet beer or allowed to mature for beer.

The malt is pounded before use until the grains are broken into fairly small fragments. A fraction of the hard bits of the grain (about 5–10 per cent.) of the whole, *ncece za cimera,* is kept aside and not used for beer-making.

(*b*) *From finger millet, mawere.*

The grain is soaked for a day, the water poured off and the grain put into an earthenware pot and covered with leaves. It is ground between stones and may be used at once or after storage for one or two months.

Brewing.

First day. Maize flour is mixed with cold water to form a paste. This is poured into water which is already boiling in a large earthenware pot. The mixture is stirred and boiled for about five minutes, ladled into other larger earthenware pots and allowed to cool. Pounded maize malt is stirred in and the mixture left overnight.

Second day. The liquid is ladled back into the cooking pots and given a thorough boiling. It is then ladled back again into the brewing pots.

Third day. The brew is allowed to stand.

Fourth day. More maize malt is pounded, a little water is added to it and the mixture left in the hut in a warm place overnight.

Fifth day. The malt is repounded and sieved, a little is added to each pot of beer and the rest mixed with cold water, poured into hot water and boiled for a short time. It is then divided up among the pots. When cool, the beer is strained through baskets into smaller pots and a quantity of the coarser bran thus removed. Some ground malt made from finger millet is now boiled and when cool divided among the pots. The beer can be drunk now but usually it is kept until the next day.

Preparation of Sweet Beer, *tobwa, cindongwa.*

The method is similar except that fresh malt is always used and the brew is allowed to ferment for a shorter time. The day of drinking depends upon the rules of the Mission to which the brewer belongs. It may be on the second day onwards and in many cases the brew is little distinguishable from true beer.

Amounts of ingredients used.

The following is an example of the amounts used for a brew made in the Kota Kota Hills in 1939:—

Weight of maize flour	50 lbs.
Weight of malt (maize) added on 1st day ..	22 lbs.
Weight of malt (maize) ,, ,, 5th ,, ..	26 lbs.
Weight of malt (finger millet) added on 5th day	6 lbs.

The brew was a large one of about 50–60 gallons. From the measurement of many brews it is reckoned that about 3 lbs. of grain is used to brew a gallon of beer.

The temperatures at the various stages of brewing were recorded, it is of interest to find that African women by long experience and handing on of the knowledge from generation to generation, have learnt to adjust the temperature of the brew after the boiling on the first day to about 40 degrees Centigrade, the optimal temperature for enzyme action.

The cost of this type of beer in 1939 was 1d–2d a gallon.

Cassava Beer. (Kota Kota Lake-shore).

First day. A thin gruel is made as for maize beer but because cassava flour burns very easily, great care is needed. The product is always slightly lumpy and brown in colour. When the malt is added to the cooled thick gruel, it immediately thins down and the lumps disappear.

Second day. The brew is very thoroughly boiled for a longer time than with maize flour, otherwise the brew may be bitter.

Third day. By this time the brew has solidified to a jelly with round patches of moulds on the top. It thins down as soon as the malt is added and begins to ferment very rapidly. Unless great care is taken, cassava beer when made at the high temperature of the lake-shore, often goes sour so that whole brews are spoilt. Usually if this happens, they are used for the illicit distilling of a raw spirit, *kacasu.*

Tobwa, sweet beer, is made from cassava flour in the same way as with maize flour.

Cassava Beer (Mlanje District).

Cassava beer is brewed commonly in the Mlanje District with Kaffir corn as malt.

First day. A gruel is made by pouring water on to a paste of the flour. Pounded malt is added.

Second day. The mixture is boiled.

Third day. A large amount of pounded malt is added. A quantity of fresh gruel is made from flour and added when cool to the brew.

Fourth day. The beer is ready to drink.

Finger Millet Beer (Karonga District) *ubwala* (Nk), peri (Tu).

Beer made from finger millet is in common use in all parts of the country north of Kasungu. A thick gruel is made from flour prepared from sprouted finger millet. This is left for four days, by which time it has thinned down. More gruel is now made of the same kind of flour and added to the brew. The beer is ready to drink next day. The beer is relatively dear and in 1942 was selling at 1s for about 1½ gallons. In cold weather the brew may take a full week to make.

Finger Millet and Maize Bran Beer (Kaluluma's area, Kasungu District).

First day. Maize bran is mixed with roasted and ground finger millet, boiling water is poured on and the mixture stirred. Malt from finger millet is added.

Second day. The mixture is well boiled.

Third day. The mixture is left.

Fourth day. A small amount of malt is added to each pot.

Fifth day. A large amount of finger millet is ground, enough boiling water is poured into it to make it of a stiff consistency. It is left to cool and then divided up among the pots. The brew begins now to ferment rapidly.

Sixth day. The beer is strained and is ready to drink.

Approximate amounts used — 6 lbs. maize bran to 50 lbs. finger millet.

Beer (*Port Herald*).

A variety of grains are available so that many variations of brews are made. Usually the flour is of maize, kaffir corn or bulrush millet and the malt of one of the two latter.

First day. Boiling water is poured on to a paste of flour and water to make a gruel. Some pounded malt is added.

Second day. The mixture is well boiled until about two-thirds of the water has evaporated.

Third and fourth days. The brew is left.

Fifth day. A small amount of pounded malt is added.

Sixth day. Some fresh gruel is made as for the first day and added to the brew when it is cold. More malt is added to all the pots.

Seventh day. The beer is ready to drink.

A mixture of malt of kaffir corn and bulrush millet gives a good strong beer while that of maize or finger millet is thought less highly of.

Beer (*Fort Johnston*).

The flour is of maize, kaffir corn or rice and the malt of kaffir corn or finger millet.

Bran Beer (*Ncheu*).

A large amount of maize bran is soaked for three or four days, the coarse flakes are sifted off and a thick milky liquid left.

First day. The milky liquid is boiled.

Second day. The liquid is left.

Third day. A mixture of pounded malt of maize and finger millet is boiled and then added to the pots.

Fourth day. The beer is ready to drink.

Bran beer is made in other parts of the country where maize is short, *e.g.*, parts of the Mzimba District.

Kabanga (*S. Province*).

A brew made from maize bran and sugar is (1943) becoming very popular in the Southern Province. It is probably of lower nutritive value than ordinary beer and it is far more intoxicating.

Maize bran is soaked for a day and then boiled for a long time, the pot may be filled up perhaps twice with water and reboiled. It is now left until cold then strained.

Sugar is now added in relatively large amounts and the brew begins to ferment rapidly.

About 6 lbs. of sugar are used to make 10 gallons of beer. As the drink is so intoxicating, it is sold in small amounts, half a pint cups at 1d a cup (1943).

SUMMARY OF THE VARIOUS FORMS AND FRACTIONS OF MAIZE.

