



USEFUL TREES AND SHRUBS FOR UGANDA

Identification, Propagation and
Management for Agricultural and
Pastoral Communities



A . B. Katende
with Ann Birnie and
Bo Tengnäs



RELMA

Useful Trees and Shrubs for Uganda

Identification, Propagation and Management
for Agricultural and Pastoral Communities

A B Katende, Ann Birnie and Bo Tengnas

REGIONAL SOIL CONSERVATION UNIT (RSCU)

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Top: Trees near the home are easy to look after and provide shade, beauty and useful products

Bottom: A panoramic view of a Ugandan Landscape

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Contents

| | |
|---|-----|
| Foreword | v |
| Acknowledgements | vii |
| Introduction | ix |
| Illustrated glossary of some botanical terms. | xiv |

PART I

| | |
|-----------------------|---|
| Common names. | 1 |
|-----------------------|---|

PART II

| | |
|--------------------------------------|----|
| The useful trees and shrubs. | 41 |
|--------------------------------------|----|

PART III

| | |
|--|-----|
| Summary table of species and their uses. | 685 |
|--|-----|

| | |
|-------------------------|-----|
| Bibliography. | 705 |
| Feedback form | 709 |

Maps

| | |
|--|-------|
| 1. The main physical features of Uganda | vi |
| 2. The administrative regions and main towns of Uganda | viii |
| 3. The main vegetation zones of Uganda | x |
| 4. The main forests of Uganda | xii |
| 5. The main language groups of Uganda | xxiii |

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Foreword

This book is the fourth in a series covering the countries of East Africa published with support from SIDA through the Regional Soil Conservation Unit. The corresponding handbook for Kenya was published by ICRAF in 1992 with financial support from SIDA and technical input from RSCU professionals. The succeeding volumes for Ethiopia and Tanzania were published by RSCU in 1993 and 1994, respectively, and produced in close collaboration with relevant institutions and individuals in each country.

The major aims of these handbooks are to document the useful tree and shrub species of the region and to provide information to subject-matter specialists, extension workers, institutions and farmers on species that have production and conservation potential for small-scale farmers in the region.

The present book covering Uganda contains even more species than the earlier ones, mainly due to three factors. Firstly, Uganda is extremely rich in tropical species. Secondly, RSCU found a Ugandan co-author, A-B. Katende, who has an enormous amount of knowledge about the trees of Uganda; knowledge that he willingly made available for the production of the book. Thirdly, more forest species have been covered than in the earlier books which concentrated more on the agricultural and pastoral settings. With growing worldwide interest in the Uganda rain-forest ecosystems, the authors felt it was important also to include species from a biodiversity conservation point of view. Thus the size of this book may not be as handy as one would wish, but RSCU felt it was important to include as much of the available information as possible.

Bo Tengnas, a former RSCU staff member now working as an agroforestry consultant, and Ann Birnie, a Nairobi-based botanist, teacher and illustrator, have contributed substantially to the production of the book and done the technical editing. Mrs Birnie has also organized all the illustrations.

RSCU publishes this handbook in the hope that it will be widely used by individuals, extension workers and educational and research institutions in order to foster a greater interest in the growing and management of a wide range of trees and shrubs as part of the development of sustainable farming systems in different ecological zones of Uganda.

Erik Skoglund
Director, Regional Soil Conservation Unit
Nairobi, August 1995

Acknowledgements

Most of the material for this book was gathered by A.B. Katende over many years of work on the taxonomy and other aspects of trees and their uses in Uganda and during a period of extensive travel in Uganda specifically for this book. Discussions were held with people knowledgeable on trees and shrubs, among whom were many farmers and pastoralists. In fact, most of the information in this book derives from rural people in East Africa who have enthusiastically shared their knowledge with us.

Special thanks go to M. Kayondo, Principal Forest Officer, and J.R. Kamugisha, Forest Officer, both of the Uganda Forest Department, who liaised between RSCU and Mr Katende. Thanks are also due to the Dean of the Faculty of Science, Makerere University, who made a Faculty car available for the field work, and to the Head of the Botany Department who gave permission for Mr Katende to work on this book.

Much of the text and many illustrations are from RSCU's companion volumes for Kenya, Ethiopia and Tanzania. Several people contributed to the production of those books and we acknowledge their contributions to this volume covering Uganda.

Illustrations

The majority of the plant illustrations are original drawings by Ann Birnie, many taken from *Trees of Kenya* by T. Noad and A. Birnie. Other drawings have been done specially for this book, both from fresh material and from dried specimens either at Makerere University Herbarium, Kampala, or at the East African Herbarium, Nairobi.

Margaret Nagawa and David N. Kato, both Kampala artists, contributed to these drawings. Louise Gull in Nairobi contributed four drawings and those of the following species were originally published in the children's magazine *Rainbow* (Stellagraphics Ltd., Nairobi): *Ricinus communis*, *Senecio hadiensis*, *Senna didymobotrya*, *Solanecio mannii* and *Vernonia auriculifera*. A few drawings have been taken from *Plants in Zanzibar and Pemba* by R.O. Williams and *Kenya Trees and Shrubs* by I.R. Dale and P.J. Greenway. More have been used from the earlier volume, *Indigenous Trees of the Uganda Protectorate* by W.J. Eggeling (1951). A few further illustrations have been taken from *Know Your Trees* by A.E.G. Storrs. Unfortunately, it has not been possible to view the important timber trees of the Uganda forests in their natural setting, nor, within the limitations of this book, to illustrate their towering and majestic forms.

We acknowledge with thanks the Royal Botanic Gardens, Kew, for permission to use several illustrations that appear in the published family volumes of the *Flora of Tropical East Africa*. The copyright to all the illustrations above remains with the original publishers. RSCU would also like to acknowledge the other sources of material listed in the bibliography.

Staff of the East African Herbarium at the National Museums of Kenya in Nairobi were most helpful in availing specimens from their collection to facilitate the drawing of the illustrations. They were also extremely helpful in providing taxonomic information. The Nitrogen Fixing Tree Association assisted us with confirmation of species that are known to be nitrogen fixing.

Thanks are due to Yasmin Kalyan who cheerfully and tirelessly entered the first draft on computer.

Finally, a word of thanks to the Swedish tax payer who, through SIDA, provided the funds necessary for the production of this handbook.

..

Introduction

Biodiversity in Uganda

Uganda is the richest of the East African countries in terms of biodiversity, and even in a global context it is regarded as one of one of the important centres of biodiversity.

The country can be divided into several biogeographical zones:

- Sudano-Congolean (north)
- Somali-Maasai (north-east)
- Guinea-Congolean (west, south-west)
- Afro-montane (mountains)
- Transition (north-western)
- Lake Victoria basin (regional mosaic).

Although there are not many species that are strictly endemic to the country, the flora is still of great importance because of its major contribution to regional endemism. The Western Rift Valley, as well as the areas around Lakes Edward and Victoria, much of which are within Uganda, are particularly important as many species that occur here are not found anywhere else in the world.

Climatic and physical conditions vary a great deal within short distances in Uganda. Areas at higher altitudes have reliable rainfall that can support montane rain forests and most areas of the country have sufficient rainfall to support agriculture, A large proportion of the land area is now under cultivation.

Reconstructed vegetation maps of Uganda indicate that before the advent of settled agriculture, a considerable part of the land surface was covered by forest and all the rest of the country was covered with thicket or wooded savanna, except Karamoja where the nature of the original vegetation is uncertain.

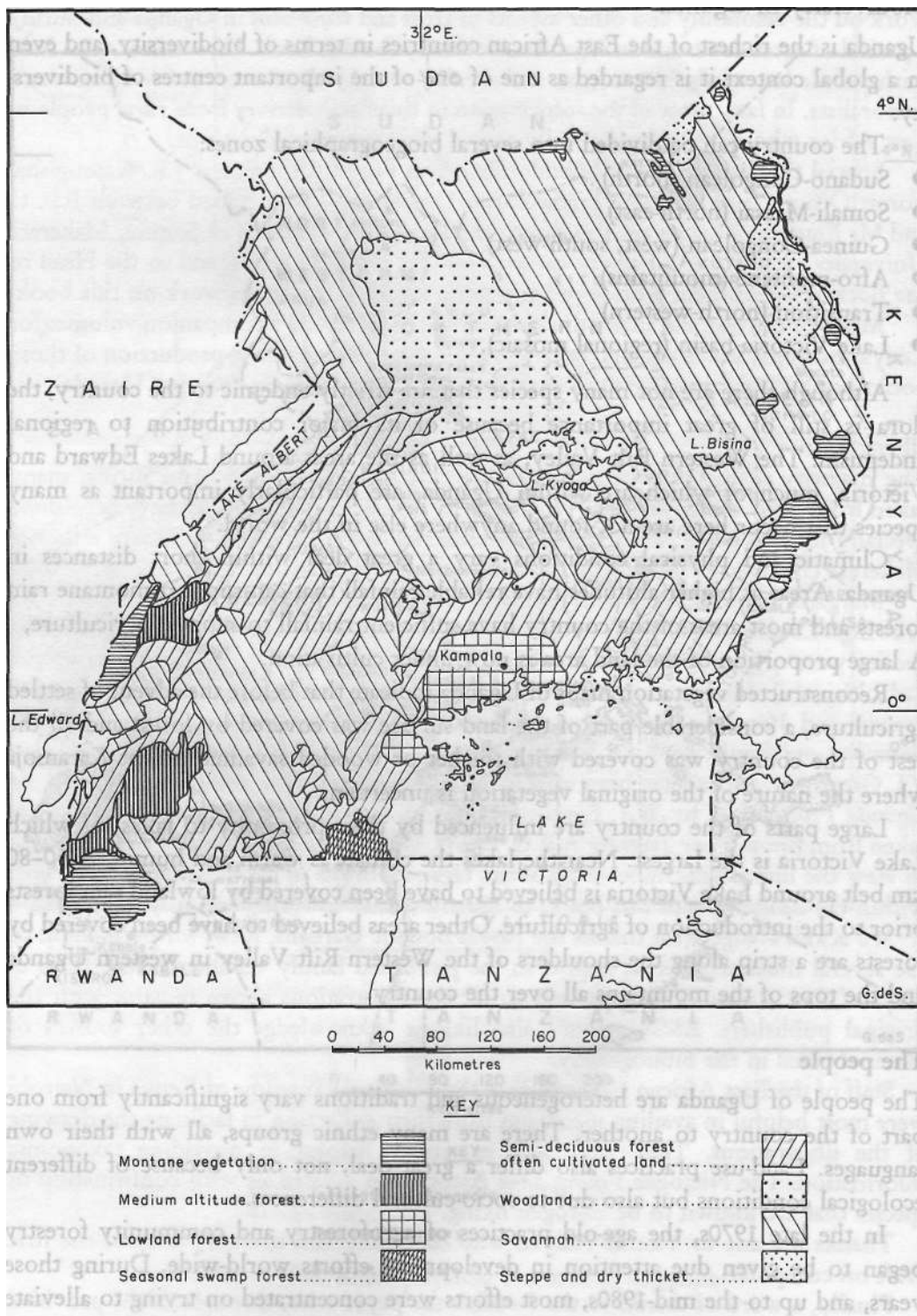
Large parts of the country are influenced by their proximity to lakes, of which Lake Victoria is the largest. Near the lakes the climate is warm and humid. A 50-80 km belt around Lake Victoria is believed to have been covered by lowland rain forests prior to the introduction of agriculture. Other areas believed to have been covered by forests are a strip along the shoulders of the Western Rift Valley in western Uganda and the tops of the mountains all over the country.

The people

The people of Uganda are heterogeneous and traditions vary significantly from one part of the country to another. There are many ethnic groups, all with their own languages. Land-use practices also differ a great deal, not only because of different ecological conditions but also due to socio-cultural differences.

In the late 1970s, the age-old practices of agroforestry and community forestry began to be given due attention in development efforts world-wide. During those years, and up to the mid-1980s, most efforts were concentrated on trying to alleviate the fuelwood problem by intensified tree planting, but due to the political turmoil in

USEFUL TREES AND SHRUBS FOR UGANDA



Map 3. The main vegetation zones of Uganda

Uganda little support was provided by the Government to farmers during those years. More recently, however, numerous projects have been aimed at supporting and developing local farmers' tree-growing efforts.

Forestry has been important in Uganda since colonial times. Makerere University has a well-established Faculty of Forestry which had been the leading centre for forestry studies in East Africa prior to the establishment of universities in Kenya and Tanzania. Logging and sawmilling were important activities in colonial times and have recently grown in importance once more. Management of soft-wood plantations with exotic species received much attention, while indigenous forests were subject to harvesting but given less attention in terms of sustainable management. Forestry activities in the indigenous forests have constituted a threat to biodiversity, and several valuable forest species have become rare and threatened.

Gradually officers in development projects world-wide, as well as researchers, have come to realize that the priorities of farm families often differ from those project designers initially anticipate. It is now felt that development agendas must be worked out with the rural people concerned if the projects are to give sustainable results. Methods such as diagnosis and design (D&D) developed by ICRAF, and PRA participatory rural appraisal (PRA) by the International Institute for Environment and Development are promoted. All these methods are based on development workers' awareness that the local people always have a wealth of knowledge that needs to be the focal point of efforts to improve agroforestry or tree growing in general.

All too often, however, development workers, whether foreign or national, do not communicate effectively with local people on issues related to trees. There is often a language barrier if the two groups do not have a common set of names for the trees and shrubs that they deal with. Even if English is understood by many people in Uganda, there are obvious limitations to communicating in that language when discussing the details of a land-use system. Recognition of this communication gap between extension workers and farmers, the need to regard local farmer's experience as a focal point in any efforts to improve land use, and the importance of utilizing and preserving tree biodiversity in Uganda were the underlying concepts for this book.

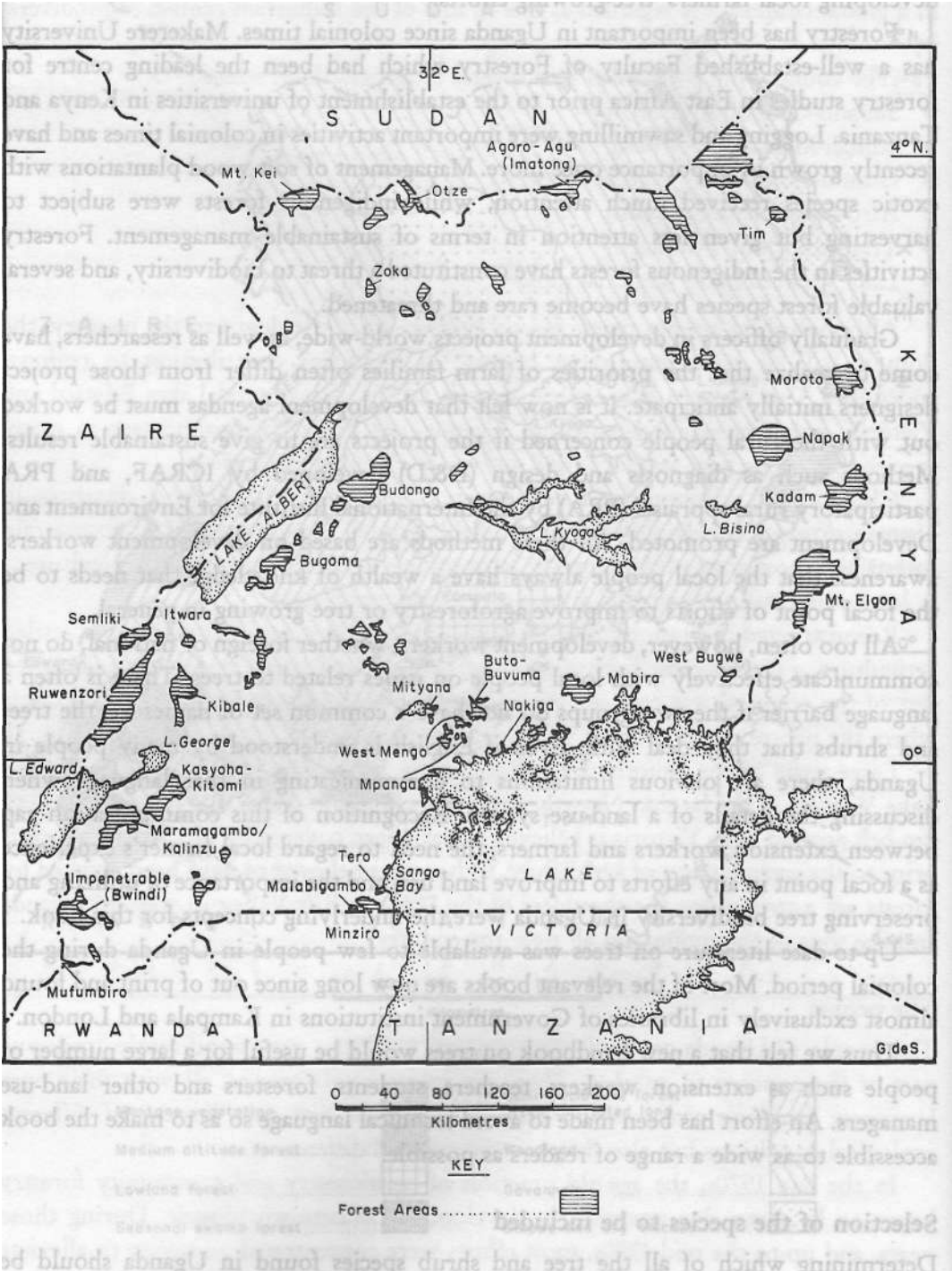
Up-to-date literature on trees was available to few people in Uganda during the colonial period. Most of the relevant books are now long since out of print and found almost exclusively in libraries of Government institutions in Kampala and London.

Thus we felt that a new handbook on trees would be useful for a large number of people such as extension workers, teachers, students, foresters and other land-use managers. An effort has been made to avoid technical language so as to make the book accessible to as wide a range of readers as possible.

Selection of the species to be included

Determining which of all the tree and shrub species found in Uganda should be included and which omitted was a difficult task. Based on the authors' knowledge

USEFUL TREES AND SHRUBS FOR UGANDA



Map 4. The main forests of Uganda

coupled with farmer's knowledge obtained during extensive field visits and consultations, certain species have emerged as being important to many groups of people. During the selection process both indigenous and exotic species have been considered, and it was also decided to include a few species which are not strictly trees but giant herbs or grasses, e.g. bamboos, *Agave sisalana* and banana. Some tree species have been included because of their ecological value or due to their potential forestry value although they may not be of prime importance for local communities. Many of these are tropical rain forest species. A few other species have been included because they are potentially useful but becoming very rare and close to extinction due to over exploitation or other habitat changes.

Vernacular names

The average farmer in Uganda seldom uses the English or Latin names for the trees and shrubs that he is familiar with; the local languages are still most commonly used and will continue to be for a long time. Old people often have much more knowledge about the trees and shrubs of their areas than the younger generation. Therefore it is important that researchers and development workers wishing to elicit information about local plants use the vernacular names that will be familiar to the older people in the local community. When this handbook was developed, therefore, it was decided to include as many vernacular names as possible, although there are some areas of the country that have been poorly covered so far in this respect and where further research is needed.

Ecology

Under this heading a brief description of the origin and present distribution of the species is given, followed by an indication of where it grows in Uganda and, where possible, information on the altitudinal range, preferred climatic and soil conditions, etc.

Uses

Trees and shrubs provide a wide range of benefits to man, both in terms of products such as timber or medicine and services such as shade or soil improvement. Such information has been summarized for each species under this heading. It must be stressed, however, that these are *reported* uses, i.e. what the local people say they use these plants for and it has not been possible to verify the accuracy of all such reports. In addition, the known uses of a particular species may vary from one part of the country to another, or even from one community to another, and therefore it is always necessary to verify these uses with the local people.

It must also be understood that the species cannot be grown for all of the possible uses simultaneously. On the contrary, management of a species often aims at optimizing or maximizing a specific product or service.

Description

For each species there is a general description followed by a detailed description of habit, bark, leaves, flowers and fruit. As far as possible, technical botanical terms have been kept to a minimum. The features in bold type indicate the special points to look for when identifying a species. It may not always be possible to identify a species from the descriptive text alone, but it is anticipated that, together with the illustrations and the vernacular names, the descriptions will prove a practical guide to species identification in the field.

Under this heading attention has been focused on management of individual trees in a farming or pastoral context. Thus, normal forestry operations such as clearing, thinning and pruning are not covered. For information on these aspects, the reader should consult standard forestry handbooks. Whether or not a species is suitable for intercropping with agricultural crops is indicated as is information on whether the species does well if planted as a woodlot or pure forest stand.

Propagation

Wherever information on suitable methods of propagation is available it is given under this heading. "Seedlings" indicates that a relevant propagation method is raising seedlings in a nursery, either on farm or in a central or group nursery. "Wildings" indicates that it is known that farmers propagate a certain species by collecting wildings and transplanting them at the desired site. Other species may be propagated by direct sowing of seeds at the desired site, and vegetative propagation by cuttings is recommended for others. Coppicing is a management practice rather than a method of propagation, hence coppicing ability is indicated under "management".

Seed information

When relevant, information on number of seeds per kilogram, whether seeds can be stored or not, and suitable pre-sowing treatment is given. Normally, storage of seeds is to be avoided. The storage periods indicated are deliberately imprecise because there is no fixed period during which seeds can be stored without harm and after which they all lose viability. Loss of viability is a gradual process, and its speed depends on many factors, mainly the storage conditions. Hence, only approximate indications of acceptable storage periods can be given.

If seeds are to be stored for some time it is always best to keep them in a cool, dry and insect-free place.

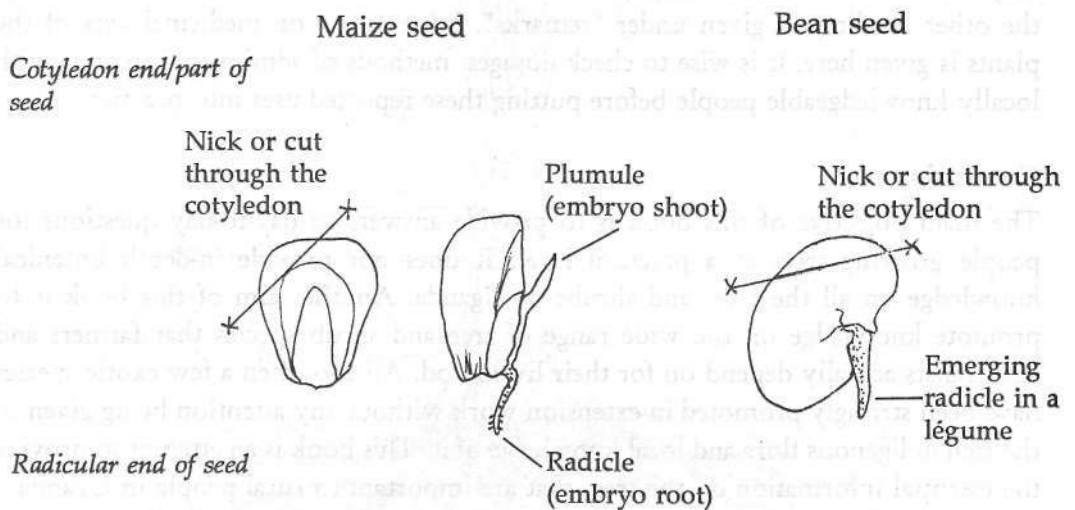
Seed pre-treatment to render viable but dormant seeds fit for germination can be carried out in a number of ways. The methods mentioned in this book are the simple ones that can be applied under field conditions without the use of sophisticated equipment or chemicals.

Seed treatment is not needed for all species. For many, however, treatment may enhance both the rate and the speed of germination. The most common methods are

soaking in hot or cold water, nicking, and de-winging. In addition, floatation can be mentioned as a simple way of separating bad (empty and thus light and floating) from good (heavy and sinking) seed.

Soaking in water is recommended for many species and, where these are known, details of temperature and time are indicated.

Nicking can be done by removing small pieces of the seed coat at the distal (cotyledon) end of each seed using a sharp tool such as a knife or nail clipper. Removal of the hard coat next to the storage tissue of the seed speeds up the absorption of water and hence the growth of the embryo. Nicking is time consuming if it is to be done to a large number of seeds, and soaking is often a more convenient alternative. Furthermore, nicking must be done with care in order to avoid damaging the vital part of the seed, i.e. the embryo itself.



The cotyledon and radicular ends of a seed and how to nick the seed

Winged seeds should normally be de-winged before sowing (e.g. *Combretum*, *Terminalia*, *Tipuana tipu*).

In some species germination is enhanced if the hard seed coat is cracked. This is a delicate operation as it is easy to damage the embryo within the seed.

As a general rule, fruits with a fleshy pulp surrounding the seeds will germinate better if the pulp is removed and the seed cleaned before sowing. Seeds of this kind often cannot be stored and should be sown soon after collection and cleaning.

Management

Different management techniques allow tree growers to maximize the production (both products and service functions) from trees and shrubs. Management may also be applied in order to reduce negative side effects from the presence of trees or shrubs, e.g. shading effects on adjacent crops.

The most common management practices are coppicing, lopping, and pollarding. Whenever a certain management technique is known to be feasible for a certain species this is indicated. Under this heading information on growth rate is also given.

Under this heading attention has been focused on the individual tree management in a farming or pastoral context. Normal forestry operations like clearing, thinning and pruning have thus not been indicated. Reference is made to forestry handbooks for such information. Information on whether or not the species is suitable for intercropping with agricultural crops has been included when known, and so has information on whether or not the species does well if planted as a woodlot or pure forest stand.

Remarks

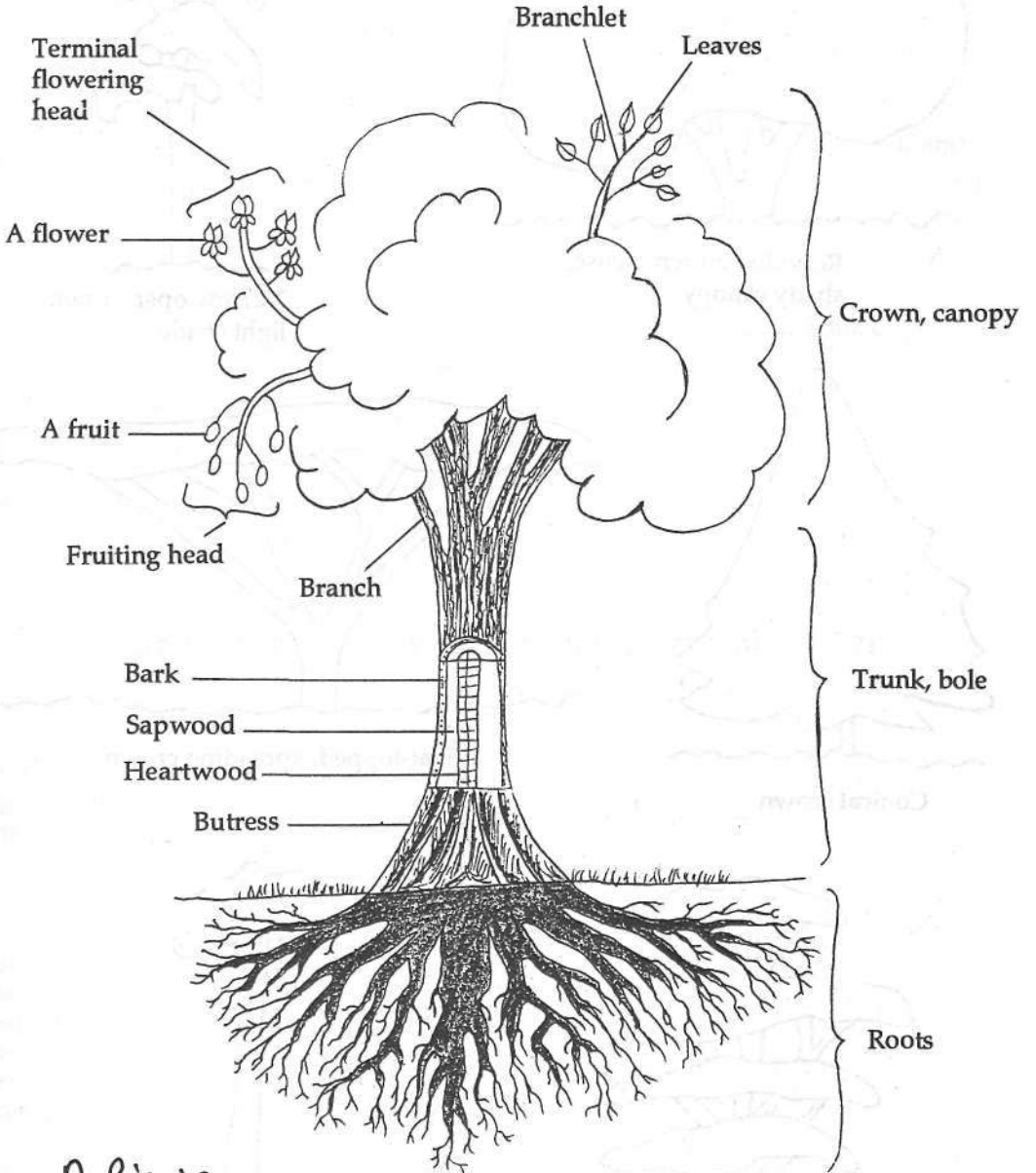
Any other useful or interesting information that is not relevant for inclusion under the other headings is given under "remarks". Information on medicinal uses of the plants is given here. It is wise to check dosages, methods of administration, etc., with locally knowledgeable people before putting these reported uses into practice.

Conclusion

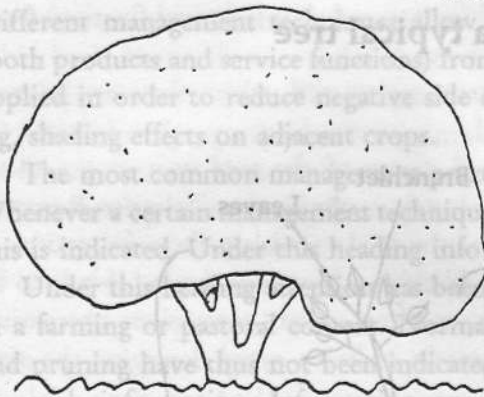
The main objective of this book is to provide answers to day-to-day questions for people growing trees at a practical level. It does not provide in-depth botanical knowledge on all the trees and shrubs of Uganda. Another aim of this book is to promote knowledge on the wide range of tree and shrub species that farmers and pastoralists actually depend on for their livelihood. All too often a few exotic species have been strongly promoted in extension work without any attention being given to the rich indigenous flora and local knowledge of it. This book is an attempt to provide the essential information on the trees that are important to rural people in Uganda.

Any reader who feels he can contribute to an improved second edition of this book is urged to do so by using the forms at the back.

The parts of a typical tree



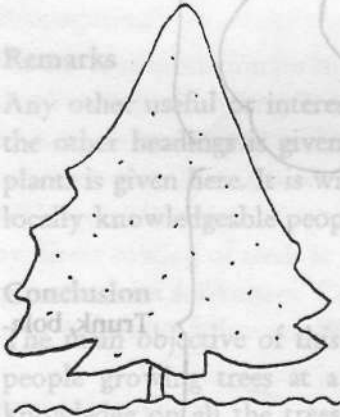
Tree shapes



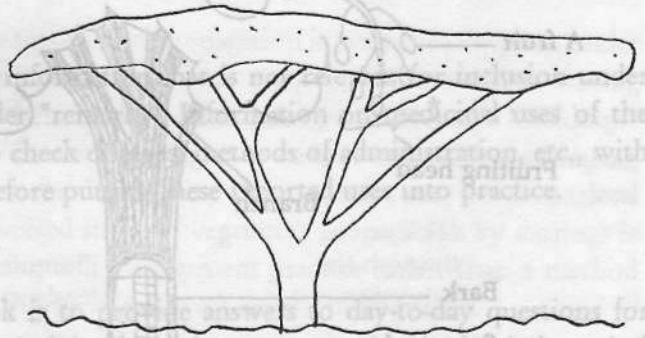
Rounded crown, dense, shady canopy



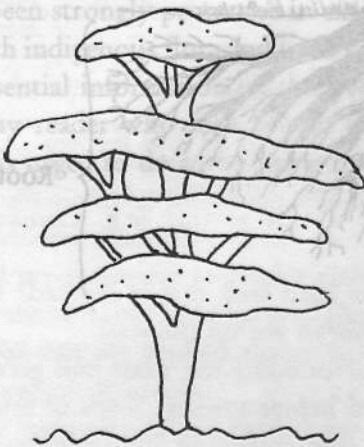
Narrow open crown, light shade



Conical crown



Flat-topped, spreading crown



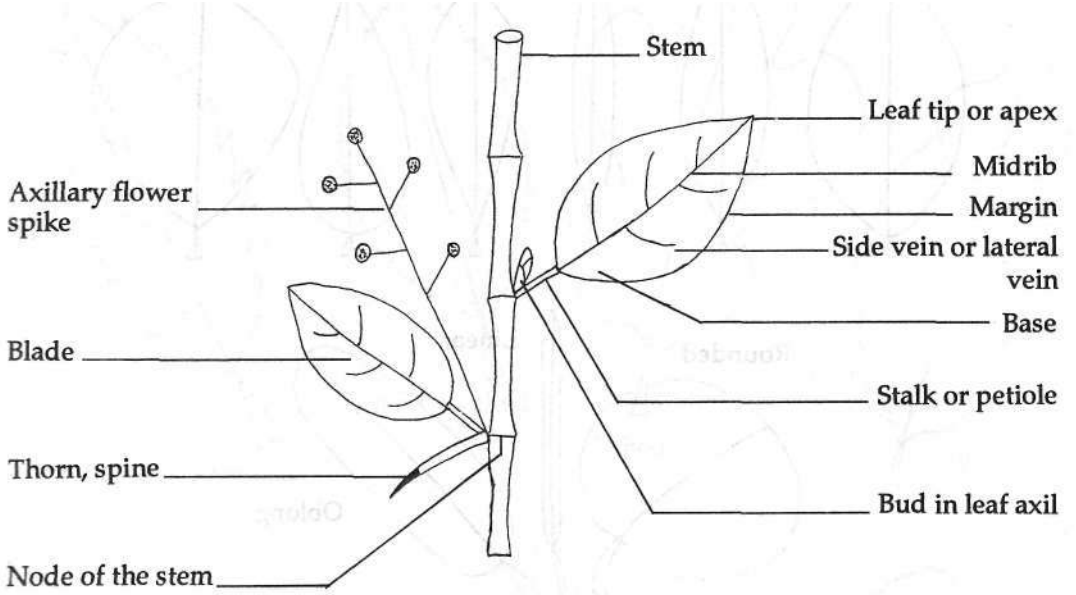
Canopy in layers



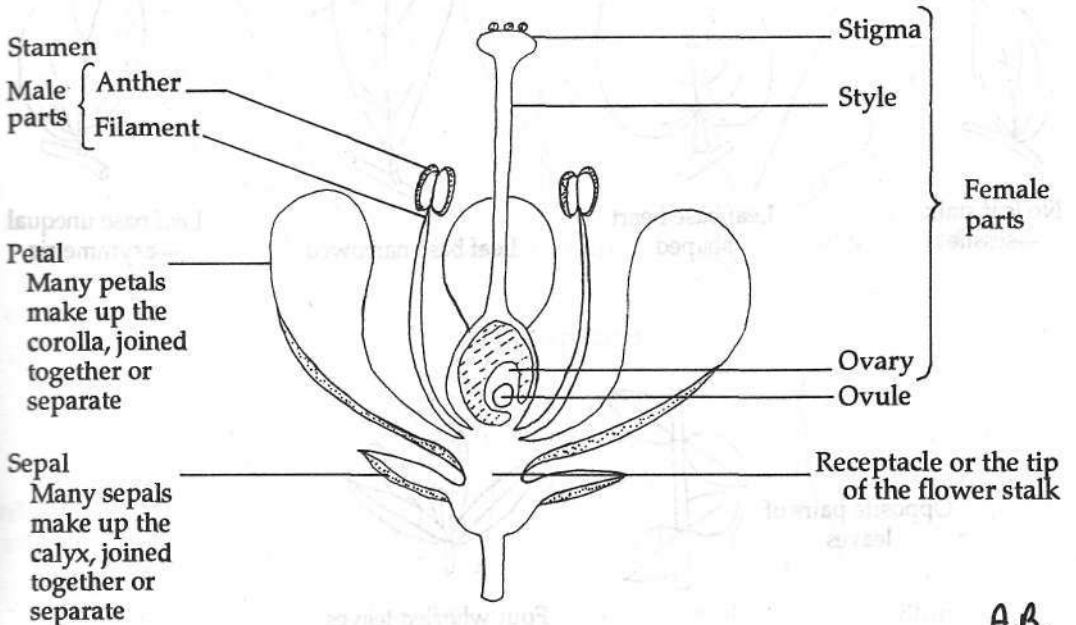
A tall bole, small dense crown

Leaves and stems

Diagram showing two **simple leaves** alternate on a stem



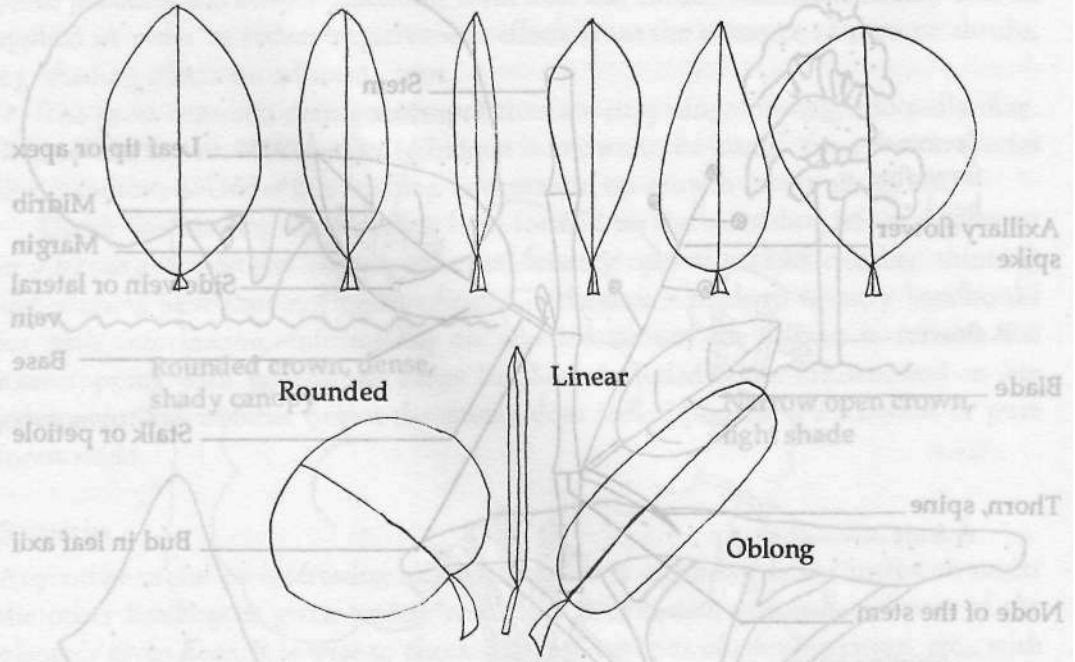
A diagrammatic section through a typical flower



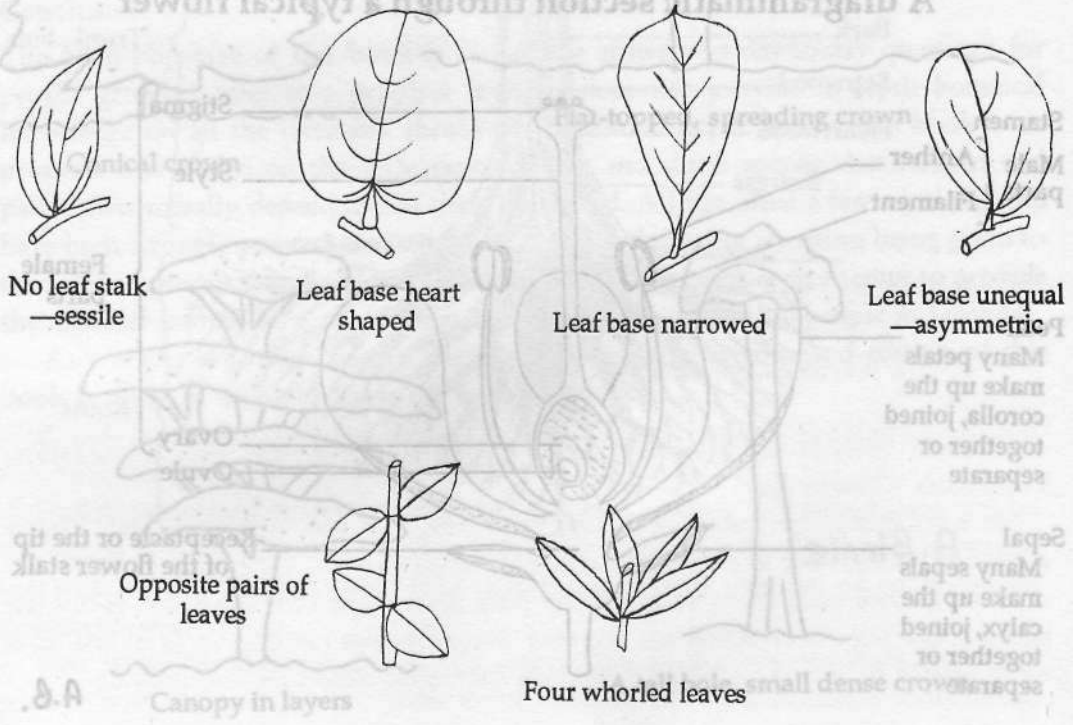
A.B.

Leaves

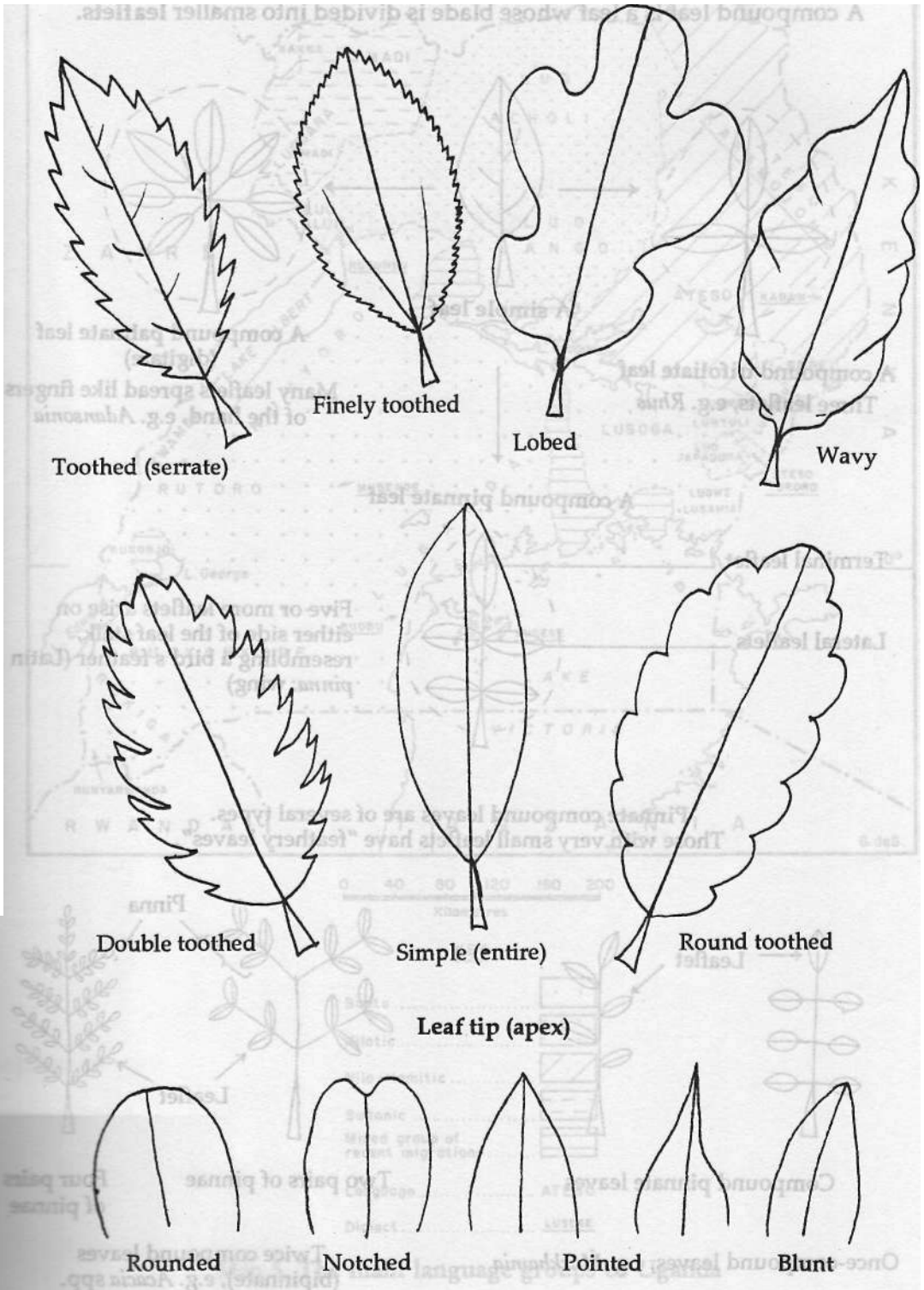
A variety of simple oval-shaped leaves



Leaf base

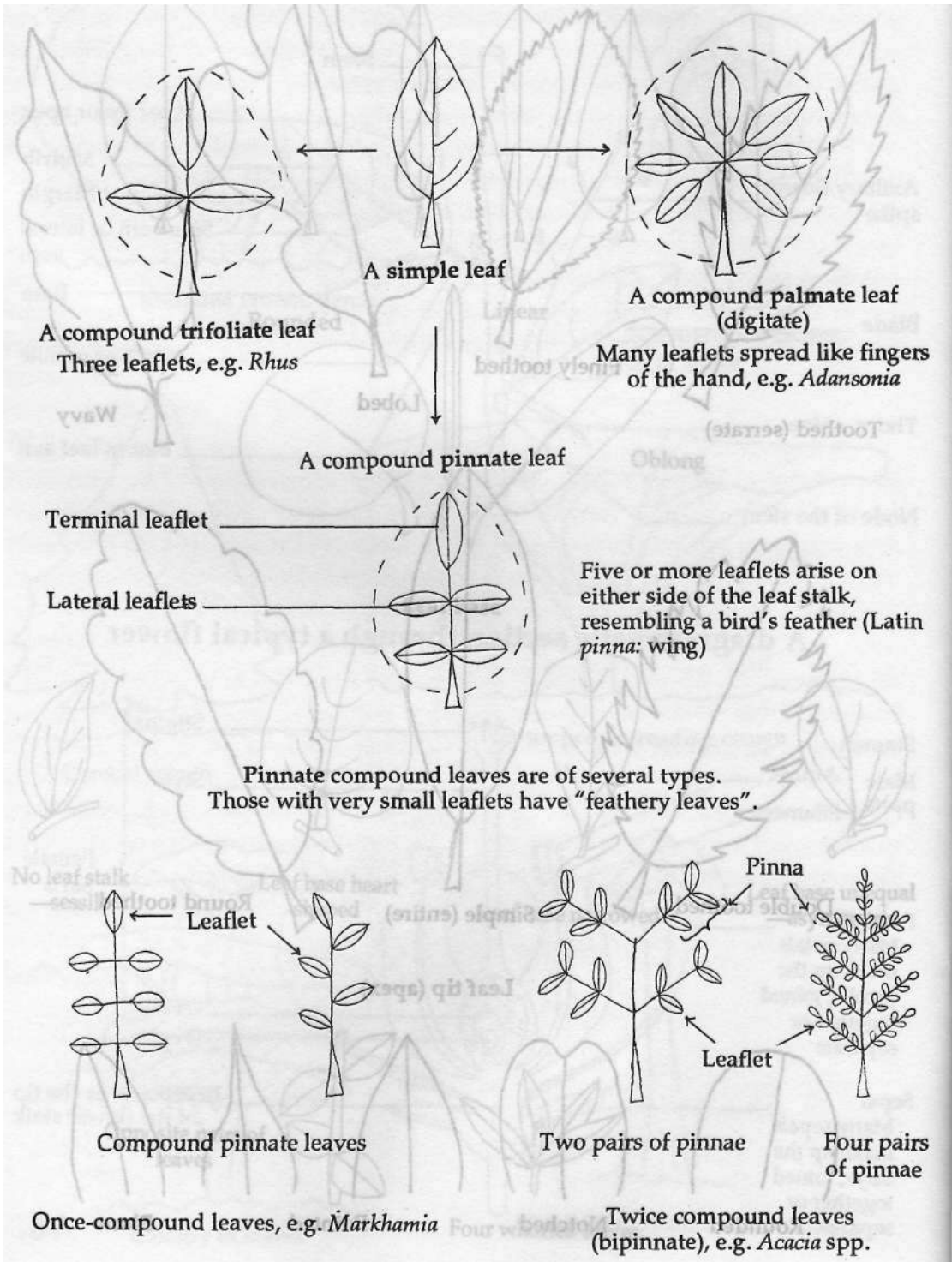


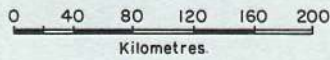
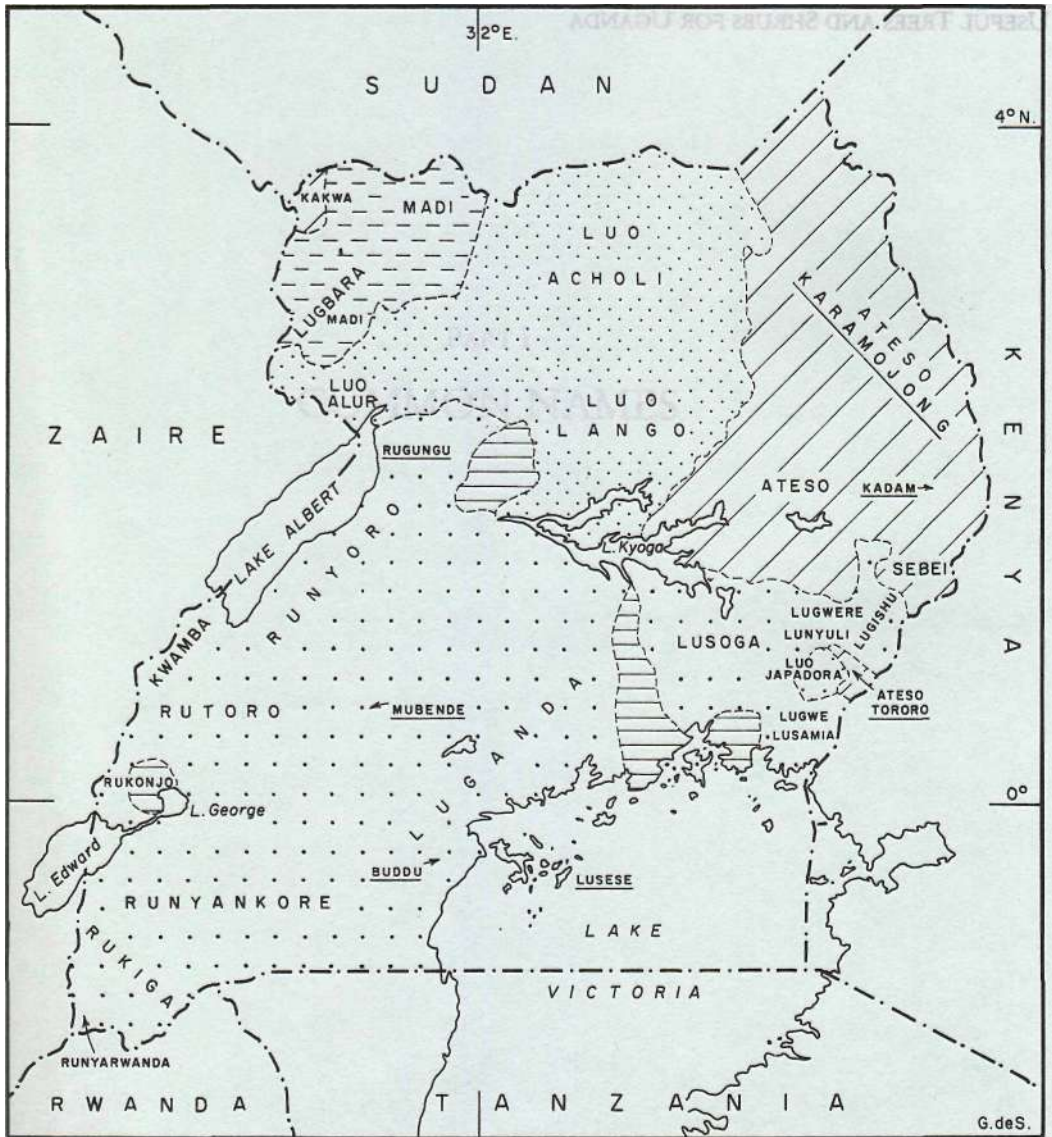
Leaf edge (margin)



Leaves may be simple or compound.

A compound leaf is a leaf whose blade is divided into smaller leaflets.

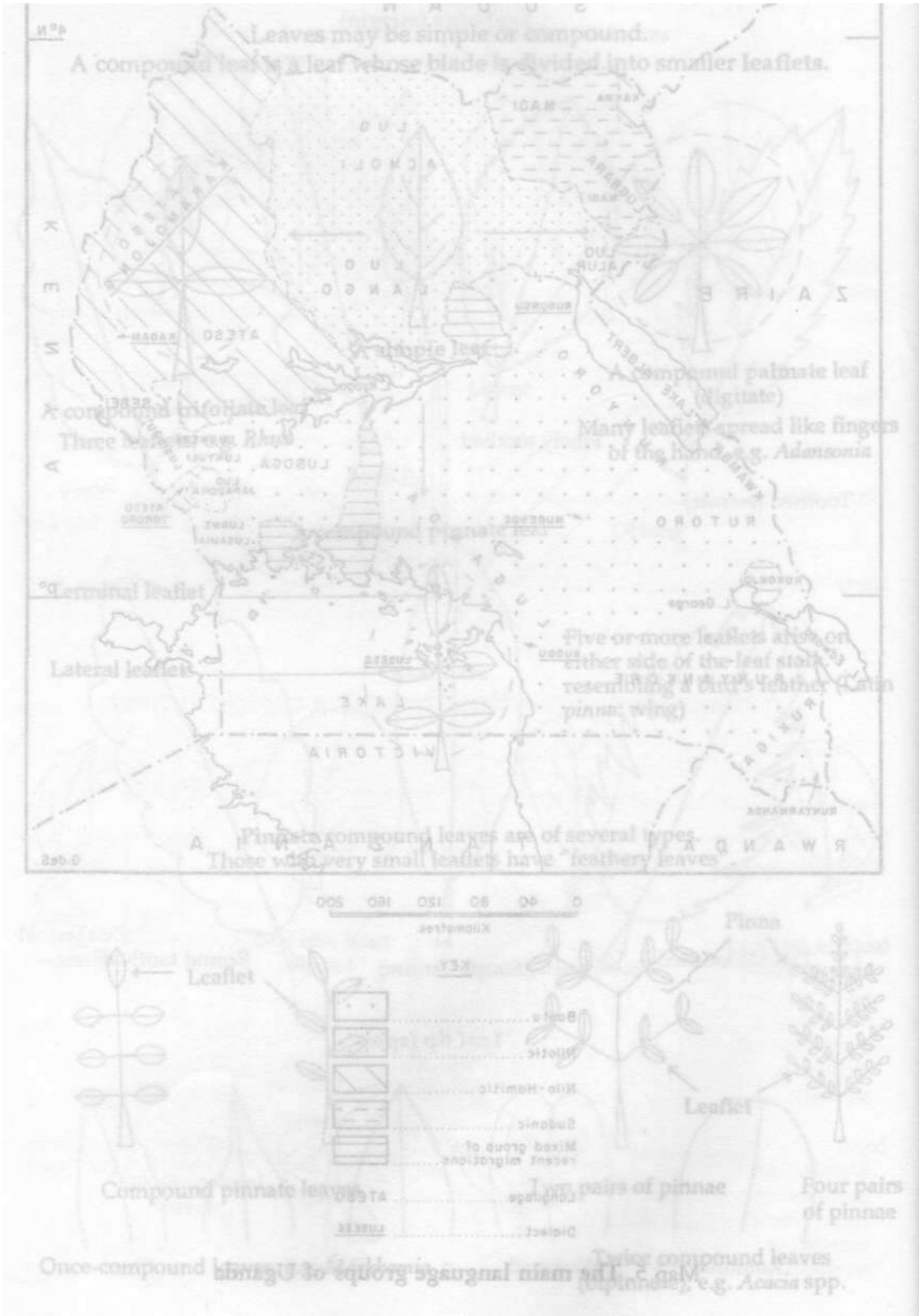




KEY

| | |
|--|---|
| Bantu |  |
| Nilotic |  |
| Nilo-Hamitic |  |
| Sudanic |  |
| Mixed group of recent migrations |  |
| Language | ATESO |
| Dialect | <u>LUSESE</u> |

Map 5. The main language groups of Uganda



PART I
COMMON NAMES

USEFUL TREES AND SHRUBS FOR UGANDA

ATESO

| | |
|-------------|--|
| Atenum | <i>Garcinia buchananii</i> |
| Bushishi | <i>Hagenia abyssinica</i> |
| Earamor | <i>Erythrophleum suaveolens</i> |
| Ebatat | <i>Albizia zygia</i> |
| Ebatata | <i>Albizia glaberrima</i> |
| Ebeliodole | <i>Sarcocephalus latifolius</i> |
| Ebiong | <i>Ficus glumosa</i> |
| Eboliboli | <i>Ficus ovata</i> |
| Ebolo | <i>Annona senegalensis</i> |
| Ebolo | <i>Sarcocephalus latifolius</i> |
| Ebolocho | <i>Lannea barteri</i> |
| Eborborei | <i>Ficus sycomorus</i> |
| Ebulai | <i>Ficus platyphylla</i> |
| Ebule | <i>Ficus platyphylla</i> |
| Ebuli | <i>Ficus ovata</i> |
| Ebusubusi | <i>Steganotaenia araliacea</i> |
| Edalach | <i>Ficus glumosa</i> |
| Edodoi | <i>Kigelia africana</i> |
| Edoil | <i>Sarcocephalus latifolius</i> |
| Edukudukut | <i>Borassus aethiopum</i> |
| Edukut | <i>Borassus aethiopum</i> |
| Edulo | <i>Ficus sur</i> |
| Edurakoit | <i>Faidherbia albida</i> |
| Edurokoi | <i>Ficus sur</i> |
| Egarai | <i>Lannea schweinfurthii</i> var. <i>stuhlmannii</i> |
| Egwapet | <i>Steganotaenia araliacea</i> |
| Ejikai | <i>Sclerocarya birrea</i> subsp. <i>caffra</i> |
| Ejikaiskoi | <i>Sclerocarya birrea</i> subsp. <i>caffra</i> |
| Ejinga | <i>Ficus sycomorus</i> |
| Ejoroi | <i>Teclea nobilis</i> |
| Ekajikai | <i>Sclerocarya birrea</i> subsp. <i>caffra</i> |
| Ekamaturu | <i>Ozoroa insignis</i> subsp. <i>reticulata</i> |
| Ekarukei | <i>Vitex madiensis</i> |
| Ekarukei | <i>Vitex doniana</i> |
| Ekiki | <i>Prosopis africana</i> |
| Ekisim | <i>Acacia hockii</i> |
| Eko | <i>Sclerocarya birrea</i> subsp. <i>caffra</i> |
| Ekodokodoi | <i>Acacia Senegal</i> |
| Ekomokoi | <i>Sarcocephalus latifolius</i> |
| Ekude | <i>Teclea nobilis</i> |
| Ekuloin | <i>Combretum collinum</i> |
| Ekum | <i>Diospyros mespiliformis</i> |
| Ekunguru | <i>Butyrospermum paradoxum</i> |
| Ekwalakwala | <i>Strychnos innocua</i> |
| Ekwalakwala | <i>Garcinia buchananii</i> |
| Ekworo | <i>Combretum molle</i> |
| Elamai | <i>Ximenia americana</i> |
| Elepolepo | <i>Mimusops kummel</i> |
| Elilie | <i>Securidaca longipedunculata</i> |
| Elilyoi | <i>Securidaca longipedunculata</i> |
| Elipilepo | <i>Sapium ellipticum</i> |

Ateso (contd)

| | |
|-------------|---|
| Eloa | <i>Antiaris toxicaria</i> |
| Elowa | <i>Milicia excelsa</i> |
| Elua | <i>Milicia excelsa</i> |
| Emalere | <i>Vangueria apiculata</i> |
| Ematakiro | <i>Lannea schweinfurthii</i> var. <i>stuhmannii</i> |
| Eminit | <i>Acacia gerrardii</i> |
| Emiti | <i>Markhamia lutea</i> |
| Emuriai | <i>Carissa edulis</i> |
| Emusogot | <i>Phoenix reclinata</i> |
| Engosorot | <i>Erythrina abyssinica</i> |
| Enyiti | <i>Stereospermum kunthianum</i> |
| Enyongai | <i>Steganothaenia araliacea</i> |
| Enytet | <i>Stereospermum kunthianum</i> |
| Eomokoi | <i>Sarcocephalus latifolius</i> |
| Epapai | <i>Piliostigma thonningii</i> |
| Eparis | <i>Grewia mollis</i> |
| Zpeduru | <i>Tamarindus indica</i> |
| Epopong | <i>Euphorbia candelabrum</i> |
| Eputon | <i>Pseudoedrela kotschyi</i> |
| Eregai | <i>Acacia mellifera</i> |
| Erere | <i>Trema orientalis</i> |
| Erionoi | <i>Margaritaria discoideus</i> |
| Esilang | <i>Zizyphus abyssinica</i> |
| Etek | <i>Albizia coriaria</i> |
| Etekwa | <i>Albizia coriaria</i> |
| Etira | <i>Dichrostachys cinerea</i> |
| Etirai | <i>Dichrostachys cinerea</i> |
| Etirir | <i>Acacia sieberiana</i> |
| Etirok | <i>Acacia sieberiana</i> |
| Etit | <i>Lannea barteri</i> |
| Etukubai | <i>Spathodea campanulata</i> |
| Eturukukuti | <i>Strychnos innocua</i> |
| Eturukurut | <i>Strychnos spinosa</i> |
| Eusuk | <i>Zanthoxylum chalybeum</i> |
| Eutukidole | <i>Sarcocephalus latifolius</i> |
| Ewelo | <i>Vitex doniana</i> |
| Ewoi | <i>Faidherbia albida</i> |
| Eworo | <i>Combretum molle</i> |
| Keo | <i>Oxytenanthera abyssinica</i> |

ATESO Karamajong

| | |
|------------|---------------------------|
| Ekapelimen | <i>Acacia nilotica</i> |
| Ekaramai | <i>Acacia seyal</i> |
| Ekodokodwo | <i>Acacia Senegal</i> |
| Eoi | <i>Acacia tortilis</i> |
| Nyadokanet | <i>Borassus aethiopum</i> |

ATESO Karamojong, dialect Kadam

| | |
|---------|----------------------------|
| Akalale | <i>Zizyphus abyssinica</i> |
| Alamai | <i>Ximenia americana</i> |
| Chia | <i>Hagenia abyssinica</i> |
| Ekingol | <i>Phoenix reclinata</i> |

Ateso Karamojong, dialect Kadam (contd)

| | |
|----------|-----------------------------|
| Ekonorum | <i>Ficus sur</i> |
| Ekorete | <i>Balanites aegyptiaca</i> |
| Lopeduru | <i>Tamarindus indica</i> |
| Muirungi | <i>Catha edulis</i> |

ATESO, Tororo

| | |
|------------|------------------------------|
| Ebei | <i>Balanites orbicularis</i> |
| Ebenyo | <i>Acacia mellifera</i> |
| Echekereng | <i>Acacia hockii</i> |
| Ekonoit | <i>Acacia Senegal</i> |
| Ekoromait | <i>Acacia seyal</i> |
| Epiyei | <i>Terminalia brownii</i> |
| Epujaiit | <i>Acacia seyal</i> |
| Etirr | <i>Acacia tortilis</i> |

ENGLISH

| | |
|------------------------|---|
| African nutmeg | <i>Pycnanthus angolensis</i> |
| African ebony | <i>Diospyros mespiliformis</i> |
| African ebony | <i>Dalbergia melanoxylon</i> |
| African blackwood | <i>Dalbergia melanoxylon</i> |
| African wild rubber | <i>Funtumia elastica</i> |
| African breadfruit | <i>Treculia africana</i> |
| African holly | <i>Ilex mitis</i> |
| African locust bean | <i>Parkia filicoidea</i> |
| African fan palm | <i>Borassus aethiopum</i> |
| Afzelia | <i>Afzelia africana</i> |
| American cedar | <i>Cedrella odorata</i> |
| Angel's trumpet | <i>Datura suaveolens</i> |
| Apple of sodom | <i>Solanum aculeastrum</i> |
| Apple-ring acacia | <i>Faidherbia albida</i> |
| Avocado pear | <i>Persea americana</i> |
| Bark-cloth fig | <i>Ficus natalensis</i> |
| Beechwood | <i>Faurea saligna</i> |
| Big-leaf mahogany | <i>Khaya grandifoliola</i> |
| Bitok | <i>Daniellia oliveri</i> |
| Black plum | <i>Vitex doniana</i> |
| Black-wood cassia | <i>Senna siamea</i> |
| Blue gum | <i>Eucalyptus globulus</i> |
| Borassus palm | <i>Borassus aethiopum</i> |
| Bottlebrush | <i>Callistemon citrinus</i> var. <i>splendens</i> |
| Bracatinga | <i>Mimosa scabrella</i> |
| Brazil cherry | <i>Eugenia uniflora</i> |
| Brazilian mahogany | <i>Cedrella odorata</i> |
| Broad-leaved croton | <i>Croton macrostachyus</i> |
| Brown olive | <i>Olea europaea</i> subsp. <i>africana</i> |
| Brown mahogany | <i>Lovoa swynnertonii</i> |
| Budongo heavy mahogany | <i>Entandrophragma utile</i> |
| Budongo mahogany | <i>Entandrophragma angolense</i> |
| Bush rubber | <i>Funtumia africana</i> |
| Calliandra | <i>Calliandra calothyrsus</i> |
| Camdeboo stinkwood | <i>Celtis africana</i> |
| Camel's foot leaf tree | <i>Piliostigma thonningii</i> |

English (contd)

| | |
|------------------------|--|
| Candelabra euphorbia | <i>Euphorbia candelabrum</i> |
| Candle bush | <i>Senna didymobotrya</i> |
| Candle-nut tree | <i>Aleurites moluccana</i> |
| Cape gooseberry | <i>Physalis peruviana</i> |
| Cape ash | <i>Ekebergia capensis</i> |
| Cape fig | <i>Ficus sur</i> |
| Cape chestnut | <i>Calodendrum capense</i> |
| Carambola | <i>Averrhoa carambola</i> |
| Caribbean pine | <i>Pinus caribaea</i> |
| Cassia | <i>Senna spectabilis</i> |
| Castor-oil plant | <i>Ricinus communis</i> |
| Casuarina | <i>Casuarina equisetifolia</i> |
| Cedar | <i>Juniperus procera</i> |
| Cedrella | <i>Cedrella odorata</i> |
| Celtis | <i>Celtis mildbraedii</i> |
| Chinese banyan | <i>Ficus benjamina</i> |
| Cigar-box tree | <i>Cedrella odorata</i> |
| Cinnamon | <i>Cinnamomum zeylanicum</i> |
| Cocoa | <i>Theobroma cacao</i> |
| Coconut palm | <i>Cocos nucifera</i> |
| Coral bush | <i>Jatropha multifida</i> |
| Cork wood | <i>Ricinodendron heudelotii</i> |
| Cow tamarind | <i>Albizia saman</i> |
| Crab nut | <i>Carapa procera</i> |
| Zroton | <i>Croton megalocarpus</i> |
| Cioan palm | <i>Roystonea regia</i> |
| Cuban pine | <i>Pinus caribaea</i> |
| -"cad | <i>Encephalartos hildebrandtii</i> |
| Deleb palm | <i>Borassus aethiopum</i> |
| Desert rose | <i>Adenium obesum</i> |
| Devil's yam | <i>Smilax anceps</i> |
| Dogplum | <i>Ekebergia capensis</i> |
| Dragon tree | <i>Dracaena fragrans</i> |
| East African satinwood | <i>Zanthoxylum gillettii</i> |
| African yellow-wood | <i>Podocarpus latifolius</i> |
| African yellow-wood | <i>Podocarpus usambarensis</i> var. <i>dawei</i> |
| African green wood | <i>Warburgia ugandensis</i> |
| ptian thorn | <i>Acacia nilotica</i> |
| Elephant foot | <i>Adenium obesum</i> |
| Elgon teak | <i>Olea capensis</i> subsp. <i>welwitschii</i> |
| Elgon olive | <i>Olea capensis</i> subsp. <i>welwitschii</i> |
| False nutmeg | <i>Pycnanthus angolensis</i> |
| False rubber | <i>Funtumia africana</i> |
| Fancy fruit | <i>Citrus reticulata</i> |
| Feather sepele | <i>Entandrophragma utile</i> |
| nut | <i>Jatropha curcas</i> |
| er euphorbia | <i>Euphorbia tirucalli</i> |
| :boyant | <i>Delonix regia</i> |
| Flame of the forest | <i>Spathodea campanulata</i> |
| Fiat-top acacia | <i>Acacia abyssinica</i> |
| Hooded gum | <i>Eucalyptus grandis</i> |
| Forest dombeya | <i>Dombeya goetzenii</i> |

USEFUL TREES AND SHRUBS FOR UGANDA

English (contd)

| | |
|-----------------------|----------------------------------|
| Forest rothmannia | <i>Rothmannia urcelliformis</i> |
| Giant diospyros | <i>Diospyros abyssinica</i> |
| Giant yellow mulberry | <i>Myrianthus holstii</i> |
| Giant granadilla | <i>Passiflora quadrangularis</i> |
| Granadilla | <i>Passiflora edulis</i> |
| Grape fruit | <i>Citrus paradisi</i> |
| Grape | <i>Vitis vinifera</i> |
| Grevillea | <i>Grevillea robusta</i> |
| Guava | <i>Psidium guajava</i> |
| Guinea oil palm | <i>Elaeis guinensis</i> |
| Hagenia | <i>Hagenia abyssinica</i> |
| Hook thorn | <i>Acacia mellifera</i> |
| Hoop pine | <i>Araucaria cunninghamii</i> |
| Horse-radish tree | <i>Moringa oleifera</i> |
| Incense tree | <i>Canarium schweinfurthii</i> |
| Indian plum | <i>Flacourtia indica</i> |
| Indian ash | <i>Acrocarpus fraxinifolius</i> |
| Indian rubber tree | <i>Ficus elastica</i> |
| Ironwood | <i>Senna siamea</i> |
| Jacaranda | <i>Jacaranda mimosifolia</i> |
| Jackfruit | <i>Artocarpus heterophyllus</i> |
| Jambolan | <i>Syzygium cuminii</i> |
| Java plum | <i>Syzygium cuminii</i> |
| Jerusalem thorn | <i>Parkinsonia aculeata</i> |
| Kaffir orange | <i>Strychnos spinosa</i> |
| Kapok tree | <i>Ceiba pentandra</i> |
| Kei apple | <i>Dovyalis caffra</i> |
| Kenya greenheart | <i>Warburgia ugandensis</i> |
| Khat | <i>Catha edulis</i> |
| Lagos rubber tree | <i>Funtumia elastica</i> |
| Large-leaved cordia | <i>Cordia africana</i> |
| Large-leaved albizia | <i>Albizia grandibracteata</i> |
| Lava fig | <i>Ficus benjamina</i> |
| Lemon | <i>Citrus limon</i> |
| Lemon-scented gum | <i>Eucalyptus citriodora</i> |
| Leucaena | <i>Leucaena diversifolia</i> |
| Leucaena | <i>Leucaena leucocephala</i> |
| Lime | <i>Citrus aurantifolia</i> |
| Loquat | <i>Eriobotrya japonica</i> |
| Lowland bamboo | <i>Oxytenanthera abyssinica</i> |
| Lucky nut | <i>Thevetia peruviana</i> |
| Lucky-bean tree | <i>Erythrina abyssinica</i> |
| Lucky-bean tree | <i>Azalia africana</i> |
| Mandarin | <i>Citrus reticulata</i> |
| Mango | <i>Mangifera indica</i> |
| Markhamia | <i>Markhamia lutea</i> |
| Mecodze | <i>Morus mesozygia</i> |
| Mesquite | <i>Prosopis juliflora</i> |
| Mexican lilac | <i>Gliricidia sepium</i> |
| Mexican weeping pine | <i>Pinus patula</i> |
| Mexican cypress | <i>Cupressus lusitanica</i> |
| Millettia | <i>Millettia dura</i> |

English (contd)

| | |
|----------------------|--------------------------|
| Mimusops | Mimusops kummel |
| Monkey pod | Albizia saman |
| Moon flower | Datura suaveolens |
| Moreton Bay pine | Araucaria cunninghamii |
| Mother of cocoa | Gliricidia sepium |
| Mountain ebony | Bauhinia variegata |
| Mountain bamboo | Arundinaria alpina |
| Mubende witch tree | Pterygota mildbraedii |
| ~indu palm | Phoenix reclinata |
| Mulberry | Morus alba |
| ritius thorn | Caesalpinia decapetala |
| Murray red gum | Eucalyptus camaldulensis |
| Ijrsore thorn | Caesalpinia decapetala |
| Nandi flame | Spathodea campanulata |
| Neem | Azadirachta indica |
| Newtonia | Newtonia buchananii |
| Nigerian pearwood | Guarea cedrata |
| Nile flame | Spathodea campanulata |
| Orange | Citrus sinensis |
| Orchid tree | Bauhinia variegata |
| Palmyra palm | Borassus aethiopum |
| Parasol tree | Polyscias fulva |
| Passion fruit | Passiflora edulis |
| Pawpaw | Carica papaya |
| Peacock flower | Albizia gummifera |
| Peanut-butter cassia | Senna didymobotrya |
| Pepper tree | Schinus molle |
| Persian lilac | Melia azedarach |
| Physic nut | Jatropha curcas |
| Pig nut | Jatropha curcas |
| Pigeonpea | Cajanus cajan |
| Pink poui | Tabebuia pentaphylla |
| Pink African cedar | Guarea cedrata |
| Pink mahogany | Guarea cedrata |
| Pitanga | Eugenia uniflora |
| Pitch pine | Pinus caribaea |
| Plantain | Musa paradisiaca |
| Poison-arrow tree | Acokanthera schimperi |
| Pomegranate | Punica granatum |
| Pride of Bolivia | Tipuana tipu |
| Purple canary tree | Canarium schweinfurthii |
| Pycnanthus | Pycnanthus angolensis |
| Quick stick | Gliricidia sepium |
| Rain tree | Albizia saman |
| Red milkwood | Mimusops kummel |
| Red thorn | Acacia lahai |
| Red silk cotton | Bombax buonopozense |
| Red stinkwood | Prunus africana |
| Red-hot-poker tree | Erythrina abyssinica |
| Riverbean | Sesbania sesban |
| Rose gum | Eucalyptus grandis |
| Rosy trumpet tree | Tabebuia pentaphylla |

English (contd)

| | |
|-------------------------|------------------------------------|
| Royal palm | <i>Roystonea regia</i> |
| Rubber plant | <i>Ficus elastica</i> |
| Saman tree | <i>Albizia saman</i> |
| Sand olive | <i>Dodonaea angustifolia</i> |
| Sandpaper cordia | <i>Cordia monoica</i> |
| Sausage tree | <i>Kigelia africana</i> |
| Scented-pod acacia | <i>Acacia nilotica</i> |
| Senegal mahogany | <i>Khaya senegalensis</i> |
| Senegal palm | <i>Phoenix reclinata</i> |
| Sesbania | <i>Sesbania sesban</i> |
| Shea-butter tree | <i>Butyrospermum paradoxum</i> |
| Shingle tree | <i>Acrocarpus fraxinifolius</i> |
| Sickle bush | <i>Dichrostachys cinerea</i> |
| Silky oak | <i>Grevillea robusta</i> |
| Sirris tree | <i>Albizia lebbeck</i> |
| Sisal | <i>Agave sisalana</i> |
| Slash pine | <i>Pinus caribaea</i> |
| Soursop | <i>Annona muricata</i> |
| Spanish cedar | <i>Cedrella odorata</i> |
| Spreading-leaved pine | <i>Pinus patula</i> |
| Star fruit | <i>Averrhoa carambola</i> |
| Starch banana | <i>Musa paradisiaca</i> |
| Steudner's dracaena | <i>Dracaena steudneri</i> |
| Stinkwood | <i>Celtis durandii</i> |
| Sudan gum Arabic | <i>Acacia Senegal</i> |
| Sugar apple | <i>Annona squamosa</i> |
| Surinam cherry | <i>Eugenia uniflora</i> |
| Swamp she oak | <i>Casuarina glauca</i> |
| Sweet banana | <i>Musa sapientum</i> |
| Sweetsop | <i>Annona squamosa</i> |
| Sycamore fig | <i>Ficus sycomorus</i> |
| Tamarind | <i>Tamarindus indica</i> |
| Tangerine | <i>Citrus reticulata</i> |
| Teak | <i>Tectona grandis</i> |
| Tecote pine | <i>Pinus patula</i> |
| Terminalia | <i>Terminalia mantaly</i> |
| Three-thorned acacia | <i>Acacia Senegal</i> |
| Tipu tree | <i>Tipuana tipu</i> |
| Toon tree | <i>Toona ciliata</i> |
| Tree of iron | <i>Gliricidia sepium</i> |
| Tree tomato | <i>Cyphomandra betacea</i> |
| Tulip tree | <i>Spathodea campanulata</i> |
| Uganda crab nut | <i>Carapa procera</i> |
| Uganda mulberry | <i>Morus mesozygia</i> |
| Uganda crab wood | <i>Carapa procera</i> |
| Uganda flame | <i>Spathodea campanulata</i> |
| Uganda coral | <i>Erythrina abyssinica</i> |
| Umbrella thorn | <i>Acacia abyssinica</i> |
| Umbrella thorn | <i>Acacia tortilis</i> |
| Umbrella tree | <i>Musanga cecropioides</i> |
| Velvet-leaved combretum | <i>Combretum molle</i> |
| Violet tree | <i>Securidaca longipedunculata</i> |

English (contd)

Wait-a-bit thorn
 Water-berry tree
 Waterberry
 Waterberry
 Weeping fig
 Whistling pine
 White stinkwood
 White teak
 White star apple
 White whistling thorn
 White-galled acacia
 Wild soursop
 Wild plum
 'NSH custard apple
 Wild banana
 Wild date palm
 i silk cotton
 Id olive
 i kapok
 Wild jackfruit
 Woman's tongue
 Yellow oleander

KAKWA

Andzili
 Angili
 Kirai
 Kobo
 Komure
 Murukukwe
 Ubologoi

KWAMBA

Abadu
 Amakeke
 Bohwe
 Bombo
 Bondongulo
 Buhura
 Bukingi
 Bulanka
 Bulera
 Bulera
 Bulera
 Bulera
 Butungu
 Byoro
 Enkinu
 Esa
 Idada
 Kagorogoro
 Kahimbi

Acacia mellifera
 Syzygium cordatum
 Syzygium owariense
 Syzygium guineense
 Ficus benjamina
 Casuarina equisetifolia
 Celtis africana
 Gmelina arborea
 Chrysophyllum albidum
 Acacia seyal
 Acacia seyal
 Annona senegalensis
 Ximenia americana
 Annona senegalensis
 Ensete ventricosum
 Phoenix reclinata
 Bombax buonopozense
 Olea europaea subsp. africana
 Bombax buonopozense
 Treculia africana
 Albizia lebbeck
 Thevetia peruviana

Parinari curatellifolia
 Parinari curatellifolia
 Khaya senegalensis
 Isoberlinia doka
 Butyrospermum paradoxum
 Vitex madiensis
 Ficus vallis-choudae

Spathodea campanulata
 Margaritaria discoideus
 Celtis mildbraedii
 Mildbraediendendron excelsum
 Chrysophyllum albidum
 Canarium schweinfurthii
 Trema orientalis
 Bombax buonopozensis
 Albizia glaberrima
 Albizia zygia
 Albizia adianthifolia
 Albizia grandibracteata
 Holoptelea grandis
 Canarium schweinfurthii
 Phoenix reclinata
 Elaeis guinensis
 Albizia grandibracteata
 Dracaena steudneri
 Cynometra alexandrei

Kwamba (contd)

| | |
|---------------|----------------------------------|
| Kesuba | <i>Antiaris toxicaria</i> |
| Ketumba | <i>Cordia millenii</i> |
| Kibanda | <i>Myrianthus holstii</i> |
| Kibende | <i>Myrianthus holstii</i> |
| Kibuki-lingi | <i>Nauclea diderrichii</i> |
| Kidlki | <i>Parkia filicoidea</i> |
| Kigere | <i>Musanga cecropioides</i> |
| Kigima | <i>Alstonia boonei</i> |
| Kigima | <i>Spathodea campanulata</i> |
| Kikangabalimi | <i>Tetrapleura tetraptera</i> |
| Kikiri | <i>Erythrina abyssinica</i> |
| Kikumbu | <i>Musanga cecropioides</i> |
| Kikussu | <i>Spathodea campanulata</i> |
| Kilingi | <i>Nauclea diderrichii</i> |
| Kiloko | <i>Ficus mucoso</i> |
| Kiringi | <i>Podocarpus latifolius</i> |
| Kirumbo | <i>Khaya anthotheca</i> |
| Kisongo | <i>Ricinodendron heudelotii</i> |
| Kisuba | <i>Antiaris toxicaria</i> |
| Kitokwe | <i>Sterculia dawei</i> |
| Kitomo | <i>Sterculia dawei</i> |
| Kitutube | <i>Zanthoxylum gillettii</i> |
| Kitutube | <i>Bombax buonopozensis</i> |
| Luma | <i>Arundinaria alpina</i> |
| Madada | <i>Albizia grandibracteata</i> |
| Makoga | <i>Borassus aethiopum</i> |
| Mba | <i>Elaeis guinensis</i> |
| Mbande | <i>Mimusops bagshawei</i> |
| Mbara | <i>Milicia excelsa</i> |
| Mbolu | <i>Pseudospondias microcarpa</i> |
| Moti | <i>Croton macrostachyus</i> |
| Mubio | <i>Teclea nobilis</i> |
| Muhona | <i>Schrebera arborea</i> |
| Muhuta | <i>Croton macrostachyus</i> |
| Mukana | <i>Markhamia lutea</i> |
| Mukiringi | <i>Morinda lucida</i> |
| Mukole | <i>Dombeya kirkii</i> |
| Muluku | <i>Sapium ellipticum</i> |
| Munyamaize | <i>Mitragyne rubrostipulata</i> |
| Munyamaize | <i>Mitragyne stipulosa</i> |
| Murundu | <i>Celtis durandii</i> |
| Musanvuma | <i>Sapium ellipticum</i> |
| Musasa | <i>Sapium ellipticum</i> |
| Museta | <i>Terminalia brownii</i> |
| Musisiya | <i>Albizia coriaria</i> |
| Mutaka | <i>Maesa lanceolata</i> |
| Mutiti | <i>Acacia sieberiana</i> |
| Mutumba | <i>Cordia africana</i> |
| Muwogi | <i>Carissa edulis</i> |
| Mwiha | <i>Pterygota mildbraedii</i> |
| Mwira | <i>Pterygota mildbraedii</i> |
| Mwogi | <i>Carissa edulis</i> |

Kwamba (contd)

Xdoro
Xjenjeka
Xkinga
Wukebu
Wulebu

Markhamia lutea
Mimusops kummel
Diospyros abyssinica
Strychnos mitis
Strychnos mitis

LUGANDA

Akasinsa
Banda
Budalasini
Bunuli
Etengoeddene
Ettengolyabalalo
Gonja
Isubi
Joge
Kabakanjagala
Kabalira
Kabalira
Kabaragala
Kafamba
Kajolyanjovu
Kaliba
Kalitunsi
Kalitunsi
Kalitunsi
Kalunginsavu
Kalunginsavu
Kalunginsavu
Kamenyambazi
Kanzironziro
Kapok
Kasaana
Kasisa
Katazamiti
Katunda
Katuugo
Kayinja
Kibo
Kifabakazi
Kifampa
Kifenensi
Kigali
Kigoogwa
Kikokooma
Kikokowe
Kikokwa
Kimulyangimbe
Kinulangombe
Kiralankuba
Kirundu
Kiryowa

Celtis africana
Arundinaria alpina
Cinnamomum zeylanicum
Pseudocedrela kotschyi
Solanum aculeastrum
Solanum aculeastrum
Musa paradisiaca
Musa sapientum
Parkia filicoidea
Aleurites moluccana
Ficus mucoso
Ficus sur
Musa sapientum
Ceiba pentandra
Dracaena steudneri
Musanga cecropioides
Eucalyptus citriodora
Eucalyptus grandis
Eucalyptus camaldulensis
Syzygium guineense
Syzygium cordatum
Syzygium guineense
Margaritaria discoideus
Syzygium cordatum
Ceiba pentandra
Acacia hockii
Trema orientalis
Bridelia micrantha
Passiflora edulis
Borassus aethiopum
Musa sapientum
Raphia farinifera
Spathodea campanulata
Ceiba pentandra
Artocarpus heterophyllus
Piliostigma thonningii
Agave sisalana
Vernonia auriculifera
Ficus vallis-choudae
Dombeya bagshawei
Steganotaenia araliacea
Steganotaenia araliacea
Solanecio mannii
Antiaris toxicaria
Jatropha curcas

Luganda (contd)

| | |
|---------------|------------------------------------|
| Kitembe | <i>Ensete ventricosum</i> |
| Kitunda | <i>Passiflora quadrangularis</i> |
| Kitwekyankima | <i>Tabernaemontana pachysiphon</i> |
| Kivuvu | <i>Solanecio cydonifolius</i> |
| Kiwondowondo | <i>Maesa lanceolata</i> |
| Kookowe | <i>Ficus ovata</i> |
| Kyewamala | <i>Tetradenia riparia</i> |
| Lilo | <i>Securidaca longipedunculata</i> |
| Lira | <i>Melia azedarach</i> |
| Lubira | <i>Smilax anceps</i> |
| Lufugo | <i>Celtis mildbraedii</i> |
| Lukindu | <i>Phoenix reclinata</i> |
| Lukolokolo | <i>Smilax anceps</i> |
| Lunaba | <i>Pycnanthus angolensis</i> |
| Lusambya | <i>Markhamia lutea</i> |
| Luwawu | <i>Ficus exasperata</i> |
| Luwoko | <i>Phytolacca dodecandra</i> |
| Maduudu | <i>Datura suaveolens</i> |
| Mangada | <i>Citrus reticulata</i> |
| Matooke | <i>Musa paradisiaca</i> |
| Mbidde | <i>Musa paradisiaca</i> |
| Motangu | <i>Dalbergia melanoxylon</i> |
| Mpaanyi | <i>Dracaena fragrans</i> |
| Mpewere | <i>Newtonia buchananii</i> |
| Mpewere | <i>Piptadeniastrum africana</i> |
| Mpinnamiti | <i>Cajanus cajan</i> |
| Mpojwa | <i>Diospyros abyssinica</i> |
| Mubajangabo | <i>Erythrina excelsa</i> |
| Mubajangalabi | <i>Alstonia boonei</i> |
| Mubajansayi | <i>Morinda lucida</i> |
| Mubimba | <i>Sesbania sesban</i> |
| Mubira | <i>Elaeis guineensis</i> |
| Muchungwa | <i>Citrus sinensis</i> |
| Mugavu | <i>Albizia coriaria</i> |
| Mugina | <i>Senecio hadiensis</i> |
| Mugunga | <i>Myrianthus holstii</i> |
| Mukebu | <i>Cordia africana</i> |
| Mukebu | <i>Cordia millenii</i> |
| Mukoge | <i>Tamarindus indica</i> |
| Mukoge | <i>Morus mesozygia</i> |
| Mukoge | <i>Alstonia boonei</i> |
| Mukole | <i>Dombeya kirkii</i> |
| Mukoma | <i>Grewia mollis</i> |
| Mukomakoma | <i>Grewia mollis</i> |
| Mukookowe | <i>Ficus ovata</i> |
| Mukoola | <i>Combretum collinum</i> |
| Mukoola | <i>Entandrophragma utile</i> |
| Mukoola | <i>Entandrophragma utile</i> |
| Mukowa | <i>Lanea welwitschii</i> |
| Mukunyu | <i>Ficus mucoso</i> |
| Mukunyu | <i>Ficus sycomoros</i> |
| Mukusakusa | <i>Strychnos mitis</i> |

Luganda (contd)

| | |
|--------------|--|
| Mukusu | <i>Entandrophragma angolense</i> |
| Mukuzanume | <i>Warburgia ugandensis</i> |
| Mukuzanyana | <i>Blighia unijugata</i> |
| Mukyula | <i>Senna didymobotrya</i> |
| Mulamula | <i>Dracaena fragrans</i> |
| Mulirira | <i>Harungana madagascariensis</i> |
| Mnlongo | <i>Albizia glaberrima</i> |
| Mulongo | <i>Albizia grandibracteata</i> |
| Mulongo | <i>Albizia zygia</i> |
| Mululu | <i>Chrysophyllum albidum</i> |
| Mululuza | <i>Vernonia amygdalina</i> |
| Mumuli | <i>Holoptelea grandis</i> |
| Munaba | <i>Pycnanthus angolensis</i> |
| Munazi | <i>Elaeis guineensis</i> |
| Munyamazi | <i>Vitex doniana</i> |
| Munyanya | <i>Cyphomandra betacea</i> |
| Munyegenye | <i>Tetrapleura tetraptera</i> |
| Munyenye | <i>Zanthoxylum gilletti</i> |
| Munyenye | <i>Zanthoxylum rubescens</i> |
| Munyinya | <i>Acacia gerrardii</i> |
| Munywamazzi | <i>Voacanga thouarsii</i> |
| Mupeera | <i>Psidium guajava</i> |
| Musa | <i>Musa sapientum</i> |
| | <i>Garcinia buchananii</i> |
| Musaali | <i>Symphonia globulifera</i> |
| Musali | <i>Mimusops bagshawei</i> |
| Musambamazzi | <i>Entada abyssinica</i> |
| Musandasanda | <i>Mimusops bagshawei</i> |
| Musanvuma | <i>Sapium ellipticum</i> |
| Musanvuma | <i>Voacanga thouarsii</i> |
| Musasa | <i>Sapium ellipticum</i> |
| Musebeya | <i>Albizia glaberrima</i> |
| Museka | <i>Ximenia americana</i> |
| Musenene | <i>Podocarpus usambarensis</i> var. <i>dawei</i> |
| Musenene | <i>Podocarpus latifolius</i> |
| Musinyanuro | <i>Myrianthus holstii</i> |
| Musizi | <i>Maesopsis eminii</i> |
| Musoga | <i>Alstonia boonei</i> |
| Musogasoga | <i>Croton macrostachyus</i> |
| Musogasoga | <i>Croton sylvaticus</i> |
| Munssa | <i>Kigelia africana</i> |
| Musuga | <i>Ehretia cymosa</i> |
| Musuga | <i>Olea capensis</i> subsp. <i>welwitschii</i> |
| Mutuba | <i>Ficus natalensis</i> |
| Mutugundo | <i>Vangueria apiculata</i> |
| Mutunku | <i>Dovyalis macrocalyx</i> |
| Muvule | <i>Milicia excelsa</i> |
| Muwafu | <i>Canarium schweinfurthii</i> |
| Muwanika | <i>Dichrostachys cinerea</i> |
| Muwawa | <i>Acacia sieberiana</i> |
| Muyati | <i>Terminalia glaucescens</i> |
| Muyembe | <i>Mangifera indica</i> |

Luganda (contd)

| | |
|--------------|------------------------------------|
| Muyinja | <i>Lannea barteri</i> |
| Muyirikiti | <i>Erythrina abyssinica</i> |
| Muyonza | <i>Carissa edulis</i> |
| Muyovu | <i>Entandrophragma excelsum</i> |
| Muyovu | <i>Entandrophragma utile</i> |
| Muyovu | <i>Entandrophragma cylindricum</i> |
| Muzabibu | <i>Vitis vinifera</i> |
| Muzimbandeya | <i>Sesbania sesban</i> |
| Muzinda | <i>Treculia africana</i> |
| Muziru | <i>Pseudospondias microcarpa</i> |
| Mwasa | <i>Beilschmiedia ugandensis</i> |
| Mweganza | <i>Neoboutonia macrocalyx</i> |
| Mweramanyo | <i>Acacia sieberiana</i> |
| Mwolola | <i>Entada abyssinica</i> |
| Nabulagala | <i>Lovoa swynnertonii</i> |
| Nabulere | <i>Mildbraediodendron excelsum</i> |
| Nagomola | <i>Monodora myristica</i> |
| Namagulu | <i>Musanga cecropioides</i> |
| Namununka | <i>Celtis durandii</i> |
| Ndagi | <i>Combretum molle</i> |
| Ndela | <i>Schrebera arborea</i> |
| Ndizi | <i>Musa sapientum</i> |
| Nemera | <i>Stereospermum kunthianum</i> |
| Ngwabuzito | <i>Prunus africana</i> |
| Nimawa | <i>Citrus limon</i> |
| Nkago | <i>Funtumia elastica</i> |
| Nkago | <i>Funtumia africana</i> |
| Nkalate | <i>Pachystela brevipes</i> |
| Nkalate | <i>Chrysophyllum albidum</i> |
| Nkenene | <i>Morus alba</i> |
| Nkoba | <i>Lovoa trichillioides</i> |
| Nkokwa | <i>Dombeya bagshawei</i> |
| Nkomawawanga | <i>Punica granatum</i> |
| Nkoni | <i>Euphorbia tirucalli</i> |
| Nkulumire | <i>Croton megalocarpus</i> |
| Nnimawa | <i>Citrus aurantifolia</i> |
| Nnimu | <i>Citrus limon</i> |
| Nnongo | <i>Albizia glaberrima</i> |
| Nongo | <i>Albizia zygia</i> |
| Nongo | <i>Albizia grandibracteata</i> |
| Nsambya | <i>Markhamia lutea</i> |
| Nserere | <i>Ficus ovata</i> |
| Nsogasoga | <i>Ricinus communis</i> |
| Ntaleyedungu | <i>Zanthoxylum chalybeum</i> |
| Ntasesa | <i>Prunus africana</i> |
| Ntuntunu | <i>Physalis peruviana</i> |
| Nyonza | <i>Carisa edulis</i> |
| Nzingu | <i>Mitragyne stipulosa</i> |
| Nzingu | <i>Mitragyne robustipulata</i> |
| Nzo | <i>Teclea nobilis</i> |
| Papaali | <i>Carica papaya</i> |
| Sekoba | <i>Trichilia dregeana</i> |

Luganda (contd)

Setala
Ssegavu
Wuju
Yakobo

Polyscias fulva
Albizia glaberrima
Passiflora quadrangularis
Artocarpus heterophyllus

LUGANDA, dialect Buddu

Kataibale
Mbula
Mpimbya
Mpojwa
Munamagulu
Munazi
Mutonganyi
Muwya
Muyanja
Muziti
Muziti
Nkalate
Nkoba
Nkobakoba
Nkunya

Margaritaria discoideus
Croton megalocarpus
Diospyros abyssinica
Diospyros abyssinica
Uapaca guineensis
Parinari curatellifolia
Olea capensis subsp. *welwitschii*
Warburgia ugandensis
Symphonia globulifera
Syzygium cordatum
Syzygium guineense
Chrysophyllum albidum
Baikiaea insignis
Baikiaea insignis
Mimusops bagshawei

LUGANDA, dialect Lusese

Mukusu
Musinde
Mwenyi
Nsagalane
Nsagalanyi

Uapaca guineensis
Maesopsis eminii
Senna didymobotrya
Xylopia eminii
Xylopia eminii

LUGBARA

Abogo
Abonigo
Ajuga
AH
Ali
Alobogo
Alokwe
Amigo
Andzili
Angili
Anigo
Anigo
Asa
Asaro
Befe
Bina
Bito
Bitok
Bitoke
Bulabo
Butri
Ela

Isoberlina doka
Markhamia lutea
Albizia glaberrima
Acacia hockii
Acacia seyal
Terminalia brownii
Sapium ellipticum
Syzygium guineense
Parinari curatellifolia
Parinari curatellifolia
Syzygium guineense
Syzygium cordatum
Acacia sieberiana
Acacia sieberiana
Beilschmiedia ugandensis
Acacia Senegal
Daniellia oliveri
Daniellia oliveri
Daniellia oliveri
Ficus vallis-choudae
Pterygota mildbraedii
Zizyphus abyssinica

USEFUL TREES AND SHRUBS FOR UGANDA

Lugbara (contd)

| | |
|-----------|------------------------------------|
| Elipo | <i>Annona senegalensis</i> |
| Eniu | <i>Sapium ellipticum</i> |
| Idio | <i>Ficus sur</i> |
| Iku | <i>Lophira alata</i> |
| Iti | <i>Tamarindus indica</i> |
| Itu | <i>Borassus aethiopum</i> |
| Kamiro | <i>Butyrospermum paradoxum</i> |
| Komere | <i>Butyrospermum paradoxum</i> |
| Komoro | <i>Butyrospermum paradoxum</i> |
| Kuzu | <i>Syzygium guineense</i> |
| Kuzu | <i>Syzygium cordatum</i> |
| Lamodi | <i>Annona senegalensis</i> |
| Lepi | <i>Stereospermum kunthianum</i> |
| Lira | <i>Melia azedarach</i> |
| Liso | <i>Prosopis africana</i> |
| Lokobe | <i>Stereospermum kunthianum</i> |
| Longoro | <i>Strychnos innocua</i> |
| Mala | <i>Pseudocedrela kotschyi</i> |
| Marigo | <i>Khaya senegalensis</i> |
| Mario | <i>Khaya grandifoliola</i> |
| Mario | <i>Khaya senegalensis</i> |
| Maza | <i>Piliostigma thonningii</i> |
| Meli | <i>Azzeria africana</i> |
| Nugile | <i>Kigelia africana</i> |
| Nzu | <i>Grewia mollis</i> |
| Obo | <i>Ficus platyphylla</i> |
| Oboloko | <i>Ficus platyphylla</i> |
| Obulo | <i>Ficus vallis-choudae</i> |
| Ochiki | <i>Ximenia americana</i> |
| Odikodi | <i>Lannea barteri</i> |
| Odoandri | <i>Vitex madiensis</i> |
| Odogo | <i>Vitex doniana</i> |
| Odolo | <i>Kigelia africana</i> |
| Odologo | <i>Kigelia africana</i> |
| Odra | <i>Oxytenanthera abyssinica</i> |
| Ofunze | <i>Croton macrostachyus</i> |
| Oiyofe | <i>Securidaca longipedunculata</i> |
| Ologo | <i>Ficus sycomorus</i> |
| Olugo | <i>Erythrina abyssinica</i> |
| Oluo | <i>Erythrina abyssinica</i> |
| Omululisi | <i>Vernonia amygdalina</i> |
| Onju | <i>Grewia mollis</i> |
| Otugna | <i>Steganotaenia araliacea</i> |
| Otugwo | <i>Steganotaenia araliacea</i> |
| Weri | <i>Euphorbia candelabrum</i> |

LUGISHU

| | |
|------------|-----------------------------|
| Akomya | <i>Strychnos mitis</i> |
| Boru | <i>Milicia excelsa</i> |
| Charamandi | <i>Prunus africana</i> |
| Cheroguru | <i>Erythrina abyssinica</i> |
| Chesovio | <i>Albizia coriaria</i> |

Lugishu (contd)