	Native names
A. Whole grain	
Maize on cob or shelled	*Cimanga*
Maize, green, young	*Cimanga cachiwisi, mondokwa* (C)
Maize, green, older,	*Mpesi* (N), *ndwadwa* (Tu)
Maize, green, dried	*Cimanga cofutsa* (N), *muvusarere*
Maize, shelled, roasted or parched	*Cimanga cokazinga* (N)
Maize, shelled, cooked in ashes	*Cimanga copulitsa* (N)
Maize, shelled, popcorn	*Mbulu uli* (N)
Maize on cob, fresh or dry, roasted	*Cimanga cooca* (N)
Maize on cob, fresh or dry, boiled	*Cimanga cophika* (N)
B. Fractions of grain	
Grain after first pounding, before sifting off of bran, sometimes applied to unpounded grain	*Tsokwe, musoro* (N), *mphale* (Tu), *cokwe* (Tu)
The whole of the bran	*Madea* (N), *gaga* (C), *matimba* (Y) ?, *makunyika* (Ngu), *buswa* (Nk)
Large coarse flakes of bran usually thrown away	*Mankhupete, mankhukwa* (N), *misapi* (Y), *gaga* (Tu), *mashasha* (Ng)
Fragments of germ, endosperm and bran sifted from bran on day of pounding	*Mzoole* (C), *phala la madea* (cooked product) (N), *tatita* (Dedza)
As above but separated when bran is dry	*Mitama ya madea, nsece za gaga*
Whole grain with bran (Pericarp), removed	*Cingowe* (C), *ntakula* (Ng), *ngata* (?), *nkowe* (Tu), *mangungu* (Y)
Partly broken grain with bran removed, term applied before, during and after soaking	*Mphale* (N), *mlowe* (after), *msokolo* (before), *esolo* (Ngu)
As above but applied especially to the large, only slightly broken grains	*Lipande* (N), *lupande* (Tu), *lusika* (N).
Small pieces of grain separated after first pounding	*Dzitokola, tsesu* (Dedza) *cindongwa, misere* (N), *mitama* (Y), *citaka* (C), *lusenga la mcokwe* (Tu).
Small hard fragments remaining after second pounding	*Mitama, misele* (N), *nsece* (C), *lusenga* (Y), *mahenga* (Ng), *nsenga* (Tu)
Fine flour prepared by pounding	*Ufa* (N), *ufu* (Tu), *utandi* (Y)
Flour prepared from green maize	*Ufa wa citibu* (N)
Milled meal	*Mgayiwa* (N)
Malt prepared by soaking and sprouting grain	*Cimera* (N), *cilungo* (Y)
Small pieces of grain separated from malt	*Misere ya cimera* (N), *nsenga sya ukana* (Y)
Coarse husks strained from beer	*Masika* (C), *masese* (Ng), *nsenga sya ukana* (Y).
Green stems of maize	*Misinde* (N), *miswaga* (Y), *miwa* (Nk), *mapekesi* (Tu)
Dry stems of maize	*Mapesi*
Empty cob after maize has been stripped off	*Citsong'ontho* (N)
Empty sheaths	*Makoko*
Sour liquid in which maize has been soaked	*Matsukwa* (C), *citiwi* (Y), *cisunje, ntombera* (Ng), *mteteka* (T).

Ref. 13; 23; 27.

484. Ziziphus mauritiana Lam. (Rhamnac.) (Syn. Z. *jujuba* Lam. non Mill.)
Masawo (N), name for fruits, *msondoka* (Y).

A much-branched tree up to 20 ft. usually with recurved thorns, the leaves are ovate, 2–3 ins. long with three main veins, underside of leaves, leaf stalks and young stems covered by thick whitish or pale tomentum; fruits, yellow, the size of a cherry, fruits ripe in April and May (Lake-shore). In drier parts of lower mountain and plateau areas, known to be common in N.A. Mponda's area, Fort Johnston District.

The fruits are edible, they have a pleasant flavour and are thirst-quenching. The fruits are also used as a stomach medicine. Occasionally, raw spirit, *kacasu*, is distilled from the fermented fruits. Timber is reddish-brown and is used for native beds, walking sticks, etc.

485. Z. mucronata Willd. (Rhamnac.).
Kankhande (N).

A deciduous tree growing to 30 ft., with spreading canopy, leaves almost glabrous, stipules spiny, usually recurved; fruits brown, the size of a small cherry.

The fruits are edible, the flesh sweet and mealy. The flesh is allowed to ferment and a raw spirit, *kacasu*, distilled from it.

Ref. 14; 26.

486. Zornia sp. (Papil.).
Kandudwa, see **Alternanthera sessilis** for plant of same native name.

A herb found near water with a red pea-like flower, flowering in October (Dedza).

The leaves are fairly frequently cooked as a side-dish.

B 1 *Calacakabawi* (C), claw of hawk (Convol.).

A creeping herb found at the Lake-shore; the leaves are often cooked as a side-dish, they are available for most of the year. (Kota Kota)

B 2 *Cikolikoli.*

Boys eat the roots (Kasungu and Ncheu).

B 3 *Cikuduwere* (C).

The leaves are cooked from October to November if no others are to be found. They do not need potashes, groundnuts are added. (Kasungu)

B 4 *Cimbano* (Tu).

A herb found in gardens; the leaves are eaten from January to June cooked without potashes. (Kaluluma's area, Kasungu District and Mzimba.)

B 5 *Cimbonga* (C).

A branched tuber found on streambanks in the foothills. After washing it is boiled until soft, then stirred very well and salt added.

B 6 *Cimwendomphoko* (C).

The leaves are cooked from October to November only if no others are to be found. They form a slimy dish and groundnuts are added. (Kasungu)

B 7 *Gulungwa* (He), an edible leaf.

B 8 *Kadyalitazi.*

The root is eaten from October to December (Mphunzi, Dedza).

B 9 *Kafungu, kafungo* (C).

A small herb found both in moist and dry places; the leaves are cooked with or without potashes, groundnuts and tomatoes are added. The product is well liked (Mvera, Dowa District.).

B 10 *Kajinji* (Port Herald).

The leaves are edible.

B 11 *Kakalu* (Port Herald).

A plant found near water whose leaves are edible.

B 12 *Kalomendo* (Su), an edible leaf.

B 13 *Kalule* (Port Herald).

The leaves are cooked with potashes to form a slimy product, groundnuts are not added.

B 14 *Kamciputu* (N).

The leaves are occasionally pounded and cooked with potashes to form a slimy product, *thelele.*

B 15 *Kamulukani* (Nk), an edible leaf.

B 16 *Kamupanda* (C), *kampanda.*

A shrub with large leaves, which is easily grown from stake and hence is often planted as a fence for streambed gardens.

B 17 *Kangakholowa* (N), *mbatata thengo,* meaning wild potato.

The leaves and roots are eaten.

B 18 *Kansikidzi.*

The root is eaten (Ncheu).

B 19 *Kanyaminyami* (C).

A small herb found in the bush; the leaves are cooked after pounding with potashes; groundnuts and tomatoes are added. (Mvera, Dowa District.)

B 20 *Kathankazuna* (C). (Papil.)

A herb with long cylindrical edible taproot (Lilongwe).

B 21 *Katozi* (Su), an edible leaf.

B 22 *Katsobola.*

The root is eaten in July and August if the bush is burnt early so that the plants can be found.

B 23 *Kwapa* (Tu), *majuwadoro* (Ng).

A herb with long strap-shaped leaves, grows in moist situations. The leaves are cooked after being broken into small pieces, potashes are needed to soften them and they form a slimy product, *thelele* (Ekwendeni, Mzimba District).

B 24 *Malimba, kalingena* (C).