Chibondwe
 Chichikiri
 Chichilusa
 Chichipeno
 Chichiwondo
 Chiemo
 Chiemo
 Chifungo
 Chikichikiri
 Chikole
 Chiramat
 Chiruku
 Chiruku
 Chiruku
 Chiruku
 Chirule
 Chiusa
 Dowa
 Gabaluwa
 Gafuti
 Gibengeyi
 Gishombe
 Gufuri
 Gufuti
 Galindi
 Gumuhalamwa
 Gumutumba
 Gushompo
 Gusotono
 Guyi
 Gwihih
 Kiaranwe
 Kibenobeno
 Kiberassia
 Kichubi
 Kidangerere
 Kidowadowa
 Kijubu
 Kikameri
 Kimurumba
 Kirindi
 Kirongo
 Kirongo
 Kirongo
 Kisangulia
 Kisiangulu
 Kisichetwa
 Kisoromosi
 Kisubi
 Kisubi
 Kisubi
 Kitandwe

Ehretia cymosa
 Cordia africana
 Vernonia amygdalina
 Schefflera volkensii
 Discopodium penninervum
 Syzygium cordatum
 Syzygium guineense
 Kigelia africana
 Cordia africana
 Dombeya goetzenii
 Prunus africana
 Albizia gummifera
 Albizia zygia
 Albizia adianthifolia
 Albizia glaberrima var. glaberrima
 Ximenia americana
 Strombosia scheffleri
 Neoboutonia macrocalyx
 Dombeya goetzenii
 Polyscias fulva
 Olea capensis subsp. welwitschii
 Bersama abyssinica
 Polyscias fulva
 Polyscias fulva
 Allophylus abyssinicus
 Podocarpus latifolius
 Milicia excelsa
 Dracaena steudneri
 Celtis africana
 Croton macrostachyus
 Croton macrostachyus
 Macaranga kilimandscharica
 Senna didymobotrya
 Myrica salicifolia
 Spathodea campanulata
 Vangueria apiculata
 Neoboutonia macrocalyx
 Spathodea campanulata
 Garcinia buchananii
 Milicia excelsa
 Allophylus abyssinicus
 Albizia gummifera
 Albizia adianthifolia
 Albizia glaberrima var. glaberrima
 Maesa lanceolata
 Maesa lanceolata
 Hagenia abyssinica
 Sclerocarya birrea subsp. caffra
 Albizia gummifera
 Albizia adianthifolia
 Albizia glaberrima var. glaberrima
 Catha edulis

USEFUL TREES AND SHRUBS FOR UGANDA

Lugishu (contd)

| | |
|--------------|--|
| Komosovi | <i>Albizia adianthifolia</i> |
| Komosoviyo | <i>Albizia glaberrima</i> var. <i>glaberrima</i> |
| Komusovio | <i>Albizia zygia</i> |
| Kumoluko | <i>Albizia coriaria</i> |
| Kumuholong | <i>Bridelia micrantha</i> |
| Lidwa | <i>Euphorbia candelabrum</i> |
| Lukulungu | <i>Kigelia africana</i> |
| Lulundu | <i>Antiaris toxicaria</i> |
| Luluza | <i>Vernonia amygdalina</i> |
| Lusa | <i>Celtis africana</i> |
| Lusola | <i>Markhamia lutea</i> |
| Lutandwe | <i>Catha edulis</i> |
| Lutati | <i>Teclea nobilis</i> |
| Luwessu | <i>Macaranga kilimandscharica</i> |
| Luyusa | <i>Strombosia scheffleri</i> |
| Lwihihi | <i>Croton macrostachyus</i> |
| Madega | <i>Arundinaria alpina</i> |
| Magokwe | <i>Acacia mellifera</i> |
| Makendu | <i>Phoenix reclinata</i> |
| Maruss | <i>Myrica salicifolia</i> |
| Morororia | <i>Faurea saligna</i> |
| Mubenobeno | <i>Senna didymobotrya</i> |
| Mubidira | <i>Garcinia buchananii</i> |
| Mubondwe | <i>Schefflera volkensii</i> |
| Mudowa | <i>Neoboutonia macrocalyx</i> |
| Mudwess | <i>Macaranga kilimandscharica</i> |
| Muragolo | <i>Erythrina abyssinica</i> |
| Musagali | <i>Podocarpus latifolius</i> |
| Musalamumali | <i>Ekebergia capensis</i> |
| Musasia | <i>Sapium ellipticum</i> |
| Musembe | <i>Entada abyssinica</i> |
| Museregego | <i>Hagenia abyssinica</i> |
| Muuluza | <i>Vernonia amygdalina</i> |
| Mwandanda | <i>Ilex mitis</i> |
| Mwiruni | <i>Aningeria adolfi-friedericii</i> |
| Nabutusa | <i>Maesa lanceolata</i> |
| Nafuru | <i>Hagenia abyssinica</i> |
| Naporo | <i>Maesa lanceolata</i> |
| Ntorokya | <i>Juniperus procera</i> |
| Ruiunza | <i>Strombosia scheffleri</i> |
| Sherwi | <i>Garcinia buchananii</i> |
| Shibubunbo | <i>Lannea barteri</i> |
| Shigakara | <i>Bridelia micrantha</i> |
| Shigishombe | <i>Bersama abyssinica</i> |
| Shikalangwe | <i>Zizyphus abyssinica</i> |
| Shikimira | <i>Combretum molle</i> |
| Shikomosi | <i>Vangueria madagascariensis</i> |
| Shikomosi | <i>Vangueria apiculata</i> |
| Shiunwa | <i>Strychnos spinosa</i> |
| Shukuma | <i>Zanthoxylum gillettii</i> |
| Singulurwe | <i>Flacourtia indica</i> |
| Sizanzass | <i>Syzygium guineense</i> |

Lugishu (contd)

Sizanzass
Wadambasima
Wandiviri
Wandiviri
Zomai

LUGWE

Besabako
Esimenyenabusi
Ilisiola
Lulondamombe
Lusubasubi
Luwano
Mubere
Muchasa
Muchuta
Muchwichwi
Mudati
Mudodo
Mudungudungu
Mufudufu
Muhanga
Muhehete
Muhuhubu
Muhuwa
Mulundulundu
Muryonjo
Musinganjovu
Musisa
Musisa
Mutembetembe
Mutuli
Mutuli
Mutumba
Muyanya
Muyenjayeja
Mwiabala
Nabwor
Namakumbi
Nawulamu
Nkoni
Segaru
Siboroch
Silonga-longa

LUGWERE

Kinaboru
Kinabule
Kinakongole
Kinakworo
Kinatiti
Loloyi

Syzygium cordatum
Securidaca longipedunculata
Syzygium guineense
Syzygium cordatum
Balanites aegyptiaca

Acacia hockii
Steganotaenia araliacea
Markhamia lutea
Bridelia micrantha
Trema orientalis
Dracaena steudneri
Albizia coriaria
Sapium ellipticum
Combretum molle
Croton macrostachyus
Teclea nobilis
Ficus glumosa
Spathodea campanulata
Dombeya kirkii
Sterculia dawei
Blighia unijugata
Chrysophyllum albidum
Tamarindus indica
Antiaris toxicaria
Diospyros abyssinica
Morinda lucida
Celtis durandii
Celtis africana
Erythrina abyssinica
Syzygium cordatum
Syzygium guineense
Milicia excelsa
Acacia sieberiana
Parkia filicoidea
Securidaca longipedunculata
Grewia mollis
Tetrapleura tetraptera
Schrebera arborea
Euphorbia tirucalli
Piliostigma thonningii
Stereospermum kunthianum
Annona senegalensis

Annona senegalensis
Ficus sycomorus
Butyrospermum paradoxum
Combretum molle
Lannea barteri
Securidaca longipedunculata

USEFUL TREES AND SHRUBS FOR

Lugwere (contd)

Lukamakambugo
Maddula
Mkende
Mukarukei
Mukodolowa
Mukoko
Mukomeri
Mukonowarogo
Mukora
Mukozi
Mulongo
Musiono
Musuku
Mutaigumbwa
Mutama
Mwiago
Mwiyo
Nakamole
Nongo
Pate
Speri
Tera

Margaritaria discoideus
Pycnanthus angolensis
Ficus exasperata
Vitex doniana
Zizyphus abyssinica
Ficus ovata
Ximenia americana
Stereospermum kunthianum
Combretum collinum
Entada abyssinica
Albizia zygia
Acacia hockii
Zanthoxylum chalybeum
Margaritaria discoideus
Sarcocephalus latifolius
Kigelia africana
Croton macrostachyus
Teclea nobilis
Albizia zygia
Neoboutonia macrocalyx
Ficus exasperata
Ficus natalensis

LUNYULI

Hinghobe
Kidunga
Kinyalissa
Luhoni
Lunani
Lwefubulo
Mubale
Mudongodongo
Mufudu
Mugangwe
Mugiryanjole
Muhangwe
Muhohote
Muhungwa
Mujasa
Mujengejenge
Mujiti
Mujungwe
Mukobe
Mulama
Mungobe
Musende
Musheti
Muvumbo
Nahingunya
Solwa

Cordia africana
Euphorbia candelabrum
Borassus aethiopum
Euphorbia tirucalli
Zizyphus abyssinica
Steganotaenia araliacea
Diospyros abyssinica
Erythrina abyssinica
Vitex doniana
Teclea nobilis
Trema orientalis
Bridelia micrantha
Pseudospondias microcarpa
Tamarindus indica
Sapium ellipticum
Entada abyssinica
Phoenix reclinata
Kigelia africana
Erythrina abyssinica
Piliostigma thonningii
Spathodea campanulata
Antiaris toxicaria
Borassus aethiopum
Lannea barteri
Croton macrostachyus
Markhamia lutea

LUO

Achara
 Achiru
 Adhiang
 Akikache
 Akwalakwala
 Awak
 Awak-owak
 Beyo
 Chwaa
 Chwoo
 Kano
 Kano
 Kapenda
 Koo
 Obul
 Odiodi
 Odugu
 Ogali
 Okechu
 Okeetu
 Okuto-lachar
 Okutu-oryang
 Olam
 Oiwaa
 Oteng
 Owak
 Oyelo gwok
 Pwoyo
 Tido
 Tido
 Tugu
 Yago

LUO Acholi

Acak
 Achacha
 Achika
 Achuga
 Adengoye
 Arwesa
 Alelemo
 Alemolemo
 Aliya
 Anino
 Atachogat
 Atego
 Awok
 Ayekayek
 Baa
 Beyo
 Chetwingo
 Chumu

Acacia sieberiana
 Acacia hockii
 Voacanga thouarsii
 Podocarpus latifolius
 Strychnos innocua
 Albizia grandibracteata
 Albizia glaberrima
 Afzelia africana
 Tamarindus indica
 Tamarindus indica
 Syzygium guineense
 Syzygium cordatum
 Cajanus cajan
 Oxytenanthera abyssinica
 Mitragyne stipulosa
 Erythrophleum suaveolens
 Combretum collinum
 Piliostigma thonningii
 Combretum collinum
 Acacia hockii
 Acacia sieberiana
 Acacia hockii
 Ficus sycomorus
 Milicia excelsa
 Lophira alata
 Albizia grandibracteata
 Vitex madiensis
 Ficus vasta
 Khaya senegalensis
 Khaya grandifoliola
 Borassus aethiopum
 Kigelia africana

 Uapaca guineensis
 Teclea nobilis
 Acacia Senegal
 Carissa edulis
 Vangueria apiculata
 Lannea barteri
 Ximenia americana
 Ximenia americana
 Securidaca longipedunculata
 Ozoroa insignis subsp. reticulata
 Teclea nobilis
 Margaritaria discodeus
 Albizia grandibracteata
 Albizia coriaria
 Afzelia africana
 Afzelia africana
 Croton sylvaticus
 Diospyros mespiliformis

Luo, Acholi (contd)

| | |
|-------------|--|
| Ekwanga | <i>Croton macrostachyus</i> |
| Elogologo | <i>Lanea schweinfurthii</i> var. <i>stuhl</i> |
| Kichuk | <i>Zanthoxylum chalybeum</i> |
| Kijing | <i>Prosopis africana</i> |
| Kilajok | <i>Euphorbia tirucalli</i> |
| Kilere | <i>Terminalia brownii</i> |
| Kisoro | <i>Erythrina abyssinica</i> |
| Koko | <i>Strychnos innocua</i> |
| Labori | <i>Vernonia amygdalina</i> |
| Lachari | <i>Acacia sieberiana</i> |
| Lakido | <i>Acacia Senegal</i> |
| Lalia | <i>Securidaca longipedunculata</i> |
| Lalon | <i>Securidaca longipedunculata</i> |
| Lango | <i>Zizyphus abyssinica</i> |
| Latoligo | <i>Albizia coriaria</i> |
| Leo | <i>Hagenia abyssinica</i> |
| Lpengwata | <i>Spathodea campanulata</i> |
| Locaca | <i>Uapaca guineensis</i> |
| Lochoro | <i>Erythrina abyssinica</i> |
| Loting | <i>Erythrina abyssinica</i> |
| Luguotu | <i>Sclerocarya birrea</i> subsp. <i>caffra</i> |
| Munyu | <i>Sarcocephalus latifolius</i> |
| Obwolo | <i>Annona senegalensis</i> |
| Oding | <i>Erythrina abyssinica</i> |
| Oduk | <i>Combretum molle</i> |
| Ofuti | <i>Pseudoedrela kotschyi</i> |
| Okechu | <i>Combretum molle</i> |
| Okechu | <i>Combretum molle</i> |
| Okiro | <i>Dichrostachys cinerea</i> |
| Okito | <i>Dichrostachys cinerea</i> |
| Olamoi | <i>Ximania americana</i> |
| Olango | <i>Zizyphus abyssinica</i> |
| Olivaa | <i>Antiaris toxicaria</i> |
| Olwiro | <i>Steganotaenia araliacea</i> |
| Opo | <i>Dalbergia melanoxylon</i> |
| Opobo-bunga | <i>Trema orientalis</i> |
| Opodeko | <i>Teclea nobilis</i> |
| Opolok | <i>Stereospermum kunthianum</i> |
| Oput | <i>Pseudoedrela kotschyi</i> |
| Otego | <i>Margaritaria discoideus</i> |
| Otit | <i>Phoenix reclinata</i> |
| Otitimo | <i>Sclerocarya birrea</i> subsp. <i>caffra</i> |
| Otlug | <i>Lophira alata</i> |
| Ovolo | <i>Annona senegalensis</i> |
| Oyelo | <i>Vitex doniana</i> |
| Pobo | <i>Grewia mollis</i> |
| Roki | <i>Zanthoxylum chalybeum</i> |
| Yaa | <i>Butyrospermum paradoxum</i> |
| Yao | <i>Butyrospermum paradoxum</i> |

LUO Japadora

Achak
 Adezo
 Akoiyi
 Alue
 Amalera
 Bedo
 Bedo
 Bileri
 Bondo
 Chumo
 Deda
 Dukino
 Epoli
 Katama
 Kiditi
 Kikwala
 Koli
 Lilyo
 Mafululu
 Misola
 Munu
 Obalo
 Ober
 Oberipangala
 Ogeli
 Olia
 Omogi
 Omokoma
 Ongonye
 Oporoloch
 Orian
 Osweri
 Oya
 Tewotewo
 Tit
 Yakiyaki
 Yuelo

LUO Lango

Abaa-achol
 Achacho
 Achuga
 Agagi
 Akwalakwala lyech
 Alal
 Amalera
 Aputu
 Atego
 Atila
 Bata
 Ebele
 Ebule

Ozoroa reticulata
 Vangueria madagascariensis
 Cordia africana
 Acacia sieberiana
 Vangueria apiculata
 Albizia glaberrima
 Albizia zygia
 Sapium ellipticum
 Euphorbia candelabrum
 Diospyros mespiliformis
 Combretum molle
 Combretum collinum
 Croton macrostachyus
 Nauclea latifolia
 Ficus natalensis
 Strychnos innocua
 Erythrina abyssinica
 Securidaca longipedunculata
 Steganotaenia araliacea
 Markhamia lutea
 Pycnanthus angolensis
 Annona senegalensis
 Albizia coriaria
 Entada abyssinica
 Piliostigma thonningii
 Milicia excelsa
 Albizia coriaria
 Grewia mollis
 Zizyphus abyssinica
 Stereospermum kunthianum
 Acacia hockii
 Turraea robusta
 Teclea nobilis
 Acacia sieberiana
 Phoenix reclinata
 Trema orientalis
 Vitex doniana

Albizia glaberrima
 Teclea nobilis
 Carissa edulis
 Acacia seyal
 Strychnos spinosa
 Acacia Senegal
 Vangueria apiculata
 Pseudocedrela kotschyi
 Margaritaria discoideus
 Dichrostachys cinerea
 Albizia coriaria
 Sarcocephalus latifolius
 Ficus ovata

Luo, Lango (contd)

Ebusubus
Ebuu
Edomel
Ekwango
Ekworo
Elila
Elwa
Elwa
Elwilwi
Emuturu
Epopong
Eputi
Etitiatar
Ewilakot
Eworo
Imuru
Itek
Itek
Iworo
Iyoro
Jakayit
Kokowi
Kwogo
Logologo
Lorokwoin
Musaja
Odugu-kulo
Okelo-okelo
Okuto-etiri
Okutokech
Okutu-ipeti
Oligo
Olimu
Opal
Opobu
Owelo
Tit

Steganotaenia araliacea
Ficus sur
Cordia monoica
Croton macrostachyus
Ficus glumosa
Securidaca longipedunculata
Spathodea campanulata
Antiaris toxicaria
Steganotaenia araliacea
Ozoroa insignis subsp. reticulata
Euphorbia candelabrum
Pseudocedrela kotschyi
Lannea barteri
Erythrina abyssinica
Ficus glumosa
Butyrospermum paradoxum
Albizia coriaria
Tetrapleura tetraptera
Combretum molle
Combretum molle
Sclerocarya birrea subsp. caffra
Flacourtia indica
Lannea schweinfurthii var. stuhlmannii
Lannea fulva
Stereospermum kunthianum
Sapium ellipticum
Bridelia micrantha
Vernonia amygdalina
Acacia sieberiana
Acacia Senegal
Dichrostachys cinerea
Euphorbia tirucalli
Ximenia americana
Spathodea campanulata
Grewia mollis
Vitex doniana
Phoenix reclinata

LUSAMIA

Lufullo
Ongono

Morus mesozygia
Pycnanthus angolensis

LUSOGA

Balwegira
Daha
Dembeza
Ikobokobo
Itasabwa
Kakazi
Kamunyemunye
Kasone
Katunganfulu

Warburgia ugandensis
Combretum molle
Stereospermum kunthianum
Ehretia cymosa
Bridelia micrantha
Margaritaria discoideus
Sclerocarya birrea subsp. caffra
Acacia hockii
Margaritaria discoideus

Lusoga (contd)

| | |
|--------------|--|
| Kawule | <i>Rauvolfia vomitoria</i> |
| Kibudubudu | <i>Steganotaenia araliacea</i> |
| Kidondwe | <i>Ficus vallis-choudae</i> |
| Kikukulu | <i>Euphorbia candelabrum</i> |
| Kilowa | <i>Jatropha curcas</i> |
| Kinyasila | <i>Stereospermum kunthianum</i> |
| Kinyirira | <i>Senecio hadiensis</i> |
| Kirama | <i>Piliostigma thonningii</i> |
| Kiryanyonyi | <i>Ficus natalensis</i> |
| Kitamatama | <i>Annona senegalensis</i> |
| Kivunambasa | <i>Turraea robusta</i> |
| Kookowe | <i>Ficus ovata</i> |
| Kusekseke | <i>Maesa lanceolata</i> |
| Luburyango | <i>Dichrostachys cinerea</i> |
| Luka | <i>Margaritaria discoideus</i> |
| Lukomakoma | <i>Grewia mollis</i> |
| lukone | <i>Euphorbia tirucalli</i> |
| Lusansa | <i>Phoenix reclinata</i> |
| Lutegankofu | <i>Vangueria apiculata</i> |
| Luwawu | <i>Ficus exasperata</i> |
| Lnzu | <i>Teclea nobilis</i> |
| Mubafu | <i>Canarium schweinfurthii</i> |
| Mudode | <i>Ficus vallis-choudae</i> |
| Mufudumbwa | <i>Vitex doniana</i> |
| Mufuwanduzi | <i>Acacia sieberiana</i> |
| ;aba | <i>Solanecio manni</i> |
| Mugaire | <i>Ficus natalensis</i> |
| Mugali | <i>Piliostigma thonningii</i> |
| Mujasajaba | <i>Sapium ellipticum</i> |
| Mujasajasa | <i>Sapium ellipticum</i> |
| Mukebu | <i>Cordia monoica</i> |
| Idukoge | <i>Tamarindus indica</i> |
| Mukoko | <i>Ficus platyphylla</i> |
| Idukondwa | <i>Securidaca longipedunculata</i> |
| Mukontambale | <i>Lanea barteri</i> |
| Mukoola | <i>Combretum collinum</i> |
| Mukoza | <i>Monodora myristica</i> |
| Mukukulu | <i>Euphorbia candelabrum</i> |
| Mukunyu | <i>Ficus sur</i> |
| Mukunyu | <i>Ficus sycomorus</i> |
| Mukuzadhyana | <i>Blighia unijugata</i> |
| Mukyemogola | <i>Celtis africana</i> |
| Mukyemogola | <i>Celtis durandii</i> |
| -ulongo | <i>Albizia glaberrima</i> var. <i>glaberrima</i> |
| Mulongo | <i>Albizia zygia</i> |
| Mulongo | <i>Albizia grandibracteata</i> |
| Mululu | <i>Chrysophyllum albidum</i> |
| Mulyambwa | <i>Morinda lucida</i> |
| Mupapaali | <i>Carica papaya</i> |
| Musaali | <i>Garcinia buchananii</i> |
| Musabagwa | <i>Combretum collinum</i> |
| Musali | <i>Mimusops bagshawei</i> |

USEFUL TREES AND SHRUBS FOR UGANDA

Lusoga (contd)

Musambamadhi
Musandasanda
Musandikira
Museno
Musita
Muswaki
Mutamatama
Mutulituli
Muvunjudza
Muwawa
Muyemba
Muyembe
Muyemberera
Muziru
Mwesende
Namukodolwa
Ndawa
Ndebeza
Ndujule
Nfodwa
Nkago
Nkotcha
Nkulidho
Nnongo
Nongo
Nongo
Nsali
Nsimwa
Nsiwa

Entada abyssinica
Sterculia dawei
Blighia unijugata
Ficus exasperata
Alizia coriaria
Strychnos innocua
Sarcocephalus latifolius
Carissa edulis
Kigelia africana
Acacia sieberiana
Croton macrostachyus
Mangifera indica
Croton macrostachyus
Pseudospondias microcarpa
Bridelia micrantha
Zizyphus abyssinica
Combretum molle
Stereospermum kunthianum
Steganotaenia araliacea
Combretum molle
Funtumia africana
Combretum collinum
Trema orientalis
Albizia glaberrima var. glaberrima
Albizia grandibracteata
Albizia zygia
Garcinia buchananii
Ximenia americana
Alstonia boonei

MADI

Adza
Adzimeli
Ala
Andzili
Angili
Asonbere
Awa
Azza
Elo
Enzu
Eri
Erie
Icho
Ichu
Itchi
Itu
Itzo
Iyo
Kayakaya
Kiliozoki
Kobakoba

Lannea barteri
Albizia glaberrima
Pseudocedrela kotschy
Parinari curatellifolia
Parinari curatellifolia
Harungana madagascariensis
Butyrospermum paradoxum
Afzelia africana
Ficus sur
Grewia mollis
Khaya grandifoliola
Khaya senegalensis
Ximenia americana
Ximenia americana
Phoenix reclinata
Borassus aethiopum
Ximenia americana
Ficus glumosa
Vernonia amygdalina
Euphorbia candelabrum
Ficus ovata

Madi (contd)

| | |
|-----------|---|
| Lado | <i>Kigelia africana</i> |
| Lago | <i>Sarcocephalus latifolius</i> |
| Lakozi | <i>Olea capensis</i> subsp. <i>hochstetteri</i> |
| Lanyumu | <i>Sclerocarya birrea</i> subsp. <i>caffra</i> |
| Lao | <i>Uapaca guineensis</i> |
| Lasa | <i>Acacia sieberiana</i> |
| Lebilebi | <i>Combretum molle</i> |
| Ledo | <i>Vitex doniana</i> |
| Liku | <i>Lophira alata</i> |
| Lio | <i>Securidaca longipedunculata</i> |
| Liria | <i>Zizyphus abyssinica</i> |
| Lombo | <i>Strychnos spinosa</i> |
| Lope | <i>Stereospermum kunthianum</i> |
| Malere | <i>Terminalia brownii</i> |
| Masa | <i>Daniellia oliveri</i> |
| Maza | <i>Piliostigma thonningii</i> |
| Meli | <i>Azelia africana</i> |
| Mutaa | <i>Holoptelea grandis</i> |
| Obu-obwa | <i>Ozoroa insignis</i> subsp. <i>reticulata</i> |
| Odulindri | <i>Ficus ovata</i> |
| Ddzeki | <i>Margaritaria discoideus</i> |
| Olawu | <i>Erythrina abyssinica</i> |
| Oleo | <i>Ficus sycomorus</i> |
| Oli | <i>Acacia hockii</i> |
| Ologua | <i>Syzygium guineense</i> |
| Olwa | <i>Entandrophragma utile</i> |
| ! Oo | <i>Mitragyne stipulosa</i> |
| Ordra | <i>Oxytenanthera abyssinica</i> |
| Otubi | <i>Combretum collinum</i> |
| Otubi | <i>Combretum molle</i> |
| Oyo | <i>Albizia coriaria</i> |
| Ozu | <i>Syzygium guineense</i> |
| Poyi | <i>Dalbergia melanoxylon</i> |
| Ripi | <i>Antiaris toxicaria</i> |
| Serubele | <i>Harungana madagascariensis</i> |
| r Unde | <i>Strychnos innocua</i> |
| Vundi | <i>Milicia excelsa</i> |
| Zingili | <i>Prosopis africana</i> |

RUKIGA

| | |
|--------------|------------------------------------|
| Bwiko | <i>Erythrina abyssinica</i> |
| Chanya | <i>Neoboutonia macrocalyx</i> |
| Echuvu | <i>Myrianthus holstii</i> |
| Ekifurafura | <i>Spathodea campanulata</i> |
| Ekijeje | <i>Myrica salicifolia</i> |
| Ekinyamagosi | <i>Tabernaemontana pachysiphon</i> |
| Ekitunda | <i>Cyphomandra betacea</i> |
| Isubi | <i>Musa sapientum</i> |
| Kabaragaa | <i>Musa sapientum</i> |
| Kisangi | <i>Entada abyssinica</i> |
| Migano | <i>Arundinaria alpina</i> |
| Mubaba | <i>Olinia rochetiana</i> |

Rukiga (contd)

| | |
|--------------|--|
| Mubambantomi | <i>Bridelia micrantha</i> |
| Mubani | <i>Canarium schweinfurthii</i> |
| Mubengabakwe | <i>Trema orientalis</i> |
| Muburashasha | <i>Macaranga kilimandscharica</i> |
| Mufe | <i>Myrianthus holstii</i> |
| Mufumba | <i>Ekebergia capensis</i> |
| Mufumba | <i>Syzygium cordatum</i> |
| Mufumba | <i>Syzygium guineense</i> |
| Mugando | <i>Olea capensis</i> subsp. <i>welwitschii</i> |
| Mugango | <i>Solanecio mannii</i> |
| Mugote | <i>Syzygium guineense</i> |
| Mugote | <i>Syzygium cordatum</i> |
| Muguruka | <i>Maesopsis eminii</i> |
| Mugwampira | <i>Trema orientalis</i> |
| Muhahara | <i>Margaritaria discoideus</i> |
| Muhanga | <i>Maesa lanceolata-</i> |
| Muhika | <i>Strombosia scheffleri</i> |
| Muhoko | <i>Diospyros abyssinica</i> |
| Muhulizi | <i>Podocarpus latifolius</i> |
| Mujeje | <i>Myrica salicifolia</i> |
| Mujesi | <i>Hagenia abyssinica</i> |
| Mjugangoma | <i>Cordia africana</i> |
| Mukaka | <i>Bersama abyssinica</i> |
| Mukale | <i>Margaritaria discoideus</i> |
| Mukarakare | <i>Turraea robusta</i> |
| Mukobakoba | <i>Ehretia cymosa</i> |
| Mukole | <i>Dombeya goetzenii</i> |
| Mukono | <i>Solanecio mannii</i> |
| Mukumbo | <i>Lovoa swynnertonii</i> |
| Mukungu | <i>Newtonia buchananii</i> |
| Mulenjere | <i>Faurea saligna</i> |
| Muliamanga | <i>Harungana madagascariensis</i> |
| Mumaga | <i>Ficalhoa laurifolia</i> |
| Mumuli | <i>Nuxia congesta</i> |
| Mungolero | <i>Harungana madagascariensis</i> |
| Mungu | <i>Polyscias fulva</i> |
| Munianga | <i>Harungana madagascariensis</i> |
| Munyaga | <i>Catha edulis</i> |
| Munyamagosi | <i>Funtumia africana</i> |
| Munyambasi | <i>Ilex mitis</i> |
| Munyangabu | <i>Ilex mitis</i> |
| Munyinya | <i>Acacia abyssinica</i> |
| Munyuganyege | <i>Sesbania sesban</i> |
| Muranga | <i>Neoboutonia macrocalyx</i> |
| Murangari | <i>Croton macrostachyus</i> |
| Murara | <i>Macaranga kilimandscharica</i> |
| Muruguya | <i>Carapa grandiflora</i> |
| Murungi | <i>Polyscias fulva</i> |
| Musambya | <i>Dodonaea angustifolia</i> |
| Musavu | <i>Markhamia lutea</i> |
| Musese | <i>Parkia filicoidea</i> |
| Mushaga | <i>Zanthoxylum gillettii</i> |

Rukiga (contd)

Mushalya
 Mushasha
 Mushasha
 Mushebeya
 Mushebeya
 Mushebeya
 Mushekera
 Mushinya
 Musibura
 Musisi
 Musomoro
 Musongati
 Musuba
 Mutakura
 Mutate
 Mutete
 Muvumaga
 Muyembe
 Muyenzayenze
 Muyimbo
 Muyonza
 Muyove
 Muyuni
 Muziko
 Muzo
 Mwanya
 Mwatansale
 Mwifa
 Mwiha
 Ndizi
 Ngongo
 Nkoni
 Nsenene
 Nyabinunka
 Nyegyeye
 Tukumbu
 Webina

RUKONJO

Bukemi
 Bwipe
 Bwiso
 Kasogo
 Kikukulu
 Kikura
 Kiona
 Kyango
 Kyongo
 Kyungo
 Muhanga-honga
 Muhera
 Muhunga

Entandrophragma excelsum
 Sapium ellipticum
 Macaranga kilimandscharica
 Albizia glaberrima
 Albizia gummifera
 Albizia grandibracteata
 Pittosporum spathicalyx
 Peddiea fischeri
 Pittosporum spathicalyx
 Symphonia globulifera
 Ficus sur
 Margaritaria discoideus
 Prunus africana
 Croton megalocarpus
 Millettia dura
 Millettia dura
 Ficalhoa laurifolia
 Mangifera indica
 Albizia coriaria
 Bridelia micrantha
 Carissa edulis
 Entandrophragma excelsum
 Croton megalocarpus
 Mitragyne rubrostipulata
 Teclea nobilis
 Neoboutonia macrocalyx
 Croton sylvaticus
 Pterygota mildbraedii
 Ocotea usambarensis
 Musa sapientum
 Catha edulis
 Euphorbia tirucalli
 Diospyros abyssinica
 Celtis africana
 Canarium schweinfurthii
 Ehretia cymosa
 Polyscias fulva

Celtis durandii
 Podocarpus latifolius
 Ilex mitis
 Vangueria apiculata
 Euphorbia candelabrum
 Entandrophragma angolense
 Neoboutonia macrocalyx
 Polyscias fulva
 Polyscias fulva
 Polyscias fulva
 Maesa lanceolata
 Trema orientalis
 Macaranga kilimandscharica

Rukonjo (contd)

Mukikembo

Mukole

Mukuka

Mukungu

Mulonge

Mulungula

Mulungulu

Munalibo

Mundrindi

Mungu

Munimba

Munombi

Muscheru

Musebera

Musebere

Mushebera

Mushebera

Musongi

Musongonyonye

Mutumba

Ngega

Nkwasi

Nkwasi

Nyakabonde

Sosi

Myrica salicifolia

Dombeya kirkii

Faurea saligna

Polyscias fulva

Arundinaria alpina

Bombax buonopozense

Erythrina excelsa

Schrebera arborea

Myrica salicifolia

Pseudospondias microcarpa

Symphonia globulifera

Carissa edulis

Albizia adianthifolia

Albizia glaberrima

Albizia gummifera

Albizia gummifera

Albizia adianthifolia

Terminalia brownii

Rapanea melanophloeos

Cordia africana

Parkia filicoidea

Albizia grandibracteata

Albizia zygia

Zanthoxylum gillettii

Aningeria adolfi-friedericii

RUNYANKORE

Ekikindu

Ekinyekanyeme

Enkukuru

Entoma

Gishumbo

Gonje

Isubi

Kabaragaa

Kalemanjovu

Kasyoga-kaisaja

Kataza

Kiko

Kiraeera

Kiruhura

Kitooma

Mbira

Mbuhivu

Mubani

Mubaruka

Mubirizi

Muboroboro

Mugabagaba

Mugango

Mugorogoro

Muhanga-bagenzi

Phoenix reclinata

Vernonia auriculifera

Euphorbia candelabrum

Voacanga thouarsii

Arundinaria alpina

Musa paradisiaca

Musa sapientum

Musa sapientum

Dichrostachys cinerea

Ricinus communis

Bridelia micrantha

Erythrina abyssinica

Millettia dura

Myrianthus holstii

Ficus natalensis

Musa paradisiaca

Raphia farinifera

Canarium schweinfurthii

Pittosporum spathicalyx

Vernonia amygdalina

Nuxia congesta

Senna didymobotrya

Solanecio mannii

Dracaena steudneri

Maesa lanceolata

Runyankore (contd)

| | |
|----------------------|--|
| Muhindi | <i>Cynometra alexandrei</i> |
| Muhoko | <i>Diospyros abyssinica</i> |
| Mujiji | <i>Bridelia micrantha</i> |
| Mukarabo | <i>Dombeya bagshawei</i> |
| Mukarata | <i>Beilschmiedia ugandensis</i> |
| Muko | <i>Erythrina abyssinica</i> |
| Mukobokobo | <i>Ehretia cymosa</i> |
| Mukusu | <i>Lovoa swynnertonii</i> |
| Mulangara | <i>Croton macrostachyus</i> |
| Mulemankobe | <i>Zanthoxylum gillettii</i> |
| Mulera | <i>Albizia adianthifolia</i> |
| Mulera | <i>Albizia gummifera</i> |
| Mumaka | <i>Antiaris toxicaria</i> |
| Mungu | <i>Polyscias fulva</i> |
| Munyabariko | <i>Syzygium cordatum</i> |
| Munyakasikuro | <i>Strombosia scheffleri</i> |
| Munyankono | <i>Strombosia scheffleri</i> |
| Munyara | <i>Spathodea campanulata</i> |
| Munyumatuga | <i>Funtumia africana</i> |
| Murama | <i>Olea europaea</i> subsp. <i>africana</i> |
| Murebe | <i>Ficus vallis-choudae</i> |
| Muremampango | <i>Margaritaria discoideus</i> |
| Murera | <i>Albizia adianthifolia</i> |
| Murongo | <i>Millettia dura</i> |
| Murongo | <i>Albizia coriaria</i> |
| Musandasanda | <i>Symphonia globulifera</i> |
| Musanvuma | <i>Sapium ellipticum</i> |
| Musasa | <i>Sapium ellipticum</i> |
| Musebega | <i>Albizia zygia</i> |
| Musebeya | <i>Albizia versicolor</i> |
| Mushambya | <i>Markhamia lutea</i> |
| Mushambya shebeya | <i>Dodonaea angustifolia</i> |
| Mushebeya shebeye | <i>Albizia gummifera</i> |
| Mushesebeya | <i>Albizia glaberrima</i> |
| Musimangwa | <i>Albizia gummifera</i> |
| Musimangwa | <i>Albizia adianthifolia</i> |
| Musisa | <i>Syzygium cordatum</i> |
| Musoko | <i>Syzygium guineense</i> |
| Musomoro | <i>Albizia coriaria</i> |
| Mutabungwa | <i>Olea capensis</i> subsp. <i>welwitschii</i> |
| Mutaha | <i>Ficus exasperata</i> |
| Mutera | <i>Catha edulis</i> |
| Mutole | <i>Haningtonia madagascariensis</i> |
| Mutongana | <i>Albizia adianthifolia</i> |
| Mutongore | <i>Newtonia buchananii</i> |
| Mutooma | <i>Carapa grandiflora</i> |
| Mutooma | <i>Acacia gerrardii</i> |
| Mutoro | <i>Ficus natalensis</i> |
| Mutororo | <i>Ficus ovata</i> |
| Mutoyo | <i>Mitragyne rubrostipulata</i> |
| | <i>Mitragyne rubrostipulata</i> |
| | <i>Newtonia buchananii</i> |

Runyankore (contd)

| | |
|--------------|------------------------------------|
| Mutugunda | <i>Croton megalocarpus</i> |
| Mutyaza | <i>Acacia sieberiana</i> |
| Muyanja | <i>Symphonia globulifera</i> |
| Muyembe | <i>Mangifera indica</i> |
| Muyonza | <i>Carissa edulis</i> |
| Muyora | <i>Entada abyssinica</i> |
| Muyovu | <i>Entandrophragma excelsum</i> |
| Muzhebazhebe | <i>Flacourtia indica</i> |
| Muzingu | <i>Mitragyne rubrostipulata</i> |
| Muzo | <i>Teclea nobilis</i> |
| Muzugangoma | <i>Cordia africana</i> |
| Muzunzu | <i>Celtis africana</i> |
| Mweya | <i>Securidaca longipedunculata</i> |
| Mwiha | <i>Warburgia ugandensis</i> |
| Ndizi | <i>Musa sapientum</i> |
| Nkoni | <i>Euphorbia tirucalli</i> |
| Nyamukago | <i>Funtumia africana</i> |
| Rugando | <i>Acacia hockii</i> |
| Rusambya | <i>Markhamia lutea</i> |
| Rutokye | <i>Musa paradisiaca</i> |
| Ruyenzhe | <i>Euphorbia tirucalli</i> |
| Ssegavu | <i>Albizia glaberrima</i> |

RUNYARWANDA

| | |
|----------|----------------------------|
| Mubirizi | <i>Vernonia amygdalina</i> |
| Mugezi | <i>Myrica salicifolia</i> |
| Mukindo | <i>Phoenix reclinata</i> |
| Muyembe | <i>Mangifera indica</i> |

RUNYORO

| | |
|-----------------|----------------------------------|
| Bagambanimpyata | <i>Pseudospondias microcarpa</i> |
| Ekinyara | <i>Spathodea campanulata</i> |
| Ekituugo | <i>Borassus aethiopum</i> |
| Gonja | <i>Musa paradisiaca</i> |
| Isubi | <i>Musa sapientum</i> |
| Kabaragala | <i>Musa sapientum</i> |
| Kibirizi | <i>Vernonia amygdalina</i> |
| Kiko | <i>Erythrina abyssinica</i> |
| Kinyangango | <i>Solanecio mannii</i> |
| Lukindu | <i>Phoenix reclinata</i> |
| Mbire | <i>Musa paradisiaca</i> |
| Mubani | <i>Canarium schweinfurthii</i> |
| Mubengeya | <i>Lannea barteri</i> |
| Mubengeya | <i>Annona senegalensis</i> |
| Muchole | <i>Albizia glaberrima</i> |
| Mucholi | <i>Tetrapleura tetraptera</i> |
| Mudoti | <i>Erythrina abyssinica</i> |
| Mufunjo | <i>Dalbergia melanoxylon</i> |
| Mugare | <i>Piliostigma thonningii</i> |
| Mugeye | <i>Piptadeniastrum africana</i> |
| Muhimbi | <i>Cynometra alexandrei</i> |
| Muho | <i>Mitragyne stipulosa</i> |

Runyoro (contd)

| | |
|---------------|------------------------------------|
| Muhomozi | <i>Vitex doniana</i> |
| Muhongera | <i>Maesopsis eminii</i> |
| Muhotora | <i>Steganotaenia araliacea</i> |
| Muikya | <i>Kigelia africana</i> |
| Mujojo | <i>Parkia filicoidea</i> |
| Mujugangoma | <i>Cordia millenii</i> |
| Mujugangoma | <i>Cordia africana</i> |
| Mujwa | <i>Alstonia boonei</i> |
| Mujwe | <i>Alstonia boonei</i> |
| Muko | <i>Erythrina abyssinica</i> |
| Mukoge | <i>Tamarindus indica</i> |
| Mukoko | <i>Pterygota mildbraedii</i> |
| Mukole | <i>Dombeya kirkii</i> |
| Mukoma | <i>Grewia mollis</i> |
| Mukomakoma | <i>Grewia mollis</i> |
| Mukomakoma | <i>Celtis mildbraedii</i> |
| Mukora | <i>Combretum collinum</i> |
| Mukunyu | <i>Ficus sycomorus</i> |
| Mukunyu | <i>Ficus mucoso</i> |
| Mukusu | <i>Entandrophragma angolense</i> |
| Mukyora | <i>Dracaena steudneri</i> |
| Mulamula | <i>Dracaena fragrans</i> |
| Klulemangundu | <i>Stereospermum kunthianum</i> |
| Mulimbi | <i>Bombax buonopozense</i> |
| Mulolo | <i>Kigelia africana</i> |
| Mulonge | <i>Albizia glaberrima</i> |
| Mulongo | <i>Albizia grandibracteata</i> |
| Mulongo | <i>Albizia zygia</i> |
| Mululu | <i>Chrysophyllum albidum</i> |
| Mumara | <i>Erythrophleum suaveolens</i> |
| Mumuli | <i>Holoptelea grandis</i> |
| Munyama | <i>Khaya grandifoliola</i> |
| Munyama | <i>Khaya anthotheca</i> |
| Munyara | <i>Spathodea campanulata</i> |
| Murama | <i>Combretum molle</i> |
| Murongo | <i>Albizia grandibracteata</i> |
| Musanda | <i>Funtumia africana</i> |
| Musanda | <i>Funtumia elastica</i> |
| Musanki | <i>Canarium schweinfurthii</i> |
| Museha | <i>Ximenia americana</i> |
| Museke | <i>Arundinaria alpina</i> |
| Museta | <i>Terminalia brownii</i> |
| Musisa | <i>Albizia coriaria</i> |
| Musizambuzi | <i>Warburgia ugandensis</i> |
| Musodo | <i>Ricinodendron heudelotii</i> |
| Musokotinde | <i>Zanthoxylum rubescens</i> |
| Musomoro | <i>Ficus exasperata</i> |
| Muswale | <i>Raphia farinifera</i> |
| Mutabungura | <i>Catha edulis</i> |
| Mutumba | <i>Milicia excelsa</i> |
| Muwawa | <i>Acacia sieberiana</i> |
| Muyati | <i>Mildbraedi dendron excelsum</i> |

Runyoro (contd)

| | |
|-----------------|------------------------------------|
| Muyembe | <i>Mangifera indica</i> |
| Muyova | <i>Entandrophragma utile</i> |
| Muyovu | <i>Entandrophragma angolense</i> |
| Muyovu | <i>Entandrophragma cylindricum</i> |
| Muzo | <i>Teclea nobilis</i> |
| Mweramenyo | <i>Acacia sieberiana</i> |
| Mwongogwenkende | <i>Tabernaemontana pachysiphon</i> |
| Ndizi | <i>Musa sapientum</i> |
| Nkoba | <i>Lovoa trichilioides</i> |
| Nkondwe | <i>Securidaca longipedunculata</i> |
| Nkuuku | <i>Cajanus cajan</i> |
| Nnongo | <i>Albizia glaberrima</i> |
| Nongo | <i>Albizia zygia</i> |
| Nongo | <i>Albizia grandibracteata</i> |
| Ntaleyerungu | <i>Zanthoxylum gilletii</i> |
| Ntaleyerungu | <i>Zanthoxylum rubescens</i> |
| Ntuutu | <i>Physalis peruviana</i> |
| Nyakatoma | <i>Morus mesozygia</i> |
| Nyamunyu | <i>Musa paradisiaca</i> |
| Ruhoko | <i>Phytolacca dodecandra</i> |
| Rukoni | <i>Euphorbia tirucalli</i> |
| Rwata | <i>Vitex ferruginea</i> |
| Tubi | <i>Combretum collinum</i> |

RUNYORO dialect Bugungu

| | |
|---------|--------------------------|
| Masaga | <i>Strychnos innocua</i> |
| Munondo | <i>Tamarindus indica</i> |

RUNYORO dialect Mubende

| | |
|---------|------------------------------|
| Ndawula | <i>Pterygota mildbraedii</i> |
|---------|------------------------------|

RUTORO

| | |
|-----------------|----------------------------------|
| Bagambanimpyata | <i>Pseudospondias microcarpa</i> |
| Gonja | <i>Musa paradisiaca</i> |
| Isubi | <i>Musa sapientum</i> |
| Kabaragala | <i>Musa sapientum</i> |
| Kasisa | <i>Trema orientalis</i> |
| Kiko | <i>Erythrina abyssinica</i> |
| Kiswali | <i>Raphia farinifera</i> |
| Lyzo | <i>Parkia filicoidea</i> |
| Mbahira | <i>Turraeanthus africanus</i> |
| Mbire | <i>Musa paradisiaca</i> |
| Mbondo | <i>Antiaris toxicaria</i> |
| Mubalagaza | <i>Bridelia micrantha</i> |
| Mubani | <i>Canarium schweinfurthii</i> |
| Muchenche | <i>Newtonia buchananii</i> |
| Mufumbi | <i>Entandrophragma utile</i> |
| Mugando | <i>Acacia hockii</i> |
| Mugangara | <i>Strychnos mitis</i> |
| Mugema | <i>Monodora myristica</i> |
| Mugina | <i>Senecio hadiensis</i> |

Rutoro (contd)

| | |
|-----------------|--|
| Muhakwa | <i>Millettia dura</i> |
| Muhambulya | <i>Chrysophyllum gorungosanum</i> |
| Muhambulya | <i>Chrysophyllum albidum</i> |
| Muhanga-bagenzi | <i>Maesa lanceolata</i> |
| Muharami | <i>Warburgia ugandensis</i> |
| Muhere | <i>Antiaris toxicaria</i> |
| Muhoko | <i>Diospyros abyssinica</i> |
| Muhoti | <i>Macaranga kilimandscharica</i> |
| Muhoti | <i>Croton macrostachyus</i> |
| Muhungulia | <i>Carapa grandiflora</i> |
| Muhungura | <i>Entandrophragma excelsum</i> |
| Muhungura | <i>Bersama abyssinica</i> |
| Mujogo | <i>Carapa grandiflora</i> |
| Mujuganlara | <i>Polyscias fulva</i> |
| Mujunju | <i>Celtis durandii</i> |
| Mukarangeye | <i>Symphonia globulifera</i> |
| Mukindu | <i>Phoenix reclinata</i> |
| Muko | <i>Erythrina abyssinica</i> |
| Mukogota | <i>Pycnanthus angolensis</i> |
| Mukoko | <i>Pterygota mildbraedii</i> |
| Mukoora | <i>Strombosia scheffleri</i> |
| Mukuka | <i>Faurea saligna</i> |
| Mukusu | <i>Lovoa swynnertonii</i> |
| Mukusu | <i>Entandrophragma angolense</i> |
| Mukusu | <i>Lovoa trichilioides</i> |
| Mulongo | <i>Albizia grandibracteata</i> |
| Mulongo | <i>Albizia gummifera</i> |
| Muninya | <i>Acacia sieberiana</i> |
| Munyabakuru | <i>Croton megalocarpus</i> |
| Munyaburo | <i>Rothmannia urcelliformis</i> |
| Munyama | <i>Khaya anthotheca</i> |
| Munyenye | <i>Symphonia globulifera</i> |
| Munyinya | <i>Acacia sieberiana</i> |
| Munywankwai | <i>Symphonia globulifera</i> |
| Muramura | <i>Dracaena fragrans</i> |
| Murinda | <i>Harungana madagascariensis</i> |
| Murogorogoro | <i>Spathodea campanulata</i> |
| Murongo | <i>Albizia zygia</i> |
| Musanvuma | <i>Sapium ellipticum</i> |
| Musasa | <i>Sapium ellipticum</i> |
| Museke | <i>Arundinaria alpina</i> |
| Museta | <i>Terminalia brownii</i> |
| Musisa | <i>Albizia coriaria</i> |
| MUSodo | <i>Olea capensis</i> subsp. <i>welwitschii</i> |
| Musoga | <i>Harungana madagascariensis</i> |
| Musoko | <i>Olea capensis</i> subsp. <i>welwitschii</i> |
| Musomoro | <i>Ficus exasperata</i> |
| Musonganyonye | <i>Rapanea melanophloeos</i> |
| Mutatembwa | <i>Zanthoxylum gillettii</i> |
| Mutawale | <i>Holoptelea grandis</i> |

Rutoro (contd)

| | |
|-----------------|------------------------------------|
| Mutete | <i>Trema orientalis</i> |
| Mutoke | <i>Aningeria altissima</i> |
| Mutoro | <i>Mitragyne rubrostipulata</i> |
| Mutororo | <i>Mitragyne rubrostipulata</i> |
| Mutumba | <i>Cordia africana</i> |
| Mutumba | <i>Cordia millenii</i> |
| Muyembe | <i>Mangifera indica</i> |
| Muyovu | <i>Entandrophragma angolense</i> |
| Muyovu | <i>Entandrophragma cylindricum</i> |
| Muyovu | <i>Entandrophragma excelsum</i> |
| Muzingu | <i>Mitragyne rubrostipulata</i> |
| Muzo | <i>Teclea nobilis</i> |
| Mwatibale | <i>Blighia unijugata</i> |
| Mwebende | <i>Myrianthus holstii</i> |
| Mwenyabakikuru | <i>Croton megalocarpus</i> |
| Mwikya | <i>Kigelia africana</i> |
| Mwitha | <i>Trema orientalis</i> |
| Mwongogwenkende | <i>Tabernaemontana pachysiphon</i> |
| Ndizi | <i>Musa sapientum</i> |
| Ngorogoro | <i>Dracaena steudneri</i> |
| Nkabwa | <i>Ehretia cymosa</i> |
| Nkoni | <i>Euphorbia tirucalli</i> |
| Nkwasi | <i>Symphonia globulifera</i> |
| Nondwa | <i>Tamarindus indica</i> |
| Nongo | <i>Albizia grandibracteata</i> |
| Nongo | <i>Albizia zygia</i> |
| Ntengenene | <i>Dovyalis macrocalyx</i> |
| Ntuutu | <i>Physalis peruviana</i> |
| Nyamanuka | <i>Celtis africana</i> |
| Nyamanunka | <i>Celtis durandii</i> |
| Nyamunyu | <i>Musa paradisiaca</i> |
| Nyanya-ezomuti | <i>Cyphomandra betacea</i> |
| Ruhoko | <i>Phytolacca dodecandra</i> |

SEBEI

| | |
|-------------|---------------------------------|
| Bionwa | <i>Allophylus abyssinicus</i> |
| Borowa | <i>Dombeya goetzenii</i> |
| Borowetomoi | <i>Dombeya goetzenii</i> |
| Bulgelwa | <i>Vitex doniana</i> |
| Bumet | <i>Ekebergia capensis</i> |
| Chebakwa | <i>Neoboutonia macrocalyx</i> |
| Chemungwa | <i>Spathodea campanulata</i> |
| Cheptua | <i>Diospyros abyssinica</i> |
| Chepturitia | <i>Stereospermum kunthianum</i> |
| Chorowa | <i>Nuxia congesta</i> |
| Chumutwet | <i>Piliostigma thonningii</i> |
| Delya | <i>Acacia hockii</i> |
| Ematso | <i>Acacia lahai</i> |
| Gagawa | <i>Schrebera alata</i> |
| Gogorwo | <i>Maesa lanceolata</i> |

Sebei (contd)

| | |
|--------------|---|
| Gurio | <i>Teclea nobilis</i> |
| Kaborte | <i>Erythrina abyssinica</i> |
| Kaimet | <i>Acacia lahai</i> |
| Kaptebema | <i>Macaranga kilimandscharica</i> |
| Katagi | <i>Zizyphus abyssinica</i> |
| Katetalam | <i>Sclerocarya birrea</i> subsp. <i>caffra</i> |
| Kelyo | <i>Acokanthera schimperi</i> |
| Kembe | <i>Combretum molle</i> |
| Ketimwa | <i>Lannea barteri</i> |
| Kwalet | <i>Schefflera volkensii</i> |
| Kwelet | <i>Schefflera volkensii</i> |
| Lamadi | <i>Polyscias fulva</i> |
| Lemaiyua | <i>Syzygium guineense</i> |
| Lemaiyua | <i>Syzygium cordatum</i> |
| Lulyo | <i>Aningeria adolfi-friedericii</i> |
| Maiyokwo | <i>Faurea saligna</i> |
| Margalgalyet | <i>Bridelia micrantha</i> |
| Masgat | <i>Olea capensis</i> subsp. <i>hochstetteri</i> |
| Mastet | <i>Celtis africana</i> |
| Mastitet | <i>Celtis africana</i> |
| Mkukwa | <i>Strychnos innocua</i> |
| Mokyobelyo | <i>Steganotaenia araliacea</i> |
| Mololosti | <i>Dracaena steudneri</i> |
| Moyokwo | <i>Faurea saligna</i> |
| Mugengere | <i>Cordia africana</i> |
| Mujustet | <i>Sapium ellipticum</i> |
| Mundarariet | <i>Ehretia cymosa</i> |
| Musiembu | <i>Entada abyssinica</i> |
| Muteiwa | <i>Ximenia americana</i> |
| Mutoiwa | <i>Ximenia americana</i> |
| Mutumbwa | <i>Ozoroa insignis</i> subsp. <i>reticulata</i> |
| Mutummu | <i>Ozoroa insignis</i> subsp. <i>reticulata</i> |
| Nerekio | <i>Olinia rochetiana</i> |
| Pekeriaondet | <i>Olea capensis</i> subsp. <i>welwitschii</i> |
| Reberwo | <i>Syzygium cordatum</i> |
| Reberwo | <i>Syzygium guineense</i> |
| Sagawat | <i>Zanthoxylum gillettii</i> |
| Sakilandet | <i>Piliostigma thonningii</i> |
| Segar | <i>Ilex mitis</i> |
| Segatetit | <i>Myrica salicifolia</i> |
| Senetwa | <i>Senna didymobotrya</i> |
| Sigara | <i>Ilex mitis</i> |
| Sigirwo | <i>Bersama abyssinica</i> |
| Sigurwa | <i>Hagenia abyssinica</i> |
| Sitetet | <i>Podocarpus latifolius</i> ot |
| Sitoto | <i>Rapanea melanophloeos</i> |
| Swaya | <i>Markhamia lutea</i> |
| Swessie | <i>Albizia glaberrima</i> |
| Swessu | <i>Albizia gummifera</i> |
| Swessu | <i>Albizia zygia</i> |

Sebei (contd)

Tegandet
Toboswa
Tombolokwa
Torokio
Tumeyondet
Tungururu
Uskinwo
Yemit
Zabakwa

Arundinaria alpina
Croton macrostachyus
Dodonaea angustifolia
Juniperus procera
Catha edulis
Flacourtia indica
Combretum collinum
Olea europaea subsp. *africana*
Discopodium penninervum

SWAHILI

Mchai
Mnazi

Camellia sinensis
Cocos nucifera

TRADE NAMES

Abura
African celtis
African mahogany
African mahogany
African mahogany
African pencil cedar
African copaiba balsam
African mahogany
African canarium
African blackwood
Afzelia
Agboin
Antiaris
Bastard wild rubber
Blue gum
Budongo mahogany
Calabash nutmeg
Cape chestnut
Cashew nut
Celtis
Cheese wood
Cinnamon
Coconut
Coral bush
Crab nut
Cycad
Dahoma
Desert date
Drum tree
East African satinwood
East African olive wood
East African camphor wood
East African mulberry
East African yellow-wood
Egyptian myrobalan

Mitragyne stipulosa
Celtis mildbraedii
Khaya senegalensis
Khaya anthotheca
Khaya grandifoliola
Juniperus procera
Daniellia oliveri
Entandrophragma angolense
Canarium schweinfurthii
Dalbergia melanoxylon
Afzelia africana
Piptadeniastrum africanum
Antiaris toxicaria
Funtumia africana
Eucalyptus globulus
Entandrophragma angolense
Monodora myristica
Calodendrum capense
Anacardium occidentale
Celtis mildbraedii
Alstonia boonei
Cinnamomum zeylanicum
Cocos nucifera
Jatropha multifida
Carapa procera
Encephalartos hildebrandtii
Piptadeniastrum africanum

Cordia millenii
Zanthoxylum gillettii
Olea capensis
Ocotea usambarensis
Morus mesozyga
Podocarpus latifolius

Trade names (contd)

| | |
|------------------|--|
| Ekki | <i>Lophira alata</i> |
| Elgon olive | <i>Olea capensis</i> |
| Erimado | <i>Ricinodendron heudelotii</i> |
| False mvule | <i>Antiaris toxicaria</i> |
| False iroko | <i>Antiaris toxicaria</i> |
| Fig nut | <i>Jatropha curcas</i> |
| Forest croton | <i>Croton sylvaticus</i> |
| Gedu | <i>Entandrophragma angolense</i> |
| Giant granadilla | <i>Passiflora quadrangularis</i> |
| Granadilla | <i>Passiflora edulis</i> |
| Grapefruit | <i>Citrus paradisi</i> |
| Heglig berries | <i>Balanites aegyptiaca</i> |
| Iroko | <i>Milicia excelsa</i> |
| Kirundo | <i>Antiaris toxicaria</i> |
| Lemon | <i>Citrus limon</i> |
| Lime | <i>Citrus aurantifolia</i> |
| Lunaba | <i>Pycnanthus angolensis</i> |
| Mandarin | <i>Citrus reticulata</i> |
| Menioil tree | <i>Lophira alata</i> |
| Mufumbi | <i>Entandrophragma utile</i> |
| Mugaita | <i>Rapanea melanophloeos</i> |
| Muhimbi | <i>Cynometra alexandrei</i> |
| Mukebu | <i>Cordia africana</i> |
| Mukusu | <i>Entandrophragma angolense</i> |
| Mulimangombe | <i>Rapanea melanophloeos</i> |
| Mumara | <i>Erythrophleum suaveolens</i> |
| Munyama | <i>Khaya anthotheca</i> |
| Munyenye | <i>Zanthoxylum gillettii</i> |
| Musharagi | <i>Olea capensis</i> |
| Musizi | <i>Maesopsis eminii</i> |
| Muvule | <i>Milicia excelsa</i> |
| Muyovu | <i>Entandrophragma cylindricum</i> |
| Mvule | <i>Milicia excelsa</i> |
| Neem | <i>Azadirachta indica</i> |
| Nkoba | <i>Lovoa trichilioides</i> |
| Nohor | <i>Entandrophragma angolense</i> |
| Nongo | <i>Albizia zygia</i> |
| Nzingu | <i>Mitragyne stipulosa</i> |
| Olon | <i>Zanthoxylum gillettii</i> |
| Opepe | <i>Nauclea diderrichi</i> |
| Ordeal tree | <i>Erythrophleum suaveolens</i> |
| Osan | <i>Aningeria altissima</i> |
| Passion fruit | <i>Passiflora edulis</i> |
| Pattern wood | <i>Alstonia boonei</i> |
| Physic nut | <i>Jatropha curcas</i> |
| Pig nut | <i>Jatropha curcas</i> |
| Podo | <i>Podocarpus latifolius</i> |
| Podo | <i>Podocarpus usambarensis</i> var. <i>dawei</i> |
| Poyi | <i>Dalbergia melanoxylon</i> |

USEFUL TREES AND SHRUBS FOR UGANDA

Trade names (contd)

| | |
|------------------|-----------------------------|
| Red mahogany | Khaya anthotheca |
| Sapele | Entandrophragma cylindricum |
| Sasswood | Erythrophleum suaveolens |
| Scented guarea | Guarea cedrata |
| Sechungwa | Citrus paradisi |
| Shea-butter tree | Butyrospermum paradoxum |
| Stinkwood | Celtis durandii |
| Stool wood | Alstonia boonei |
| Sweet orange | Citrus sinensis |
| Tamarind | Tamarindus indica |
| Tangerine | Citrus reticulata |
| Tea | Camellia sinensis |
| Teak | Tectona grandis |
| Tido | Khaya grandifoliola |
| Tree tomato | Cyphomandra betacea |
| Uganda walnut | Lovoa trichilioides |
| Uganda ironwood | Cynometra alexandrei |
| Uganda crab nut | Carapa procera |
| Uganda mahogany | Khaya anthotheca |
| Uganda crab wood | Carapa procera |
| Upas tree | Antiaris toxicaria |
| Utile | Entandrophragma utile |
| White nongo | Albizia glaberrima |
| White star apple | Chrysophyllum albidum |
| Wild oil palm | Elaeis guineensis |

PART II
THE USEFUL TREES AND SHRUBS

Indigenous

Common names: **English:** Flat-top acacia, umbrella thorn **Rukiga:** Munyinya.

Ecology: Widely distributed in Uganda, occurring in wooded grassland and in groups among other scattered trees in woodland, 1,500-2,300 m. Most common on Mt. Napak and in the highlands of Kisoro, Rukungiri, Kabale and Kapchorwa Districts.

Uses: Firewood, charcoal, poles, posts, tool handles, medicine, fodder, bee forage, shade (for cattle), nitrogen fixation, soil conservation, fence (cut branches).

Description: A large **flat-topped** tree to 20 m when mature. **BARK:** Rough, grooved, dark brown. **THORNS:** Very variable, white, straight, short or to 4 cm, sometimes none. **LEAVES:** Bipinnate, **15–36** pairs pinnae when mature, on a stalk to 9 cm, **leaflets tiny.** **FLOWERS:** Very many, **round** heads of **cream** flowers, buds **pink-red.** **FRUIT:** **Pods to 12 cm,** usually **straight,** grey-brown, splitting to set free seed.

Propagation: Seedlings (sow seeds in pots), direct sowing at site, root suckers.

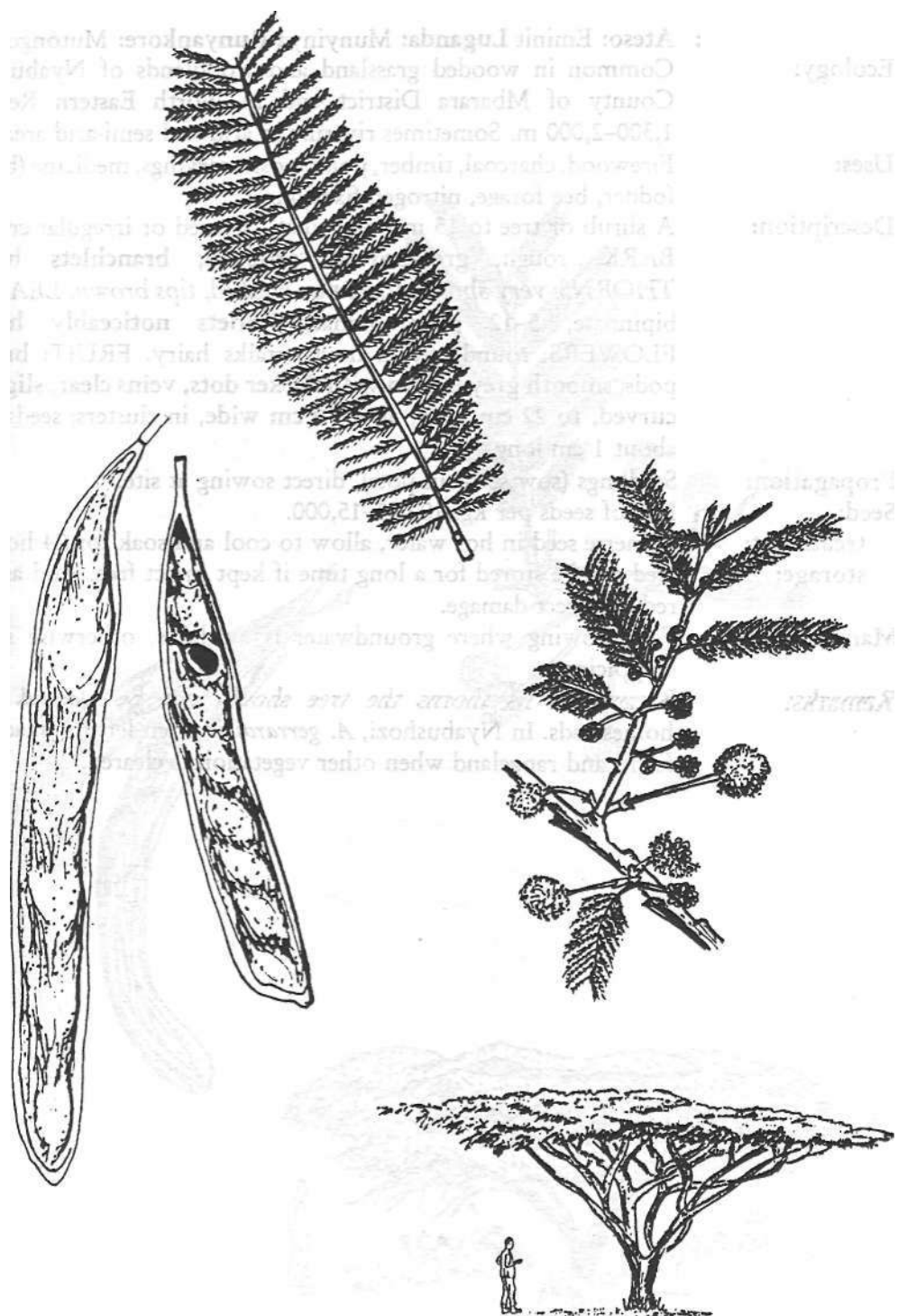
Seed: Seed quite small, highly susceptible to beetle attack while still in pods. Damaged seeds should be separated by floating. No. of seeds per kg: 16,000-18,000.

treatment: soak in cold water or put in hot water, allow to cool and soak for 36-48 hours.

storage: seed can be stored for long periods if kept in a cool, dry and insect-free place. Add ash to reduce insect damage.

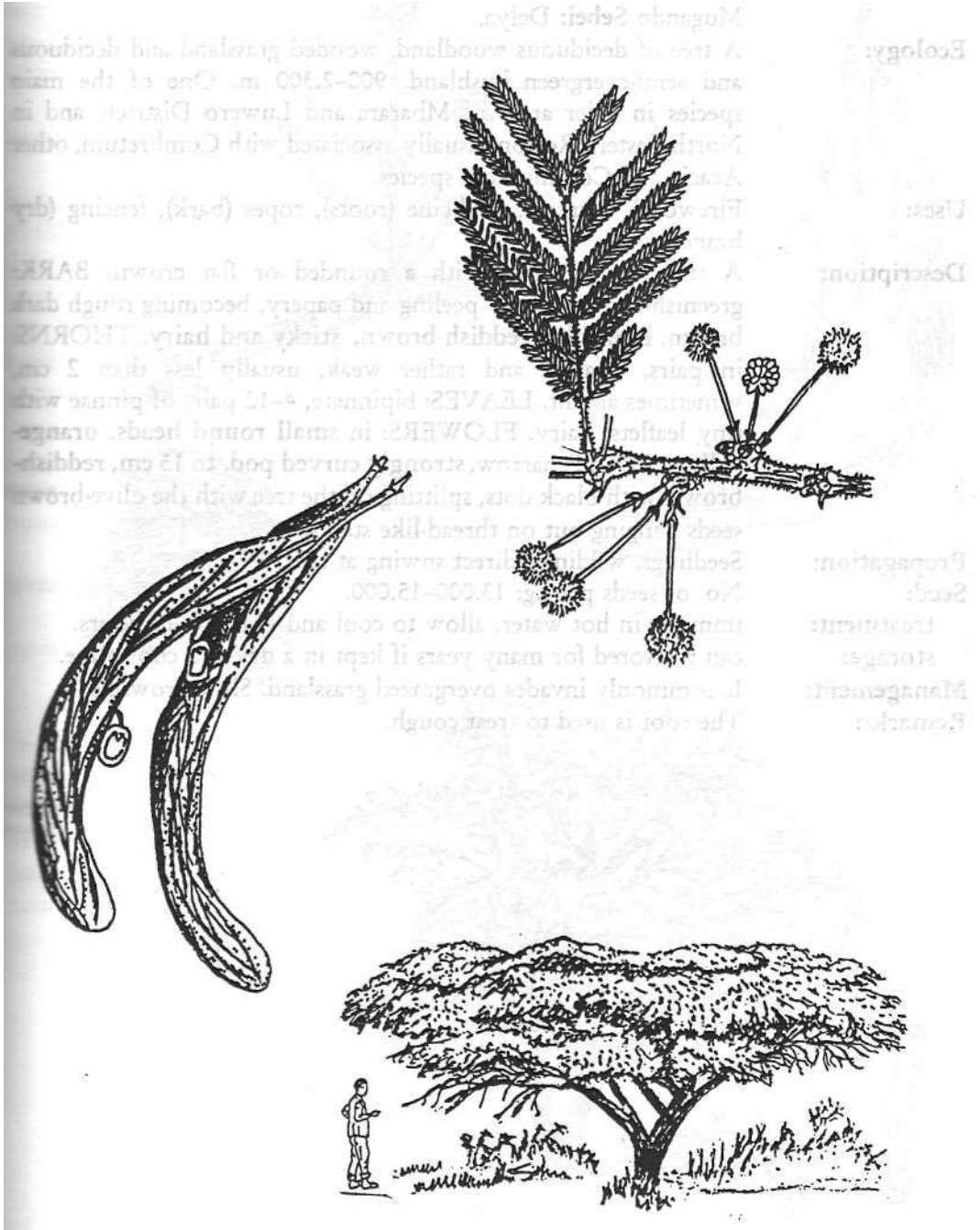
Management: Growth rate is medium. Pollarding, coppicing while young.

Remarks: Spreading roots make it unsuitable for providing shade near crops. Drought tolerant and will grow on degraded land and **along** gullies. It makes good fuelwood but the hard wood is difficult to work.



Indigenous

- Common names:** Ateso: Eminit **Luganda:** Munyinya **Runyankore:** Mutongore.
- Ecology:** Common in wooded grassland and woodlands of Nyabushozi County of Mbarara District and in North Eastern Region, 1,300-2,000 m. Sometimes riverine in arid and semi-arid areas.
- Uses:** Firewood, charcoal, timber, poles, posts, carvings, medicine (bark), fodder, bee forage, nitrogen fixation.
- Description:** A shrub or tree to 15 m, somewhat flattened or irregular crown. **BARK:** rough, **grey-brown, grooved; branchlets hairy.** **THORNS:** **very short,** straight or hooked, tips brown. **LEAVES:** bipinnate, 5-12 pairs pinnae, **leaflets noticeably hairy.** **FLOWERS:** round, cream heads, stalks hairy. **FRUIT:** brown pods, **smooth grey-brown with darker dots, veins clear, slightly curved, to 22 cm long, about 2 cm wide,** in clusters; seeds flat, about 1 cm long.
- Propagation:** Seedlings (sow seeds in pots), direct sowing at site.
- Seed:** No. of seeds per kg: 10,000-15,000.
- treatment:** immerse seed in hot water, allow to cool and soak for 24 hours.
- storage:** seed can be stored for a long time if kept insect free. Add ash to reduce insect damage.
- Management:** Fast growing where groundwater is available, otherwise slow. Coppicing.
- Remarks:** Because of its thorns the tree should not be planted near homesteads. In Nyabushozi, *A. gerrardii* is often left for shade on farms and rangeland when other vegetation is cleared.



Acacia hockii

Mimosaceae

Indigenous

Common names: **Ateso:** Ekisim **Luganda:** Kasaana **Lugbara:** Ali **Lugwe:** Besabako **Lugwere:** Musiono **Luo:** Achiru, okeetu, okutu-oryang **Luo J:** Orian **Lusoga:** Kasone **Madi:** Oli **Runyankore:** Rugando **Rutoro:** Mugando **Sebei:** Delya.

Ecology: A tree of deciduous woodland, wooded grassland and deciduous and semi-evergreen bushland, 900-2,300 m. One of the main species in drier areas of Mbarara and Luwero Districts and in North Eastern Region, usually associated with Combretum, other Acacia and Commiphora species.

Uses: Firewood, charcoal, medicine (roots), ropes (bark), fencing (dry branches).

Description: A tree 2-6 m high, with a rounded or flat crown. **BARK:** greenish-brown, thinly peeling and papery, becoming rough dark brown. Branchlets **reddish-brown, sticky and hairy**. **THORNS:** in pairs, straight and rather weak, usually less than 2 cm, sometimes absent. **LEAVES:** bipinnate, 4-12 pairs of pinnae with tiny leaflets, hairy. **FLOWERS:** in **small round heads, orange-yellow**. **FRUIT:** narrow, **strongly curved pod, to 15 cm, reddish-brown** with black dots, splitting on the tree with the olive-brown seeds hanging out on thread-like stalks.

Propagation: Seedlings, wildings, direct sowing at site.

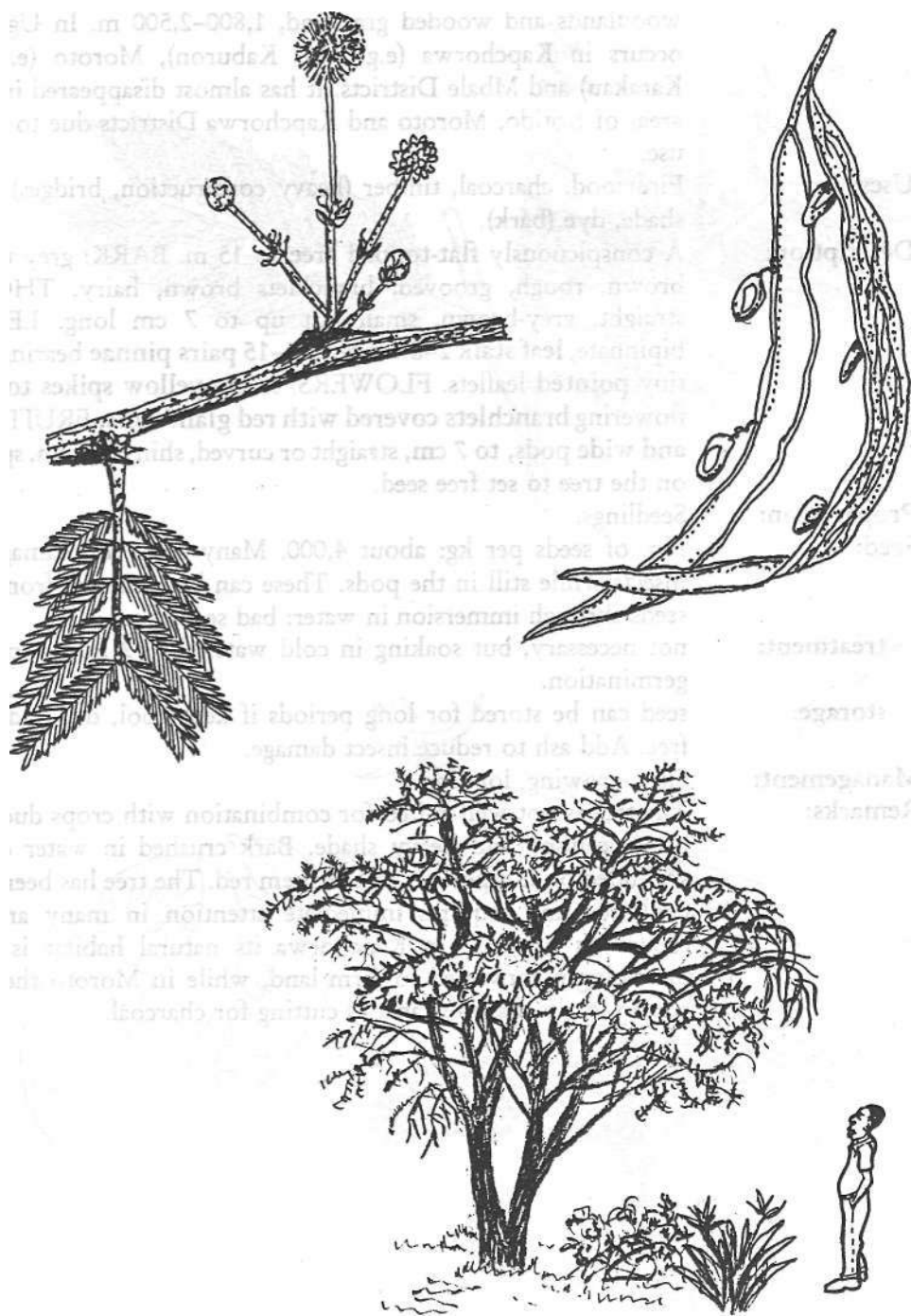
Seed: No. of seeds per kg: 13,000-15,000.

treatment: immerse in hot water, allow to cool and soak for 12 hours,

storage: can be stored for many years if kept in a dry and cool place.

Management: It commonly invades overgrazed grassland. Slow growing.

Remarks: The root is used to treat cough.



Acacia lahai

Mimosaceae

Indigenous

Common names: **English:** Red thorn **Sebei:** Ematso, kaimet.

Ecology: One of the umbrella thorns of cooler uplands occurring in woodlands and wooded grassland, 1,800-2,500 m. In Uganda it occurs in Kapchorwa (e.g. near Kaburon), Moroto (e.g. near Karakau) and Mbale Districts. It has almost disappeared in many areas of Kotido, Moroto and Kapchorwa Districts due to intense use.

Uses: Firewood, charcoal, timber (heavy construction, bridges), posts, shade, dye (bark).

Description: A conspicuously **flat-topped tree** to 15 m. **BARK:** grey to dark brown, rough, grooved; branchlets brown, hairy. **THORNS:** straight, grey-brown, small but up to 7 cm long. **LEAVES:** bipinnate, **leaf stalk 2-8 cm with 6-15 pairs pinnae** bearing many tiny **pointed** leaflets. **FLOWERS:** **cream-yellow spikes to 7 cm**, flowering **branchlets covered with red gland dots**. **FRUIT:** **short and wide pods, to 7 cm**, straight or curved, shiny brown, splitting on the tree to set free seed.

Propagation: Seedlings.

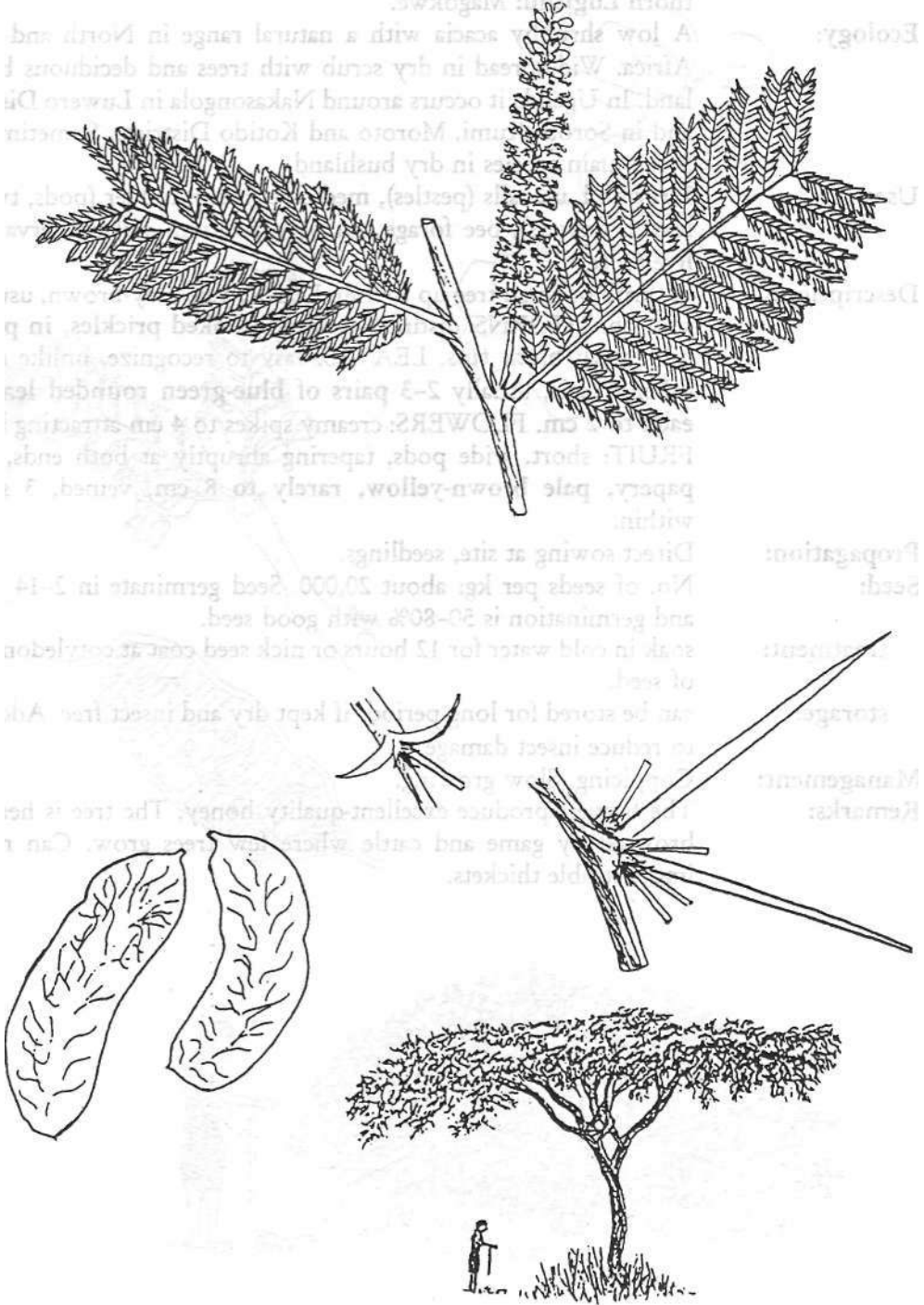
Seed: No. of seeds per kg: about 4,000. Many seeds are damaged by insects while still in the pods. These can be separated from good seeds through immersion in water: bad seeds float,

treatment: not necessary, but soaking in cold water for 12 hours enhances germination.

storage: seed can be stored for long periods if kept cool, dry and insect free. Add ash to reduce insect damage.

Management: Slow growing, lopping.

Remarks: The tree is not well suited for combination with crops due to its broad canopy and heavy shade. Bark crushed in water can be sprinkled on hot pots to colour them red. The tree has been over-exploited and requires immediate attention in many areas to ensure its survival. In Kapchorwa its natural habitat is being increasingly converted to farm land, while in Moroto the main reason for its disappearance is cutting for charcoal.



Indigenous

Common names: **Ateso:** Eregai **Ateso T:** Ebenyo **English:** Wait-a-bit thorn, hook thorn **Lugishu:** Magokwe.

Ecology: A low shrubby acacia with a natural range in North and East Africa. Widespread in dry scrub with trees and deciduous bushland. In Uganda it occurs around Nakasongola in Luwero District and in Soroti, Kumi, Moroto and Kotido Districts. Sometimes it is the main species in dry bushland.

Uses: Firewood, utensils (pestles), medicine (bark), fodder (pods, twigs, leaves, flowers), bee forage, nitrogen fixation, soil conservation, live fence.

Description: A shrub or small tree up to 9 m. **BARK:** pale grey-brown, usually smooth. **THORNS:** distinctive, **small hooked prickles, in pairs, grey with black tips.** **LEAVES:** easy to recognize, unlike most other Acacia, usually **2-3 pairs of blue-green rounded leaflets each to 2 cm.** **FLOWERS:** creamy spikes to 4 cm attracting bees. **FRUIT:** short, wide pods, tapering abruptly at both ends, **flat papery, pale brown-yellow, rarely to 8 cm,** veined, 3 seeds within.

Propagation: Direct sowing at site, seedlings.

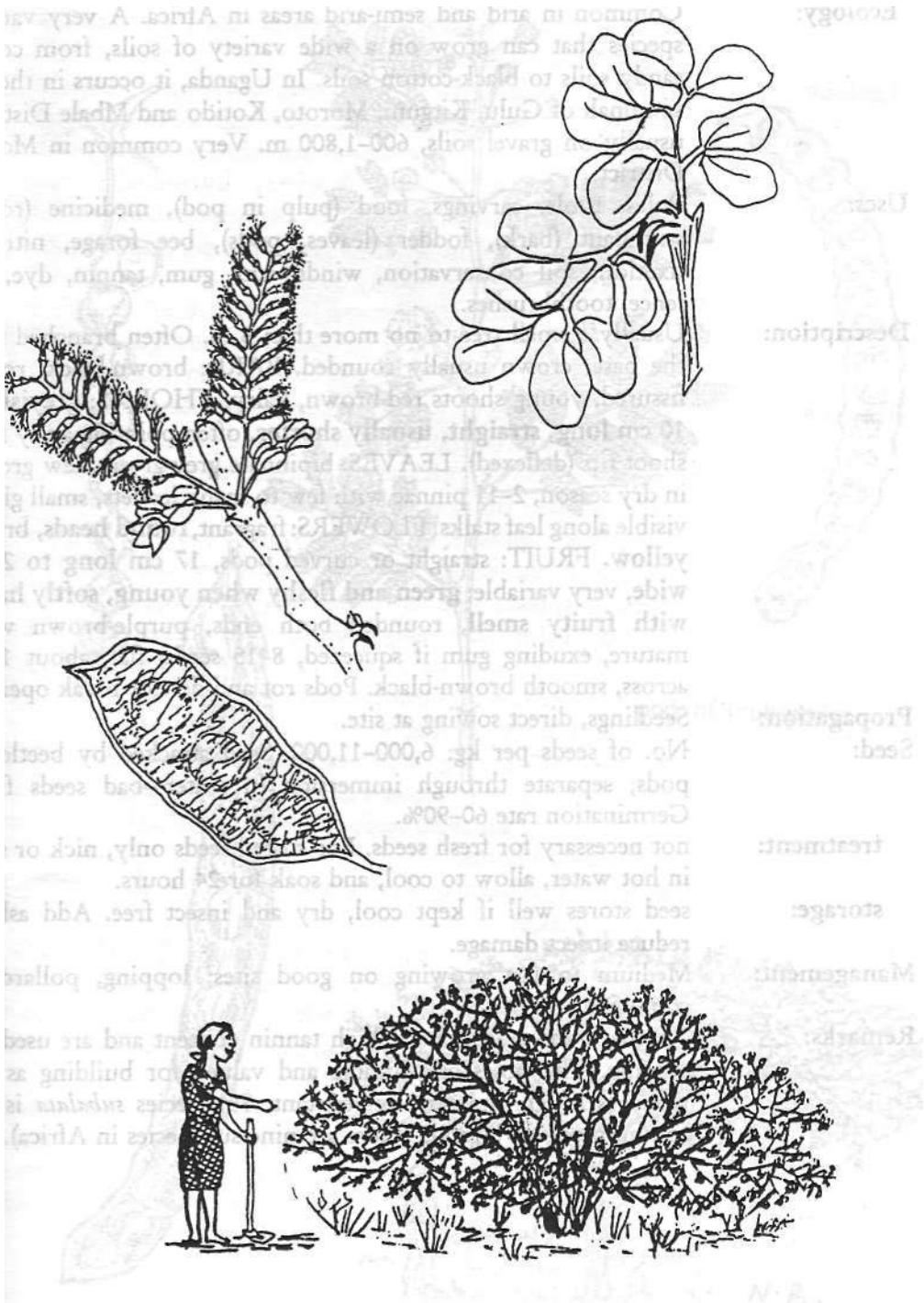
Seed: No. of seeds per kg: about 20,000. Seed germinate in 2-14 days and germination is 50-80% with good seed,

treatment: soak in cold water for 12 hours or nick seed coat at cotyledon end of seed.

storage: can be stored for long periods if kept dry and insect free. Add ash to reduce insect damage.

Management: Coppicing. Slow growing.

Remarks: The flowers produce excellent-quality honey. The tree is heavily browsed by game and cattle where few trees grow. Can make impenetrable thickets.



Indigenous

Common names: **Ateso K:** Ekapelimen **English:** Egyptian thorn, scented-pod acacia.

Ecology: Common in arid and semi-arid areas in Africa. A very variable species that can grow on a wide variety of soils, from coastal sandy soils to black-cotton soils. In Uganda, it occurs in the dry savannah of Gulu, Kitgum, Moroto, Kotido and Mbale Districts, usually on gravel soils, 600-1,800 m. Very common in Moroto District.

Uses: Poles, tools, carvings, food (pulp in pod), medicine (roots), stimulant (bark), fodder (leaves, pods), bee forage, nitrogen fixation, soil conservation, windbreaks, gum, tannin, dye, live fence, toothbrushes.

Description: Usually a small tree to no more than 6 m. Often branched from the base, crown usually rounded. **BARK:** brown-black, rough, fissured, young shoots red-brown, hairy. **THORNS:** **greyish, to 10 cm long, straight, usually shorter**, often pointing away from shoot tip (deflexed). **LEAVES:** bipinnate grey-green, new growth in dry season, 2-11 pinnae with few to many leaflets, small glands visible along leafstalks. **FLOWERS:** fragrant, **round heads, bright yellow**. **FRUIT:** straight or curved pods, **17 cm long to 2 cm wide**, very variable; **green and fleshy when young, softly hairy, with fruity smell**, rounded both ends, purple-brown when mature, exuding gum if squeezed, 8-15 seeds, flat, about 1 cm across, smooth brown-black. Pods rot and do not break open.

Propagation: Seedlings, direct sowing at site.

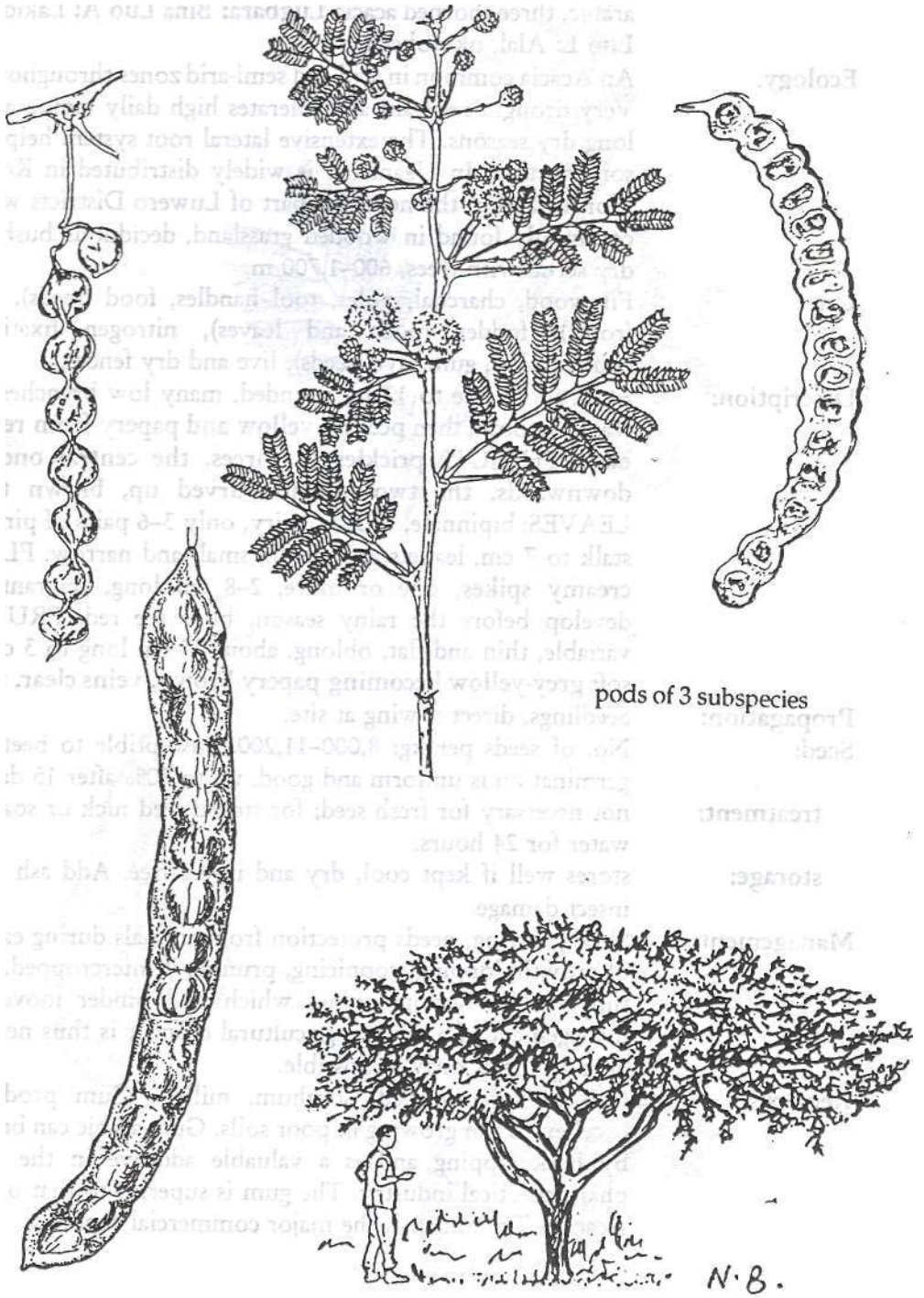
Seed: No. of seeds per kg: 6,000-11,000. Seed attacked by beetles in pods; separate through immersion in water—bad seeds float. Germination rate 60-90%.

treatment: not necessary for fresh seeds. For stored seeds only, nick or soak in hot water, allow to cool, and soak for 24 hours.

storage: seed stores well if kept cool, dry and insect free. Add ash to reduce insect damage.

Management: Medium to fast growing on good sites; lopping, pollarding, coppicing.

Remarks: The bark and pods have a high tannin content and are used for tanning. The poles are durable and valued for building as the wood is tough and termite resistant. Subspecies *subalata* is the common one in Uganda (there are nine subspecies in Africa).



Indigenous

Common names: **Ateso K:** Ekodokodwo **Ateso T:** Ekonoit **English:** Sudan gum arabic, three-thorned acacia **Lugbara:** Bina **Luo A:** Lakido, achika **Luo L:** Alal, okutokech.

Ecology: An Acacia common in arid and semi-arid zones throughout Africa. Very drought resistant and tolerates high daily temperatures and long dry seasons. The extensive lateral root system helps to bind soil together. In Uganda it is widely distributed in Kotido and Moroto and in the northern part of Luwero Districts where it is commonly found in wooded grassland, deciduous bushland and dry scrub with trees, 600-1,700 m.

Uses: Firewood, charcoal, poles, tool handles, food (seeds), medicine (roots), fodder (pods and leaves), nitrogen fixation, soil conservation, gum, dye (seeds), live and dry fences.

Description: A shrub or tree to 12 m, rounded, many low branches. **BARK:** waxy, smooth, then **peeling yellow and papery from red-brown base**. **THORNS:** prickles in threes, the central one hooked downwards, the two laterals curved up, brown to black. **LEAVES:** bipinnate, usually hairy, only 3-6 pairs of pinnae, on a stalk to 7 cm, leaflets grey-green, small and narrow. **FLOWERS:** **creamy spikes**, one or more, 2-8 cm long, fragrant, usually develop before the rainy season, buds are red. **FRUIT:** pods, variable, thin and flat, oblong, about 10 cm long to 3 cm across, soft **grey-yellow becoming papery brown, veins clear**, few seeds.

Propagation: Seedlings, direct sowing at site.

Seed: No. of seeds per kg: 8,000-11,200. Susceptible to beetle attack, germination is uniform and good, up to 70% after 15 days.

treatment: not necessary for fresh seed; for stored seed nick or soak in cold water for 24 hours.

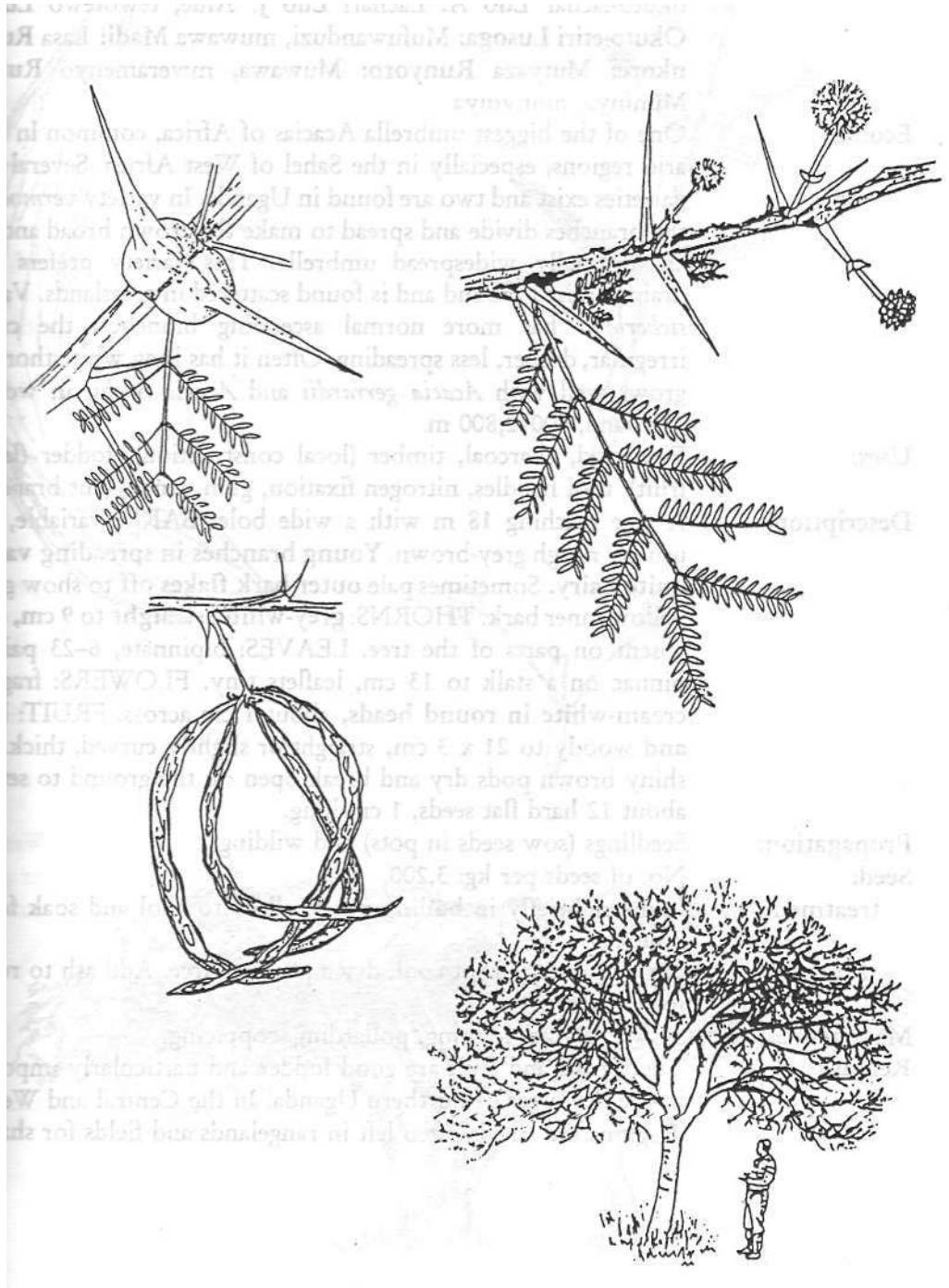
storage: stores well if kept cool, dry and insect free. Add ash to reduce insect damage.

Management: Slow growing, needs protection from animals during early stages of growth; lopping, coppicing, pruning if intercropped. Caution: this tree has vicious spines which will hinder movement for management of a young agricultural crop. It is thus necessary to do pruning as early as possible.

Remarks: Can be intercropped (sorghum, millet). Gum production is excellent when growing in poor soils. Gum arabic can be obtained by bark tapping and is a valuable additive in the food and pharmaceutical industry. The gum is superior to that of all other Acacias. The Sudan is the major commercial exporter.