A very small herb whose leaves are cooked with potashes to form a slimy product, *thelele* (Dzenza, Lilongwe).

B 25 *Mayingwe* (C).

The very small leaves are cooked occasionally for a side-dish (Kota Kota Lakeshore).

B 26 *Mkomwa.*

A tree found growing up to 3,500 ft. with edible fruit and kernel.

B 27 *Mlanya* (Y).

The roots are cooked as potatoes and are not bitter; they are eaten in October and November (Fort Johnston).

B 28 *Mpece.*

The root is eaten raw in November to December (Mphunzi, Dedza).

B 29 *Mtombodwa.*

A herb with succulent stems found at all elevations. The stems are chewed as they are refreshing. They are often chewed by men when going hunting (Ncheu and Dedza Districts).

B 30 *Musimphi* (To), an edible leaf.

B 31 *Muyuyu* (To, an edible leaf.

B 32 *Nakumbira* (N), probably *Amaranthaceae.*

The leaves are cooked with or without potashes and are often mixed with *namabondo,* see B 34.

B 33 *Nalepule* (C).

A herb with large leaves found both in the hills and near the Lake; the leaves are cooked with potashes, groundnuts and tomatoes are added. The dish is said to taste like *limanda,* (*Hibiscus* sp).

B 34 *Namabondo.*

A herb found widespread; the leaves are cooked as a side-dish, sometimes potashes are used, groundnuts and tomatoes are added (Mlanje).

B 35 *Namzalamba* (C).

A tree which produces a strong bird lime, *ulimbo,* and which is sometimes planted for this purpose.

B 36 *Nderepule, kamwala.*

A herb with long fleshy leaves found near water. The leaves are cooked with potashes and form a slimy product, *thelele.*

B 37 *Ngotwe, nkhotwe* (C), *ndiabawala* (Y), probably *Asclepiadaceae.*

A straggling herb; the leaves are cooked fairly often with or without potashes. They may first be pounded, the product is mealy in consistency and is well liked (Kota Kota foothills, Lilongwe and Fort Johnston hills).

B 38 *Nkhonkho.*

A kind of water lily; the tubers are eaten (Mphunzi, Dedza).

B 39 *Nkwekwete* (He), an edible leaf.

B 40 *Pulolo* (He), an edible leaf.

B 41 *Thyothyo* (Port Herald).

Found in the hills, the leaves are cooked as a side-dish.

B 42 *Usakasaka* (Su), an edible leaf

Index to English and Vernacular Names

Explanatory Note

Unfortunately, it has been impossible to consult experts in the various Bantu languages current in Nyasaland on the subject of the correct spelling of the vernacular names. I fully realize that there are many imperfections; this is particularly so in the use of the letter " h ", of " m " and " n " and of the difficult " w " and " b " of the Northern Province.

The English " ch " sound has in all cases been represented by the letter " c " in the Bantu word, *e.g.*, *chimanga* is spelt *cimanga*. As a very large number of the names begin with m, these have been indexed under their first two letters, *e.g.*, *ma*, *mb*, etc.

When using the index the following points should be borne in mind:—

1. That " l " and " r " are interchangeable
2. That " m " and " n " are often incorrectly interchanged or omitted at the beginning of a word
3. That " w " and " b " are often confused
4. That " v " and " vb, " " s " and " ts, " " z " and " dz " are used inconsistently
5. That " h " is often wrongly used
6. That prefixes, such as *ci*, *ka* (little) and *naka* (like) are often used and may disguise the real word.

Plants Classified According to their Uses

Explanatory Note

In the next section will be found lists of plants grouped under the following headings:—

A. Edible Plants
1. Cereals
2. Fruits, cultivated
3. Fruits, wild
4. Leaves, cultivated
5. Leaves, wild
6. Legumes, cultivated
7. Legumes, wild
8. Nuts and other seeds, cultivated
9. Nuts and other seeds, wild
10. Oil-producing plants (mainly edible)
11. Roots and tubers, cultivated
12. Roots and tubers, wild
13. Plants used as stock feed

B. Plants with a Medicinal Value

C. Trees whose Wood Is Used for Timber or other Uses

D. Plants Used for Fibre and Textiles

E. Plants with Miscellaneous Uses
1. Livehedge plants
2. Plants used as dyes
3. Plants used for their gum or latex
4. Trees which make good charcoal
5. Fish poisons and insecticides
6. Plants burnt for their ash
7. Plants used as soap-substitutes

The lists of edible plants are reasonably complete as I am interested primarily in nutrition but there are many gaps, maybe important ones, in the other lists, particularly is this the case in regard to dye plants and those used for stock feed.

To remedy these shortcomings I would like to draw the attention of readers to the following excellent lists drawn up by Dr. P. J. Greenway which include many plants to be found in Nyasaland:—

"Amani Memoirs". Dyeing and Tanning Plants in East Africa. Reprinted from *Bull. Imp. Inst.*, Vol. XXXIX (1941), No. 3.

East African Plants of proved or potential value as drug producers. *East African Agricultural Journal*, Jan., 1941.

Gums, resinous and mucilaginous plants in East Africa. Supplement to *East African Agricultural Journal*, April, 1941.

Vegetable Fibres and Flosses in East Africa. *East African Agricultural Journal*, Vol. XV (1950), No. 3.

and to the following list of grasses:—

Jackson, G. and Wiehe, P.O. *An annotated list of Nyasaland Grasses.* (Dale)

Almost every plant that one comes across seems to have some medicinal value to the African, so that particular list must not be taken too seriously.

J. W.

A. EDIBLE PLANTS

1. Cereals

		Number
Eleusine coracana	Finger millet	195
Oryza sativa	Rice	328
Pennisetum typhoides	Bulrush millet	344
Secale cereale	Rye	401
Sorghum vulgare	Kaffir corn	415
Zea mays	Maize	483

2. Fruits, Cultivated

Anacardium occidentale	Cashew nut	36
Ananas comosus	Pineapple	37
Annona sp.	Custard apple	40
Carica papaya	Pawpaw	90
Citrullus vulgaris	Water Melon	111
Citrus aurantifolia	Lime	112
Citrus limonia	Lemon	113
Citrus paradisa	Grapefruit	114
Citrus sinensis	Orange	115
**Cucumis melo*	Cucumber	150
**Cucumis sativus*	Cucumber	152
**Cucumis* sp.	Prickly cucumber	153–4
**Cucurbita maxima*	Pumpkin or Squash	155
Cyphomandra betacea	Tree tomato	161
**Hibiscus esculenta*	Okra	241
Hibiscus sabdariffa	Roselle	244
**Lagenaria vulgaris*	Gourd	278
Litchi chinensis	Litchi	291
**Luffa cylindrica*	Loofah	295
**Lycopersicum esculentum*	Tomato	296
Malus pumila	Apple	297
Mangifera indica	Mango	298
Morus alba	Mulberry	310
Musa spp.	Bananas and plantains	316
Passiflora edulis	Passion fruit	340
Persea americana	Avocado pear	348
Phoenix dactylifera	Date	353
Physalis peruviana	Cape Gooseberry	358
Prunus armeniaca	Apricot	371
Prunus persica	Peach	373
Psidium guajava	Guava	375
Punica granatum	Pomegranate	381
**Sechium edule*	Chocho	403
**Solanum melongena*	Egg fruit	411

*** eaten as vegetables.**

3. Fruits, Wild

	Chinyanja name	
Adansonia digitata	Mlambe	9
Anisophyllea sp.	Maciliciti	38
Annona chrysophylla	Mpoza	39
Antidesma venosum	Mpungulira	44
Bauhinia fassoglensis	Mpandwapansi	55
Borassus aethiopum	Mvumo	65
Bridelia micrantha	Mpasa	79
Canthium crassum	Mvilo	86
Carissa edulis	Mpabulu	91
Cissus buchanani	Namwalicece	107
Cissus cornifolia	Mbulunbunji	108
Cissus jatrophoides	Mwinimunda	109
Coccinia palmata	Fwifwi	119
Coccinia quinqueloba	Cinkaka	120
Cordia abyssinica	Mbwabwa	133
Cordyla africana	Mtondo	134
Cussonia kirkii	Mbwabwa	157
Cussonia spicata	Camdimbo	158
Diospyros mespiliformis	Msumwa	176
Ekebergia arborea	Mabere ya ng'ombe	191

		Number
Fadogia odorata	Mkumbakumba	211
Ficus mallatocarpa	Mtundu	214
Ficus spp.	Nkhuyu	217
Flacourtia indica	Mtawa	218
Garcinia spp.	Mpimbi	221
Gardenia manganjae	Mzondo	222
Grewia woodiana	Tensa	226
Hirtella sp.	Mphungumutu	246
Hyphaene sp.	Mgwalangwa	252
Landolphia kirkii	Mpira	279
Landolphia parvifolia	Kapwati	280
Landolphia sp.	Makombe	281
Lannea discolor	Sidyatungu	282
Lannea fulva	Kitongomilo	283
Lannea stuhlmannii	Cirusa	285
Lantana salviifolia	Nakasonde (Y)	286
Mimusops sp.	Njolokwa	306
Myrianthus arboreus	Ciwele	317
Olea crysophylla	Nakatimba	322
Pachystela brevipes	Mpimbi	335
Parinari spp.	Muula	336–38
Parkia filicoidea	Mkundi	339
Phyllanthus muellerianus	—	357
Popowia obovata	Mfulafula	367
Pseudolachnostylis sp.	Msolo	374
Pyrenocantha sp.	Mcende	383
Rhoicissus erythrodes	Mpeza	390
Rhus natalensis	Mapirankukute	392
Rubus spp.	Mpandankhuku	395
Sclerocarya caffra	Mfula	400
Solanum spp.	Many names	410–413
Sorindeia obtusifolia	Sasola	416
Strychnos sp.	Mateme, etc.	426
Syzygium cordatum	Nyowe	427
Syzygium quineense	Ntepera (Y)	428
Syzygium owariense	Mafuwa	429
Tamarindus indica	Bwemba	433
Temnocalyx obovatus	Maso a ng'ombe	435
Terminalia catappa	Mkungu	439
Turraea nilotica	Msindila	455
Uapaca spp.	Msuku	456–58
Uvaria sp.	Ukonde	462
Vangueria spp.	Mzilu	463–4
Vitex spp.	Mpindimbi, etc.	475–77
Xymalos monospora	Nakaswaga (Y)	481
Zanha golungensis	Mkwidio	482
Ziziphus spp.	Kankhande	484–5

4. Leaves, Cultivated

Beta vulgaris	Beetroot, Spinach beet	59–60
Brassica chinensis	Chinese cabbage	73
Brassica juncea	Indian mustard	74
Brassica napus	Swede and rape	75–76
Brassica oleracea	Cabbage	77
Colocasia antiquorum	Taro	124
Cucurbita maxima	Pumpkin, mkhwani	155
Hibiscus rosa-sinensis	Rose of China	243
Ipomea batatas	Sweet potato, kholowa	256
Lactuca sativa	Lettuce	277
Manihot esculenta	Cassava, ntapasya	299
Phaseolus vulgaris	Haricot bean, khwanya	352
Pisum sativum	Field pea, nzera	362
Spinacia oleracea	Spinach	420
Tetragona expansa	Spinach, New Zealand	441
Vigna unguiculata	Cowpea, mtambe	473

5. Leaves, Wild

Acacia macrothyrsa	Mnkhumbu	4
Adansonia digitata	Mlambe	9

		Number
Adenia cissampeloides	Mlozi	10
Aerva lanata	Cidyonko	12
Afzelia quanzensis	Msambamfumu	14
Allophylus alnifolius	—	28
Alternanthera sessilis	Kandudwa	29
Amaranthus spp.	Bonongwe	31–35
Anthericum sp.	Kaluwatete	42
Argemone mexicana	Mkumajalaga	47
Arthrosolen sp.	Kazinda	48
Astragalus sp.	Nacilare	52
Basella alba	Mndele	54
Bidens pilosa	Cinomba	61
Bidens schimperi	Masanjala	62
Boscia sp...	Mpetu	66
Canthium sp.	Cisunkunthu	87
Cardiospermum sp.	Msendecere	89
Cassia singueana	Mpatsacokolo	93
Celosia argentea	Ndangale	96
Celosia trigyna	Kaphika ulesi	97
Ceropegia papillata	Fwafwalingo	100
Ceropegia sp.	Cang'ombe	101
Cleome monophylla	Njerenjedza	117
Coccinia quinqueloba	Cinkaka	120
Commelina sp.	Khovani	128
Corchorus olitorius	Cilenzi	131
Corchorus trilocularis	Denje	132
Crassocephalum rubens	Cinusi	136
Crotalaria spp.	Many names	138–147
Cryptolepis oblongifolia	Bwazi	148
Cucumis hirsutus	Mkuwikuwi	149
Cucumis metuliferous	Kangakhwani	151
Cynanchum schistoglossum	Mpuludwa	159
* *Dolichos* spp.	Many names	180–188
Dorstenia sp.	Mbwangululu	189
Emilia coccinia	Cinguwo	196
Fagara nitens	Mlunguculu	212
Glycine javanica	Yembe	224
Grumilea ungoniensis	Cisunkunthu	228
Gynandropsis gynandra	Luni	230
Hibiscus spp.	Many names	238–245
Ipomoea spp.	Many names	257–260
Indigofera sp.	Denje	254
Jussiaea abyssinicus	—	266
Justicia spp.	Many names	267–270
Lightfootia sp.	Cisiso	289
Manihot spp.	Mpira	300
Melochia corchorifolia	Cipondavu	304
Momordica foetida	Tungwi	308
Moringa oleifera	Camwamba	309
Nesaea sp.	Kwete	318
Nidorella microcephala	Sungubuwa	319
Ormocarpum sp.	Phuluphulu	327
Oxalis sp.	Katakula	332
Oxygonum atriplicifolium	Kalaseweni	333
Pentarrhinum sp.	Cindewe, kafungo	345–346
Pentanisia schweinfurthii	Ngulungundi	347
Polygonum spp.	Many names	364–366
Portulaca oleracea	Matakoatsanu	368
Ranunculus multifidus	Khobedi	386
Rumex nepalensis	Qakazea (Ng)	396
Secamone sp.	Bwazi (C)	402
Securidaca sp.	Bwazi	404
Sesamum angolense	Citowe thengo	405
Sida alba	—	407
Smithia elliotii	Kadzulo	408
Solanum nigrum	Mnadzi	410
Sonchus oleraceus	Cinguwo	414
Sphaerosicyos sp.	Cipuzi	417
* *Sphenostylis erecta*	Mlali	418