Indigenous

- Common names:** **Ateso K:** Ekaramai **Ateso T:** Epujaiit, ekoromait **English:** white-galled acacia, white whistling thorn **Lugbara:** AH **Luo L:** Agagi.
- Ecology:** This is a typical tree of semi-arid zones widespread in tropical Africa with various varieties. In Uganda it is widely distributed in flood plains in North Eastern Region, along Kafu River in Masindi and Luwero Districts, and also in Tororo, Soroti, and Kumi Districts, 600-1,800.
- Uses:** Firewood, charcoal, poles, posts, medicine (bark, gum), fodder (leaves), bee forage, nitrogen fixation, soil conservation, windbreak, gum, tannin (bark), dye (bark), live fence.
- Description:** A small- to medium-sized tree 3-12 m, irregular umbrella crown, often many together. **BARK:** distinctive powdery **white to pale green** or **orange-red**. **THORNS: diverging pairs, white, stout, to 8 cm** sometimes smaller or none. Variety *fistula* bears grey-white swollen ant galls at the base of the thorns, to 3 cm across. Variety *seyal* has no ant galls. **LEAVES:** bipinnate with 3-7 pairs of pinnae, bearing a gland on the leaf stalk, leaflets tiny. **FLOWERS:** very many, **yellow, in large round heads** over 1 cm across, fragrant. **FRUIT: narrow, curved, shiny light brown pods, in bunches, slightly constricted between seeds, splitting on the trees, 7-20 cm long.**
- Propagation:** Seedlings.
- Seed:** No. of seeds per kg: about 20,000.
- treatment:** not necessary for fresh seed; for stored seed nick or soak in cold water for 24 hours.
- storage:** seed can be stored for several years if kept cool, dry and insect free. Add ash to reduce insect damage.
- Management:** Medium to slow growing; lopping, pollarding, coppicing.
- Remarks:** The gum of this tree has been extracted in North Eastern Region and is used as glue in offices.



Indigenous

Common names: **Ateso K:** Eoi **Ateso T:** Etirr **English:** Umbrella thorn.

Ecology: A common acacia all over Africa. Favours alkaline soils and can grow on shallow soils. Produces enormous deep roots penetrating a wide area to collect water and so reaches into semi-desert scrub as well as wooded grasslands. In Uganda it tends to be riparian. Commonly found near Greek River in Kapchorwa and Moroto Districts and around Moroto town.

Uses: Firewood, charcoal, timber, poles, posts, fodder (shoots, leaves, pods), bee forage, soil conservation, nitrogen fixation, shade (livestock), fibre (bark), fences (cut branches).

Description: A characteristic tree of drylands, 4-21 m, the **crown layered, flat and spreading** or rounded, sometimes a shrub. **BARK:** grey-brown-black **and fissured when mature**, young branchlets very hairy. **THORNS:** Two kinds: **small hooked** and **long, straight white**, sometimes mixed pairs, all on one stem. **LEAVES:** bipinnate, 2-10 pairs pinnae on a **short stalk** only 2-4 cm. **FLOWERS:** Fragrant, **cream**, in round heads. **FRUIT:** **yellow-brown pods, each containing up to 10 brown seeds**, hang in dense bunches **spirally twisted, sometimes in rings**.

Propagation: Seedlings (sow seeds in pots), wildings.

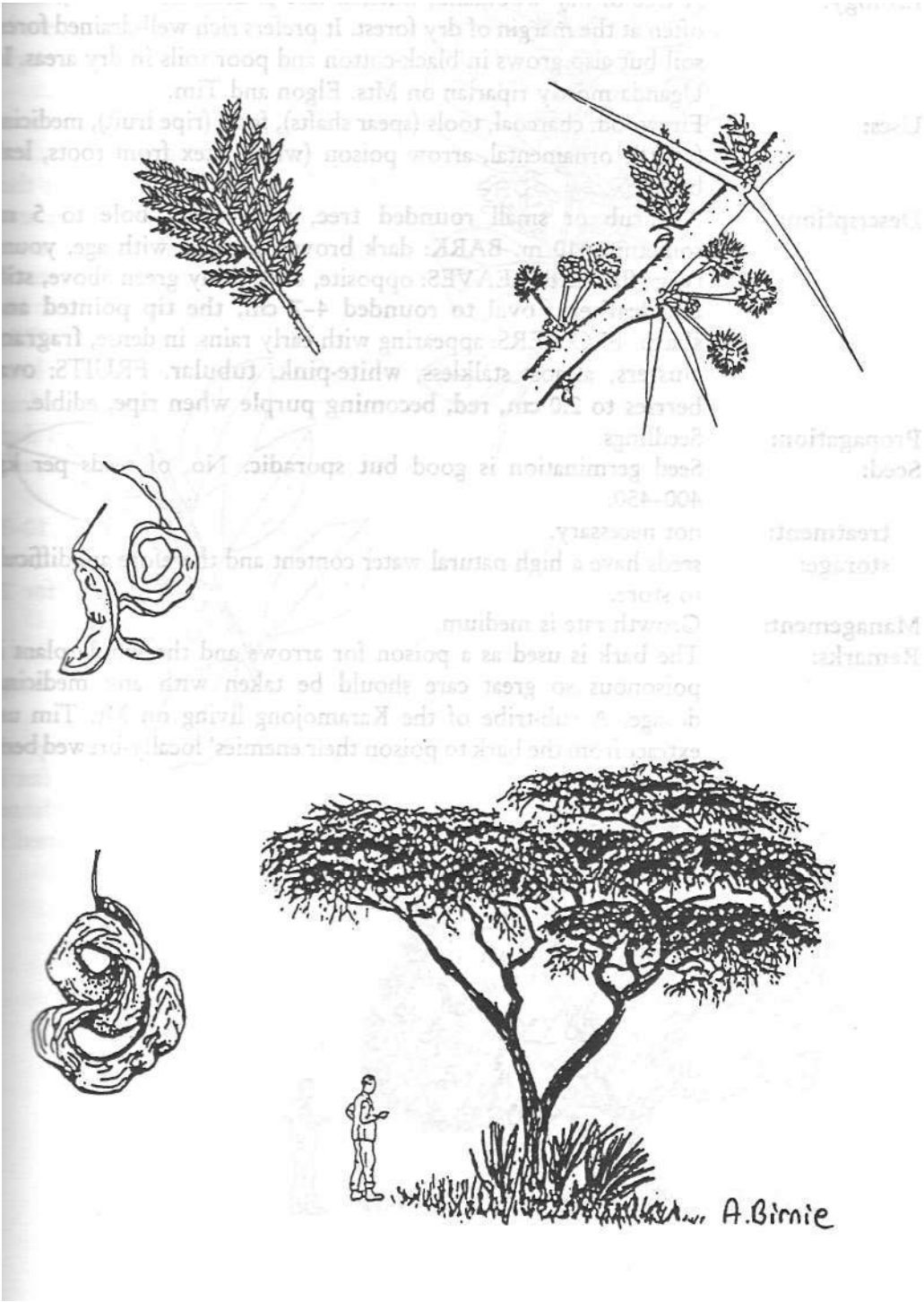
Seed: Slow germination, low germination rate. No. of seeds per kg: 12,000-31,000.

treatment: seed is very hard. Pour boiling water over seed, leave to soak and cool for 24 hours.

storage: seed can be stored for a very long period without losing viability. Add ash to reduce insect damage.

Management: Slow growing but if well protected can grow relatively fast on dry sandy soils. Protect young plants from goats. Lopping.

Remarks: Can be left to grow on pasture or crop land. In North Western Region the pods are the most important source of fodder for goats and sheep during the dry season. They are also eaten by game.



Acrocarpus fraxinifolius

Caesalpinaceae

India, S.E. Asia

Common names: **English:** Indian ash, shingle tree.

Ecology: Originally introduced in Uganda in arboretums, later planted throughout Uganda. It is most suitable for moderate altitudes with red soil and a moist climate, but can also stand some drought, 1,000-1,500 m.

Uses: Firewood, timber (furniture, tea boxes), roof shingles, beehives, bee forage, shade, ornamental, mulch, windbreak.

Description: A large tree reaching 60 m. The bole is often buttressed but then has a long straight trunk. It is an evergreen tree except in areas with a marked dry season. **BARK:** pale grey and smooth, trunk and branches bear leaf scars. **LEAVES:** **large, bipinnate in distinctive fan shapes to 1 m, young red leaves** look like blossoms, leaflets oval, wavy and pointed to 14 cm. **FLOWERS:** appear on the tree when it is leafless, up to **20 dense heads hang down from branch ends**, each 12 cm long, dripping nectar from the **red-green flowers**, short lived. **FRUIT:** **big bunches of dark brown pods** persist on the tree. They split easily to release seed.

Propagation: Seedlings, direct sowing at site.

Seed: No. of seeds per kg: 24,000-29,000. Germination is sporadic, 10-30 days after good pretreatment.

treatment: nick or immerse in hot water, allow to cool and soak for 24 hours.

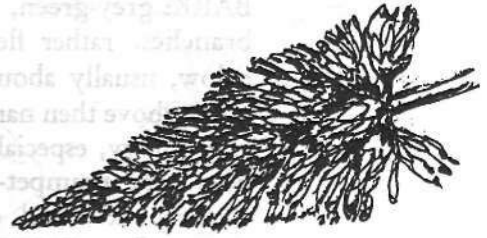
storage: seed loses viability rapidly.

Management: Very fast growing; pollarding, coppicing (only while young). Rotation for fuel 8-10 years, timber 30-40 years.

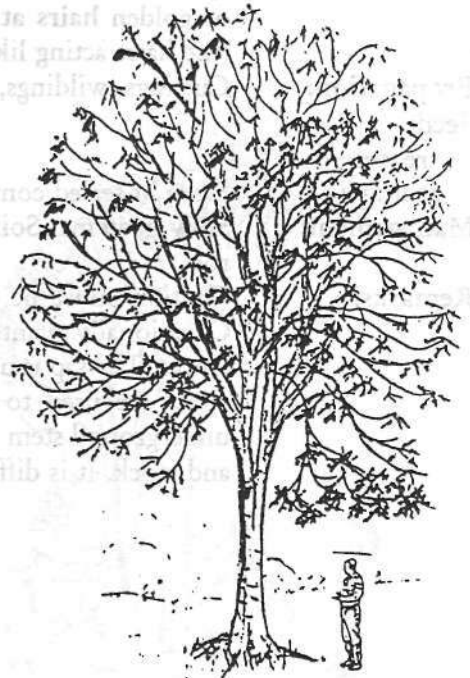
Remarks: It should not be planted near houses as dry branches drop off. Competes with crops if grown in fields. It grows extremely fast in Uganda, especially near Lake Victoria, where it was planted originally in Entebbe Botanic Gardens. (In Kenya it was used as a shade tree for coffee and tea.)



one leaflet



flower head



Afzelia africana (Pahudia africana)

Caesalpinaceae

Indigenous

Trade name: Afzelia.

Common names: **English:** Afzelia, lucky-bean tree **Lugbara:** Meli **Luo:** Beyo **Luo A:** Baa, beyo **Madi:** Azza.

Ecology: A tree occurring from Senegal to the Sudan and Zaire. In Uganda, it grows in wooded grassland with higher rainfall and can also be found on rocky ground or in gallery forest. It is abundant in the North West Region in forest on Mt. Kei and the Otze Forest.

Uses: Firewood, charcoal, timber, poles, posts, shade.

Description: A large tree, usually deciduous 6-30 m with **thick branches** to a flat or rounded crown, the bole with short thick buttresses. **BARK:** pale grey to dark brown, with **large pieces flaking off**. **LEAVES:** compound pinnate on stalks to 32 cm, **2-5 pairs of leaflets**, which are oval, 5-15 cm long, the **tip clearly pointed**. Leaflets have a short twisted stalk. **FLOWERS:** sweet scented in branched heads about 10 cm long. Each flower has **only 1 petal**, bilobed and clawed, **1-2 cm long**, green-white with pink lines. The 2 plus 2 grey-green sepals have short hairs. A leafy structure (bracteole) almost covers the flower buds. **FRUIT:** large woody **straight pods** 10-20 cm long and 5-8 cm across. The conspicuous black seeds, each to 3 cm long, are half covered with a soft **bright orange aril cup** and lie in white pith.

Propagation: Seedlings (sow seeds in pots), wildings.

Seed: Should be collected during March-April. Susceptible to insect attack.

treatment: the aril should be removed and nicking anywhere on the seed may hasten germination.

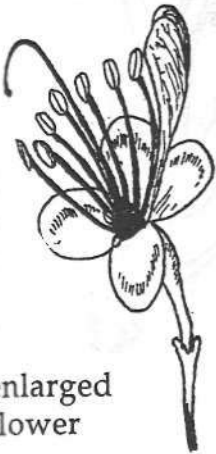
storage: Seeds can be stored for a long time in an air-tight container at room temperature. Add ash to reduce insect damage.

Management: Coppicing, pollarding. Needs to be protected from fire. Slow growing.

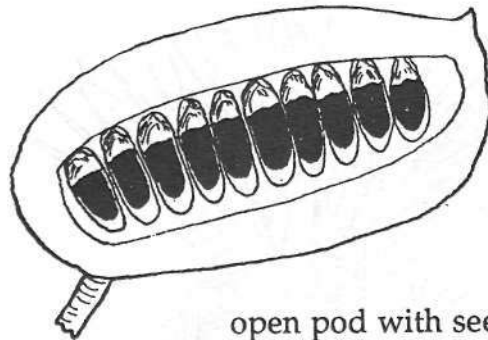
Remarks: The timber is of good quality and can be recommended for all uses. Can be planted for erosion control on slopes, and for improvement of degraded savannahs.



flower head



enlarged
flower



open pod with seeds

Mexico

Common names: **English:** Sisal **Luganda:** Kigoogwa.

Ecology: Grows on a wide range of soils from sandy loam to clay, withstands waterlogging and is drought hardy. In Uganda it has been grown as a plantation crop around Butiaba old pier and Masindi Port. Sisal is also commonly planted for live fencing throughout the country.

Uses: Firewood (flowering stem), live fence, strong ropes, sacking, mats (fibres).

Description: A woody herb with whorls of spiny leaves at ground level. The flowering stem reaches up to 6 m. **LEAVES: sword-shaped, to 2 m long**, edges spiny, with a **sharp dark brown tip**. **FLOWERS: a flowering "pole" has small "green-yellow flowers** on side branches. **FRUIT:** dry capsules with seed but little is viable. Some flower buds become thick and hard and will root when planted. They are called **"bulbils"** and may **develop among the flowers**. Suckers are produced at the base of the leaves.

Propagation: Suckers and bulbils.

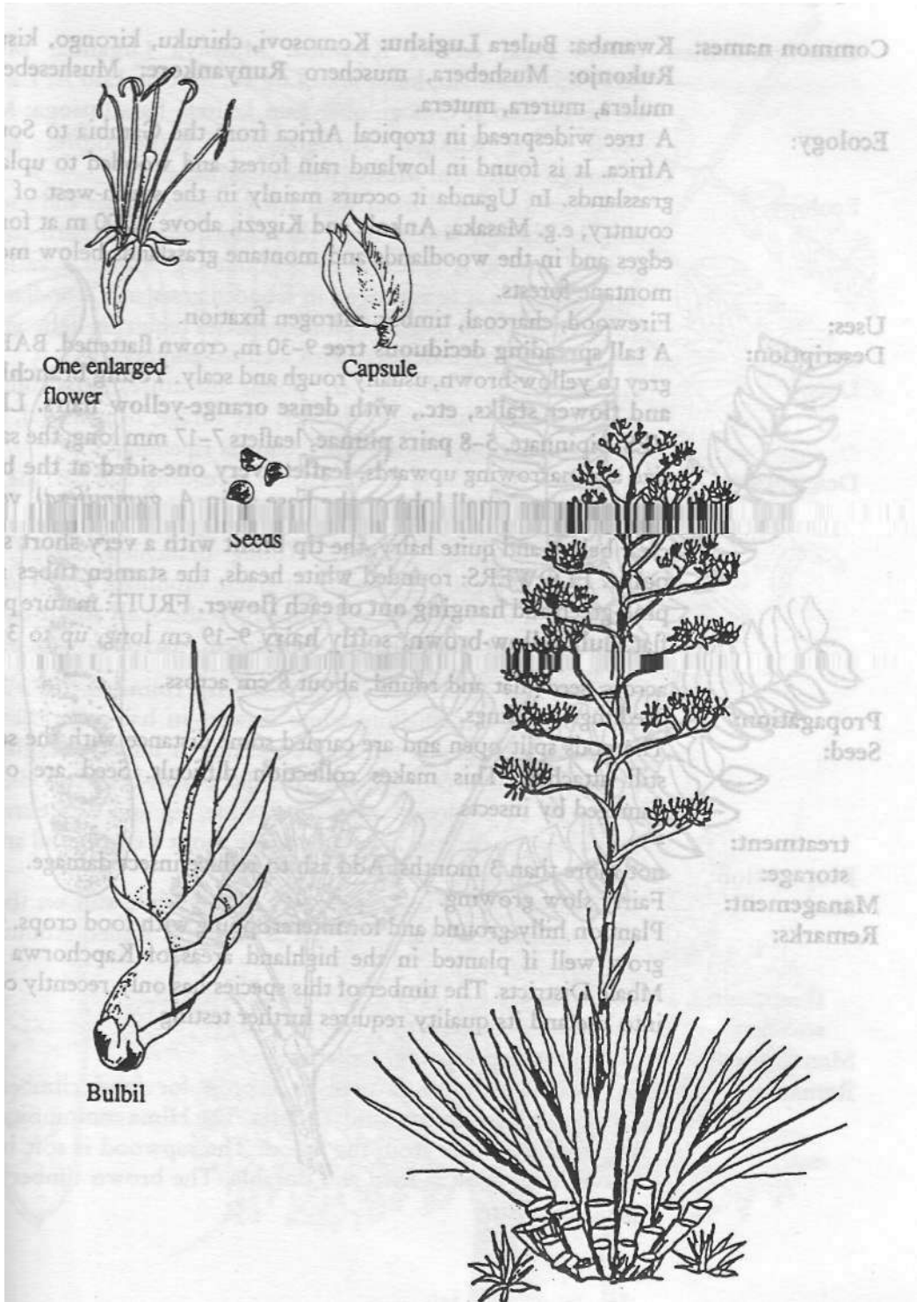
Seed: Little viable seed.

treatment:

storage:

Management: Cut the large leaves to grow a suitable hedge. Fast growing.

Remarks: Drought hardy and termite resistant. The whole plant dies after flowering, which normally occurs at the age of seven years. Leaves for fibres can be cut after about two years.



Indigenous

Common names: **Kwamba:** Bulera **Lugishu:** Komosovi, chiruku, kirongo, kisubi
Rukonjo: Mushebera, muschero **Runyankore:** Mushesebeya, mulera, murera, mutera.

Ecology: A tree widespread in tropical Africa from the Gambia to South Africa. It is found in lowland rain forest and wooded to upland grasslands. In Uganda it occurs mainly in the south-west of the country, e.g. Masaka, Ankole and Kigezi, above 1,200 m at forest edges and in the woodlands and montane grasslands below moist montane forests.

Uses: Firewood, charcoal, timber, nitrogen fixation.

Description: **A tall spreading deciduous tree** 9-30 m, crown flattened. **BARK:** grey to yellow-brown, usually rough and scaly. **Young branchlets and flower stalks, etc., with dense orange-yellow hairs.** **LEAVES:** bipinnate, **5-8 pairs pinnae**, leaflets 7-17 mm long, the same size and narrowing upwards, **leaflets very one-sided at the base (but no extra small lobe at the base as in *A. gummifera*),** veins clear below and quite hairy, the **tip blunt with a very short stiff point.** **FLOWERS:** rounded white heads, the **stamen tubes red-pink-green and hanging out of each flower.** **FRUIT:** mature pods flat, **dull yellow-brown, softly hairy** 9-19 cm long, up to 3 cm across; seeds flat and round, about 8 cm across.

Propagation: Seedlings, wildings.

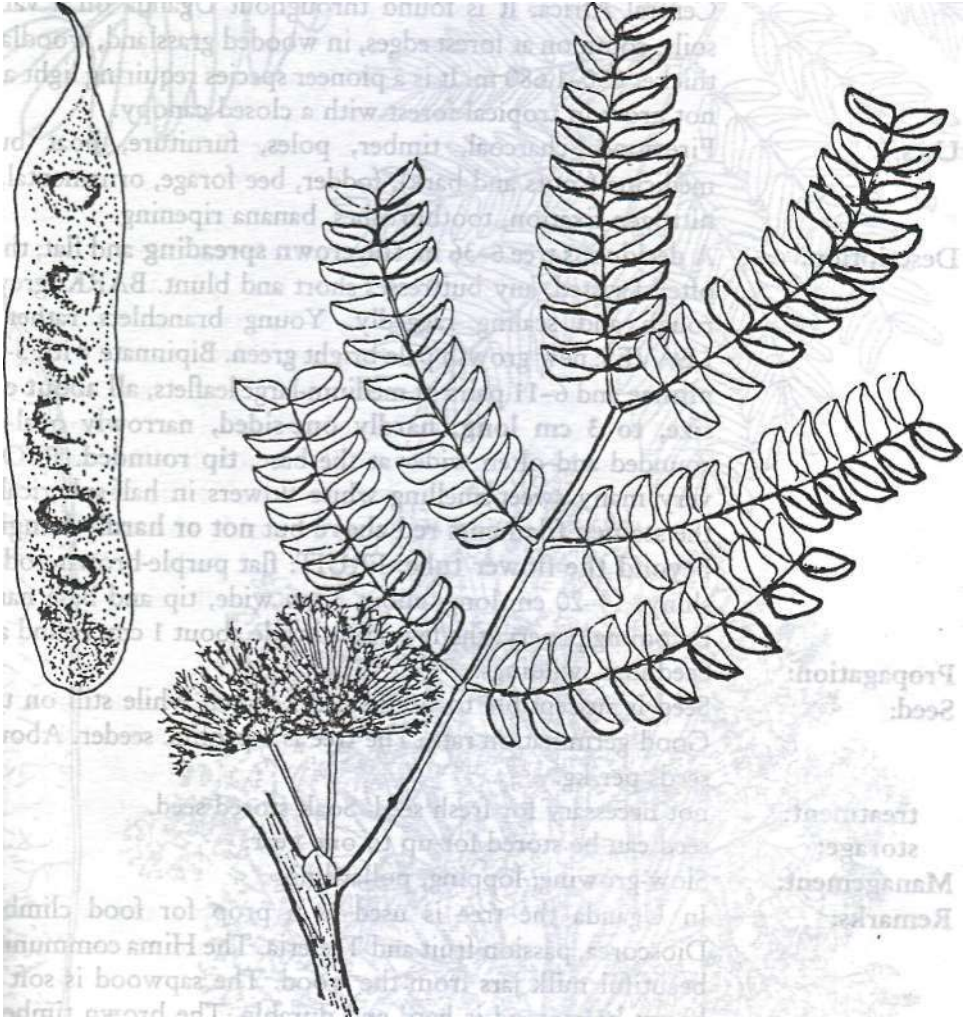
Seed: The pods split open and are carried some distance with the seeds still attached. This makes collection difficult. Seed are often damaged by insects.

treatment:

storage: not more than 3 months. Add ash to reduce insect damage.

Management: Fairly slow growing.

Remarks: Plant on hilly ground and for intercropping with food crops. Can grow well if planted in the highland areas of Kapchorwa and Mbale Districts. The timber of this species has only recently come into use and its quality requires further testing.



Indigenous

Common names: **Ateso:** Etek, etekwa **Kwamba:** Musisiya **Luganda:** Mugavu **Lugishu:** Chesovio, kumuluko **Lugwe:** Mubere **Luo A:** Latoligo, ayekayek **Luo J:** Omogi, ober **Luo L:** Itek, bata **Lusoga:** Musita **Madi:** Oyo **Rukiga:** Muyenzayenze **Runyankore:** Musisa, murongo **Runyoro:** Musisa **Rutoro:** Musisa.

Ecology: A timber tree found from West Africa to the Sudan and south to Angola, though absent from the eastern and southern parts of Central Africa. It is found throughout Uganda on a variety of soils; common at forest edges, in wooded grassland, woodland and thicket 850-1,680 m. It is a pioneer species requiring light and will not grow in tropical forest with a closed canopy.

Uses: Firewood, charcoal, timber, poles, furniture, boat building, medicine (roots and bark), fodder, bee forage, ornamental, shade, nitrogen fixation, toothbrushes, banana ripening.

Description: A deciduous tree 6-36 m, **the crown spreading** and flat, the trunk often twisted, any buttresses short and blunt. **BARK:** grey-black, rough and scaling raggedly. Young branchlets rather hairy. **LEAVES:** new growth pale bright green. Bipinnate with **3-6 pairs pinnae** and 6-11 pairs of medium-large leaflets, **all about equal in size, to 3 cm long, hardly one-sided**, narrowly oval-oblong, rounded and often wider at the base, **tip rounded**. **FLOWERS:** very many sweet-smelling white flowers in half-spherical heads, the **stamen filaments red above** but **not or hardly hanging out beyond the flower tube**. **FRUIT:** flat purple-brown pods, often shiny, 14-20 cm long, about 3 cm wide, tip and base narrowed, becoming papery, the few seeds inside about 1 cm, round and flat. Seedlings, wildings.

Propagation:

Seed: Seed is susceptible to beetle attack, often while still on the tree. Good germination rate. The tree is a prolific seeder. About 6,000 seeds per kg.

treatment: not necessary for fresh seed. Soak stored seed.

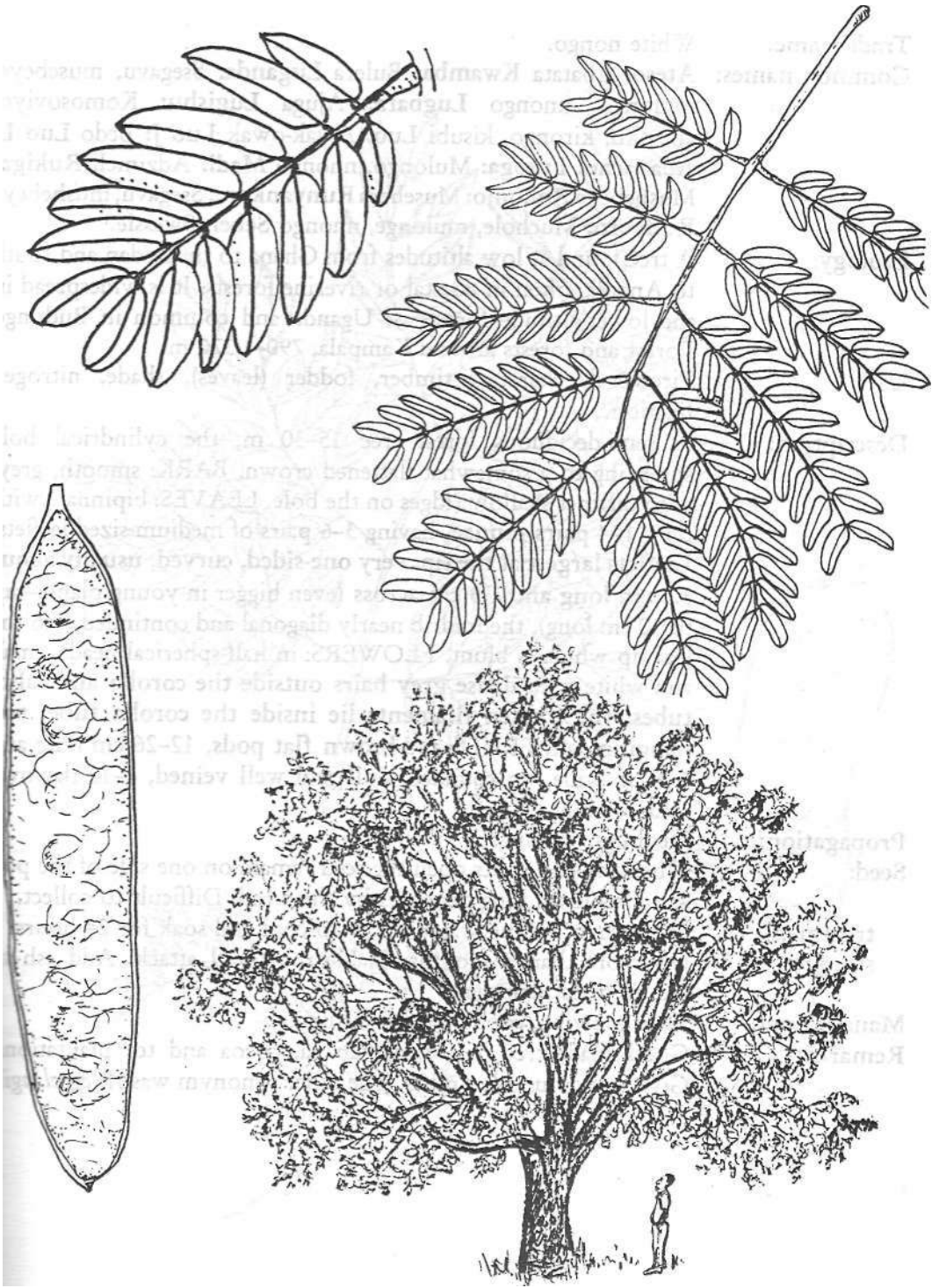
storage: seed can be stored for up to one year.

Management: Slow-growing; lopping, pollarding.

Remarks: In Uganda the tree is used as a prop for food climbers like Dioscorea, passion fruit and Taferia. The Hima community make beautiful milk jars from the wood. The sapwood is soft but the heavy heartwood is hard and durable. The brown timber makes good furniture.

Albizia coriaria

Mimosaceae



Indigenous

Trade name: White nongo.

Common names: **Ateso:** Ebatata **Kwamba:** Bulera **Luganda:** Ssegavu, musebeya, mulongo, nnongo **Lugbara:** Ajuga **Lugishu:** Komosoviyo, chiruku, kironko, kisubi **Luo:** Awak-owak **Luo J:** Bedo **Luo L:** Abaa-achol **Lusoga:** Mulongo, nnongo **Madi:** Adzimeli **Rukiga:** Mushebeya Rukonjo: Musebera Runyankore: Ssegavu, mushebeya **Runyoro:** Muchole, mulonge, nnongo **Sebei:** Swessie.

Ecology: A tree found at low altitudes from Ghana to the Sudan and south to Angola, often in coastal or riverine forests. It is widespread in the lower-altitude forests of Uganda and common in Budongo Forest and forests around Kampala, 790-1,370 m.

Uses: Firewood, charcoal, timber, fodder (leaves), shade, nitrogen fixation.

Description: A semi-deciduous forest tree 15-30 m, the cylindrical bole spreading to a somewhat flattened crown. **BARK:** smooth, grey, with distinct shallow ridges on the bole. **LEAVES:** bipinnate with only **1-4 pairs pinnae**, having 3-6 pairs of medium-sized leaflets. **Leaflets largest at the tip, very one-sided, curved, usually about 3.5 cm long and 1.5 cm across** (even bigger in young plants—up to 10 cm long), the midrib nearly diagonal and continued into the leaf tip which is blunt. **FLOWERS:** in half-spherical heads, small and white with **dense grey hairs outside the corolla and calyx tubes; the stamen filaments lie inside the corolla tube, not hanging out.** **FRUIT:** **red-brown flat pods**, 12-26 cm long and 3-4 cm wide, tip rounded, **dull and well veined**, 6-12 flat oval seeds within.

Propagation: Seedlings, wildings.

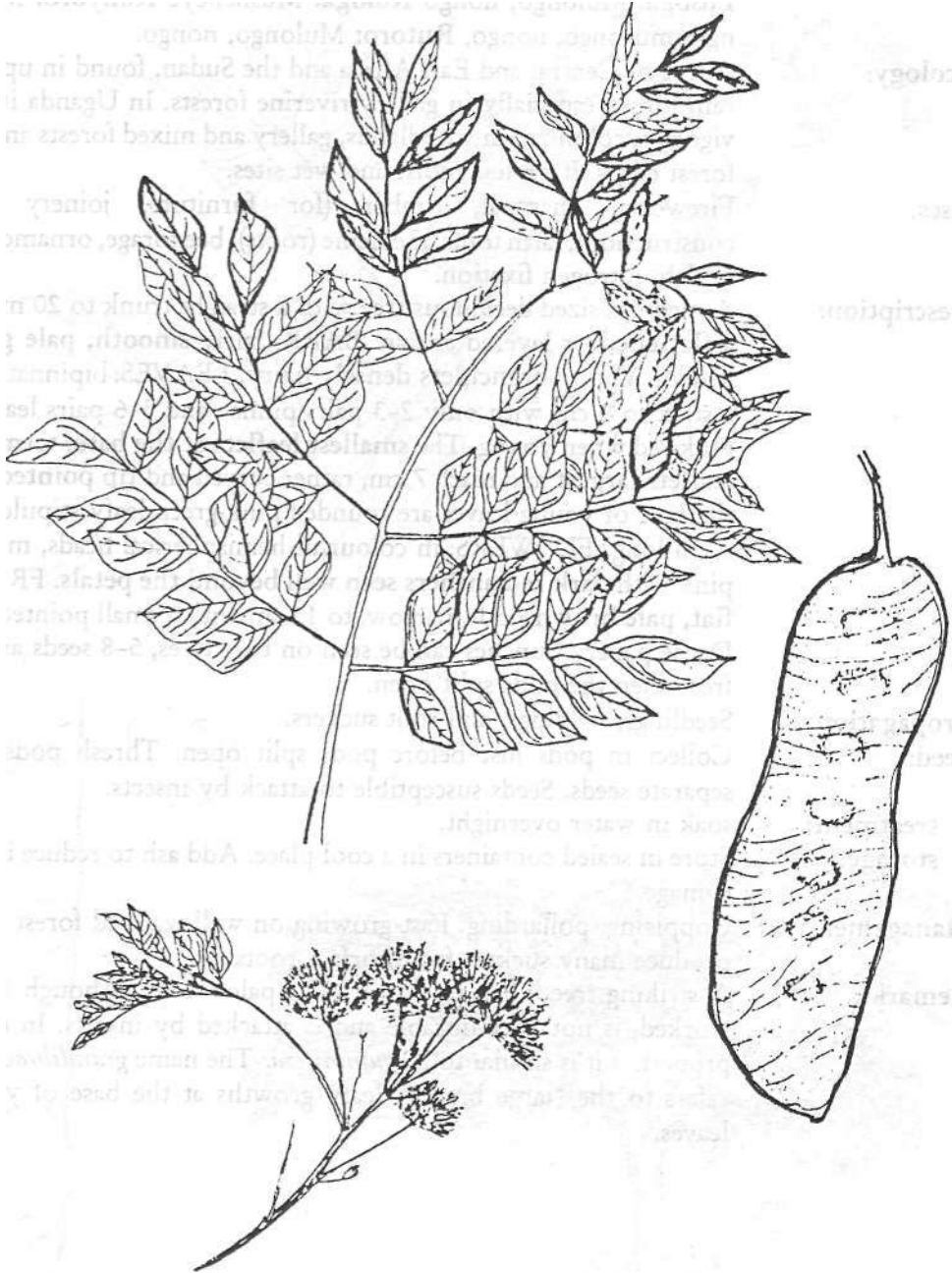
Seed: When the pod splits open the seed remain on one side of the pod and are blown long distances by the wind. Difficult to collect.

treatment: immerse in boiling water, allow to cool and soak for 24 hours.

storage: not more than 3 months. Liable to weevil attack. Add ash to reduce insect damage.

Management: Slow growing; coppicing, pollarding.

Remarks: Good shade tree in coffee, banana, cocoa and tea plantations. Gives good durable timber. The older synonym was *A. eggelingii*.



Indigenous

Common names: **English:** Large-leaved albizia **Kwamba:** Bulera, idada, madada **Luganda:** Mulongo, nongo **Luo:** Awak, owak **Luo A:** Awok **Lusoga:** Mulongo, nongo **Rukiga:** Mushebeye **Runyoro:** Mulongo, murongo, nongo, **Rutoro:** Mulongo, nongo.

Ecology: A tree of Central and East Africa and the Sudan, found in upland rain forest, especially in gallery riverine forests. In Uganda it is a vigorous colonizer in woodlands, gallery and mixed forests and on forest edges. It prefers moist and wet sites.

Uses: Firewood, charcoal, timber (for furniture, joinery and construction), farm tools, medicine (roots), bee forage, ornamental, mulch, nitrogen fixation.

Description: A medium-sized deciduous tree with a straight trunk to 20 m and a **flattened** or layered crown. **BARK:** fairly **smooth, pale grey-brown**. **Young branchlets densely hairy**. **LEAVES:** bipinnate, on a stalk to 9 cm with only 2-3 pairs pinnae and 3-6 pairs leaflets, pink-red when young. The **smallest leaflets at the base, terminal leaflets largest** and reach 7 cm, rather curved and **tip pointed**. At the base of young leaves are rounded pink-green leafy stipules, to 2 cm long. **FLOWERS:** in colourful hemispherical heads, mostly pink with **dark red anthers seen well beyond the petals**. **FRUIT:** **flat, pale brown** pods, narrow, to 15 cm with a small pointed tip. Dense papery bunches can be seen on bare trees, 5-8 seeds are set free when the pods split open.

Propagation: Seedlings, wildings, and root suckers.

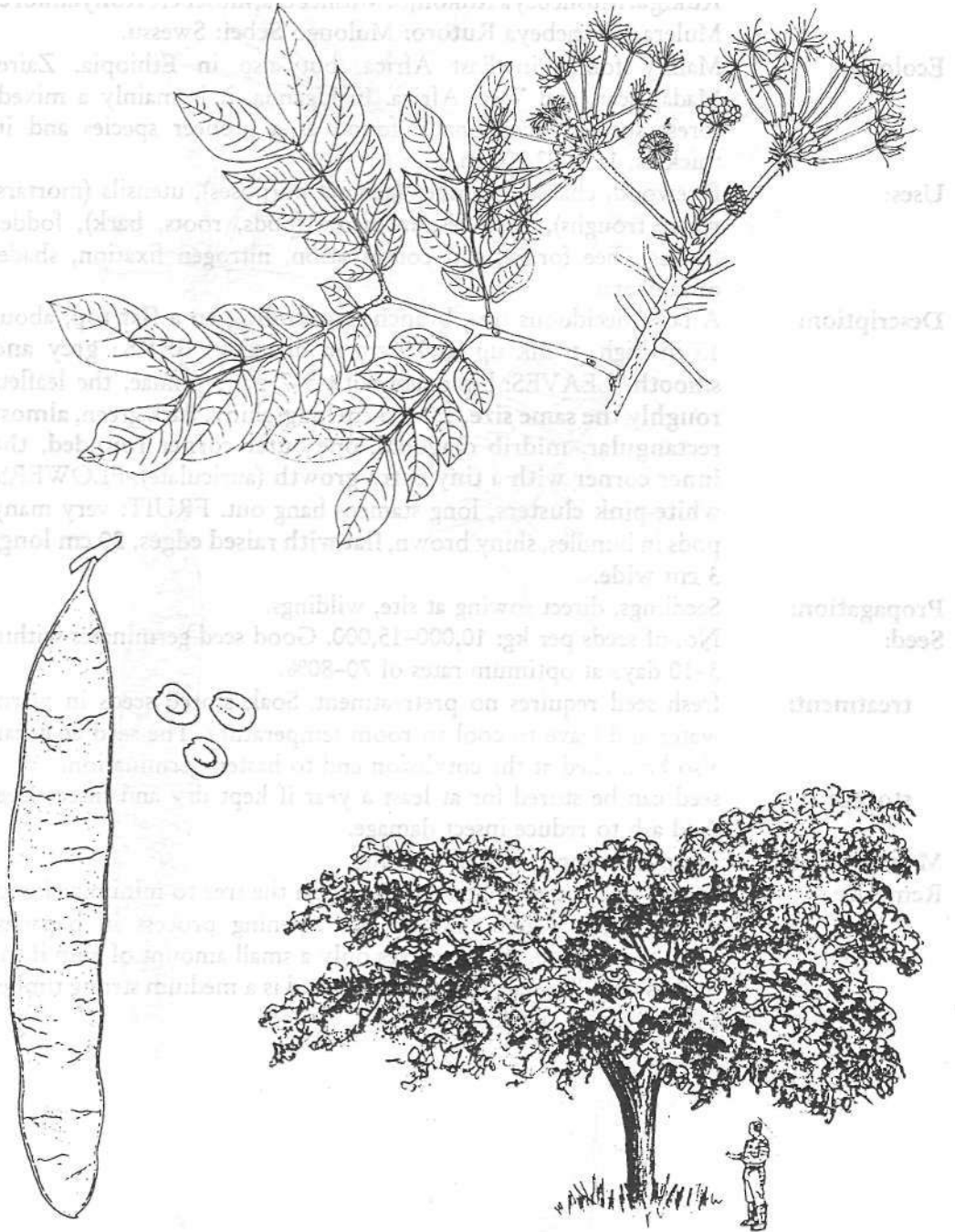
Seed: Collect in pods just before pods split open. Thresh pods and separate seeds. Seeds susceptible to attack by insects,

treatment: soak in water overnight.

storage: Store in sealed containers in a cool place. Add ash to reduce insect damage.

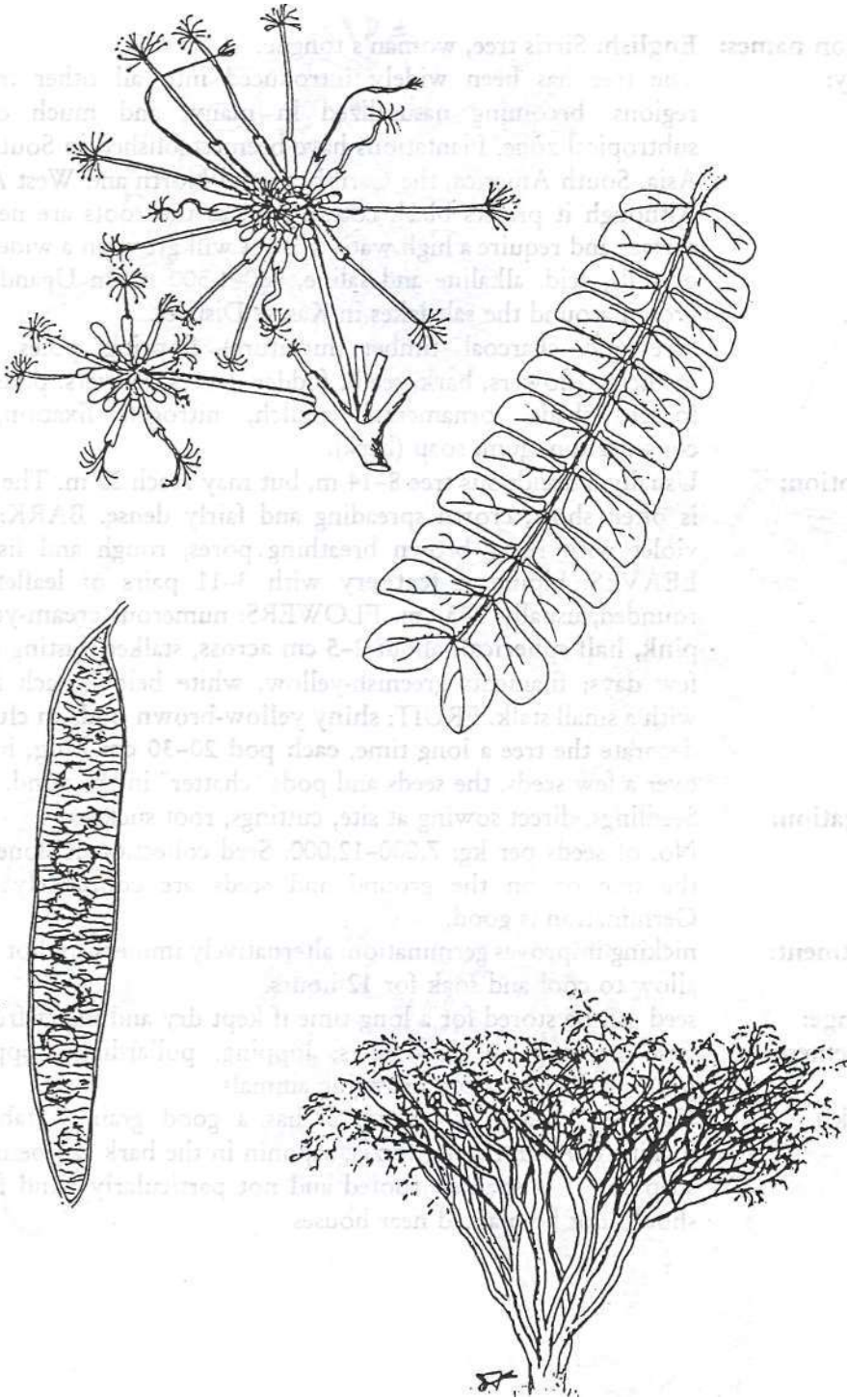
Management: Coppicing, pollarding. Fast growing on well-watered forest soils, produce many suckers from surface roots.

Remarks: A striking tree when in flower. The pale wood, although easily worked, is not very durable and is attacked by insects. In other properties it is similar to *A. gummifera*. The name *grandibracteata* refers to the "large bracts", leafy growths at the base of young leaves.



Indigenous

- Common names:** **English:** Peacock flower **Lugishu:** Chiruku, kironko, kisubi
Rukiga: Mushebeya **Rukonjo:** Mushebera, musebere **Runyankore:** Mulera, mushebeya **Rutoro:** Mulongo **Sebei:** Swessu.
- Ecology:** Mainly found in East Africa, but also in Ethiopia, Zaire, Madagascar, and West Africa. In Uganda, it is mainly a mixed-forest species, occasionally found as a pioneer species and in thickets, 1,000-2,300 m.
- Uses:** Firewood, charcoal, timber (general purposes), utensils (mortars, water troughs), beehives, medicine (pods, roots, bark), fodder (leaves), bee forage, soil conservation, nitrogen fixation, shade, ornamental.
- Description:** A large deciduous tree, **branches ascending to a flat top**, about 15 m high, trunk up to 75 cm in diameter. **BARK: grey and smooth.** **LEAVES:** bipinnate with 5-7 pairs pinnae, the leaflets **roughly the same size**, 1.0-2.5 cm long, shiny, dark green, **almost rectangular, midrib diagonal, one outer corner rounded, the inner corner with a tiny extra growth** (auriculate). **FLOWERS:** **white-pink clusters**, long stamens hang out. **FRUIT:** very many pods in bundles, shiny brown, **flat with raised edges, 20 cm long, 3 cm wide.**
- Propagation:** Seedlings, direct sowing at site, wildings.
- Seed:** No. of seeds per kg: 10,000-15,000. Good seed "germinates within 3-10 days at optimum rates of 70-80%.
- treatment:** fresh seed requires no pretreatment. Soak stored seeds in warm water and leave to cool to room temperature. The seed coat can also be nicked at the cotyledon end to hasten germination,
- storage:** seed can be stored for at least a year if kept dry and insect free. Add ash to reduce insect damage.
- Management:** Lopping, coppicing while young.
- Remarks:** Seed should be collected while still on the tree to minimize insect damage. The leaves quicken the ripening process in bananas. Despite its name, the tree gives only a small amount of gum if the bark is cut. The pale brown heartwood is a medium strong timber that is easy to work.



India, Burma

Common names: **English:** Sirns tree, woman's tongue.

Ecology: The tree has been widely introduced into all other tropical regions, becoming naturalized in many, and much of the subtropical zone. Plantations have been established in South East Asia, South America, the Caribbean and North and West Africa. Although it prefers black cotton soil, as the roots are near the surface and require a high watertable, it will grow on a wide range of soils, acid, alkaline and saline, 900-1,500 m. In Uganda it is grown around the salt lakes in Kasese District.

Uses: Firewood, charcoal, timber (furniture), flooring, poles, posts, medicine (flowers, bark, seed), fodder (leaves, flowers, pods), bee forage, shade, ornamental, mulch, nitrogen fixation, soil conservation, gum, soap (bark).

Description: Usually a deciduous tree 8-14 m, but may reach 25 m. The trunk is often short, crown spreading and fairly dense. **BARK:** grey-violet with rusty brown breathing pores, rough and fissured. **LEAVES:** bipinnate **feathery** with 3-11 pairs of leaflets, tip rounded, usually 2-3 cm. **FLOWERS:** numerous **cream-yellow-pink, half spherical**, about 2-5 cm across, stalked, lasting only a few days; filaments greenish-yellow, white below; each flower with a small stalk. **FRUIT:** **shiny yellow-brown pods in clusters**, decorate the tree a long time, **each pod 20-30 cm long**, bulging over a few seeds, the seeds and pods "chatter" in the wind.

Propagation: Seedlings, direct sowing at site, cuttings, root suckers.

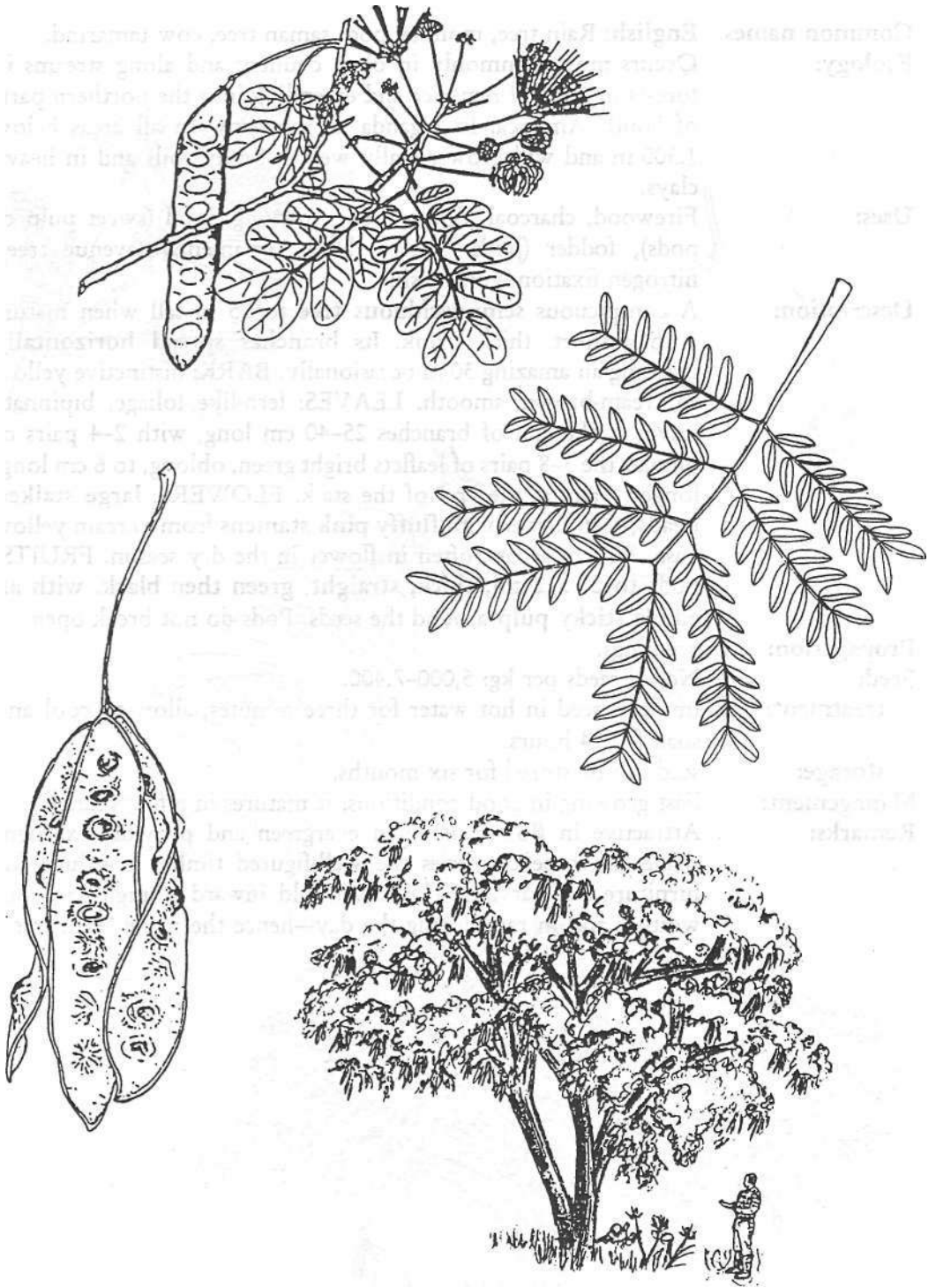
Seed: No. of seeds per kg: 7,000-12,000. Seed collection is done from the tree or on the ground and seeds are completely dried. Germination is good.

treatment: nicking improves germination; alternatively immerse in hot water, allow to cool and soak for 12 hours.

storage: seed can be stored for a long time if kept dry and insect free.

Management: Fast growing on good sites; lopping, pollarding, coppicing, pruning. Protect from browsing animals.

Remarks: Hard and heavy wood which has a good grain suitable for furniture. As in most Albizia, saponin in the bark can be used as soap. As it is shallow rooted and not particularly wind firm it should not be planted near houses.



Central and South America

Common names: **English:** Rain tree, monkey pod, saman tree, cow tamarind.

Ecology: Occurs most commonly in open country and along streams in forests in Central America and extending into the northern parts of South America. In Uganda, it can grow in all areas below 1,300 m and will grow equally well in sandy soils and in heavy clays.

Uses: Firewood, charcoal, timber, tools, carving, food (sweet pulp of pods), fodder (pods, seeds), shade, ornamental (avenue tree), nitrogen fixation, gum, resin.

Description: A conspicuous **semi-deciduous tree** to 25 m tall when mature with a short, thick trunk. Its **branches spread horizontally** reaching an amazing 30 m occasionally. **BARK:** distinctive yellow to cream-brown, smooth. **LEAVES:** fern-like foliage, bipinnate leaves at the end of branches 25-40 cm long, with 2-4 pairs of pinnae, the 3-8 pairs of leaflets bright green, oblong, to 6 cm long, longest pairs at the end of the stalk. **FLOWERS:** **large stalked heads**, each flower with **fluffy pink stamens** from a cream-yellow base, 3-5 cm across, often in flower in the dry season. **FRUITS:** **pods to 20 x 2 cm, thick, straight, green then black, with an edible sticky pulp** around the seeds. Pods do not break open.

Propagation: Seedlings.

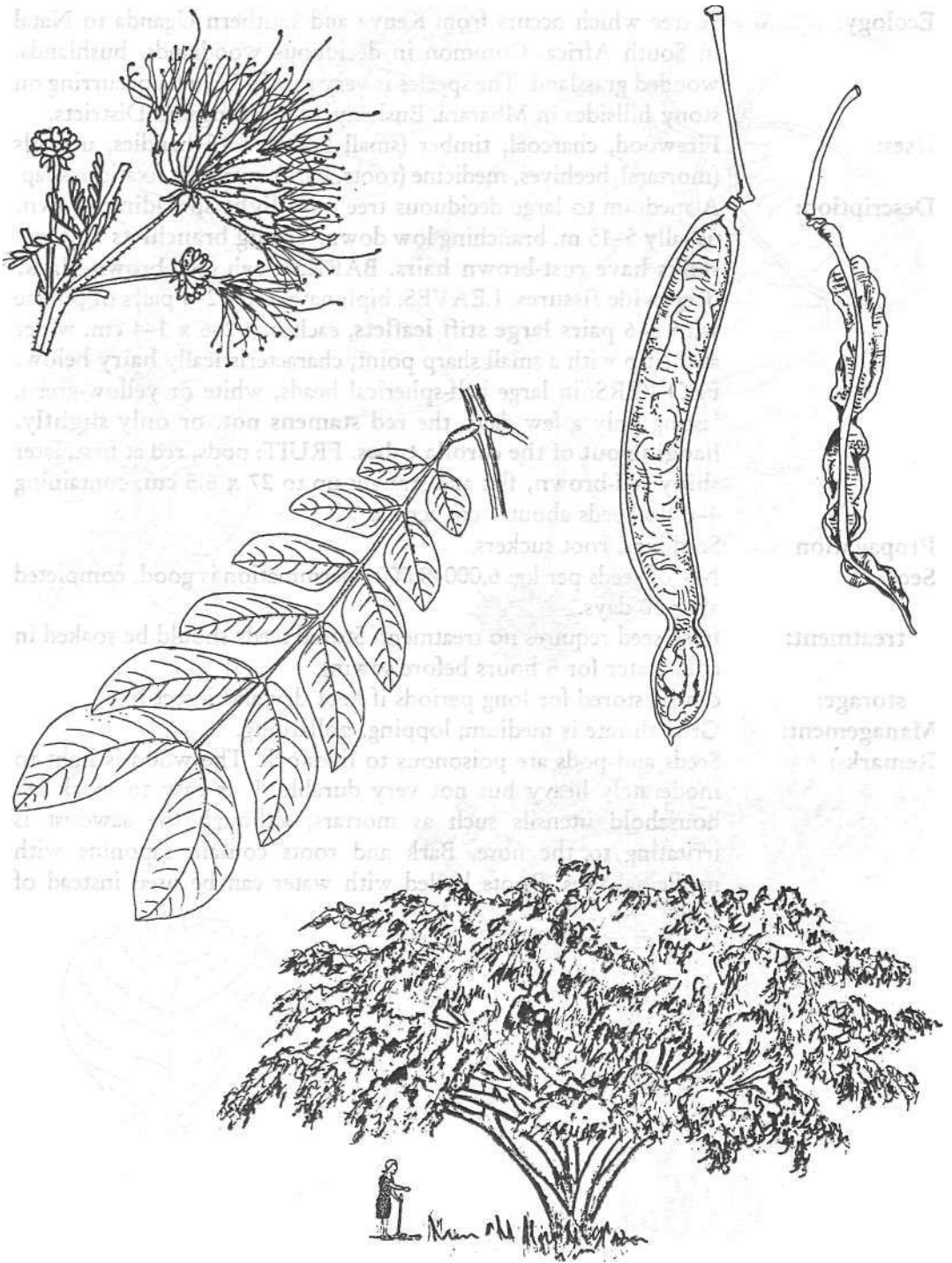
Seed: No. of seeds per kg: 5,000-7,400.

treatment: immerse seed in hot water for three minutes, allow to cool and soak for 24 hours.

storage: seed can be stored for six months.

Management: Fast growing in good conditions; it matures in a few years.

Remarks: Attractive in flower, is often evergreen and provides excellent shade. In some countries the well-figured timber is valued for furniture and carving. The leaves fold inward at night, in cool weather and in rain during the day—hence the name "rain tree".



Indigenous

Common names: Runyankore: Musebeya.

Ecology: A tree which occurs from Kenya and southern Uganda to Natal in South Africa. Common in deciduous woodlands, bushlands, wooded grassland. The species is very rare in Uganda occurring on stony hillsides in Mbarara, Bushenyi and Ntungamo Districts.

Uses: Firewood, charcoal, timber (small boats), tool handles, utensils (mortars), beehives, medicine (roots, bark), nitrogen fixation, soap.

Description: A medium to large deciduous tree with **light spreading crown**, usually 5-15 m, branching low down. **Young branchlets and leaf stalks have rust-brown hairs.** BARK: rough **grey-brown-black, deep wide fissures.** LEAVES: bipinnate, only 2-4 pairs of pinnae with **3-6 pairs large stiff leaflets**, each one 2-6 x 1-4 cm, wider at the tip with a small sharp point, characteristically **hairy below.** FLOWERS: in large half-spherical heads, white or yellow-green, lasting only a few days, the **red stamens not, or only slightly, hanging out of the corolla tubes.** FRUIT: pods, red at first, later **shiny red-brown**, flat and straight up to 27 x 6.5 cm, containing 4-6 flat seeds about 1 cm across.

Propagation Seedlings, root suckers.

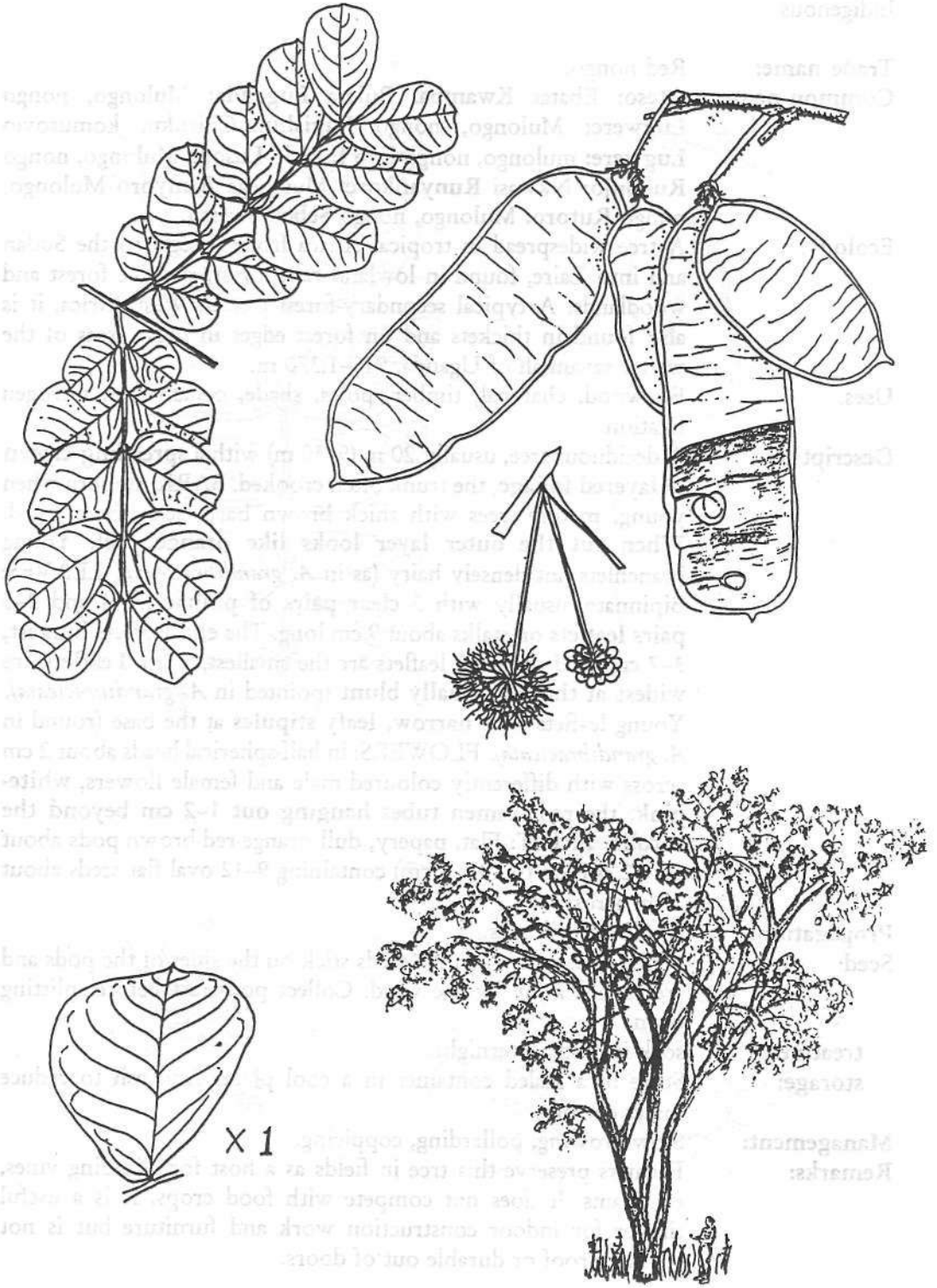
Seed: No. of seeds per kg: 6,000-8,000. Germination is good, completed after 30 days.

treatment: fresh seed requires no treatment. Stored seeds should be soaked in cold water for 6 hours before sowing.

storage: can be stored for long periods if kept dry and insect free.

Management: Growth rate is medium; lopping, pollarding.

Remarks: Seeds and pods are poisonous to livestock. The wood is light to moderately heavy but not very durable. It is easy to work for household utensils such as mortars, although the sawdust is irritating to the nose. Bark and roots contain saponins with medicinal uses. Roots boiled with water can be used instead of soap.



Albizia zygia

Mimosaceae

Indigenous

Trade name: Red nongo.

Common names: **Ateso:** Ebatat **Kwamba:** Bulera **Luganda:** Mulongo, nongo **Lugwere:** Mulongo, nongo **Lugishu:** Chiruku, komusovio **Lugwere:** mulongo, nongo **Luo J:** Bedo **Lusoga:** Mulongo, nongo **Rukonjo:** Nkwasi **Runyankore:** Musebega **Runyoro:** Mulongo, nongo **Rutoro:** Mulongo, nongo **Sebei:** Swessu.

Ecology: A tree widespread in tropical Africa from Senegal to the Sudan and into Zaire, found in lowland rain forest, riverine forest and woodlands. A typical secondary-forest tree in West Africa, it is also found in thickets and on forest edges in most areas of the wetter savannah of Uganda, 915-1,370 m.

Uses: Firewood, charcoal, timber, poles, shade, ornamental, nitrogen fixation.

Description: A deciduous tree, usually 20 m (9-30 m) with a **spreading crown of layered foliage**, the trunk often crooked. **BARK:** smooth when young, mature trees with thick brown bark, scaly or cracked. **When cut the outer layer looks like orange peel.** Young branchlets not densely hairy (as in *A. grandibracteata*). **LEAVES:** Bipinnate, usually with **3 clear pairs of pinnae (3-5)** and **2-5 pairs leaflets** on stalks about 9 cm long. The **end leaflets longest, 3-7 cm**, and the basal leaflets are the smallest, 1 cm. **Leaflets are widest at the tip, usually blunt** (pointed in *A. grandibracteata*). Young leaflets have **narrow, leafy stipules** at the base (round in *A. grandibracteata*). **FLOWERS:** In half-spherical heads about 2 cm across with differently coloured male and female flowers, **white-pink**, the **red stamen tubes hanging out 1-2 cm beyond the corolla**. **FRUIT:** Flat, papery, dull orange-red-brown pods about 10 x 2 cm (up to 18 x 4 cm) containing 9-12 oval flat seeds about 1 cm across.

Propagation: Seedlings, wildings.

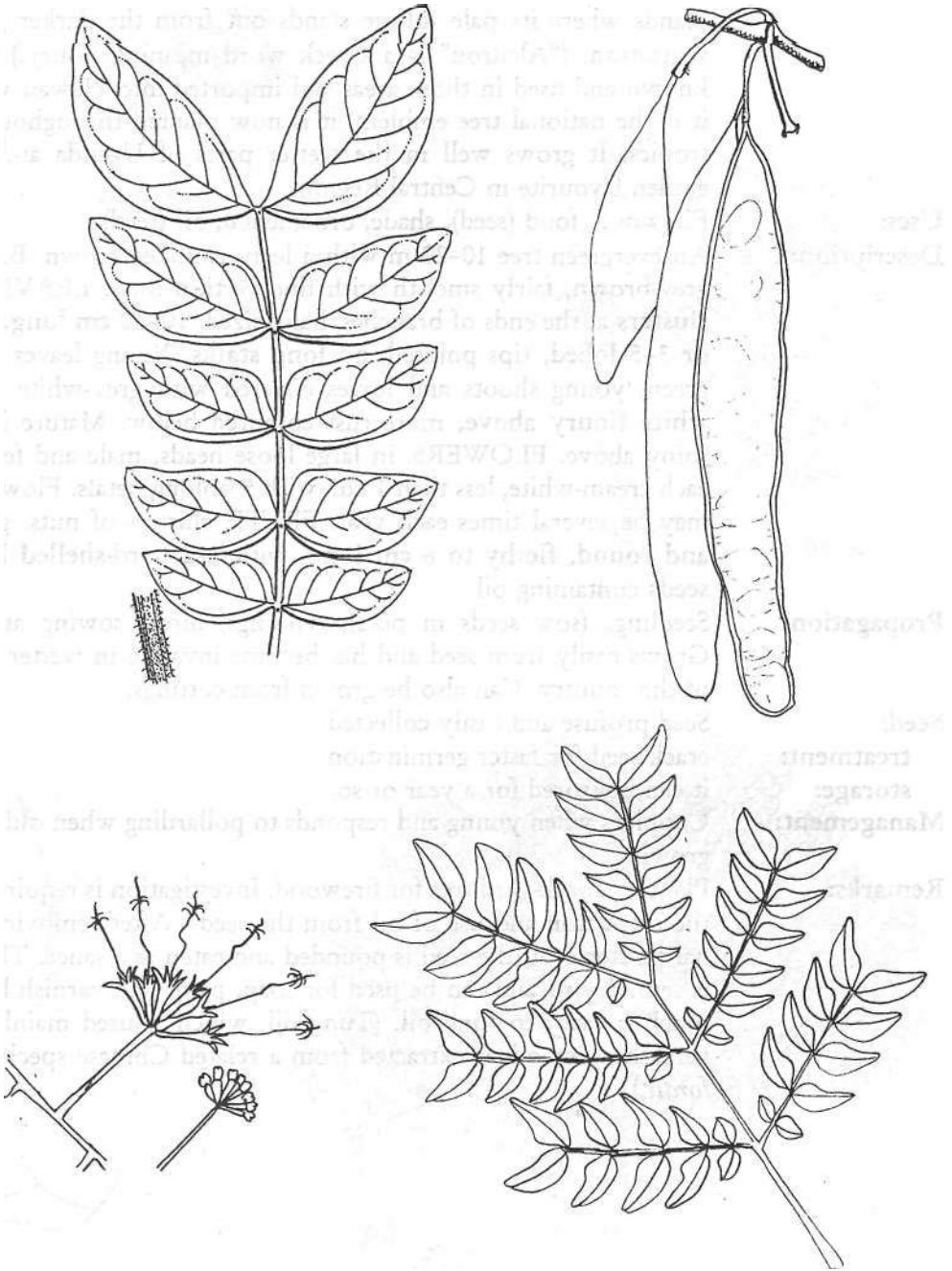
Seed: When pods split open the seeds stick on the sides of the pods and are carried away by the wind. Collect pods just before splitting open.

treatment: soak in water overnight.

storage: Store in a sealed container in a cool place. Add ash to reduce insect damage.

Management: Slow growing; pollarding, coppicing.

Remarks: Farmers preserve this tree in fields as a host for climbing vines, e.g. yams. It does not compete with food crops. It is a useful timber for indoor construction work and furniture but is not termite proof or durable out of doors.



S.E. Asia

Common names: **English:** Candle-nut tree **Luganda:** Kabakanjagala.

Ecology: A tree growing on hillside forests of S.E. Asia and the Pacific islands where its pale foliage stands out from the darker green vegetation. ("Aleuron" is a Greek word meaning floury.) Well known and used in those areas and imported into Hawaii where it is the national tree emblem, it is now planted throughout the tropics. It grows well in the wetter parts of Uganda and is a garden favourite in Central Region.

Uses: Firewood, food (seed), shade, ornamental, oil (seed).

Description: An evergreen tree 10-20 m with a leafy rounded crown. **BARK:** grey-brown, fairly smooth with fine vertical lines. **LEAVES:** in **clusters** at the ends of branches, hand sized, **10-30 cm long, oval or 3-5 lobed**, tips pointed, **on long stalks**. Young leaves pink-green, young shoots and leaves covered with grey-white hairs, **white floury above**, more rust coloured below. Mature leaves shiny above. **FLOWERS:** in large loose heads, male and female, each cream-white, less than 1 cm, with 5 oblong petals. Flowering may be several times each year. **FRUIT:** clusters of nuts, **green and round, fleshy to 6 cm long**, with **1-2 hard-shelled black seeds** containing oil.

Propagation: Seedlings (sow seeds in pots), wildings, direct sowing at site. Grows easily from seed and has become invasive in wetter parts of the country. Can also be grown from cuttings.

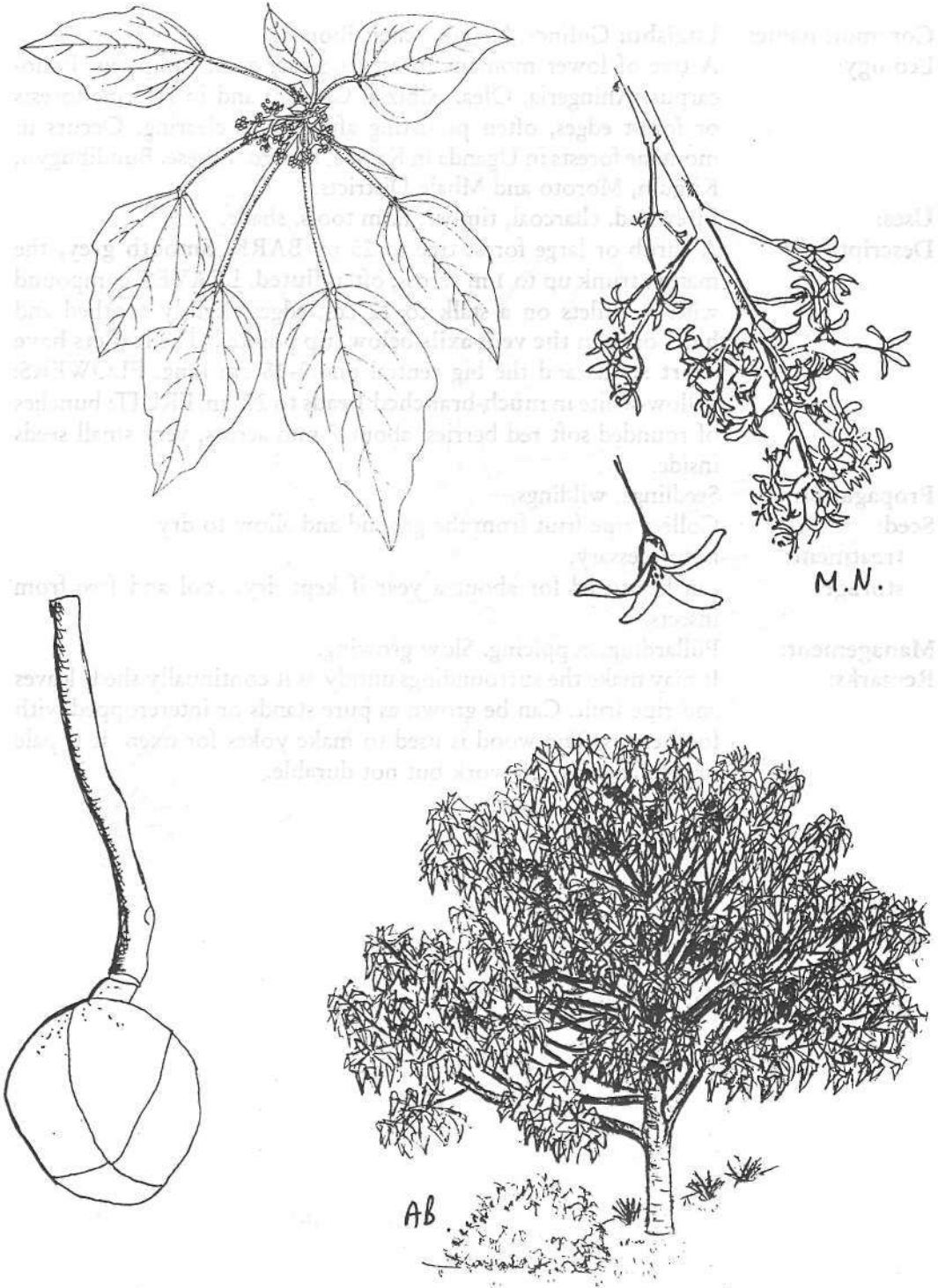
Seed: Seed profuse and easily collected,

treatment: crack seed for faster germination,

storage: it can be stored for a year or so.

Management: Coppices when young and responds to pollarding when old. Fast growing.

Remarks: Plant as a back-yard tree for firewood. Investigation is required on the extraction and use of oil from the seeds. After removing the hard outer coat, the seed is pounded and eaten as a sauce. The oil is semi-drying and can be used for soap, paint and varnish but is much inferior to tung oil. (Tung oil, which is used mainly for varnishing wood, is extracted from a related Chinese species, *A. fordii*.)



Indigenous

Common names: **Lugishu:** Gulindi, kirindi **Sebei:** Bionwa.

Ecology: A tree of lower montane forest (together with Juniperus, Podocarpus, Aningeria, Olea, Albizia, Croton) and in riverine forests or forest edges, often persisting after forest clearing. Occurs in montane forests in Uganda in Kabale, Kisoro, Kasese, Bundibugyo, Kitgum, Moroto and Mbale Districts.

Uses: Firewood, charcoal, timber, farm tools, shade.

Description: A shrub or large forest tree to 25 m. **BARK:** **Smooth grey**, the mature trunk up to 1 m across, often **fluted**. **LEAVES:** compound with 3 leaflets on a stalk to 12 cm, edges slightly toothed and **hairs only in the vein axils below**, tip pointed. The **leaflets have short stalks** and the big central one 9-18 cm long. **FLOWERS:** yellow-white in **much-branched heads** to 20 cm. **FRUIT:** bunches of rounded soft red berries, about 7 mm across, very small seeds inside.

Propagation Seedlings, wildings.

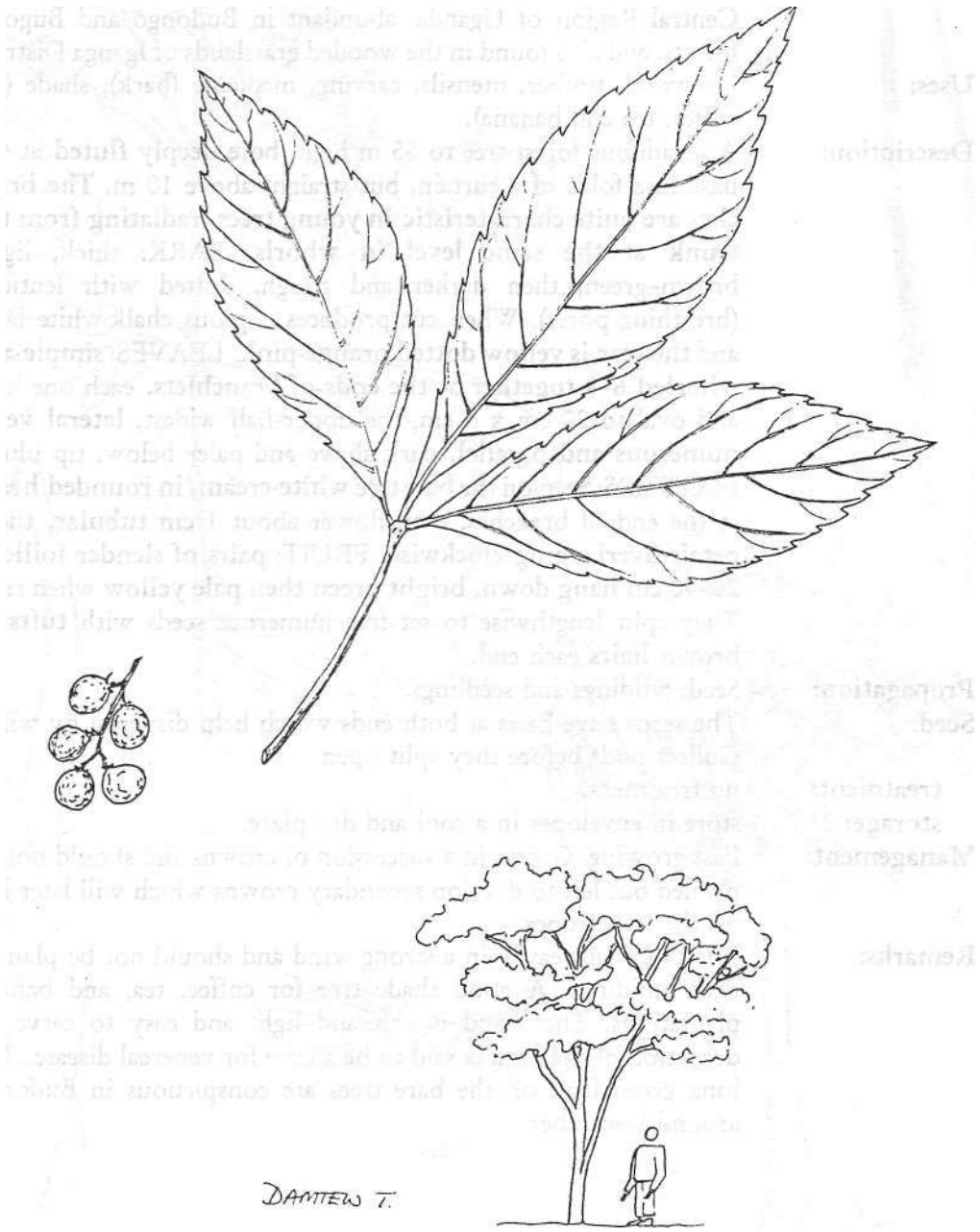
Seed: Collect ripe fruit from the ground and allow to dry.

treatment: not necessary.

storage: can be stored for about a year if kept dry, cool and free from insects.

Management: Pollarding, coppicing. Slow growing.

Remarks: It may make the surroundings untidy as it continually sheds leaves and ripe fruit. Can be grown as pure stands or intercropped with food crops. The wood is used to make yokes for oxen. It is pale brown and easy to work but not durable.



Indigenous

Trade names: Pattern wood, stool wood, cheese wood.

Common names: **Kwamba:** Kigima **Luganda:** Musoga, mukoge, mubajangalabi
Lusoga: Nsiwa **Runyoro:** Mujwa, mujwe.

Ecology: A tree of swampy high forest in West Africa. Widespread in the Central Region of Uganda, abundant in Budongo and Bugoma forests, and also found in the wooded grasslands of Iganga District.

Uses: Firewood, timber, utensils, carving, medicine (bark), shade (for coffee, tea and banana).

Description: A deciduous forest tree to 65 m high, **bole deeply fluted at the base** like folds of a curtain, but straight above 10 m. **The branches are quite characteristic in young trees, radiating from the trunk at the same level in whorls.** BARK: thick, light-brown-green, then darker and rough, dotted with lenticels (breathing pores). When cut produces copious chalk-white latex and **the scar is yellow dotted orange-pink.** LEAVES: **simple and whorled 6-8 together at the ends of branchlets**, each one long and oval to 20 cm x 5 cm, the upper half widest, **lateral veins numerous and parallel**, dark above and paler below, tip blunt. FLOWERS: Seen on the bare tree **white-cream, in rounded heads** at the end of branches, each flower about 1 cm **tubular**, the **5 petals overlapping clockwise.** FRUIT: **pairs of slender follicles 20-40 cm hang down, bright green then pale yellow** when ripe. They split lengthwise to set free numerous seeds with **tufts of brown hairs** each end.

Propagation: Seed, wildings and seedlings.

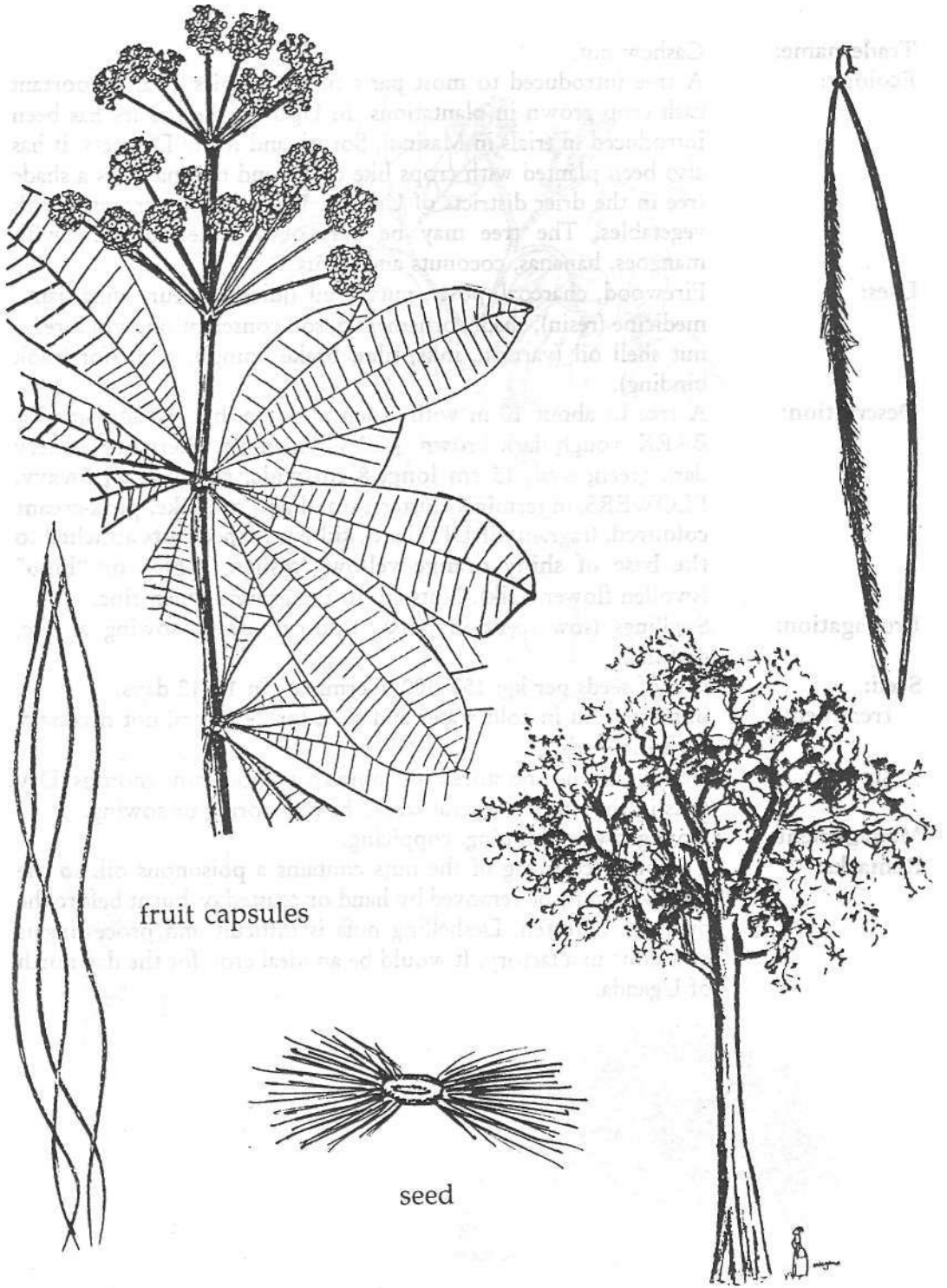
Seed: The seeds have hairs at both ends which help dispersal by wind. Collect pods before they split open,

treatment: no treatment.

storage: store in envelopes in a cool and dry place.

Management: Fast growing. Grows in a succession of crowns and should not be pruned but left to develop secondary crowns which will later kill off the lower ones.

Remarks: The tree snaps easily in a strong wind and should not be planted near buildings. A good shade tree for coffee, tea, and banana plantations. The wood is soft and light and easy to carve. A decoction of the bark is said to be a cure for venereal disease. The long green fruit on the bare trees are conspicuous in Budongo around December.



fruit capsules

seed

Brazil. Caribbean

Trade name: Cashew nut.

Ecology: A tree introduced to most parts of the tropics as an important cash crop grown in plantations. In Uganda, the species has been introduced in trials in Masindi, Soroti, and Kumi Districts. It has also been planted with crops like coffee and banana or as a shade tree in the drier districts of Uganda. It can be intercropped with vegetables. The tree may be part of a mixed orchard with mangoes, bananas, coconuts and citrus.

Uses: Firewood, charcoal, posts, nuts, fruit (juice, liqueur, wine, jam), medicine (resin), shade, ornamental, soil conservation, windbreak, nut shell oil (varnish, inks, tiles, brake linings), gum (for book binding).

Description: A tree to about 10 m with a dense crown, but usually smaller. BARK: rough dark brown. LEAVES: simple, alternate, leathery dark green, oval, **15 cm long, 8 cm wide, rounded tip, wavy.** FLOWERS: in terminal clusters, **small and star like, pink-cream coloured,** fragrant. FRUIT: hard, **kidney-shaped nuts attached to the base of shiny orange yellow "cashew apple" or "bibo"** (swollen flower stalk). Nuts fall to the ground when ripe.

Propagation: Seedlings (sow seeds in pots), wildings, direct sowing at site, grafting.

Seed: No. of seeds per kg: 150-300. Germinate in 10-12 days.

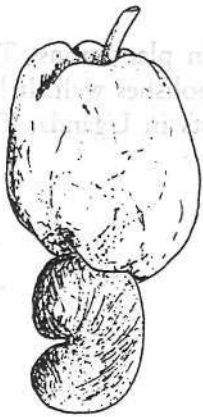
treatment: immerse seed in cold water and soak for 24 hours, not necessary for fresh seeds.

storage: seed should not be stored for more than about nine months. Dry nuts in the sun for several weeks before storing or sowing.

Management: Slow growing; lopping, coppicing.

Remarks: The outer covering of the nuts contains a poisonous oil, so the thin skin must be removed by hand or roasted or burnt before the nuts can be eaten. Deshelling nuts is difficult and processing is best done in a factory. It would be an ideal crop for the dry north of Uganda.

Common name: ...
 Ecology: ...
 Uses: ...
 Description: ...
 Propagation: ...
 Seed: ...
 treatment: ...
 storage: ...
 Management: ...
 Remarks: ...



$\times \frac{1}{2}$



Indigenous

Common names: **Lugishu:** Mwiruni **Rukonjo:** Sosi **Sebei:** Lulyo.

Ecology: In Uganda, in lower montane forests, e.g. in Kibale, Kalinzu and Kasyoha-Kitomi Forests, 1,200-2,100 m.

Uses: Firewood, charcoal, timber (general purpose, joinery, flooring, panelling, plywood, veneer), food (nut, oil), shade.

Description: **A very tall tree, to 50 m, with a clear straight bole to about 16 m, topped by a rather small dense crown, mature trees buttressed at the base.** BARK: Pale, grey-brown, smooth to lightly fissured, much **white latex** if cut and an **unpleasant smell**. Flower and leaf stalks, buds and shoots covered with **golden-brown hairs**. LEAVES: Stiff and large to 22 x 8 cm, usually smaller, dark shiny green above, **hairy pale orange below, 10-20 pairs prominent veins**, the tip pointed, on a twisted stalk to 2 cm. FLOWERS: Cream-green, very small, in clusters beside leaves, sepals and flower stalks brown, hairy, soon falling to the ground. FRUIT: Hard, green, **narrow to 4 cm with a beak**, the soft hairy skin milky but inside is **one shiny brown seed** to 3 cm long with a large white scar (hilum).

Propagation: Seedlings (sow seeds in pots), wildings.

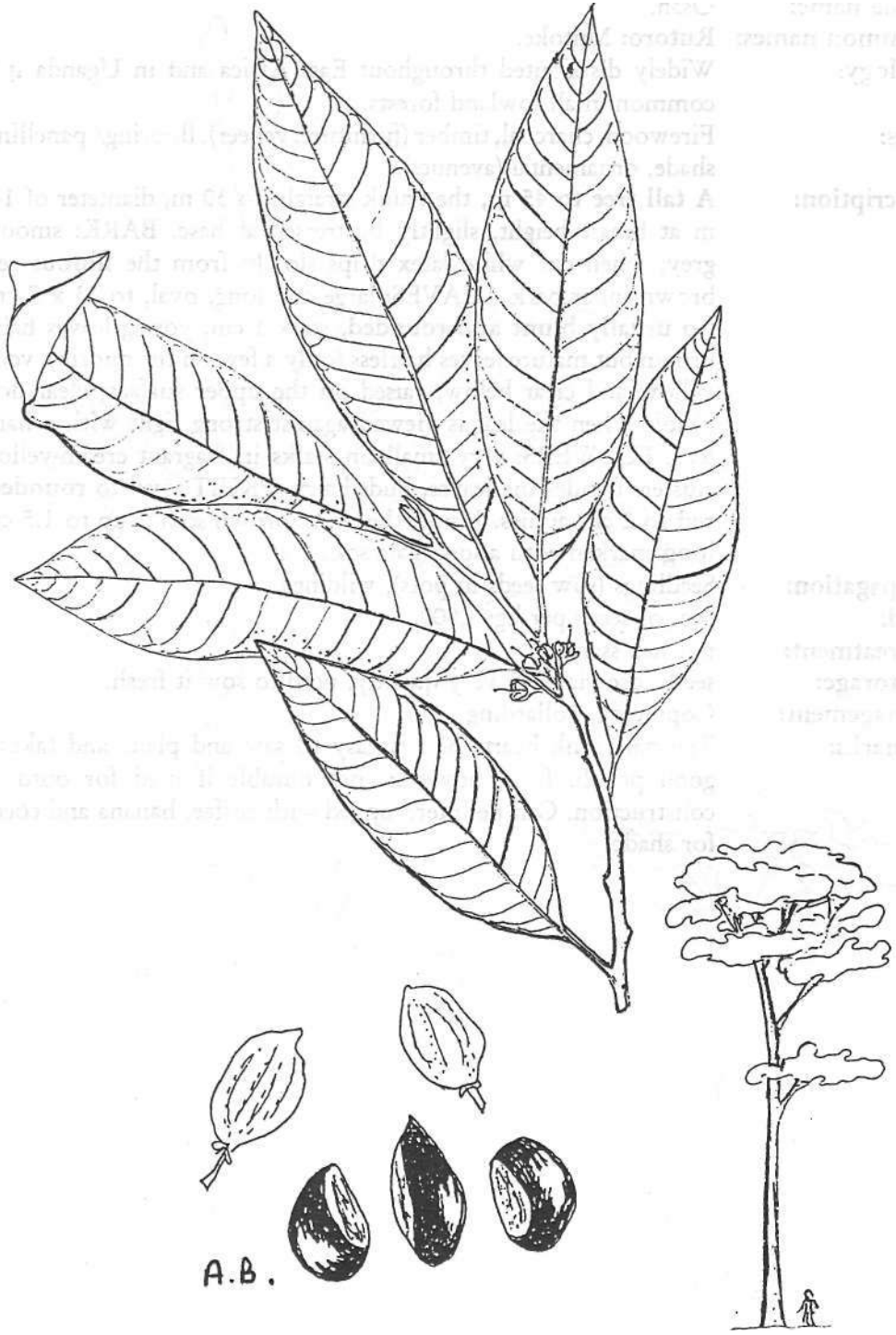
Seed: Fruit mature in April.

treatment: not required, but seed should be sown fresh.

storage: seed has a very short viability period.

Management: Slow growing; coppicing, pollarding.

Remarks: This valuable timber tree has been planted in plantations. The wood is medium heavy and hard to saw but polishes well. It has also been planted in degraded montane forests in Uganda. The seed contains edible oil.



Indigenous

Trade name: Osan.

Common names: **Rutoro:** Mutoke.

Ecology: Widely distributed throughout East Africa and in Uganda it is common in all lowland forests.

Uses: Firewood, charcoal, timber (furniture, veneer), flooring/ panelling, shade, ornamental (avenues).

Description: **A tall tree to 45 m**, the trunk straight to 30 m, diameter of 1-2 m at breast height, slightly buttressed at base. **BARK:** smooth grey; when cut white latex drips slowly from the fibrous red-brown inner bark. **LEAVES:** large and long, oval, to 13 x 7 cm, **tip usually blunt and rounded**, stalk 1 cm, young leaves hairy brown but mature leaves hairless (only a few on the midrib), veins yellow and clear below, raised on the upper surface; clear dots visible when the leaf is viewed against strong light with a hand lens. **FLOWERS:** very small on stalks in fragrant cream-yellow clusters besides the leaves, buds hairy. **FRUIT:** oval to **rounded, red to 2 cm across**. Inside, the shiny brown seed is up to **1.5 cm long** marked with a long pale scar.

Propagation: Seedlings (sow seeds in pots), wildings.

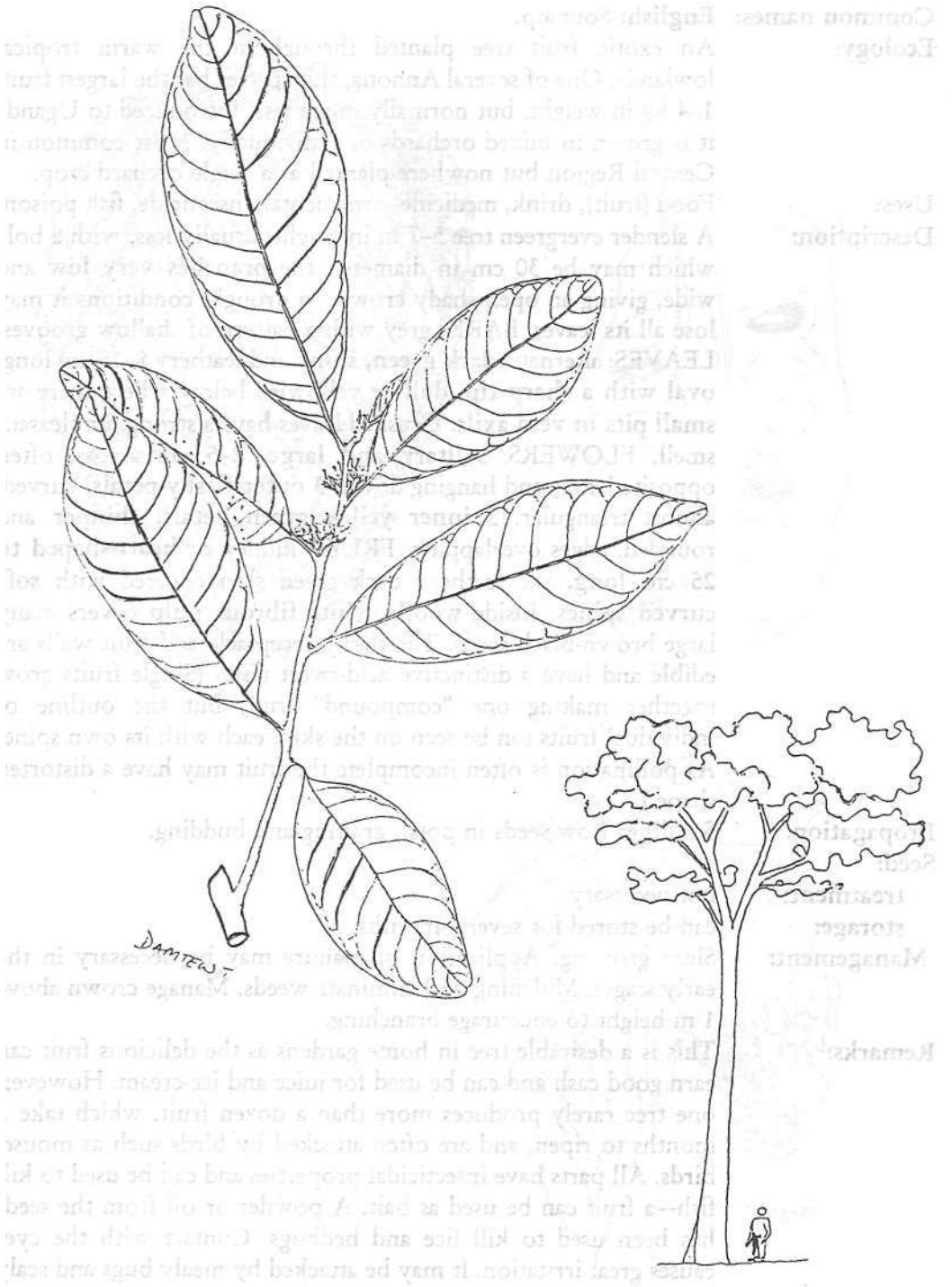
Seed: No. of seeds per kg: 1,000.

treatment: not necessary.

storage: seeds lose viability very quickly; need to sow it fresh.

Management: Coppicing, pollarding.

Remarks: The pale pink heartwood is easy to saw and plane and takes a good polish. It is, however, not durable if used for outdoor construction. Can be intercropped with coffee, banana and cocoa for shade.



West Indies, Tropical America

Common names: **English:** Soursop.

Ecology: An exotic fruit tree planted throughout the warm tropical lowlands. One of several *Annona*, this species has the largest fruit, 1-4 kg in weight, but normally much less. Introduced to Uganda it is grown in mixed orchards or individually. Most common in Central Region but nowhere planted as a single orchard crop.

Uses: Food (fruit), drink, medicine, ornamental, insecticide, fish poison.