		Number
Sterculia appendiculata	Njale	422
Talinum caffrum	Mlelamvula	432
Thunbergia spp.	Mlombwe	443–444
Trichodesma zeylanicum	Dungumwamba	450
Triumfetta annua	Khatambuzi	452
Tulbaghia cameroni	Katsopi	454
* *Urena lobata*	Kolokondwe (Su)	459
Vernonia sp.	Dambwe	469
Vigna spp.	Many names	470–472
Viola abyssinica	Katongolola	474
Wormskioldia sp.	Katambala	480
Zornia sp.	Kandudwa	486

Other Unidentified wild leaves *see* pages 138–9

*** flowers eaten**

6. Legumes, Cultivated (Pulses)

Arachis hypogea	Groundnut	46
Cajanus cajan	Pigeon pea	82
Canavalia ensiformis	Sword bean	84
Cicer arietum	Chick pea	105
Dolichos lablab	Hyacinth bean	181
Glycine max	Soya bean	225
Lens esculenta	Lentil	288
Mucuna aterrima	Velvet bean	311
Phaseolus acutifolius	Tepary bean	349
Phaseolus aureus	Gram	350
Phaseolus lunatus	Lima bean	351
Phaseolus vulgaris	Haricot bean	352
Pisum sativum	Field pea	362
Vigna unguiculata	Cowpea	473
Voandzeia subterranea	Bambarra groundnut	478

7. Legumes, Wild

Cassia petersiana	Bwemba nyani	92
Cassia singuena	Mpatsacokolo	93
Dolichos lablab	Nkhusa	182
Mucuna pruriens	Citedze	312
Parkia filicoidea	Mkhundi	339
Sphenostylis erecta	Nkhunga	418
Vigna phaseoloides	Mtambe thengo	471

8. Nuts and Other Seeds, Cultivated

Anacardium occidentale	Cashew nut	36
Arachis hypogea	Groundnut	46
Cocus nucifera	Coconut	122
Cucurbita maxima	Pumpkin	155
Prunus communis	Almond	372
Sesame orientale	Sesame	406

9. Nuts and Other Seeds, Wild

Adansonia digitata	Baobab	9
Telfaria pedata	Oyster nut	434
Terminalia catappa	Mkungu	439
Treculia africana	African bread fruit	447
Trichelia roka	Msikitsi	449

10. Oil Producing Plants. (Mainly edible)

Aleurites spp.	Tung	22–24
Ceiba pentandra	Kapok	95
Cocus nucifera	Coconut	122
Elaeis guineensis	Oil palm	193
Helianthus annuus	Sunflower	236
Gossypium spp.	Cotton	227
Jatropha curcas	Pulsa nut	263
Moringa oleifera	Horse radish	309
Olea europa	Olive	323
Persea americana	Avocado pear	348
Piliostigma thonningii	Citimbe	359
Ricinus communis	Castor oil	394

		Number
Sesame orientale	Sesame	406
Telfairia pedata	Oyster nut	434
Trichelia roka	Mafuira oil	449

11. Roots and Tubers, Cultivated

Beta vulgaris	Beetroot	59
Brassica napus	Swede	75
Coleus esculentus	Kaffir potato	123
Colocasia antiquorum	Taro	124
Daucus carota	Carrot	166
Dioscorea bulbifera	Air potato	171
Dioscorea spp.	Yam	172
Ipomoea batatas	Sweet potato	256
Manihot esculenta	Cassava	299
Raphanus sativus	Giant radish	387
Solanum tuberosum	Irish potato	412

12. Roots and Tubers, Wild

Anthericum sp.	Shawawa	41
Coccinia quinqueloba	Cinkaka	120
Dioscorea sp.	—	173–175
Disa sp.	Cinaka	179
Eriosema spp.	—	201–2
Euphorbia sp.	Cikhawo	210
Habenaria sp.	Cinaka	232
Lotus sp.	Mpeta	293
Margaretta whytei	Ncence	301
Nymphaea calliantha	Cikolwa	320
Satyrium sp.	Cinaka	398
Sphenostylis stenocarpa	Cinkhoma	419
Tacca involucrata	Dinde	431
Vigna fischeri	Mukho	470
Ranunculus multifidus	Khobedi	386

Others unidentified *see* **pages 139–40**

13. Plants Used as Stock Feed

Acacia albida	Nsangu	2
Acacia spirocarpa	Ncongwe (Y)	6
Acacia subalata	Ciseo	7
Albizzia anthelmintica	Citale	17
Albizzia lebbek	Mpepe	20
Bauhinia fassoglensis	Mpandwapansi	55
Dichrostachys glomerulata	Cipangala	169
Mikania scandens	Matholisa	305
Parkia filicoidea	Mkundi	339
Pennisetum purpureum	Nsenjere	343
Piliostigma thonningii	Citimbi	359
Swartzia madagascariensis	Kampango	430

B. PLANTS WITH MEDICINAL VALUE

	Chinyanja Name	*Use*	*Number*
Acacia spp.	Many	Various	2–7
Acalypha senensis	Cigaga	Diorrhoea	8
Adansonia digitata	Mlambe	Many	9
Adenia cissampeloides	Mlozi	Bee-taking, said to have supernatural powers	10
Adina microcephala	Mwenya	Colic	11
Albizzia anthelmintica	Citale	Anthelmintic, purgative	17
Albizzia versicolor	Nsenjere	Anthelmintic, purgative and enema	21
Allophylus africanus	Kandula	Coughs and colds	27
Allophylus alnifolius	—	—	28
Annona chrysophylla	(Wild custard apple)	Pneumonia	39
Antidesma venosum	Mpungulira	Coughs, colds, epilepsy?	44
Argemone mexicana	Mkumajalaga (Y)	Narcotic	47
Asparagus sp.	Katsitsimzukwa	—	50
Aspilia kotschii	—	Colds	51

	Cinyanja Name	Use	Number
Bersama maxima	Mkanga	Swellings, headache	58
Brachystegia bussei	Mseza (C)	Stomach disorders	68
Brachystegia spiciformis	Cumbe	Eye-wash	70
Bridelia micrantha	Mpasa	—	79
Burkea africana	Mkalati	Aphrodisiac	80
Cajanus cajan	Nandolo	Earache	82
Calotropis procera	Citonje	Aphrodisiac, heart poison	83
Cannabis sativa	Camba	Narcotic	85
Canthium crassum	Mvilo	At childbirth	86
Carica papaya	Papaya	Syphilis, source of papain useful drug	90
Carissa edulis	Mpabulu	Intestinal worms	91
Cassia petersiana	Bwembanyani	Many	92
Cassia sp.	Muwawani	Many	94
Ceratotheca sesamoides	Cewe	Smallpox, measles	99
Cissus buchanani	Namwalicece	Rheumatism	107
Clematis simensis	Kongwe	Colds	116
Clerodendron uncinatum	Likodza	Bilharzia	118
Crassopteryx febrifuga	Dangwe	Fevers?	137
Crotalaria sp.	Kanyaminyami	Backache, headache	144
Culcasia scandens	—	—	156
Dalbergia nitidula	Mkulasinga	Coughs, abscesses	163
Dalbergiella nyasae	Mlembela	Dysentery	164
Datura stramonium	—	Narcotic, asthma	165
Dialopsis africana	Mtutumuko (Y)	—	168
Dichrostachys glomerata	Cipangala	Aphrodisiac, scorpion and Snake bite	169
Dichrostachys nyassana	Cipangala	Toothache, headache	170
Diospyros mespiliformis	Msumwa	Many	176
Diplorhynchus sp.	Thombozi nsanga	Venereal diseases	178
Dolichos lablab	Nkhusa	Prevents miscarriage	182
Dolichos trinervatus	Mkhwere	Aphrodisiac, cure for ' nyangu '	183
Dolichos sp.	Gulinga	Aches and pains	185
Ekebergia arborea	Mabere ya ng'ombe	Chest pains	191
Elephantorrhiza sp.	Citeta	Cure for disease of women	194
Erythrina abyssinica	Mbale	Delusions?	204
Erythrina humei	Cimutu	Stomach troubles, dysentery	205
Erythrophleum sp.	Mwabvi	Ordeal poison	206
Ficus spp.	—	Influenza	215–17
Flacourtia indica	Mtawa	Pneumonia	218
Garcinia sp.	Mpimbi	Chest pains	221
Gymnosporia senegalensis	Mpelu	Many in W.A.	229
Gynandropsis gynandra	Luni	Pneumonia	230
Harungana sp.	Mbuluni	Many	233
Heeria mucronata	Mbewe (Y)	Dysentery	234
Heeria reticulata	Mbewe (Y)	Venereal disease, colds	235
Heteromorpha sp.	Kapoloni	Venereal disease, colds	237
Holarrhena febrifuga	Thombozi cipeta	Many	247
Iboza riparia	Cingambilo	Anthelmintic	253
Inula glomerulata	Mabwani	Rheumatism	255
Jateorhiza palmata	(Calumba root)	Anthelmintic	262
Kigelia aethiopica	Mvunguti	Venereal disease, balm for sores	273
Lannea schimperi	Kaumbu	Dysentery, diorrhoea, syphylis	284
Lantana salvifolia	Nakasonde (Y)	Eye medicine	286
Lasiosiphon kraussianus	Katupe	Wounds, snakebite, sores	287
Lippia asperifolia	Mcamsi	Many uses	290
Luffa cylindrica	Loofah	Constipation	295
Markhamia obtusifolia	Msewa	Convulsions	303
Mikania scandens	Matholisa	Abortifacient	305
Moghania macrophylla	Damate	Dysentery	307
Mucuna sp.	Dema	Insecticide	313
Myrianthus arboreus	Ciwele	Sore throat	317
Olax dissitiflora	Nandolo	Emetic	321
Olea chrysophylla	Nakatimba	Rheumatism	322
Oncoba spinosa	Mtsece	Epilepsy?	324
Osteospermum monocephalum	Cimvulo	Cuts	329
Parkia filicoides	Mkundi	Madness	339
Pavetta crassipes	Manja atali	' Mdulo '	341

	Cinyanja Name	*Use*	*Number*
Pavetta Schumanniana	Mpambo	'Citete', a disease of women	342
Phragmites mauritianus	Bango	Various diseases	355
Phyllanthus guineensis	Mtanthanyelele	Rheumatic fever and sore eyes	356
Phyllanthus muellerianus	—	Many uses	357
Piliostigma thonningii	Citimbe	Many uses	359
Pseudolachnostylis sp.	Msolo	Many uses	374
Psorospermum febrifugum	Mtsiloti	Wounds, 'itch', protective properties	376
Punica granatum	Cimanga cacizungu	Worms in cattle	381
Randia sp.	Cipembere	Stomach and eye medicine	385
Rhyncosia sublobata	Mbuto ya cule	Children's medicine at puberty	391
Rumex nepalensis	Qakazea	Pneumonia, dysentery	396
Securidaca sp.	Bwazi	Snake bite	404
Sesamum angolense	Citowe thengo	Small pox	405
Stereospermum kunthianum	Kabvunguti	A disease possibly asthma	424
Strophanthus kombe	Kombe	Arrow poison	425
Strychnos spinosa	Mteme	Colic, venereal disease, cataract?	462
Tamarindus indica	Bwemba	Venereal disease	433
Temnocalyx obovatus	Maso a ng'ombe	A disease of children	435
Thunbergia sp.	Cipere dodza	Skin disease	445
Tephrosia spp.	Many	Insecticide	436–438
Trema guineensis	Mpefu	Cough cure	448
Trichelia roka	Msikitsi	Emetic and purgative	449
Urginea altissima	Nthunga	—	460
Vangueria tomentosa	Mzilu	Snake bite	463
Vernonia spp.	Many	Many	466–8
Vigna phaseoloides	Mtambe thengo	Contraceptive	471
Wormskioldia sp.	Katambala	Sore eyes	480
Ziziphus mauritiana	Masao	Stomach	484

C. TREES WHOSE WOOD IS USED FOR TIMBER OR OTHER PURPOSES

	Chinyanja Name	*Use*	*Number*
Acacia albida	Nsangu	Canoes, handles, mortars	2
Acacia campylacantha	Mtete	Building, mine shafts, handles	3
Acacia nigrescens	Mkungu	Very hard, termite-resistant wood	5
* *Adina microcephala*	Conya	All purposes, canoes	11
Afrormosia angolensis	Mwanga	Many purposes	13
Afzelia quanzensis	Msambamfumu	Furniture, building, drums	14
Albizzia glabrescens	Nsenjere	Panelling doors, beds	18
Albizzia gummifera	Nsenjere	Beds, spoons	19
Albizzia lebbek	Mpepe (Y)	Many purposes	20
Albizzia versicolor	Nsenjere	Panelling doors	21
Anthocleista zambesiaca	Nguonguo	Boxes	43
Apodytes dimiata	Lifefe	Felloes	45
Arundinaria alpina	(Mountain Bamboo)	Hut building, wickerwork	49
Bambusa vulgaris	(Golden Bamboo)	Building, pig fences	53
Bersama zombensis	—	?	58
Borassus aethiopum	Mvumo	Poles	65
Brachystegia bussei	Mseza (C)	Hoe handles, ply wood	68
Brachystegia spiciformis	Cumbe	Poles, sleepers	70
Brachystegia tamarindoides	Musani	Building, wagon hubs	71
Brachystegia woodiana	Mombo	Poles	72
Bridelia micrantha	Mpasa	Fence posts, furniture	79
Burkea africana	Mkalati	Furniture, wagons	80
Ceiba pentandra	Usufu (Kapok)	Canoes	95
* *Chlorophora excelsa*	Mvule	Canoes, cabinet work	102
Chrysophyllum fulvum	Cifila	Cabinet work, building	104
Colophospermum mopane	Sanya	Piles for bridges, mine props	125
Combretum imberbe	Mnangali	All purposes on farm	126
Cordia abyssinica	Mbwabwa	Mortars, bee hives work	133
Cordyla africana	Mtondo	Mortars, rough building work	134
Crossopteryx febrifuga	Dangwe	Cabinet work	137