Description: A slender evergreen tree 5-7 m in height, usually less, with a bole which may be 30 cm in diameter, the **branches very low** and wide, giving an open shady crown. In drought conditions it may lose all its leaves. **BARK:** grey with a pattern of shallow grooves. **LEAVES:** alternate, **dark green, shiny** and leathery 8-15 cm long, **oval with a sharp tip**, dull or yellowish below where there are **small pits in vein axils**. Crushed leaves have a strong, unpleasant smell. **FLOWERS:** **solitary and large**, 2-5 cm across, often opposite leaves and hanging down, **3 outer fleshy petals**, curved, almost triangular, **3 inner yellow-green petals**, **thinner** and rounded, edges overlapping. **FRUIT:** kidney or **heart-shaped to 25 cm long**, the leathery dark green skin covered with **soft curved spines**. Inside **woolly white fibrous pulp** covers many large brown-black seeds. The fleshy receptacle and fruit walls are edible and have a distinctive acid-sweet taste. (Single fruits grow together making one "compound" fruit, but the outline of individual fruits can be seen on the skin, each with its own spine. As pollination is often incomplete the fruit may have a distorted shape.)

Propagation: Seedlings (sow seeds in pots), grafting and budding.

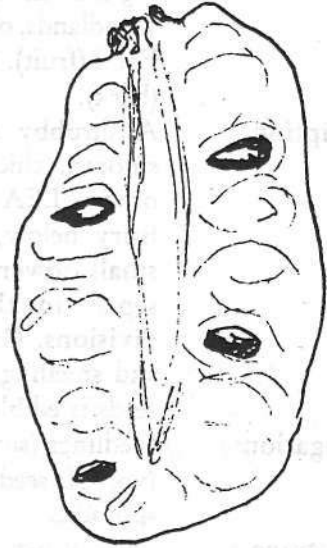
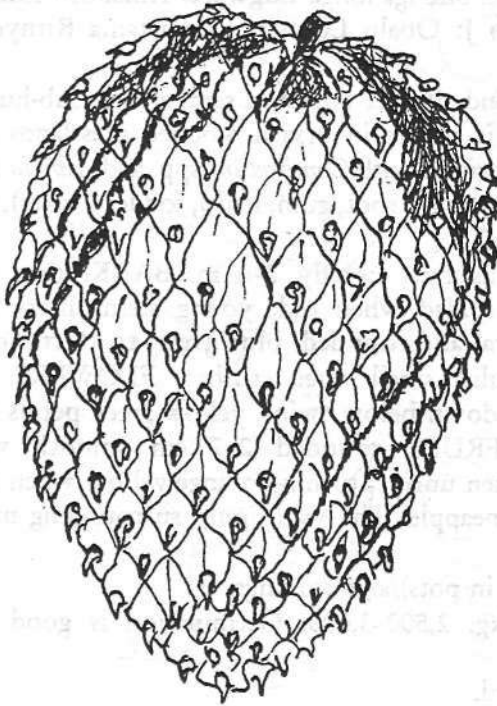
Seed:

treatment: not necessary.

storage: can be stored for several months.

Management: Slow growing. Application of manure may be necessary in the early stages. Mulching will eliminate weeds. Manage crown above 1 m height to encourage branching.

Remarks: This is a desirable tree in home gardens as the delicious fruit can earn good cash and can be used for juice and ice-cream. However, one tree rarely produces more than a dozen fruit, which take 3 months to ripen, and are often attacked by birds such as mouse-birds. All parts have insecticidal properties and can be used to kill fish—a fruit can be used as bait. A powder or oil from the seeds has been used to kill lice and bedbugs. Contact with the eyes causes great irritation. It may be attacked by mealy bugs and scaly insects resulting in a reduction of yield or even complete failure.



A. Birnie

Annona senegalensis (A. chrysophylla)

Annonaceae

Indigenous

Common names **Ateso:** Ebolo **English:** Wild custard apple, wild soursop **Lugbara:** Elipo, lamodi **Lugwe:** Silonga-longa **Lugwere:** Kinaboru **Luo A:** Obwolo, ovolo **Luo J:** Obalo **Lusoga:** Kitamatama **Runyoro:** Mubengeya.

Ecology: A wild fruit tree found all over Africa in semi-arid to sub-humid regions. In Uganda it occurs in dryish wooded grasslands and woodlands, often associated with *Combretum* spp. and *Albizia* spp.

Uses: Food (fruit), medicine (bark, root, gum, fruit), fodder (leaves), dye (bark).

Description: A shrubby deciduous tree, usually 2-6 m. **BARK:** grey and smooth, thick and folded when old, young stems hairy and orange. **LEAVES:** oval and rounded, blue-green to 18 cm long, hairy below, a peculiar smell when crushed. **FLOWERS:** 1-3 small flowers hang down below twigs, yellow-green petals and sepals in threes. **FRUIT:** rounded 2-7 cm smooth with divisions. Green when unripe, turning orange-yellow when ripe and smelling like pineapple. The sweet pulp surrounding many seeds is edible.

Propagation: Seedlings (sow seeds in pots) and wildings.

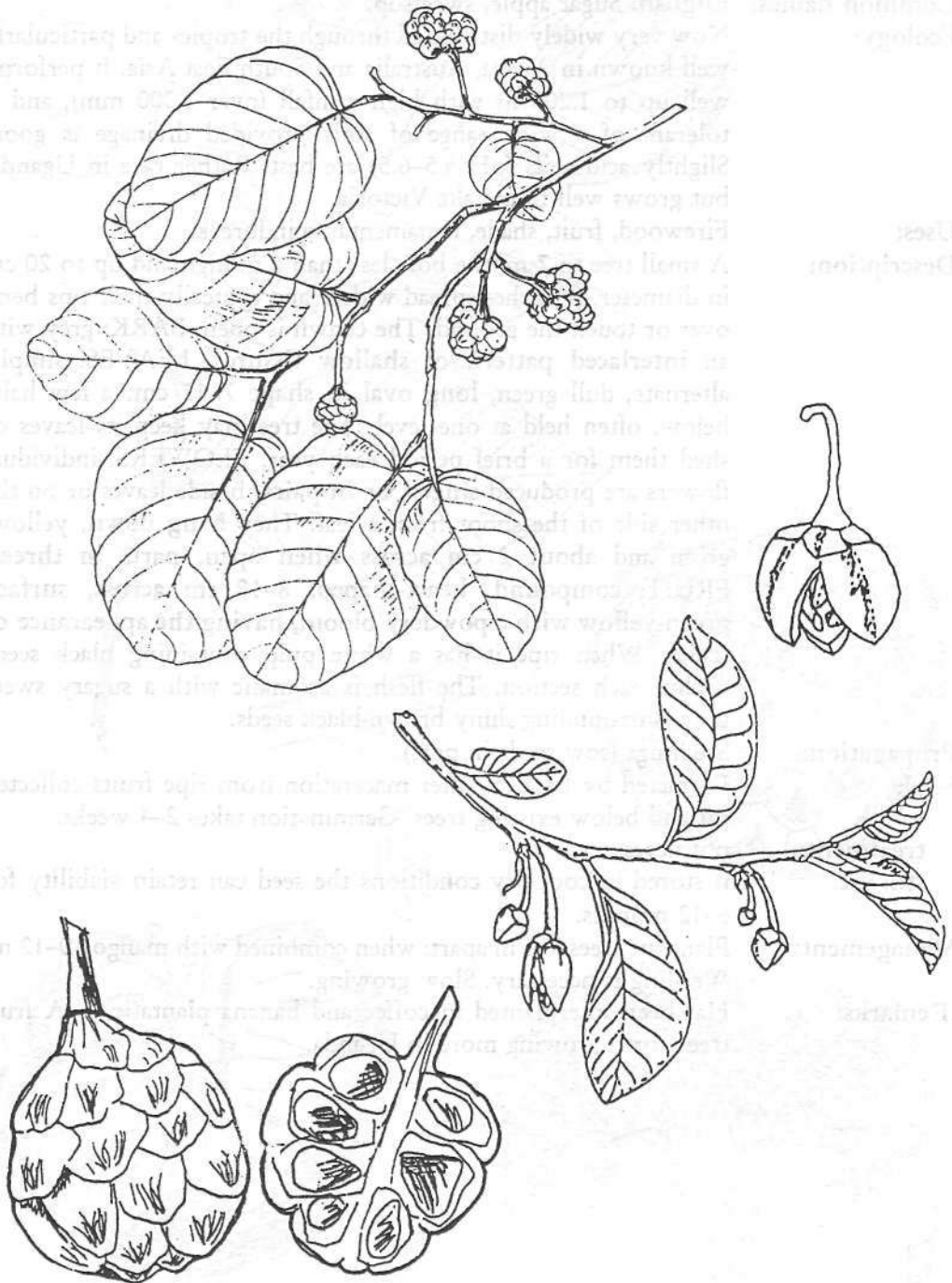
Seed: No. of seeds per kg: 2,500-3,000. Germination is good but sporadic.

treatment: no treatment required.

storage: seeds susceptible to insect damage and lose viability within 6 months. Add ash to reduce insect damage.

Management: Very susceptible to fire and weeds. Needs shade from other trees, but cannot live under tropical forest conditions. It is thus better to plant it under light shade of other useful trees. Slow growing.

Remarks: *Annona senegalensis* is very similar to the exotic *Annona squamosa*. *Annona* species are suitable for introduction into farmlands. Bark and roots can be used as a treatment for snake bite.



Actual size of fruit

Tropical South America

Common names: **English:** Sugar apple, sweetsop.

Ecology: Now very widely distributed through the tropics and particularly well known in Africa, Australia and South East Asia. It performs well up to 1,200 m with high rainfall (over 1,000 mm), and is tolerant of a wide range of soils provided drainage is good. Slightly acid soils (pH 5.5-6.5) are best. Rather rare in Uganda, but grows well near Lake Victoria.

Uses: Firewood, fruit, shade, ornamental, windbreak.

Description: A small tree to 7 m, the bole less than 1 m high and up to 20 cm in diameter. Branches spread widely and typically their tips bend over or touch the ground. The crown is open. **BARK:** grey with an **interlaced pattern of shallow fissures**. **LEAVES:** simple, alternate, dull green, **long oval in shape 7-17 cm**, a few hairs below, often held at one level. The tree may keep its leaves or shed them for a brief period each year. **FLOWERS:** individual flowers are produced **singly, or in pairs**, beside leaves or on the other side of the shoot from a leaf. They **hang down**, yellow-green and **about 2 cm across when open, parts in threes**. **FRUIT:** **compound, heart-shaped, 8-10 cm across, surface green-yellow with a powdery bloom, having the appearance of scales**. When ripe it has a white pulp containing black seeds within each section. The flesh is aromatic with a sugary sweet taste, surrounding shiny brown-black seeds.

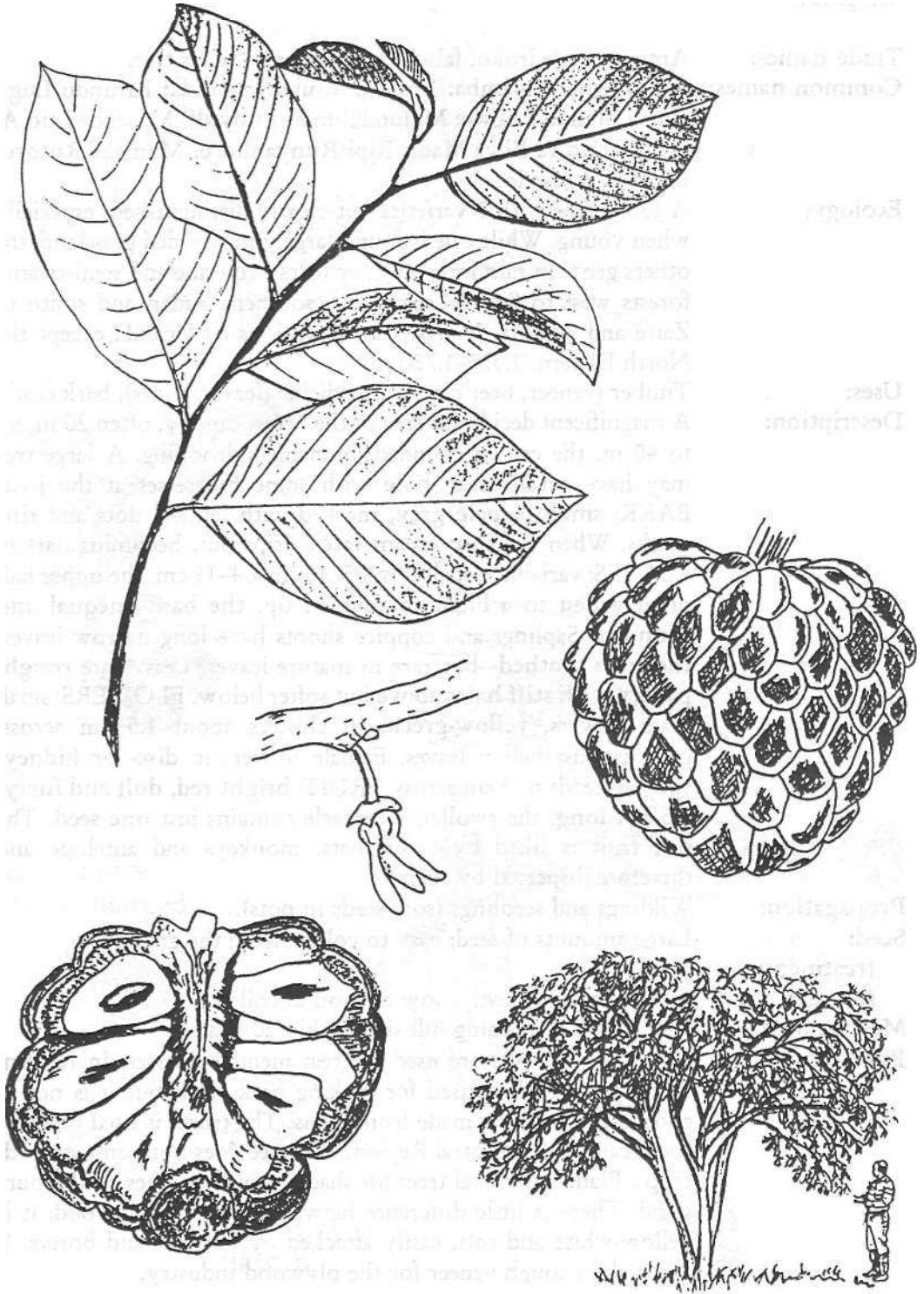
Propagation: Seedlings (sow seeds in pots).

Seed: Extracted by hand or after maceration from ripe fruits collected off and below existing trees. Germination takes 2-4 weeks, **treatment:** not necessary.

storage: if stored in cool dry conditions the seed can retain viability for 6-12 months.

Management: Plant the trees 5-6 m apart; when combined with mango 10-12 m. Weeding is necessary. Slow growing.

Remarks: Has been interplanted in coffee and banana plantations. A fruit tree worth growing more in Uganda.



Indigenous

Trade names: Antiaris, false iroko, false mvule, kirundo, upas tree.

Common names: **Ateso:** Eloa **Kwamba:** Kesuba, kisuba **Luganda:** Kirundu **Lugishu:** Lulundu **Lugwe:** Mulundulundu **Lunyuli:** Musende **Luo A:** Olivaa **Luo L:** Elwa **Madi:** Ripi **Runyankore:** Mumaka **Rutoro:** Muhere, mbondo.

Ecology: A forest tree with 3 varieties not clearly distinguished, especially when young. While one is found largely in wooded grassland, the others grow in rain forest, wetter forest, riverine and semi-swamp forests west to Sierra Leone, into southern Sudan and south to Zaire and Angola. It grows in all regions of Uganda except the North Eastern, 1,350-1,700 m.

Uses: Timber (veneer, beer canoes), medicine (leaves, roots), bark cloth.

Description: A magnificent deciduous tree of the forest canopy, often 20 m, up to 40 m, the crown rounded, branchlets drooping. A large tree may have a **tall clear bole** with some buttresses at the base. **BARK:** **smooth, pale grey**, marked with lenticel dots and ring marks. When cut **thin cream latex** drips out, becoming darker. **LEAVES:** variable, usually oval 5-16 cm x 4-11 cm, the upper half often widest to a blunt or pointed tip, **the base unequal and rounded**. Saplings and coppice shoots have long narrow leaves, **the edge toothed**—but rare in mature leaves. Leaves are **rough, papery with stiff hairs above** but softer below. **FLOWERS:** small male flowers, **yellow-green**, in clusters about 1.5 cm across, growing just below leaves. Female flowers in **disc- or kidney-shaped heads** to 3 cm across. **FRUIT:** **bright red, dull and furry, 1.5 cm long**, the swollen receptacle contains just **one seed**. The soft fruit is liked by birds, bats, monkeys and antelope and therefore dispersed by them.

Propagation: Wildings and seedlings (sow seeds in pots).

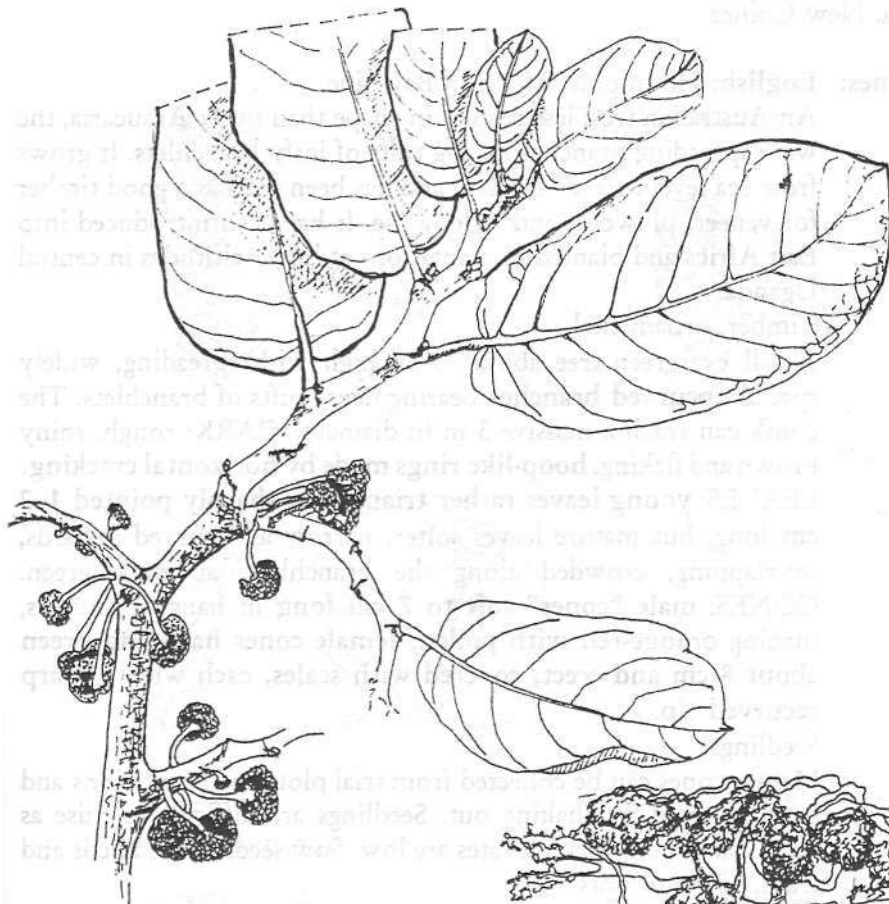
Seed: Large amounts of seed; easy to collect from the ground, none.

treatment:

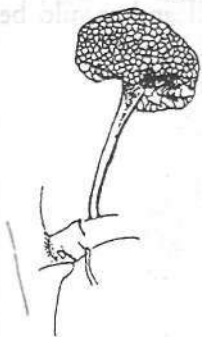
storage: loses viability quickly, sow as soon as collected.

Management: Fast growing attaining full size within 20 years.

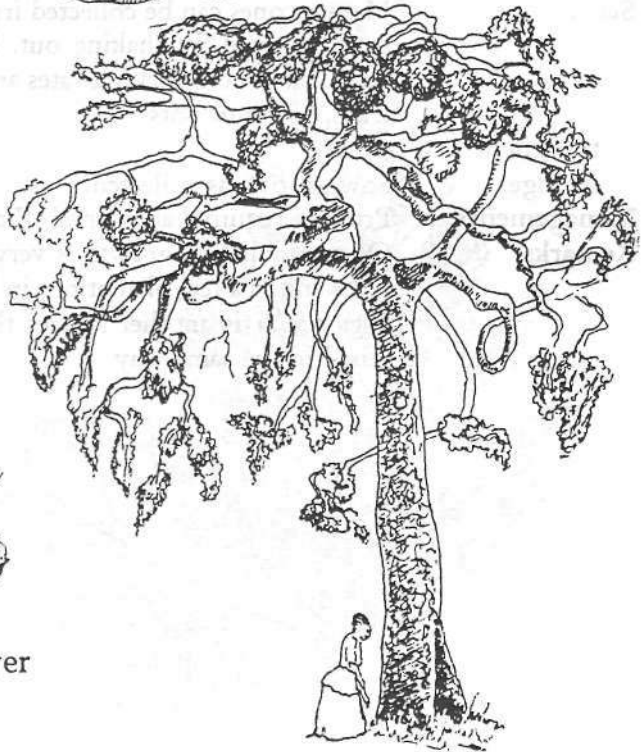
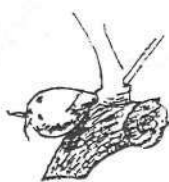
Remarks: The root or leaves are used to treat mental illnesses. In Kitgum District the bark is used for making bark cloth but it is not as good quality as that made from Ficus. The trunk is used to make "beer canoes" in Central Region. The tree does not compete with crops. Plant individual trees for shade, as avenue trees or as a pure stand. There is little difference between heart and sapwood; it is yellow-white and soft, easily attacked by termites and borers. It can make a tough veneer for the plywood industry.



male flower head enlarged



female flower enlarged



N.E. Australia, New Guinea

Common names: **English:** Hoop pine, Moreton Bay pine.

Ecology: An Australian tree, less regular in shape than other *Araucaria*, the wide spreading branches having tufts of leafy branchlets. It grows from sea level to over 1,000 m and has been used as a good timber for veneer, plywood and indoor use. It has been introduced into East Africa and planted in plantations at lower altitudes in central Uganda.

Uses: Timber, ornamental.

Description: A tall evergreen tree about 50 m high with spreading, widely spaced **upcurved branches** bearing dense tufts of branchlets. The trunk can reach a massive 3 m in diameter. **BARK:** rough, shiny brown and flaking, **hoop-like rings made by horizontal cracking.** **LEAVES:** **young leaves rather triangular, sharply pointed 1-2 cm** long, but mature leaves softer, narrow and curved inwards, overlapping, crowded along the branchlets, all dark green. **CONES:** **male "cones" soft to 7 cm long** in hanging clusters, turning **orange-red with pollen; female cones hard and green about 8 cm and erect, covered with scales, each with a sharp recurved tip.**

Propagation: Seedlings.

Seed: Mature cones can be collected from trial plots and plantations and seed collected by shaking out. Seedlings are difficult to raise as germination and survival rates are low. Sow seeds in seed beds and transplant into pots.

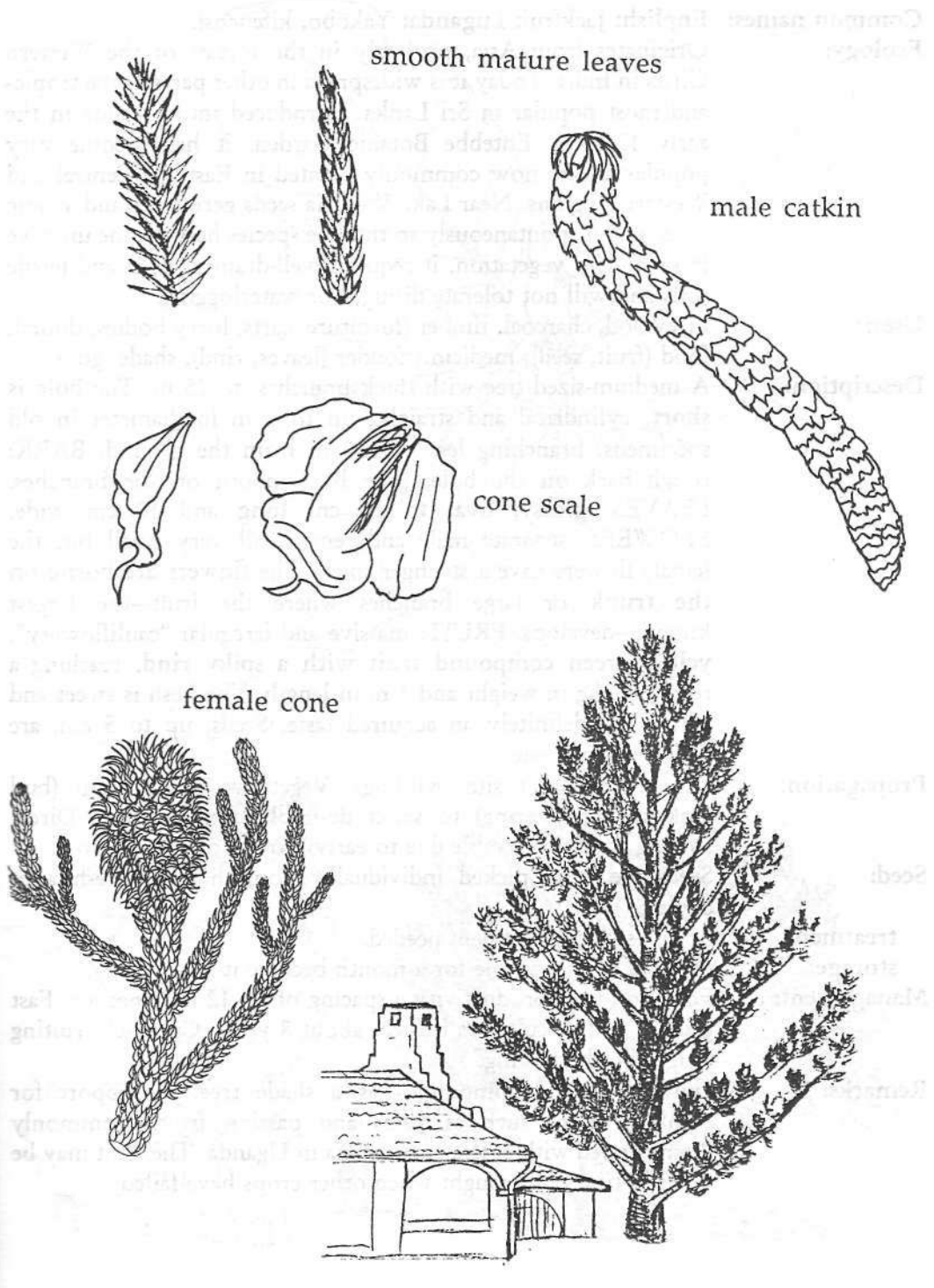
treatment:

storage: Sow as soon as collected.

Management: Pruning required at intervals. Fast growing.

Remarks: Once established, growth is very fast. So far, trees planted in trial plots and in a few plantations in Uganda are doing well. *Araucaria angustifolia* is another species that also does well and should be raised in the same way.

Araucaria cunninghamii



India

Common names: **English:** Jackfruit **Luganda:** Yakobo, kifenensi.

Ecology: Originates from Asia, probably in the forests of the Western Ghats in India. Today it is widespread in other parts of the tropics and most popular in Sri Lanka. Introduced into Uganda in the early 1940s at Entebbe Botanic Garden, it has become very popular and is now commonly planted in Eastern, Central and Western Regions. Near Lake Victoria seeds germinate and young trees sprout spontaneously so that the species has become invasive in secondary vegetation. It requires well-drained, deep and fertile soils and will not tolerate drought or waterlogging.

Uses: Firewood, charcoal, timber (furniture, carts, lorry bodies, doors), food (fruit, seed), medicine, fodder (leaves, rind), shade, gum.

Description: A medium-sized tree with thick branches, to 25 m. The **bole is short**, cylindrical and straight, up to 1 m in diameter in old specimens, branching less than 2 m from the ground. **BARK:** rough bark on the bole, grey but smooth on the branches. **LEAVES:** **glossy, oval to 15 cm long** and 10 cm wide. **FLOWERS:** separate male and female, all very small but the female flowers have a stronger smell. The **flowers are borne on the trunk** or large branches where the fruit—the largest known—develops. **FRUIT:** massive and irregular "cauliflowery", **yellow-green compound fruit with a spiky rind**, reaching a record 20 kg in weight and 1 m in length. The flesh is sweet and edible but definitely an acquired taste. Seeds, up to 5 cm, are edible when roasted.

Propagation: Direct sowing at site, wildings. Vegetative propagation (bud grafting, air layering) to select desirable characteristics. Direct sowing at site preferable due to early growth of the taproot.

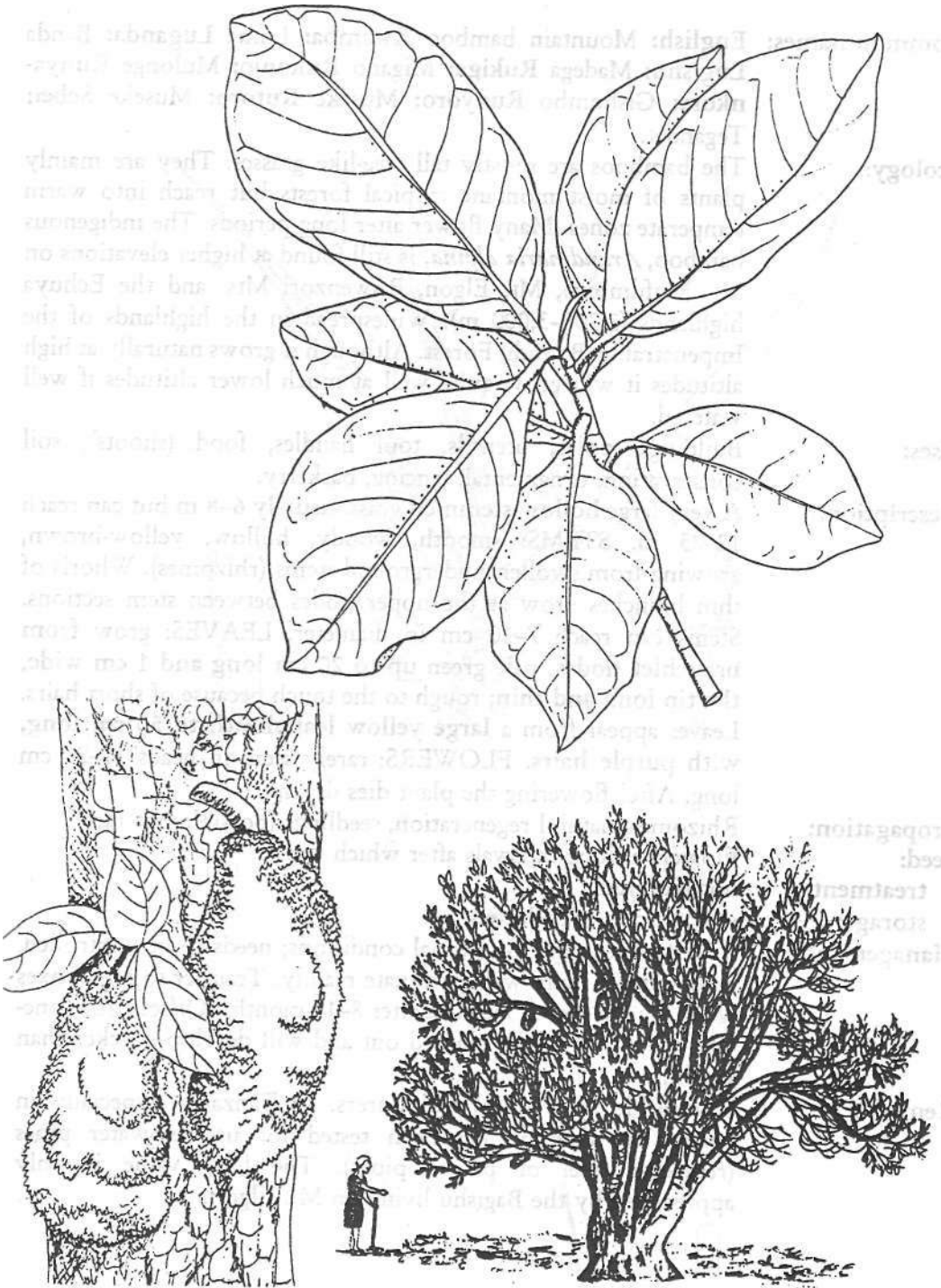
Seed: Seeds are hand picked individually from the fruit flesh after drying.

treatment: no pre-sowing treatment needed.

storage: the seed is only viable for a month because it is very oily.

Management: For good fruit productivity a spacing of 10-12 m is needed. Fast growing; most cultivars fruit in about 8 years. Cut back fruiting twigs after harvesting.

Remarks: Suitable around compounds as a shade tree or support for climbing crops such as yams and passion fruit. Commonly intercropped with coffee and banana in Uganda. The fruit may be eaten in times of drought when other crops have failed.



Indigenous

Common names: **English:** Mountain bamboo **Kwamba:** Luma **Luganda:** Banda **Lugishu:** Madega **Rukiga:** Migano **Rukonjo:** Mulonge **Runyanakore:** Gishumbo **Runyoro:** Museke **Rutoro:** Museke **Sebei:** Tegandet.

Ecology: The bamboos are mostly tall tree-like grasses. They are mainly plants of moist montane tropical forests but reach into warm temperate zones. Many flower after long periods. The indigenous bamboo, *Arundinaria alpina*, is still found at higher elevations on Mt. Mufumbiro, Mt. Elgon, Ruwenzori Mts. and the Echuya highlands (2,700-3,000 m). "Widespread in the highlands of the Impenetrable (Bwindi) Forest. Although it grows naturally at high altitudes it will grow quite well at much lower altitudes if well watered.

Uses: Buildings, poles, utensils, tool handles, food (shoots), soil conservation, ornamental, fencing, basketry.

Description: A very large **hollow-stemmed** grass, **usually 6-8 m** but can reach 12-25 m. **STEMS:** smooth, woody, hollow, yellow-brown, growing from swollen underground stems (rhizomes). Whorls of thin branches grow at the upper nodes between stem sections. Stems can reach 7-10 cm in diameter. **LEAVES:** grow **from branchlet nodes**, pale green **up to 20 cm long and 1 cm wide, the tip long and thin;** rough to the touch because of short hairs. Leaves appear from a **large yellow leaf sheath to 50 cm long, with purple hairs.** **FLOWERS:** rarely seen, in heads 10-20 cm long. After flowering the plant dies down.

Propagation: Rhizomes, natural regeneration, seedlings (possible but rare).

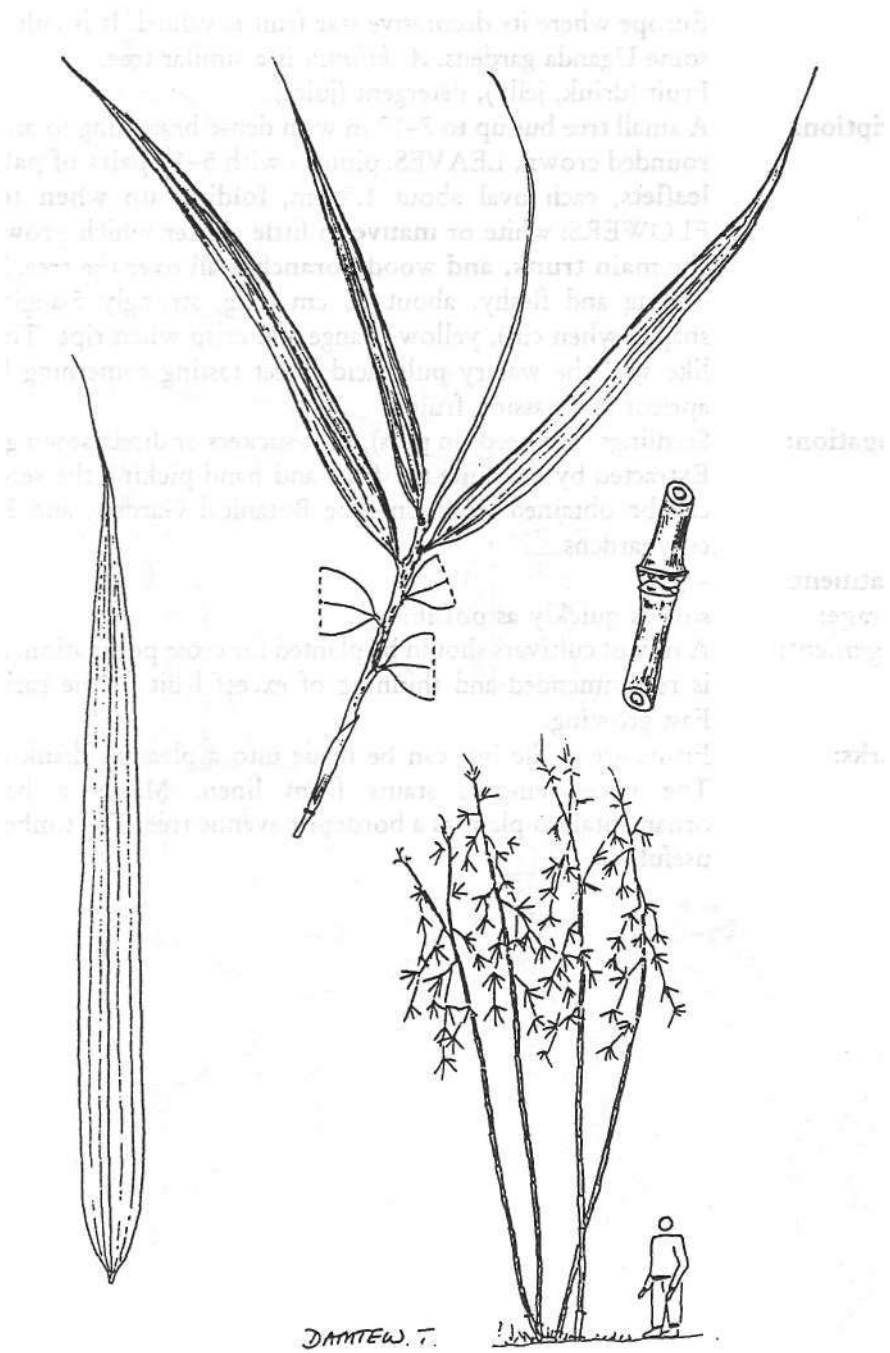
Seed: Flowers at long intervals after which it dies,

treatment: not required,

storage: sow as soon as collected.

Management: Very fast growing in optimal conditions; needs to be controlled. Seed watered daily will germinate readily. Transfer to seed boxes when 2.5 cm high. Plant out after 8-12 months. Offsets from one-year-old stems can be planted out and will develop quicker than seedlings.

Remarks: Susceptible to termites and borers. In Tanzania, especially in Iringa, the bamboo has been tested for use as water pipes (replacing steel or plastic pipes). The food value is only appreciated by the Bagishu living on Mt. Elgon.



S.E. Asia

Common names: **English:** Carambola, star fruit.

Ecology: A small fruit tree now widely cultivated in the wetter tropics from West Africa to Florida and Queensland. A recent import to Europe where its decorative star fruit is valued. It is cultivated in some Uganda gardens. *A. bilimbi* is a similar tree.

Uses: Fruit (drink, jelly), detergent (juice).

Description: A small tree but up to 7-10 m with dense branching to an upright rounded crown. LEAVES: pinnate with **5-11 pairs of pale green leaflets**, each oval about 15 cm, **folding up when touched**. FLOWERS: white or **mauve** in little cluster which **grow out of the main trunk, and woody branches** all over the tree. FRUIT: oblong and fleshy, about 10 cm long, strongly 5-angled (star-shaped when cut), yellow-orange and crisp when ripe. They look like wax the watery pulp acid sweet tasting something between apricot and passion fruit.

Propagation: Seedlings (sow seeds in pots), root suckers or direct sowing on site.

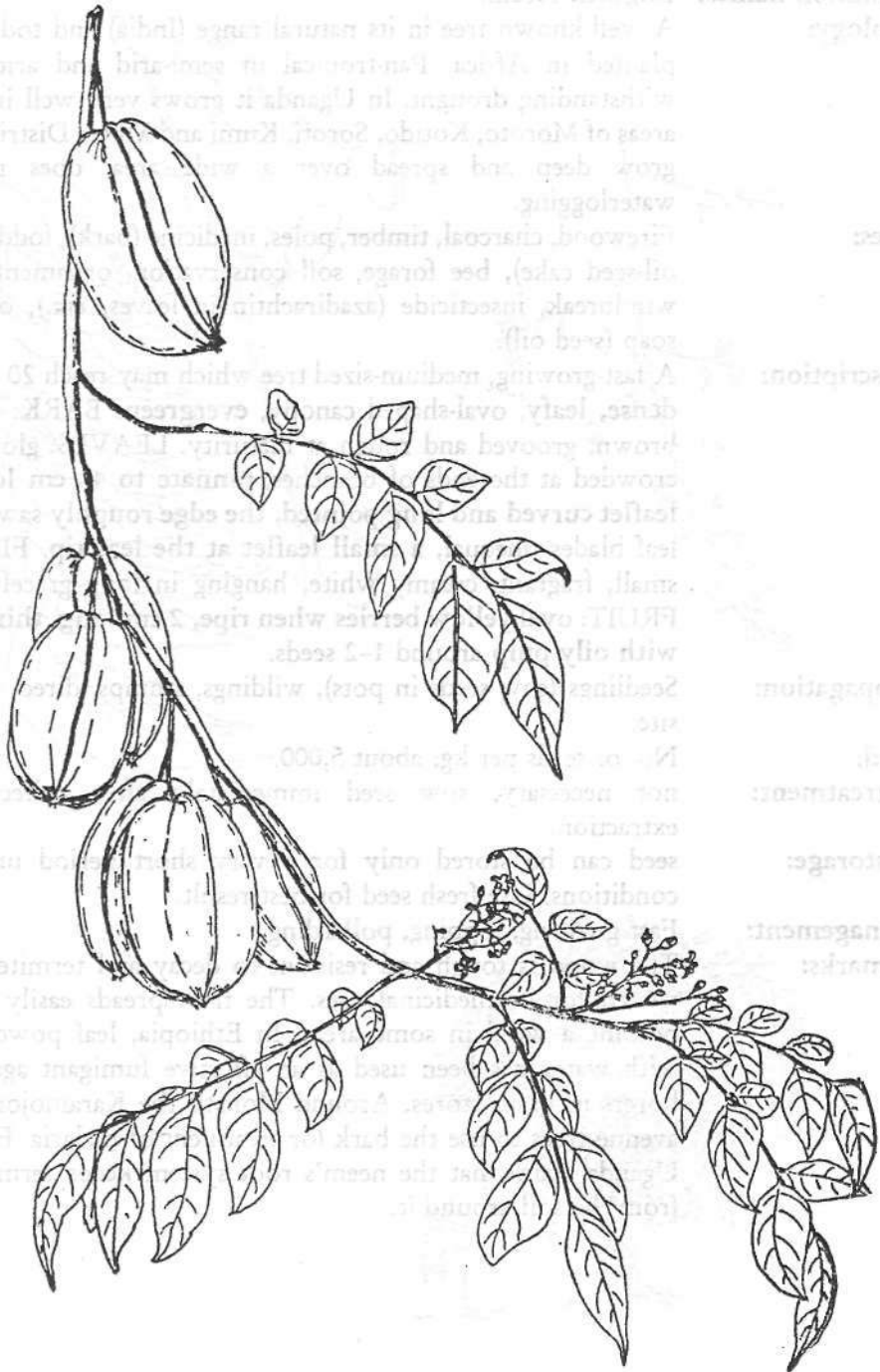
Seed: Extracted by crushing the fruit and hand picking the seeds. Seed can be obtained from Entebbe Botanical Gardens and Kampala city gardens.

treatment:

storage: sow as quickly as possible.

Management: A mix of cultivars should be planted for cross pollination. Pruning is recommended and thinning of excess fruit in the early stage. Fast growing.

Remarks: Fruits are acidic but can be made into a pleasant drink or jelly. The juice removes stains from linen. Makes a handsome ornamental, so plant as a border or avenue tree. The timber is also useful.



Azadirachta indica

Meliaceae

N.E. India, Burma

Trade name: Neem.

Common names: **English:** Neem.

Ecology: A well-known tree in its natural range (India) and today widely planted in Africa. Pan-tropical in semi-arid and arid regions, withstanding drought. In Uganda it grows very well in lowland areas of Moroto, Kotido, Soroti, Kumi and Mbale Districts. Roots grow deep and spread over a wide area; does not stand waterlogging.

Uses: Firewood, charcoal, timber, poles, medicine (bark), fodder (leaves, oil-seed cake), bee forage, soil conservation, ornamental, shade, windbreak, insecticide (azadirachtin in leaves, etc.), oil (seeds), soap (seed oil).

Description: A fast-growing, medium-sized tree which may reach 20 m, with a **dense, leafy, oval-shaped canopy, evergreen**. **BARK:** pale grey-brown, grooved and rough at maturity. **LEAVES:** glossy green, crowded at the ends of branches, **pinnate to 40 cm long, each leaflet curved and long pointed, the edge roughly saw toothed**, leaf blades unequal, **a small leaflet at the leaf tip**. **FLOWERS:** small, fragrant, creamy white, hanging in long graceful sprays. **FRUIT:** **oval yellow berries when ripe, 2 cm long, thin skinned with oily pulp** around 1-2 seeds.

Propagation: Seedlings (sow seeds in pots), wildings, stumps, direct sowing at site.

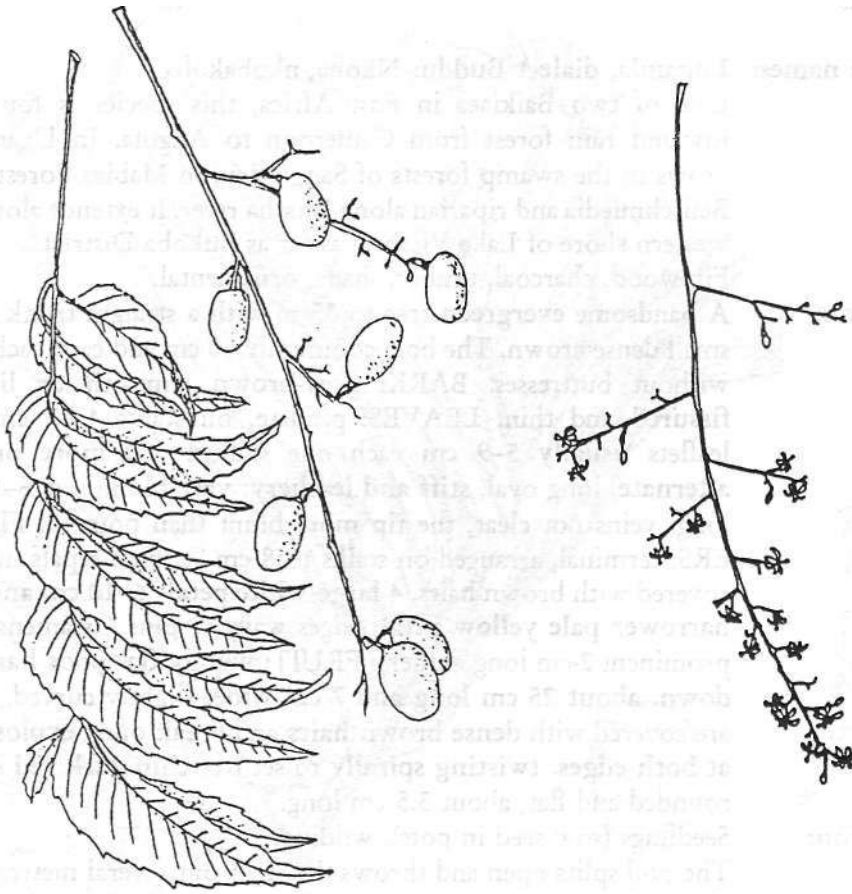
Seed: No. of seeds per kg: about 5,000.

treatment: not necessary; sow seed immediately after collection and extraction.

storage: seed can be stored only for a very short period under field conditions. Use fresh seed for best result.

Management: Fast growing; lopping, pollarding.

Remarks: The wood is tough and resistant to decay and termites. Highly valued for its medicinal uses. The tree spreads easily and may become a weed in some areas. In Ethiopia, leaf powder mixed with water has been used as an effective fumigant against seed borers in grain stores. Around Moroto the Karamojong debark avenue trees to use the bark for treatment of malaria. Farmers in Uganda claim that the neem's root system keeps termites away from the soil around it.



Baikiaea insignis subsp. minor

Caesalpinaceae

Indigenous

Common names: **Luganda, dialect Buddu:** Nkoba, nkobakoba.

Ecology: One of two *Baikiaea* in East Africa, this species is found in lowland rain forest from Cameroon to Angola. In Uganda it grows in the swamp forests of Sango Bay, in Mabira Forest with *Beilschmiedia* and riparian along Ishasha river. It extends along the western shore of Lake Victoria as far as Bukoba District.

Uses: Firewood, charcoal, timber, shade, ornamental.

Description: A handsome **evergreen** tree to 35 m with a straight trunk and a small dense crown. The bole commonly 50 cm and can reach 1 m, without buttresses. **BARK:** **grey-brown, smooth or lightly fissured** and thin. **LEAVES:** pinnate, on stalks 4-17 cm, the leaflets **usually 5-9 cm** each one stalked and **more or less alternate**, long oval, **stiff and leathery, variable** in size 6-18 cm long, veins not clear, the tip more blunt than pointed. **FLOWERS:** terminal, arranged on stalks to 8 cm, 4 thick sepals in bud, covered with brown hairs, **4 large white petals 6-10 cm and one narrower pale yellow petal**, edges wavy, 9 plus 1 stamens with prominent 2-cm long anthers. **FRUIT:** **woody flat pods hanging down, about 25 cm long and 7 cm wide**, slightly curved. They are covered with **dense brown hairs** and **break open explosively at both edges, twisting spirally** to set free **thin dark red seeds**, rounded and flat, about 3.5 cm long.

Propagation: Seedlings (sow seed in pots), wildings.

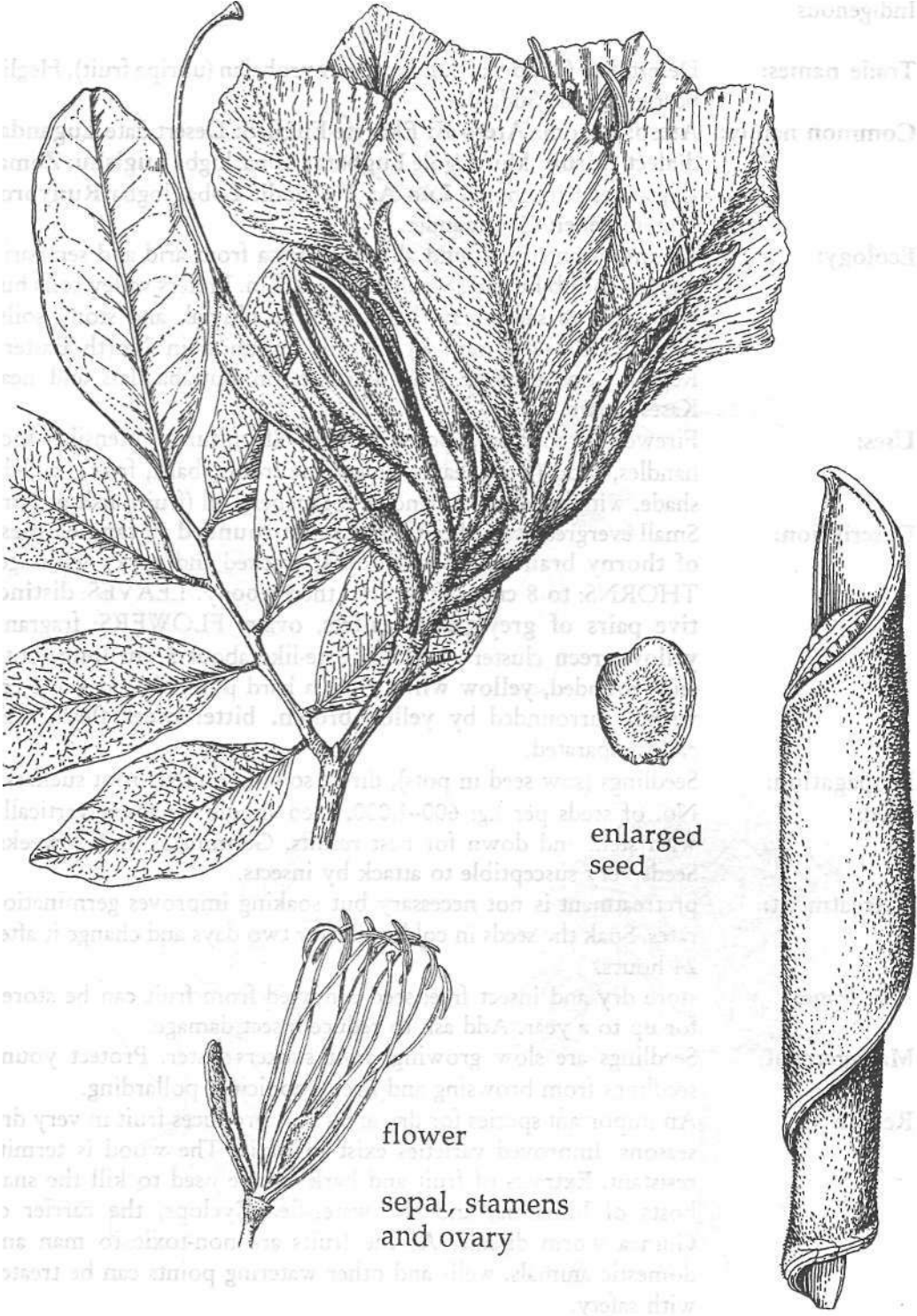
Seed: The pod splits open and throws the seeds out several metres from the mother tree. To obtain the seeds a search must be made on the ground.

treatment: soaking the seed overnight prior to sowing will shorten germination time.

storage: liable to weevil attack. Can be stored in sealed containers in a cool place. Add ash to reduce insect damage.

Management: Coppicing while young, pollarding. Slow growing.

Remarks: The timber is suitable for joinery, cheap furniture and shelving but must be treated with preservatives against borers. It is pale brown, moderately hard, heavy and strong.



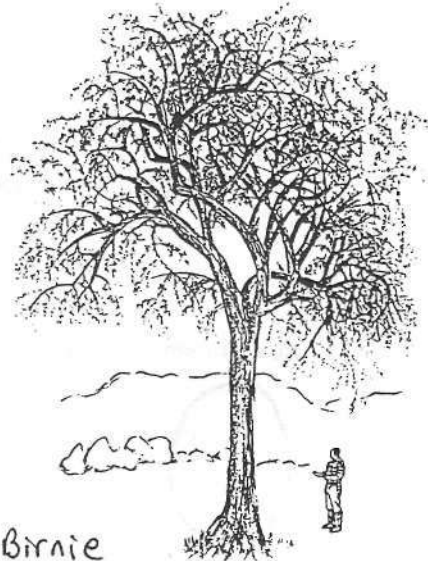
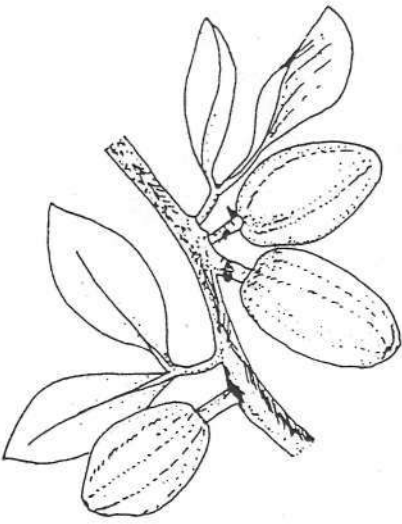
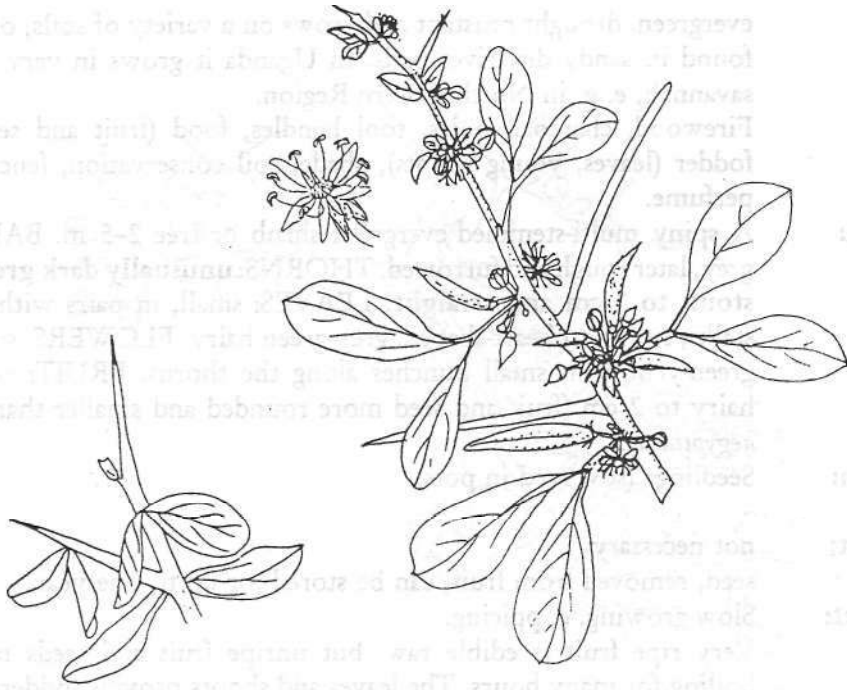
enlarged seed

flower

sepal, stamens and ovary

Indigenous

- Trade names:** Desert date (dried fruit), Egyptian myrobalan (unripe fruit), Heglig berries (in the Sudan).
- Common names:** **Ateso:** Echoma **Ateso K:** Ekorete **English:** Desert date **Luganda, dialect Buruli:** Musongole **Lugbara:** Loba, logba **Lugishu:** Zomai **Lugwere:** Kinachoma **Luo A: To Madi:** Loba, logba **Runyoro:** Mutete **Sebei:** Chomiantet.
- Ecology:** An important tree found all over Africa from arid and semi-arid regions to sub-humid savannah, 0-2,000 m. Prefers valley soils but will grow in sand, clay, black cotton, alluvial, and stony soils. Rainfall: 200-800 mm. In Uganda common in North Eastern Region, low areas of Arua District, on Butiaba flats and near Kasese town.
- Uses:** Firewood, charcoal, poles, timber (furniture), utensils, tool handles, food (fruit, leaves), medicine (roots, bark, fruit), mulch, shade, windbreak, gum, fencing (branches), oil (fruit), fish poison.
- Description:** Small evergreen tree about 6 m, **crown rounded in tangled mass of thorny branches.** BARK: dark, cracked and corky with age. THORNS: **to 8 cm**, soft at first, then **woody.** LEAVES: **distinctive pairs of grey-green leaflets**, ovate. FLOWERS: fragrant, **yellow-green** clusters. FRUIT: date-like about **5 cm long**, both ends rounded, **yellow when ripe**, a hard pointed seed 4 x 2 cm within surrounded by **yellow-brown, bitter-sweet flesh**, seed easily separated.
- Propagation:** Seedlings (sow seed in pots), direct sowing on site, root suckers.
- Seed:** No. of seeds per kg: 600-1,000. Seed should be sown vertically with stem end down for best results. Germinates in 1-4 weeks. Seeds very susceptible to attack by insects.
- treatment:** pretreatment is not necessary but soaking improves germination rates. Soak the seeds in cold water for two days and change it after 24 hours.
- storage:** store dry and insect free; seed removed from fruit can be stored for up to a year. Add ash to reduce insect damage.
- Management:** Seedlings are slow growing, root suckers faster. Protect young seedlings from browsing and fire. Coppicing, pollarding.
- Remarks:** An important species for dry areas as it produces fruit in very dry seasons. Improved varieties exist in India. The wood is termite resistant. Extracts of fruit and bark can be used to kill the snail hosts of bilharzia, and the water-flea Cyclops, the carrier of Guinea worm disease. As the fruits are non-toxic to man and domestic animals, wells and other watering points can be treated with safety.



A. Birnie

Balanites orbicularis (B. rotundifolia)

Balanitaceae

Indigenous

Common names: Ateso T: Ebei

Ecology: A thorny bush of arid areas where it may be very common. It is evergreen, drought resistant and grows on a variety of soils, often found in sandy dry river beds. In Uganda it grows in very dry savannah, e. g. in North Eastern Region.

Uses: Firewood, charcoal, poles, tool handles, food (fruit and seed), fodder (leaves, young shoots), shade, soil conservation, fencing, perfume.

Description: A spiny multi-stemmed evergreen shrub or tree 2-5 m. **BARK:** grey, later rough and furrowed. **THORNS:** **unusually dark green, stout, to 3 cm and straight.** **LEAVES:** small, in pairs with no stalks, round to heart-shaped, grey-green hairy. **FLOWERS:** small green-yellow in small bunches along the thorns. **FRUIT:** oval, hairy to 2 cm (fruit and seed more rounded and smaller than *B. aegyptiaca*).

Propagation: Seedlings (sow seed in pots).

Seed:

treatment: not necessary.

storage: seed, removed from fruit, can be stored for up to one year.

Management: Slow-growing, coppicing.

Remarks: Very ripe fruit is edible raw, but unripe fruit and seeds need boiling for many hours. The leaves and shoots provide fodder for animals in very arid areas.

Balanites orbicularis (B. rotundifolia)

Balanitaceae

Common names: English: Orchid tree, mountain ebony.
Ecology: A tree grown throughout the tropics. Commonly planted in gardens and avenues in most towns throughout Uganda.

Uses: Firewood: a oil, food (bitter), pickles, fodder, shade cover.

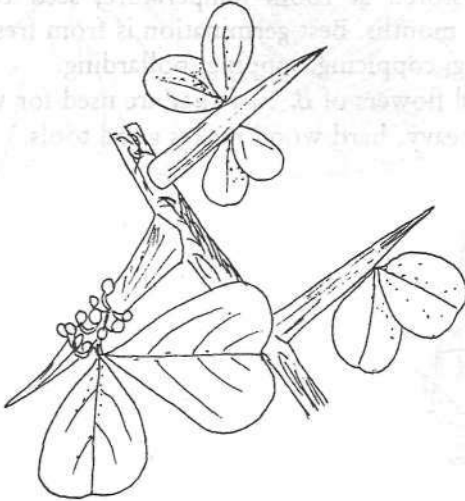
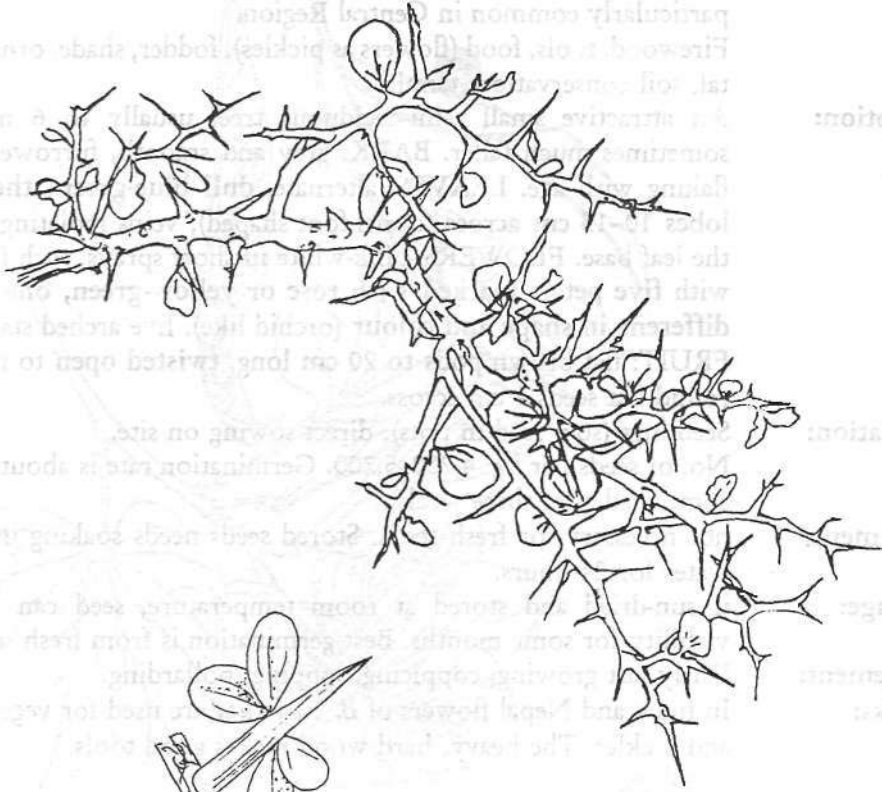
Description: A tree with a thick, gnarled trunk and a dense canopy of small, round, green leaves. The tree is often found in gardens and avenues.

Propagation: Seeds: The seeds are small and round, and are often found in the soil. They are usually sown in a nursery bed and are ready for planting in 6-8 weeks.

Storage: The seeds can be stored for up to 6 months in a cool, dry place. They should be kept in airtight containers to prevent them from becoming rancid.

Management: The tree is a fast grower and is suitable for planting in gardens and avenues. It is also a good source of firewood and shade cover.

Remarks: The tree is a member of the Balanitaceae family and is closely related to the Balanites species. It is a common tree in many parts of the tropics.



mature fruit



Bauhinia variegata

Caesalpinaceae

India, Tropical Asia, China

Common names: **English:** Orchid tree, mountain ebony.

Ecology: A tree grown throughout the tropics. Commonly planted in gardens and avenues in most towns throughout Uganda, but particularly common in Central Region.

Uses: Firewood, tools, food (flowers as pickles), fodder, shade, ornamental, soil conservation, tannin.

Description: An attractive small semi-deciduous tree, usually to 6 m but sometimes much taller. **BARK:** grey and smooth, furrowed and flaking with age. **LEAVES:** alternate, **dull blue-green, the two lobes 10-15 cm across** (camel-foot shaped), veins radiating from the leaf base. **FLOWERS:** pink-white in short sprays, each flower with **five petals marked with rose or yellow-green, one petal different in shape and colour** (orchid like), five arched stamens. **FRUIT:** flat brown **pods to 20 cm** long, **twisted open** to release round flat seeds 1 cm across.

Propagation: Seedlings (sow seed in pots), direct sowing on site.

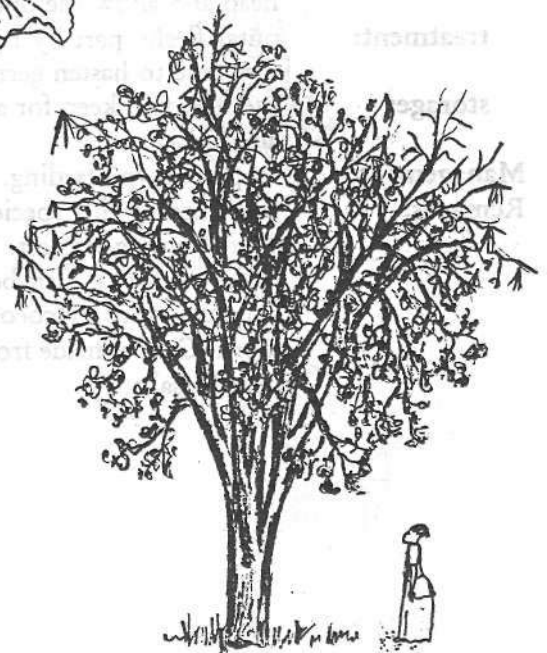
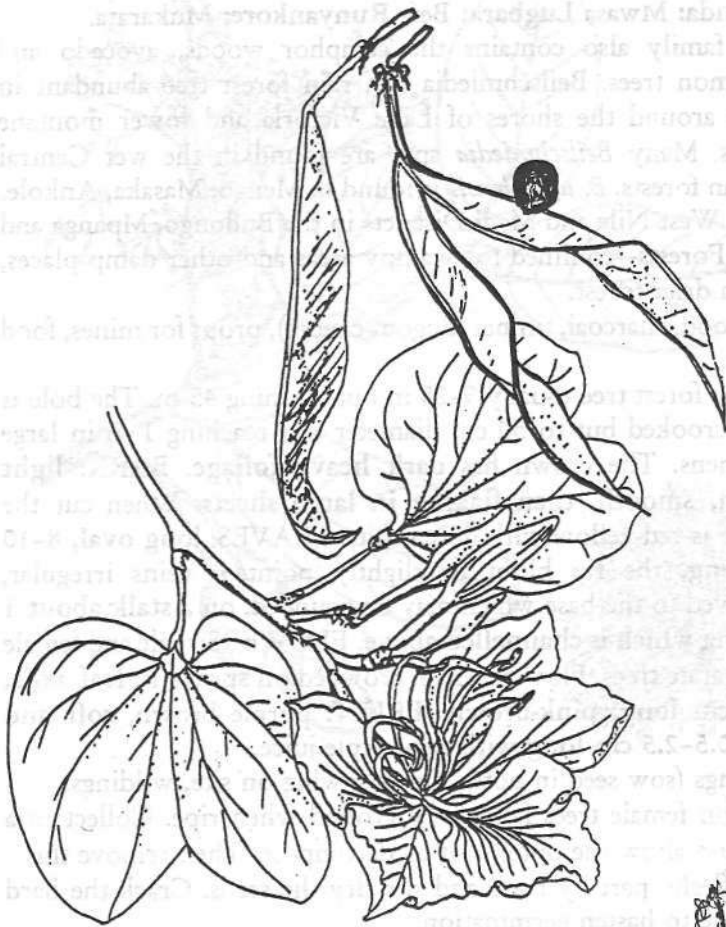
Seed: No. of seeds per kg: 4,200-5,700. Germination rate is about 70%, completed after three weeks.

treatment: not necessary for fresh seeds. Stored seeds needs soaking in cold water for 24 hours.

storage: if sun-dried and stored at room temperature, seed can retain viability for some months. Best germination is from fresh seeds.

Management: Fairly fast growing; coppicing, lopping, pollarding.

Remarks: In India and Nepal flowers of *B. variegata* are used for vegetables and pickles. The heavy, hard wood makes good tools.



Beilschmiedia ugandensis (Tylostemon ugandensis) *Lauraceae*

Indigenous

Common names: **Luganda:** Mwaswa **Lugbara:** Befe **Runyankore:** Mukarata.

Ecology: This family also contains the camphor woods, avocado and cinnamon trees. *Beilschmiedia* is a rain forest tree abundant in forest around the shores of Lake Victoria and lower montane forests. Many *Beilschmiedia* spp. are found in the wet Central African forests. *B. ugandensis* is found in Mengo, Masaka, Ankole, Toro, West Nile and Madi Districts in the Budongo, Mpanga and Zoka Forests—confined to swampy areas and other damp places, rare in drier forest.

Uses: Firewood, charcoal, timber (dugout canoes), props for mines, food (fruit).

Description: A large forest tree usually 9-25 m but reaching 45 m. The bole is often crooked but to 50 cm diameter and reaching 1 m in large specimens. The crown has **dark heavy foliage**. **BARK: light brown, smooth, then flaking in large sheets**. When cut the surface is red-yellow with dotted pits. **LEAVES: long oval, 8-10 cm long**, the tip blunt or slightly pointed, veins irregular, narrowed to the base which may be rounded, on a **stalk about 1 cm long which is channelled above**. **FLOWERS:** male and female on separate trees. Flowers small, crowded on **sprays in leaf axils, 2-10 cm long, pink-brown**. **FRUIT:** purple brown, **soft and oval, 0.5-2.5 cm long** with red-purple juice.

Propagation: Seedlings (sow seed in pots), direct sowing on site, wildings.

Seed: Fruit on female trees fall to the ground when ripe. Collect in a heap and allow the outer coat to decompose. Then remove this outer fleshy part by hand and sun dry the seeds. Crack the hard seed case to hasten germination.

treatment:

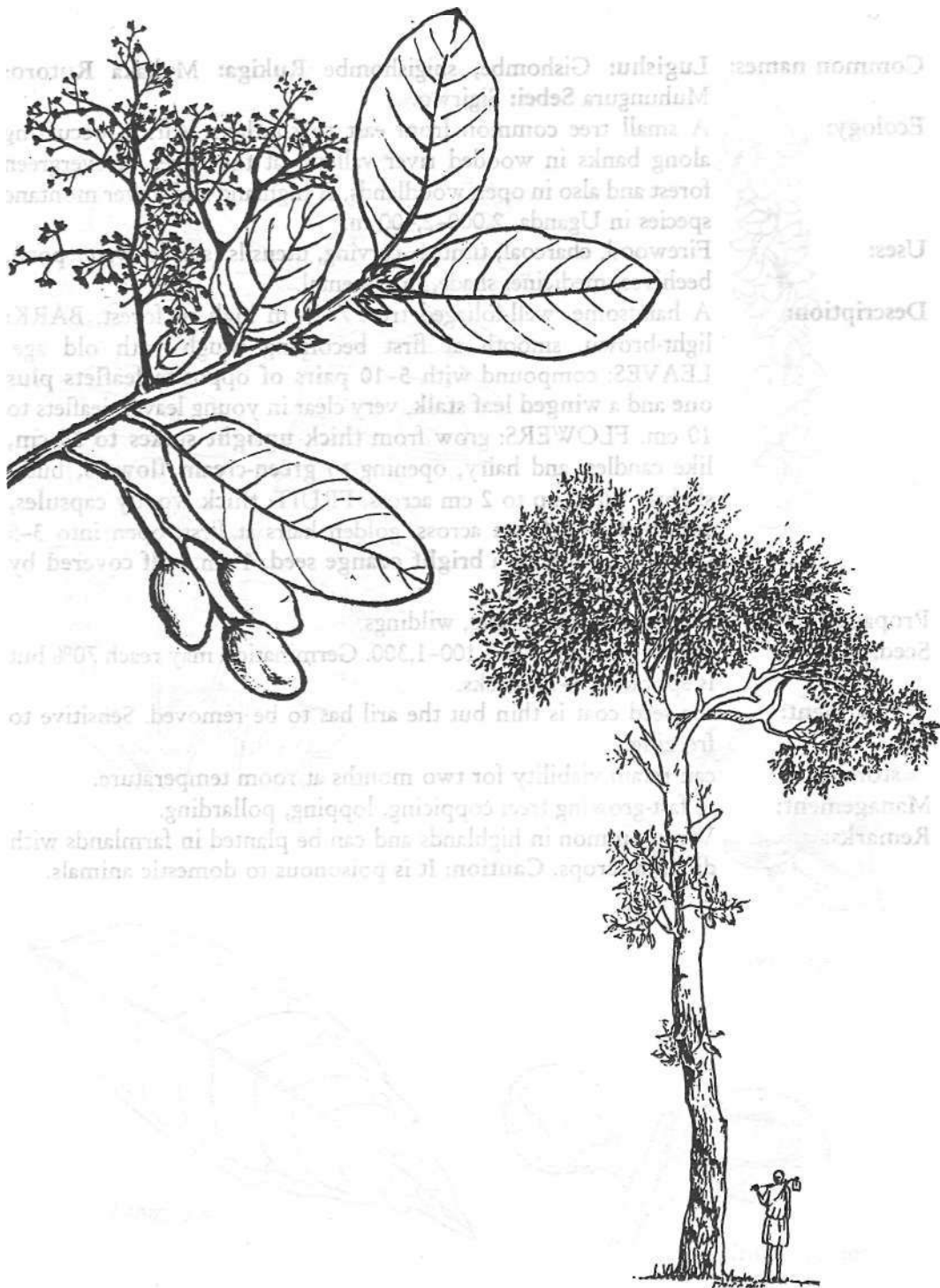
storage:

the seed will keep for a year if left in the seed case in a cool well-aired place.

Management: Coppicing, pollarding. Slow growing.

Remarks: Seedlings of this species have been raised in Masaka by the VI Tree Planting Project. The seed is rich in oil but its value is yet to be explored. Can be planted as a stand or intercropped with banana, coffee or cocoa. The wood is durable enough for mine work. Canoes made from this timber are used on Lake Nabugabo near Masaka.

Beilschmiedia ugandensis (Tylostemon ugandensis) *Lauraceae*



Indigenous

Common names: **Lugishu:** Gishombe, shigishombe **Rukiga:** Mukaka **Rutoro:** Muhungura **Sebei:** Sigirwo.

Ecology: A small tree common from east to southern Africa, occurring along banks in wooded river valleys, at the edges of evergreen forest and also in open woodlands. A highland and lower montane species in Uganda, 2,000-2,400 m.

Uses: Firewood, charcoal, timber, carving, utensils (stools, water pots), beehives, medicine, shade, ornamental.

Description: A handsome, well-foliaged tree, 7-15 m high in forest. **BARK:** light-brown, smooth at first becoming rough with old age. **LEAVES:** compound with **5-10 pairs of opposite leaflets plus one** and a **winged leaf stalk**, very clear in young leaves, leaflets to 10 cm. **FLOWERS:** grow from **thick upright spikes to 35 cm**, like candles, and hairy, opening to **green-cream flowers**, buds, slightly pink, up to 2 cm across. **FRUIT:** **thick woody capsules, rounded to 2.5 cm** across, golden hairs at first, open into 3-5 sections, each with a **bright orange seed, 1 cm, half covered by a waxy yellow aril.**

Propagation: Seedlings, root suckers, wildings.

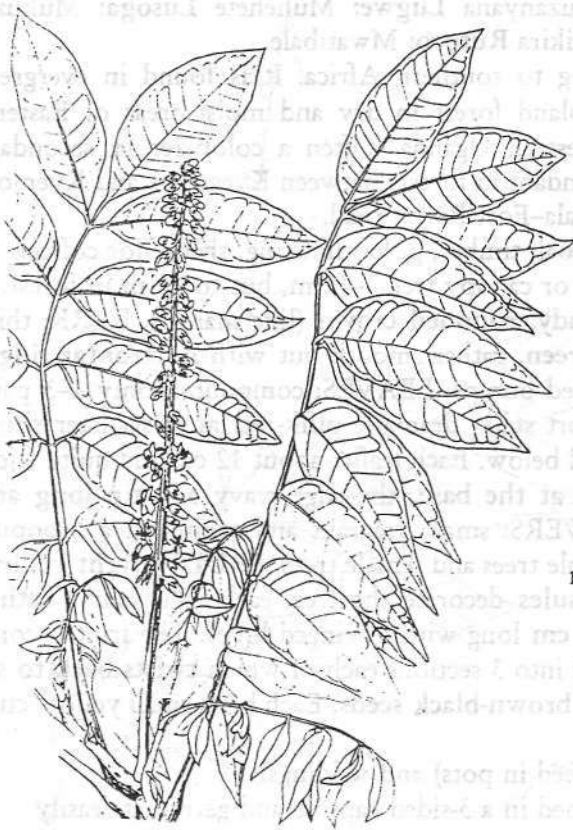
Seed: No. of seeds per kg: 1,100-1,300. Germination may reach 70% but is sporadic, 5-10 weeks.

treatment: the seed coat is thin but the aril has to be removed. Sensitive to freezing.

storage: can retain viability for two months at room temperature.

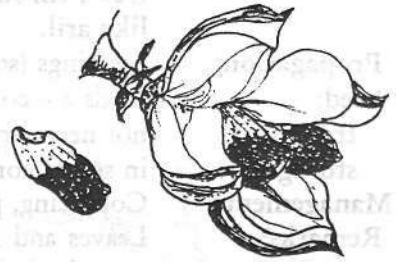
Management: A fast-growing tree; coppicing, lopping, pollarding.

Remarks: Very common in highlands and can be planted in farmlands with different crops. **Caution:** It is poisonous to domestic animals.



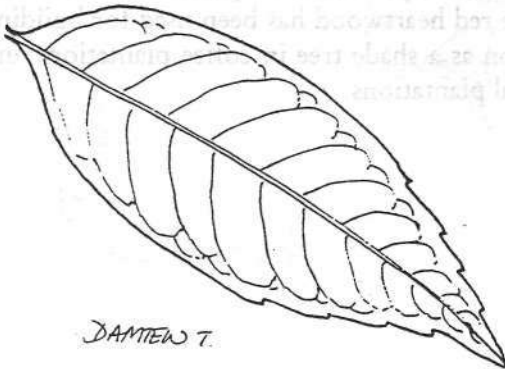
mature fruit head

A.B.

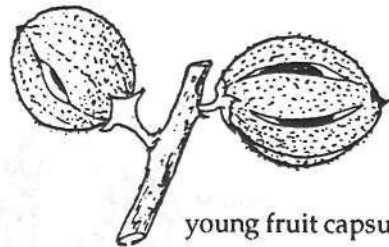


seed

open woody capsules



DANTEW T.



young fruit capsules

Indigenous

Common names: **Luganda:** Mukuzanyana **Lugwe:** Muhehete **Lusoga:** Mukuza-dhyana, musandikira **Rutoro:** Mwatibale.

Ecology: A tree extending to southern Africa. It is found in evergreen lowland and upland forest in dry and moist areas of Eastern, Central and Western Uganda. Often a colonizer in secondary vegetation. Abundant in forests between Kyegegwa and Kyenjojo along the Kampala-Fort Portal road.

Uses: Firewood, charcoal, timber, poles, flooring, shade (for coffee).

Description: An understorey or canopy tree 7-12 m, but to 25 m in forest. It has a **dense, shady, rounded crown** (like mango). **BARK:** thin, **grey to dark green**, rather smooth but with **horizontal ridges** and little rounded bumps. **LEAVES:** compound, only 1-3 pairs leaflets on a short stalk, dramatic **pink-red at first**, later **shiny dark green**, dull below. Each leaflet about 12 cm and quite wide, **smaller leaflets at the base**, the edge wavy and **tip long and pointed**. **FLOWERS:** small, fragrant and white on a drooping head 7-8 cm. Male trees and female trees. **FRUIT:** **bright yellow-orange-red capsules** decorate the tree, each soft, hairy, **rather triangular to 4 cm** long with 3 winged lobes. The fruit become woody and split into 3 sections each of which **twists back to set free 1 cm shiny brown-black seeds**. Each has a small **yellow cup-like aril**.

Propagation: Seedlings (sow seed in pots) and wildings.

Seed: Seeds are contained in a 3-sided capsule and germinate easily,

treatment: not necessary.

storage: in sealed containers in a cool place.

Management: Coppicing, pollarding.

Remarks: Leaves and fruit have been reported to be poisonous—not even eaten by baboons. The red heartwood has been used for building and furniture. Common as a shade tree in coffee plantations and suitable for commercial plantations.

Common names: English: Red silk cotton, wild kapok, wild silk cotton (Kwara);
 Kitumba, balaka Rukonjo; Mulungu, Rukonjo; Malindi.
 Ecology: A tree of tropical rain forest extending from West Africa to
 in the semi-deciduous forest, Burundi, Malawi, Mozambique, Uganda,
 in the swamp forest areas of the interior and on
 rarely on drier sites.

Users: Ornamental (avenue), fibres (kapok).
 Description: A deciduous forest tree 45-75 m. The trunk
 a narrow crown has short buttresses and a
 and a narrow crown has short buttresses and a
 your faces with a warty surface. The trunk
 river, grey-brown and flaking. The tree
 What are the...
 pores) in vertical lines. The bark is
 leaflets, narrow, 5-20 cm long, up to
 (cm) on a leaf stalk 5-20 cm long, straight
 appearing on the base of the leaflets and a
 green calyx saucer-shaped, 1.5-2 cm in
 mass of black stamens. The fruit is
 long hangs down on a thick stalk. Inside
 surrounded by grey-white fluffy kapok
 seedlings (now used in pots) and direct
 seeds embedded in cotton-like fibres collected

Remarks: The tree is not used for its wood
 for its pulp. The tree is used for its seed
 for its pulp. The tree is used for its seed
 for its pulp. The tree is used for its seed

Management: The tree is not used for its wood
 for its pulp. The tree is used for its seed
 for its pulp. The tree is used for its seed
 for its pulp. The tree is used for its seed



seed with aril

Bombax buonopozense (B. reflexum)

Bombacaceae

Indigenous

Common names: **English:** Red silk cotton, wild kapok, wild silk cotton **Kwamba:** Kitutube, bulanka **Rukonjo:** Mulungula **Runyoro:** Mulimbi.

Ecology: A tree of tropical rain forest extending into West Africa. It occurs in the Semliki, Maramagambo, Bugoma and Budongo Forests of Uganda, in the swamp forests around Lake Victoria and only rarely on drier sites.

Uses: Ornamental (avenue), fibres (kapok).

Description: A deciduous forest tree 45-75 m, the straight bole reaching up to a narrow crown has short buttresses at the base. The **trunk is armed with large conical woody spines**, black-tipped on the younger branches which are generally whorled. **BARK:** smooth, silvery or grey-green becoming rough and scaly, dark and fissured. When cut the bark is deep red, with large lenticels (breathing pores) in vertical lines. **LEAVES: compound digitate with 5-7 leaflets**, narrow-oval and pointed, variable, about 14 cm (up to 20 cm) on a leaf stalk 5-20 cm. **FLOWERS: solitary and bright red**, appearing on the bare tree, held erect all along the branches, the green calyx saucer-shaped, 5 red petals hairy inside and a central mass of black stamens. **FRUIT: a 5-part woody capsule to 15 cm** long hangs down on a thick stalk. Inside numerous seeds are surrounded by **grey-white fluffy kapok**.

Propagation: Seedlings (sow seed in pots) and direct sowing on site.

Seed: Seeds embedded in cotton-like fibres can be collected from the ground.

treatment: separate seeds from fibres.

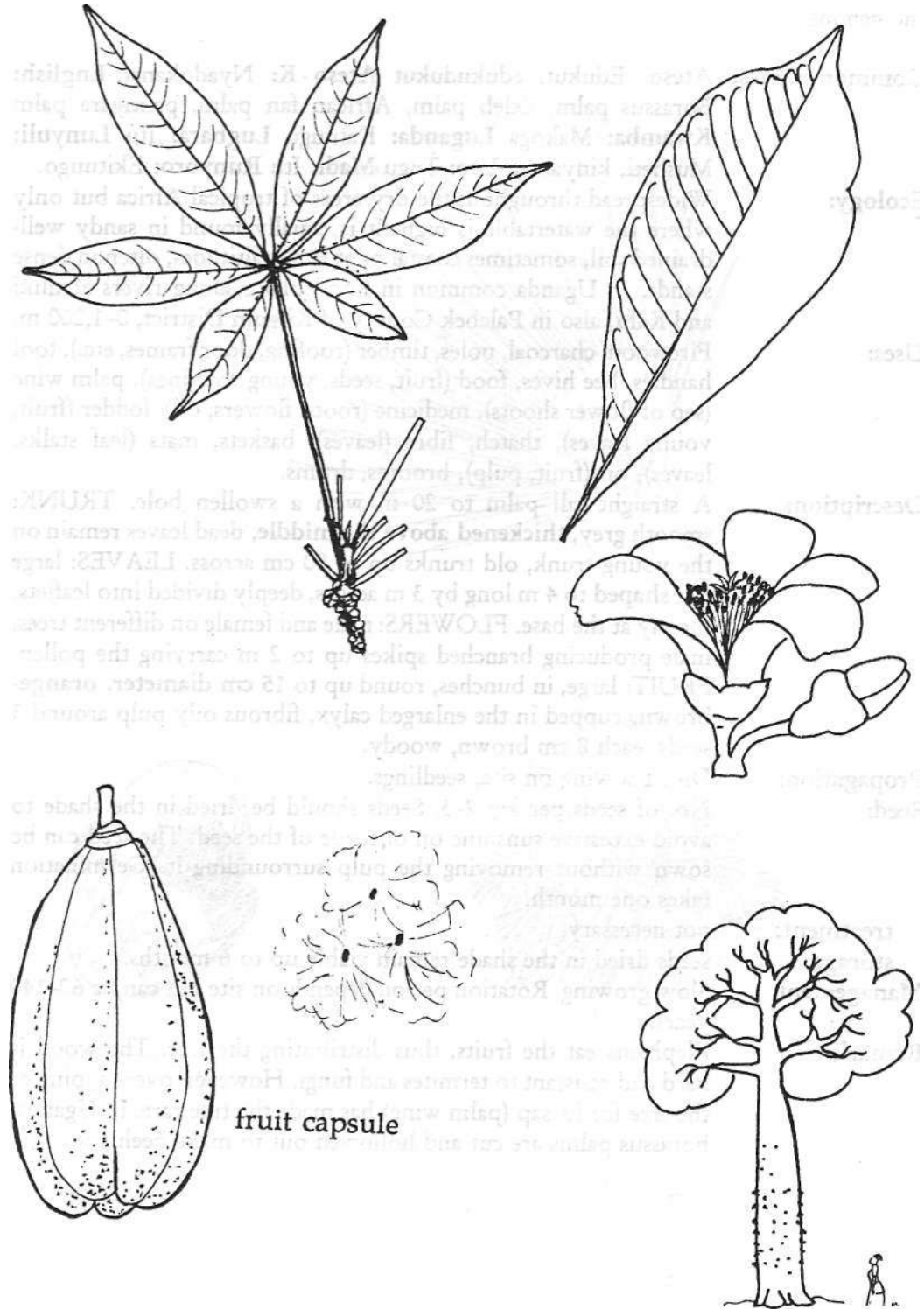
storage: store seeds in a cool dry place.

Management: Fast growing.

Remarks: A tree not yet in general use but which could be promoted more for its potential both as a showy avenue tree and for its useful kapok. The fibres are similar but inferior to the kapok of commerce (*Ceiba pentandra*).

Bombax buonopozense (B. reflexum)

Bombacaceae



Indigenous

Common names: **Ateso:** Edukut, edukudukut **Ateso K:** Nyadokanet **English:** Borassus palm, deleb palm, African fan palm, palmyra palm **Kwamba:** Makoga **Luganda:** Katuugo **Lugbara:** Itu **Lunyuli:** Musheti, kinyalissa **Luo:** Tugu **Madi:** Itu **Runyoro:** Ekituugo.

Ecology: Widespread throughout the dry areas of tropical Africa but only where the watertable is high. It is usually found in sandy well-drained soil, sometimes coastal or at lower altitudes, often in dense stands. In Uganda common in flood plains along rivers Semliki and Kafu, also in Palabek County of Kitgum District, 0-1,200 m.

Uses: Firewood, charcoal, poles, timber (roofing, door frames, etc.), tool handles, bee hives, food (fruit, seeds, young seedlings), palm wine (sap of flower shoots), medicine (roots, flowers, oil), fodder (fruit, young leaves), thatch, fibre (leaves), baskets, mats (leaf stalks, leaves), oil (fruit, pulp), brooms, drums.

Description: A straight tall palm to 20 m with a swollen bole. **TRUNK:** smooth grey, **thickened above the middle**, dead leaves remain on the young trunk, old trunks up to 80 cm across. **LEAVES:** large **fan shaped** to 4 m long by 3 m across, deeply divided into leaflets, thorny at the base. **FLOWERS:** male and female on different trees, male producing branched spikes up to 2 m carrying the pollen. **FRUIT:** large, in bunches, round up to **15 cm diameter, orange-brown**, cupped in the enlarged calyx, fibrous oily pulp around 3 seeds, each 8 cm brown, woody.

Propagation: Direct sowing on site, seedlings.

Seed: No. of seeds per kg: 2-3. Seeds should be dried in the shade to avoid excessive sunshine on one side of the seed. The seed can be sown without removing the pulp surrounding it. Germination takes one month,

treatment: not necessary.

storage: seeds dried in the shade remain viable up to 6 months.

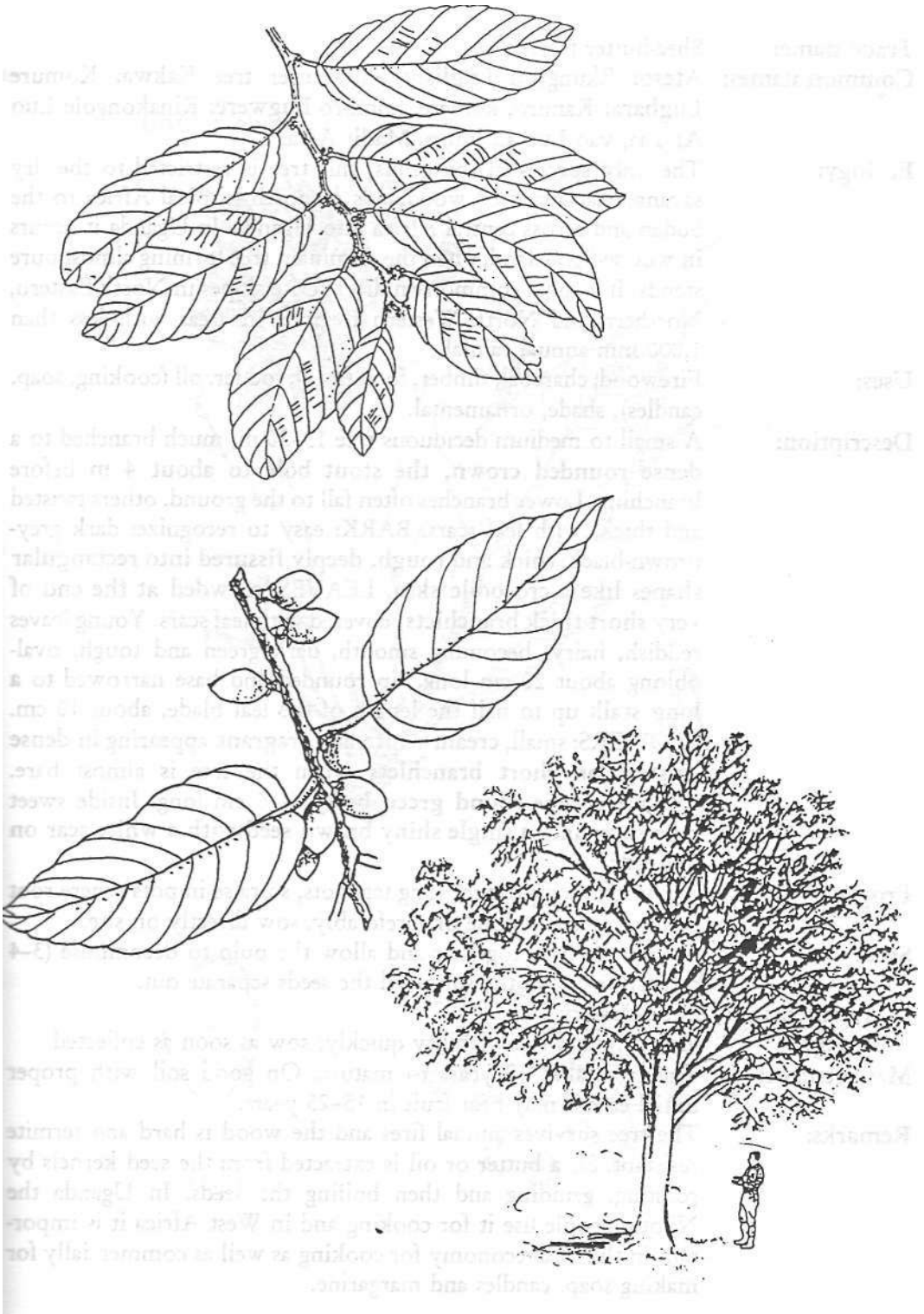
Management: Slow growing. Rotation period depends on site but can be 60-140 years.

Remarks: Elephants eat the fruits, thus distributing the tree. The wood is hard and resistant to termites and fungi. However, over-tapping of the tree for its sap (palm wine) has made the tree rare. In Uganda, borassus palms are cut and hollowed out to make beehives.

..

Indigenous

- Common names:** **Luganda:** Katazamiti **Lugishu:** Kumuholong, shigakara **Lugwe:** Lulondamombe **Lunyuli:** Muhangwe **Luo L:** Odugu-kulo **Lusoga:** Itasabwa, mwesende **Rukiga:** Muyimbo, mubambantomi **Runyankore:** Kataza, mujiji **Rutoro:** Mubalagaza **Sebei:** Margalgalyet.
- Ecology:** A tree of the high-potential areas in East and Southern Africa. In Uganda occurs in riverine forests, forest edges or in wet places in thickets in Eastern, Central, North Western and parts of Northern Regions, 600-2,200 m. It does well in a wide variety of climates.
- Uses:** Firewood, charcoal, timber, poles (granaries), tool handles, fruit, medicine (bark and roots), fodder (leaves), mulch, shade.
- Description:** A medium-sized leafy evergreen tree with **dense spreading crown**, to 13 m. **BARK:** grey-brown flaking with age, young stems zigzag, dotted with paler breathing pores. **LEAVES:** appear compound but actually simple alternate along branches, **dark shiny green above**, to 12 cm long, **veins parallel extending along margin**, leaf stalks slightly hairy. **FLOWERS:** small and yellowish, **bunched in leaf axils**, male and female flowers on different trees. **FRUIT:** **soft purple-black, oval up to 8 mm**, sweet and edible when ripe in times of emergency.
- Propagation:** Seedlings (sow seed in pots), wildings, direct sowing on site.
- Seed:** Prolific seeder. No. of seeds per kg: 19,000-19,500. Germination is very good and uniform, up to 90-100 % after 20-25 days,
- treatment:** not necessary,
- storage:** short viability (oil seed).
- Management:** Fast growing in good sites, pollarding, coppicing.
- Remarks:** The species is becoming scarce due to over-exploitation. It is not planted near homesteads as it attracts caterpillars and birds. The wood is resistant to termites. The species is kept in banana and coffee plantations where it is a useful shade tree.



Butyrospermum paradoxum subsp. niloticum

Sapotaceae

Indigenous

Trade name: Shea-butter tree.

Common names: **Ateso:** Ekunguru **English:** Shea-butter tree **Kakwa:** Komure **Lugbara:** Kamiro, komere, komoro **Lugwere:** Kinakongole **Luo A:** Yaa, yao **Luo L:** Imuru **Madi:** Awa.

Ecology: The only species in the genus, this tree is restricted to the dry savannah and grassed woodlands of north tropical Africa to the Sudan and across central Africa into Uganda. In Uganda it occurs in wooded grassland, often the dominant tree forming almost pure stands. It is most common on dry laterite slopes in North Eastern, Northern and North Western Regions in areas with less than 1,000 mm annual rainfall.

Uses: Firewood, charcoal, timber, food (seed), fodder, oil (cooking, soap, candles), shade, ornamental.

Description: A small to medium deciduous tree 13-20 m, much branched to a **dense rounded crown, the stout bole to about 4 m** before branching. Lower branches often fall to the ground, others twisted and thick, with leaf scars. **BARK:** easy to recognize: dark grey-brown-black, **thick and rough, deeply fissured into rectangular shapes like a crocodile skin.** **LEAVES:** crowded at the end of **very short thick branchlets**, covered with leaf scars. Young leaves reddish, hairy, becoming smooth, dark green and tough, oval-oblong about 20 cm long, tip rounded and base narrowed to a **long stalk** up to half the length of the leaf blade, about 10 cm. **FLOWERS:** small, **cream-white and fragrant appearing in dense clusters on short branchlets** when the tree is almost bare. **FRUIT:** a large **round green berry**, 4-6 cm long. Inside sweet pulp surrounds a **single shiny brown seed with a white scar on one side.**

Propagation: Seedlings; they produce long taproots, so raise in pots where root pruning is easily done or, preferably, sow directly on site.

Seed: Gather the fruit together and allow the pulp to decompose (3-4 weeks) or dry in the sun until the seeds separate out.

treatment: not necessary.