	Cinyanja Name	*Use*	*Number*
Cussonia spicata	Candimbo	Troughs, brake blocks	158
Dalbergia melanoxylon	Mpingo (Ebony)	Turnery wood, walking sticks, carved ornaments	162
Dalbergia nitidula	Mkulasinga	Pounding sticks, poles	163
Dichrostachys glomerulata	Cipangala	Walking sticks, bows	169
Dichrostachys nyassana	Cipangala	Poles, pegs	170
Diospyros mespiliformis	Msumwa	Rulers	176
Diplorhynchus sp.	Tombozi	Heartwood durable	177
Dombeya rotundifolia	Naduwa	Tool handles	187
* *Ekebergia arborea*	Mabere ya ng'ombe	Bowls, wood pillows	191
* *Entandophragma caudatum*	Napalali	Furniture	199
* *Entandophragma stolzii*	—	Valuable timber	200
Erythrina abyssinica	Mbale	Spoons, drums, toys	204
Erythrophleum guineense	Mwabvi	Many uses	206
Euclea fructuosa	Msanama	Useful timber	207
Fagara nitens	Mlunguculu	Bows	212
Faurea saligna	Cinsense	Furniture, charcoal	213
Gymnosporia senegalensis	Mpelu	? useful boxwood	229
Heeria reticulata	Mbewe	Building, beds	235
Ixora narcissiodora	Msisita (Y)	Probably useful	261
Juniperus procera	Cangalumwe	Many uses	265
* *Khaya nyasica*	Mbawa	Many uses, furniture	272
Kigelia aethiopica	Mvunguti	Stools, canoes, drums, hoe handles	273
Kigelia pinnata	Mvunguti	Boxes	274
Kirkia acuminata	Mtumbu	Furniture	275
Lachnopylis sambesina	Nakawaka (Y)	Useful timber	276
Lannea discolor	Sidyatungu	Poles	282
Lannea stuhlmannii	Cirusa	Useful timber	285
Markhamia acuminata	Katsongole	Rafters	302
Markhamia obtusifolia	Msewa	Building huts, beds	303
Myrianthus arboreus	Ciwele	Fencing	317
Olea chrysophylla	Nakatimba	Good fuel and charcoal	322
Oncoba spinosa	Mtawa (Y)	Cabinet work and inlay	324
Oreobambus buchwaldii	Tolanje	Fences, baskets	326
Ostryoderris stuhlmannii	Mlonde	Sleepers, building	330
Oxytenanthera abyssinica	Nsungwi	Baskets	334
Pachystela brevipes	Mpimbi	Pestles and mortars	335
Parinari curatellifolia	Muula	Many purposes	336
Parinari holstii	Muula	Many purposes	337
Parinari mobola	Muula	Poles	338
Parkia filicoidea	Mkundi	Poles, mortars	339
Piliostigma thonningii	Citimbe	Poles	359
Piptadenia buchananii	Mkweranyani	Building purposes	360
Podocarpus milanjianus	Nkanguni	All purposes	363
* *Pterocarpus angolensis*	Mlombwa	Furniture	377
* *Pterocarpus polyanthus*	Mlelaniya	Easy to work	378
Pterocarpus rotundifolius	Mbalisa	Difficult to saw	379
Pterocarpus stolzii	Mkulo (C)	Cabinet wood	380
Pygeum africanum	Dadzi (C)	Furniture?	382
Raphia ruffia	Ciwale	Poles, light furniture	388
Rauvolfia caffra	Ciwimbi	Spoons, boxes	389
Ricinodendron rautanenii	Mkomwa	Packing cases?	393
Schlerocarya caffra	Mfula	Building, furniture, canoes	400
Securidaca sp.	Bwazi	Poles	404
Sterculia appendiculata	Njale	Soft wood	422
Sterculia quinqueloba	Msetanyani	Reputed to be fine furniture wood	423
Syzygium cordatum	Nyowe	Doors	427
Syzygium quineense	Ntepera (Y)	Hard, strong, easy to work	428
Swartzia madagascariensis	Kampango	Turnery work	430
Tamarindus indica	Bwemba	Boat building	433
Terminalia sericea	Naphini	Axes, hoe handles	440
Thespesia garkeana	Mtowo	Bows	442
Toona ciliata	Cedrela	?	446
Treculia africana	Mjaya	Furniture, carving and turnery work	447
Trichelia roka	Msikitsi	Furniture and general purposes	449

	Cinyanja Name	Use	Number
Uapaka kirkiana	Msuku	General building	456
Uapaka nitida	Kasokolowe	Beds, structural purposes	457
Uvaria sp.	Ukonde (C)	Game traps	462
Vitex doniana	Mpindimbi	Boxes, interior fittings	475
* *Widdringtonia whytei*	Mkungusa	All purposes	479
Xymalos monospora	Nakaswaga (Y)	Poles, furniture, bee hives	481
Zanha golungensis	Mkwidio	Building purposes	482

*** important timber trees.**

D. PLANTS USED FOR FIBRE AND TEXTILES

	Chinyanja Name	Use	Number
Acacia spirocarpa	Ncongwe	String	6
Adansonia digitata	Mlambe	Rope, string	9
Aerva lanata	Cidyonko	Stuffing native pillows	12
Agave sisalana	Khonje	Rope, string	15
Annona chrysophylla	Mpoza	Rope	39
Bombax stolzii	Mtonjemanga	Stuffing cushions	64
Borassus aethiopum	Mvumo	Mats, binding material	65
Brachystegia longifolia	Mombo	Bark cloth, ropes	69
Brachystegia spiciformis	Cumbe	Thatching twine	70
Brachystegia woodiana	Mombo	Twine and binding	72
Calotropis procera	Citonje	Stuffing cushions	83
Cannabis sativa	Camba	Rope	85
Ceiba pentandra	Usufu (Kapok)	Stuffing cushions, life-belts	95
Cissampelos mucronata	Cilambe	Binding edges of baskets	106
Cocculus hirsutus	Cipapati	Wickerwork	121
Corchorus olitorius	Cilenzi	Rope, bags	131
Crotalaria juncea	(Sunnhemp)	String, ropes, sacking	142
Culcasia scandens	—	Binding material	156
Cyperus sp.	Kauju	String	160
Dichrostachys glomerata	Cipangala	Rope	169
Domqeya rotundifolia	Naduwa	Rope and binding material	187
Elephantorrhiza sp.	Citeta	String	194
Ensete livingstonianum	Cizuzu	Bindings for building	197
Entada phaseoloides	Mkulumu	Mats, ropes	198
Ficus natalensis	—	Bark cloth	215
Ficus ovata	Mlambi (Su)	Bark cloth	216
Fleurya aestuans	Khwisa	String	220
Gossypium spp.	Tonje	Cotton cloth	227
Hibiscus cannabinus	Sonkwe	Substitute for jute	239
Hibiscus diversifolius	Catata	String for sewing mats	240
Hibiscus esculentus	Nathando	Rope	241
Hibiscus physaloides	Thelele thengo	Short strong fibre	242
Hyphaene spp.	Mgwalangwa	Mats	252
Ipomoea pes-capraca	Msaula (Y)	Ropes for fish nets	258
Lannea fulva	Kitongomilo (Nk)	String	283
Lannea schimperi	Kaumbu	String	284
Oreobambus buchwaldii	Tolanje	Baskets	326
Oxytenanthera abyssinica	Nsungwi	Baskets	334
Pennisetum purpureum	Nsenjere	Paper	343
Phoenix reclinata	Kanjedza	Baskets, mats	354
Phragmites mauritianus	Bango	Mats	355
Piliostigma thonningii	Citimbe	Rope, string	359
Popowia obovata	Mfulufula	Withies	367
Pouzolzia hypoleuca	Thingo	Twine for nets	369
Raphia ruffia	Ciwale	Raffia for binding	388
Secamone sp.	Bwazi	String	402
Securidaca sp.	Bwazi	String	404
Sida alba	—	Roof supports	407
Sphenostylis erecta	Nkhunga	Root fibres for string and mats	418
Sterculia africana	Mgoza	Rope	421
Tamarindus indica	Bwemba	Rope and string	433
Triumfetta rhomboidea	Khatambuzi	String	452
Urena lobata	Msapatonje (Y)	String	459
Vellozia spp.	Ceu	Brushes	465
Vernonia amygdalina	Futsa	Lids of grain stores tooth-brushes	466

E. PLANTS WITH MISCELLANEOUS USES

1. Live Hedge Plants

		Number
Agave sisalana	Sisal	15
Caesalpinia decapetala	Mauritius thorn	81
Commiphora sp.	Khobo	129
Dovyalis caffra	Kei apple	190
Euphorbia tirucalli	Nkhadze	209
Jatropha curcas	Msatsimanga	263
Jatropha gossypifolia	—	264
Kirkia acuminata	Mtumbu	275
Lannea discolor	Ciumbu	282
Moringa oleifera	Horse radish tree	309
Punica granatum	Pomegranate	381
Solanum aculeastrum	Mtundu wa matungwi	409

2. Plants Used as Dyes

Acacia subalata	Ciseo	7
Bixa orellana	Annatto	63
Cocculus hirsutus	Namgoneka (Y)	121
Euclea fructuosa	Msanama	207
Harungana madagascariensis	Mbuluni	233
Moghania macrophylla	Damate	307
Pseudolachnostylis sp.	Msolo	374
Sorghum vulgare	Mapira	415
Uvaria sp.	Ukonde (C)	462

3. Plants Used for Their Gum or Latex

Acacia albida	Nsangu (Gum)	2
Acacia campylacantha	Mtete (Gum)	3
Albizzia adianthifolia	— (Gum)	16
Brachystegia bussei	Mseza (C) (Gum)	68
Burkea africana	Mkalati (Gum)	80
Cordyla africana	Mtondo (Gum)	134
Dichrostachys glomerulata	Cipangala (Latex)	169
Diplorhynchus mossambicensis	Tombozi (Latex)	177
Ficus spp.	— (Latex)	214–17
Landolphia kirkii	Mpira (Latex)	279
Loranthus sp.	Thonga (Latex)	292
Scylla sp.	— (Latex)	399
Sphenostylis erecta	Nkhunga (waterproofing liquid)	418
	Namzalamba (Latex)	B 35

4. Trees Which Make Good Charcoal

Albizzia gummifera	Nsenjere	18
Bridelia micrantha	Mpasa	79
Chlorophora excelsa	Mvule	102
Colophospermum sp.	Tsanya	125
Faurea saligna	Cinsense	213
Pseudolachnostylis sp.	Msolo	374
Swartzia madagascariensis	Cinyenye	430

5. Fish Poisons and Insecticides

Chrysanthemum sp.	Pyrethrum	103
Combretum ternifolium	Kadale	127
Elephantorrhiza goetzii	Citeta	194
Euphorbia tirucalli	Nkhadze	209
Mucuna sp.	Dema	313
Mundulea sericea	Lusyunga (Y)	314
Swartzia sp.	Kampango	430
Tephrosia nyasae	Ombwe	436
Tephrosia vogelii	Mthuthu	437
Tephrosia zombensis	Katupe	438

6. Plants Burnt for Their Ashes

Canthium sp.	Cisunkunthu	87
Cyperus sp.	Cesa	160
Cyperus sp.	Kauju	160
Pistia stratioides	Kakombwe	361

The following are also very commonly used:—cassava peelings, banana stalks and leaves, groundnut husks, dung and a great variety of tree ash.

7. Plants Used as Soap Substitutes			*Number*
Albizzia versicolor	Nsenjere		21
Ceratotheca sesamoides	Cewe		99
Dolichos trinervatus	Mkwere		183
Piliostigma thonningii	Citimbe		359
Sesamum angolense	Cewe		405
Sphaerosicyos sp.	Cipuzi		417

Index to Vernacular Names of Processed Food and Cooked Dishes

NOTE.—

For preparation of beer, see *mowa* No. 483.

For preparation of dried leaves, See *mfutso* No. 473.

GLOSSARY OF FOOD TERMS IN COMMON USE

English	*Chinyanja (N)*	*Cichawa (Y*	*Cingulu (Ngu)*	*Citumbuka (Tu)*	*Citonga (To)*	*Kyangonde (Nk)*	*Cisukwa (Su)*
(Porridge)	Nsima	ugali	eshima	sima	sima	bwali	bwali
(Side dish)	Ndiwo	mboga	matapa	dende	dende	liseke	iwoga
Gruel	Phala	likoko	niphuka	bala	ba	litapa	itapa
Beer	Mowa	nkologo or ukana	oteka	peri	mowa	ubwalwa	ubwalwa
Sweet beer	Phala, bota or thobwa	utobwa	muthobwa	cindongwa	ntibi	cindongwa	cindongwa
Malt	Cimera	cilungo	miropo	cimera	cimera	cimera	amamera
Pounded groundnuts to add to side dish	Thendo, nsinjilo	ndwelo	—	ntendelo	ntendelo	kipomi	ntwilo
Porridge " left over "	Nkute	nkute	mvite	cimbala	mukuti	cimbala	cika
Leaves for side dish	Masamba	liponda	makukhu	mphangwe	mpangwe	mani	?
Slimy leaves	Thelele	linyololo	phwinyu	bwenka	dere	sambwi	sumba
Beans, collective name	Nyemba	mbwanda	mpwanda	ncunga	mtamba	ndima	indima
Mashed beans	Cipere	cipalasya, cipere	evele	cilanda	cipere	cilanda, cimpela	cinkinyasha
Dried leaves	Mfutso	cauya	—	mpangwe yakwanika	mfuska	iliseke, ilyumu	lifufye
Meat	Nyama	nyama	enama	nyama	nyama	nyama	nyama
Fish	Nsomba	somba	ehomba	somba	somba	iswi	iswi
Maize and beans cooked together ..	Mbule, mangungu, cingowe (c)	mbule, mangungu	—	nkowe	vingowe	ngata	nkanji
Salt	Mcere	njete	mwinyu	mcere	mce	munyu	umunyu
Potashes or solution of them ..	Mcere woceza, cidulo	cidulo	—	magali	mce wa cidulo	munyu wa fwandilo cigadabula	cipembewa