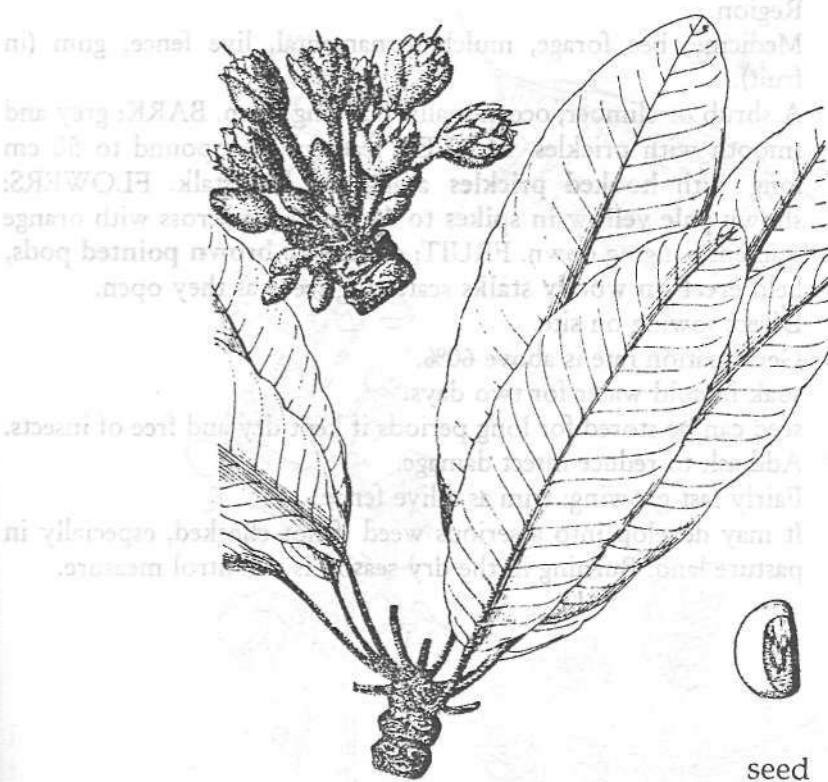
storage: very oily and lose viability quickly; sow as soon as collected.

Management: The tree takes 30 years to mature. On good soil with proper initial care it may bear fruit in 15-25 years.

Remarks: The tree survives annual fires and the wood is hard and termite resistant. Shea butter or oil is extracted from the seed kernels by roasting, grinding and then boiling the seeds. In Uganda the Nilotic people use it for cooking and in West Africa it is important in the local economy for cooking as well as commercially for making soap, candles and margarine.

A thorny shrub widely naturalized in Africa in medium- and high-
altitude areas, 900-2,100 m. In Uganda commonly cultivated as a
live fence or growing wild in moist forest. Eastern

Ecology:



User:

Description:

Propagation:

Seed:

Treatment:

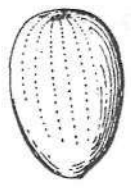
Storage:

Management:

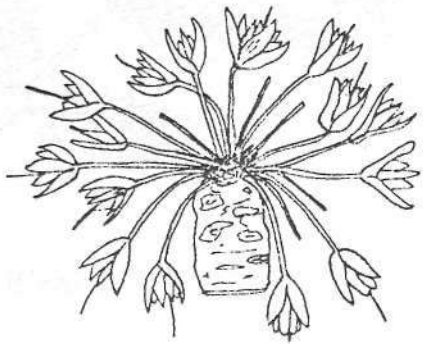
Remarks:



seed



fruit



Tropical Asia

Common names: **English:** Mauritius thorn, Mysore thorn.

Ecology: A thorny shrub widely naturalized in Africa in medium- and high-rainfall areas, 900-2,100 m. In Uganda commonly cultivated as a live fence or growing wild in most areas except North Eastern Region.

Uses: Medicine, bee forage, mulch, ornamental, live fence, gum (in fruit).

Description: A shrub or climber, occasionally reaching 10 m. **BARK:** grey and smooth with prickles. **LEAVES:** feathery, compound to 50 cm long with **hooked prickles** along the leaf stalk. **FLOWERS:** showy **pale yellow in spikes to 30 cm**, 2 cm across with orange stamens hanging down. **FRUIT:** clusters of **brown pointed pods**, held **erect on woody stalks** scattering seeds as they open.

Propagation: Direct sowing on site.

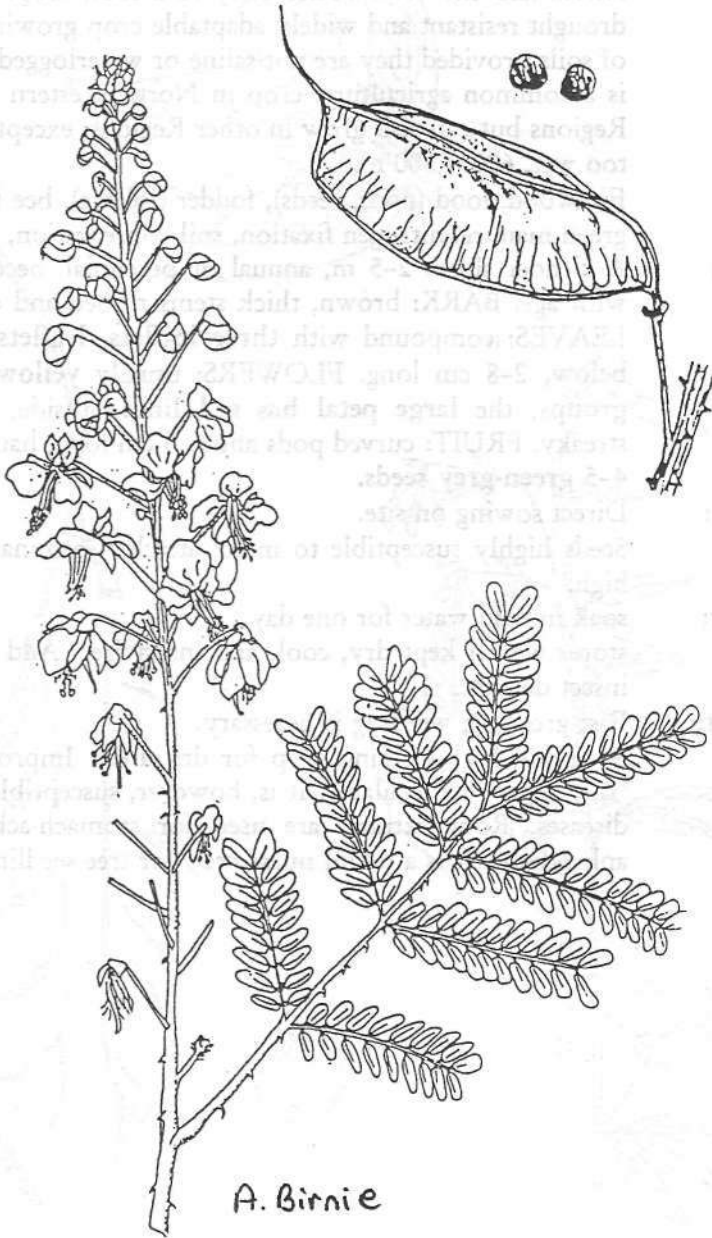
Seed: Germination rate is above 60%.

treatment: soak in cold water for two days.

storage: seed can be stored for long periods if kept dry and free of insects. Add ash to reduce insect damage.

Management: Fairly fast growing; trim as a live fence.

Remarks: It may develop into a serious weed if not checked, especially in pasture land. Burning in the dry season is a control measure.



Cajanus cajan

Papilionaceae

S.E. Asia

Common names: **English:** Pigeon pea **Luganda:** Mpinnamiti **Luo:** Kapenda **Runyoro:** Nkuuku.

Ecology: The genus is now recognized to have 32 species. It reached west Africa and the West Indies early as a food crop. It is a hardy, drought resistant and widely adaptable crop growing in a variety of soils provided they are not saline or waterlogged. In Uganda it is a common agricultural crop in North Western and Northern Regions but can also grow in other Regions, except areas that are too wet, 600-1,800 m.

Uses: Firewood, food (pods, seeds), fodder (foliage), bee forage, mulch, green manure, nitrogen fixation, soil conservation, windbreak.

Description: A slender shrub 2-5 m, annual or perennial, becoming woody with age. **BARK:** brown, thick stems ribbed and densely hairy. **LEAVES:** compound with **three leaflets, leaflets hairy white below**, 2-8 cm long. **FLOWERS:** usually **yellow in terminal groups, the large petal has red lines** outside, buds yellow, streaky. **FRUIT:** curved pods about 5 cm long, hairy with about 4-5 **green-grey seeds**.

Propagation: Direct sowing on site.

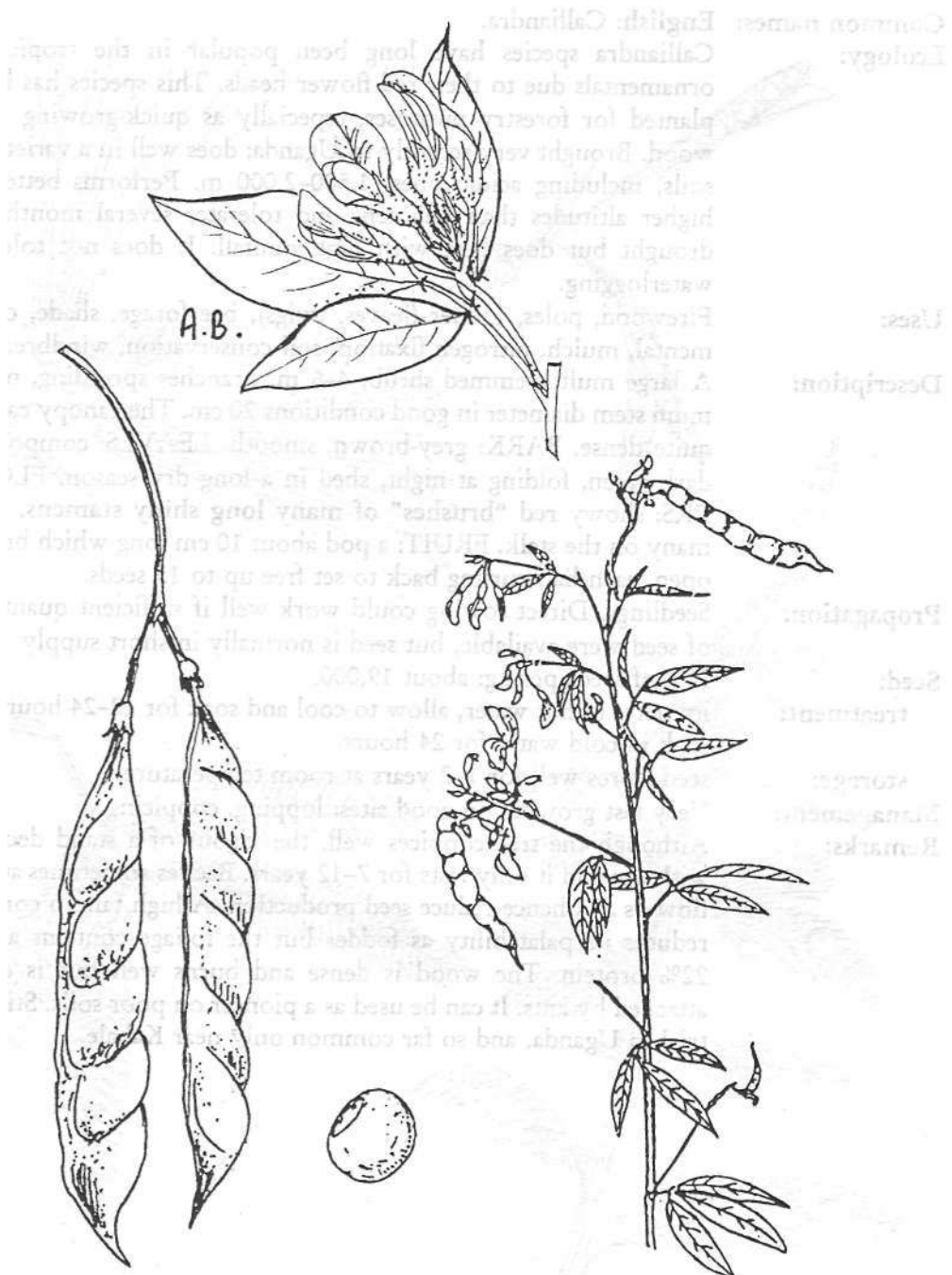
Seed: Seeds highly susceptible to insect attack. Germination rate very high.

treatment: soak in cold water for one day.

storage: stores well if kept dry, cool, and insect free. Add ash to reduce insect damage.

Management: Fast growing; weeding is necessary.

Remarks: A useful, high-yielding crop for dry areas. Improved perennial "tree types" are available. It is, however, susceptible to pests and diseases. Root extracts are used for stomach-ache and as an aphrodisiac. It is a useful nurse crop for tree seedlings.



Central America

Common names: **English:** Calliandra.

Ecology: Calliandra species have long been popular in the tropics as ornamentals due to their red flower heads. This species has been planted for forestry purposes, especially as quick-growing fuelwood. Brought very recently to Uganda; does well in a variety of soils, including acidic ones, 1,500-2,000 m. Performs better at higher altitudes than *Leucaena* and tolerates several months of drought but does best with high rainfall. It does not tolerate waterlogging.

Uses: Firewood, poles, fodder (leaves, twigs), bee forage, shade, ornamental, mulch, nitrogen fixation, soil conservation, windbreak.

Description: A large multi-stemmed shrub, 4-6 m, branches spreading, maximum stem diameter in good conditions 20 cm. The canopy can be quite dense. **BARK:** grey-brown, smooth. **LEAVES:** compound, dark green, folding at night, shed in a long dry season. **FLOWERS:** showy **red "brushes" of many long shiny stamens**, very many on the stalk. **FRUIT:** a pod about 10 cm long which breaks open, each half curling back to set free up to 15 seeds.

Propagation: Seedlings. Direct sowing could work well if sufficient quantities of seed were available, but seed is normally in short supply.

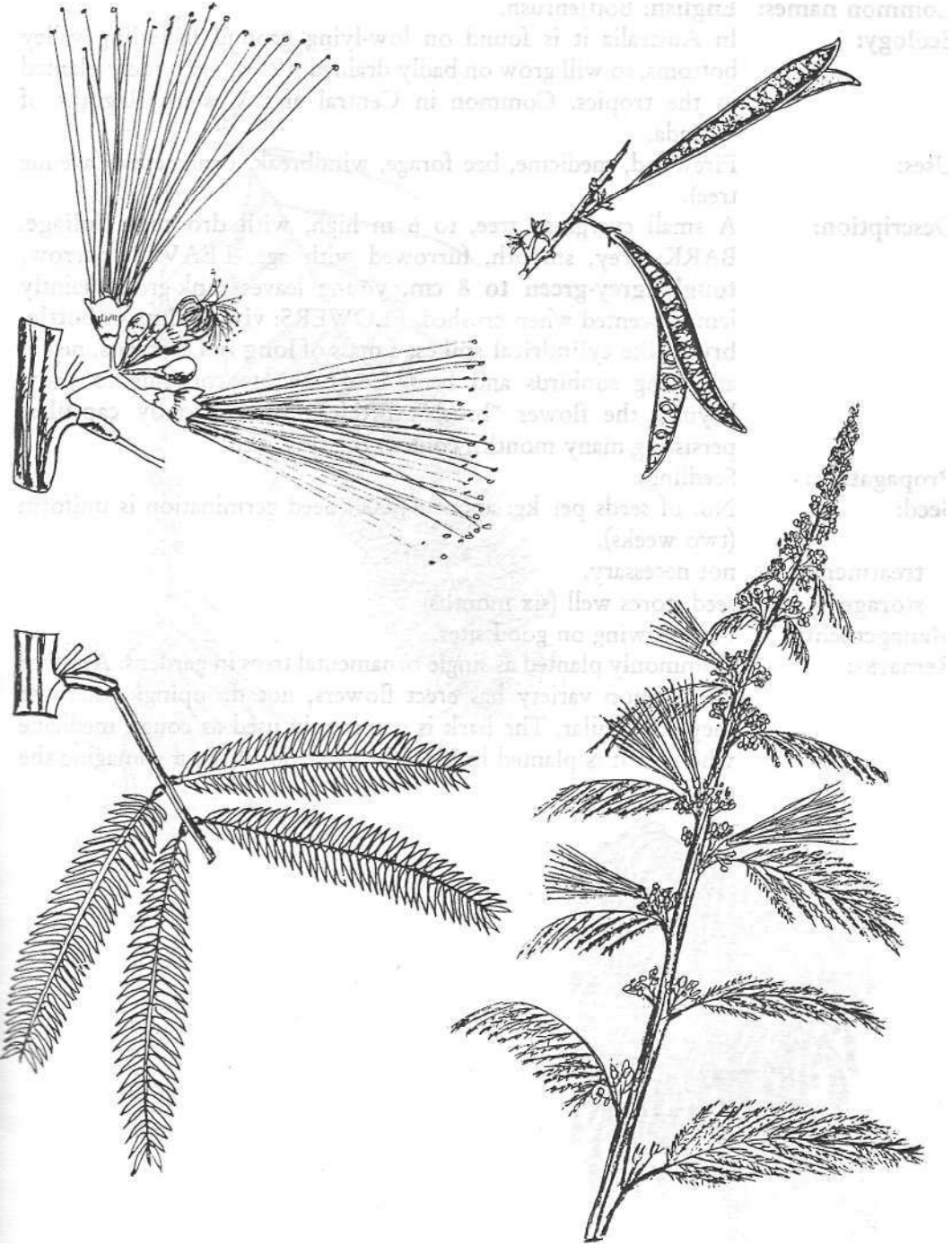
Seed: No. of seeds per kg: about 19,000.

treatment: immerse in hot water, allow to cool and soak for 12-24 hours, or soak in cold water for 24 hours,

storage: seed stores well for 1-2 years at room temperature.

Management: Very fast growing on good sites: lopping, coppicing.

Remarks: Although the tree coppices well, the vigour of a stand declines with age and it only lasts for 7-12 years. Beetles sometimes attack flowers and hence reduce seed production. A high tannin content reduces its palatability as fodder but the foliage contains about 22% protein. The wood is dense and burns well but is often attacked by ants. It can be used as a pioneer on poor soils. Still on trial in Uganda, and so far common only near Kabale.



Callistemon citrinus var. splendens

Myrtaceae

Australia, New Zealand, Tasmania

Common names: **English:** Bottlebrush.

Ecology: In Australia it is found on low-lying ground including valley bottoms, so will grow on badly drained sites. Now widely planted in the tropics. Common in Central and Western Regions of Uganda.

Uses: Firewood, medicine, bee forage, windbreak, ornamental (avenue tree).

Description: A small evergreen tree, to 6 m high, with **drooping foliage**. **BARK:** grey, smooth, furrowed with age. **LEAVES:** **narrow, tough, grey-green to 8 cm**, young leaves pink-green, faintly lemon scented when crushed. **FLOWERS:** **vivid crimson bottle-brush-like cylindrical spikes**, a mass of **long red stamens**, nectar attracting sunbirds and bees. Leafy shoots continue to grow beyond the flower "brush". **FRUIT:** **small woody capsules**, persisting many months, contain the tiny seed.

Propagation: Seedlings.

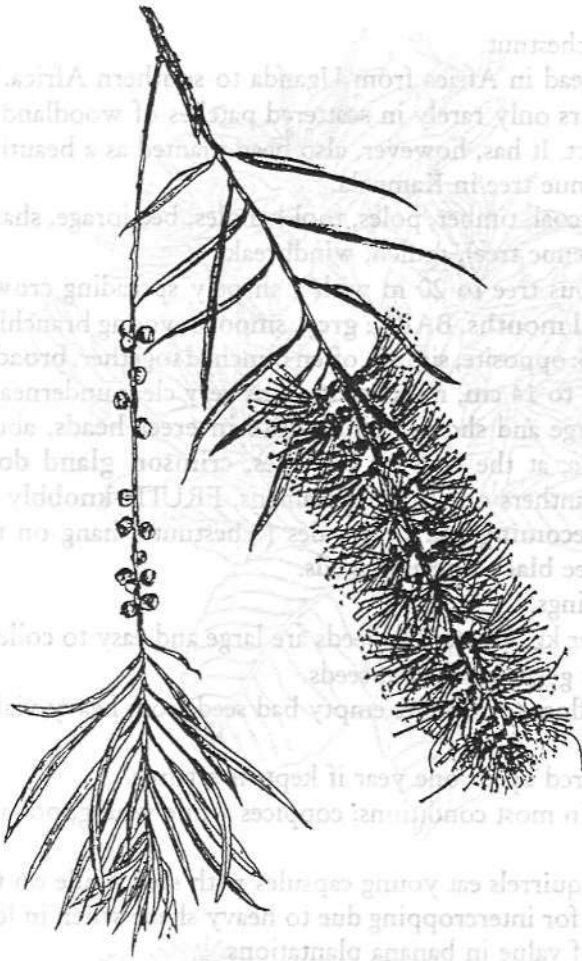
Seed: No. of seeds per kg: about 44,000. Seed germination is uniform (two weeks),

treatment: not necessary.

storage: seed stores well (six months).

Management: Fast growing on good sites.

Remarks: Commonly planted as single ornamental trees in gardens. Another Callistemon variety has erect flowers, not drooping; otherwise they are similar. The bark is commonly used as cough medicine wherever it is planted in Uganda, its removal often damaging the tree.



Calodendrum capense

Rutaceae

Indigenous

Trade name: Cape chestnut.

Common names: English: Cape chestnut.

Ecology: A tree widespread in Africa from Uganda to southern Africa. In Uganda it occurs only rarely in scattered patches of woodland in Mbarara District. It has, however, also been planted as a beautiful garden and avenue tree in Kampala.

Uses: Firewood, charcoal, timber, poles, tool handles, bee forage, shade, ornamental (avenue tree), mulch, windbreak.

Description: A semi-deciduous tree to 20 m with a shapely spreading crown, **bare for several months. BARK: grey, smooth**, young branchlets hairy. **LEAVES:** opposite, simple, often bunched together, **broadly oval and wavy to 14 cm**, midrib and veins very clear underneath. **FLOWERS:** large and showy, **pink-white in erect heads**, abundant but erratic, at the ends of branches, **crimson gland dots**, purple-brown anthers on the long stamens. **FRUIT: knobbly to softly spiny becoming hard**, capsules ("chestnut") hang on the tree then set free **black angular seeds**.

Propagation: Seedlings, wildings.

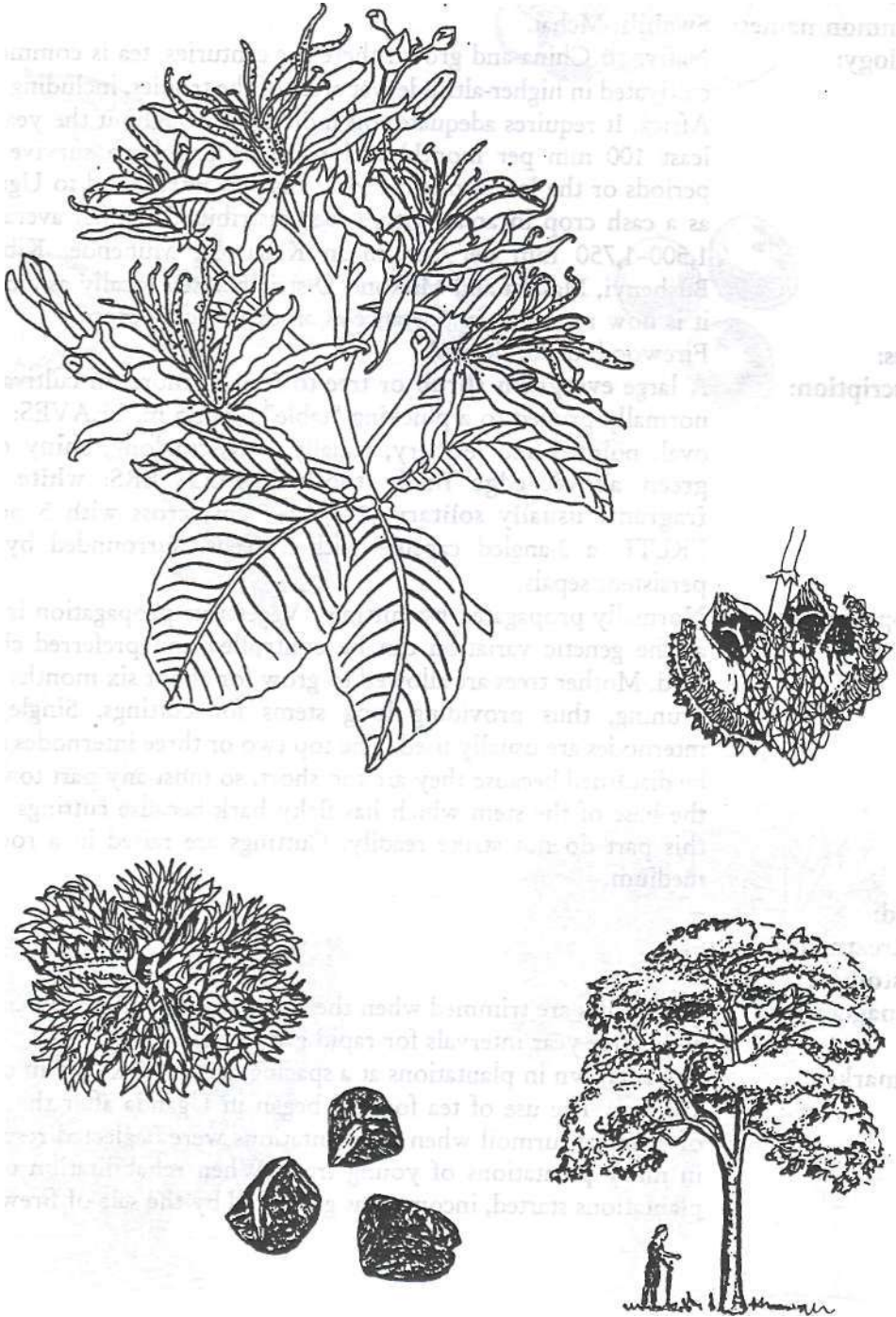
Seed: No. of seeds per kg: about 900. Seeds are large and easy to collect. Germination is good with fresh seeds.

treatment: not necessary; float to separate empty bad seed from heavy viable seed.

storage: seed can be stored up to one year if kept insect free.

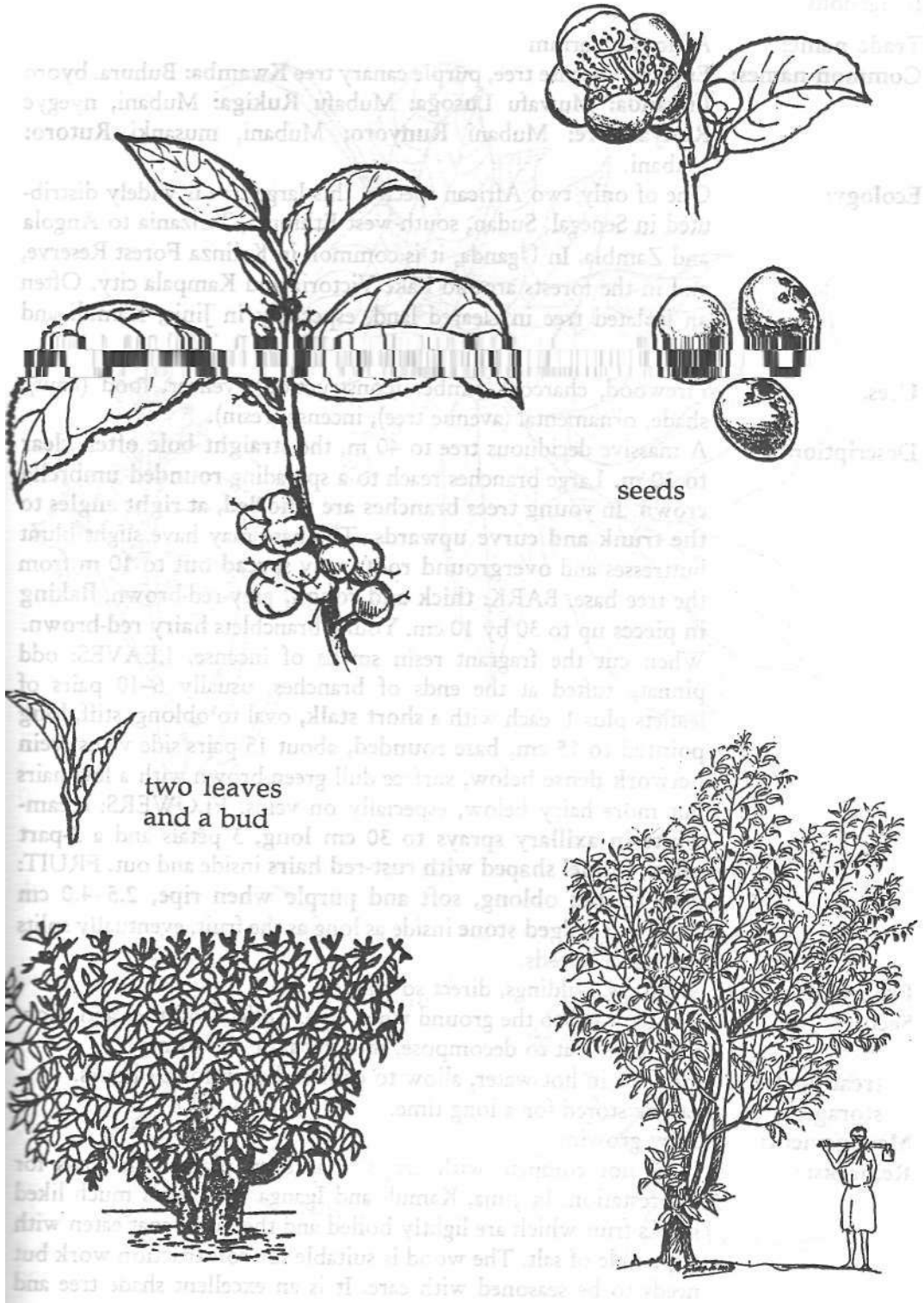
Management: Slow growing in most conditions; coppices while young, pollarding.

Remarks: Monkeys and squirrels eat young capsules with seed while on the tree. Not good for intercropping due to heavy shade when in leaf, but might be of value in banana plantations.



China

- Trade name:** Tea.
- Common names:** **Swahili:** Mchai.
- Ecology:** Native to China and grown there for centuries, tea is commonly cultivated in higher-altitude wet areas of the tropics, including East Africa. It requires adequate soil moisture throughout the year (at least 100 mm per month) and needs irrigation to survive dry periods or the leaves may be lost. Tea was introduced to Uganda as a cash crop in areas with a well-distributed rainfall averaging 1,500-1,750 mm per annum in Kabarole, Mubende, Kiboga, Bushenyi, Masaka and Mukono Districts. Used locally as a drink it is now resuming importance as an export cash crop.
- Uses:** Firewood, drink (leaves).
- Description:** A large **evergreen shrub** or tree to 5 m or more. In cultivation normally pruned to a plucking "table" 0.5-1.5 m. **LEAVES:** long oval, pointed and leathery, usually 5-10 cm long, **shiny dark green above, edge finely toothed**. **FLOWERS:** **white and fragrant, usually solitary** (2-4), 2-4 cm across with 5 petals. **FRUIT:** a 3-angled capsule with 3 seeds, surrounded by the persistent sepals.
- Propagation:** Normally propagated by cuttings. Vegetative propagation is best as the genetic variation can be controlled and preferred clones used. Mother trees are allowed to grow for about six months after pruning, thus providing long stems for cuttings. Single leaf internodes are usually used. The top two or three internodes must be discarded because they are too short, so must any part towards the base of the stem which has flaky bark because cuttings from this part do not strike readily. Cuttings are raised in a rooting medium.
- Seed:**
- treatment:**
- storage:**
- Management:** Tea bushes are trimmed when the leaves are picked. Coppicing at about five-year intervals for rapid growth of leaves.
- Remarks:** Tea is grown in plantations at a spacing about 1.5 x 0.75 m or 1.2 x 0.9 m. The use of tea for fuel began in Uganda after the years of political turmoil when tea plantations were neglected resulting in many plantations of young trees. When rehabilitation of the plantations started, income was generated by the sale of firewood.



seeds

two leaves and a bud

Indigenous

Trade name: African canarium

Common names: **English:** incense tree, purple canary tree **Kwamba:** Buhura, byoro **Luganda:** Muwafu **Lusoga:** Mubafu **Rukiga:** Mubani, nyegye **Runyankore:** Mubani **Runyoro:** Mubani, musanki **Rutoro:** Mubani.

Ecology: One of only two African species, this large tree is widely distributed in Senegal, Sudan, south-west Ethiopia, Tanzania to Angola and Zambia. In Uganda, it is common in Kalinza Forest Reserve, and in the forests around Lake Victoria and Kampala city. Often an isolated tree in cleared land, especially in Jinja, Kamuli and Iganga Districts, rare in Ankole and Kigezi. Rainfall 900-1,400 m.

Uses: Firewood, charcoal, timber (construction), veneer, food (fruit), shade, ornamental (avenue tree), incense (resin).

Description: A massive deciduous tree to 40 m, the **straight bole often clear to 30 m**. Large branches reach to a spreading **rounded umbrella crown**. **In young trees branches are whorled, at right angles to the trunk and curve upwards**. The base may have slight blunt buttresses and **overground roots may spread out to 10 m** from the tree base. **BARK: thick and rough**, grey-red-brown, **flaking in pieces** up to 30 by 10 cm. Young branchlets **hairy red-brown**. When cut the fragrant resin smells of incense. **LEAVES:** odd pinnate tufted at the ends of branches, usually 6-10 pairs of leaflets plus 1, each with a **short stalk**, oval to oblong, stiff, **long pointed to 15 cm, base rounded**, about 15 pairs side veins, **vein network dense below**, surface dull green-brown with a few hairs but more hairy below, especially on veins. **FLOWERS: cream-white in axillary sprays to 30 cm long**, 3 petals and a **3-part calyx, funnel shaped with rust-red hairs** inside and out. **FRUIT: smooth and oblong, soft and purple when ripe, 2.5-4.0 cm long. A 3-ridged stone** inside as long as the fruit, eventually splits to release 3 seeds.

Propagation: Seedlings, wildings, direct sowing on site.

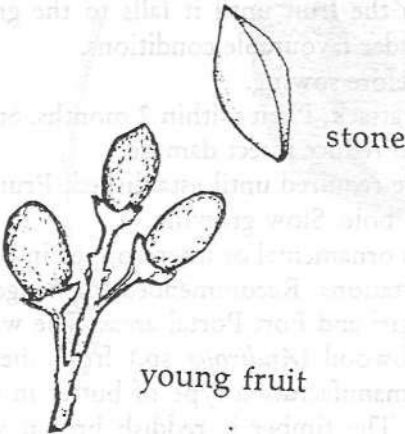
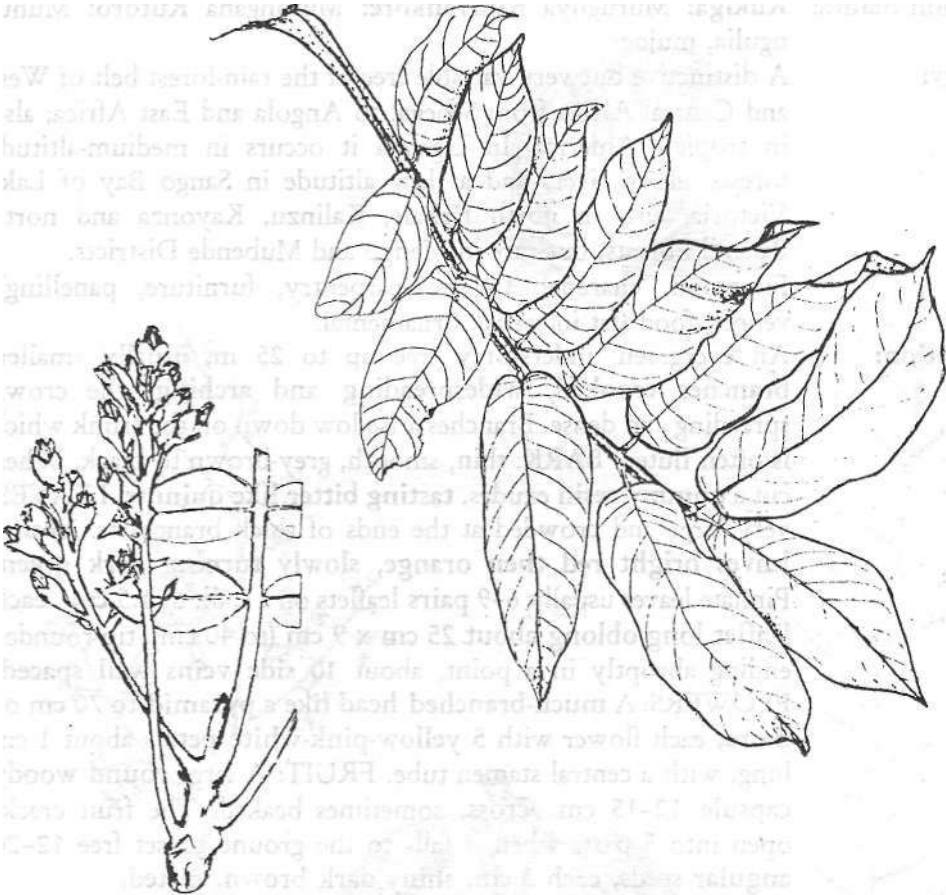
Seed: The fruit fall to the ground when ripe. Collect together and allow the outer coat to decompose, then separate the stones, immerse in hot water, allow to cool and soak for 24 hours, can be stored for a long time.

treatment:

storage:

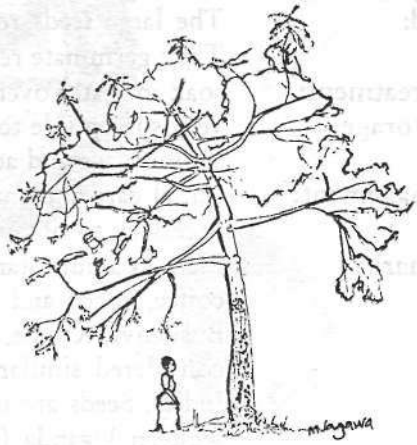
Management: Slow growing.

Remarks: Does not compete with crops. Has been planted in rows for reforestation. In Jinja, Kamuli and Iganga the tree is much liked for its fruit which are lightly boiled and the outer coat eaten with a sprinkle of salt. The wood is suitable for construction work but needs to be seasoned with care. It is an excellent shade tree and the resin is used as an incense.



young fruit

stone



Carapa procera (C. grandiflora)

Meliaceae

Indigenous

Trade name: Crab nut, Uganda crab wood, Uganda crab nut.

Common names: **Rukiga:** Muruguya **Runyankore:** Mutongana **Rutoro:** Muhungulia, mujogo.

Ecology: A distinctive but very variable tree of the rain-forest belt of West and Central Africa from Senegal to Angola and East Africa; also in tropical America. In Uganda it occurs in medium-altitude forests, along rivers and at low altitude in Sango Bay of Lake Victoria; also in north Kabale, Kalinzu, Kayonza and north Bwindi Forests, but rare in Mengo and Mubende Districts.

Uses: Firewood, charcoal, timber (carpentry, furniture, panelling), veneer, food (fat in seeds), ornamental.

Description: An evergreen understorey tree up to 25 m, usually smaller, **branches crooked, widespreading and arching**, the crown spreading and dense. Branches arise low down on the trunk which is often fluted. **BARK:** thin, smooth, grey-brown to black. When cut a **gummy resin** exudes, **tasting bitter like quinine**. **LEAVES:** very large and crowded at the ends of thick branchlets. **Young leaves bright red then orange, slowly turning dark green**. Pinnate leaves usually **6-9 pairs** leaflets on a stalk to **1.5 cm**, **each leaflet long oblong about 25 cm x 9 cm** (to 40 cm), tip rounded ending abruptly in a point, about **10 side veins well spaced**. **FLOWERS:** A **much-branched head like a pyramid to 70 cm or more**, each flower with **5 yellow-pink-white petals** about 1 cm long, with a central stamen tube. **FRUIT:** A large **round woody capsule 12-15 cm across**, sometimes beaked. The fruit cracks open into 5 parts when it falls to the ground to set free **12-20 angular seeds, each 3 cm, shiny dark brown, pitted**.

Propagation: Seedlings (sow seed in pots) and wildings.

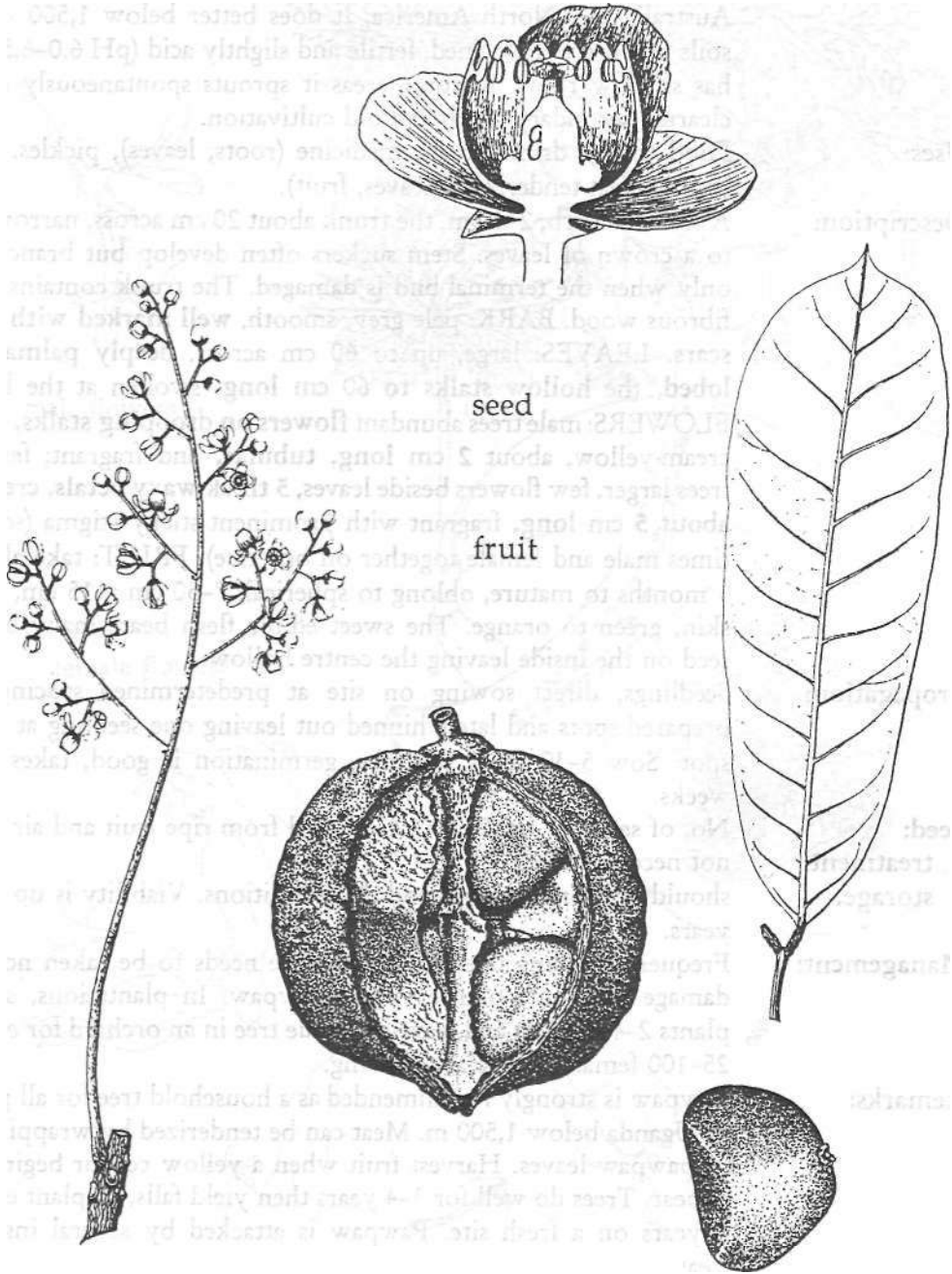
Seed: The large seeds remain in the fruit until it falls to the ground. They germinate readily under favourable conditions,

treatment: soak in water overnight before sowing.

storage: very susceptible to weevil attack. Plant within 2 months. Store in a cool place and add ash to reduce insect damage.

Management: Initial care and shading are required until established. Pruning is necessary to obtain a clear bole. Slow growing.

Remarks: Plant as a pure stand, as an ornamental or intercropped in banana, coffee, cocoa and tea plantations. Recommended for Sango Bay, Bushenyi, Kabale, Rukungiri and Fort Portal areas. The wood is considered similar to crabwood (*Andiroba* sp.) from the West Indies. Seeds are used to manufacture a type of butter in south-western Uganda (Kigezi). The timber is reddish brown **with** a golden lustre. In West Africa the bark is used as a medicine and "crab oil" from the seeds as insecticide and soap.



Tropical America

Common names: **English:** Pawpaw **Luganda:** Papaali **Lusoga:** Mupapaali.

Ecology: A short-lived tree grown throughout the subtropics in Africa, Australia and North America. It does better below 1,500 m in soils that are well drained, fertile and slightly acid (pH 6.0-6.5). It has shallow roots. In some areas it sprouts spontaneously after clearing secondary scrub and old cultivation.

Uses: Food (fruit), drink (fruit), medicine (roots, leaves), pickles, jam (fruit), meat tenderizing (leaves, fruit).

Description: A tree-like herb, 2-10 m, the trunk about 20 cm across, narrowing to a crown of leaves. Stem suckers often develop but branching only when the terminal bud is damaged. The trunk contains soft fibrous wood. **BARK:** pale grey, smooth, **well marked with leaf scars**. **LEAVES:** large, up to 60 cm across, **deeply palmately lobed**, the **hollow stalks to 60 cm long**, swollen at the base. **FLOWERS:** male trees abundant **flowers on drooping stalks**, each cream-yellow, about **2 cm long, tubular**, and fragrant; female trees larger, few flowers beside leaves, **5 thick waxy petals, cream, about 5 cm long**, fragrant with prominent sticky stigma (sometimes male and female together on one tree). **FRUIT:** take about 3 months to mature, oblong to spherical, 7-50 cm x 15 cm, thin skin, green to orange. The sweet edible flesh bears many black seed on the inside leaving the centre hollow.

Propagation: Seedlings, direct sowing on site at predetermined spacing in prepared spots and later thinned out leaving one seedling at each spot. Sow 5-30 seeds together, germination is good, takes 1-4 weeks.

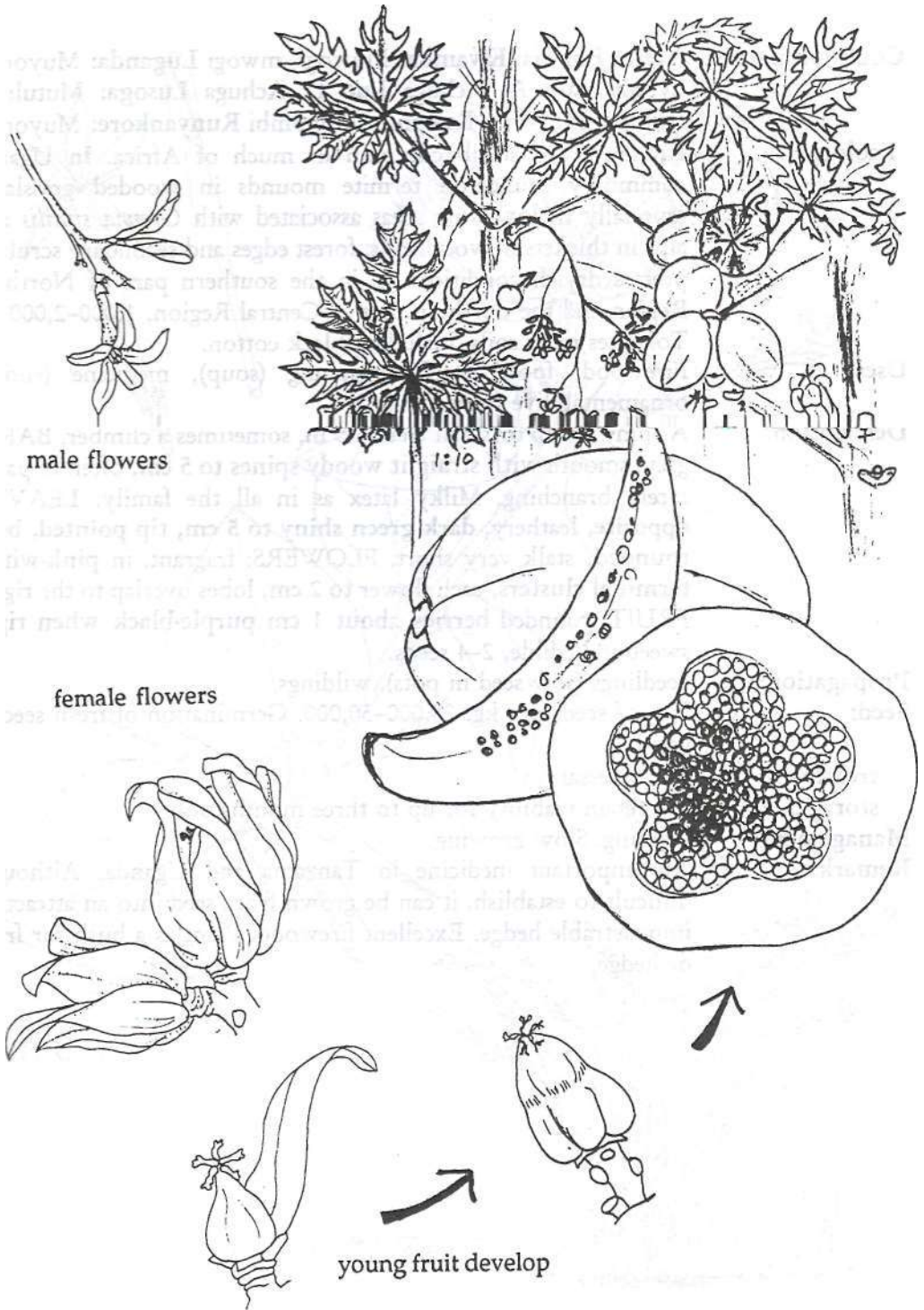
Seed: No. of seed per kg: 20,000. Collected from ripe fruit and air dry.

treatment: not necessary.

storage: should be stored in cool and dry conditions. Viability is up to 3 years.

Management: Frequent weeding is essential and care needs to be taken not to damage the roots of the young pawpaw. In plantations, space plants 2-4 m apart and leave one male tree in an orchard for every 25-100 female trees. Fast growing.

Remarks: Pawpaw is strongly recommended as a household tree for all parts of Uganda below 1,500 m. Meat can be tenderized by wrapping it in pawpaw leaves. Harvest fruit when a yellow colour begins to appear. Trees do well for 3-4 years then yield falls, so plant every 4 years on a fresh site. Pawpaw is attacked by several insects. Leaves used to treat whooping cough.



Indigenous

Common names: **Ateso:** Emuriai **Kwamba:** Muwogi, mwogi **Luganda:** Muyonza, nyonza **Luo A:** Achuga **Luo L:** Achuga **Lusoga:** Mutulituli **Rukiga:** Muyonza **Rukonjo:** Munombi **Runyankore:** Muyonza.

Ecology: An evergreen shrub common in much of Africa. In Uganda commonly found on termite mounds in wooded grassland, especially in low-lying areas associated with *Grewia similis* and also in thickets in woodlands, forest edges and secondary scrub. It prefers dryish conditions as in the southern part of Northern Region and the northern part of Central Region, 1,000-2,000 m. Tolerates most soils, including black cotton.

Uses: Firewood, food (fruit), seasoning (soup), medicine (roots), ornamental, live fence.

Description: A spiny shrub or small tree to 5 m, sometimes a climber. **BARK:** grey, smooth **with straight woody spines to 5 cm**, often in pairs, rarely branching. Milky latex as in all the family. **LEAVES:** **opposite**, leathery, **dark green shiny to 5 cm**, **tip pointed**, **base rounded**, stalk very short. **FLOWERS:** fragrant, in **pink-white terminal clusters**, each flower **to 2 cm**, lobes overlap to the right. **FRUIT:** rounded **berries about 1 cm purple-black when ripe**, sweet and edible, 2-4 seeds.

Propagation: Seedlings (sow seed in pots), wildings.

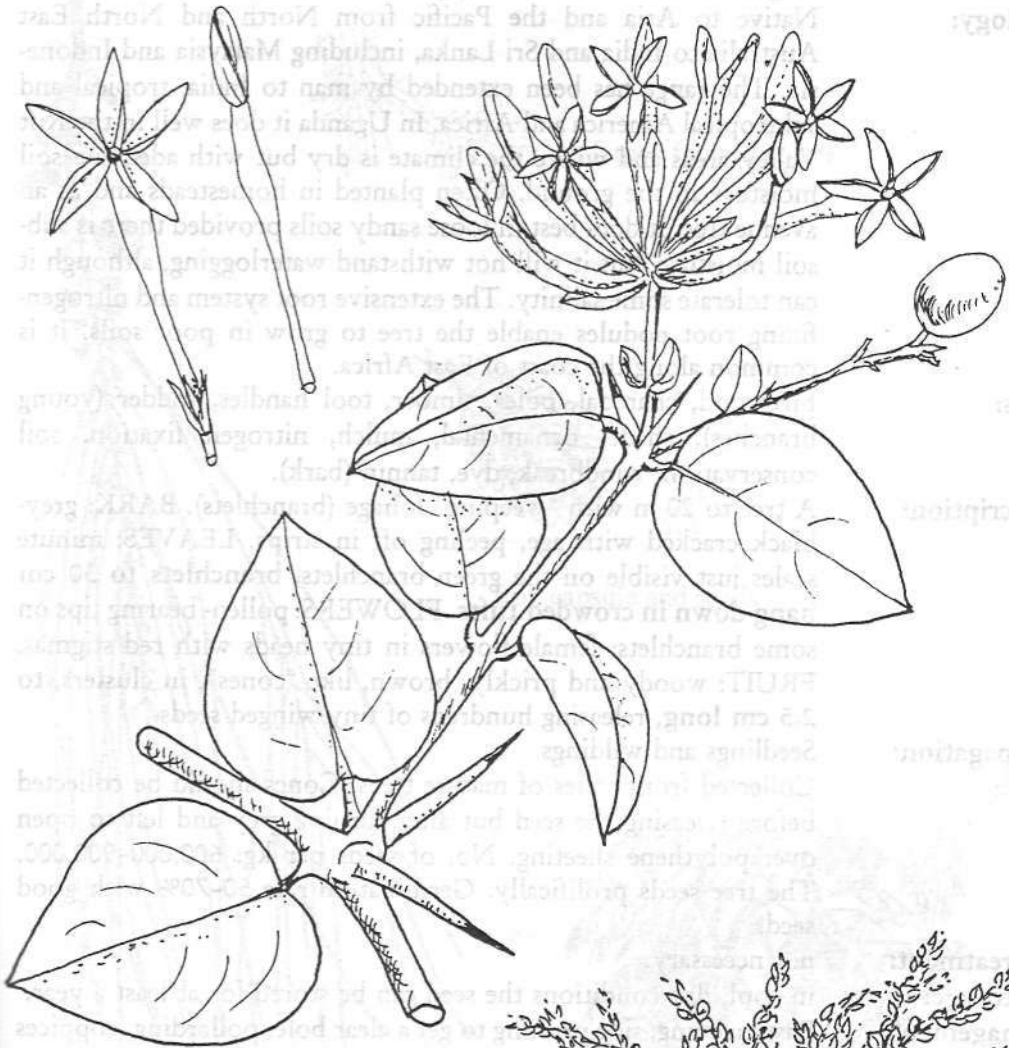
Seed: No. of seeds per kg: 28,000-30,000. Germination of fresh seed is good.

treatment: not necessary.

storage: can retain viability for up to three months only.

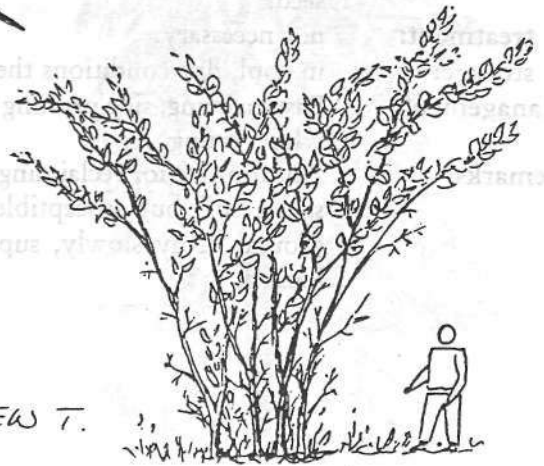
Management: Pruning. Slow growing.

Remarks: An important medicine in Tanzania and Uganda. Although difficult to establish, it can be grown from seed into an attractive impenetrable hedge. Excellent firewood. Plant as a bush for fruit or hedge.



A. Birnie

DAMTEW T.



Casuarina equisetifolia (C. littoralis)

Casuarinaceae

Asia, Pacific Islands

Common names: **English:** Casuarina, whistling pine.

Ecology: Native to Asia and the Pacific from North and North East Australia to India and Sri Lanka, including Malaysia and Indonesia. The range has been extended by man to India, tropical and subtropical America and Africa. In Uganda it does well in the Rift Valley areas and where the climate is dry but with adequate soil moisture in the ground. Often planted in homesteads and as an avenue tree. It does best in loose sandy soils provided there is subsoil moisture, but it will not withstand waterlogging, although it can tolerate some salinity. The extensive root system and nitrogen-fixing root nodules enable the tree to grow in poor soils. It is common along the coast of East Africa.

Uses: Firewood, charcoal, poles, timber, tool handles, fodder (young branches), shade, ornamental, mulch, nitrogen fixation, soil conservation, windbreak, dye, tannin (bark).

Description: A tree to 20 m with "weeping" foliage (branchlets). **BARK:** grey-black cracked with age, peeling off in strips. **LEAVES:** minute scales just visible on the green branchlets, **branchlets to 30 cm hang down in crowded tufts.** **FLOWERS:** pollen-bearing tips on some branchlets; female flowers in tiny heads with red stigmas. **FRUIT:** woody and prickly, brown, like "cones", in clusters, **to 2.5 cm long**, releasing hundreds of tiny winged seeds.

Propagation: Seedlings and wildings.

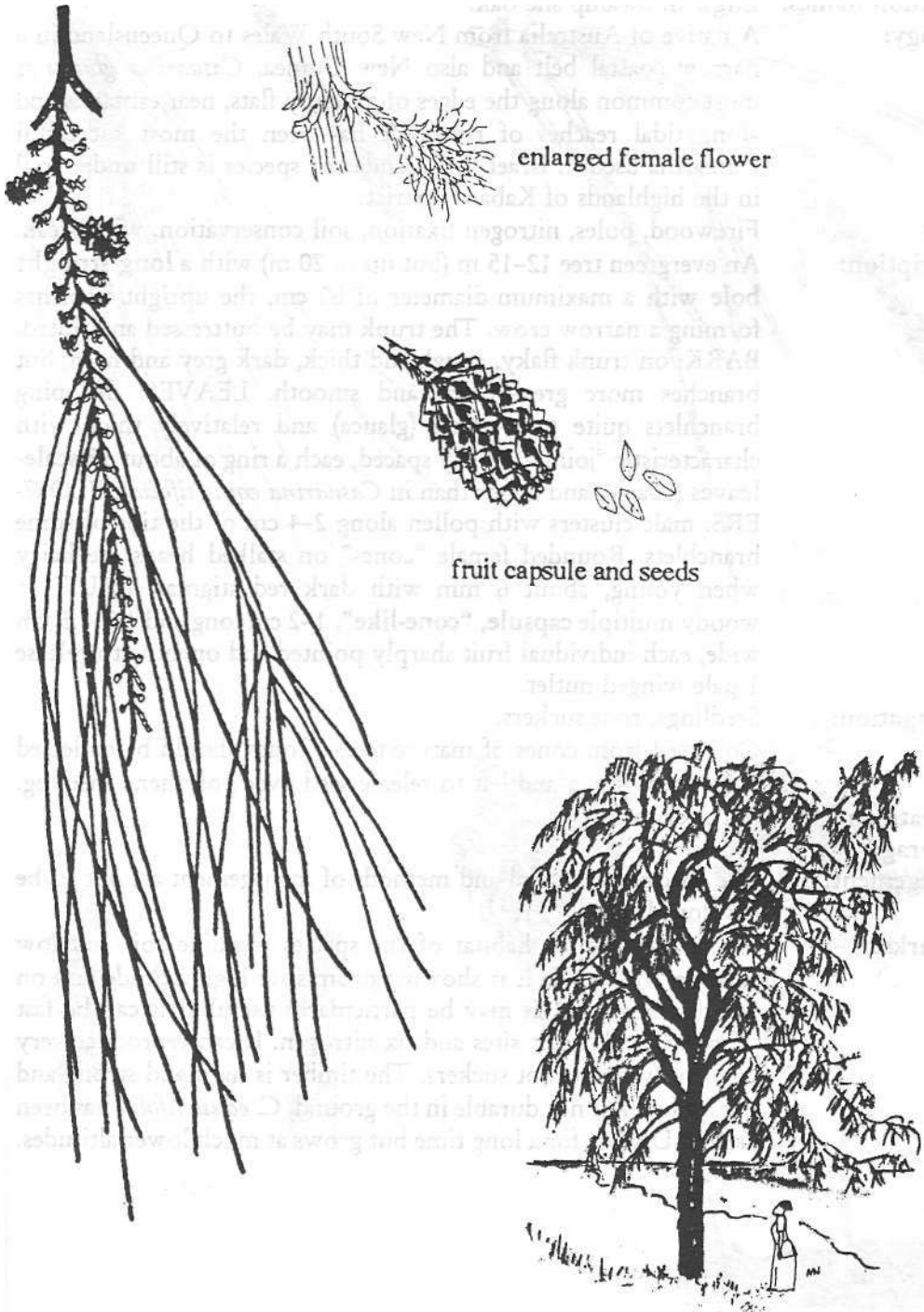
Seed: Collected from cones of mature trees. Cones should be collected before releasing the seed but after turning grey and left to open over polythene sheeting. No. of seeds per kg: 600,000-900,000. The tree seeds prolifically. Germination rate 50-70% with good seed.

treatment: not necessary.

storage: in cool, dry conditions the seed can be stored for at least a year.

Management: Fast growing; side pruning to get a clear bole, pollarding, coppices while young.

Remarks: Appropriate for reclaiming and improving sandy soils. Tolerant of saline soil but susceptible to termites. Dry branchlets on the ground decay slowly, suppress undergrowth and may be a fire hazard.



Australia, New Guinea

Common names: **English:** Swamp she oak.

Ecology: A native of Australia from New South Wales to Queensland in a narrow coastal belt and also New Guinea. *Casuarina glauca* is most common along the edges of swampy flats, near estuaries and along tidal reaches of rivers. It has been the most successful *Casuarina* used in Israel. In Uganda the species is still under trial in the highlands of Kabale District.

Uses: Firewood, poles, nitrogen fixation, soil conservation, windbreak.

Description: An evergreen tree 12-15 m (but up to 20 m) with a **long straight bole** with a maximum diameter of 60 cm, the upright branches forming a narrow crow. The trunk may be buttressed and fluted. **BARK:** on trunk flaky, rough and thick, dark grey and hard, but branches more grey-brown and smooth. **LEAVES:** drooping branchlets quite **grey-green** (glauca) and relatively thick with characteristic "joints" widely spaced, each a ring of about **15 scale-leaves** (coarser and larger than in *Casuarina equisetifolia*). **FLOWERS:** male clusters with pollen along 2-4 cm of the tips of some branchlets. Rounded female "cones" on stalked heads are hairy when young, about 6 mm with dark red stigmas. **FRUIT:** a woody multiple **capsule, "cone-like"**, 1-2 cm long and 10–15 cm wide, each individual fruit sharply pointed and opening to release 1 pale winged nutlet.

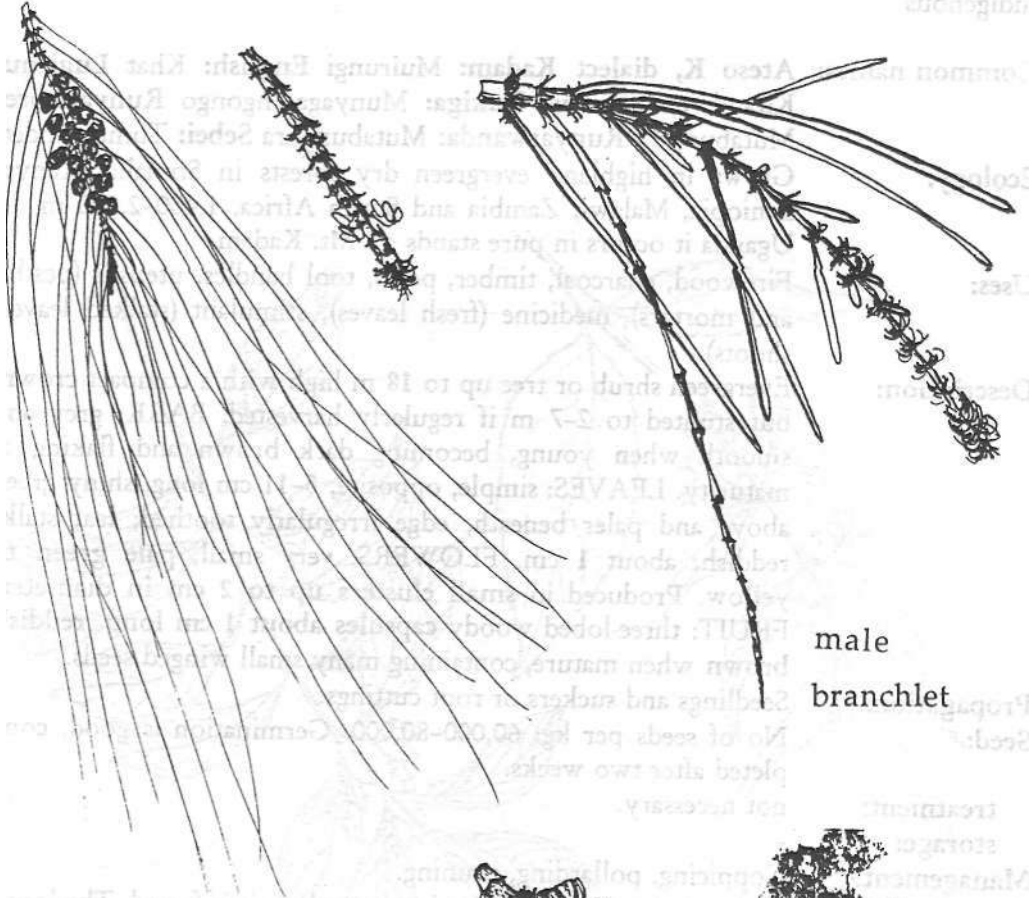
Propagation: Seedlings, root suckers.

Seed: Collected from cones of mature trees. Cones should be collected before they open and left to release seed over polythene sheeting, not necessary.

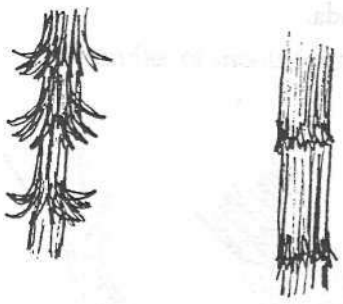
treatment:
storage:

Management: The species is on trial and methods of management are yet to be developed.

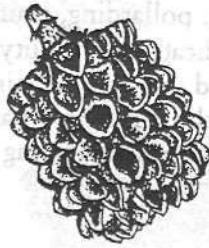
Remarks: While the original habitat of the species is saline soil and low altitude, in Uganda it is showing promise at high altitude and on free-draining soils. It may be particularly useful as it can be fast growing on difficult sites and fix nitrogen. It can reproduce very vigorously from root suckers. The timber is hard and strong and a good fuel but not durable in the ground. *C. equisetifolia* has been used in Uganda for a long time but grows at much lower altitudes.



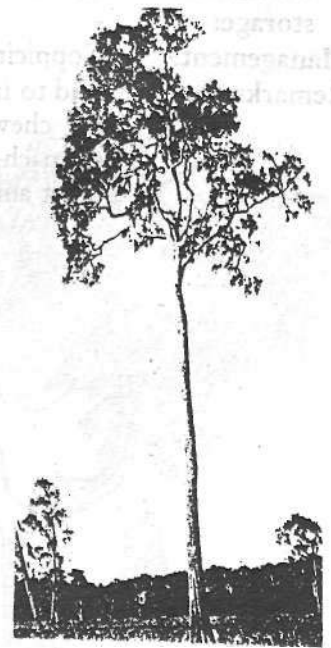
male
branchlet



leaf scales



capsule



Indigenous

Common names: **Ateso K, dialect Kadam:** Muirungi **English:** Khat **Lugishu:** Kitandwe, lutandwe **Rukiga:** Munyaga, ngongo **Runyankore:** Mutabungwa **Runyarwanda:** Mutabungura **Sebei:** Tume-yondet.

Ecology: Grows in highland evergreen dry forests in Somalia, Kenya, Ethiopia, Malawi, Zambia and South Africa, 1,400-2,200 m. In Uganda it occurs in pure stands on Mt. Kadam.

Uses: Firewood, charcoal, timber, poles, tool handles, utensils (pestles and mortars), medicine (fresh leaves), stimulant (stalked leaves, shoots).

Description: Evergreen shrub or tree up to 18 m high with a compact crown, but stunted to 2-7 m if regularly harvested. **BARK:** grey and smooth when young, becoming dark brown and flaking at maturity. **LEAVES:** simple, opposite, 5-11 cm long, shiny green above and paler beneath, edge irregularly toothed; leaf stalks reddish, about 1 cm. **FLOWERS:** very small, **pale green to yellow**. Produced in **small clusters up to 2 cm in diameter**. **FRUIT:** three-lobed woody **capsules about 1 cm long, reddish brown** when mature, containing many small winged seeds.

Propagation: Seedlings and suckers or root cuttings.

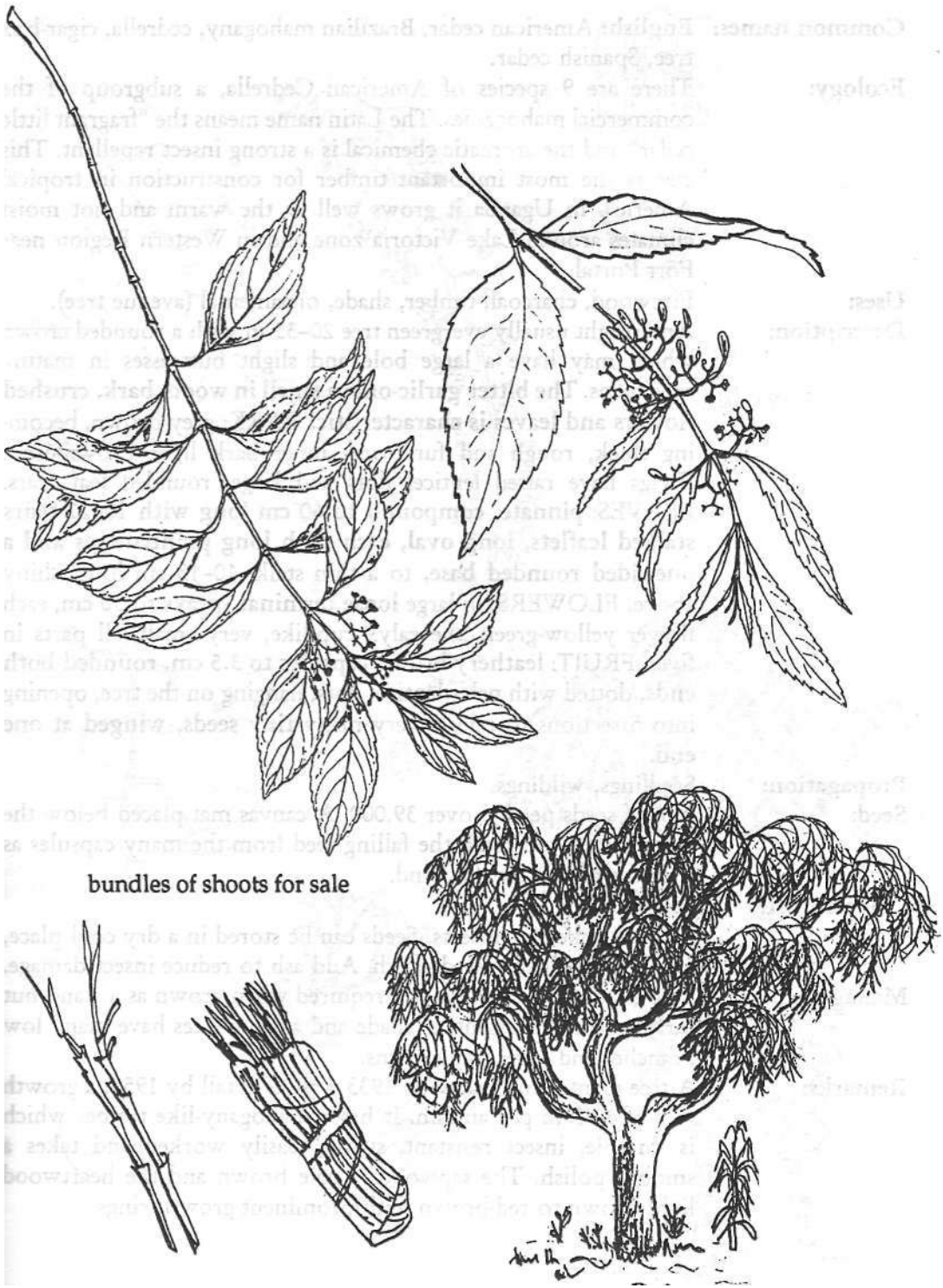
Seed: No of seeds per kg: 60,000-80,000. Germination is good, completed after two weeks,

treatment: not necessary.

storage:

Management: Coppicing, pollarding, pruning.

Remarks: Said to indicate soil fertility in areas where it is found. The leaves are chewed both as a stimulant and to treat asthma, cough, stomach-ache and chest pain. Chewing of leaves is a common habit among Somalis living in Uganda.



bundles of shoots for sale

Cedrella odorata

Meliaceae

South America, West Indies

Common names: **English:** American cedar, Brazilian mahogany, cedrella, cigar-box tree, Spanish cedar.

Ecology: There are 9 species of American Cedrella, a subgroup of the commercial mahoganies. The Latin name means the "fragrant little cedar" and the aromatic chemical is a strong insect repellent. This tree is the most important timber for construction in tropical America. In Uganda it grows well in the warm and hot moist climates around Lake Victoria zone and in Western Region near Fort Portal.

Uses: Firewood, charcoal, timber, shade, ornamental (avenue tree).

Description: An upright usually evergreen tree 20-35 m with a rounded crown which may have a large bole and slight buttresses in mature specimens. **The bitter garlic-onion smell in wood, bark, crushed flowers and leaves is characteristic.** **BARK:** grey-brown, becoming thick, rough and furrowed, inner bark light brown-pink. Twigs have raised lenticel dots and large, rounded leaf scars. **LEAVES:** **pinnate, compound to 60 cm long with 10-22 pairs stalked leaflets, long oval, each with long pointed tips and a one-sided rounded base,** to a thin stalk, 10-15 cm long, shiny above. **FLOWERS:** in large **loose terminal sprays** to 30 cm, each flower yellow-green, the calyx cup-like, very small, all parts in fives. **FRUIT:** **leathery brown capsules to 3.5 cm, rounded both ends,** dotted with paler lenticel dots, hanging on the tree, opening into 5 sections to release very many **tiny seeds, winged at one end.**

Propagation: Seedlings, wildings.

Seed: No. of seeds per kg: over 39,000. A canvas mat placed below the mother tree will catch the falling seed from the many capsules as they are blown by the wind,

treatment: not necessary.

storage: easily attacked by insects. Seeds can be stored in a dry cool place, but better still sow seeds fresh. Add ash to reduce insect damage.

Management: Fast growing. Pruning is not required when grown as a stand but early weeding is essential. Shade and avenue trees have many low branches and spreading crowns.

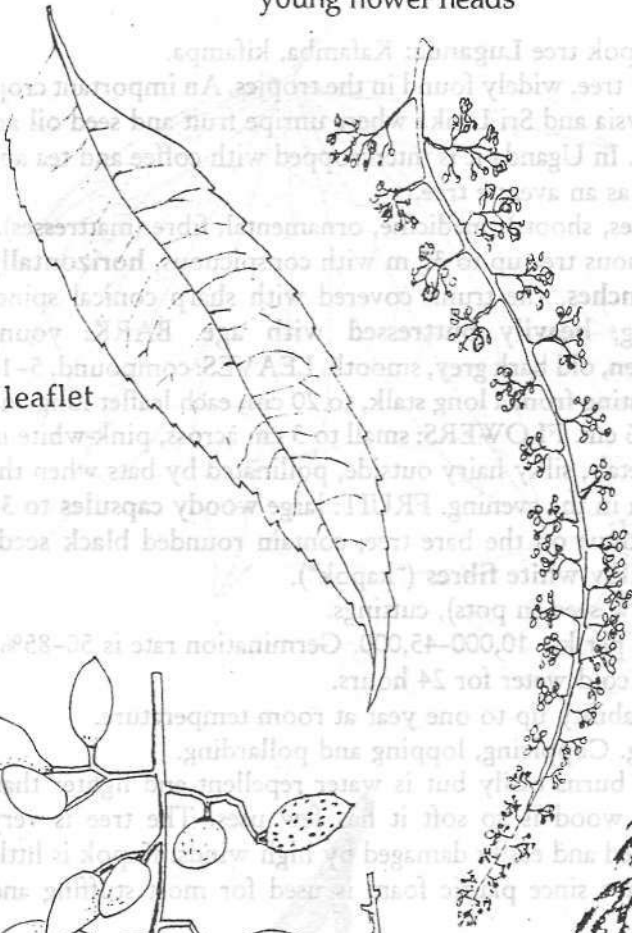
Remarks: A tree planted in Uganda in 1933 was 35 m tall by 1953, a growth rate of 1.75 m per annum: It has a mahogany-like timber which is durable, insect resistant, strong, easily worked and takes a smooth polish. The sapwood is pale brown and the heartwood light brown to red-brown with prominent growth rings.

young flower heads

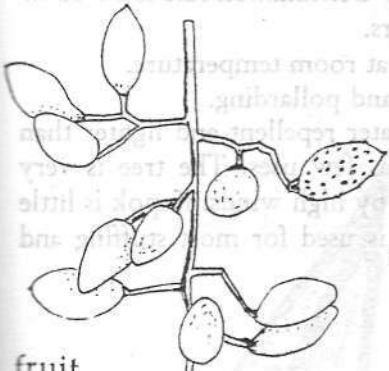


half male flower

much enlarged



leaflet



fruit capsules



seed



Ceiba pentandra

Bombacaceae

South and Central America

Common names: **English:** Kapok tree **Luganda:** Kafamba, kifampa.

Ecology: A distinctive tree, widely found in the tropics. An important crop, e.g. in Malaysia and Sri Lanka where unripe fruit and seed oil are used as food. In Uganda it is intercropped with coffee and tea and also planted as an avenue tree.

Uses: Fodder (leaves, shoots), medicine, ornamental, fibre (mattresses).

Description: A tall deciduous tree up to 30 m with conspicuous, **horizontally layered branches**, the trunk covered with sharp conical spines when young, **heavily buttressed with age**. **BARK:** young branches green, old bark grey, smooth. **LEAVES:** compound, **5-15 leaflets** radiating from a long stalk, to 20 cm, each leaflet long and narrow, 8-16 cm. **FLOWERS:** small to 3 cm across, pink-white in clusters, 5 petals, silky hairy outside, pollinated by bats when the flowers open in the evening. **FRUIT:** large **woody capsules to 30 cm**, conspicuous on the bare tree; contain rounded **black seeds with long silky white fibres** ("kapok").

Propagation: Seedlings (sow seed in pots), cuttings.

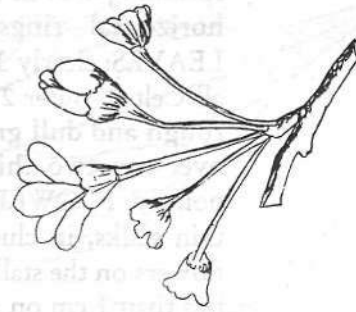
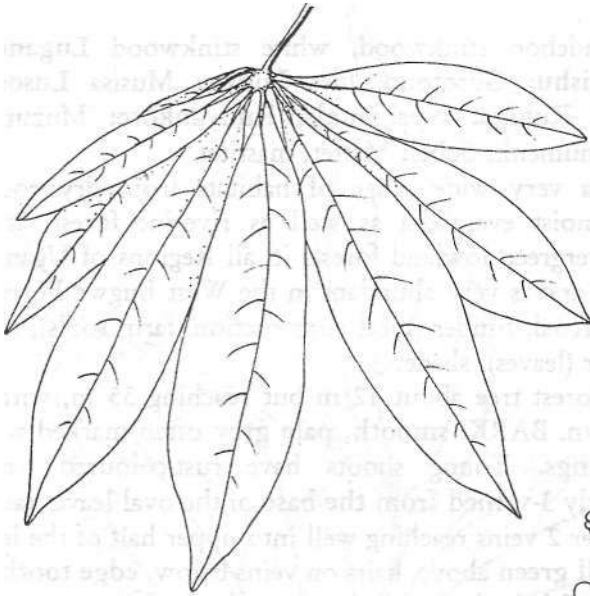
Seed: No. of seeds per kg: 10,000-45,000. Germination rate is 50-85%.

treatment: soak seed in cold water for 24 hours.

storage: can retain viability up to one year at room temperature.

Management: Fast growing. Coppicing, lopping and pollarding.

Remarks: Kapok fibre burns easily but is water repellent and lighter than cotton. The wood is so soft it has few uses. The tree is very shallow rooted and easily damaged by high winds. Kapok is little used nowadays since plastic foam is used for most stuffing and mattresses.



fruit capsule & seed

A. Birnie



Indigenous

Common names: **English:** Camdeboo stinkwood, white stinkwood **Luganda:** Akasinsa **Lugishu:** Gusotono, lusa **Lugwe:** Musisa **Lusoga:** Mukyemogola **Rukiga:** Nyabinunka **Runyankore:** Muzunzu **Rutoro:** Nyamumenka **Sebei:** Mastet, mastitet.

Ecology: A tree with a very wide range of habitats from dry rocky outcrops to moist evergreen as well as riverine forest. It is common in evergreen lowland forests in all Regions of Uganda, 1,300-2,200 m and is very abundant in the West Bugwe Forests.

Uses: Firewood, charcoal, timber (local construction, farm tools), tool handles, fodder (leaves), shade.

Description: A deciduous forest tree about 12 m but reaching 35 m, with a spreading crown. **BARK:** **smooth, pale grey** often marked with **horizontal rings**. Young shoots have rust-coloured hairs. **LEAVES:** clearly **3-veined from the base** of the oval leaves (as in all Celtis), outer 2 veins reaching well into upper half of the leaf, **rough and dull green** above, hairs on veins below, **edge toothed over top two thirds**, base a little unequal, tip drawn out and pointed. **FLOWERS:** sepals but no petals, very small, greenish, on thin stalks, in clusters beside leaves, female flowers above male flowers on the stalk. **FRUIT:** yellow or **orange**, round and **hairy**, less than 1 cm on **stalks about 2 cm** long, hard seeds inside.

Propagation: Seedlings and wildings.

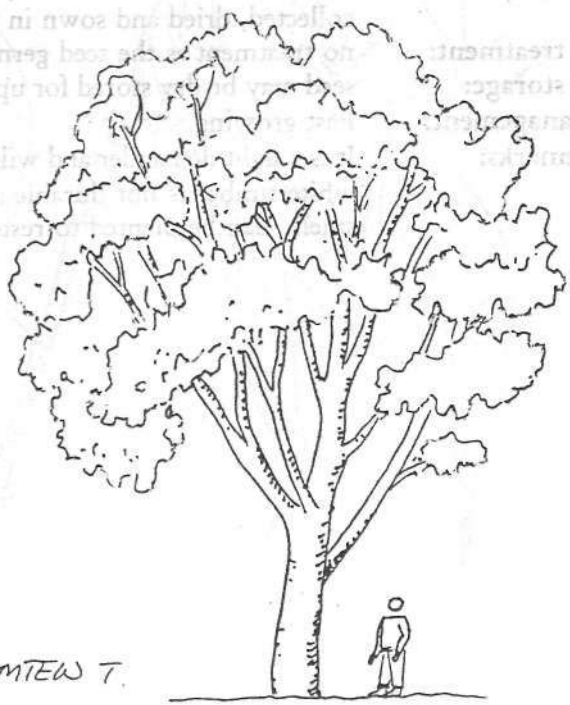
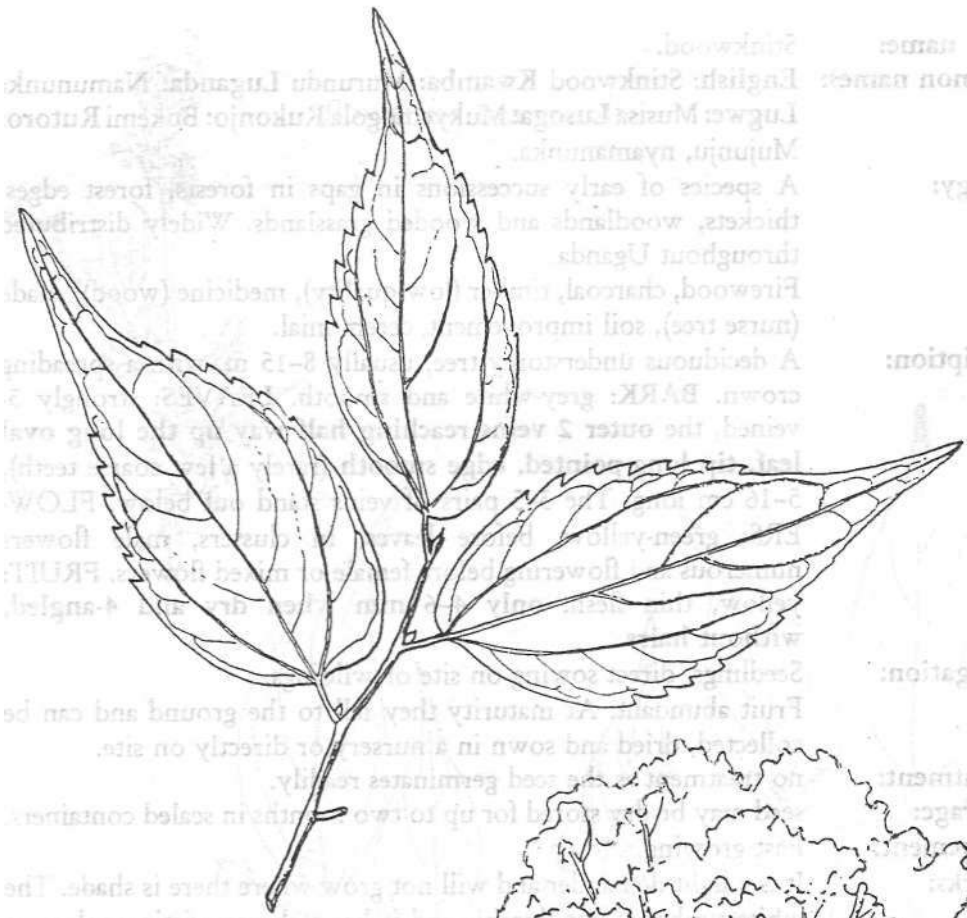
Seed: Fruit are dried in the sun and the seed extracted.

treatment: not necessary.

storage:

Management: Side pruning.

Remarks: The timber rots and splits easily, but it is very strong and with proper seasoning useful for tool handles and building. Leaves are browsed by animals, including cattle, and the leaves and fruits are important in the diet of black and white colobus monkeys. Does not compete with crops since it has a light shade. It is a tree quite suitable for parks and avenues.



DAMTEW T.

Indigenous

Trade name: Stinkwood.

Common names: **English:** Stinkwood **Kwamba:** Murundu **Luganda:** Namununka **Lugwe:** Musisa **Lusoga:** Mukyemogola **Rukonjo:** Bukemi **Rutoro:** Mujunju, nyamanunka.

Ecology: A species of early successions in gaps in forests, forest edges, thickets, woodlands and wooded grasslands. Widely distributed throughout Uganda.

Uses: Firewood, charcoal, timber (low quality), medicine (wood), shade (nurse tree), soil improvement, ceremonial.

Description: A deciduous understorey tree, usually 8-15 m, with a spreading crown. **BARK:** grey-white and smooth. **LEAVES:** strongly 3-veined, the **outer 2 veins reaching half way up the long oval leaf, tip long-pointed, edge smooth** (rarely a few coarse teeth), 5-16 cm long. The 3-5 pairs of veins stand out below. **FLOWERS:** green-yellow, before leaves, in clusters, male flowers numerous and flowering before female or mixed flowers. **FRUIT:** yellow, thin flesh, **only 4-6 mm when dry and 4-angled, without hairs.**

Propagation: Seedlings, direct sowing on site or wildings.

Seed: Fruit abundant. At maturity they fall to the ground and can be collected, dried and sown in a nursery or directly on site,

treatment: no treatment as the seed germinates readily,

storage: seed may be dry stored for up to two months in sealed containers.

Management: Fast growing.

Remarks: It is a light demander and will not grow where there is shade. The white timber is not durable and it has a characteristic unpleasant smell. Can be planted to restore degraded forest.



flowering branchlet



fruiting branchlet

Celtis mildbraedii (C. soyauxii)

Ulmaceae

Indigenous

Trade name: African celtis, celtis.

Common names: **English:** Celtis **Kwamba:** Bohwe **Luganda:** Lufugo **Runyoro:** Mukomakoma.

Ecology: A lowland understorey forest tree found in the Sudan and East Africa extending to its limit in South Africa. Common in Uganda in closed tropical rain forest, including Budongo and Mengo where it is sometimes the dominant trees. Rare in lake-side forest. It is left for shade in banana, coffee and tea plantations.

Uses: Firewood, charcoal, timber, poles, tool handles, shade, ornamental/ avenue.

Description: A semi-deciduous tree, conspicuously straight with a **tall slender trunk**, 30-50 m high with a **small rounded crown**, the branches drooping. The **bole may be clear to 30 m**, the **base having large buttresses, thin and sharp**, 2-3 m around above the ground. **BARK:** thin, pale brown and smooth, scaling into small discs or larger pieces. **LEAVES:** dark shiny green, stiff, wavy, generally oblong, average 6 cm (5-17 cm), 3 basal veins not very clear. When dry **outer 2 veins can be seen to reach half way up the leaf**. The edge is rolled under. The tip comes to a sharp point, **base one-sided, on a short leaf stalk. Coarse rounded teeth in the upper half only**, 3-7 lateral veins with close net veins in between. **FLOWERS:** small pale green clusters in leaf axils. **FRUIT: oval, red and juicy when ripe, about 1 cm**, tipped by the dried-up stigma, drying black and 2-4 angled.

Propagation: Seedlings, wildings and direct sowing on site.

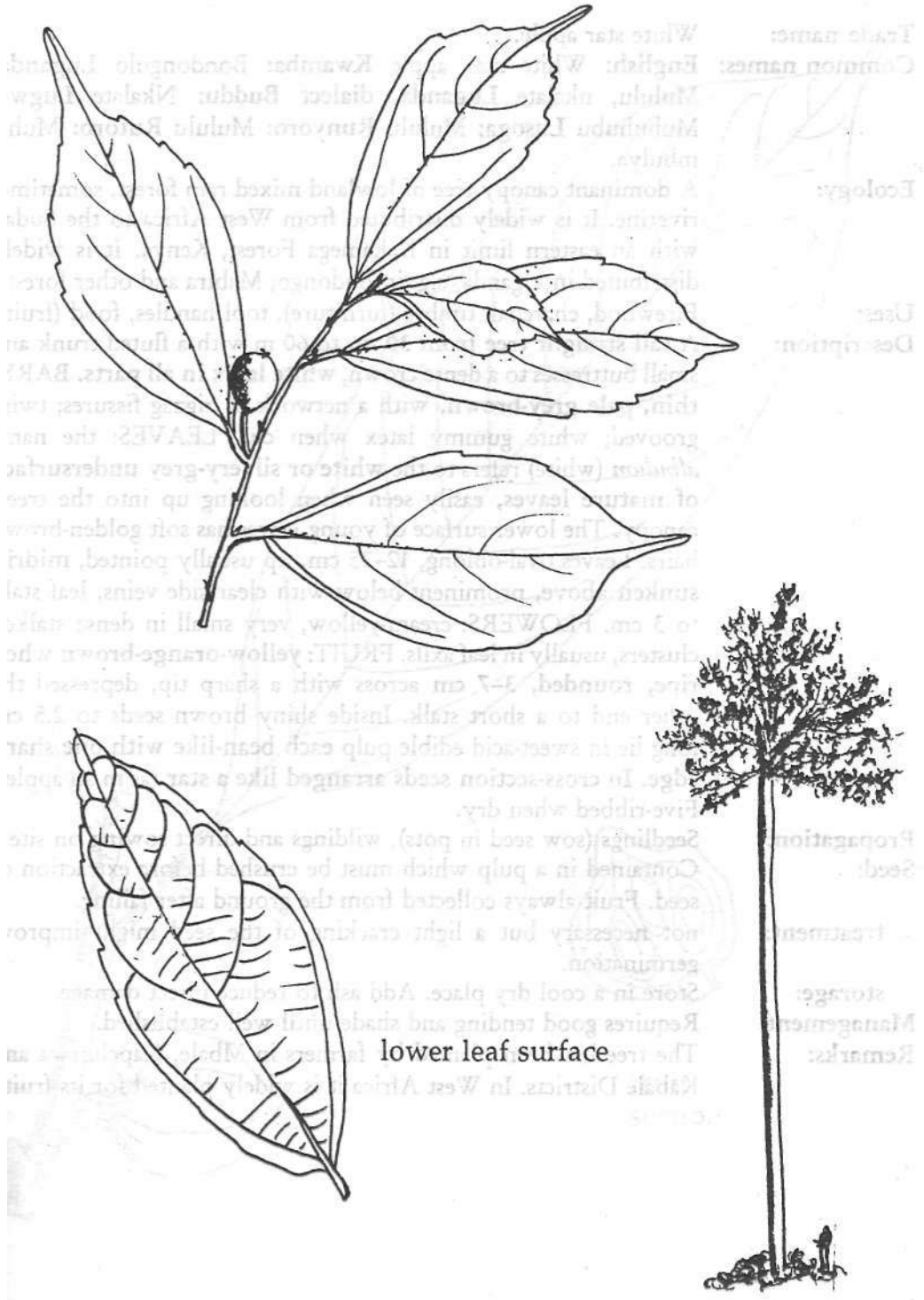
Seed: Collected as fruit after falling on the ground. Usually produced in large quantities in a season,

treatment: not necessary.

storage: Store in an air-tight container in a cool place.

Management: Fast growing; pollarding.

Remarks: The pale-coloured wood is very strong, makes excellent tool handles and firewood but is not durable in the ground. Plant as a plantation, as an avenue or individual trees for shade.



lower leaf surface

Indigenous

Trade name: White star apple.

Common names: **English:** White star apple **Kwamba:** Bondongulo **Luganda:** Mululu, nkalate **Luganda, dialect Buddu:** Nkalate **Lugwe:** Muhuhubu **Lusoga:** Mululu **Runyoro:** Mululu **Rutoro:** Muhambulya.

Ecology: A dominant canopy tree of lowland mixed rain forest, sometimes riverine. It is widely distributed from West Africa to the Sudan with an eastern limit in Kakamega Forest, Kenya. It is widely distributed in Uganda, e.g. in Budongo, Mabira and other forests.

Uses: Firewood, charcoal, timber (furniture), tool handles, food (fruit).

Description: A **tall straight tree from 30 m**, to 60 m with a fluted trunk and small buttresses to a dense crown, **white latex in all parts**. **BARK: thin, pale grey-brown**, with a network of zigzag fissures; twigs grooved; white gummy latex when cut. **LEAVES:** the name *albidum* (white) refers to the **white or silvery-grey undersurface of mature leaves**, easily seen when looking up into the tree's canopy. The lower surface of young leaves has soft golden-brown hairs. Leaves oval-oblong, 12-25 cm, tip usually pointed, **midrib sunken above**, prominent below with clear side veins, leaf stalk to 3 cm. **FLOWERS:** cream-yellow, very small in dense stalked clusters, usually in leaf axils. **FRUIT: yellow-orange-brown when ripe, rounded, 3-7 cm** across with a sharp tip, depressed the other end to a short stalk. Inside shiny brown seeds to 2.5 cm long lie in sweet-acid edible pulp **each bean-like with one sharp edge. In cross-section seeds arranged like a star** (as in an apple). Five-ribbed when dry.

Propagation: Seedlings (sow seed in pots), wildings and direct sowing on site.

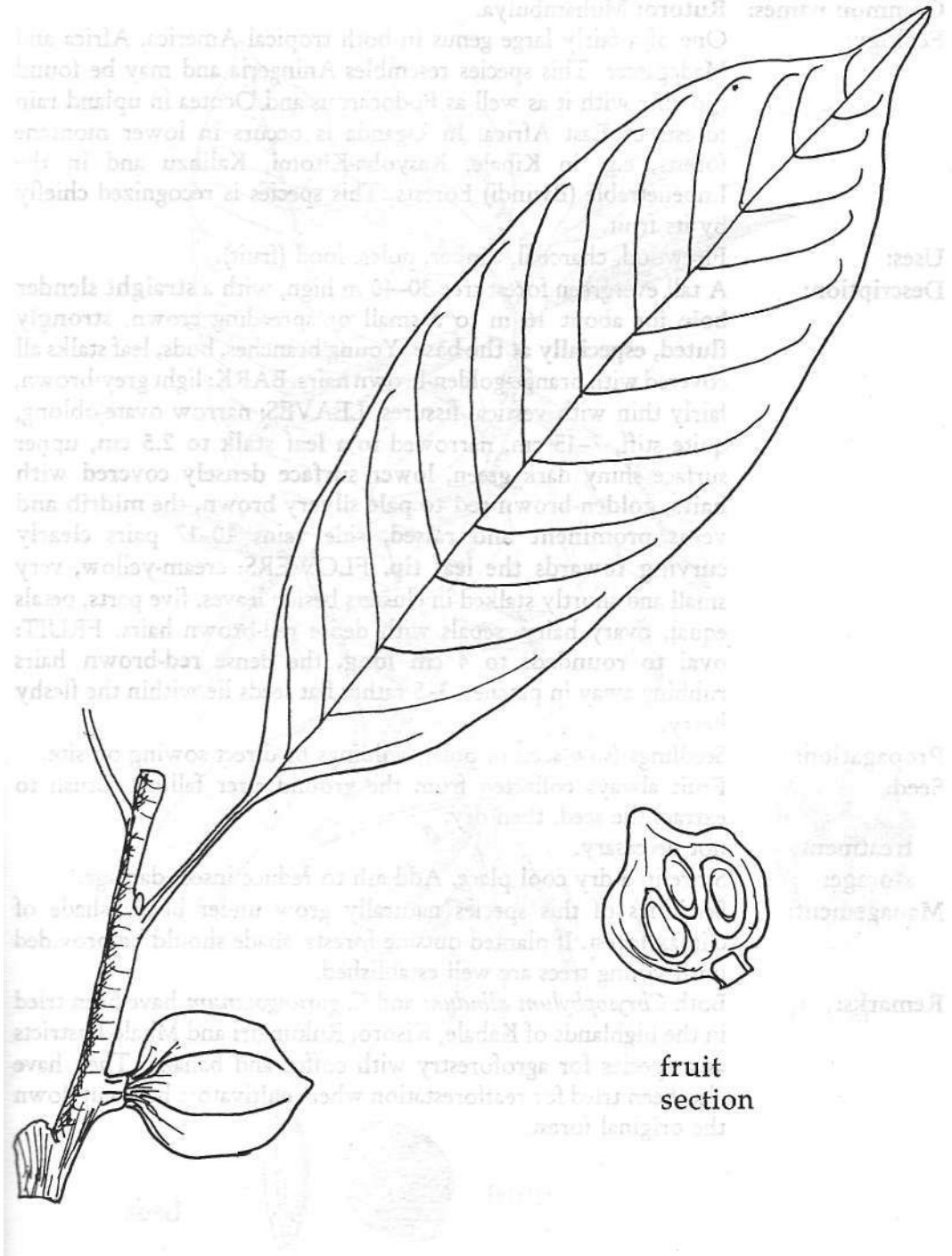
Seed: Contained in a pulp which must be crushed before extraction of seed. Fruit always collected from the ground after falling.

treatment: not necessary but a light cracking of the seed might improve germination.

storage: Store in a cool dry place. Add ash to reduce insect damage.

Management: Requires good tending and shade until well established.

Remarks: The tree has been planted by farmers in Mbale, Kapchorwa and Kabale Districts. In West Africa it is widely planted for its fruit.



fruit section

Indigenous

Common names: **Rutoro:** Muhambulya.

Ecology: One of a fairly large genus in both tropical America, Africa and Madagascar. This species resembles Aningeria and may be found growing with it as well as Podocarpus and Ocotea in upland rain forests of East Africa. In Uganda it occurs in lower montane forests, e.g. in Kibale, Kasyoha-Kitomi, Kalinzu and in the Impenetrable (Bwindi) Forests. This species is recognized chiefly by its fruit.

Uses: Firewood, charcoal, timber, poles, food (fruit).

Description: A tall evergreen forest tree 30-40 m high, with a **straight slender bole** for about 16 m to a small or spreading crown, **strongly fluted, especially at the base**. Young branches, buds, leaf stalks all covered with orange-golden-brown hairs. **BARK:** light grey-brown, fairly thin with vertical fissures. **LEAVES:** narrow ovate-oblong, quite stiff, 7-15 cm, narrowed to a **leaf stalk to 2.5 cm**, upper surface shiny dark green, **lower surface densely covered with hairs, golden-brown-red to pale silvery brown, the midrib and veins prominent and raised**, side veins 10-17 pairs **clearly curving towards the leaf tip**. **FLOWERS:** cream-yellow, very small and shortly stalked in clusters beside leaves, five parts, petals equal, ovary hairy, sepals with dense red-brown hairs. **FRUIT:** **oval to rounded, to 4 cm long**, the dense **red-brown** hairs rubbing away in patches, 3-5 rather flat seeds lie within the fleshy berry.

Propagation: Seedlings (sow seed in pots), wildings or direct sowing on site.

Seed: Fruit always collected from the ground after falling. Crush to extract the seed, then dry.

treatment: not necessary.

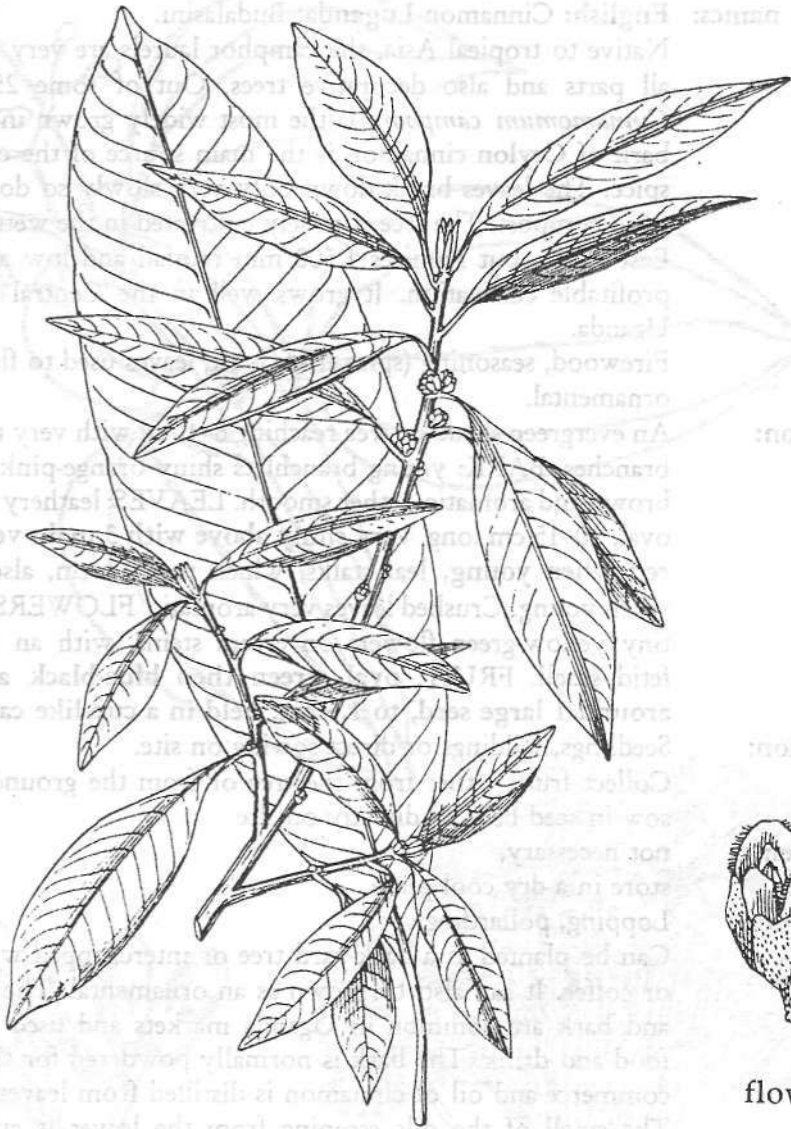
storage: Store in a dry cool place. Add ash to reduce insect damage.

Management: Seedlings of this species naturally grow under heavy shade of climax forest. If planted outside forests, shade should be provided until young trees are well established.

Remarks: Both *Chrysophyllum albidum* and *C. gorungosanum* have been tried in the highlands of Kabale, Kisoro, Rukungiri and Mbale Districts as a species for agroforestry with coffee and banana. They have also been tried for reforestation where cultivators have cut down the original forest.

Chrysophyllum gorungosanum

Sapotaceae



flower



seed



fruit

Cinnamomum zeylanicum

Lauraceae

Ceylon, India

Trade name: Cinnamon, Ceylon cinnamon.

Common names: **English:** Cinnamon **Luganda:** Budalasinii.

Ecology: Native to tropical Asia, the camphor laurels are very fragrant in all parts and also decorative trees. Out of some 250 species, *Cinnamomum camphora* is the most widely grown in Asia. The bark of Ceylon cinnamon is the main source of the commercial spice. The leaves break down only very slowly so do not make good compost. The tree is widely cultivated in the wetter parts of East Africa but requires 1,500 mm rainfall and low altitude for profitable cultivation. It grows well in the Central Region of Uganda.

Uses: Firewood, seasoning (spice from bark, leaves used to flavour tea), ornamental.

Description: An evergreen shrub or tree reaching 6-10 m with very many leafy branches. **BARK:** young branchlets shiny orange-pink becoming brown and aromatic, rather smooth. **LEAVES:** leathery and wavy, oval, 10-15 cm long, **very shiny above with 3 main veins, pink-red when young**, leaf stalks, which reach 3 cm, also pink-red when young. Crushed leaves very aromatic. **FLOWERS:** sprays of tiny yellow-green flowers on cream stems, with an unpleasant fetid smell. **FRUIT: oval, green then blue-black and fleshy around 1 large seed, to 1.5 cm, held in a cup-like calyx.**

Propagation: Seedlings, wildings or direct sowing on site.

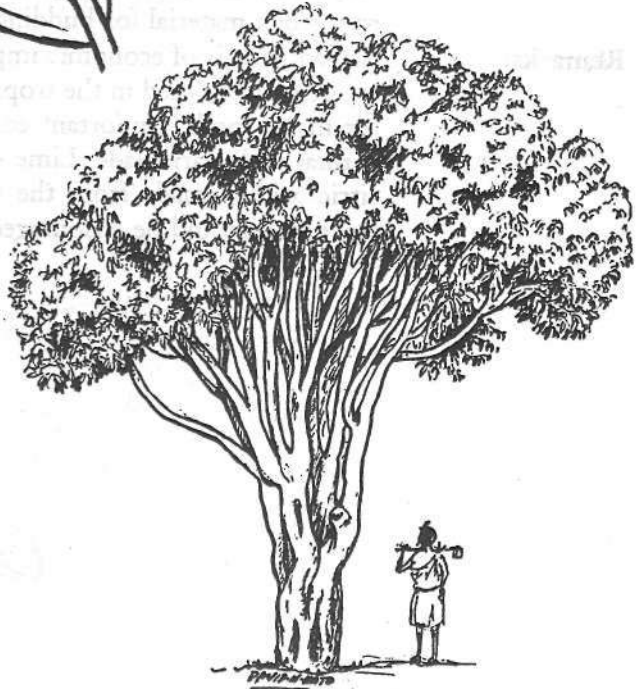
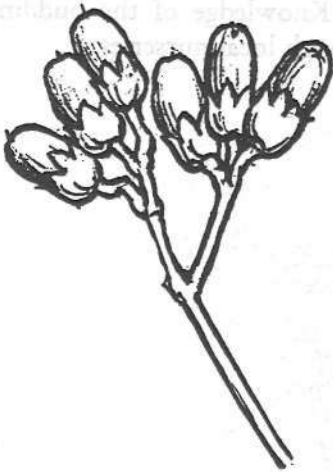
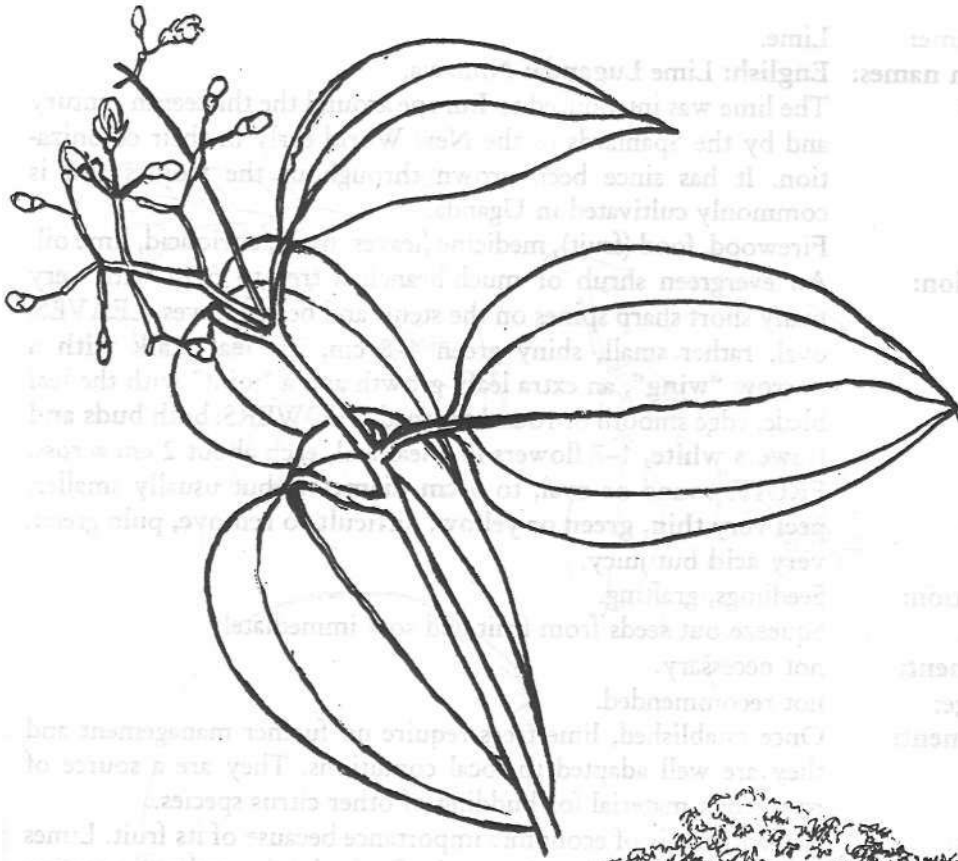
Seed: Collect fruits either from the tree or from the ground, dry and sow in seed beds or directly on site,

treatment: not necessary,

storage: store in a dry cool place.

Management: Lopping, pollarding.

Remarks: Can be planted as a back-yard tree or intercropped with banana or coffee. It can also be grown as an ornamental. The dry leaves and bark are common in Uganda markets and used to flavour food and drink. The bark is normally powdered for the spice of commerce and oil of cinnamon is distilled from leaves and bark. The smell of the oils escaping from the leaves is attractive to butterflies. Camphor woods in general are pale, light and insect repellent so favoured for use in clothes' chests.



Citrus aurantifolia

Rutaceae

Indonesia, India — naturalized

Trade name: Lime.

Common names: **English:** Lime **Luganda:** Nimawa.

Ecology: The lime was introduced to Europe around the thirteenth century and by the Spaniards to the New World early in their colonization. It has since been grown throughout the tropics and is commonly cultivated in Uganda.

Uses: Firewood, food (fruit), medicine (leaves, fruit), citric acid, lime oil.

Description: An evergreen shrub or much-branched tree to 5 m with very many short sharp spines on the stems and beside leaves. **LEAVES:** oval, rather small, shiny green 4-8 cm, the **leaf stalk with a narrow "wing"**, an extra leafy growth and a "joint" with the leaf blade, edge smooth or round-toothed. **FLOWERS:** both **buds and flowers white**, 1-7 flowers in a leaf axil, each about 2 cm across. **FRUIT:** round or oval, to **6 cm diameter**, but usually smaller, **peel very thin, green or yellow, difficult to remove**, pulp green, very **acid** but juicy.

Propagation: Seedlings, grafting.

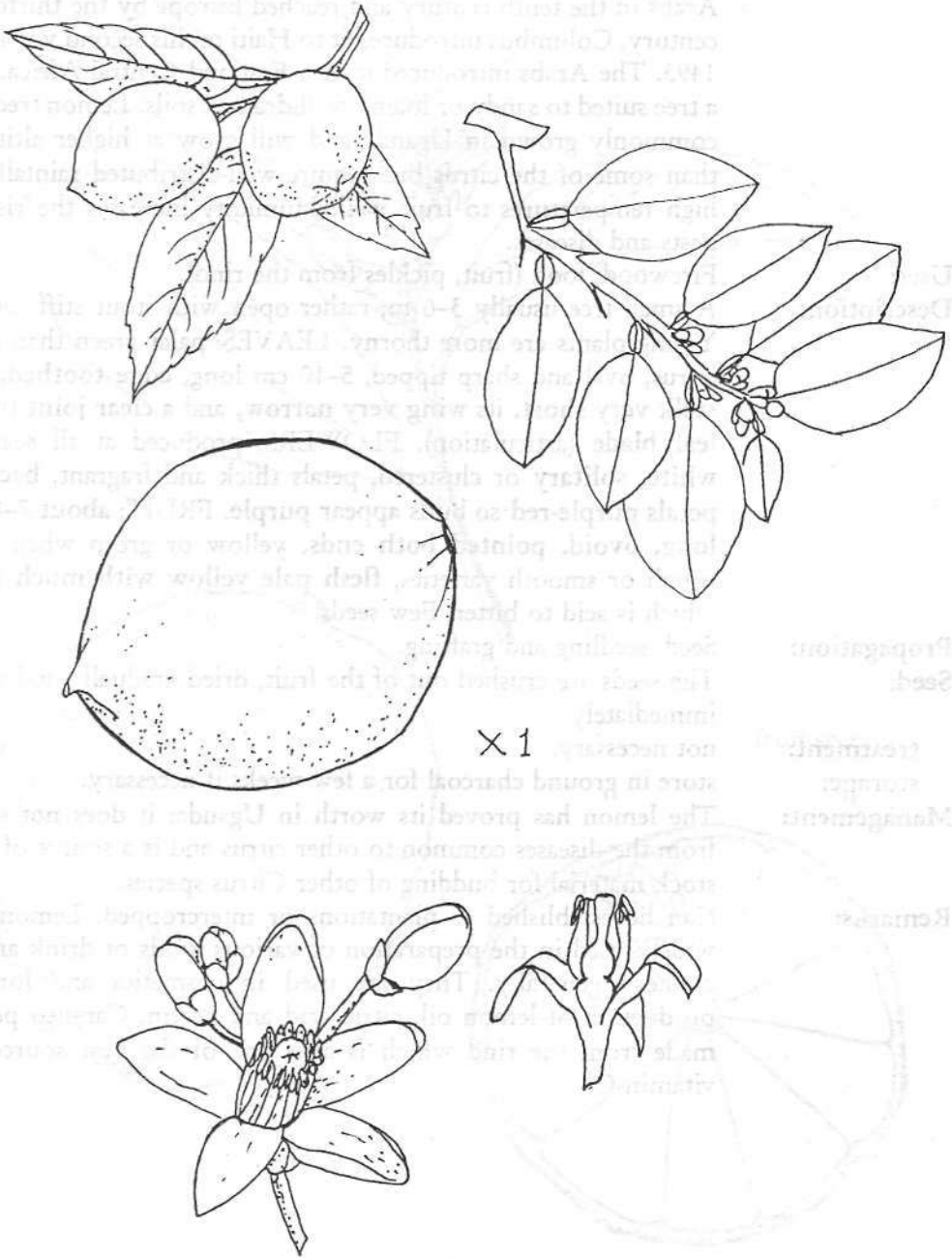
Seed: Squeeze out seeds from fruit and sow immediately,

treatment: not necessary,

storage: not recommended.

Management: Once established, lime trees require no further management and they are well adapted to local conditions. They are a source of root stock material for budding of other citrus species.

Remarks: A plant that is of economic importance because of its fruit. Limes are extensively used in the tropics for fresh juice and as flavouring for many foods. Important commercial products are lime juice, cordial and marmalade. Lime oil is prepared from the peel and citric acid is made from the fruit. Knowledge of the budding technique should be encouraged through local nurseries.



Citrus limon

Rutaceae

S.E. Asia

Trade name: Lemon.

Common names: **English:** Lemon **Luganda:** Nimawa, nnimu.

Ecology: The lemon originated in south-eastern Asia. It was known to the Arabs in the tenth century and reached Europe by the thirteenth century. Columbus introduced it to Haiti on his second voyage in 1493. The Arabs introduced it into East and Central Africa. It is a tree suited to sandy or loamy well-drained soils. Lemon trees are commonly grown in Uganda and will grow at higher altitudes than some of the citrus but require well-distributed rainfall and high temperatures to fruit well. Humidity increases the risk of pests and diseases.

Uses: Firewood, food (fruit, pickles from the rind).

Description: A small tree usually 3-6 m, rather open with stout stiff thorns. Young plants are more thorny. **LEAVES:** paler green than most citrus, oval and sharp tipped, 5-10 cm long, **edge toothed, leaf stalk very short, its wing very narrow, and a clear joint to the leaf blade** (articulation). **FLOWERS:** produced at all seasons, **white, solitary** or clustered, petals thick and fragrant, **back of petals purple-red so buds appear purple**. **FRUIT:** **about 7-8 cm long, ovoid, pointed both ends**, yellow or green when ripe, rough or smooth varieties, **flesh pale yellow with much juice** which is acid to bitter. Few seeds.

Propagation: Seed, seedling and grafting.

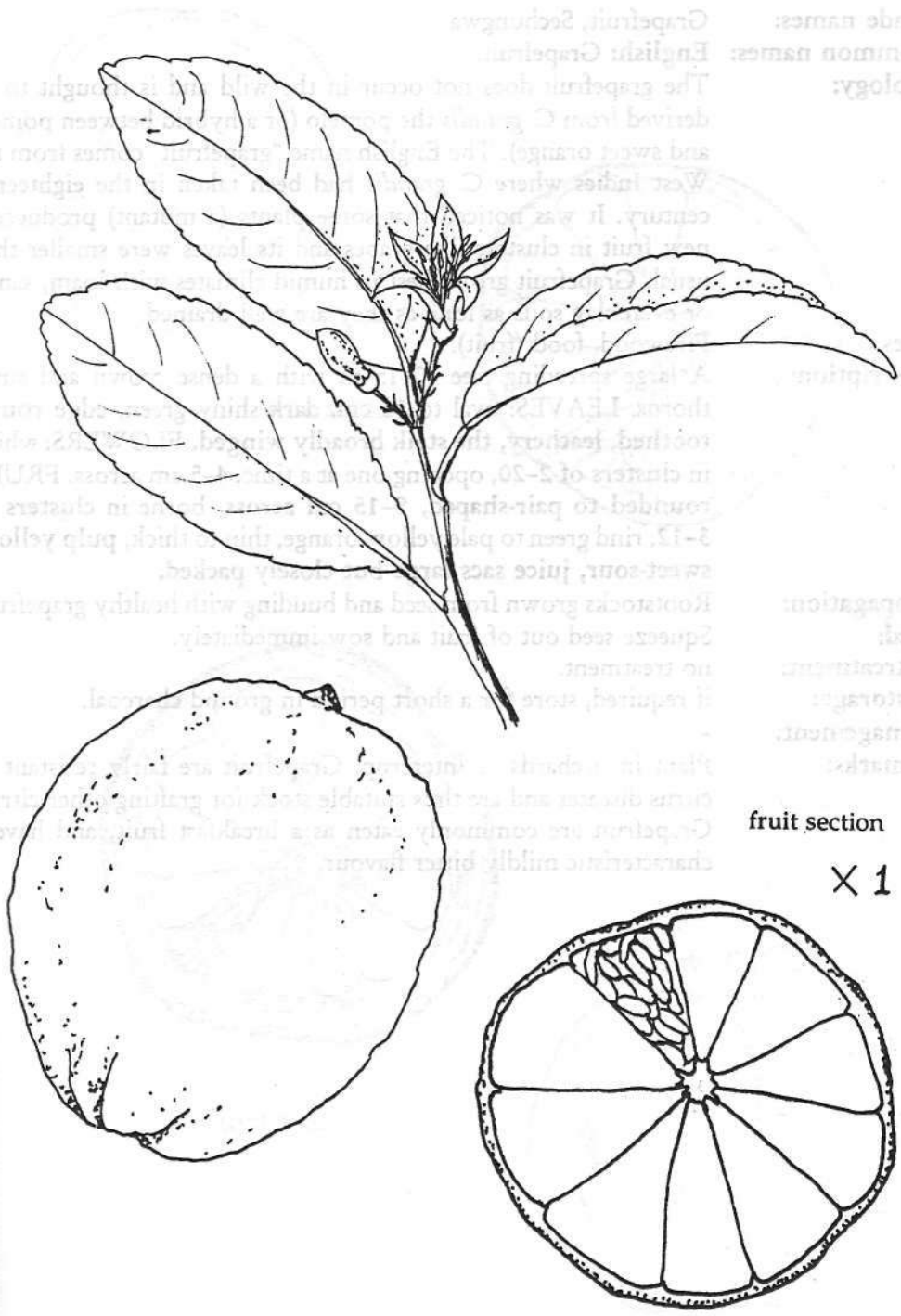
Seed: The seeds are crushed out of the fruit, dried gradually and sown immediately.

treatment: not necessary.

storage: store in ground charcoal for a few weeks if necessary.

Management: The lemon has proved its worth in Uganda: it does not suffer from the diseases common to other citrus and is a source of root stock material for budding of other Citrus species.

Remarks: Can be established as plantations or intercropped. Lemons are widely used in the preparation of various kinds of drink and in cookery generally. They are used in cosmetics and for the production of lemon oil, citric acid and pectin. Candied peel is made from the rind which is also one of the best sources of vitamin C.



fruit section

× 1

West Indies

Trade names: Grapefruit, Sechungwa.

Common names: **English:** Grapefruit.

Ecology: The grapefruit does not occur in the wild and is thought to be derived from *C grandis* the pomelo (or a hybrid between pomelo and sweet orange). The English name "grapefruit" comes from the West Indies where *C grandis* had been taken in the eighteenth century. It was noticed that some plants (a mutant) produced a new fruit in clusters like grapes and its leaves were smaller than usual. Grapefruit grows best in humid climates with loam, sandy or even clay soils as long as they are well drained.

Uses: Firewood, food (fruit).

Description: A large spreading tree 10-15 m with a dense crown and small thorns. **LEAVES:** oval to 18 cm, dark shiny green, **edge round toothed, leathery, the stalk broadly winged.** **FLOWERS:** white, in **clusters** of 2-20, opening one at a time, 4-5 cm across. **FRUIT:** **rounded to pair-shaped, 9-15 cm across**, borne in **clusters of 3-12**, rind green to pale yellow-orange, thin to thick, **pulp yellow, sweet-sour, juice sacs large but closely packed.**

Propagation: Rootstocks grown from seed and budding with healthy grapefruit.

Seed: Squeeze seed out of fruit and sow immediately.

treatment: no treatment.

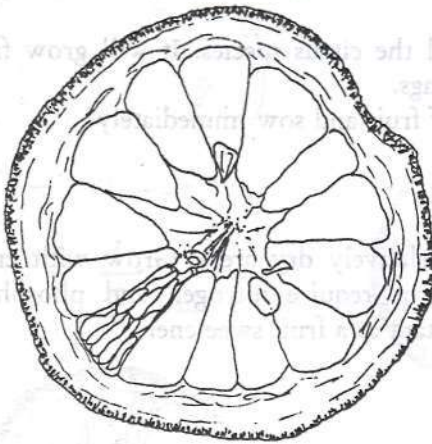
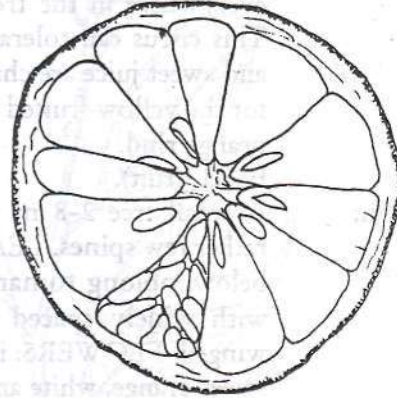
storage: if required, store for a short period in ground charcoal.

Management:

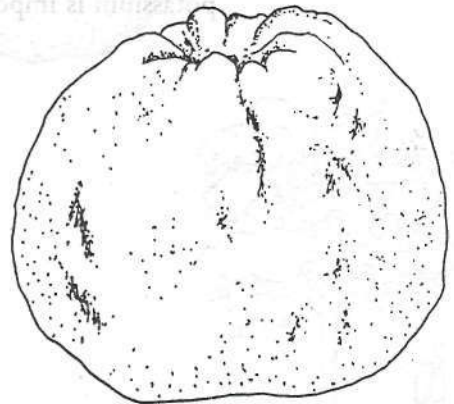
Remarks: Plant in orchards or intercrop. Grapefruit are fairly resistant to citrus diseases and are thus suitable stock for grafting other citrus. Grapefruit are commonly eaten as a breakfast fruit, and have a characteristic mildly bitter flavour.



fruit section



fruit section



Citrus reticulata (C. nobilis)

Rutaceae

China, S.E. Asia

Trade names: Mandarin, tangerine.

Common names: **English:** Mandarin, tangerine, fancy fruit **Luganda:** mangada.

Ecology: This species appears to have originated in China and has long been cultivated in China and Japan. It reached Europe in 1805 and the USA in the middle of the nineteenth century. Now it grows everywhere in the tropics and has been introduced to Uganda. This citrus can tolerate the lowest temperatures. The loose peel and sweet juice are characteristic. The name mandarin is best used for the yellow-fruited cultivars and tangerine for those with a deep orange rind.

Uses: Food (fruit).

Description: A small tree 2-8 m with a dense top of slender branches and rather **few spines**. **LEAVES:** shiny dark green above, yellow-green below, **oblong to narrowly oval to 8 cm long**, the edge usually with **widely spaced rounded teeth**, the stalk very narrowly winged. **FLOWERS:** in leaf axils, about 2 cm across, smaller than sweet orange, white and single. **FRUIT:** typically yellow to bright red-orange when ripe but some stay green. Fruit are **rounded but flattened, to 8 cm diameter, rind and segments easily separated**, the centre hollow. The orange **juicy pulp around the seeds is very sweet**.

Propagation: The toughest of all the citrus species. It will grow from seeds, seedlings and wildings.

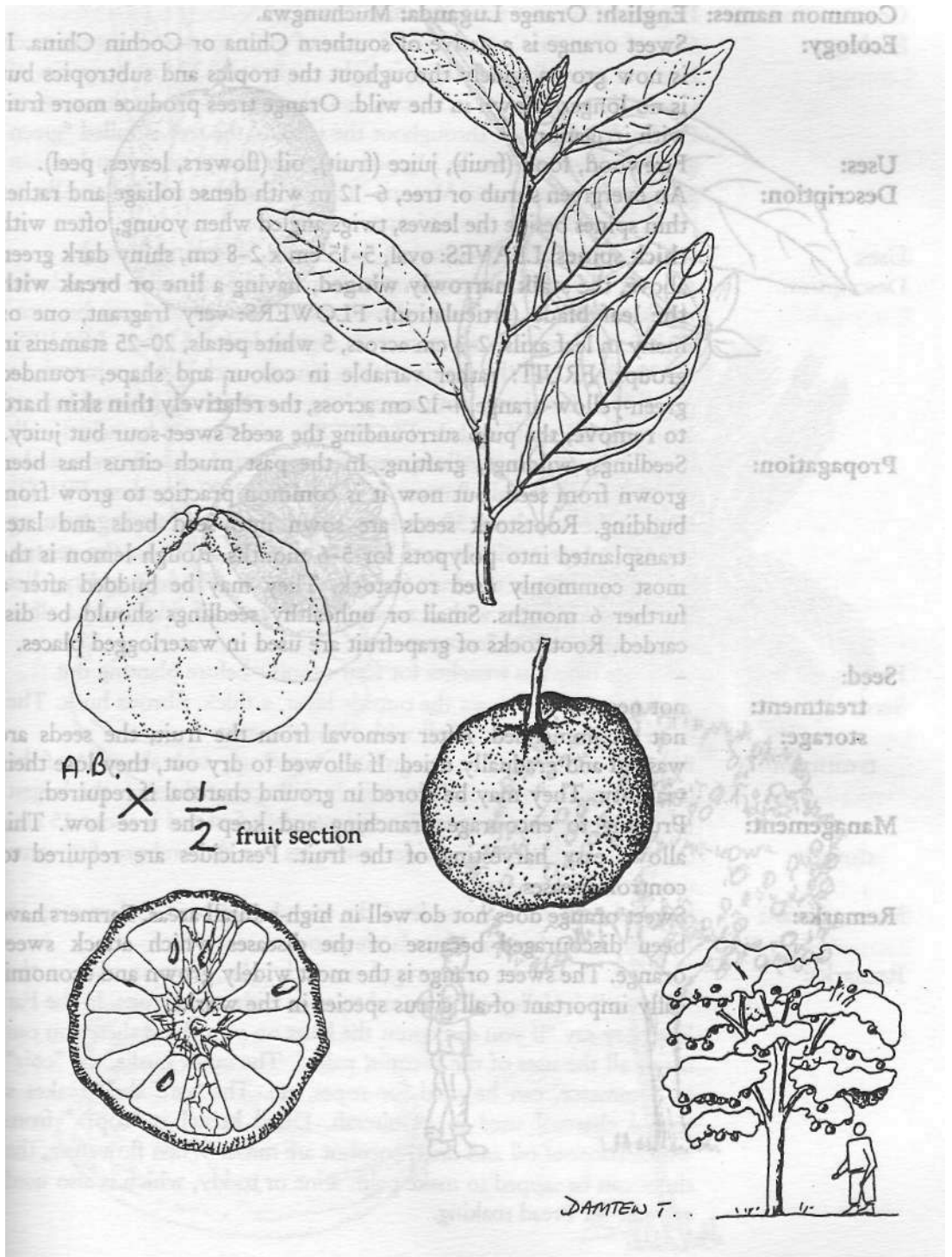
Seed: Squeeze seed out of fruit and sow immediately.

treatment: no treatment.

storage: not recommended.

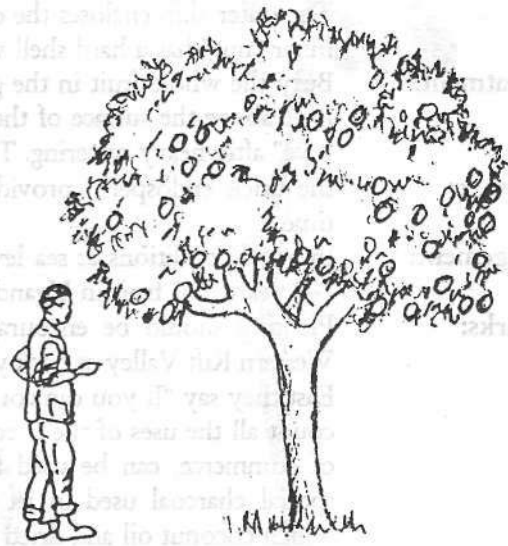
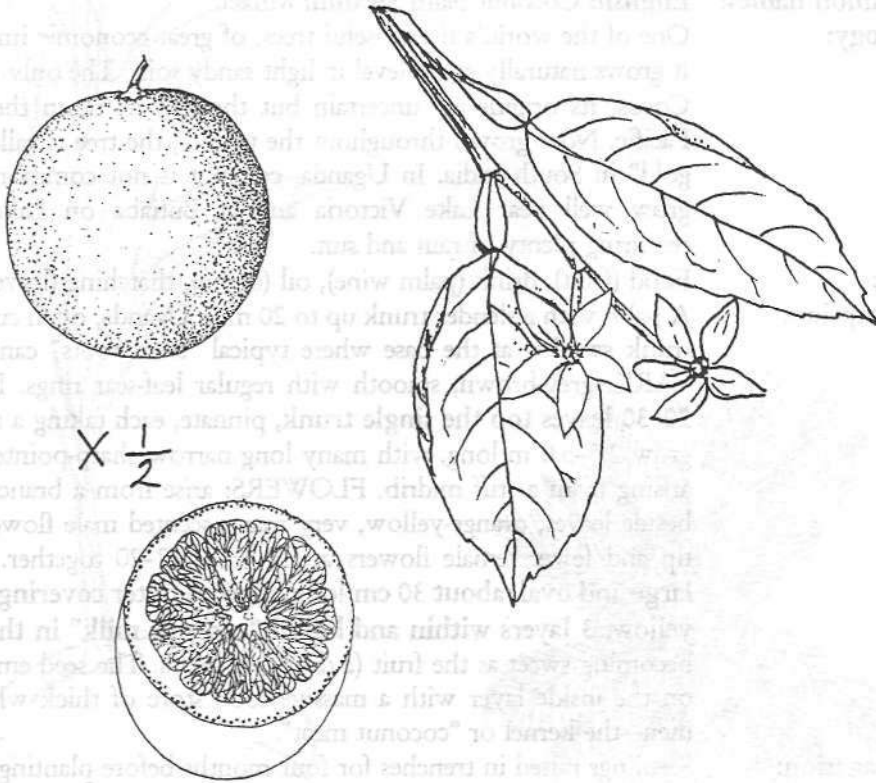
Management:

Remarks: Performs well in relatively dry areas. Grow with crops or in orchards. Most citrus require nitrogen and phosphorus, and potassium is important as a fruit sweetener.



Southern China, Vietnam

- Trade name:** Sweet orange.
- Common names:** **English:** Orange **Luganda:** Muchungwa.
- Ecology:** Sweet orange is a native of southern China or Cochin China. It is now grown widely throughout the tropics and subtropics but is no longer known in the wild. Orange trees produce more fruit with irrigation.
- Uses:** Firewood, food (fruit), juice (fruit), oil (flowers, leaves, peel).
- Description:** An evergreen shrub or tree, 6-12 m with dense foliage and rather thin spines beside the leaves, twigs angled when young, often with **thick spines**. LEAVES: oval, 5-15 cm x 2-8 cm, shiny dark green above, the **stalk narrowly winged**, having a **line or break with the leaf blade** (articulation). FLOWERS: very fragrant, one or many in leaf axils, 2-3 cm across, 5 white petals, 20-25 stamens in groups. FRUIT: rather variable in colour and shape, rounded green-yellow-orange, 4-12 cm across, the **relatively thin skin hard to remove**, the pulp surrounding the seeds sweet-sour but juicy.
- Propagation:** Seedlings, wildings, grafting. In the past much citrus has been grown from seed, but now it is common practice to grow from budding. Rootstock seeds are sown into seed beds and later transplanted into polypots for 5-6 months. Rough lemon is the most commonly used rootstock. They may be budded after a further 6 months. Small or unhealthy seedlings should be discarded. Rootstocks of grapefruit are used in waterlogged places.
- Seed:**
- treatment:** not necessary.
- storage:** not recommended. After removal from the fruit, the seeds are washed and gradually dried. If allowed to dry out, they lose their viability. They may be stored in ground charcoal if required.
- Management:** Pruning to encourage branching and keep the tree low. This allows easy harvesting of the fruit. Pesticides are required to control diseases.
- Remarks:** Sweet orange does not do well in high-rainfall areas. Farmers have been discouraged because of the diseases which attack sweet orange. The sweet orange is the most widely grown and economically important of all citrus species in the world.



Tropics

Trade name: Coconut.**Common names:** **English:** Coconut palm **Swahili:** Mnazi.

Ecology: One of the world's most useful trees, of great economic importance. It grows naturally at sea level in light sandy soils. The only species of Cocos, its origins are uncertain but thought to be in the western Pacific. Now grown throughout the tropics, the tree is called "green gold" in South India. In Uganda, coconut is not common but can grow well near Lake Victoria and at Butiaba on Lake Albert, requiring plenty of rain and sun.

Uses: Food (fruit), drink (palm wine), oil (copra), thatching (leaves).

Description: A palm with a slender trunk up to 20 m in Uganda, often curved, the trunk swollen at the base where typical "stem roots" can be seen. **BARK:** grey-brown, smooth with regular leaf-scar rings. **LEAVES:** **20-30 leaves top the single trunk**, pinnate, each taking a month to grow 2.5-5.0 m long, with many long narrow sharp-pointed leaflets arising from a stiff midrib. **FLOWERS:** arise from a branched stalk beside leaves, orange-yellow, very many scented male flowers at the tip and fewer female flowers at the base, 12-20 together. **FRUIT:** large and oval, about 30 cm long, a green outer covering turning yellow, 3 layers within and liquid "coconut milk" in the centre, becoming sweet as the fruit (a drupe) matures. The seed embryo lies on the inside layer with a massive food store of thick white albumen—the kernel or "coconut meat".

Propagation: Seedlings raised in trenches for four months before planting out.

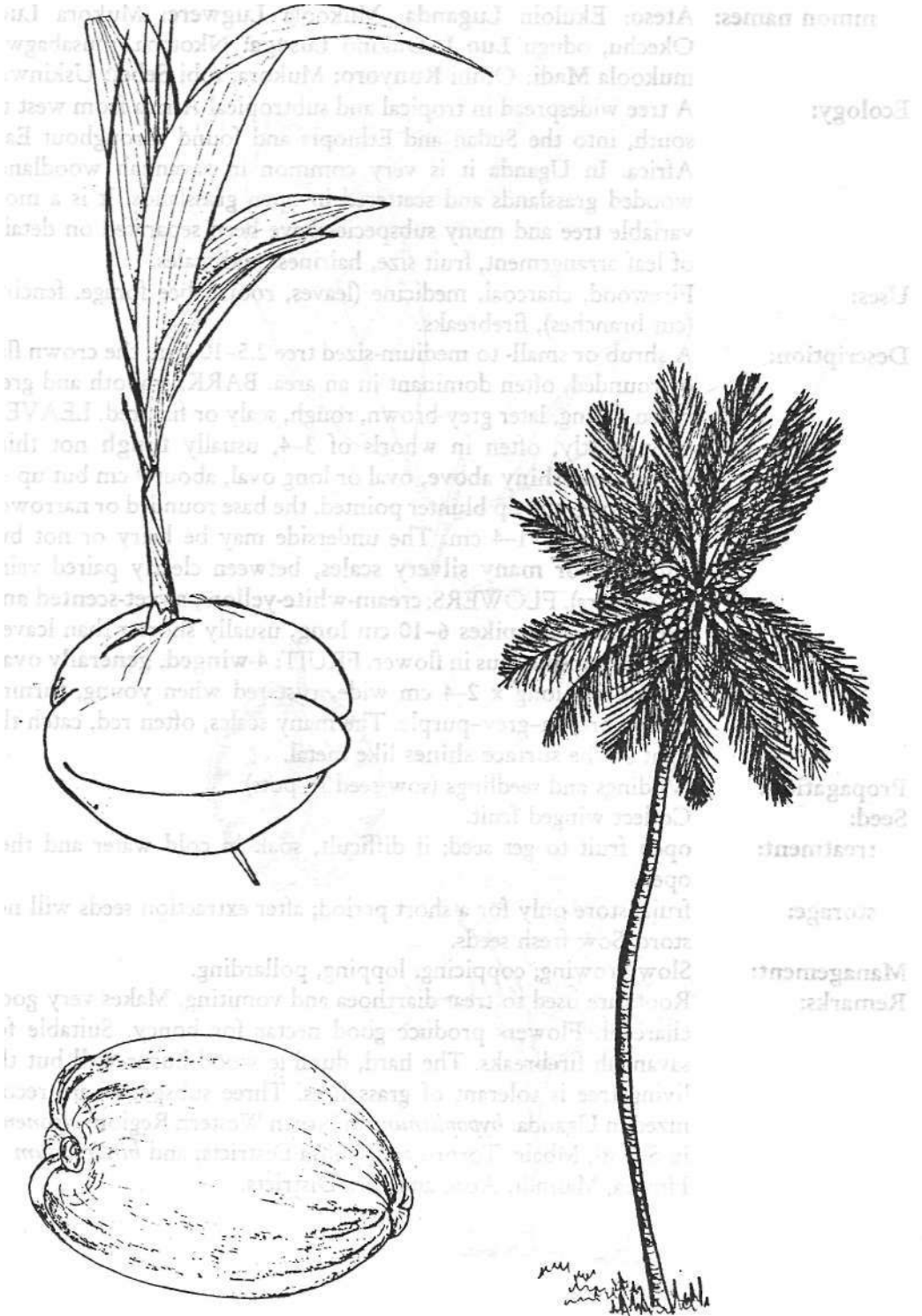
Seed: The outer skin encloses the outside layer, a thick, fibrous husk. The inner "nut" has a hard shell with 3 circular eyes.

treatment: Bury the whole fruit in the ground, "eyes" up, with about 1/4 of the fruit above the surface of the soil. It will sprout through the largest "eye" after heavy watering. Transplant when first leaf is about 15 cm.

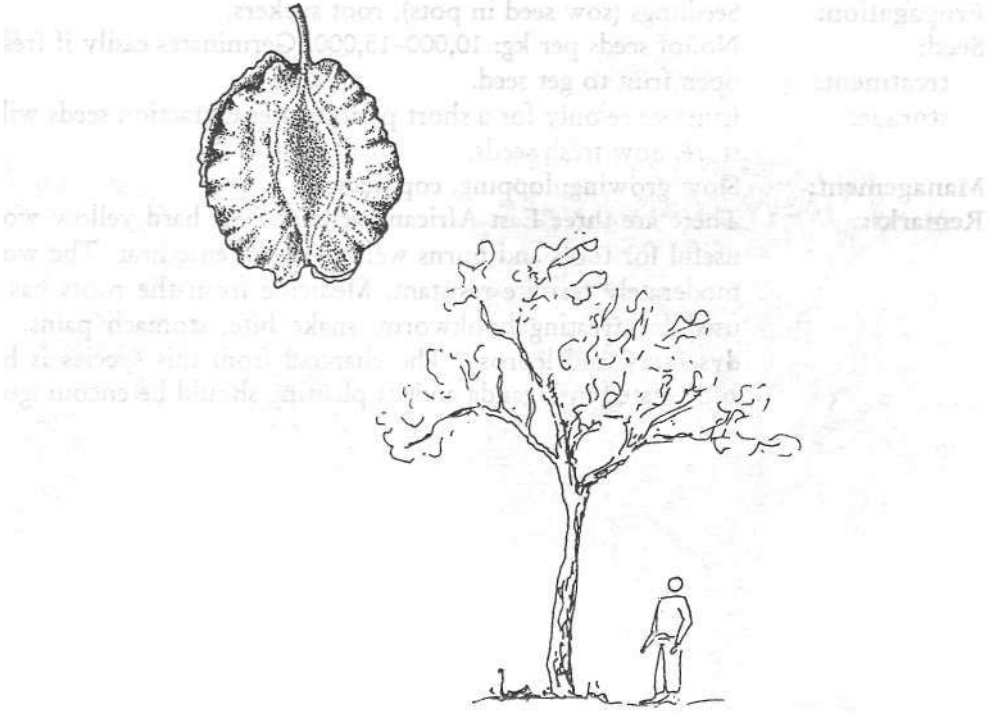
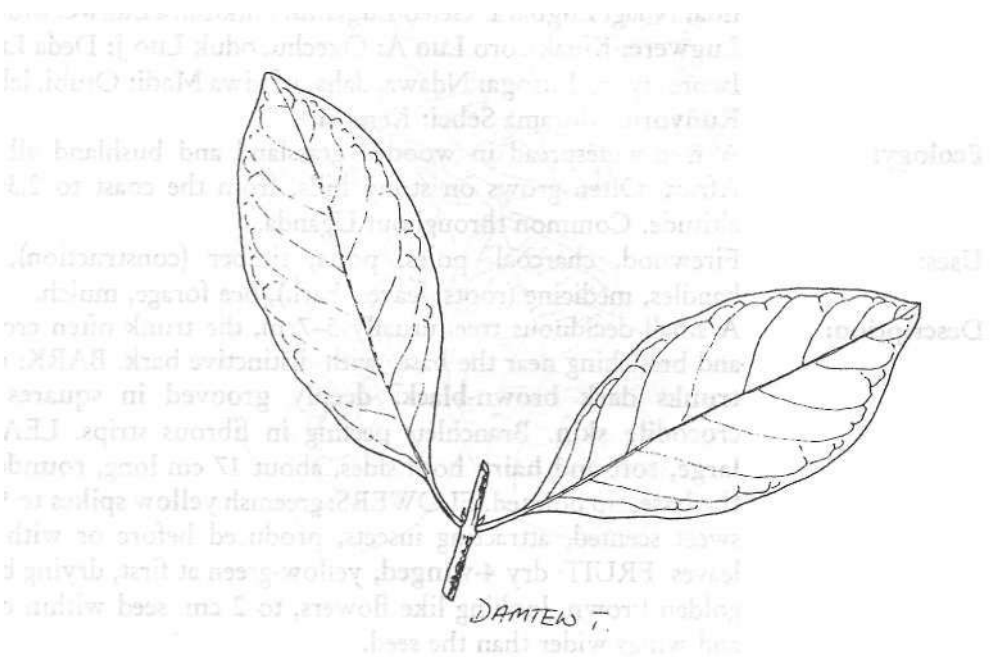
storage: the thick endosperm provides nutrients for the embryo for some time.

Management: In good conditions at sea level the tree should bear its first crop in 7-8 years, but fruit in Uganda are poor.

Remarks: Planting should be encouraged around Lake Victoria and in the Western Rift Valley as back-yard trees or with other crops. In the Far East they say "If you can count the hairs on your head then you can count all the uses of the coconut palm". The outer husks, the "coir" of commerce, can be used for ropes, etc. The hard shell makes a special charcoal used in jet aircraft. Dried kernel is "copra" from which coconut oil and dried coconut are made. When flowering, the shoot can be tapped to make palm wine or toddy, which is also used as yeast for bread making.



- Common names:** **Ateso:** Ekuloin **Luganda:** Mukoola **Lugwere:** Mukora **Luo:** Okechu, odugu **Luo J:** Dukino **Lusoga:** Nkotcha, musabagwa, mukoola **Madi:** Otubi **Runyoro:** Mukora, tubi **Sebei:** Uskinwo.
- Ecology:** A tree widespread in tropical and subtropical Africa from west to south, into the Sudan and Ethiopia and found throughout East Africa. In Uganda it is very common in savannah woodland, wooded grasslands and scattered in open grasslands. It is a most variable tree and many subspecies have been separated on details of leaf arrangement, fruit size, hairiness and scales.
- Uses:** Firewood, charcoal, medicine (leaves, roots), bee forage, fencing (cut branches), firebreaks.
- Description:** A shrub or small- to medium-sized tree 2.5-10.0 m, the crown flat or rounded, often dominant in an area. **BARK:** smooth and grey when young, later grey-brown, rough, scaly or fissured. **LEAVES:** vary greatly, often in whorls of 3-4, usually **tough** not thin, **darker and shiny above**, oval or long oval, about 9 cm but up to 22 cm long, the tip blunter pointed, the base rounded or narrowed to a leaf stalk 1-4 cm. The underside may be hairy or not but with **few or many silvery scales**, between clearly paired veins (6-20 pairs). **FLOWERS:** **cream-white-yellow, sweet-scented and very small, in spikes 6-10 cm long**, usually shorter than leaves, the tree conspicuous in flower. **FRUIT:** **4-winged, generally oval**, 2.5-5.0 cm long x 2-4 cm wide, rust red when young, turning golden-brown-grey-purple. The many scales, often red, catch the light so the **surface shines** like metal.
- Propagation:** Wildings and seedlings (sow seed in pots).
- Seed:** Collect winged fruit.
- treatment:** open fruit to get seed; if difficult, soak in cold water and then open.
- storage:** fruits store only for a short period; after extraction seeds will not store. Sow fresh seeds.
- Management:** Slow growing; coppicing, lopping, pollarding.
- Remarks:** Roots are used to treat diarrhoea and vomiting. Makes very good charcoal. Flowers produce good nectar for honey. Suitable for savannah firebreaks. The hard, durable wood burns well but the living tree is tolerant of grass fires. Three subspecies are recognized in Uganda: *hypopilinum* in North Western Region; *elgonense* in Soroti, Mbale, Tororo and Pallisa Districts; and *binderanum* in Hoima, Masindi, Apac and Lira Districts.



Indigenous

Common names: **Ateso:** Ekworo, eworo **English:** Velvet-leaved combretum **Luganda:** Ndagi **Lugbara:** Geleo **Lugishu:** Shikimira **Lugwe:** Muchuta **Lugwere:** Kinakworo **Luo A:** Okechu, oduk **Luo J:** Deda **Luo L:** Iworo, iyoro **Lusoga:** Ndawa, daha, nfodwa **Madi:** Otubi, lebilebi **Runyoro:** Murama **Sebei:** Kembei.

Ecology: A tree widespread in wooded grassland and bushland all over Africa. Often grows on stony hills, from the coast to 2,300 m altitude. Common throughout Uganda.

Uses: Firewood, charcoal, poles, posts, timber (construction), tool handles, medicine (roots, leaves, bark), bee forage, mulch.

Description: A small deciduous tree, usually 5-7 m, the trunk often crooked and branching near the base, with distinctive bark. **BARK: older trunks dark brown-black, deeply grooved in squares like crocodile skin.** Branchlets peeling in fibrous strips. **LEAVES:** large, **soft and hairy** both sides, about 17 cm long, **rounded at the base**, tip pointed. **FLOWERS:** greenish **yellow spikes to 9 cm**, sweet scented, attracting insects, produced before or with new leaves. **FRUIT:** dry **4-winged**, yellow-green at first, drying bright golden brown, looking like flowers, to 2 cm, seed within centre and wings wider than the seed.

Propagation: Seedlings (sow seed in pots), root suckers.

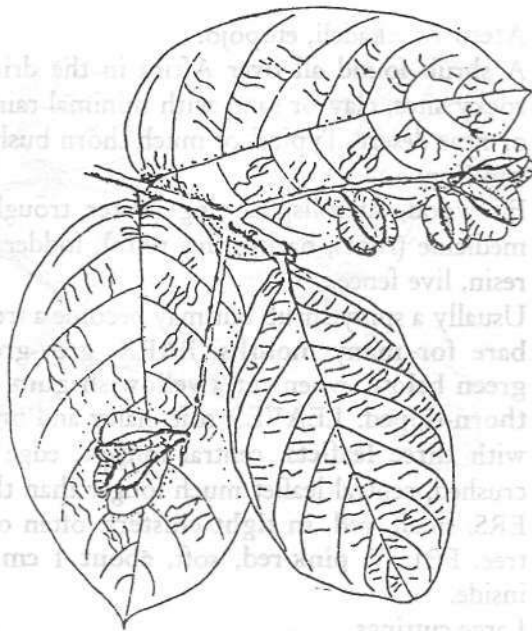
Seed: No. of seeds per kg: 10,000-15,000. Germinates easily if fresh.

treatment: open fruit to get seed.

storage: fruits store only for a short period; after extraction seeds will not store. Sow fresh seeds.

Management: Slow growing; lopping, coppicing.

Remarks: There are three East African varieties. The hard yellow wood is useful for tools and burns well giving intense heat. The wood is moderately termite resistant. Medicine from the roots has been used for treating hookworm, snake bite, stomach pains, fever, dysentery and leprosy. The charcoal from this species is highly appreciated in Uganda and its planting should be encouraged.



Commiphora africana

Burseraceae

Indigenous

Common names: Ateso K: Ekadeli, etopojo.

Ecology: A shrub found all over Africa in the driest areas. It grows on rocky sites, clay or sand with minimal rainfall in open savannah or near desert. Typical of much thorn bush in Tanzania, Uganda and Kenya.

Uses: Firewood, utensils, carving (water troughs), drink (bark tea), medicine (roots, bark, fruit, resin), fodder (young shoots), gum-resin, live fence.

Description: Usually a spiny shrub but may become a tree to 10 m. Deciduous, **bare for many months**. BARK: **grey-green peeling to show green below**, when cut a **yellowish gum drips out, branchlets thorn-tipped**. LEAVES: soft, hairy and bright green, compound with **three leaflets**, central longest, edge wavy, fragrant when crushed, central leaflet much longer than the other two. FLOWERS: small, **red, in tight clusters**, often on thorns, on the bare tree. FRUIT: **pink-red**, soft, **about 1 cm, pointed**, stony seed inside.

Propagation: Large cuttings.

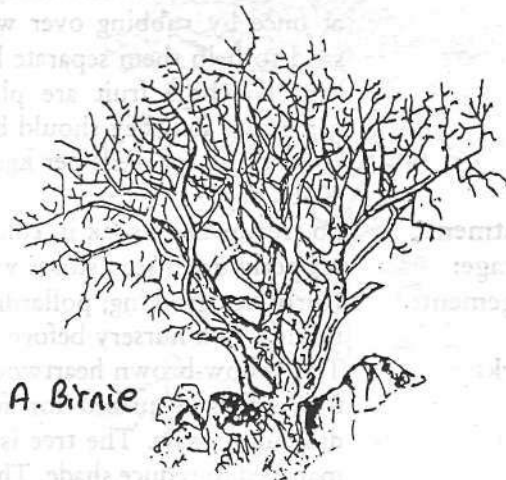
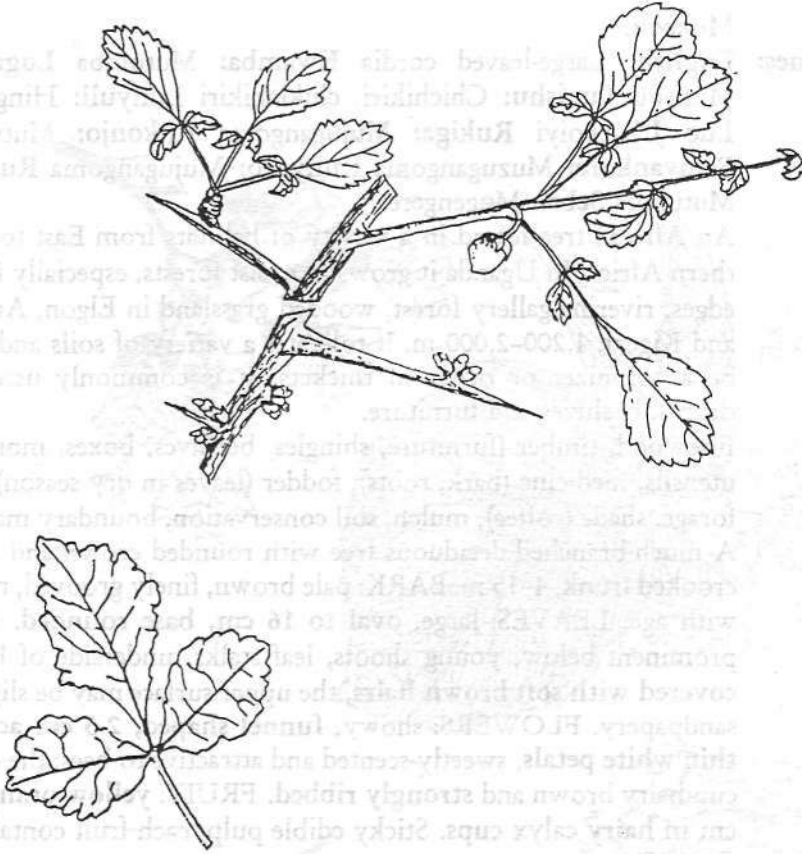
Seed: Only propagated by cuttings.

treatment:

storage:

Management: Slow growing; lopping.

Remarks: Leaves contain bitter tannin and so they are not browsed by cattle but they are important fodder for camels and goats. They come into leaf just before the rains. The cut branches take a long time to dry and the species is thus not ideal for firewood.



A. Birnie

Cordia africana (*C. abyssinica*)

Boraginaceae

Indigenous

Trade name: Mukebu.

Common names: **English:** Large-leaved cordia **Kwamba:** Mutumba **Luganda:** Mukebu **Lugishu:** Chichikiri, chikichikiri **Lunyuli:** Hinghobe **Luo J:** Akoiyi **Rukiga:** Mujugangoma **Rukonjo:** Mutumba **Runyankore:** Muzugangoma **Runyoro:** Mujugangoma **Rutoro:** Mutumba **Sebei:** Mugengere.

Ecology: An African tree found in a variety of habitats from East to Southern Africa. In Uganda it grows in moist forests, especially forest edges, riverine gallery forest, wooded grassland in Elgon, Ankole and Kigezi, 1,200-2,000 m. It tolerates a variety of soils and may be a colonizer or occur in thickets. It is commonly used for drums, beehives and furniture.

Uses: Firewood, timber (furniture, shingles, beehives, boxes, mortars), utensils, medicine (bark, roots), fodder (leaves in dry season), bee forage, shade (coffee), mulch, soil conservation, boundary marker.

Description: A much-branched deciduous tree with rounded crown and often crooked trunk, 4-15 m. **BARK:** pale brown, finely grooved, rough with age. **LEAVES:** large, **oval to 16 cm, base rounded**, veins prominent below, young shoots, leaf stalks, underside of leaves **covered with soft brown hairs**, the upper surface may be slightly sandpapery. **FLOWERS:** showy, **funnel shaped, 2.5 cm across, thin white petals**, sweetly-scented and attractive to bees; the calyx cup hairy brown and **strongly ribbed**. **FRUIT:** **yellow-orange, 1 cm in hairy calyx cups**. Sticky edible pulp, each fruit containing 4-6 seeds.

Propagation: Wildings, seedlings. Collect ripe yellow or brown fruit from crown of tree or immediately after they fall to the ground. Depulp at once by rubbing over wire mesh under flowing water. Add sand to help them separate by floating in water. Dry seed in the sun. If whole fruit are planted in seedbeds, several seedlings germinate and they should be separated while pricking out.

Seed: Average no. of seeds per kg: 18,000. Germination rate 50-80% in 40-60 days.

treatment: no treatment or soak in cold water for 6 hours,

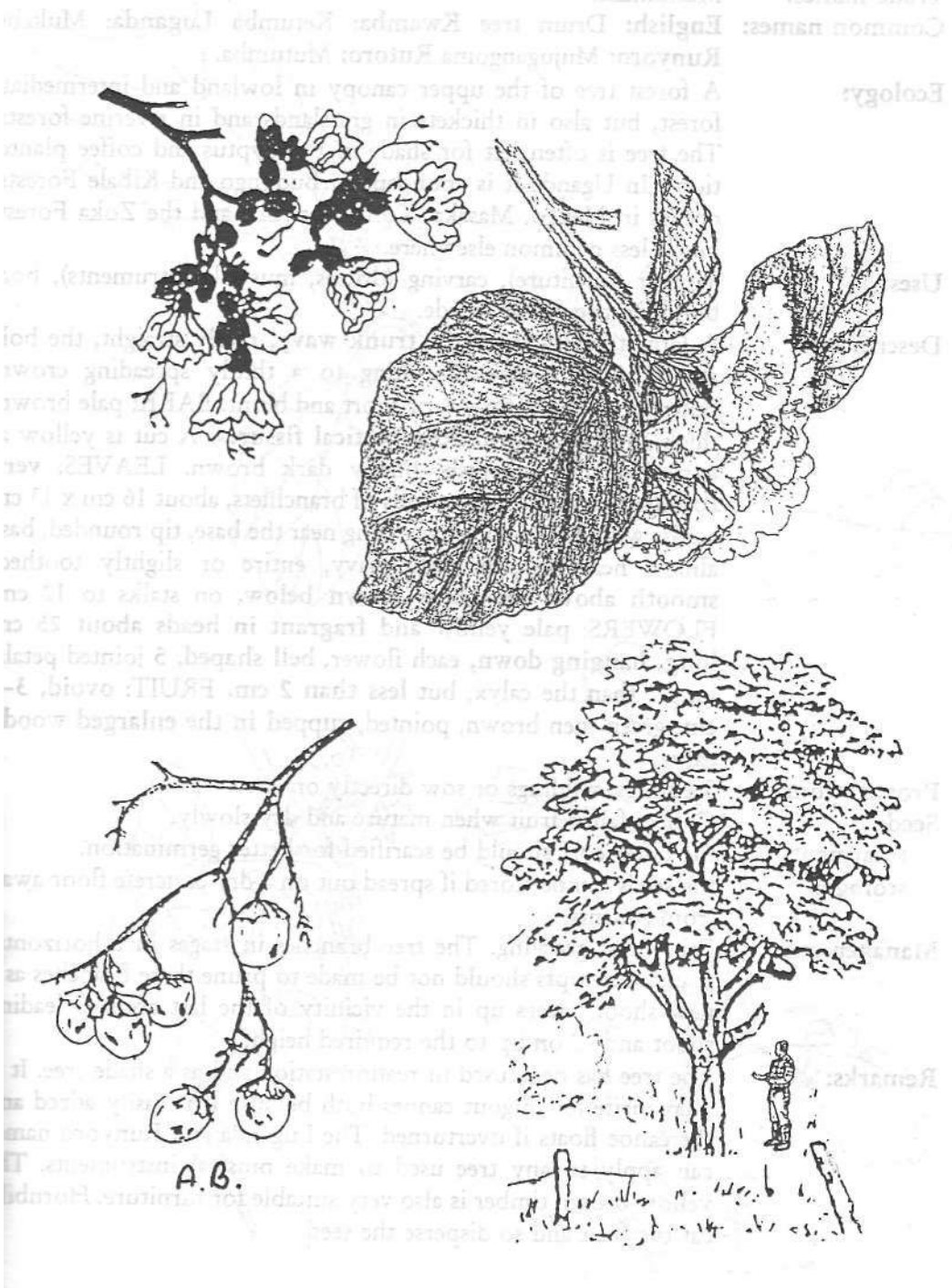
storage: properly dried seed stores well up to one year.

Management: Fairly fast growing; pollarding, lopping, coppicing. Requires 4-6 months in a nursery before planting out.

Remarks: The yellow-brown heartwood is hard and takes a good polish so the timber is prized for furniture but it can be twisted and difficult to saw. The tree is often found in cropland where it is managed to reduce shade. The species is never as big as *C. millenii*. The leaves make very good mulch.

Cordia africana (*C. abyssinica*)

Boraginaceae



Cordia millenii (*C. ugandensis*)

Boraginaceae

Indigenous

Trade names: Mukumani.

Common names: **English:** Drum tree **Kwamba:** Ketumba **Luganda:** Mukebu **Runyoro:** Mujugangoma **Rutoro:** Mutumba.

Ecology: A forest tree of the upper canopy in lowland and intermediate forest, but also in thickets in grasslands and in riverine forests. The tree is often left for shade in Eucalyptus and coffee plantations. In Uganda it is abundant in Budongo and Kibale Forests, occurs in Mengo, Masaka, Toro, Bunyoro and the Zoka Forest, but is less common elsewhere.

Uses: Timber (furniture), carving (drums, musical instruments), boat building, bee forage, shade.

Description: A large tree 30-35 m, the **trunk wavy**, rarely straight, the bole about 10 m before branching to a thinly spreading crown. Buttresses usually absent, or short and blunt. **BARK:** pale brown, thick and rough with **deep vertical fissures**. A cut is yellow at first and then greenish, finally dark brown. **LEAVES:** **very rounded**, alternate but at ends of branchlets, about 16 cm x 13 cm across with 3-7 main veins arising near the base, tip rounded, base almost heart shaped, edge wavy, entire or slightly toothed, **smooth above but hairy brown below**, on stalks to 12 cm. **FLOWERS:** **pale yellow and fragrant in heads about 25 cm long, hanging down**, each flower, **bell shaped**, 5 jointed petals, longer than the calyx, but **less than 2 cm**. **FRUIT:** **ovoid, 3-4 cm**, green then brown, pointed, **cupped in the enlarged woody calyx**.

Propagation: Seedlings, wildings or sow directly on site.

Seed: Collect fallen fruit when mature and dry slowly,

treatment: the outer coat should be scarified for better germination,

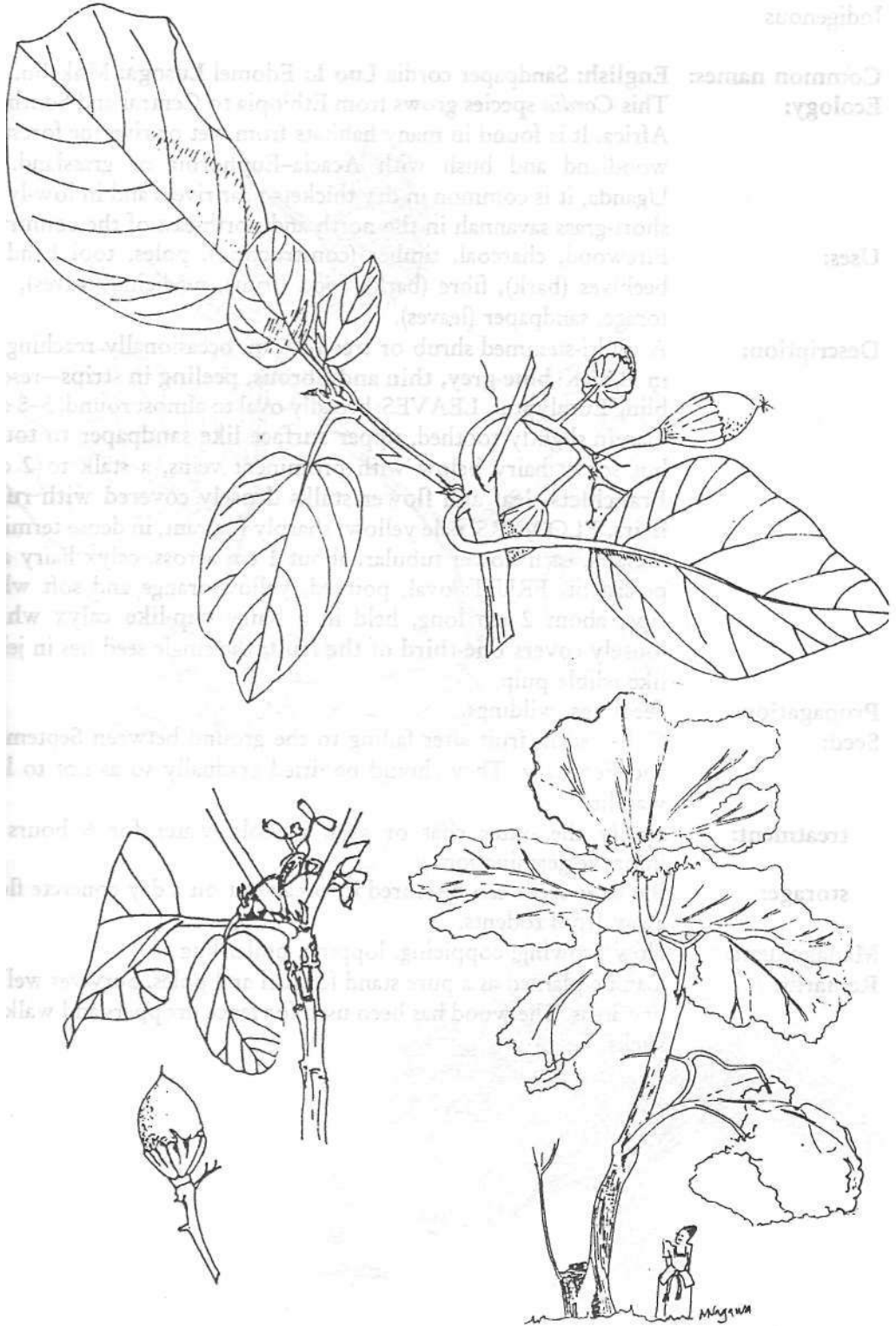
storage: the seeds can be stored if spread out on a dry concrete floor away from rodents.

Management: Fairly fast growing. The tree branches in stages in a horizontal plane. Attempts should not be made to prune these branches as a new shoot comes up in the vicinity of the last aborted leading shoot and so on up to the required height.

Remarks: The tree has been used in reforestation and as a shade tree. It is a favourite for dugout canoes both because it is easily adzed and the canoe floats if overturned. The Luganda and Runyoro names can apply to any tree used to make musical instruments. The yellow-brown timber is also very suitable for furniture. Hornbills eat the fruit and so disperse the seed.

Cordia millenii (*C. ugandensis*)

Boraginaceae



Indigenous

Common names: **English:** Sandpaper cordia **Luo** L: Edomel **Lusoga:** Mukebu.

Ecology: This *Cordia* species grows from Ethiopia to Central and Southern Africa. It is found in many habitats from wet or riverine forest to woodland and bush with Acacia-Euphorbia or grassland. In Uganda, it is common in dry thickets near rivers and in low-lying short-grass savannah in the north and north-east of the country.

Uses: Firewood, charcoal, timber (construction), poles, tool handles, beehives (bark), fibre (bark), food (fruit), medicine (leaves), bee forage, sandpaper (leaves).

Description: A multi-stemmed shrub or tree to 6 m, occasionally reaching 12 m. **BARK: blue-grey, thin and fibrous, peeling in strips**—resembling Eucalyptus. **LEAVES:** broadly oval to almost round, 5-8 cm, margin slightly toothed, **upper surface like sandpaper to touch** but softly hairy below with prominent veins, a stalk to 2 cm. **Branchlets, leaf and flower stalks densely covered with rusty hairs.** **FLOWERS:** pale yellow, sharply fragrant, in dense terminal clusters, each flower tubular, about 1 cm across, calyx hairy and persistent. **FRUIT:** oval, pointed, yellow-orange and soft when ripe, about 2 cm long, held in a **hairy cup-like calyx which loosely covers one-third of the fruit;** the single seed lies in jelly-like edible pulp.

Propagation: Seedlings, wildings.

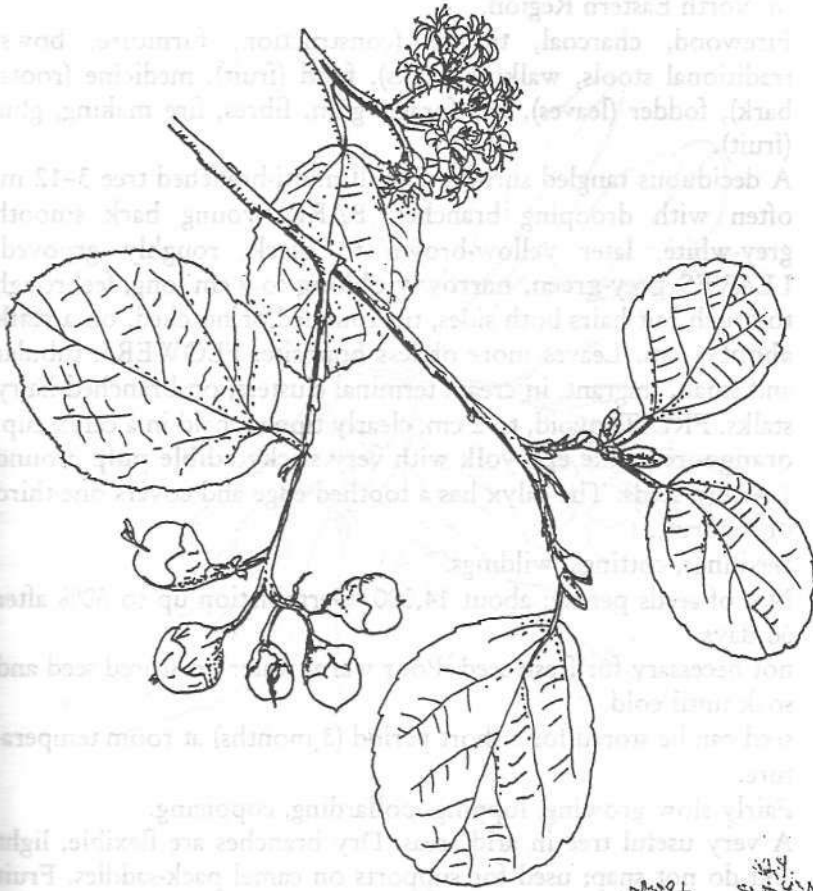
Seed: Collected in fruit after falling to the ground between September and February. They should be dried gradually so as not to lose viability.

treatment: scarify the outer coat or soak in cold water for 6 hours to improve germination.

storage: the large seeds can be stored if spread out on a dry concrete floor away from rodents.

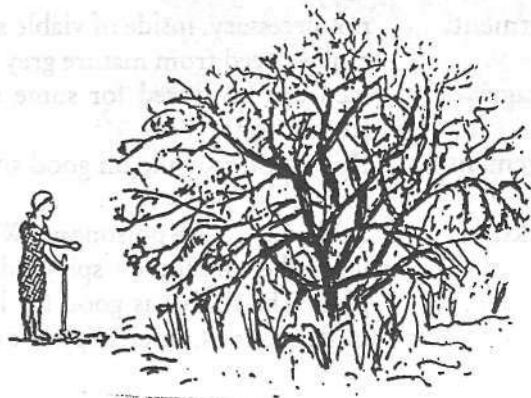
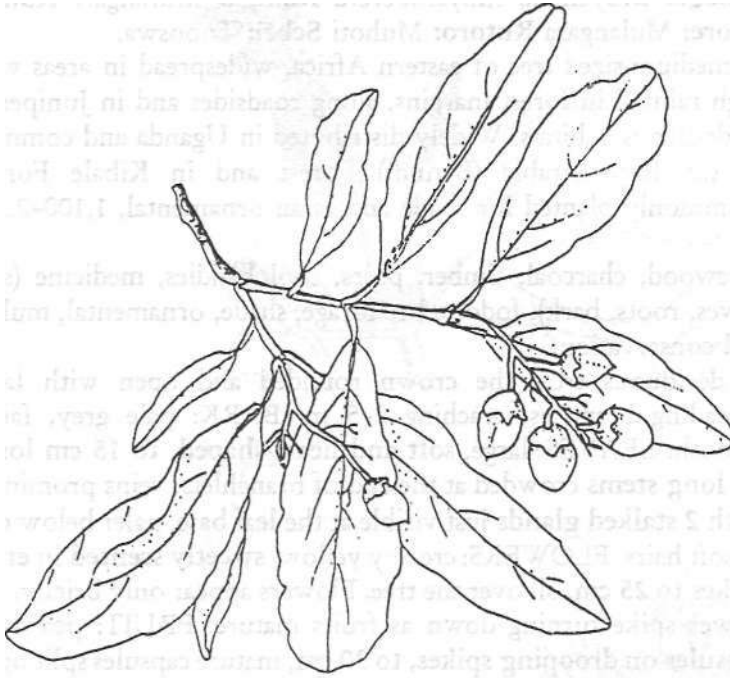
Management: Slow growing; coppicing, lopping, pollarding.

Remarks: Can be planted as a pure stand for fuel and poles. Survives well in dry areas. The wood has been used for fence droppers and walking sticks.



Indigenous

- Ecology:** Widespread in Africa in-low altitude semi-arid areas. It prefers moist river beds but can grow on stony or saline soils. Common in North Eastern Region.
- Uses:** Firewood, charcoal, timber (construction, furniture, bows, traditional stools, walking sticks), food (fruit), medicine (roots, bark), fodder (leaves), bee forage, gum, fibres, fire making, glue (fruit).
- Description:** A deciduous tangled shrub or small multi-branched tree 3-12cm often with drooping branches. **BARK:** young bark smooth grey-white, later yellow-brown to black, roughly grooved. **LEAVES:** **grey-green, narrowly oblong** to 9 cm long, feel rough to touch but hairs both sides, tip rounded or notched, on a **stalk about 1 cm**. Leaves more or less opposite. **FLOWERS:** tubular and small, fragrant, in cream terminal clusters, on branched hairy stalks. **FRUIT:** ovoid, to 2 cm, clearly tipped, held in a calyx cup, **orange- red, like egg yolk** with very **sticky edible pulp** around 1-4 tiny seeds. The calyx has a toothed edge and covers one-third of the fruit.
- Propagation:** Seedlings, cuttings, wildings.
- Seed:** No. of seeds per kg: about 14,000. Germination up to 60% after 30 days.
- treatment:** not necessary for fresh seed. Pour warm water on stored seed and soak until cold.
- storage:** seed can be stored for a short period (3 months) at room temperature.
- Management:** Fairly slow growing; lopping, pollarding, coppicing.
- Remarks:** A very useful tree in arid areas. Dry branches are flexible, light and do not snap; used for supports on camel pack-saddles. Fruit have a high vitamin content.



Indigenous

Common names: **English:** Broad-leaved croton **Kwamba:** Muhuta, moti **Luganda:** Musogasoga **Lugbara:** Ofunze **Lugishu:** Guyi, gwihhi, lwihhi **Lugwe:** Muchwichwi **Lugwere:** Mwiyo **Lunyuli:** Nahingunya **Luo A:** Ekwanga, ekwango **Luo J:** Epoli **Luo L:** Ekwango **Lusoga:** Muyemba, muyemberera **Rukiga:** Murangari **Runyanokore:** Mulangara **Rutoro:** Muhoti **Sebei:** Toboswa.

Ecology: A medium-sized tree of eastern Africa, widespread in areas with high rainfall in forest margins, along roadsides and in Juniperus-Podocarpus habitats. Widely distributed in Uganda and common in the Impenetrable (Bwindi) Forest and in Kibale Forest. Commonly planted for shade and as an ornamental, 1,100-2,500 m.

Uses: Firewood, charcoal, timber, poles, tool handles, medicine (sap, leaves, roots, bark), fodder, bee forage, shade, ornamental, mulch, soil conservation.

Description: A deciduous tree, the crown rounded and open with large spreading branches, reaching 2-5 m. **BARK:** pale grey, fairly smooth. **LEAVES:** large, **soft and heart-shaped, to 15 cm long, on long stems** crowded at the end of branchlets, veins prominent **with 2 stalked glands** just visible at the leaf base, paler below due to soft hairs. **FLOWERS:** creamy yellow, **sweetly scented in erect spikes to 25 cm**, all over the tree. Flowers appear only briefly, the flower spike turning down as fruits mature. **FRUIT:** **pea-sized capsules on drooping spikes, to 30 cm**, mature capsules split open with a sharp noise to release shiny grey seeds with a rather soft, cream aril.

Propagation: Seedlings (sow seed in pots), wildings.

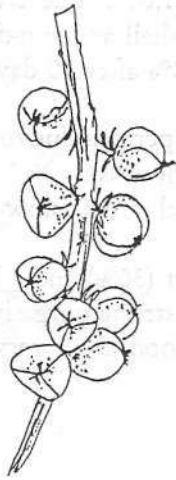
Seed: No. of seeds per kg: 16,000-27,000. Seed usually damaged by insects while on the tree. Germination is good: 40-70% in 30-60 days.

treatment: not necessary; inside of viable seeds must be white-cream coloured. Collect seed from mature grey fruit. Sun dry fruits to release seed,

storage: seed can be stored for some months if kept cool, dry and free from insects.

Management: Fairly fast growing on good sites; lopping, pollarding and coppicing.

Remarks: Seed and sap are poisonous. When cut for firewood, this sap gives it a rather unpleasant spicy odour. It is a good tree for intercropping. The timber is good for heavy-duty flooring. Can be grown in plantations, intercropped or as an ornamental.



fruit capsules



Croton megalocarpus

Euphorbiaceae

Indigenous

Common names: **English:** Croton **Luganda:** Nkulumire **Luganda, dialect Buddu:** Mbula **Rukiga:** Mutakura, muyuni **Runyankore:** Mutugunda **Rutoro:** Munyabakuru, mwenyabakikuru.

Ecology: A dominant upper-storey tree in some evergreen or semi-deciduous forested areas of East Africa. Widespread in most forests, particularly in Kibale and the Impenetrable (Bwindi) Forests and in some Toro forests, but uncommon in Bunyoro. It can be found in a range of semi-humid habitats, 1,200-2,400 m, but has been planted at lower altitudes.

Uses: Firewood, charcoal, timber, poles, medicine (bark), bee forage, shade, ornamental, mulch, live fence, boundary marker.

Description: A spreading deciduous tree to 35 m with **distinctive layering of branches**, the crown rather flat and giving light shade. **BARK:** dark grey, rough, cracking. **LEAVES:** variable, long oval and pointed to 12 cm but often much smaller, stalked. **The dull green upper surface contrasts with the pale, silvery underside.** **FLOWERS:** very short-lived but conspicuous, the buds opening after heavy rains into pale yellow, hanging spikes to 25 cm, with only a few female flowers at the base. **FRUIT:** very many **grey woody capsules**, about 2.5 cm long with **three flattened seeds** inside, grey-brown when mature with a small bump (the caruncle).

Propagation: Direct sowing on site (recommended), seedlings (sow seed in pots), wildings.

Seed: No. of seeds per kg: about 1,000. The tree seeds prolifically. Extract seed by cracking fruit shell and sun-dry firm mature seed. Germination is good: up to 70% after 30 days,

treatment: not necessary.

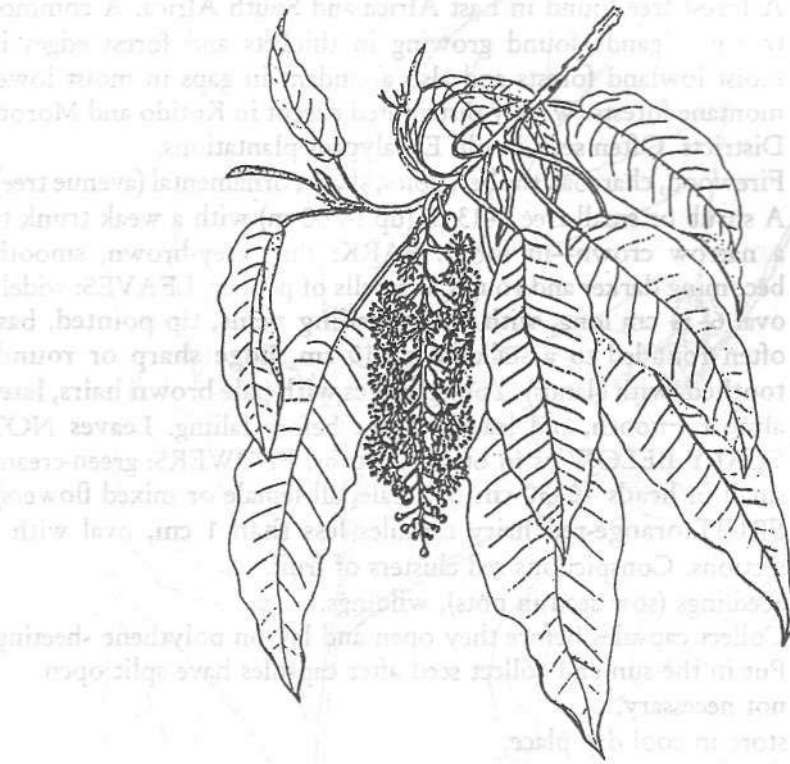
storage: seed cannot be stored for long periods due to the high oil content (at best 50% viability after 6 months).

Management: Fast growing in high-potential areas, slow elsewhere; lopping, pollarding, coppicing.

Remarks: The seed has a high oil content (30%) and a high protein content (50%). The oil extract can be a strong purgative. The heavy timber is not durable and the heartwood has a very bad smell. The sap also has a spicy odour.

Croton megalocarpus

Euphorbiaceae



three seeds



Indigenous

Common names: **English:** Forest croton **Luganda:** Musogasoga **Luo A:** Chetwingo **Rukiga:** Mwatansale.

Ecology: A forest tree found in East Africa and South Africa. A common tree in Uganda found growing in thickets and forest edges in moist lowland forests and also abundant in gaps in moist, lower montane forests. Widely distributed except in Kotido and Moroto Districts. Often seen in old Eucalyptus plantations.

Uses: Firewood, charcoal, timber, poles, shade, ornamental (avenue tree).

Description: A shrub or small tree 7-13 m (up to 30 m) with a weak trunk to a narrow crown—in forest. **BARK:** thin grey-brown, smooth, becoming darker and rough. It smells of pepper. **LEAVES:** widely oval 6-14 cm long, with **5-7 spreading veins, tip pointed**, base often rounded to a stalk up to 10 cm. **Edge sharp or round-toothed** (with glands). **Young leaves with pale brown hairs, later almost smooth**, old leaves orange before falling. **Leaves NOT SCALY BELOW** as in other Crotons. **FLOWERS:** green-cream, small in **heads 10-30 cm** (all male, all female or mixed flowers). **FRUIT orange-red** hairy capsules **less than 1 cm**, oval with 3 sections. Conspicuous red clusters of fruit.

Propagation: Seedlings (sow seed in pots), wildings.

Seed: Collect capsules before they open and lay on polythene sheeting. Put in the sun and collect seed after capsules have split open,

treatment: not necessary,

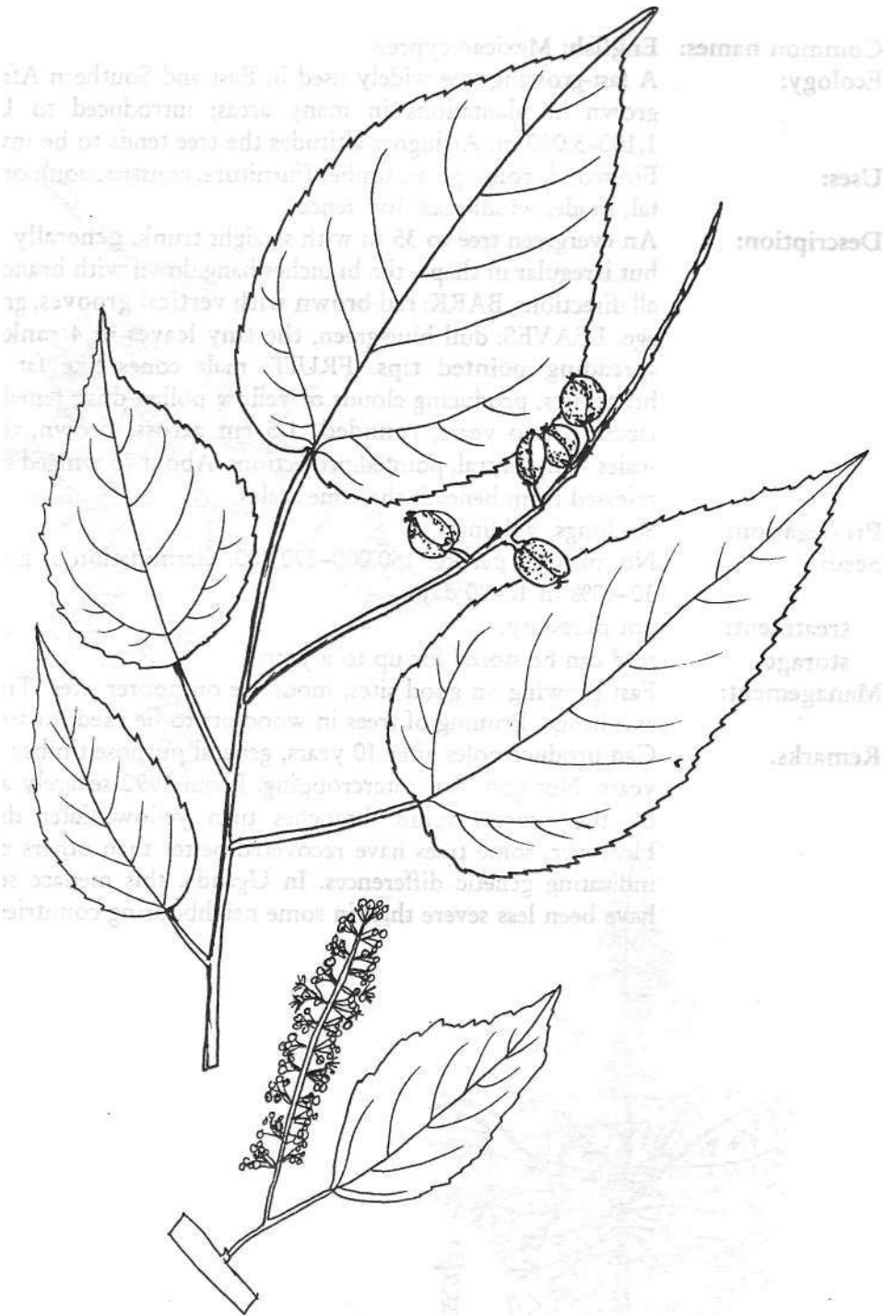
storage: store in cool dry place.

Management: Fast growing.

Remarks: Along with other species, this tree has been planted with crops in Mbale and Kabale Districts. Yields good, light and cheap timber. The wood is soft and easily worked and is reported to burn even when green. Various parts are said to be toxic and bark has been used as a fish poison (South Africa). There are many medicinal uses for leaves and bark reported from Kenya and South Africa.

Croton sylvaticus (C. oxypetalus)

Euphorbiaceae



Mexico, Guatemala

Common names: **English:** Mexican cypress.

Ecology: A fast-growing tree widely used in East and Southern Africa and grown in plantations in many areas; introduced to Uganda, 1,100-3,000 m. At higher altitudes the tree tends to be invasive.

Uses: Firewood, poles, posts, timber (furniture, construction), ornamental, shade, windbreak, live fence.

Description: An evergreen tree to 35 m with straight trunk, **generally conical** but irregular in shape, the branches hang down with branchlets in all directions. **BARK: red-brown with vertical grooves**, grey with age. **LEAVES: dull blue-green, the tiny leaves in 4 ranks, with spreading pointed tips.** **FRUIT: male cones like fat tips to branchlets, producing clouds of yellow pollen dust; female cones ripen in two years, rounded, 1.5 cm across, brown, the cone scales with central, pointed projections.** About 75 winged seeds are released from beneath the cone scales.

Propagation: Seedlings, wildings.

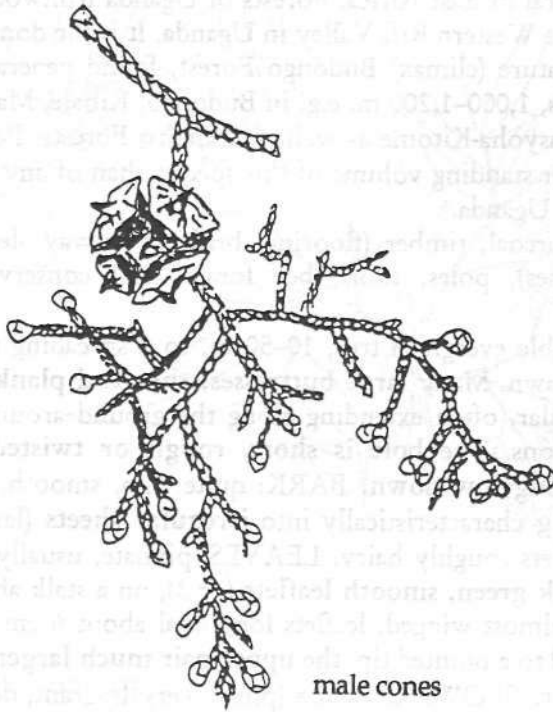
Seed: No. of seeds per kg: 160,000-290,000. Germination of good seed 30-40% in 10-20 days,

treatment: not necessary.

storage: seed can be stored for up to a year.

Management: Fast growing on good sites, moderate on poorer sites. Trimming as a hedge. Pruning of trees in woodlots to be used for timber.

Remarks: Can produce poles after 10 years, general purpose timber after 20 years. Not good for intercropping. From 1990 severely attacked by the cypress aphid: branches turn yellow, later dry out. However, some trees have recovered better than others possibly indicating genetic differences. In Uganda, this menace seems to have been less severe than in some neighbouring countries.



male cones



Indigenous

Trade names: Uganda iron wood, muhimbi.

Common names: **Kwamba:** Kahimbi **Runyankore:** Muhindi **Runyoro:** Muhimbi.

Ecology: There are 50-60 pantropical rain-forest Cynometra species, including several in East Africa. Forests of Uganda ironwood are confined to the Western Rift Valley in Uganda. It is the dominant tree in the mature (climax) Budongo Forest, found generally **at** lower altitudes, 1,000-1,200 m, e.g. in Budongo, Kibale, Maramagambo and Kasyoha-Kitome as well as Mangiro Forests. Perhaps there is a larger standing volume of this species than of any other timber tree in Uganda.

Uses: Firewood, charcoal, timber (flooring, bridges, railway sleepers, props in mines), poles, tools, bee forage, soil conservation, ornamental.

Description: An unmistakable evergreen tree, 10-50 m, to a spreading rather flat-topped crown. Many **large buttresses, thin and plank-like**, almost triangular, often extending along the ground around the tree like ribbons. The **bole is short, rough or twisted**, the **branches arising low down**. **BARK:** quite thin, smooth, grey-brown, **flaking** characteristically into **irregular sheets** (large or small. Branchlets roughly hairy. **LEAVES:** pinnate, usually only **2 pairs of dark green, smooth leaflets** (or 3), on a stalk about 3 cm, grooved almost winged, leaflets long oval about 6 cm (1-10 cm), narrowed to a pointed tip, the **upper pair much larger than the lower pair**. **FLOWERS:** white (pink), very fragrant, densely crowded in heads 2-6 cm on jointed stalks. **FRUIT: smooth flat pods, 5-10 cm**, each round or pointed, 3-4 flat circular seeds.

Propagation: Seedlings (sow seed in pots), wildings, direct sowing on site.

Seed: Large bean-like seeds. No. of seeds per kg: about 290. The pods open naturally and the seed can easily be collected from the ground during the season,

treatment: not necessary.

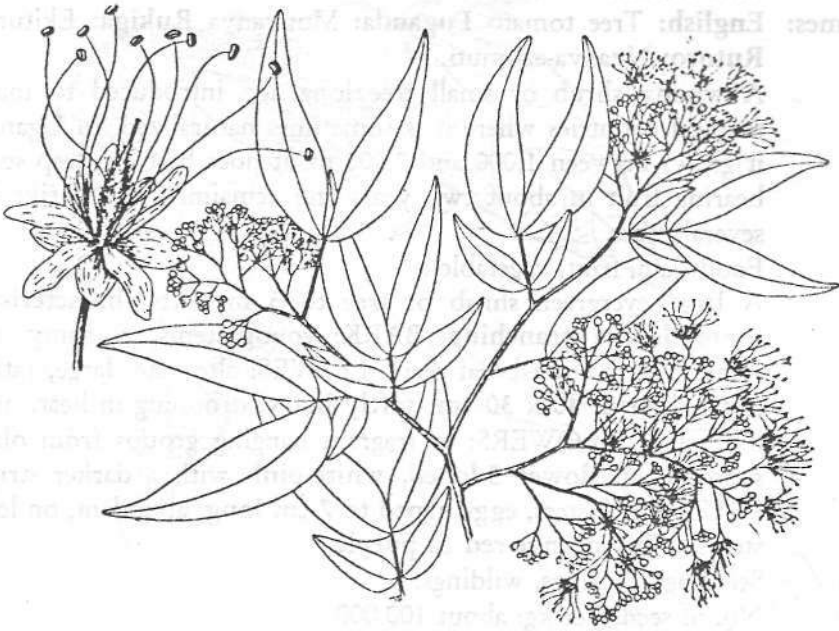
storage: seeds of this species are easily attacked by insects. Storing is difficult without use of insecticides. Add ash to reduce insect damage.

Management: The tree is a slow grower and requires shade until established. Coppicing, pollarding.

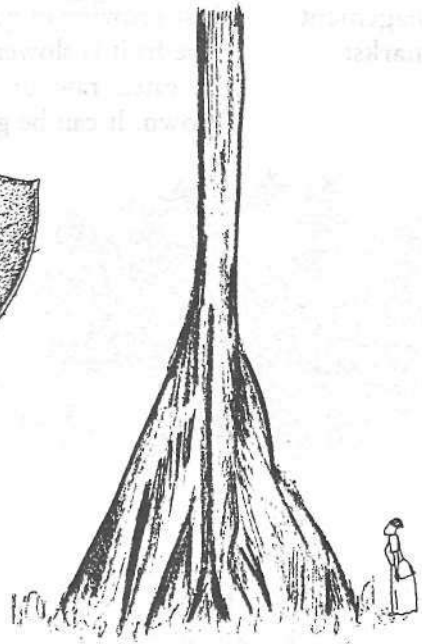
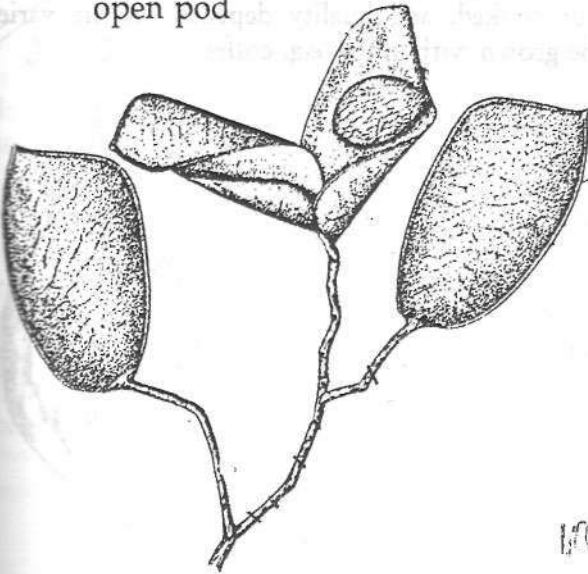
Remarks: The species grows as a shrub in gullies holding soils against erosion and landslides. It has an enormous number of lateral roots and thus should not be intercropped. When suitably pruned, **it** can be grown as an ornamental shrub. The timber is strong, durable and termite resistant, thus suitable for heavy construction, but it is difficult to saw or plane.

flower

flowering branchlet



open pod



Cyphomandra betacea

Solanaceae

Peru, South America

Trade name: Tree tomato.

Common names: **English:** Tree tomato **Luganda:** Munyanya **Rukiga:** Ekitunda **Rutoro:** Nyanya-ezomuti.

Ecology: A woody shrub or small tree long ago introduced to many tropical countries where it is sometimes naturalized. In Uganda, it grows between 1,000 and 2,000 m. It does best on deep soils, bearing fruit in about two years and remaining productive for several years.

Uses: Food (jam, fruit, vegetable).

Description: A large evergreen shrub or tree to 3 m with **characteristic umbrella-like branching**. **BARK:** young stems are shiny, old stems with rounded leaf scars. **LEAVES:** alternate, large, rather **heart-shaped, 40 x 30 cm, softly hairy**, drooping in heat, on a long stalk. **FLOWERS:** in fragrant hanging groups from older stems. **Each flower 5-lobed, white-pink** with a darker stripe. **FRUIT:** in clusters, **egg-shaped to 7 cm long**, abundant, on long stems, **shiny orange-red to purple**.

Propagation: Seedlings, cuttings, wildings.

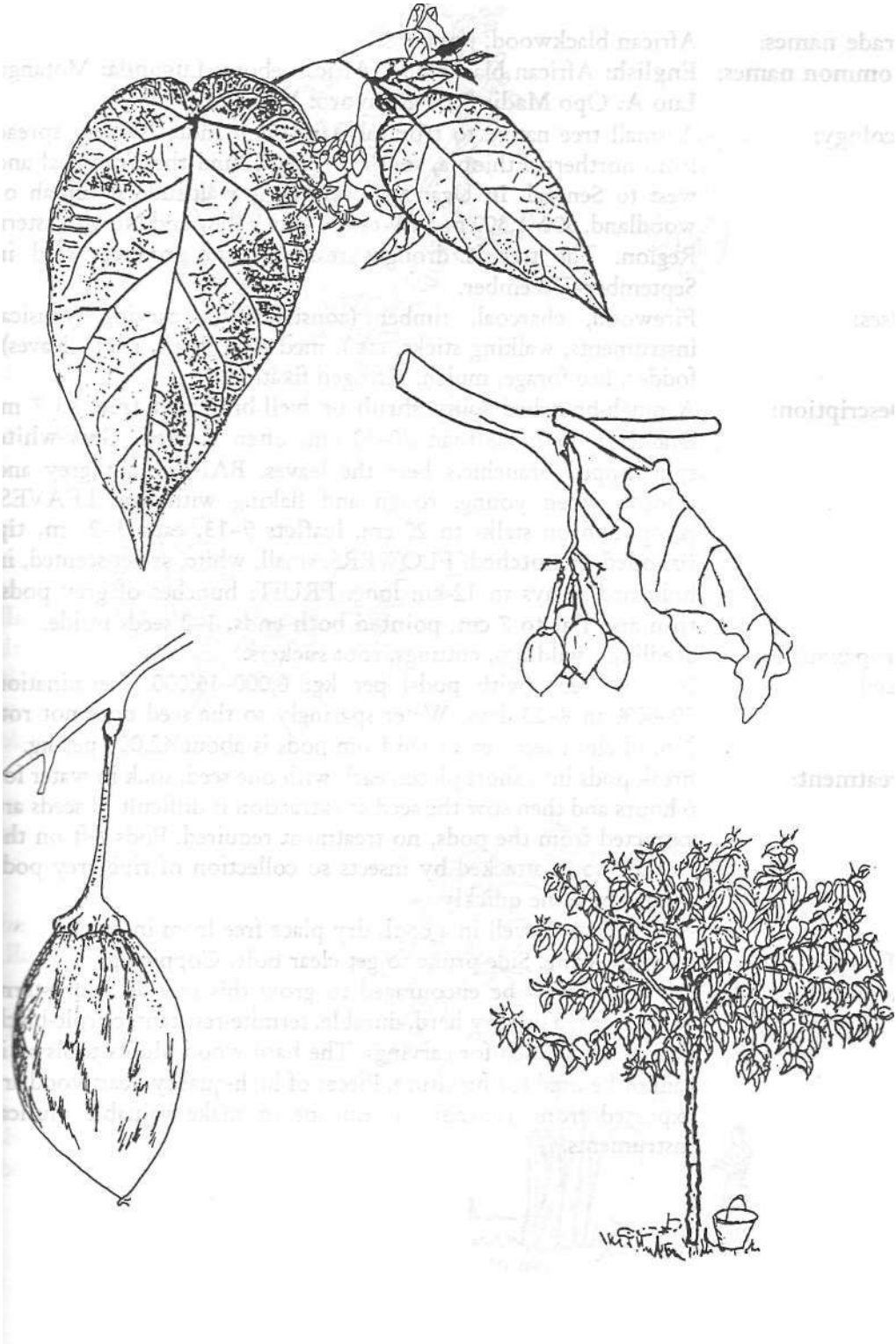
Seed: No. of seeds per kg: about 100,000.

treatment: not necessary.

storage: seed can be stored.

Management: Fast growing in good sites; coppicing.

Remarks: The fruit is slower to ripen at higher altitudes. The acid fruit can be eaten raw or cooked, and quality depends on the variety grown. It can be grown with crops, e.g. coffee.



Indigenous

Trade names: African blackwood, poyi.

Common names: **English:** African blackwood, African ebony **Luganda:** Motangu **Luo A:** Opo **Madi:** Poyi **Runyoro:** Mufunjo.

Ecology: A small tree native to tropical Africa and India. Widely spread from northern Ethiopia, south to Angola and the Transvaal and west to Senegal. In Uganda, found in low-altitude savannah or woodland, 600-1,300 m, in Western Rift Valley and North Eastern Region. The tree is drought resistant and produces seed in September-December.

Uses: Firewood, charcoal, timber (construction), carving (musical instruments, walking sticks, etc.), medicine, (bark, roots, leaves), fodder, bee forage, mulch, nitrogen fixation.

Description: A much-branched **spiny shrub or well-branched tree, to 7 m**. Diameter no more than 20-30 cm, often twisted. **Grey-white** spine-tipped branchlets bear the leaves. **BARK:** light grey and smooth when young, rough and flaking with age. **LEAVES:** compound on stalks to 20 cm, **leaflets 9-13**, each **1-2 cm, tip rounded or notched**. **FLOWERS:** small, white, sweet-scented, in branched sprays to 12 cm long. **FRUIT:** bunches of grey pods, **thin and flat to 7 cm, pointed both ends**, 1-2 seeds inside.

Propagation: Seedlings, wildings, cuttings, root suckers.

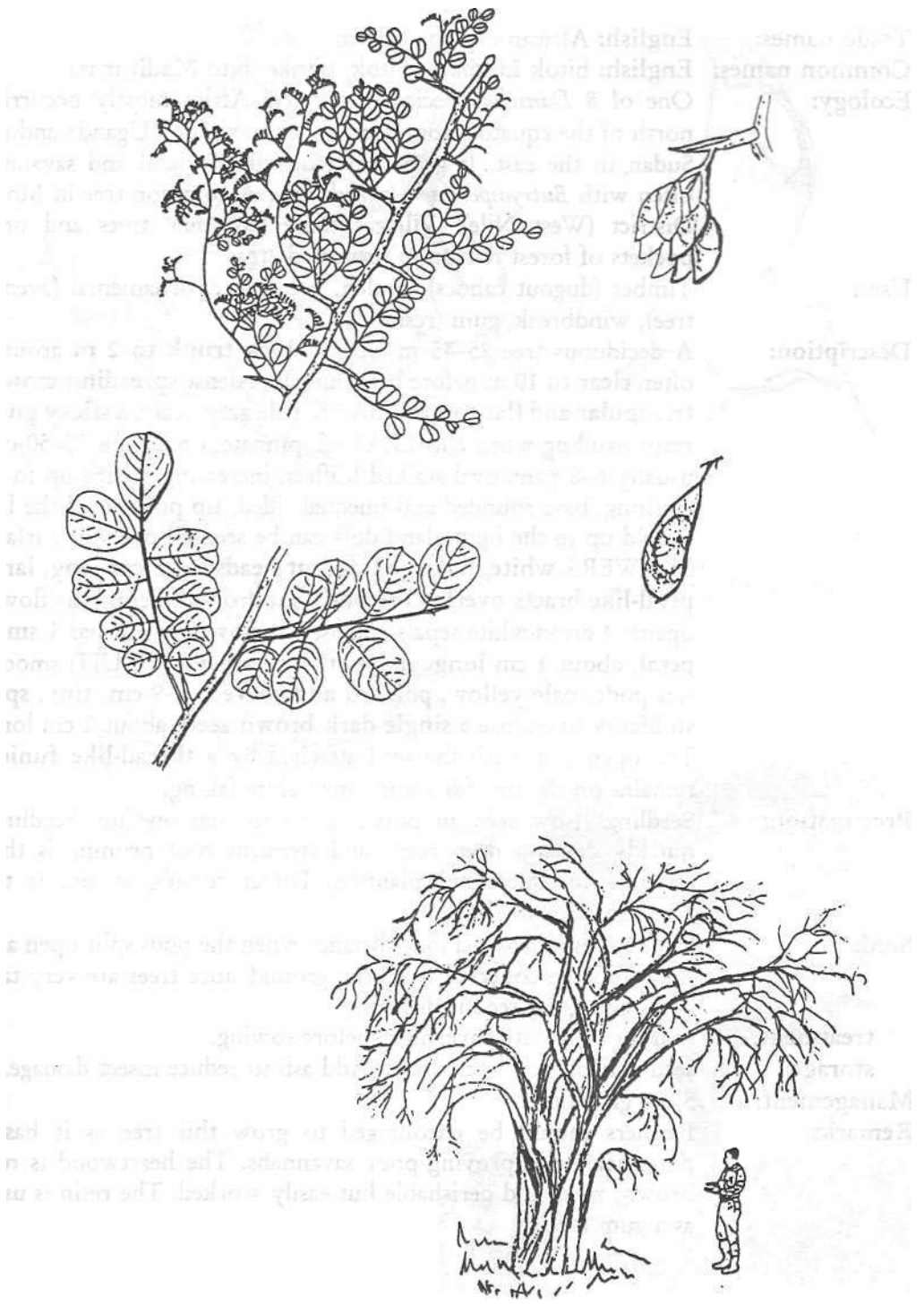
Seed: No. of seeds (with pods) per kg: 6,000-16,000. Germination 50-60% in 8-20 days. Water sparingly so the seed does not rot. No. of clean seeds extracted from pods is about 42,000 per kg.

treatment: break pods into short pieces, each with one seed, soak in water for 6 hours and then sow the seed as extraction is difficult. If seeds are extracted from the pods, no treatment required. Pods left on the tree are soon attacked by insects so collection of ripe grey pods should be done quickly.

storage: seed will store well in a cool, dry place free from insects.

Management: Slow growing. Side-prune to get clear bole. Coppicing.

Remarks: Farmers should be encouraged to grow this tree as a long-term investment. The very hard, durable, termite-resistant, purple-black heartwood is used for carvings. The hard wood blunts tools so it cannot be used for furniture. Pieces of high-quality heartwood are exported from Tanzania to Europe to make valuable musical instruments.



Indigenous

Trade names: **English:** African copaiba balsam

Common names: **English:** bitok **Lugbara:** bitok, bitoke, bito **Madi:** masa.

Ecology: One of 8 *Daniellia* species in tropical Africa mostly occurring north of the equator from Senegal in the west to Uganda and the Sudan in the east. It grows in wooded grassland and savannah often with *Butryospermum paradoxum*. A common tree in Moyo District (West Nile). Villages there have few trees and only pockets of forest remain in protected areas.

Uses: Timber (dugout canoes), mulch, bee forage, ornamental (avenue tree), windbreak, gum (resin).

Description: A deciduous tree 25-45 m with a **thick trunk to 2 m** around, often **clear to 10 m** before branching to a dense **spreading crown, triangular and flat-topped**. **BARK:** pale grey, scaly, **a sticky gum-resin** exuding when cut. **LEAVES:** pinnate, on a stalk 20-50 cm, usually 6-8 pairs oval stalked leaflets, increasing in size up to 10 cm long, base rounded and unequal sided, tip pointed. If the leaf is held up to the light gland dots can be seen all over the surface. **FLOWERS:** **white, in large fragrant heads to 25 cm long, large petal-like bracts overlap the buds** but drop off before the flower opens; 4 green-white sepals enclose the flower which has **1 small petal, about 1 cm long**, and 4 other tiny petals. **FRUIT:** smooth **flat pods, pale yellow, pointed and curved, 6-9 cm, tiny, split suddenly** to expose a **single dark brown seed**, about 2 cm long. The open pod with the seed attached by a **thread-like funicle** remains on the tree for some time before falling.

Propagation: Seedlings (sow seed in pots), direct sowing on site. Seedlings quickly develop deep roots and frequent root pruning is thus essential for successful planting. Direct sowing at site is the recommended method.

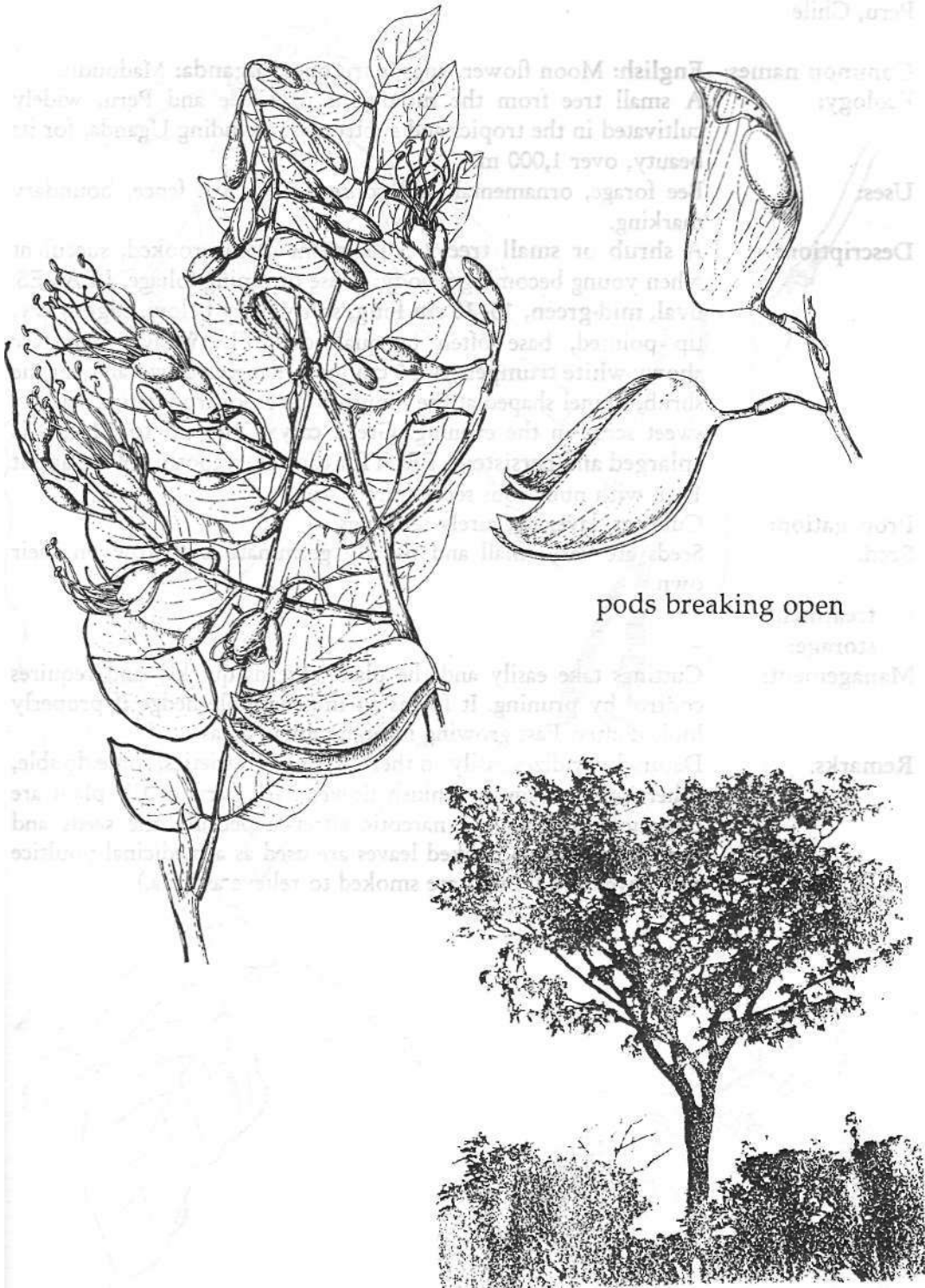
Seed: The seed are thrown a long distance when the pods split open and they must be collected from the ground since trees are very tall. Thus collecting seed is difficult,

treatment: soak in cold water overnight before sowing,

storage: seed is liable to insect attack. Add ash to reduce insect damage.

Management: Slow growing.

Remarks: Farmers should be encouraged to grow this tree as it has a potential for improving poor savannahs. The heartwood is red-brown, weak and perishable but easily worked. The resin is used as a gum locally.



Datura suaveolens (D. Candida)

Solanaceae

Peru, Chile

Common names: **English:** Moon flower, angel's trumpet **Luganda:** Maduudu.

Ecology: A small tree from the mountains of Chile and Peru, widely cultivated in the tropics and subtropics, including Uganda, for its beauty, over 1,000 m.

Uses: Bee forage, ornamental, soil conservation, live fence, boundary marking.

Description: A **shrub or small tree 2-5 m**, stems often crooked, succulent when young becoming woody; dense drooping foliage. **LEAVES: oval, mid-green, 15-30 cm long**, softly hairy below, **edge wavy**, tip pointed, base often unequal-sided. **FLOWERS: attractive showy white trumpets to 30 cm long**, hanging down all over the shrub, funnel shaped at the mouth with an overpowering musky-sweet scent in the evening. Green **calyx, 5-lobed to 12 cm, is enlarged and persistent**. **FRUIT:** a capsule, smooth, oblong about 1 cm with numerous seeds (rarely seen).

Propagation: Cuttings, layering, rarely seedlings.

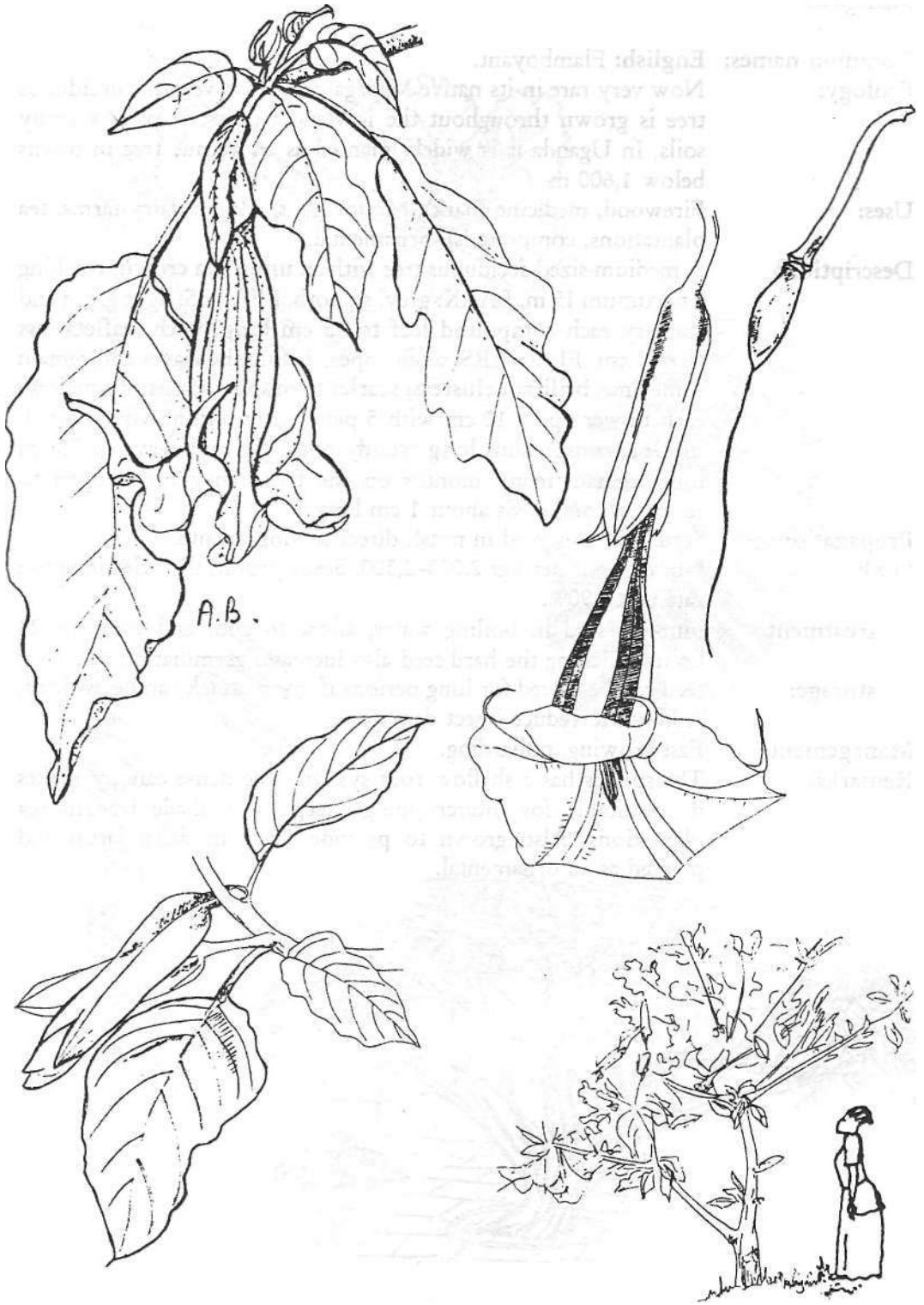
Seed: Seeds are very small and usually germinate and grow on their own.

treatment:

storage:

Management: Cuttings take easily and the plant spreads quickly and requires control by pruning. It forms an impenetrable hedge if properly looked after. Fast growing in high-rainfall areas.

Remarks: *Datura* hybridizes easily so there are many varieties, some double, others with cream or pinkish flowers. All parts of the plant are poisonous and have a narcotic effect—especially the seeds and leaves. (In Mexico cooked leaves are used as a medicinal poultice and leaves and flowers are smoked to relieve asthma.)



Madagascar

Common names: **English:** Flamboyant.

Ecology: Now very rare in its native Madagascar. However, this deciduous tree is grown throughout the lowland tropics. It prefers sandy soils. In Uganda it is widely planted as an avenue tree in towns below 1,600 m.

Uses: Firewood, medicine (bark), bee forage, shade (in dairy farms, tea plantations, compounds), ornamental.

Description: A medium-sized deciduous tree with an **umbrella crown**, reaching a maximum 15 m. **BARK:** grey, smooth. **LEAVES:** light green and feathery each **compound leaf to 45 cm long, with leaflets less than 1 cm.** **FLOWERS:** often appear before the leaves and remain sometime, **brilliant clusters, scarlet to orange**, sometimes yellow, each flower up to 10 cm with 5 petals, 1 cream, heavily spotted. **FRUIT:** conspicuous **long woody pods**, flat and heavy to 75 cm long, remain many months on the tree. They break open to release oblong seeds about 1 cm long.

Propagation: Seedlings (sow seed in pots), direct sowing on site.

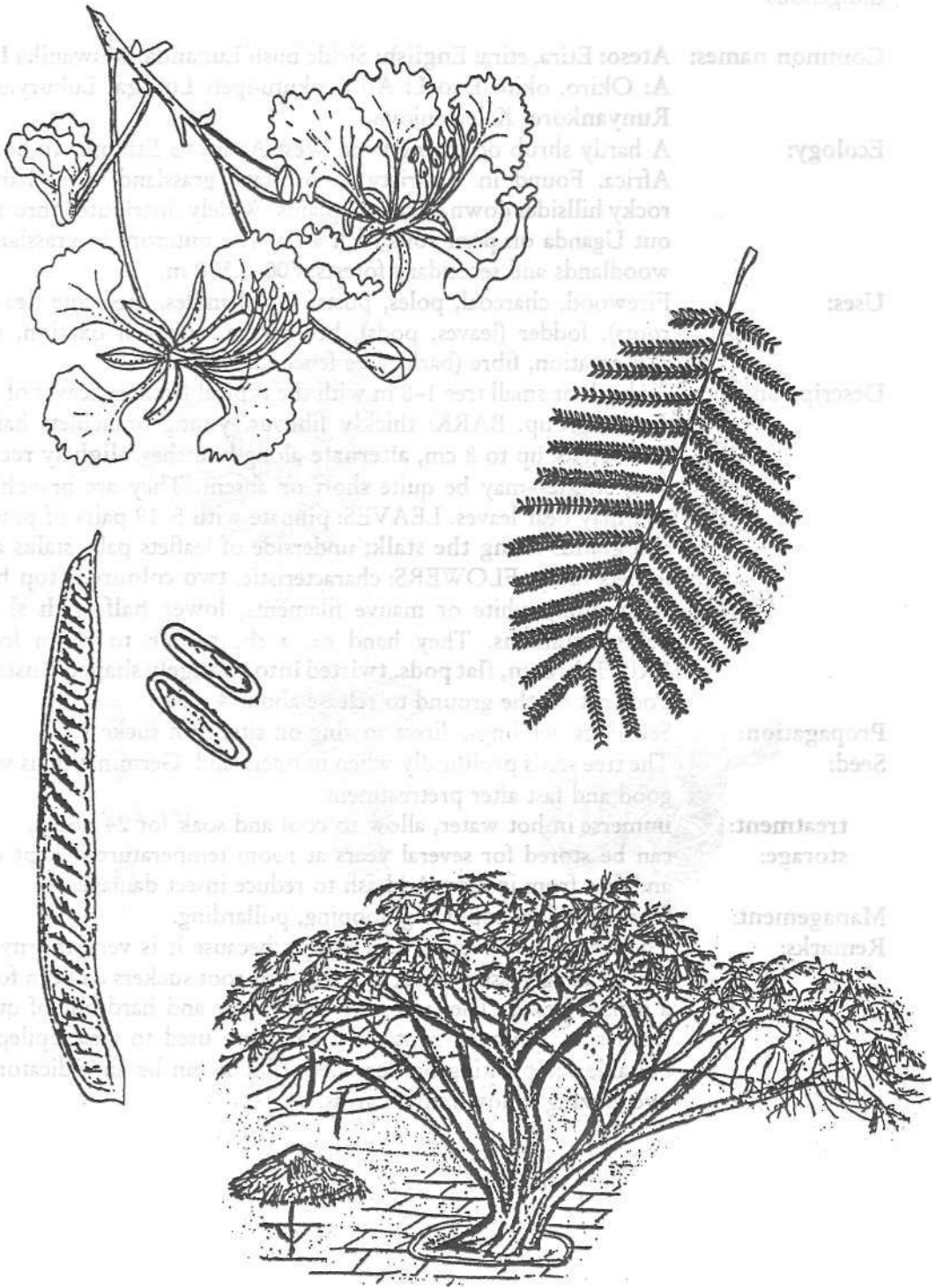
Seed: No. of seeds per kg: 2,000-2,300. Seeds prolifically. Germination rate up to 90%.

treatment: immerse seed in boiling water, allow to cool and soak for 24 hours. Nicking the hard seed also increases germination rate.

storage: seed can be stored for long periods if insect attack can be avoided. Add ash to reduce insect damage.

Management: Fast growing, pollarding.

Remarks: The species has a shallow root system. The dense canopy makes it unsuitable for intercropping except as a shade tree in tea plantations. Also grown to provide shade in dairy farms and planted as an ornamental.



Dichrostachys cinerea (D. glomerata)

Mimosaceae

Indigenous

Common names: **Ateso:** Etira, etirai **English:** Sickle bush **Luganda:** Muwanika **Luo A:** Okiro, okito **Luo L:** Atila, okutu-ipeti **Lusoga:** Luburyango **Runyankore:** Kalemanjovu.

Ecology: A hardy shrub occurring from West Africa to Ethiopia to South Africa. Found in a variety of habitats: grassland, river banks, rocky hillsides down to coastal plains. Widely distributed throughout Uganda on poor soils such as laterite outcrops in grasslands, woodlands and secondary forests, 700-1,500 m.

Uses: Firewood, charcoal, poles, posts, tool handles, medicine (leaves, roots), fodder (leaves, pods), bee forage, nitrogen fixation, soil conservation, fibre (bark), live fence, dry fence.

Description: A shrub or small tree 1-8 m with the typical feathery leaves of the Acacia group. **BARK:** thickly fibrous, young branchlets hairy. **THORNS:** up to 8 cm, **alternate** along branches, **slightly recurved, single**—may be quite short or absent. They are branchlets and may bear leaves. **LEAVES:** pinnate with 5-19 pairs of pinnae and **glands along the stalk;** underside of leaflets pale, stalks and leaflets hairy. **FLOWERS:** characteristic, **two coloured, top half with pink,** white or mauve filaments, **lower half with short yellow stamens.** They hang on a short stalk to 5 cm long. **FRUIT: brown, flat pods, twisted into strangely shaped clusters.** Pods rot on the ground to release about 4 seeds.

Propagation: Seedlings, wildings, direct sowing on site, root suckers.

Seed: The tree seeds prolifically when in open land. Germination is very good and fast after pretreatment.

treatment: immerse in hot water, allow to cool and soak for 24 hours,
storage: can be stored for several years at room temperature if kept dry and free from insects. Add ash to reduce insect damage.

Management: Slow growing; coppicing, lopping, pollarding.

Remarks: The tree is not planted near houses because it is very thorny. It can be an aggressive weed, has vigorous root suckers and can form a dense thicket. The timber is very heavy and hard but of quite small size. Pounded roots and leaves are used to treat epilepsy. Suitable for planting on degraded soils. It can be an indicator of overgrazing in low rainfall areas.

Indigenous

Common names: **English:** Giant diospyros **Kwamba:** Nkinga **Luganda:** Mpojwa **Luganda, dialect Buddu:** Mpimbya, mpojwa **Lugwe:** Muryonjo **Lunyuli:** Mubale **Rukiga:** Muhoko, nsenene **Runyankore:** Muhoko **Rutoro:** Muhoko **Sebei:** Cheptua.

Ecology: A widespread African forest tree found in rain forest, lower montane forests, especially on drier sites and upper slopes, often on shallow soils underlain by murram, 1,100-2,200 m. In Uganda occurs in Bushenyi, Rukungiri, Kabale, Bundibugyo, Mukono, Masaka and Mpigi Districts and in Mabira, Kibale and Maramagambo Forests.

Uses: Firewood, charcoal, timber (furniture, local construction), poles, implements, tool handles, shade, walking sticks.

Description: A tall evergreen tree with a straight, slender trunk about 20 m but reaching 40 m in forests. It has a **small mushroom-shaped crown**. **BARK:** dark grey-brown, turning black, thick and fibrous, scaling off in thin strips or cracking into small rectangles. **LEAVES:** shiny dark green, long oval to 16 cm, narrowing to the tip, the **edge wavy, midrib clear below**. The short stalk is grooved. **Dry black leaves** can be seen below a tree. **FLOWERS:** small, white and fragrant in clusters beside the leaves. **FRUIT:** round to 1.5 cm across held in a **cup-shaped calyx, about 1 cm long, the tip pointed, red-yellow then black** when ripe. Sometimes in dense clusters.

Propagation: Seedlings, wildings.

Seed: No. of seeds per kg: 2,500-3,000.

treatment: not necessary.

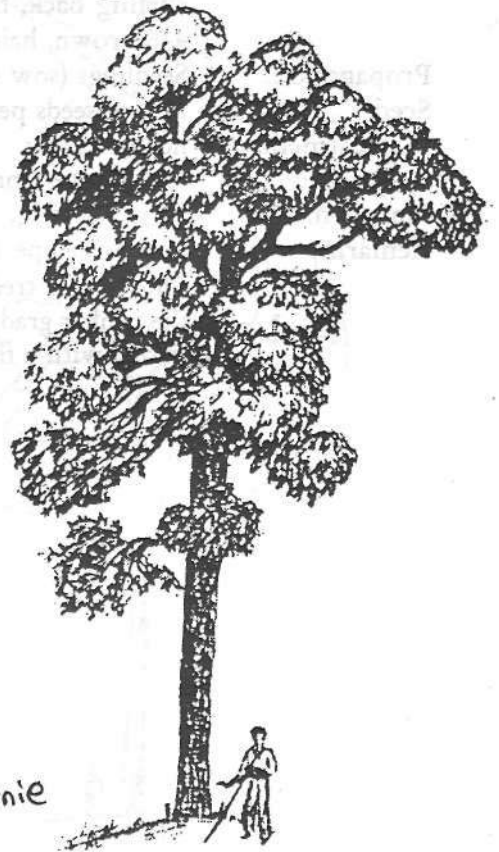
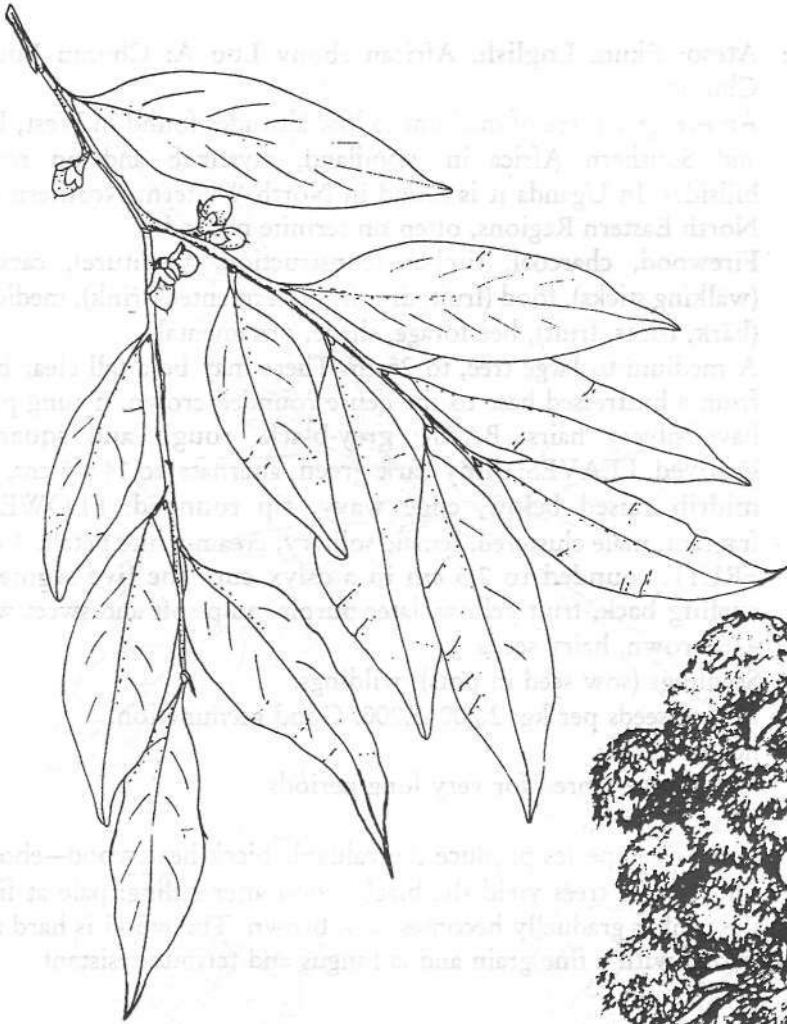
storage: seeds store for several years if kept free from insects. Add ash to reduce insect damage.

Management: Slow growing; pruning, pollarding, coppicing.

Remarks: The wood is pale, hard and tough, difficult to plane and not durable. The heartwood is darker. Though a mixed-forest species, it grows quickly when planted in new areas and in farm land thus quickly yielding good firewood and low-quality building poles.

Diospyros abyssinica

Ebenaceae



A. Birnie

Diospyros mespiliformis

Ebenaceae

Indigenous

Common names: **Ateso:** Ekum **English:** African ebony **Luo A:** Chumu **Luo J:** Chumo.

Ecology: An evergreen tree of medium to low altitudes found in West, East and Southern Africa in woodland, savannah and on rocky hillsides. In Uganda it is found in North Western, Northern and North Eastern Regions, often on termite mounds.

Uses: Firewood, charcoal, timber (construction, furniture), carving (walking sticks), food (fruit: dry, fresh, fermented drink), medicine (bark, roots, fruit), bee forage, shade, ornamental.

Description: A medium to large tree, to 25 m. There may be a tall clear bole from a buttressed base to the dense rounded crown. Young parts have silvery hairs. **BARK: grey-black, rough and squared, grooved.** **LEAVES: shiny dark green**, alternate, to 14 x 3 cm, **the midrib raised below, edge wavy, tip rounded.** **FLOWERS:** fragrant, male clustered, female solitary, cream-white petals, 1 cm. **FRUIT: rounded to 2.5 cm in a calyx cup, the five segments curling back**, fruit yellow, later purple, pulp soft and sweet with 4-6 brown, hairy seeds.

Propagation: Seedlings (sow seed in pots), wildings.

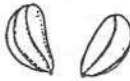
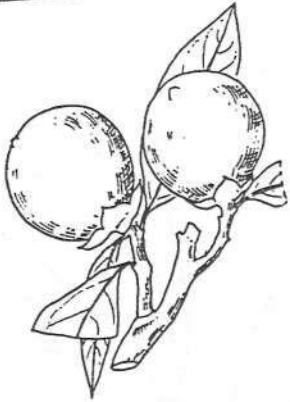
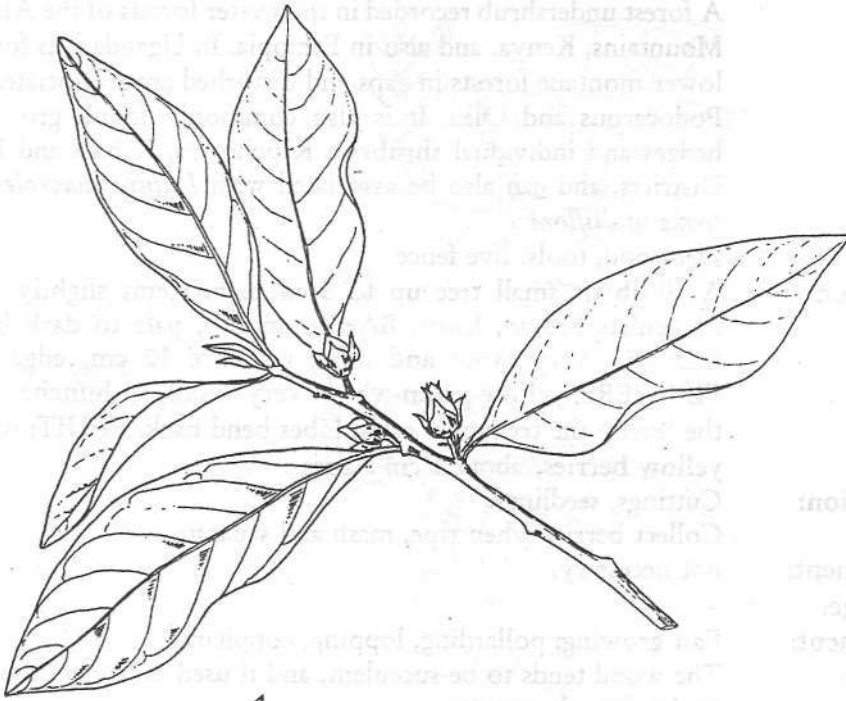
Seed: No. of seeds per kg: 2,700-3,200. Good germination.

treatment: not necessary.

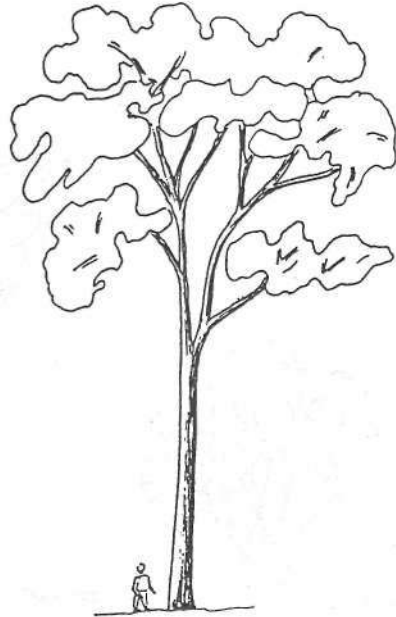
storage: seed can be stored for very long periods.

Management: Slow growing.

Remarks: Diospyros species produce the valuable black heartwood—ebony. Only a few trees yield the black wood after felling; pale at first, the timber gradually becomes dark brown. The wood is hard and strong with a fine grain and is fungus and termite resistant.



DAMTEW T.



Indigenous

Common names: **Lugishu:** Chichiwondo **Sebei:** Zabakwa.

Ecology: A forest undershrub recorded in the wetter forests of the Aberdare Mountains, Kenya, and also in Ethiopia. In Uganda it is found in lower montane forests in gaps and disturbed areas associated with Podocarpus and Olea. It is also commonly found growing as hedges and individual shrubs in Kapchorwa, Kabale and Kisoro Districts, and can also be associated with *Datura suaveolens* and *Iboza multiflora*.

Uses: Firewood, tools, live fence.

Description: A shrub or small tree up to 5 m high, stems slightly fleshy, branchlets brown, hairy. **BARK:** smooth, pale to dark brown. **LEAVES:** **very large and oval, to 25 x 10 cm**, edge wavy. **FLOWERS:** **yellow-green-white, very small, in bunches** beside the leaves; the triangular calyx lobes bend back. **FRUIT:** **orange-yellow berries**, about 1 cm across.

Propagation: Cuttings, seedlings.

Seed: Collect berries when ripe, mash and separate, not necessary.

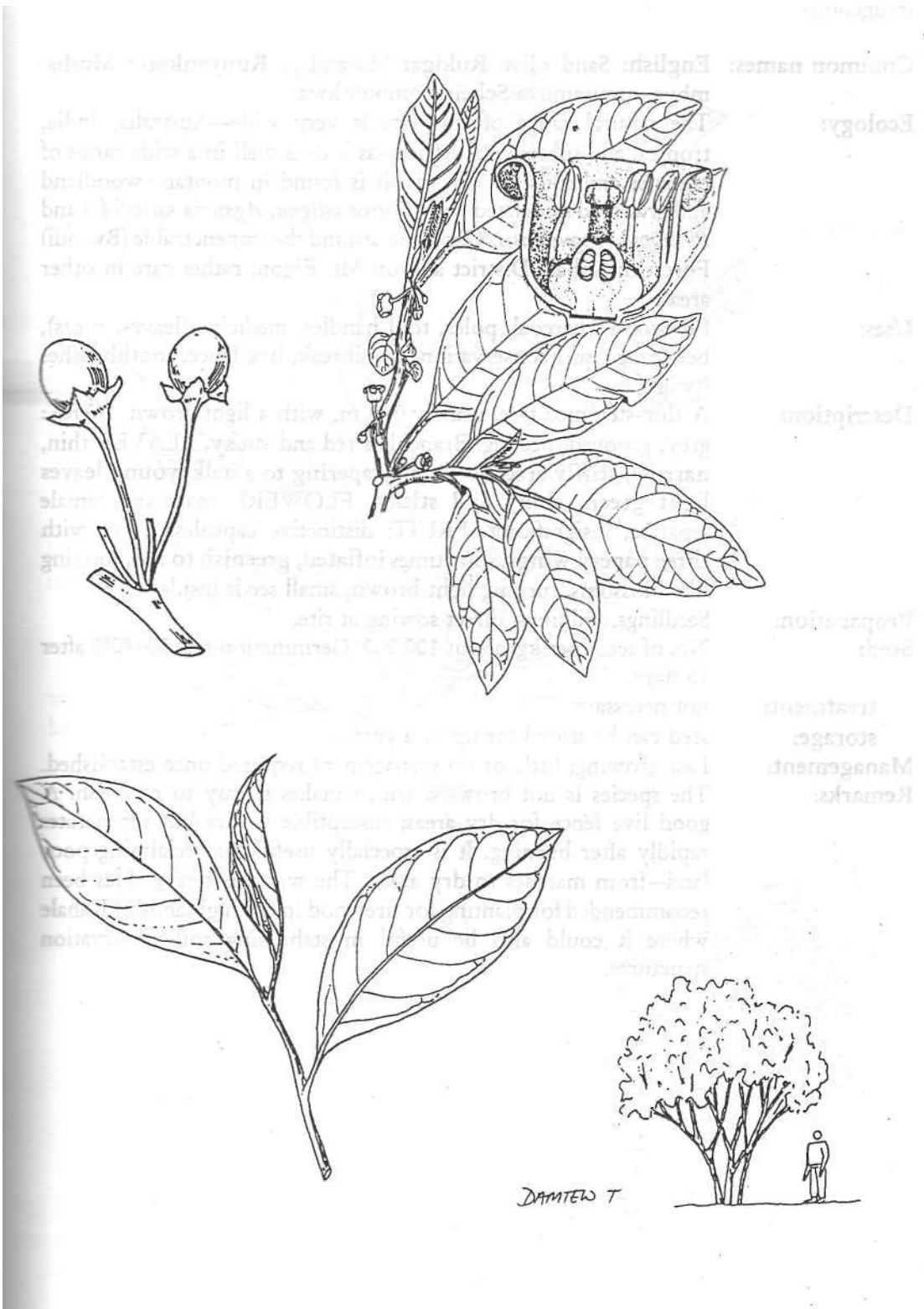
treatment:
storage:

Management: Fast growing; pollarding, lopping, coppicing.

Remarks: The wood tends to be succulent, and if used as firewood it needs to dry for a long time.

Discopodium penninervum

Solanaceae



Dodonaea angustifolia (D. viscosa)

Sapindaceae

Indigenous

Common names: **English:** Sand olive **Rukiga:** Musambya **Runyankore:** Mushambya, omusambya **Sebei:** Tombolokwa.

Ecology: The natural range of this tree is very wide—Australia, India, tropical and subtropical Africa—as it does well in a wide range of climates and soils. In Uganda, it is found in montane woodland and grassland associated with *Faurea saligna*, *Agauria salicifolia* and *Philippia benguelensis*. Common around the Impenetrable (Bwindi) Forest in Kabale District and on Mt. Elgon; rather rare in other areas.

Uses: Firewood, charcoal, poles, tool handles, medicine (leaves, roots), bee forage, soil conservation, windbreak, live fence, toothbrushes (twigs).

Description: A thin-stemmed tree, usually 3-8 m, with a light crown. **BARK:** grey, grooved, peeling. Branchlets red and sticky. **LEAVES:** thin, **narrow, stiffly erect to 10 cni, tapering** to a stalk, **young leaves light green, shiny and sticky.** **FLOWERS:** male and female separate, insignificant. **FRUIT:** distinctive capsules, 2 cm with **three papery wings, sometimes inflated, greenish to red,** looking like blossoms, turning light brown, small seeds inside.

Propagation: Seedlings, wildings, direct sowing at site.

Seed: No. of seeds per kg: about 100,000. Germination rate 30-70% after 15 days.

treatment: not necessary.

storage: seed can be stored for up to a year.

Management: Fast growing; little or no management required once established.

Remarks: The species is not browsed which makes it easy to establish. A good live fence for dry areas; susceptible to fire but regenerates rapidly after burning. It is especially useful for reclaiming poor land—from marshes to dry areas. The wood is heavy. Has been recommended for planting for firewood in the highlands of Kabale where it could also be useful in stabilizing soil-conservation structures.



Indigenous

Common names: **Luganda:** Nkokwa **Runyankore:** Mukarabo.

Ecology: A shrub or small tree found in Uganda but not in Kenya or Tanzania. It grows in the wooded savannah grassland or shady woodlands of the Central, Western and North Western Regions of Uganda.

Uses: Fibre (bark), bee hives (coppice shoots).

Description: A decorative shrub or small tree about 2 m high, rarely up to 6 m. **BARK:** brown and fibrous, young shoots hairy. They are flexible and used to make bee hives. **LEAVES:** **oval to rounded with 3-5 lobes, the edge irregularly toothed**, the main lateral veins reaching over half way up the leaf blade, upper surface hairy, **tip rounded or notched, the midrib tip projecting**, leaf base heart-shaped to a hairy stalk 3-7 cm long. **FLOWERS:** **heads of white flowers** on a stalk to 15 cm grow beside leaves, each flower with 5 petals up to 17 mm and **5 styles**. **FRUIT:** a **capsule about 1 cm long with 5 sections** which split to release tiny hairy seeds.

Propagation: Seedlings, wildings.

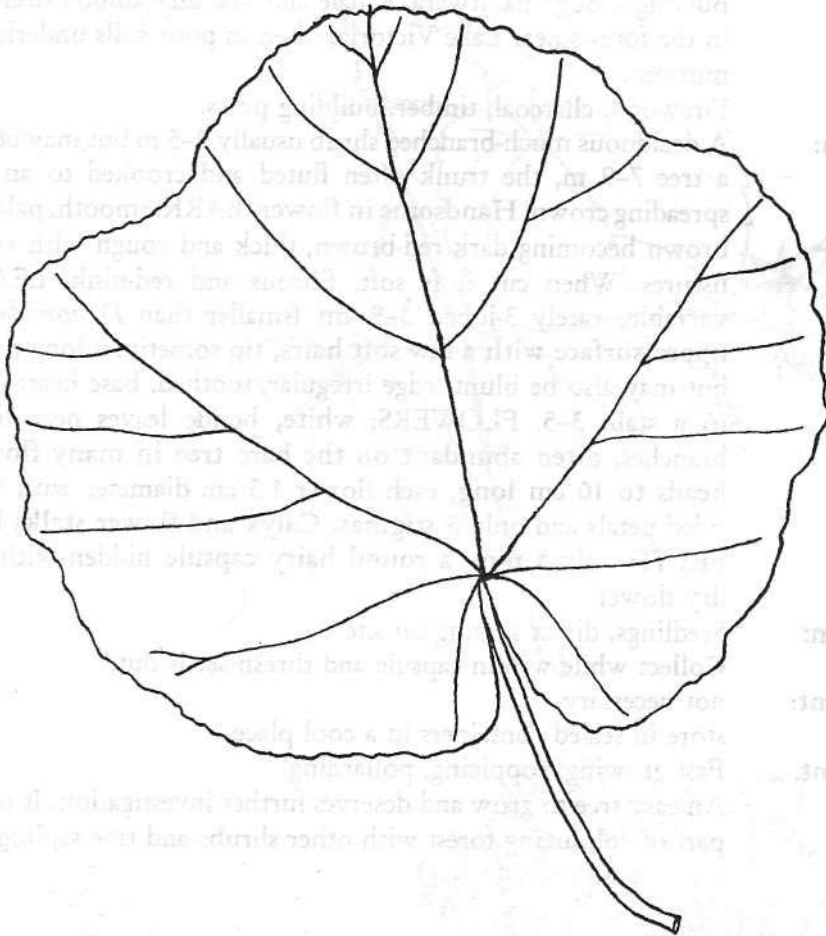
Seed: Seeds should be collected before the capsules split open, and removed either by shaking the split capsules or by beating them with a stick,

treatment: not necessary.

storage: store in sealed envelopes in a dry cool place.

Management: Fast growing; coppicing. Many coppice shoots are produced after cutting or burning in bush fires. Such stems need to be thinned and pruned.

Remarks: Once the bark is removed, the stem dies. The bark is used to make baskets.



Description:

Propagation:
Seed.
Treatment:
Storage:
Management:
Remarks:

Indigenous

Common names: **Kwamba:** Mukole **Luganda:** Mukole **Lugwe:** Mufudufu **Rukonjo:** Mukole **Runyoro:** Mukole.

Ecology: A widespread tree of moist lowland or colonizing forests in Uganda. Also common in Kenya and into Southern Africa. It can be part of the riverine vegetation, often on rocky sites or bushland and at the margins of dry or open forest. The tree grows in Budongo, Bugoma, Itwara, Kibale and Maramagambo Forests and in the forests near Lake Victoria, often in poor soils underlain by murrain.

Uses: Firewood, charcoal, timber, building poles.

Description: A deciduous much-branched shrub usually 2-5 m but may become a tree 7-9 m, the trunk often fluted and crooked to an open spreading crown. **Handsome in flower.** **BARK:** smooth, pale grey-brown becoming dark red-brown, thick and rough with vertical fissures. When cut it is soft, fibrous and red-pink. **LEAVES:** **variable**, rarely 3-lobed 3-9 cm (smaller than *D. torrida*), the **upper surface with a few soft hairs**, tip sometimes long pointed but may also be blunt, edge irregular, toothed, base heart-shaped to a stalk 3-5. **FLOWERS:** **white**, beside leaves near tips of branches, **often abundant on the bare tree in many flowered heads to 10 cm long**, each flower 1.3 cm diameter with 5 one-sided petals and only **3 stigmas**. **Calyx and flower stalks hairy.** **FRUIT:** only **5 mm**, a **round hairy capsule** hidden within the dry flower.

Propagation: Seedlings, direct sowing on site.

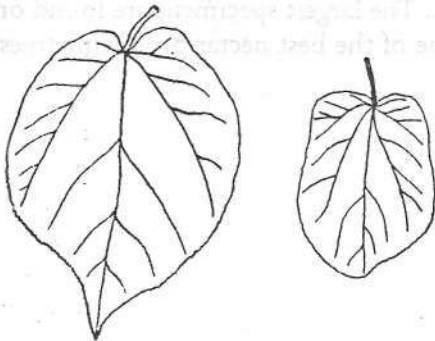
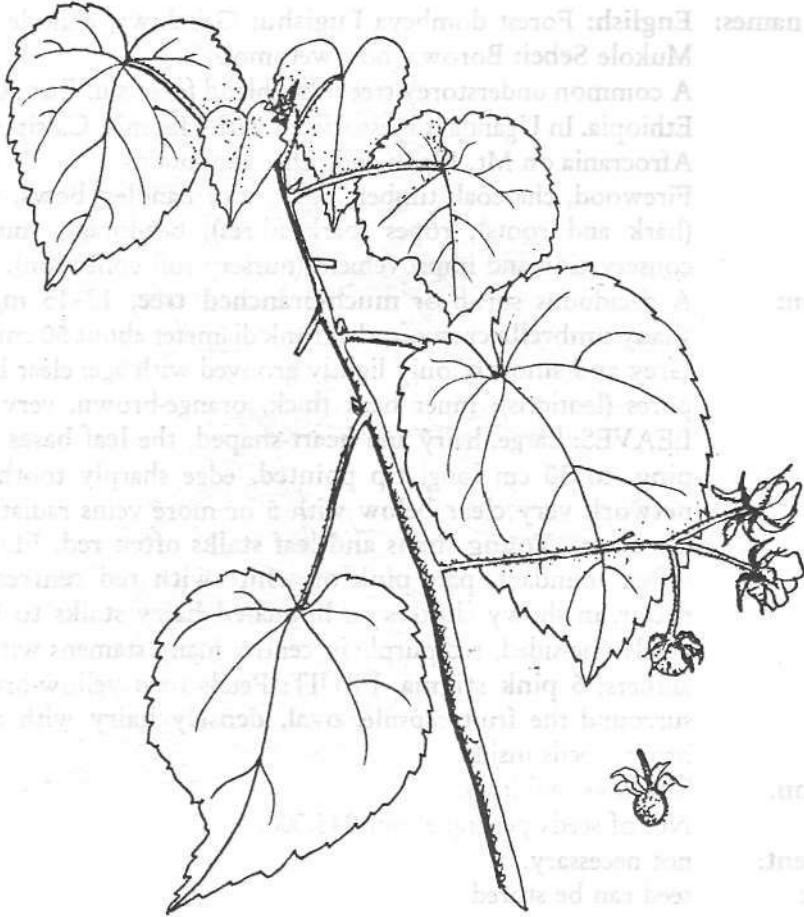
Seed: Collect while within capsule and thresh seeds out.

treatment: not necessary.

storage: store in sealed containers in a cool place.

Management: Fast growing; coppicing, pollarding.

Remarks: An easy tree to grow and deserves further investigation. It is often part of colonizing forest with other shrubs and tree saplings.



Indigenous

Common names: **English:** Forest dombeya **Lugishu:** Gabaluwa, chikole **Rukiga:** Mukole **Sebei:** Borowa, borowetomoi.

Ecology: A common understorey tree of highland forests in East Africa and Ethiopia. In Uganda it is associated with *Hagenia*, *Cassipourea* and *Afrocrania* on Mt. Elgon and other mountains.

Uses: Firewood, charcoal, timber, poles, tool handles, bows, medicine (bark and roots), ropes (bark fibres), bee-forage, mulch, soil conservation and improvement (nursery soil collection).

Description: A deciduous shrub or **much-branched tree, 12-15 m, with a shady umbrella crown** and a trunk diameter about 50 cm. **BARK:** **Grey and smooth**, only lightly grooved with age; clear breathing pores (lenticels); inner bark thick, orange-brown, very fibrous. **LEAVES:** Large, hairy and **heart-shaped**, the **leaf bases overlapping**, to 30 cm long, **tip pointed**, edge sharply toothed, **vein network very clear below** with 5 or more veins radiating from the centre. **Young stems and leaf stalks often red.** **FLOWERS:** Often abundant, **pale pink or white with red centres**, full of nectar, in showy clusters on **branched hairy stalks to 30 cm**, 5 petals one-sided, red-purple in centre; many stamens with orange anthers; **5 pink stigma.** **FRUIT:** Petals turn yellow-brown and surround the fruit capsule, **oval, densely hairy** with about 10 brown seeds inside.

Propagation: Seedlings, wildings.

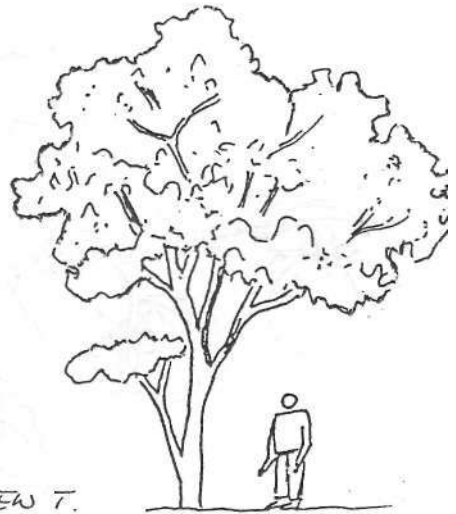
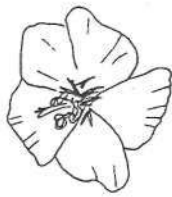
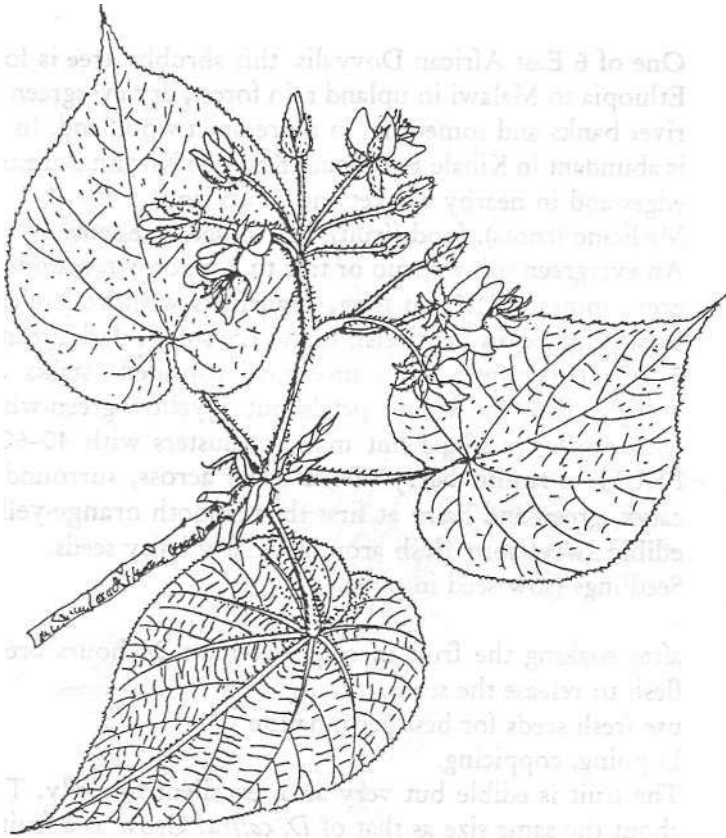
Seed: No. of seeds per kg: about 235,000.

treatment: not necessary,

storage: seed can be stored.

Management: Fairly fast growing.

Remarks: Even though top-quality forest soil can be collected below these trees, crops cannot grow well due to the heavy shading. The wood is soft but tough, easy to saw and to plane. The species has been recommended for planting together with others in the buffer zone around Bwindi National Park. The largest specimens are found on Mt. Elgon. It is considered one of the best nectar-producing trees.

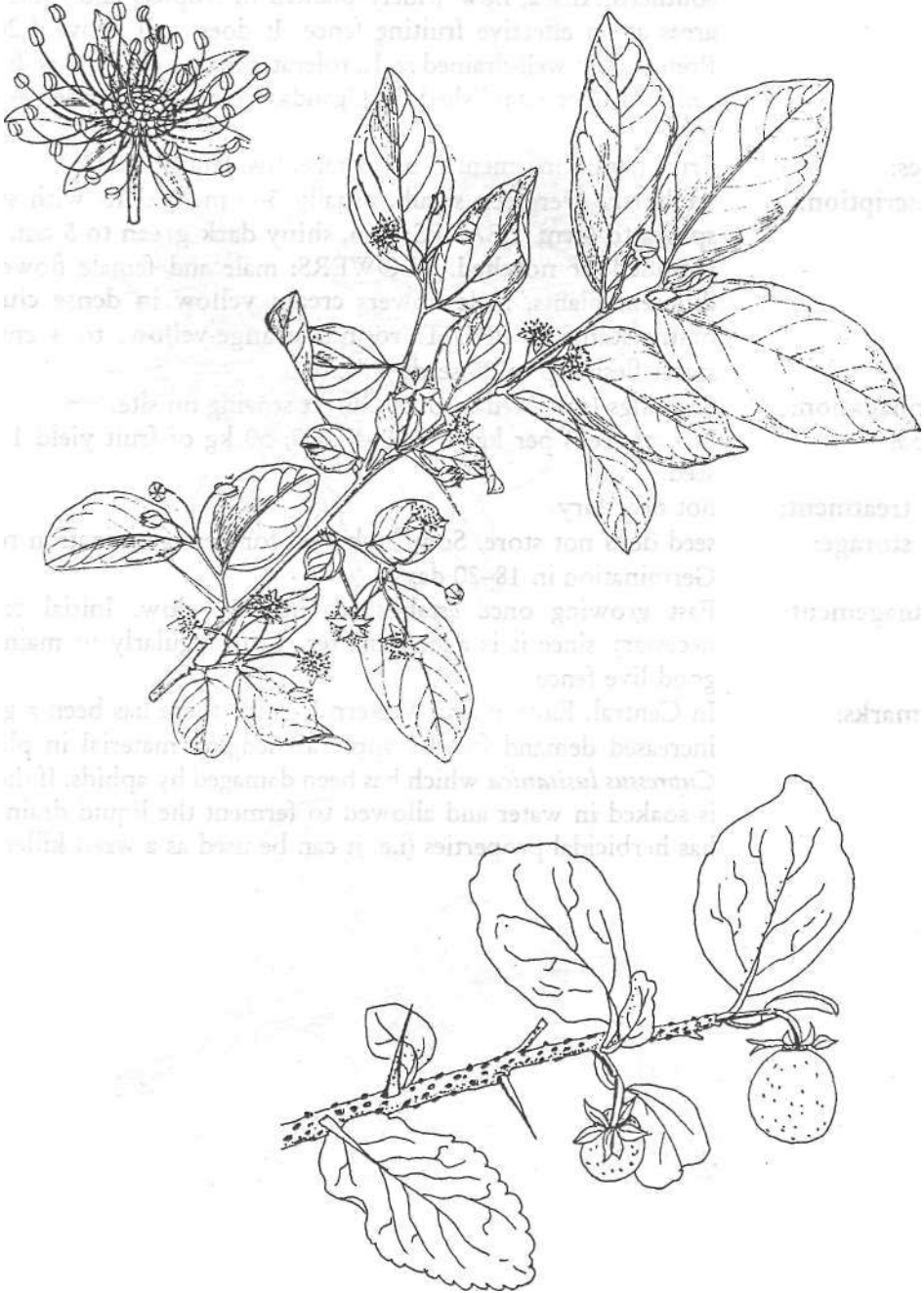


JAMTEW T.

Indigenous

- Ecology:** One of 6 East African Dovyalis, this shrubby tree is found from Ethiopia to Malawi in upland rain forest, dry evergreen forest, on river banks and sometimes in more open woodland. In Uganda it is abundant in Kibale Forest and Kasyoha-Kitomi Forests, at forest edges and in nearby thicket and scrub land.
- Uses:** Medicine (roots), food (fruit), bee forage, live fence.
- Description:** An evergreen spiny shrub or tree to 8 m, crown rounded. BARK: grey, spines to 1.5 cm long. Branchlets with **very clear dotted breathing pores** (lenticels). LEAVES: shiny, dark green, **oval, to 5 cm, tip blunt, edge unevenly rounded**, stalks and veins reddish. FLOWERS: no petals but 5 yellow-green-white sepals, female flowers single but male in clusters with 40-60 stamens. FRUIT: a **round berry about 2 cm across**, surrounded by the calyx, green and hairy at first then smooth **orange-yellow**, with **edible sweet-sour flesh** around the few hairy seeds.
- Propagation:** Seedlings (sow seed in pots).
- Seed:**
- treatment:** after soaking the fruit in cold water for 24 hours break up the flesh to release the seeds.
- storage:** use fresh seeds for best germination.
- Management:** Lopping, coppicing.
- Remarks:** The fruit is edible but very acid; excellent for jelly. The fruit is about the same size as that of *D. caffra*. Grow as a fruit bush.

enlarged
male flower



South Africa

Common names: **English:** Kei apple.

Ecology: A spiny shrub found in open bush and Acacia woodlands in southern Africa, now widely planted in tropical and subtropical areas as an effective fruiting fence. It does well above 1,200 m. Prefers deep well-drained soils, tolerates loamy clay and is drought resistant once established. In Uganda it is widely planted as a live fence.

Uses: Fruit (jam), ornamental, bee forage, live fence.

Description: A thorny evergreen shrub, usually 3-5 m. **BARK:** with **strong spines to 6 cm**. **LEAVES:** thin, **shiny dark green to 5 cm, tip is rounded or notched**. **FLOWERS:** male and female flowers on different plants, male flowers **cream yellow in dense clusters, many stamens**. **FRUIT:** **round, orange-yellow**, to 4 cm, soft sweet flesh, up to 20 seeds within.

Propagation: Seedlings (sow seed in pots), direct sowing on site.

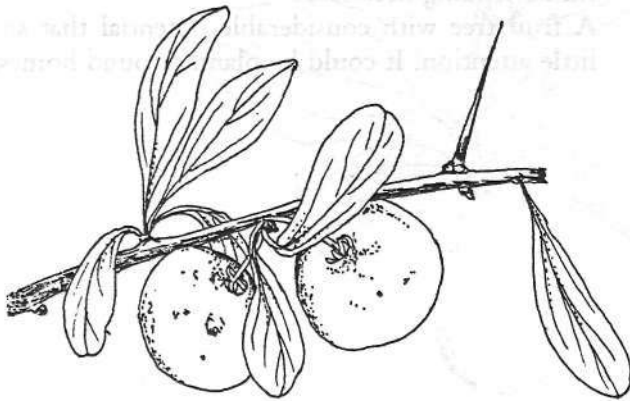
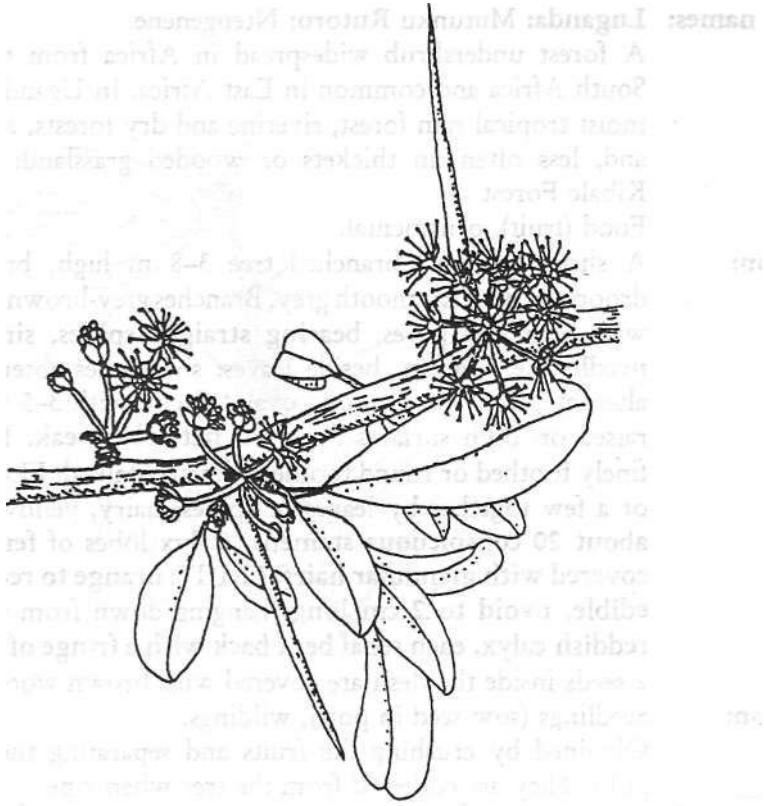
Seed: No. of seeds per kg: 27,000-47,000; 50 kg of fruit yield 1 kg of seed.

treatment: not necessary.

storage: seed does not store. Sow fresh seed for best germination results. Germination in 18-20 days.

Management: Fast growing once established, initially slow. Initial tending necessary since it is a slow starter. Trim regularly to maintain a good live fence.

Remarks: In Central, Eastern and Western Uganda there has been a greatly increased demand for kei apple as hedging material in place of *Cupressus lusitanica* which has been damaged by aphids. If the fruit is soaked in water and allowed to ferment the liquid drained off has herbicidal properties (i.e. it can be used as a weed killer).



Indigenous

Common names: **Luganda:** Mutunku **Rutoro:** Ntengenene.

Ecology: A forest undershrub widespread in Africa from the Sudan to South Africa and common in East Africa. In Uganda it grows in moist tropical rain forest, riverine and dry forests, at forest edges and, less often, in thickets or wooded grassland; abundant in Kibale Forest.

Uses: Food (fruit), ornamental.

Description: A shrub or much-branched tree 3-8 m high, branches often drooping. **BARK:** smooth grey. Branches grey-brown, often dotted with breathing pores, **bearing straight spines, single, usually needle-like 1-6 cm**, beside leaves; sometimes absent. **LEAVES:** alternate, usually thin, long oval 4-9 cm, with 3-5 veins slightly raised on both surfaces but **vein network weak**. Edge may be finely toothed or round toothed; shortly stalked. **FLOWERS:** one or a few together by leaves or spines, hairy, yellow-green, with **about 20 conspicuous stamens**. Calyx lobes of **female flowers covered with glandular hairs**. **FRUIT: orange to red, fleshy and edible, ovoid to 2 cm long**, hanging down from the **enlarged reddish calyx, each sepal bent back with a fringe of sticky hairs**, 2 seeds inside the flesh are covered with brown wool.

Propagation: Seedlings (sow seed in pots), wildings.

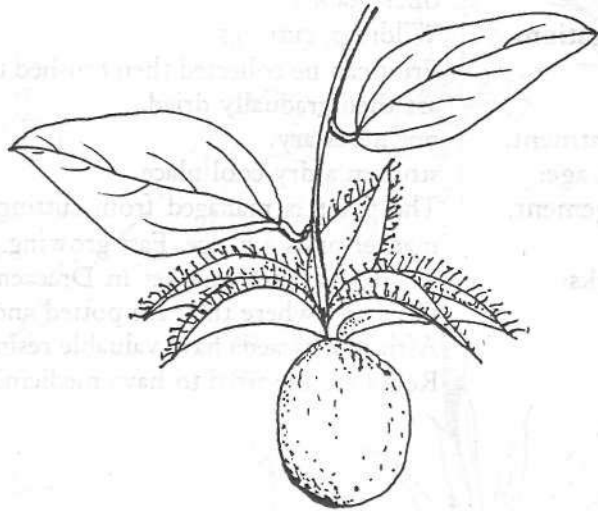
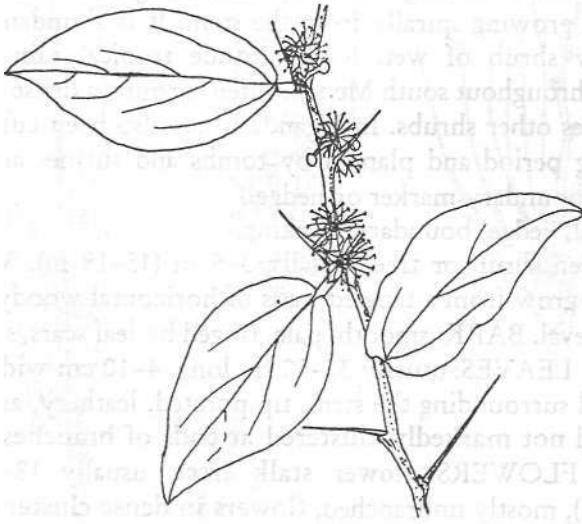
Seed: Obtained by crushing the fruits and separating them from the pulp. They are collected from the tree when ripe.

treatment: not necessary.

storage: use fresh seed for best germination.

Management: Initial tending necessary.

Remarks: A fruit tree with considerable potential that so far has received little attention. It could be planted round homesteads.



Dracaena fragrans

Dracaenaceae

Indigenous

Common names: **English:** Dragon tree **Luganda:** Mpaanyi, mulamula **Runyoro:** Mulamula **Rutoro:** Muramura.

Ecology: This is one of several East African species in a monocotyledon family, unusual in having secondary thickening in the stems and with leaves growing spirally from the stem. It is abundant as an understory shrub of wet, lower-altitude tropical rain forest. Common throughout south Mengo, often forming a dense thicket that excludes other shrubs. In Uganda it has also been cultivated over a long period and planted by tombs and shrines and as a traditional boundary marker or hedge.

Uses: Ornamental, hedge, boundary marking.

Description: An evergreen shrub or tree, usually 3-5 m (15-18 m). Vertical leafy stems grow from a tangled mass of horizontal woody stems at ground level. **BARK:** smooth, pale, ringed by leaf scars, soft and juicy if cut. **LEAVES:** usually 30-50 cm long, **4-10 cm wide**, base narrow and surrounding the stem, tip pointed, leathery, arranged spirally and **not markedly clustered at ends of branches** (as *D. steudneri*). **FLOWERS:** **flower stalk erect**, usually 18-25 cm (40-100 cm), mostly unbranched, **flowers in dense clusters, very fragrant, petals white or pink with a central darker pink stripe**, anthers yellow, flower tubular with 6 lobes in 2 whorls. **FRUIT:** rounded **orange fleshy berries**, about 2 cm, sometimes lobed, on thick stalks.

Propagation: Wildings, cuttings.

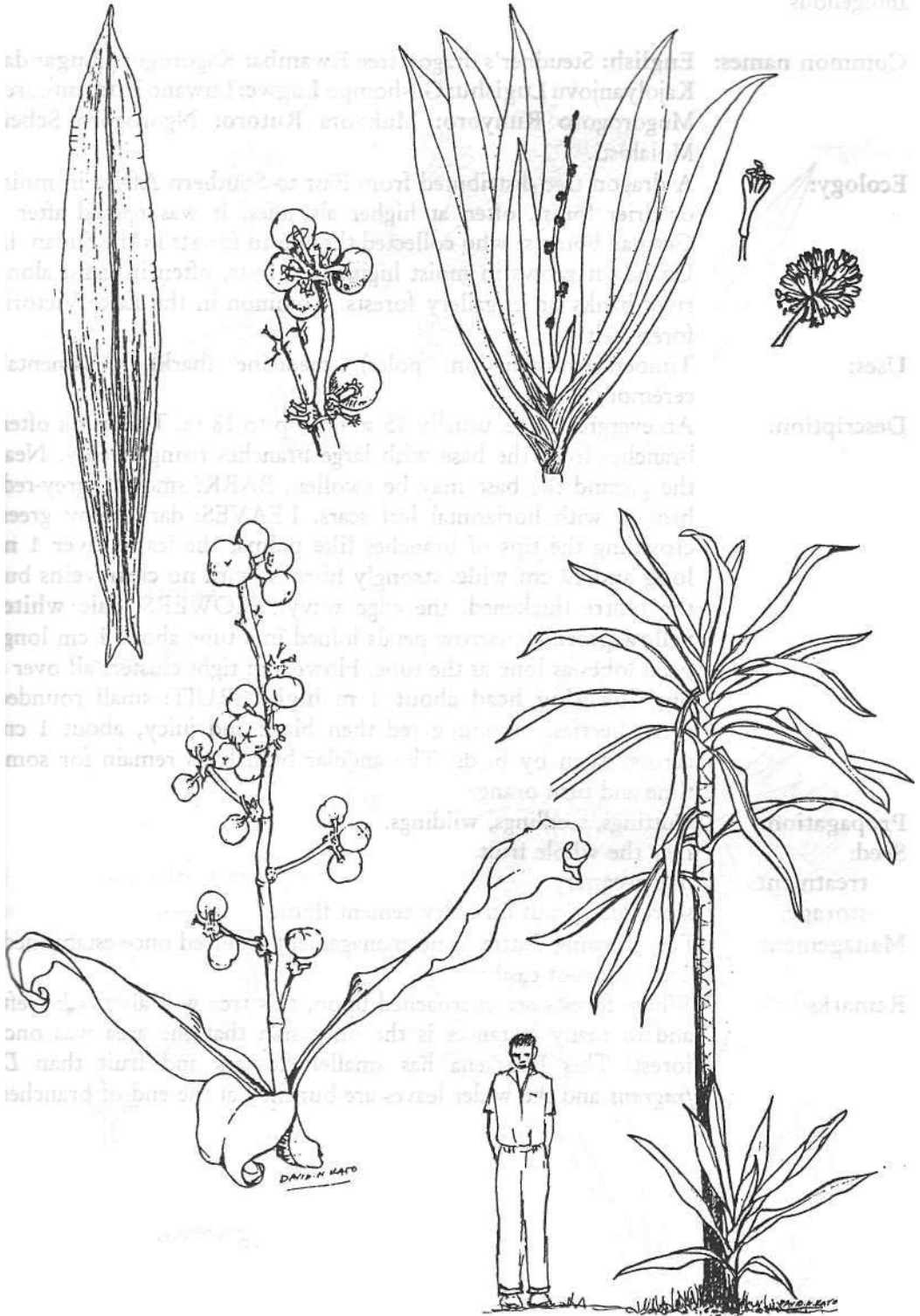
Seed: Fruit can be collected then crushed to set free the seeds. The seeds are then gradually dried.

treatment: not necessary.

storage: store in a dry cool place.

Management: The plant is managed from cuttings or wildings as a boundary marker or as a hedge. Fast growing.

Remarks: There is a good market in Dracaena cuttings being exported to Germany where they are potted and sold as indoor plants. Some African Dracaena have valuable resins which are extracted for sale. Roots are reported to have medicinal uses.



Indigenous

Common names: **English:** Steudner's dragon tree **Kwamba:** Kagorogoro **Luganda:** Kajolyanjovu **Lugishu:** Gushompo **Lugwe:** Luwano **Runyankore:** Mugorogoro **Runyoro:** Mukyora **Rutoro:** Ngorogoro **Sebei:** Molalosti.

Ecology: A dragon tree distributed from East to Southern Africa in moist or drier forest, often at higher altitudes. It was named after a German botanist who collected the tree in forests in the Sudan. In Uganda it grows in moist highland forests, often in gaps, along river banks or in gallery forests. Common in the Lake Victoria forest belt.

Uses: Timber (construction, poles), medicine (bark), ornamental, ceremonial.

Description: An evergreen tree, usually 15 m but up to 18 m. The trunk often branches from the base with large branches rising steeply. Near the ground the base may be swollen. **BARK:** smooth, grey-red-brown, with horizontal leaf scars. **LEAVES:** dark shiny green crowding the tips of branches **like palms**, the leaves **over 1 m long and 12 cm wide**, strongly fibrous, with **no clear veins** but the centre thickened, the edge wavy. **FLOWERS:** **pale white-yellow-green**, 6 narrow petals joined in a tube about 1 cm long, petal lobes as long as the tube. Flowers in tight clusters all over a **big flowering head about 1 m high**. **FRUIT:** small rounded green berries, becoming red then black and juicy, about 1 cm across; eaten by birds. The angular branchlets remain for some time and turn orange.

Propagation: Cuttings, seedlings, wildings.

Seed: Dry the whole fruit,

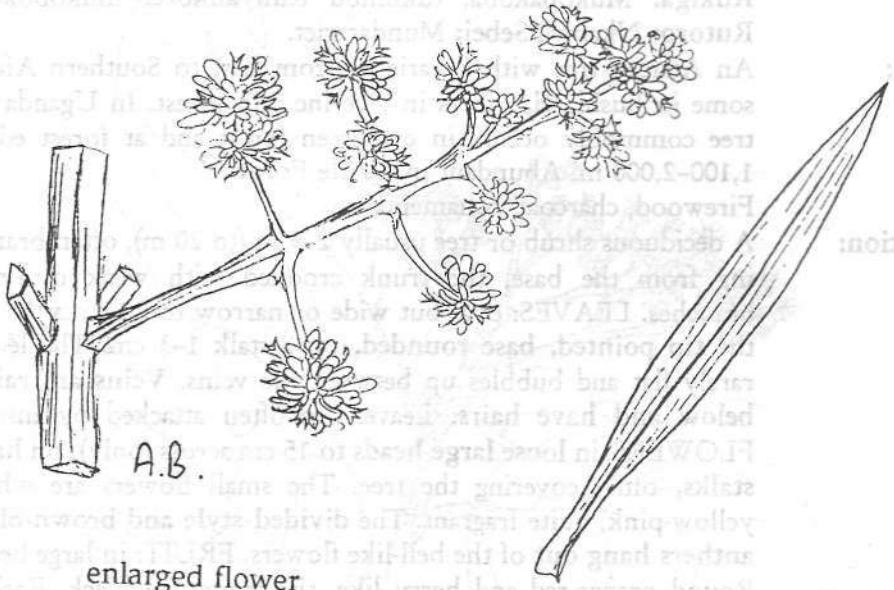
treatment: not necessary.

storage: store spread out on a dry cement floor.

Management: Fast growing. Little or no management required once established. Cuttings root easily.

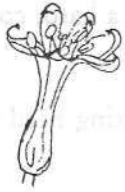
Remarks: Where forests are encroached upon, this tree will always be left, and in many instances is the only sign that the area was once forest. This *Dracaena* has smaller flowers and fruit than *D. fragrans* and the wider leaves are bunched at the end of branches.

Common names: ...
 Ecology: ...
 Description: ...

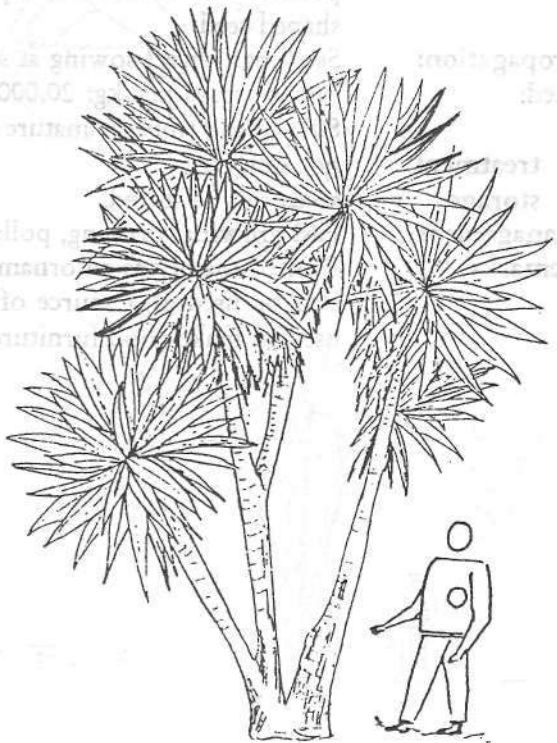


A.B.

enlarged flower



seed-fruit enlarged



DAMTEW T.

Indigenous

Common names: **Luganda:** Musuga **Lugishu:** Chibondwe **Lusoga:** Ikobokobo **Rukiga:** Mukobakoba, tukumbu **Runyankore:** mukobokobo **Rutoro:** Nkabwa **Sebei:** Mundarariet.

Ecology: An African tree with 5 varieties from East to Southern Africa, some in bushland, others in riverine rain forest. In Uganda the tree commonly occurs in evergreen forest and at forest edges, 1,100-2,000 m. Abundant in Kibale Forest.

Uses: Firewood, charcoal, ornamental.

Description: A deciduous shrub or tree usually 2-9 m (to 20 m), often branching from the base, the trunk crooked with weak drooping branches. **LEAVES:** oval but wide or narrow to 20 cm x 12 cm, the **tip pointed, base rounded**, on a stalk 1-3 cm. The leaf is rarely flat and bubbles up between the veins. **Veins are raised below and have hairs.** Leaves are often attacked by insects. **FLOWERS:** in **loose large heads** to 15 cm across (only), on **hairy stalks**, often covering the tree. The small flowers are **white-yellow-pink**, quite fragrant. The **divided style and brown-black anthers hang out** of the bell-like flowers. **FRUIT:** in large heads. Round orange-red and berry like, the fruit turn black. Each is **pointed** and breaks into **4 parts**, each containing a hard, comma-shaped seed.

Propagation: Seedlings, direct sowing at site.

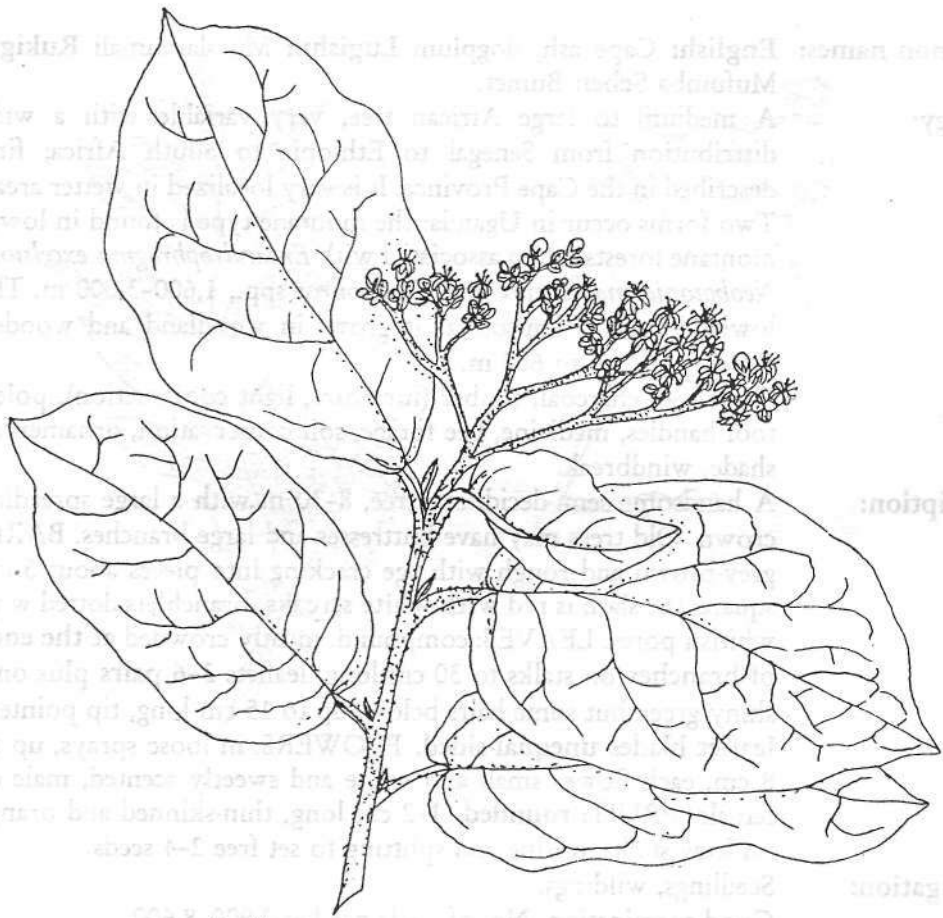
Seed: No. of seeds per kg: 20,000-30,000. Cut the fruiting head when 80% of the fruit are mature to extract the seed,

treatment: not necessary,

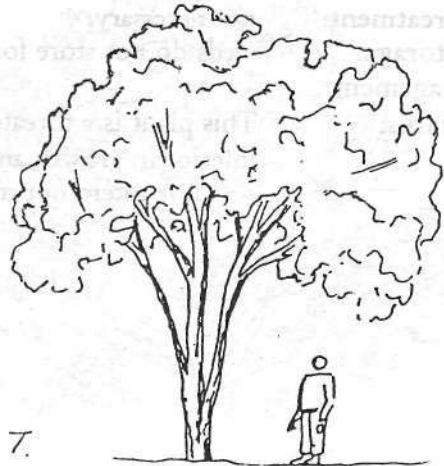
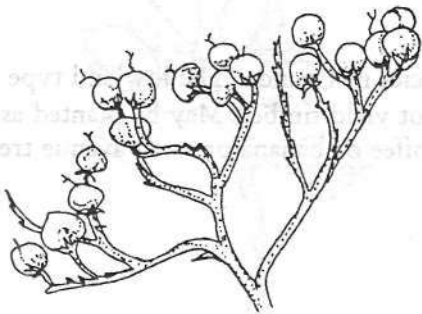
storage: seeds can be stored.

Management: Fast growing; pruning, pollarding, lopping and coppicing.

Remarks: Planted mainly as an ornamental in villages in Uganda but could also be used as a source of firewood. In South Africa has been used to make good furniture.



A.B.



DAMTEW T.

Indigenous

Common names: **English:** Cape ash, dogplum **Lugishu:** Musalamumali **Rukiga:** Mufumba **Sebei:** Bumet.

Ecology: A medium to large African tree, very variable with a wide distribution from Senegal to Ethiopia to South Africa; first described in the Cape Province. It is very localized in wetter areas. Two forms occur in Uganda: the montane type is found in lower montane forests, often associated with *Entandrophragma excelsum*, *Neobotonia macrocalyx* and *Cassipourea* spp., 1,600-3,000 m. The lowland type is unusual as it grows in woodland and wooded grassland down to 600 m.

Uses: Firewood, charcoal, timber (furniture, light construction), poles, tool handles, medicine, bee forage, soil conservation, ornamental, shade, windbreak.

Description: A handsome semi-deciduous tree, 8-30 m with a large spreading crown. Old trees may have buttresses and large branches. **BARK:** grey-brown and rough with age cracking into pieces about 5 cm square; the slash is **red with white streaks**, branchlets dotted with whitish pores. **LEAVES:** compound, mostly crowded **at the ends of branches** on stalks to 30 cm long, leaflets **3-6 pairs** plus one, shiny green but some hairs below, up to 15 cm long, tip pointed, **leaflet blades unequal-sided**. **FLOWERS:** in loose sprays, up to 8 cm, each flower small and white and sweetly scented, male or female. **FRUIT: rounded**, 1-2 cm long, thin-skinned and orange on long stalks, drying and splitting to set free 2-4 seeds.

Propagation: Seedlings, wildings.

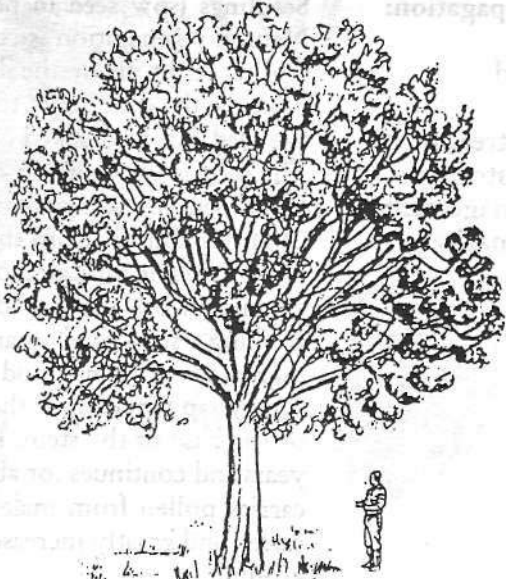
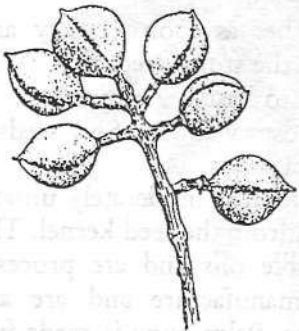
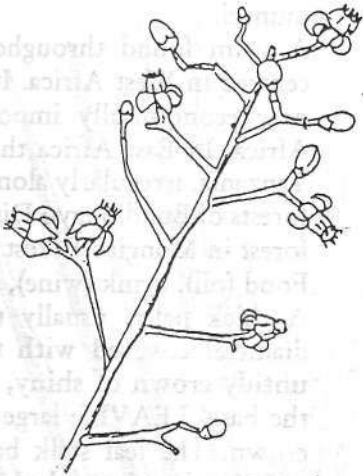
Seed: Good germination. No. of seeds per kg: 2,900-8,600.

treatment: not necessary.

storage: seeds do not store for long.

Management:

Remarks: This plant is a threatened species in Uganda. The lowland type is inferior in growth and will not yield timber. May be planted as a stand or intercropped with coffee or banana or as an avenue tree.



Indigenous

Trade name: Wild oil palm

Common names: **English:** Guinea oil palm **Kwamba:** Esa, mba **Luganda:** Mubira, munazi.

Ecology: A palm found throughout the wetter parts of Africa; origin centred in West Africa. It was introduced to Java in 1848 and is now economically important in Malaysia as well as in West Africa. In East Africa the palm is confined to some habitats in Tanzania, irregularly along the coast and in Uganda in the swamp forests of Bundibugyo District (900 m) and in high-rainfall gallery-forest in Mongiro Forest of the eastern Semliki valley (760 m).

Uses: Food (oil), drink (wine), medicine (oil), ornamental (avenue tree).

Description: A thick palm, usually to 15 m, the wide bole 30-50 cm in diameter **covered with the remains of leaf bases. A massive untidy crown of shiny, drooping leaves**, loose brown fibres at the base. LEAVES: large and pinnate, 3-4 m, 40-50 in a mature crown. The leaf stalk bears **100-150 folded leaflets each side growing out irregularly in two planes**, the whole leaf feathery, about 120 cm long and 8 cm across. Leaf stalks wider at the base with sharp fibre-spines along the edge. FLOWERS: arise beside leaves, often before a trunk develops. The **massive golden flowering heads, 15-20 cm, male or female**. Male flower tiny, aromatic and yellow; female almost round, larger, central joined styles-stigma 1 cm across. FRUIT: just above the short trunk, **big bunches, each fruit shiny, bright orange, 3-5 cm**, upper parts dark red to black, tipped by old style. Below the outer skin is a yellow oil-rich layer 5-10 mm thick. One dark seed lies in the centre, also rich in oil.

Propagation: Seedlings (sow seed in pots), wildings and direct sowing at site. Natural regeneration is common.

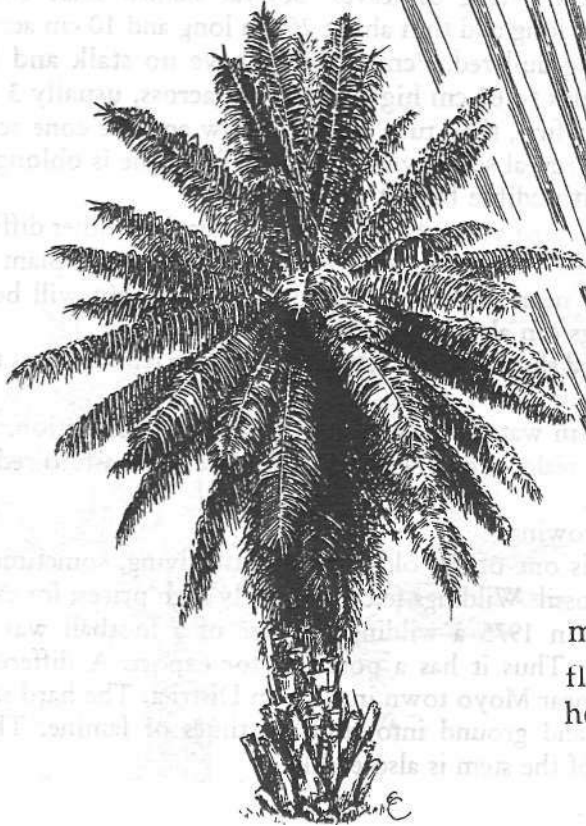
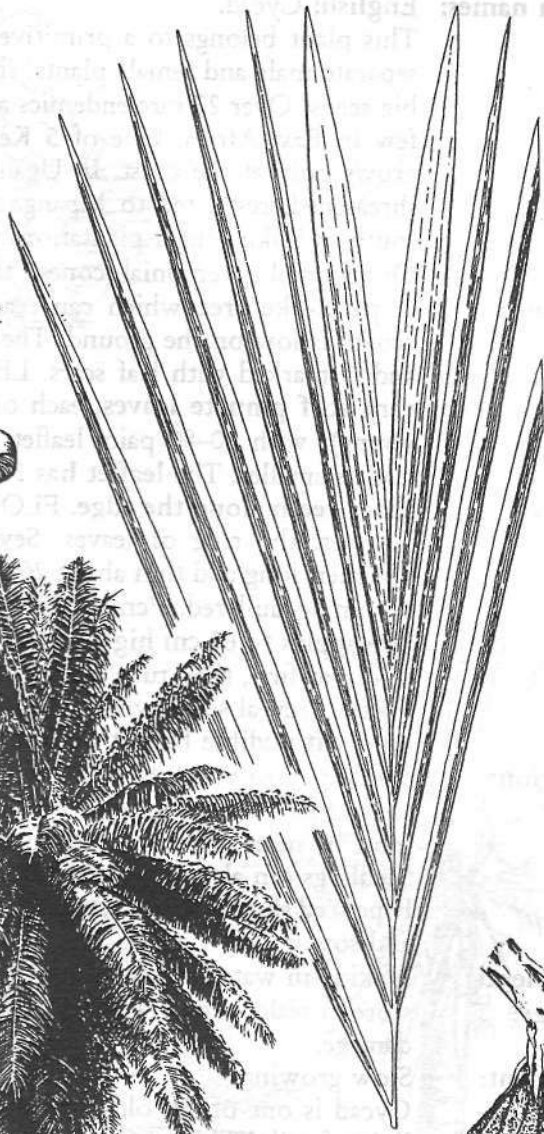
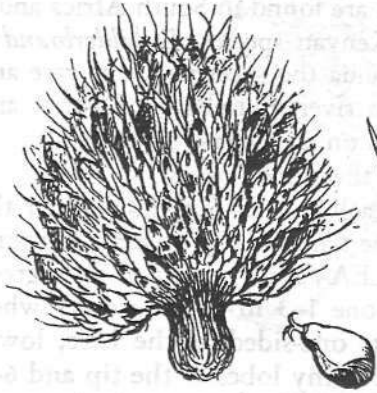
Seed: Collect fruit from the big bunches as soon as they are ripe. Remove the outer coat to set free the stony seed, the seed can be cracked or nicked to hasten germination.

treatment:
storage: The seed is very oily so quickly loses viability. Sow seeds fresh.

Management: Initial tending is necessary in plantations.

Remarks: Orange palm oil from the outer flesh is moderately unsaturated; more valuable saturated oil comes from the seed kernel. These are a major world source of vegetable oils and are processed for cooking, soap and margarine manufacture and are a major ingredient in many food products. Palm wine is made from the sugary sap tapped near the growing stem tip, from the flower head or the base of the stem. In plantations, the tree bears fruit in 3-4 years and continues for about 25 years. In Malaysia a weevil which carries pollen from male to female flower heads has been introduced and greatly increased yields. The wood is not durable in the ground.

female head
and fruit



male
flower
head



Indigenous

Trade name: Cycad.

Common names: **English:** Cycad.

Ecology: This plant belongs to a primitive group of woody plants, with separate male and female plants, the latter having large cones and big seeds. Over 20 rare endemics are found in South Africa and a few in East Africa. One of 5 Kenyan species, *E. hildebrandtii* grows only at the coast. In Uganda the species is very rare and threatened, restricted to Mpanga river in Kabarole District and south of Kakira sugar plantations on the Jinja-Tororo road.

Uses: Ornamental, ceremonial (cones), thatching (leaves).

Description: A **palm-like tree** which can reach 6-9 m but more often the crown is low on the ground. The trunk may be over 2 m round and is marked with leaf scars. **LEAVES:** a crown of dark green very **stiff pinnate leaves**, each one 1-3 m (white-woolly when young), with 60-80 pairs leaflets **one-sided at the base**, lower leaflets smaller. The **leaflet has 3 spiny lobes at the tip and 6-9 sharp teeth along the edge**. **FLOWERS:** cones arise in the centre between the ring of leaves. Several stalked male cones grow together, long and thin about 25 cm long and 10 cm across, green becoming dull red. **Female cones have no stalk and look like pineapples to 60 cm high and 25 cm across, usually 3 together**. Green at first, they turn orange-yellow and the cone scales burst open to reveal **seeds** which fall out. Each one is **oblong to 3 cm long with edible bright orange flesh**.

Propagation: Wildings are obtained easily from suckers but rather difficult from seeds. For a female cone to be fertilized the male plant and cone must be near each other. Seed may develop but will be infertile. Seedlings can also be raised in pots.

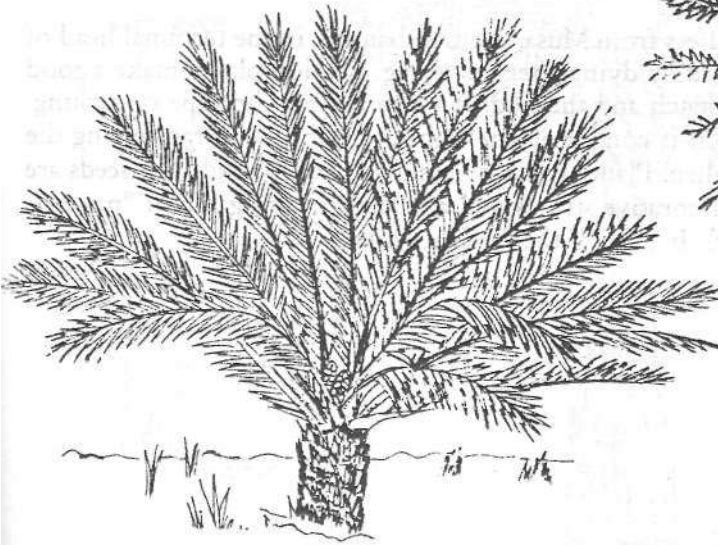
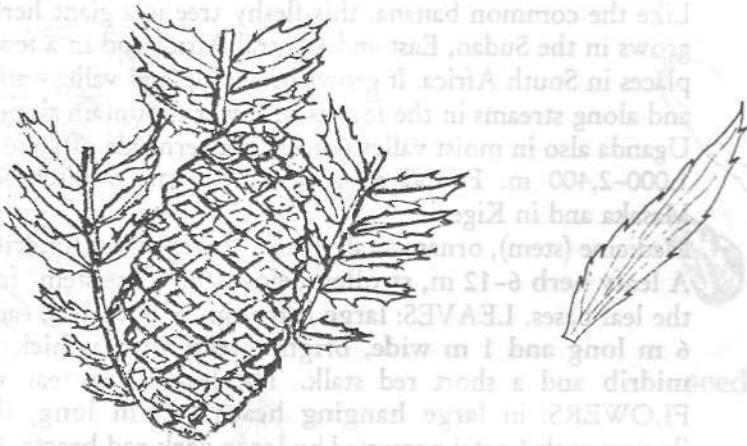
Seed: Ripe seed should be collected from mature female cones then dried and sown.

treatment: soaking in water for 24 hours will hasten germination.

storage: store in sealed containers in a cool place. Add ash to reduce insect damage.

Management: Slow growing.

Remarks: Cycad is one of the oldest plants still living, sometimes called a living fossil. Wildings fetch extremely high prices; for example, in the US in 1975 a wilding the size of a football was selling at \$25,000. Thus it has a potential for export. A different species occurs near Moyo town in Kitgum District. The hard seed can be boiled and ground into flour in times of famine. The starchy centre of the stem is also edible.



Indigenous

Common names: **English:** Wild banana **Luganda:** Kitembe.

Ecology: Like the common banana, this fleshy tree is a giant herb. It also grows in the Sudan, East and Central Africa and in a few suitable places in South Africa. It grows in wet upland valleys and ravines and along streams in the forests of lower mountain slopes, and in Uganda also in moist valleys on the western side of Lake Victoria, 1,000-2,400 m. Found in Kalinzu Forest, Wabitembe Forest, Masaka and in Kigezi.

Uses: Medicine (stem), ornamental, thatch (leaves), fibre (midrib of leaf).

Description: **A leafy herb 6-12 m, swollen below**, the "false stem" formed by the leaf bases. **LEAVES: large leaves** grow in spirals, each one to **6 m long and 1 m wide, bright green** with a **thick pink-red midrib** and a short red stalk. The leaf blades tear with age. **FLOWERS: in large hanging heads 2-3 m long**, the white flowers with 1 petal protected by **large dark red bracts**, 5 stamens produce sticky pollen. **FRUIT:** although the small yellow clusters look like normal bananas they are not edible. Each leathery fruit, about 9 cm long, contains many hard seeds, brown-black to 2 cm long with only a thin layer of pulp. **The whole plant dies down after fruiting.**

Propagation: Wildings and seedlings (sow seed in pots).

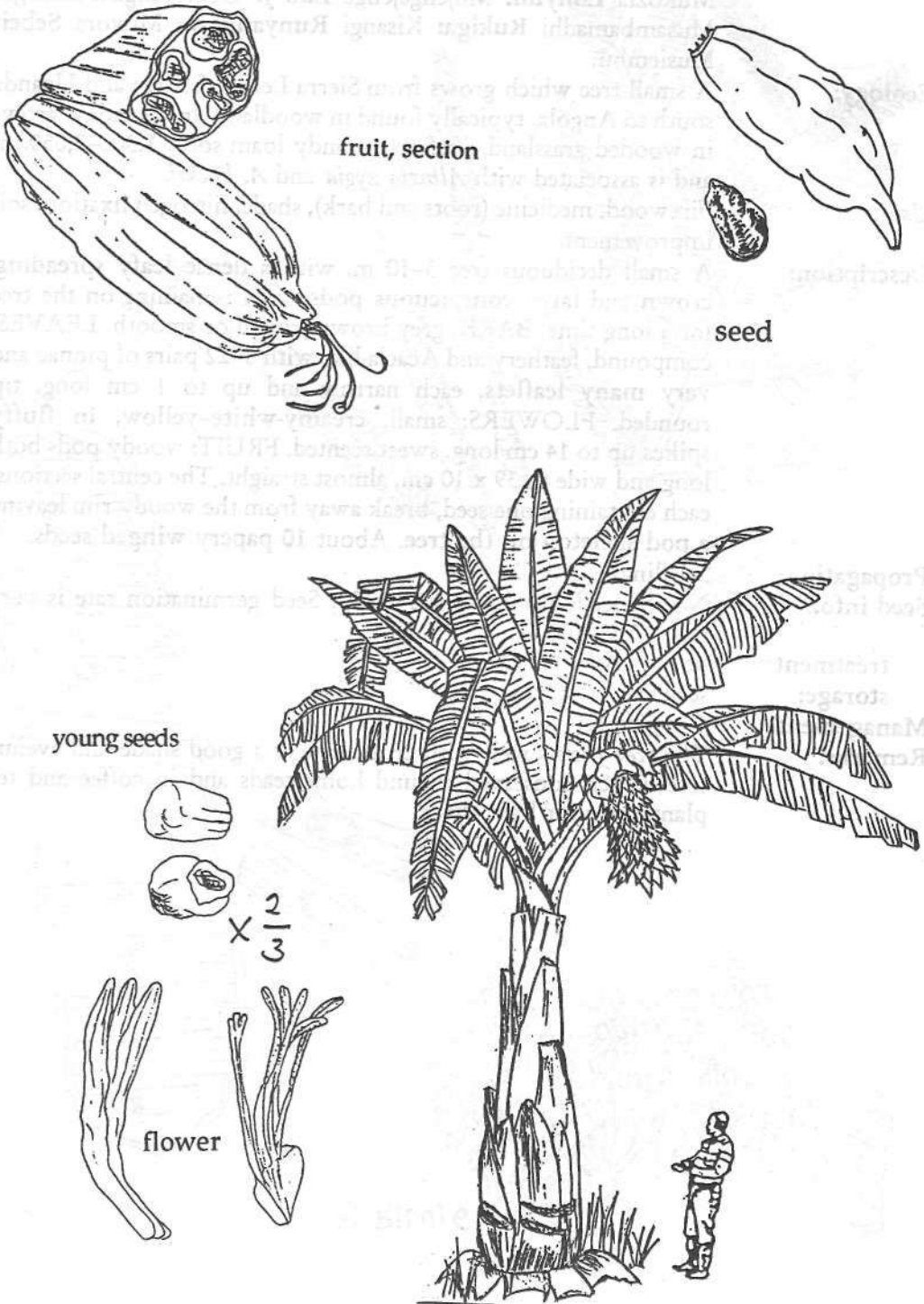
Seed: Seeds are contained in finger-like fruits and on ripening they are set free.

treatment: no treatment.

storage: store in sealed containers in a cool place.

Management: Fast growing.

Remarks: Ensete differs from Musa, the true banana, in the terminal head of flowers and by dying after flowering. The leaf blades make a good durable thatch and the midrib a strong fibre for rope or sacking. Pollination is commonly brought about by bats transferring the sticky pollen. Plant as single trees in the compound. The seeds are used as decorative strings and also used in the game of "mweso" (Luganda). In Acholi the seeds are eaten.



Indigenous

Common names: **Luganda:** Mwolola, musambamazzi **Lugishu:** Musembe **Lugwere:** Mukozia **Lunyuli:** Mujengejenge **Luo J:** Oberipangala **Lusoga:** Musambamadhi **Rukiga:** Kisangi **Runyankore:** Muyora **Sebei:** Musiambu.

Ecology: A small tree which grows from Sierra Leone, Eritrea and Uganda south to Angola, typically found in woodland. In Uganda it grows in wooded grassland, preferring sandy loam soils, 1,300-2,050 m, and is associated with *Albizia zygia* and *A. hockii*.

Uses: Firewood, medicine (roots and bark), shade, nitrogen fixation, soil improvement.

Description: A small deciduous tree 3-10 m, with a **dense leafy spreading crown** and **large conspicuous pods** often remaining on the tree for a long time. **BARK:** grey-brown, rough or smooth. **LEAVES:** compound, feathery and Acacia-like with 4-22 pairs of pinnae and **very many leaflets**, each narrow and up to 1 cm long, tip rounded. **FLOWERS:** small, **creamy-white-yellow, in fluffy spikes** up to 14 cm long, sweet scented. **FRUIT:** woody pods both long and wide to 39 x 10 cm, almost straight. The central sections, each containing one seed, break away from the woody rim leaving **a pod skeleton on the tree. About 10 papery winged seeds.**

Propagation: Seedlings.

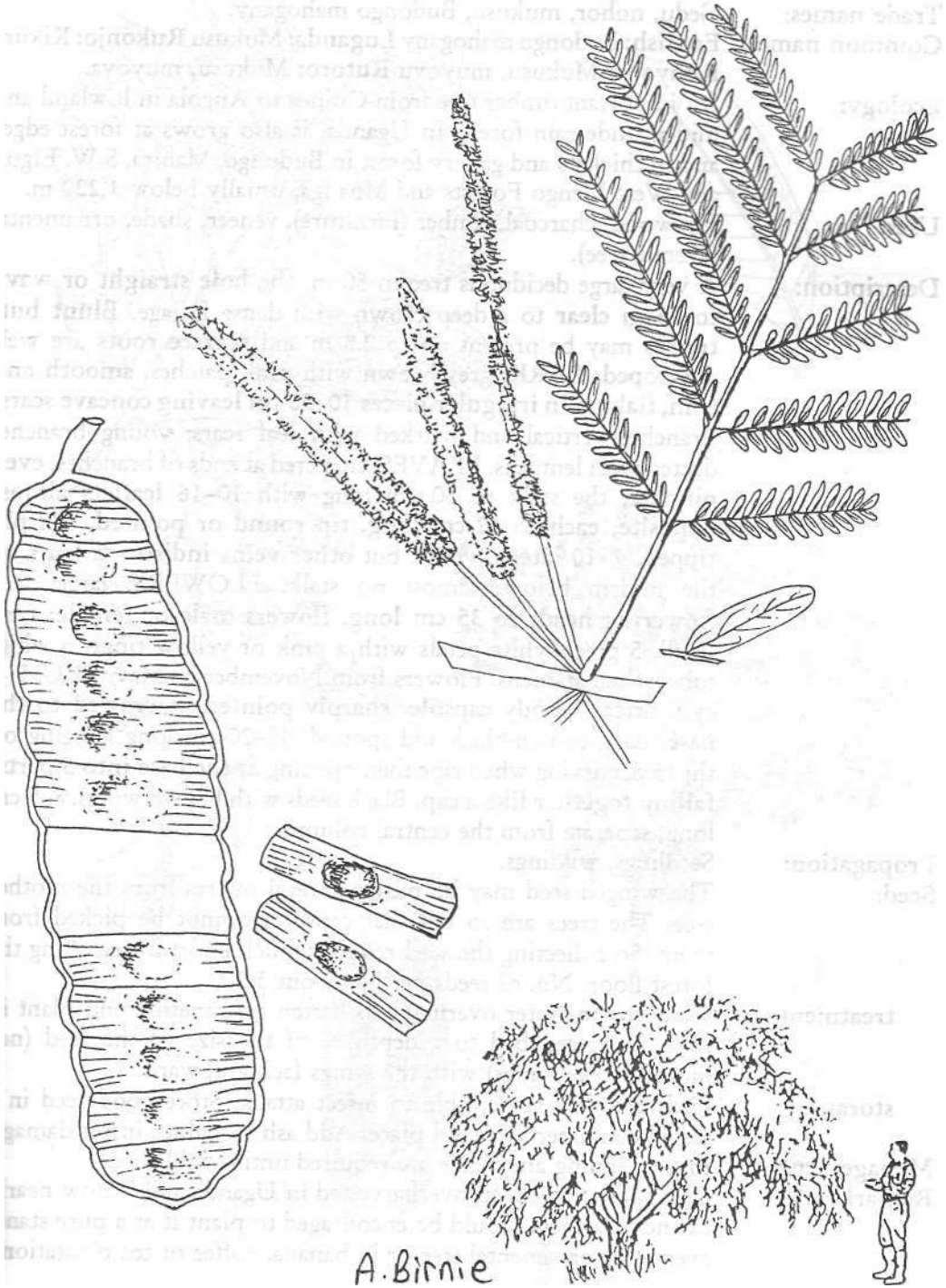
Seed info.: No. of seeds per kg: 3,600-4,200. Seed germination rate is very high: 70%-100%.

treatment: not necessary.

storage: seed can be stored.

Management: Coppicing.

Remarks: The tree grows well with crops, and is a good shade and avenue tree. Often conserved around homesteads and in coffee and tea plantations for light shade.



Indigenous

Trade names: Gedu, nohor, mukusu, Budongo mahogany.

Common names: **English:** Budongo mahogany **Luganda:** Mukusu **Rukonjo:** Kikura **Runyoro:** Mukusu, muyovu **Rutoro:** Mukusu, muyova.

Ecology: An important timber tree from Guinea to Angola in lowland and mid-altitude rain forest. In Uganda, it also grows at forest edges and in thickets and gallery forest in Budongo, Mabira, S.W. Elgon and West Mengo Forests and Mpanga, usually below 1,220 m.

Uses: Firewood, charcoal, timber (furniture), veneer, shade, ornamental (avenue tree).

Description: A very large deciduous tree to 50 m, **the bole straight or wavy to 25 m clear** to a deep crown with dense foliage. **Blunt buttresses** may be present up to 2.5 m and **surface roots are well developed**. **BARK:** grey-brown with pink patches, **smooth and thin, flaking in irregular pieces 10-20 cm leaving concave scars**. Branches vertical and marked with leaf scars; young branches dotted with lenticels. **LEAVES:** clustered at ends of branches, **even pinnate**, the stalk to 30 cm long with **10-16 leaflets almost opposite, each to 12 cm long, tip round or pointed, sharply tipped, 7-10 lateral veins, but other veins indistinct**, hairs or, the midrib below, almost no stalk. **FLOWERS:** large, **stiff flowering heads to 35 cm long, flowers male or female**, very small, 5 green-white petals with a pink or yellow tinge, a white tube of ten stamens. Flowers from November to May. **FRUIT:** a **cylindrical woody capsule, sharply pointed, narrowed to the base, dark brown-black and spotted, 15-20 cm long hanging on the tree, curving when ripe then opening at the base into 5 parts, falling together like a cap**. Black seeds with brown wings, 8-9 cm long, separate from the central column.

Propagation: Seedlings, wildings.

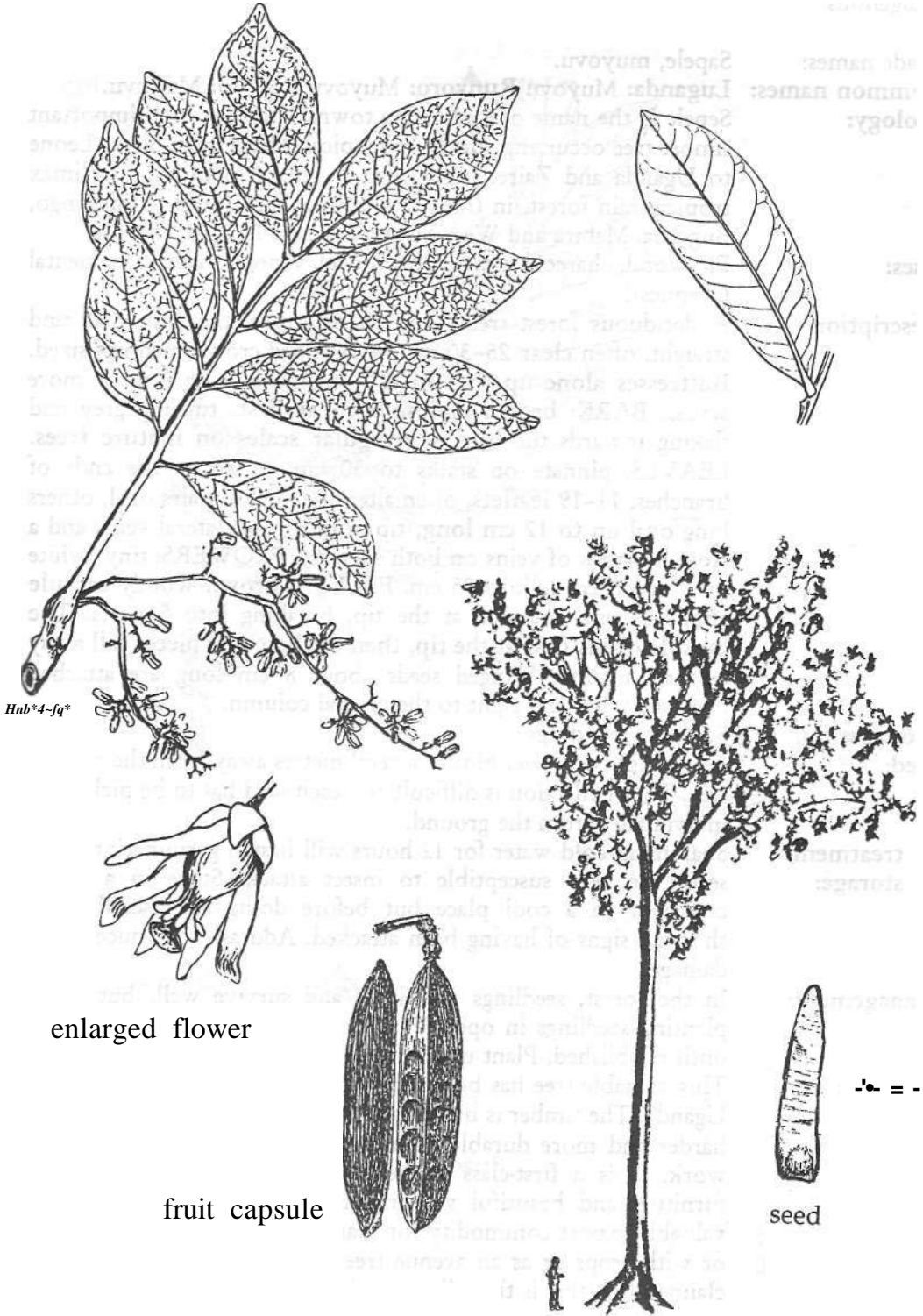
Seed: The winged seed may be blown several metres from the mother tree. The trees are so tall that capsules cannot be picked from them. So collecting the seed requires much effort in searching the forest floor. No. of seeds per kg: about 3,200.

treatment: soak seed in water overnight to hasten germination and plant in rows in a seed bed to a depth ³A of the size of the seed (not including the wings) with the wings facing upward,

storage: seeds are very susceptible to insect attack. Store good seed in a sealed container in a cool place. Add ash to reduce insect damage.

Management: Initial tending and shade are required until established.

Remarks: This species has been overharvested in Uganda and is now nearly extinct. Farmers should be encouraged to plant it as a pure stand, avenue or ornamental tree or in banana, coffee or tea plantations.



Hnb*4-fq*

enlarged flower

fruit capsule

seed

Indigenous

Trade names: Sapele, muyovu.

Common names: **Luganda:** Muyovu **Runyoro:** Muyovu **Rutoro:** Muyovu.

Ecology: Sepele is the name of a Nigerian town. This tree is an important timber tree occurring widely in tropical Africa from Sierra Leone to Uganda and Zaire. In Uganda it grows in mixed to climax tropical rain forest, in thickets and in gallery forest in Budongo, Bugoma, Mabira and West Mengo Forests, 1,100-1,500 m.

Uses: Firewood, charcoal, timber (furniture), veneer, shade, ornamental (avenues).

Description: A deciduous forest tree **to 55 m or more**, the trunk tall and straight, often **clear 25-30 m**, the rounded crown medium sized. **Buttresses alone up to 3 m**. The trunk may be 1 m or more across. **BARK: brown and smooth at first**, turning grey and flaking towards the base in **irregular scales on mature trees**. **LEAVES:** pinnate on stalks to 30 cm, tufted at the ends of branches, **11-19 leaflets**, often alternate, lowest pairs oval, others long oval up **to 12 cm long**, tip pointed, 6-9 lateral veins and a close network of veins on both surfaces. **FLOWERS:** tiny, white on a branched stalk to 25 cm. **FRUIT:** a **brown woody capsule** about 14 cm, rounded at the tip, breaking into 5 parts. **The capsule opens first at the tip, then the base and pieces fall away one at a time**. Winged seeds about 8 cm long are attached alternately left and right to the central column.

Propagation: Seedlings, wildings.

Seed: The winged seeds get blown several metres away from the mother tree. Thus collection is difficult and each seed has to be picked up individually from the ground.

treatment: Soaking in cold water for 12 hours will hasten germination,
storage: seeds are very susceptible to insect attack. Store in a sealed container in a cool place but before doing so discard those showing signs of having been attacked. Add ash to reduce insect damage.

Management: In the forest, seedlings germinate and survive well, but when planting seedlings in open areas, tending and shade are required until established. Plant under nurse trees wherever possible.

Remarks: This valuable tree has been removed from most of the forests of Uganda. The timber is brown and fragrant. It is heavier, stronger, harder and more durable than mahogany but more difficult to work. It is a first-class timber used for indoor and outdoor furniture and beautiful veneers. In West Africa it has been a valuable export commodity for many years. Plant in pure stands or with crops or as an avenue tree. Its shade is quite light. It is claimed that this is the tallest tree in Africa.

Entandrophragma cylindricum

Meliaceae

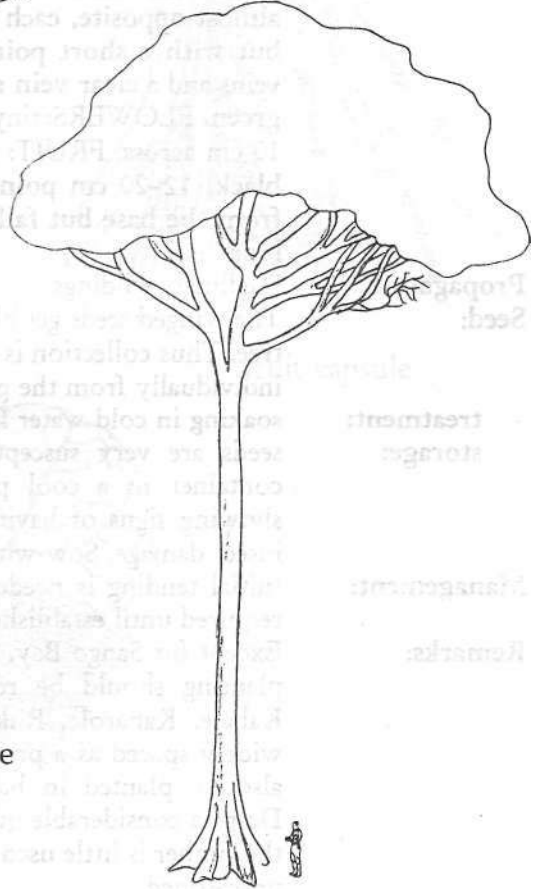
enlarged flower



winged seed



capsule



Indigenous

Common names: **Luganda:** Muyovu **Rukiga:** Mushalya, muyove **Rukonjo:** Kikula **Runyankore:** Muyovu **Rutoro:** Muyovu, muhungura.

Ecology: A rain-forest tree found in Zaire, Malawi and Tanzania. In Uganda it is a tree of medium-altitude and lower montane rain forest but an exception is its presence in the Sango Bay area of Lake Victoria. It also grows in Mityana and Nakiga Forests of West Mengo and is frequent in south-west Uganda, Kigezi, Kalinzu, Itwara and on Mt. Elgon, 1,280-2,150 m.

Uses: Firewood, charcoal, timber, veneer, ornamental (avenues).

Description: A deciduous forest tree about 40 m high with a **clear bole about 24 m** to a large crown. **Buttresses strongly developed extend 4-5 m up the trunk** (larger than other *Entandrophragma* species). **BARK:** thick, **grey and smooth when young** becoming brown with pale pink-orange patches, scaling in flat pieces on older trees (as in *E. angolense* but remaining scars quite shallow). **LEAVES:** pinnate on stalks to 60 cm or more with about 14 **large leaflets, almost opposite, each one oblong, 18 x 8 cm, the tip rounded but with a short point often twisted backwards;** 8-12 lateral veins and a **clear vein network on both surfaces which are dull green.** **FLOWERS:** tiny, white in stiff heads about 30 cm long and 10 cm across. **FRUIT:** cylindrical woody capsules, **dark brown-black, 12-20 cm pointed,** breaking open into 5 parts, **starting from the base but falling altogether.** Winged seeds about 7 cm long.

Propagation: Seedlings, wildings.

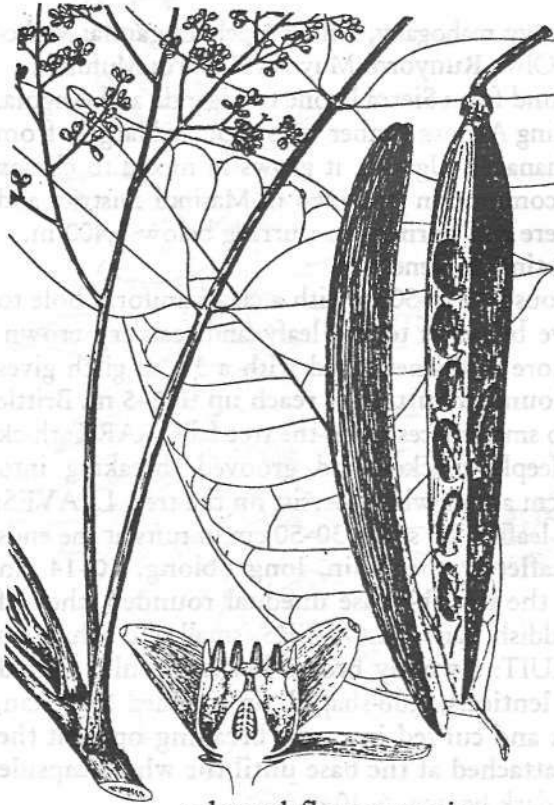
Seed: The winged seeds get blown several metres away from the mother tree. Thus collection is difficult and each seed has to be picked up individually from the ground.

treatment: soaking in cold water for 12 hours will hasten germination,

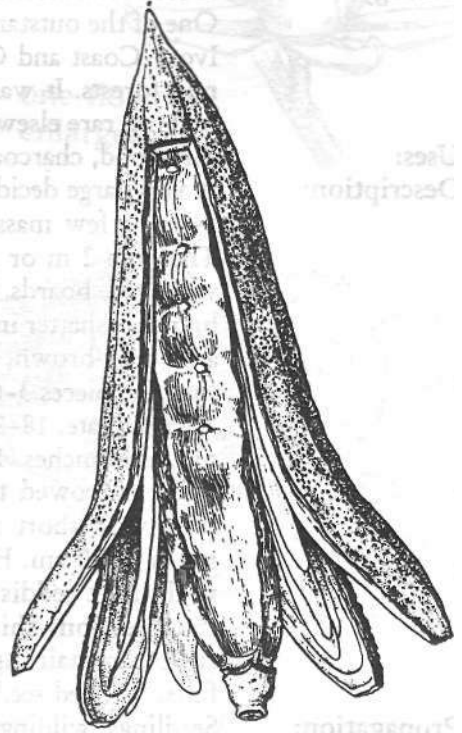
storage: seeds are very susceptible to insect attack. Store in a sealed container in a cool place but before doing so discard those showing signs of having been attacked. Also add ash to reduce insect damage. Sow within two months.

Management: Initial tending is needed and, if planted in the open, shading is required until established.

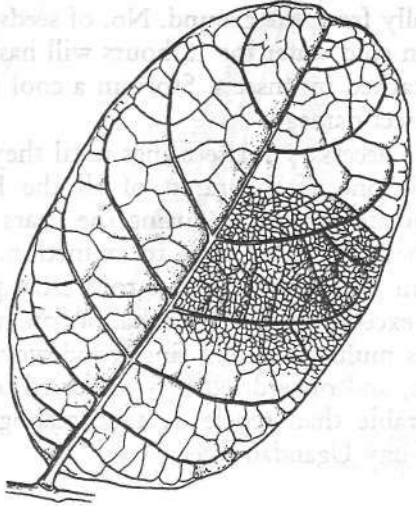
Remarks: Except for Sango Bay, this is a highland species. For this reason, planting should be restricted to highland areas of Bushenyi, Kabale, Kabarole, Rukungiri, Mbale and Arua Districts. Plant widely spaced as a pure stand, avenue or ornamental tree. It can also be planted in banana, coffee, cocoa and tea plantations. Despite considerable quantities of the tree in south-west Uganda, the timber is little used as it tends to warp and twist badly if used unseasoned.



enlarged flower section



fruit capsule



Indigenous

Trade name: Utile, mufumbi.

Common names: **English:** Budongo heavy mahogany, feather sepele **Luganda:** Mukola, muyovu **Madi:** Olwa **Runyoro:** Muyova **Rutoro:** Mufumbi.

Ecology: A rain-forest tree found from Sierra Leone to Uganda and Angola. One of the outstanding African timber trees exported largely from Ivory Coast and Ghana. In Uganda, it grows in mixed to climax rain forests. It was common in Budongo in Masindi District and Mabira; rare elsewhere and normally occurring below 1,400 m.

Uses: Firewood, charcoal, timber, veneer.

Description: A very large deciduous tree to 50 m with a clean uniform bole to 24 m; a few massive branches to the leafy and feathery crown. The bole 2 m or more in diameter and with a 3.6 m girth gives very wide boards. **Rounded buttresses reach up to 2-5 m.** Brittle branches shatter into small pieces when the tree falls. **BARK:** thick and grey-brown, deeply cracked and grooved, breaking into squarish pieces 3-6 cm across which persist on the tree. **LEAVES:** even pinnate, 18-22 leaflets on stalks 30-50 cm in tufts at the ends of the branches. **Leaflets rather thin, long oblong, 10-14 cm long, narrowed to the tip, the base unequal rounded,** the leaf stalk with short reddish hairs. **FLOWERS:** small and white on stalks to 20 cm. **FRUIT:** a **woody brown-black capsule, dotted with large reddish lenticels,** club-shaped, tip rounded 15-20 cm, the **5 sections thick and curved inwards, breaking open at the tip but remaining attached at the base until the whole capsule falls.** Winged seeds dark brown, 6-10 cm.

Propagation: Seedlings, wildings.

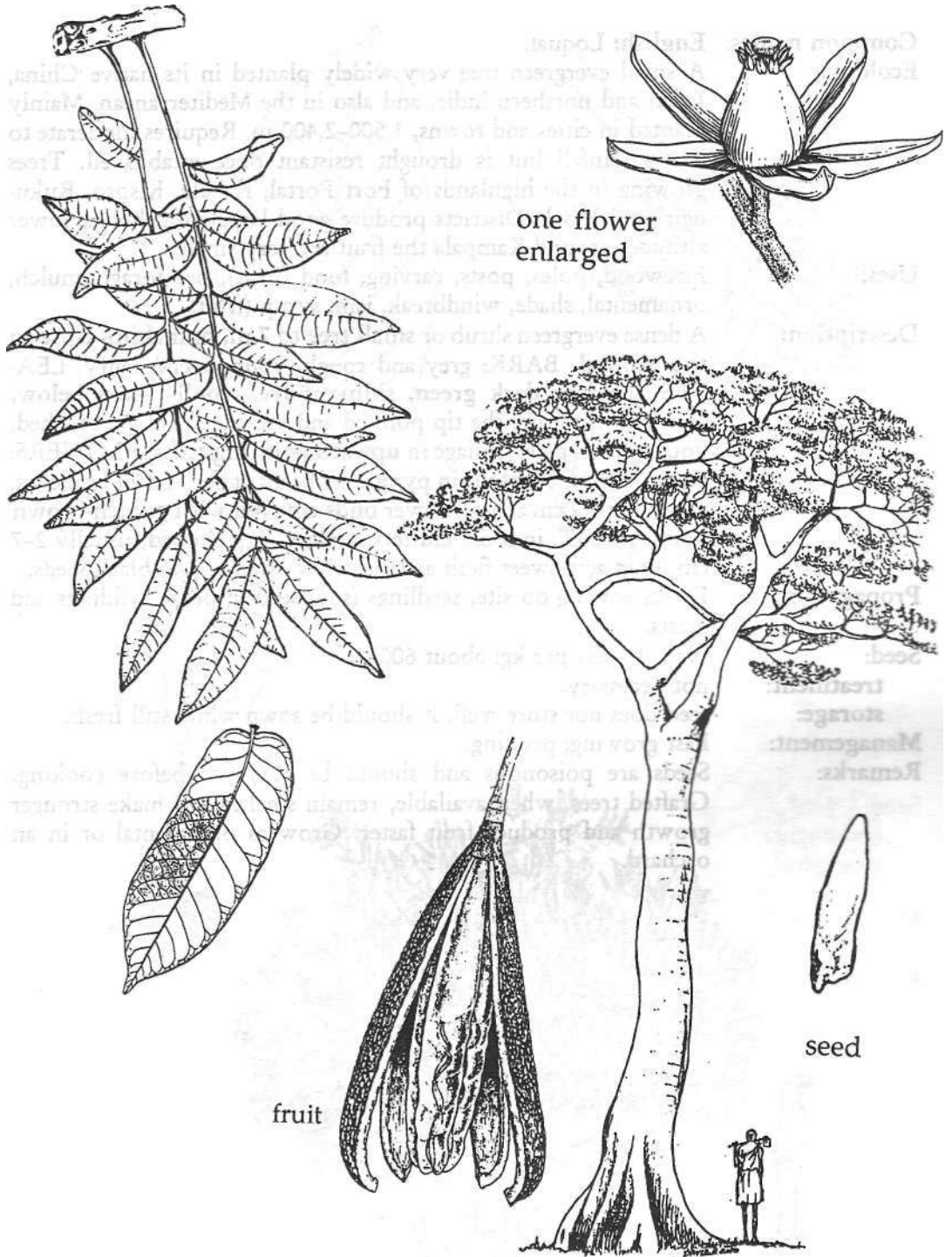
Seed: The winged seeds are blown several metres away from the mother tree. Thus collection is difficult and each seed has to be picked up individually from the ground. No. of seeds per kg: 1,880.

treatment: soaking in cold water for 12 hours will hasten germination.

storage: Easily attacked by insects. Store in a cool dry place. Add ash to reduce insect damage.

Management: Shading is necessary for seedlings until they are fully established.

Remarks: *E. utile* is one of the rarest of all the Entandrophragma and indiscriminate harvesting during the years of political unrest in Uganda has brought it close to extinction. Planting should be a priority in afforestation and agroforestry programmes. The tree yields an excellent timber like that of true mahogany (*Khaya* spp.) and it has multiple uses in fine wood work. It is reddish with a fine grain, and once dried it is preferred to *E. cylindricum*. It is more durable than sepele or true mahogany. The bole is the largest of any Ugandan tree.



China, Japan

Common names: **English:** Loquat.

Ecology: A small evergreen tree very widely planted in its native China, Japan and northern India, and also in the Mediterranean. Mainly planted in cities and towns, 1,500-2,400 m. Requires moderate to heavy rainfall but is drought resistant once established. Trees growing in the highlands of Fort Portal, Kabale, Kisoro, Rukungiri and Mbale Districts produce good large fruit, but at lower altitudes around Kampala the fruit are very small.

Uses: Firewood, poles, posts, carving-, food (fruit), bee forage, mulch, ornamental, shade, windbreak, jam, syrup (fruit).

Description: A dense evergreen shrub or **small tree to 7 m, branching close to the ground.** **BARK:** grey and rough, young stems hairy. **LEAVES:** stalkless, **dark green, shiny above, woolly hairs below**, about 35 cm long, the tip pointed and the edge prickly, toothed, young leaves paler, foliage in **upward pointing tufts.** **FLOWERS:** **cream-white, scented**, in pyramidal heads at the end of branches, each flower 2 cm across, flower **buds covered with golden-brown hairs.** **FRUIT:** in loose clusters, **yellow, egg shaped**, usually 2-7 cm long, acid-sweet flesh around a few large brown-black seeds.

Propagation: Direct sowing on site, seedlings (sow seed in pots), wildings and grafts.

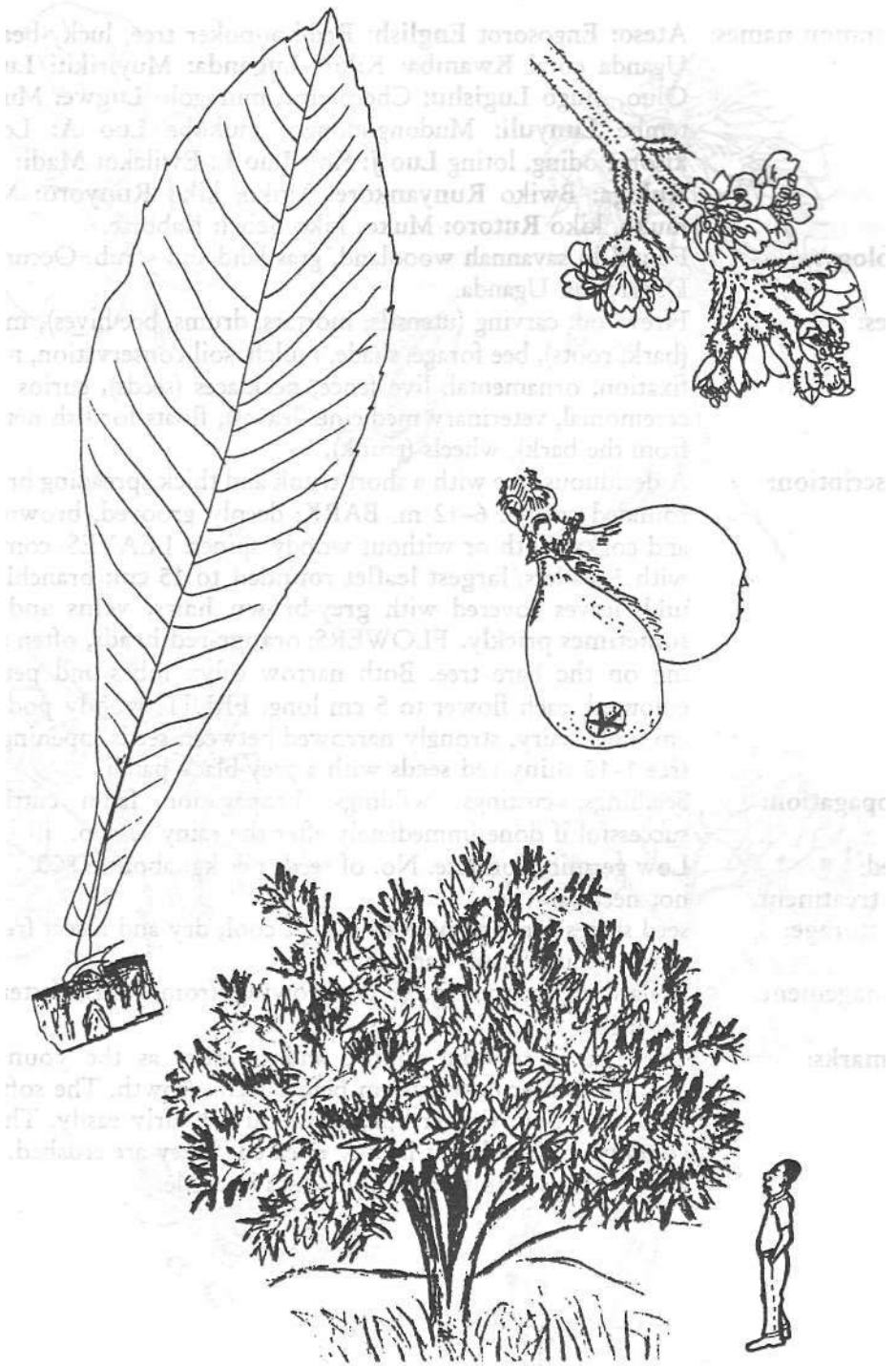
Seed: No. of seeds per kg: about 600.

treatment: not necessary.

storage: seed does not store well. It should be sown while still fresh.

Management: Fast growing; pruning.

Remarks: Seeds are poisonous and should be removed before cooking. Grafted trees, when available, remain smaller but make stronger growth and produce fruit faster. Grow as ornamental or in an orchard.



Indigenous

Common names: **Ateso:** Engosorot **English:** Red-hot-poker tree, lucky-bean tree, Uganda coral **Kwamba:** Kikiri **Luganda:** Muyirikiti **Lugbara:** Oluo, olugo **Lugishu:** Cheroguru, muragolo **Lugwe:** Mutembe-tembe **Lunyuli:** Mudongodongo, mukobe **Luo A:** Lochoro, kisoro, oding, loting **Luo J:** Koli **Luo L:** Ewilakot **Madi:** Olawu **Rukiga:** Bwiko **Runyankore:** Muko, kiko **Runyoro:** Mudoti, muko, kiko **Rutoro:** Muko, kiko **Sebei:** Kaborte.

Ecology: Found in savannah woodland, grassland and scrub. Occurs in all Districts in Uganda.

Uses: Firewood, carving (utensils, mortars, drums, bee-hives), medicine (bark, roots), bee forage, shade, mulch, soil conservation, nitrogen fixation, ornamental, live fence, necklaces (seeds), curios (seeds), ceremonial, veterinary medicine (leaves), floats for fish nets (cork from the bark), wheels (trunk).

Description: A deciduous tree with a short trunk and thick spreading branches, rounded crown, 6-12 m. **BARK:** deeply grooved, brown, thick and corky, with or without woody spines. **LEAVES:** compound with 3- leaflets, **largest leaflet rounded to 15 cm;** branchlets and underleaves covered with **grey-brown hairs, veins and stalks sometimes prickly.** **FLOWERS:** orange-red heads, often appearing on the bare tree. Both narrow calyx lobes and petals are coloured, each flower to 5 cm long. **FRUIT:** woody pods, 4-16 cm long, hairy, strongly narrowed between seeds, opening to set free 1-10 **shiny red seeds** with a grey-black patch.

Propagation: Seedlings, cuttings, wildings. Propagation from cuttings is successful if done immediately after the rainy season.

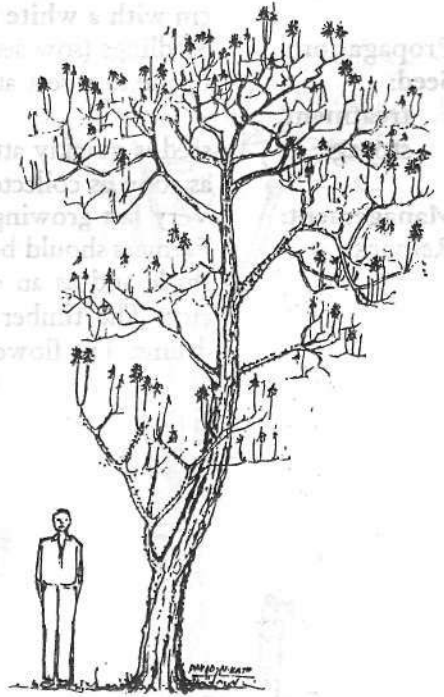
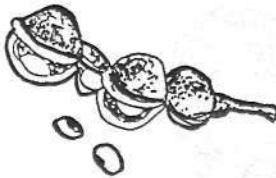
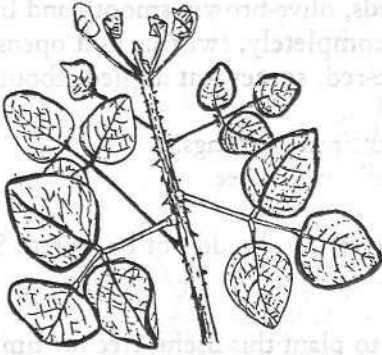
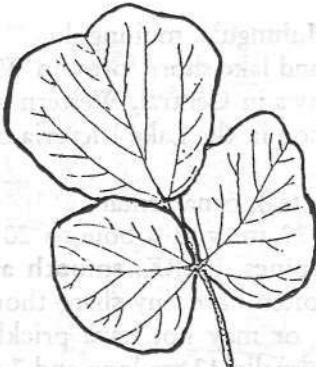
Seed: Low germination rate. No. of seeds per kg: about 6,800.

treatment: not necessary.

storage: seed stores for long periods if kept cool, dry and insect free. Add ash to reduce insect damage.

Management: Pollarding, coppicing. Slow growing from seeds, faster from cuttings.

Remarks: The tree is resistant to fire and termites as the young trees establish a deep root system before stem growth. The soft white wood is a poor timber but can be carved fairly easily. The seeds contain a poison but it is only released if they are crushed. Leaves have been used to treat skin diseases in cattle.



Indigenous

Common names: **Luganda:** Mubajangabo **Rukonjo:** Mulungula, mulungulu.

Ecology: A tree of swamp and riverine forest and lake shore forest in West and Central Africa. In Uganda it grows in Central, Western and North Western Regions and is common in the Lake Victoria belt forest.

Uses: Timber (light), carving, shade (coffee, tea), ornamental.

Description: A deciduous **tree which can reach 30 m** with a bole to 20 m which bears strong **woody conical spines**. **BARK: smooth and pale, yellow when cut.** Main stems often have tiny sharp thorns and branchlets and leaf stalks may or may not have prickles. **LEAVES: 3 leaflets**, variable in size, usually 12 cm long and 7 cm across (larger in young trees), the middle leaflet widest, lateral leaflets one-sided oval, all with yellow-brown hairs when young. Prominent glands on stalk below central leaflet and below laterals. Main stalk 4-21 cm. **FLOWERS: appearing on the bare tree in stiff one-sided heads 7-28 cm, the large standard petal dull orange to red, the calyx orange also and split to form a spathe which has two acute teeth at the tip; stamen tube also red.** **FRUIT: stalked pods, woody and twisted, very markedly constricted between some seeds, olive-brown, smooth and hairy to 20 cm long breaking open completely, twisting as it opens, to set free 1-10 seeds each orange-red, somewhat angled, about 1.5 cm with a white hilum.**

Propagation: Seedlings (sow seed in pots), cuttings, wildings.

Seed: Prone to insect attack while still on the tree.

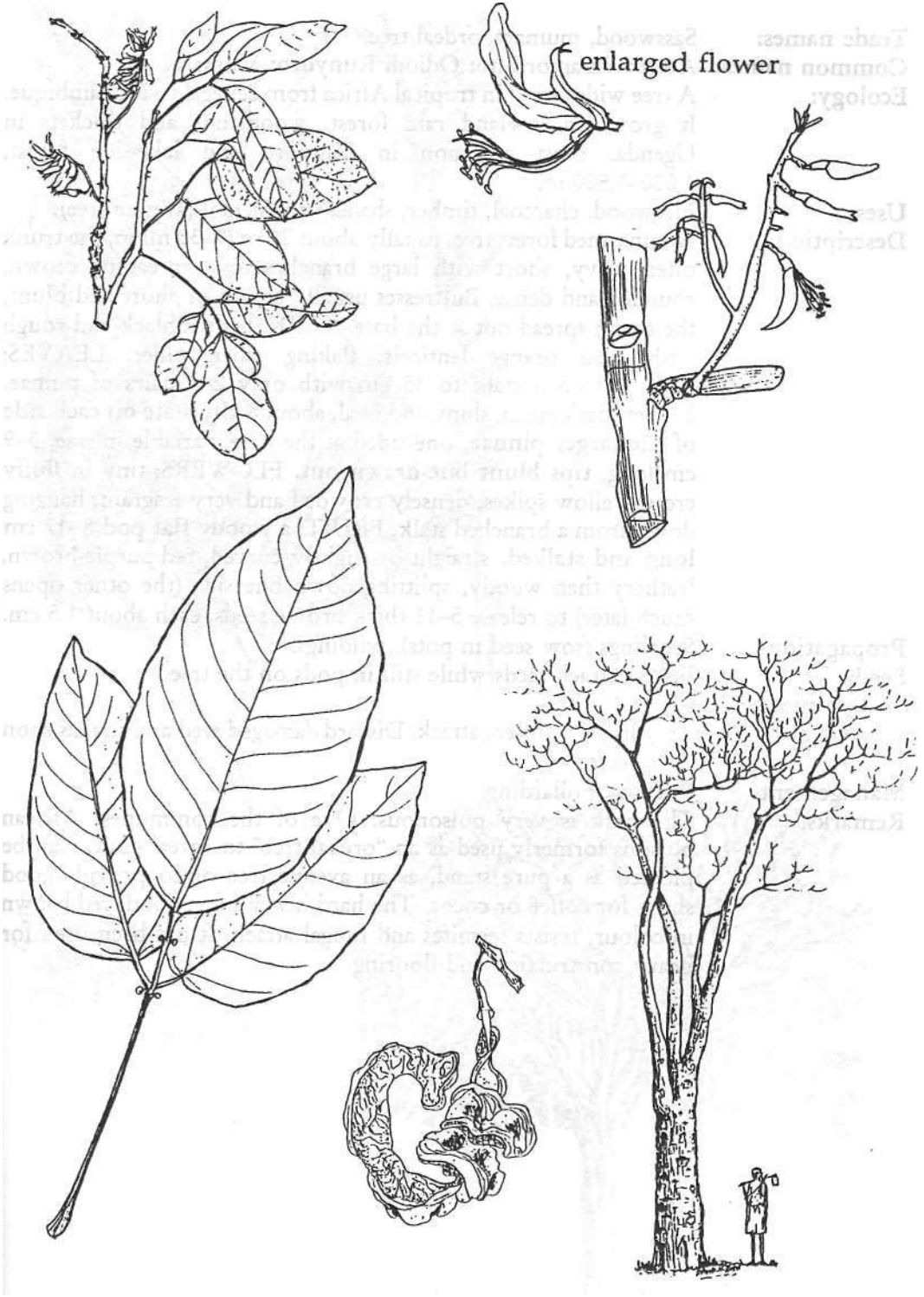
treatment:

storage:

seed is quickly attacked by insects and should not be stored. Sow as soon as collected.

Management: Very fast growing; pollarding.

Remarks: Farmers should be encouraged to plant this useful tree for timber, shade and as an ornamental. It decorates the streets in Kampala city. The timber is light and easy to work. Good for making drums. The flowers have much nectar attracting bees and birds.



Erythrophleum suaveolens

Caesalpinaceae

Indigenous

Trade names: Sasswood, mumara, ordeal tree.

Common names: **Ateso:** Earamor **Luo:** Odiodi **Runyoro:** Mumara.

Ecology: A tree widespread in tropical Africa from Senegal to Mozambique. It grows in lowland rain forest, woodlands and thickets in Uganda; most common in Bunyoro and lake-side forest, 1,000-1,500 m.

Uses: Firewood, charcoal, timber, shade, ornamental (avenue tree).

Description: An unarmed forest tree, usually about 20 m (9-30 m) m, the trunk often wavy, short with large branches to a spreading crown, rounded and dense. Buttresses usually absent or short and blunt, the trunk spread out at the base. **BARK:** brown-black and rough with clear orange lenticels; flaking when older. **LEAVES:** bipinnate on a stalk to 35 cm with only 2-4 pairs of pinnae. Leaflets dark green, shiny and oval, about 8 **alternate on each side of the larger pinnae**, one sided at the base, variable in size, 3-9 cm long, **tips blunt but drawn out**. **FLOWERS:** tiny in fluffy cream-yellow spikes, densely crowded and very fragrant, hanging down from a branched stalk. **FRUIT: a woody flat pod 8-17 cm long and stalked**, straight or slightly curved, red-purple-brown, leathery then woody, splitting down one side (the other opens much later) to release 5-11 thick brown seeds, each about 1.5 cm. **Propagation:** Seedlings (sow seed in pots), wildings. **Seed:** Insects attack seeds while still in pods on the tree.

treatment:

storage:

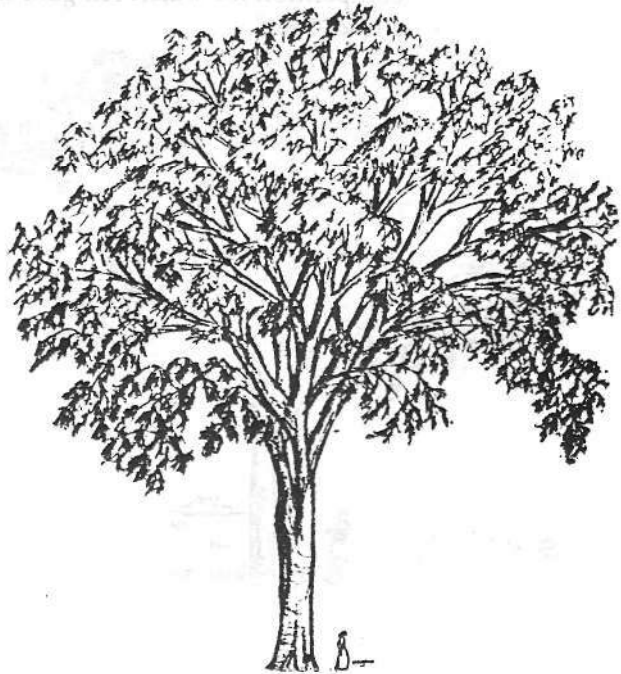
Very liable to insect attack. Discard damaged seed and sow as soon as collected.

Management: Pruning, pollarding.

Remarks: The bark is very poisonous. One of the commonest African poisons formerly used as an "ordeal tree" to reveal guilt. Can be planted as a pure stand, as an avenue tree or to provide good shade for coffee or cocoa. The hard heavy heartwood, red-brown in colour, resists termites and fungal attack. It has been used for heavy construction and flooring.



one flower
(enlarged)



Eastern Australia

Common names: **English:** Murray red gum **Luganda:** Kalitunsi.

Ecology: Widely distributed in its native Australia and one of the first *Eucalyptus* spp. to be used elsewhere, both in the Mediterranean and the tropics. Does well in semi-arid regions and tolerates a long dry season. It does well in deep silt or clay soil in eastern and northern Uganda and in dry parts of Southern Region, 900-1,800 m, and tolerates some salinity.

Uses: Firewood, charcoal, poles (power lines), posts, timber (construction), bee forage, ornamental, windbreak.

Description: A tall evergreen tree to 30 m, **deeply branched** but also with a long straight bole. **BARK:** white to brown, **thin and peeling in long strips;** when cut it exudes **red gum**. **LEAVES:** grey-blue, long and drooping, to 30 cm. **FLOWERS:** white clusters, short conical **bud caps**. **FRUIT:** very small rounded capsules on thin stalks, each less than 1 cm, 4 valves.

Propagation: Seedlings; plant out after 4-5 months in nursery.

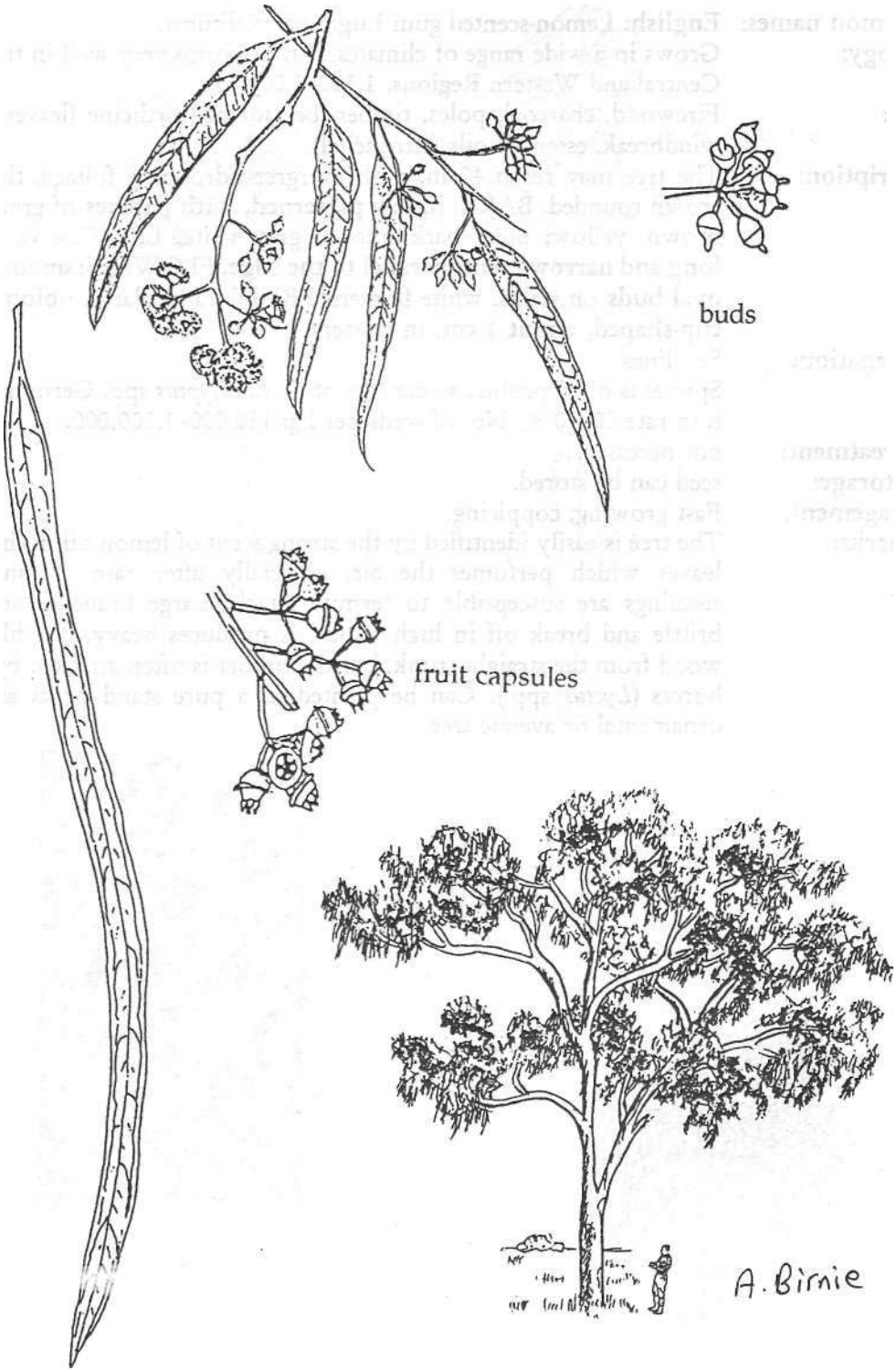
Seed: No. of seeds per kg: 100,000-2,100,000.

treatment: not necessary.

storage: seed can be stored for a long time.

Management: Fast growing; coppicing, pollarding.

Remarks: Young trees require protection from termites. The species has been primarily introduced for quick-growing fuelwood. It is also useful for homestead plantation, woodlots and along roads. The timber is red, heavy and hard. Do not plant near crops because of root competition for water. All gum-tree flowers have much nectar and attract bees.

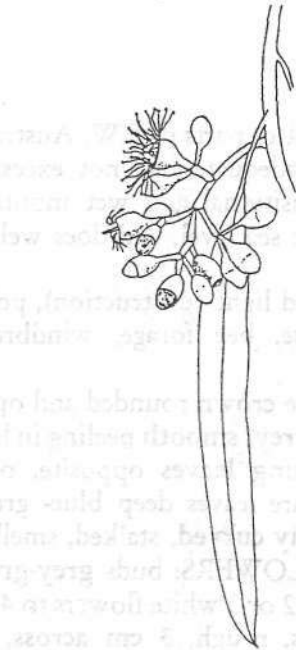


Eucalyptus citriodora

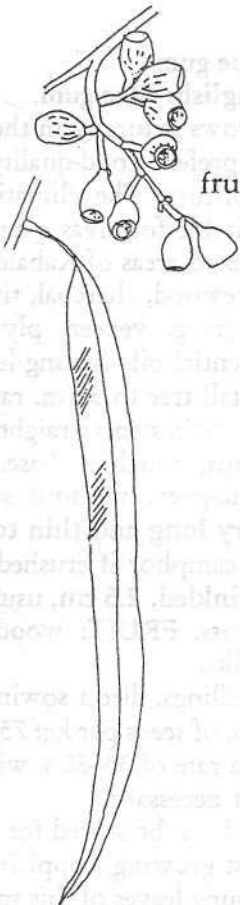
Myrtaceae

Eastern Queensland (Australia)

- Common names:** **English:** Lemon-scented gum **Luganda:** Kalitunsi.
- Ecology:** Grows in a wide range of climates, and performs very well in the Central and Western Regions, 1,300-2,000 m.
- Uses:** Firewood, charcoal, poles, timber, bee forage, medicine (leaves), windbreak, essential oils (citronellal).
- Description:** The tree may reach 40 m, with evergreen drooping foliage, the crown rounded. **BARK: jigsaw patterned, with patches** of grey, brown, yellow; older bark smooth grey-white. **LEAVES: very long and narrow, veins parallel to the edge.** **FLOWERS: smooth oval buds** on stalks, white flowers. **FRUIT: rather large, oblong cup-shaped, about 1 cm,** in clusters.
- Propagation:** Seedlings.
- Seed:** Species is not a prolific seeder like other *Eucalyptus* spp. Germination rate 60-90 %. No. of seeds per kg: 110,000-1,200,000.
- treatment:** not necessary,
- storage:** seed can be stored.
- Management:** Fast growing; coppicing.
- Remarks:** The tree is easily identified by the strong scent of lemon oil in the leaves which perfumes the air, especially after rain. Young seedlings are susceptible to termite attack. Large branches are brittle and break off in high winds. It produces heavy, durable wood from the straight trunk, but the timber is often attacked by borers (*Lyctus* spp.). Can be planted in a pure stand or as an ornamental or avenue tree.



buds



fruit capsules



Eucalyptus globulus

Myrtaceae

S.W. Australia

Trade names: Blue gum.

Common names: **English:** Blue gum.

Ecology: Grows naturally in the cooler and wetter parts of S.W. Australia. It prefers good-quality loams with adequate but not excessive moisture. The climatic range is transitional and wet montane. Suitable for areas over 2,000 m above sea level, and does well in upland areas of Kabale District.

Uses: Firewood, charcoal, timber (heavy and light construction), poles, flooring, veneer, plywood, medicine, bee forage, windbreak, essential oils (young leaves).

Description: A tall tree to 55 m, rather narrow, the crown rounded and open, the main stems straight. **BARK:** **blue-grey, smooth** peeling in long strips, rough at base. **LEAVES:** **young leaves** opposite, oval, **blue-grey, without stalks** and mature leaves deep blue-green, **very long and thin to 30 cm, slightly curved**, stalked, smelling of camphor if crushed, **tip sharp**. **FLOWERS:** buds **grey-green wrinkled, 2.5 cm**, usually one, rarely 2 or 3 white flowers to 4 cm across. **FRUIT:** woody, half spheres, rough, **3 cm across**, no stalks.

Propagation: Seedlings, direct sowing at site.

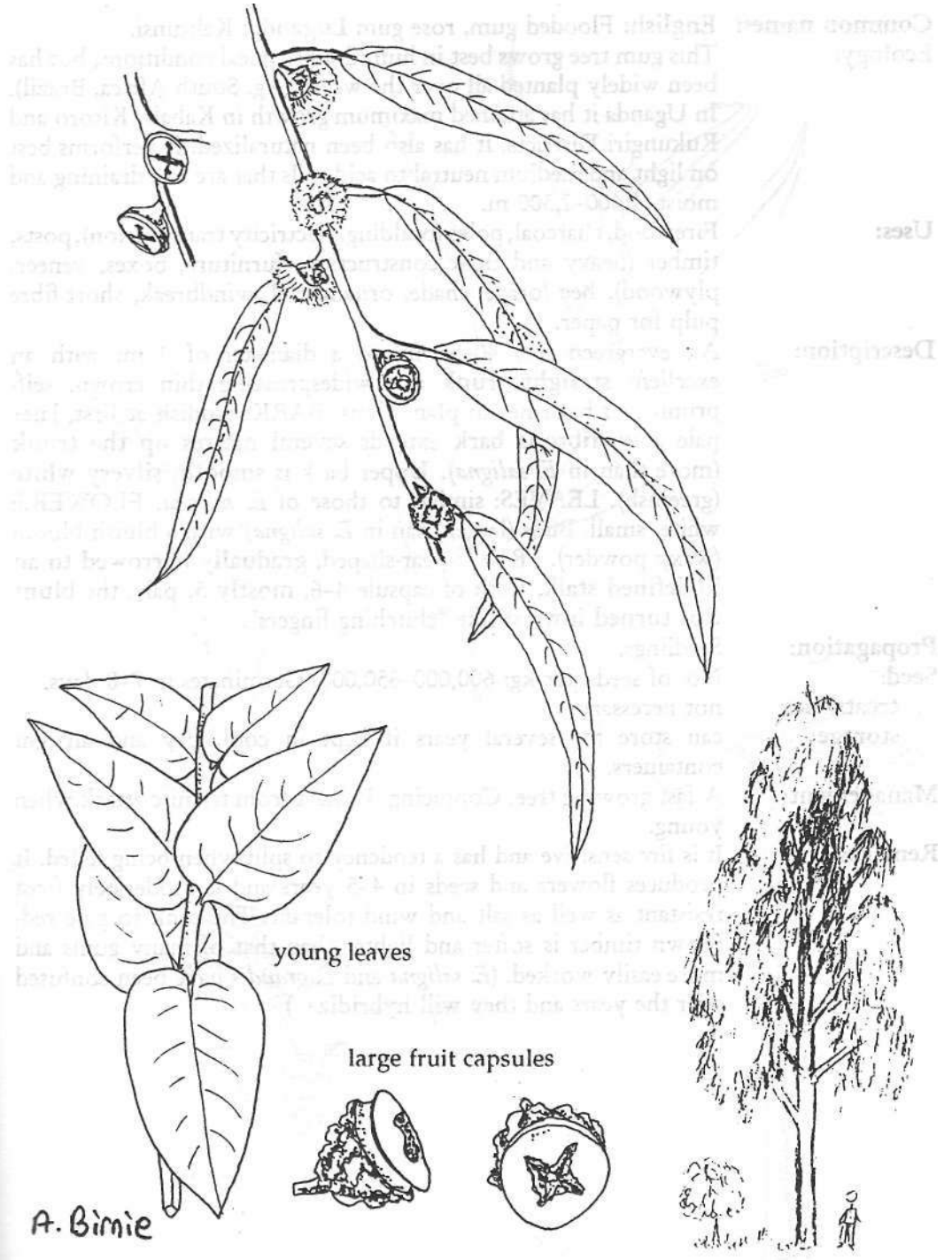
Seed: No. of seeds per kg: 75,000-100,000. Seeds germinate in 4-15 days, at a rate of 35-80% with good seed.

treatment: not necessary.

storage: seed can be stored for a long time.

Management: Fast growing; coppicing.

Remarks: Young leaves of this species have been used to produce an oil used in pharmaceutical products. The tree is very susceptible to attack by beetles (*Gonipterus scutellatus*). The wood is hard, heavy and strong, the oil making it termite resistant. Therefore, it is often used for telegraph poles. Can be planted in pure stands, as an ornamental or as an avenue tree.



Uses:

Description:

Propagation:

Eucalyptus grandis

Myrtaceae

Northern New South Wales, Queensland (Australia)

Common names: **English:** Flooded gum, rose gum **Luganda:** Kalitunsi.

Ecology: This gum tree grows best in humid subtropical conditions, but has been widely planted all over the world (e.g. South Africa, Brazil). In Uganda it has attained maximum growth in Kabale, Kisoro and Rukungiri Districts. It has also been naturalized. It performs best on light and medium neutral-to-acid soils that are free draining and moist, 1,600-2,300 m.

Uses: Firewood, charcoal, poles (building, electricity transmission), posts, timber (heavy and light construction, furniture, boxes, veneer, plywood), bee forage, shade, ornamental, windbreak, short-fibre pulp for paper.

Description: An evergreen tree 40-55 m, to a diameter of 2 m; with an excellent **straight trunk** and widespreading thin crown, self-pruning of branches in plantations. **BARK:** reddish at first, later pale grey, **fibrous bark** extends **several metres up the trunk** (more than in *E. saligna*). Upper bark is **smooth, silvery white** (greenish). **LEAVES:** similar to those of *E. saligna*. **FLOWERS:** white, 'small. Buds (larger than in *E. saligna*) with a bluish bloom (waxy powder). **FRUIT:** pear-shaped, **gradually narrowed to an ill-defined stalk**, teeth of capsule 4-6, **mostly 5**, pale, the **blunt tips turned inward** like "clutching fingers".

Propagation: Seedlings.

Seed: No. of seeds per kg: 600,000-650,000. Germinates in 7-8 days, not necessary.

treatment:
storage:

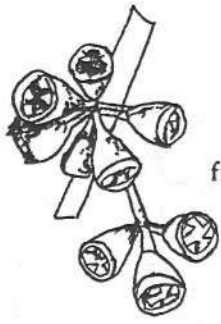
can store for several years if kept in cool, dry and airtight containers.

Management: A fast-growing tree. Coppicing. Protect from termite attack when young.

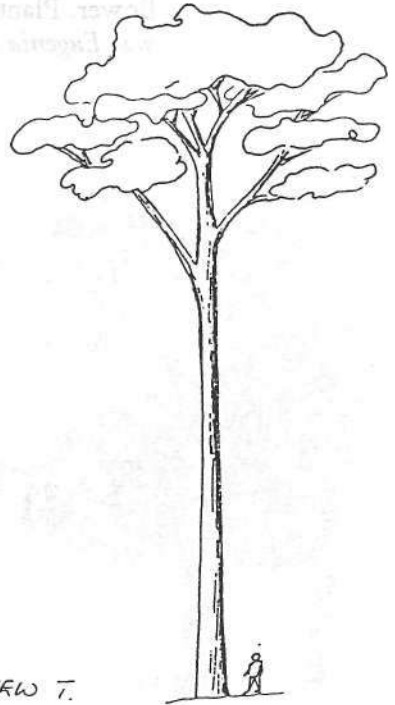
Remarks: It is fire sensitive and has a tendency to split when being felled. It produces flowers and seeds in 4-5 years and is moderately frost resistant as well as salt and wind tolerant. The pink to pale red-brown timber is softer and lighter than that of many gums and more easily worked. (*E. saligna* and *E. grandis* have been confused over the years and they will hybridize.)



A. Birnie



fruit capsules



DAMTEW T.

Indigenous

Common names:

Ecology: An understory shrub or small tree common in Uganda at forest edges, particularly in Central and Western Regions, Mengo, Sesse, Masaka and Ankole.

Uses: Food (fruit), live fence.

Description: A bushy shrub or tree to 5 m, the branches hanging down. Many stems hairy. **BARK:** rather smooth. **LEAVES:** **dull green, more or less opposite**, long oval 2-7 cm long, the tip drawn out but blunt, shortly stalked. The thin leaves are aromatic when crushed and when held against the light gland dots are visible. **FLOWERS:** 3-9 together on thin stalks next to leaves, the 4-5 tiny petals are persistent, fragrant, white, sometimes a little pink. **FRUIT:** purple-black, about 1.5 cm, turning hard brown like coffee berries with the calyx enlarged.

Propagation: Seedlings, wildings.

Seed: Squash fruit when ripe and separate seeds,

treatment: not necessary,

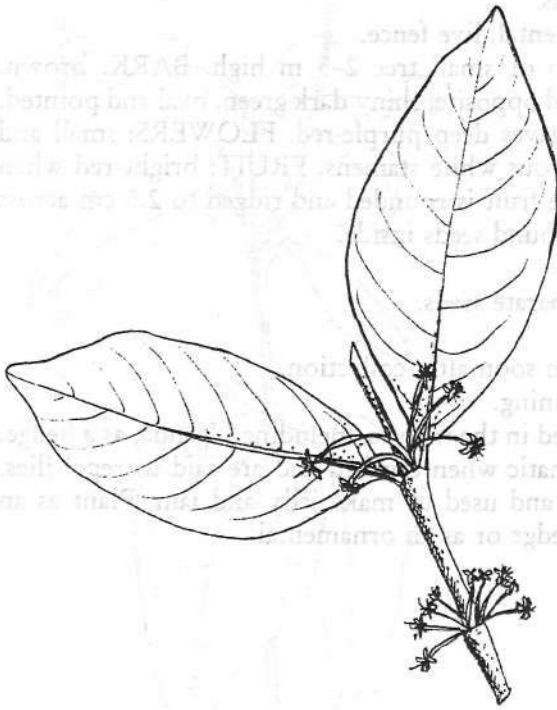
storage: seed may store up to four months.

Management:

Remarks: Farmers should be encouraged to grow this plant. The edible fruit is similar to that of guava and the shrub is beautiful when in flower. Plant as an orchard tree or living fence. The former name was *Eugenia bukobensis*.

Eugenia capensis subsp. *nyassensis*

Myrtaceae



near church mission
Food (fruit), ornament
An evergreen shrub or tree 3-7 m high. BARK: Brown.
LEAVES: simple and alternate, ovate, dark green, pointed.
FLOWERS: small and white.
FRUIT: bright red when ripe. The soft seed is enclosed in a hard, woody, inedible husk.
Uses:
Description:
Propagation:
Seed:
Treatment:
Storage:
Management:
Remarks:

Eugenia uniflora (*E. michelii*)

Myrtaceae

Brazil, West Indies, Tropical America

Common names: **English:** Brazil cherry, Surinam cherry, pitanga.

Ecology: A native of South America introduced to Uganda. Often found near church missions.

Uses: Food (fruit), ornamental, live fence.

Description: An evergreen shrub or small tree 2-3 m high. **BARK:** brown. **LEAVES:** simple and opposite, shiny dark green, oval and pointed, quite small. New leaves deep purple-red. **FLOWERS:** small and solitary with numerous white stamens. **FRUIT:** bright red when ripe. The soft edible fruit is rounded and ridged to 2.5 cm across with hard smooth round seeds inside.

Propagation: Seedlings.

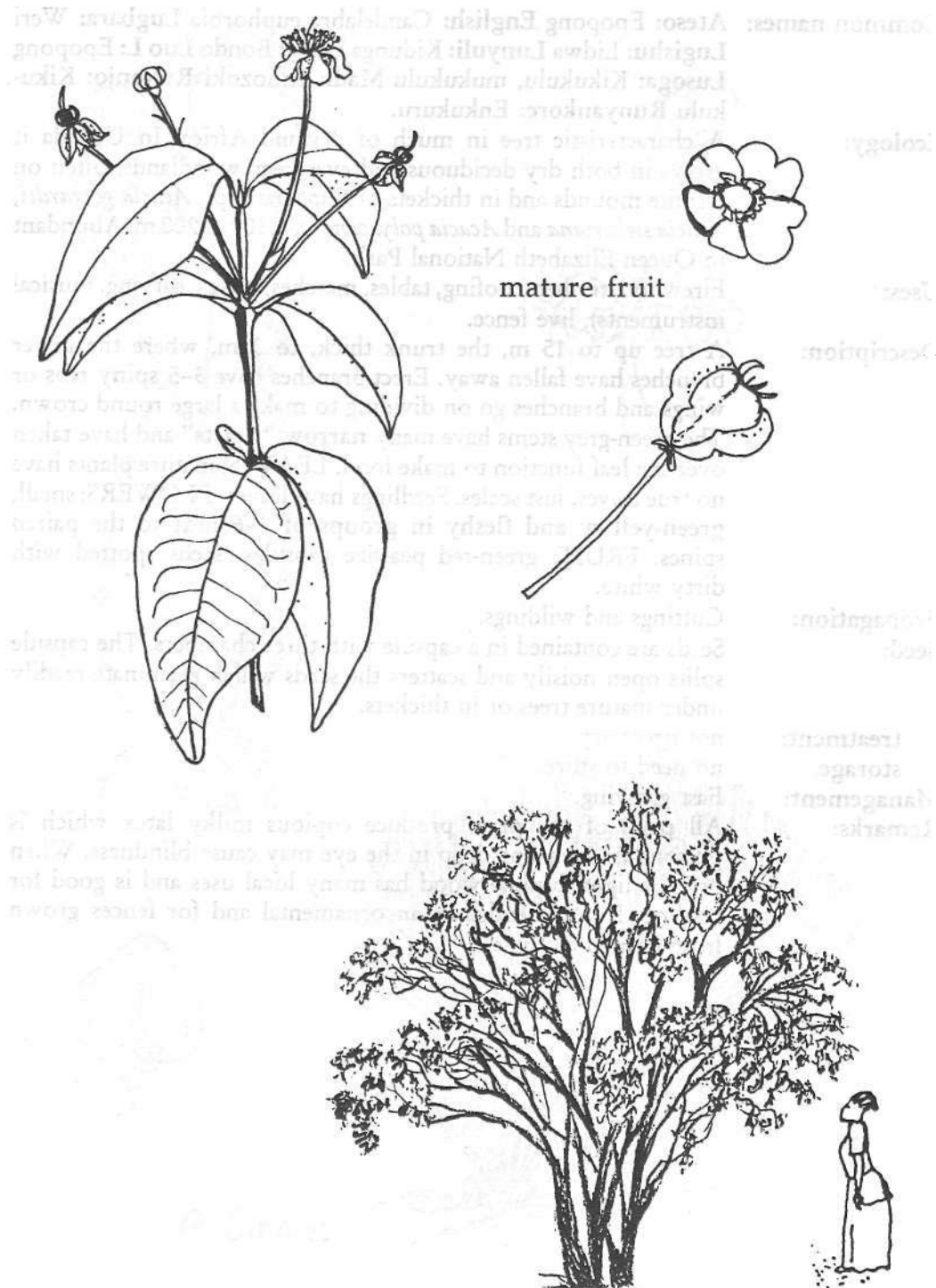
Seed: Squash fruit and separate seeds.

treatment: not necessary.

storage: seed should be sown soon after collection.

Management: Tolerates heavy pruning.

Remarks: It is widely cultivated in the tropics, including Uganda, as a hedge. The leaves are aromatic when crushed and are said to repel flies. The fruit are juicy and used to make jelly and jam. Plant as an orchard tree, as a hedge or as an ornamental.



Euphorbia candelabrum

Euphorbiaceae

Indigenous

Common names: **Ateso:** Epopong **English:** Candelabra euphorbia **Lugbara:** Weri **Lugishu:** Lidwa **Lunyuli:** Kidunga **Luo J:** Bondo **Luo L:** Epopong **Lusoga:** Kikukulu, mukukulu **Madi:** Kiliozoki **Rukonjo:** Kikukulu **Runyankore:** Enkukuru.

Ecology: A characteristic tree in much of dryland Africa. In Uganda it grows in both dry deciduous and evergreen woodlands, often on termite mounds and in thickets of *Capparis* spp., *Acacia gerrardii*, *Acacia sieberiana* and *Acacia polyacantha*, 1,100-2,200 m. Abundant in Queen Elizabeth National Park.

Uses: Firewood, timber (roofing, tables, matches, boxes, carving, musical instruments), live fence.

Description: A tree up to 15 m, the trunk thick, to 3 m, where the lower branches have fallen away. Erect branches have **3-5 spiny ribs** or wings and branches go on dividing to make a large round crown. The green-grey stems have many **narrow "waists"** and have taken over the leaf function to make food. **LEAVES:** mature plants have no true leaves, just scales. Seedlings have leaves. **FLOWERS:** small, **green-yellow and fleshy in groups** of 4-6 next to the paired spines. **FRUIT:** green-red pea-size capsules, seeds spotted with dirty white.

Propagation: Cuttings and wildings.

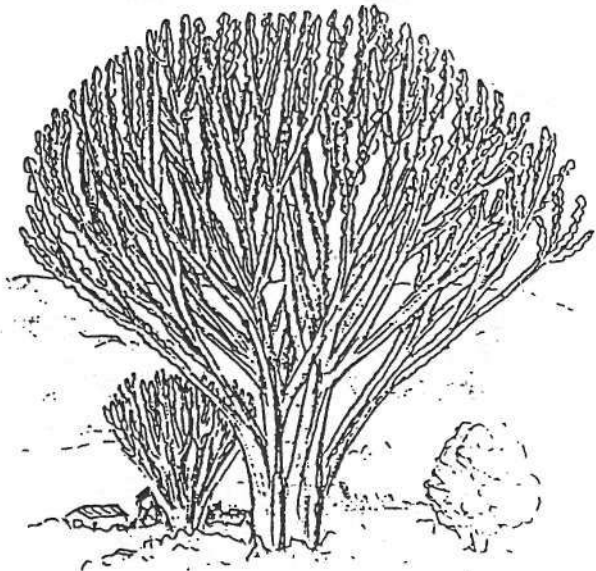
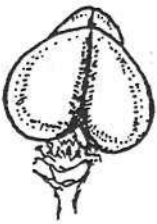
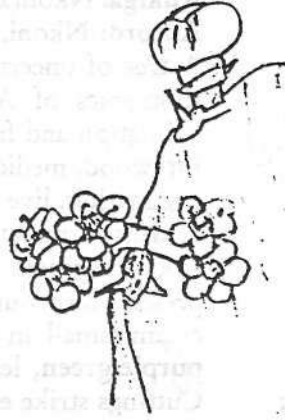
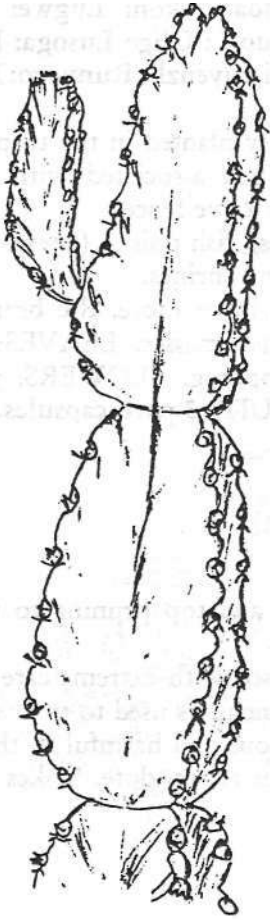
Seed: Seeds are contained in a capsule with three chambers. The capsule splits open noisily and scatters the seeds which germinate readily under mature trees or in thickets.

treatment: not necessary,

storage: no need to store.

Management: Fast growing.

Remarks: All parts of the plant produce copious milky latex which is poisonous; even one drop in the eye may cause blindness. When dry the light durable wood has many local uses and is good for roofing. Recommended as an ornamental and for fences grown from branch cuttings.



A. Birnie

Uncertain: India or Africa

Common names: **English:** Finger euphorbia **Luganda:** Nkoni **Lugwe:** Nkoni **Lunyuli:** Luhoni **Luo A:** Kilajok **Luo L:** Oligo **Lusoga:** Lukone **Rukiga:** Nkoni **Runyankore:** Nkoni, ruyenzhe **Runyoro:** Rukoni **Rutoro:** Nkoni.

Ecology: A tree of uncertain origin commonly planted in the tropics and subtropics of Asia and Africa. Much associated with human habitation and frequently planted as a live fence.

Uses: Firewood, medicine (young branches), fish poison (latex), boundary marker, live fence, planted around shrines.

Description: A dense straight-stemmed tree to 6 m or more, **the branchlets smooth green, cylindrical** in dense masses. **LEAVES:** small, present on young stems, soon dropping. **FLOWERS:** yellow-cream, small in dense clusters. **FRUIT:** **3-part capsules, hard, purple-green**, less than 1 cm across.

Propagation: Cuttings strike easily.

Seed:

treatment:

storage:

Management: Fast growing; coppicing, trimming and top pruning to make a fence.

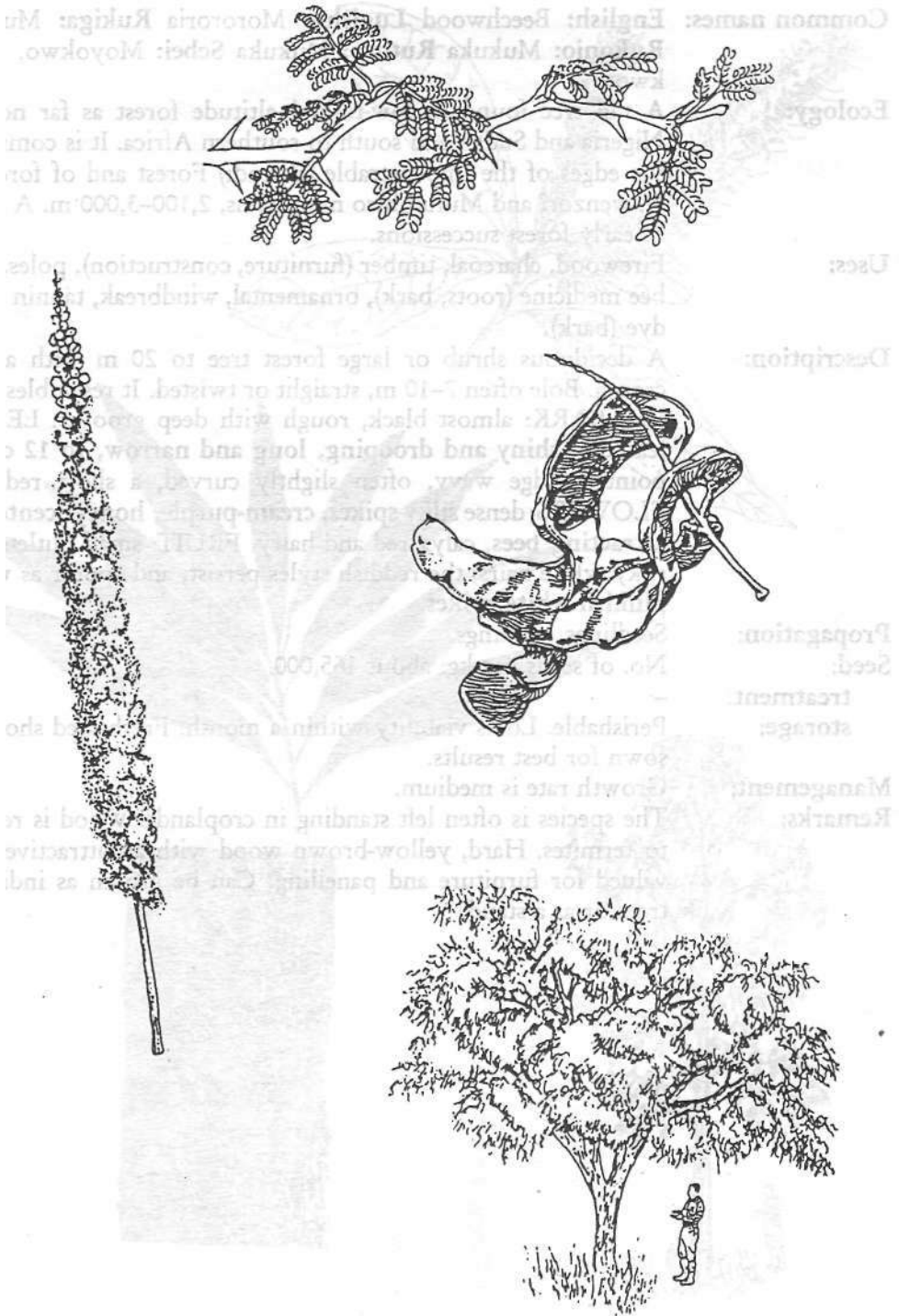
Remarks: Medicine from the plant must be used with extreme care due to its toxicity. Ash from stems and branches is used to treat whooping cough. The latex is very poisonous and harmful to the eyes. Human milk has been reported to be an antidote. Makes a good fence to control erosion.

Faidherbia albida (Acacia albida)

Mimosaceae

Indigenous

- Common names:** **Ateso:** Edurakoit, ewoi **English:** Apple ring acacia.
- Ecology:** Native to the Middle East and Africa. Within Africa, widespread in semi-arid areas. In Uganda, it occurs mostly on flood plains and with *Acacia Senegal*, 700-1,800 m. It grows well in areas with a high watertable and alluvial, loamy or sandy soils which drain well.
- Uses:** Firewood, charcoal, timber (construction), posts, utensils, flavouring (pod), medicine (bark), fodder (pods and leaves), shade, mulch, soil conservation, nitrogen fixation.
- Description:** One of the tallest of the Acacias; deciduous, sometimes to 30 m with high rounded spreading crown. Branchlets **zigzag, shiny grey**. **BARK:** dull grey, fissured and scaling; thorns in pairs, **straight to 2 cm, often pointing downwards**. **LEAVES:** bipinnate, 3-8 pairs of pinnae each with 6-23 (usually 9-16) pairs of **grey-green** leaflets, up to 1 cm, **rounded and overlapping**. **FLOWERS:** in **slender spikes to 14 cm, cream-white**, attracting bees, fragrant, appearing before new leaves. **FRUIT:** distinctive **twisted pods**, smooth, **bright orange**, to 25 cm long and quite thick, edge thickened, containing 10-20 seeds ripening at the end of the dry season. Seed are set free when the pods rot on the ground.
- Propagation:** Seedlings, direct sowing at site.
- Seed:** No. of seeds per kg: about 9,000; germination 45-96%.
- treatment:** nick or immerse in hot water, allow to cool and soak for 24 hours.
- storage:** seed can be stored for many years if dried properly and kept free from insects. Add ash to reduce insect damage.
- Management:** Slow initial growth, later fairly fast growing on good sites, and even in poor sites provided the watertable is high; coppicing, pollarding.
- Remarks:** The species is now called *Faidherbia albida* because so many of its parts are unlike those of any other Acacia. It is deep-rooted so does not compete with food crops and is intercropped with sorghum and millet in West Africa. Unlike many trees, *A. albida* is in leaf throughout the dry season so available to stock when other forage is in short supply. Fallen pods, rich in protein, are eaten at the beginning of the rains and the leaves provide mulch.



Indigenous

Common names: **English:** Beechwood **Lugishu:** Morororia **Rukiga:** Mulenjere **Rukonjo:** Mukuka **Rutoro:** Mukuka **Sebei:** Moyokwo, maiyokwo.

Ecology: A tall tree found in low-to-high-altitude forest as far north as Nigeria and Sudan and south to southern Africa. It is common at the edges of the Impenetrable (Bwindi) Forest and of forests on Ruwenzori and Mufumbiro mountains, 2,100-3,000 m. A species of early forest successions.

Uses: Firewood, charcoal, timber (furniture, construction), poles, posts, bee medicine (roots, bark), ornamental, windbreak, tannin (bark), dye (bark).

Description: A deciduous shrub or large forest tree to 20 m with a dense crown. Bole often 7-10 m, straight or twisted. It resembles a gum tree. **BARK:** almost black, rough with deep grooves. **LEAVES:** leathery, **shiny and drooping, long and narrow, to 12 cm**, tip pointed, edge wavy, often slightly curved, a short red stalk. **FLOWERS:** dense **silky spikes, cream-purple, honey scented and attracting bees**, calyx red and hairy. **FRUIT:** small nutlets, with silky white hairs, the reddish styles persist, and appear as **woolly pinkish-white spikes**.

Propagation: Seedlings, wildings.

Seed: No. of seeds per kg: about 165,000.

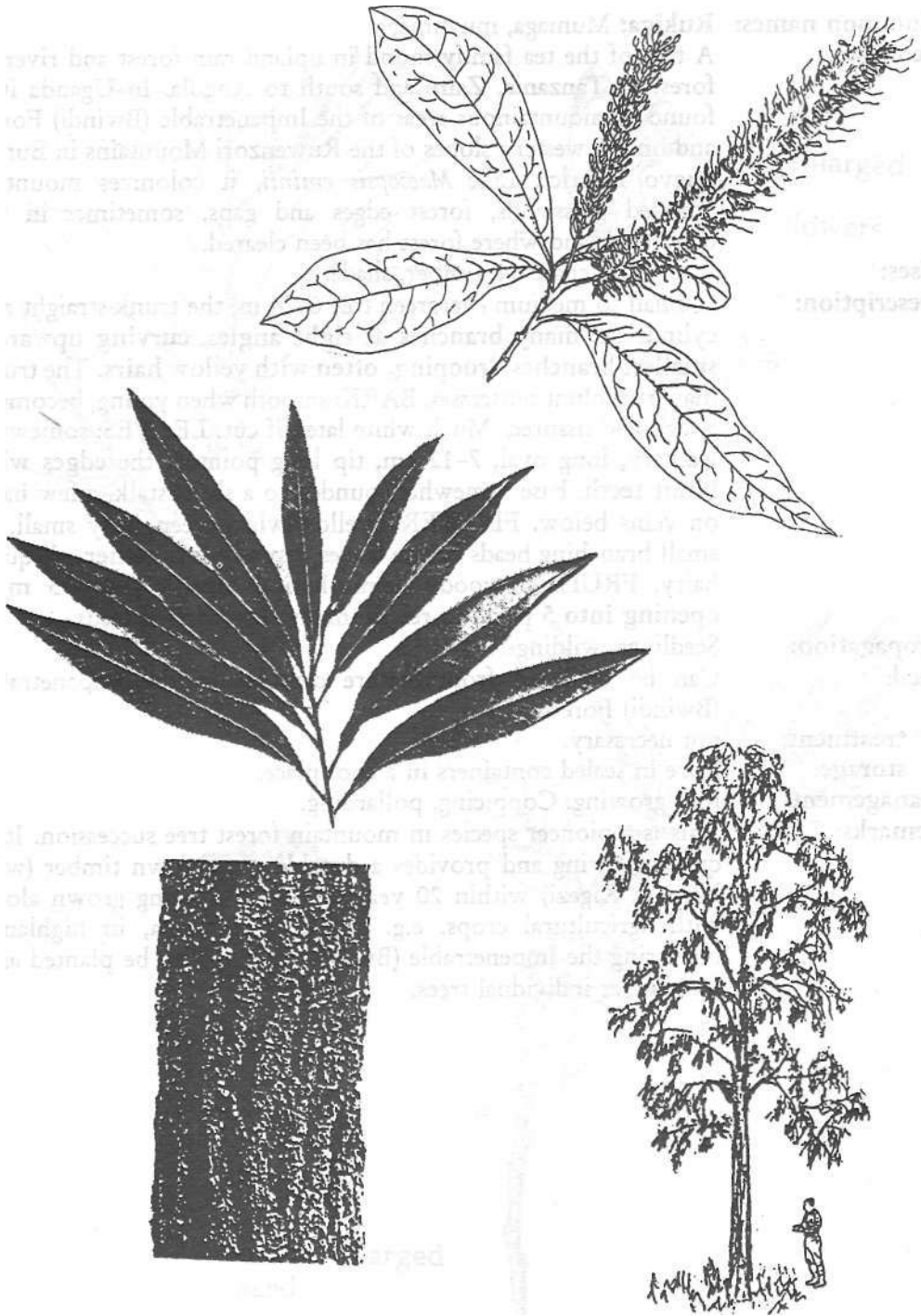
treatment:

storage:

Perishable. Loses viability within a month. Fresh seed should be sown for best results.

Management: Growth rate is medium.

Remarks: The species is often left standing in croplands. Wood is resistant to termites. Hard, yellow-brown wood with an attractive grain, valued for furniture and panelling. Can be grown as individual trees or as a stand.



Indigenous

Common names: **Rukiga:** Mumaga, muvumaga.

Ecology: A tree of the tea family found in upland rain forest and riverine forest in Tanzania, Zaire and south to Angola. In Uganda it is found in mountainous areas of the Impenetrable (Bwindi) Forest and on the western slopes of the Ruwenzori Mountains in Bundi-bugyo District. Like *Maesopsis eminii*, it colonizes mountain wooded grasslands, forest edges and gaps, sometimes in the cultivated land where forest has been cleared.

Uses: Firewood, charcoal, timber, shade.

Description: A small to medium evergreen tree 6-24 m, the trunk straight and cylindrical, **many branches at right angles, curving upwards, smallest branches drooping, often with yellow hairs**. The trunk may have blunt buttresses. **BARK:** smooth when young, becoming rough and fissured. Much white latex if cut. **LEAVES:** somewhat leathery, long oval, 7-12 cm, tip long pointed, the **edges with blunt teeth**, base somewhat rounded to a short stalk, a few hairs on veins below. **FLOWERS:** yellow-white-green, very small, in small branching heads beside leaves, **usually 2 together**, all quite hairy. **FRUIT:** a woody hemispherical **capsule, only 3 mm, opening into 5 parts** to release many tiny winged seeds.

Propagation: Seedlings, wildings.

Seed: Can be collected from mature capsules in the Impenetrable (Bwindi) Forest.

treatment: not necessary.

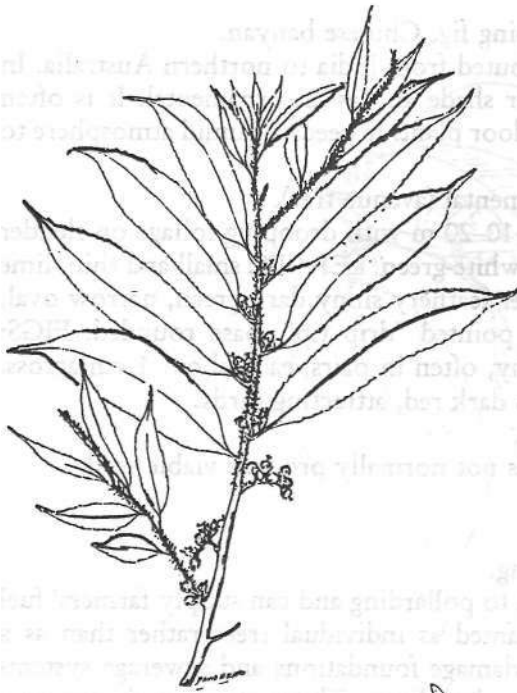
storage: store in sealed containers in a cool place.

Management: Fast growing. Coppicing, pollarding.

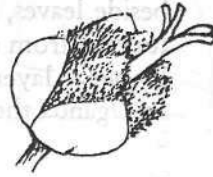
Remarks: This is a pioneer species in mountain forest tree succession. It is quick growing and provides a durable grey-brown timber (well liked in Kigezi) within 20 years or so. It is being grown along with agricultural crops, e.g. coffee and banana, in highlands bordering the Impenetrable (Bwindi) Forest. Can be planted as a stand or as individual trees.

Ficalhoa laurifolia

Theaceae



enlarged
flowers



open
fruit
capsule



much enlarged
seed



Ficus benjamina

Moraceae

India, Malaysia, Indonesia

Common names: **English:** Java fig, weeping fig, Chinese banyan.

Ecology: A native of Asia distributed from India to northern Australia. In Uganda it is grown for shade and as an ornamental. It is often grown in pots as an indoor plant. It needs a humid atmosphere to grow well.

Uses: Firewood, shade, ornamental (avenue tree).

Description: A dense evergreen tree 10-20 m with drooping foliage on slender branches. **BARK:** grey-white-green. **LEAVES:** small and thin, lime green when young, later leathery shiny dark green, narrow oval, 8-10 cm long with a pointed "drip tip", base rounded. **FIGS:** beside leaves, very many, often in pairs, each about 1 cm across, turning from orange to dark red, attracting birds.

Propagation: By aerial layering only.

Seed: In Uganda the tree does not normally produce viable seed.

treatment:

storage:

Management: Fast growing. Pollarding.

Remarks: This tree responds well to pollarding and can supply farmers' fuel needs quickly. Best planted as individual trees rather than as a stand. The roots may damage foundations and sewerage systems if planted too close to buildings. There are several attractive varieties.

Ficus elastica

Moraceae

Malaysia, India

Common names: **English:** Indian rubber tree, rubber plant.

Ecology: This tree is a native of Malaysia and India. In Uganda it is mainly grown as an ornamental in gardens and often potted for indoor decoration.

Uses: Firewood, shade, ornamental (avenues).

Description: A large spreading evergreen tree to 30 m in its native rain forests. It may grow many aerial roots from the trunk and branches. **LEAVES:** large, oval and **shiny**, long, **abruptly pointed** with parallel side veins, rather **leathery** to 30 cm, on a yellow stalk to 6 cm. The **leaf bud is covered with a pink-red membrane**, usually 7 cm but as long as 30 cm on young plants. It falls away when the leaves unfold. **FIGS:** not often seen, yellow oblong about 1 cm, in pairs in the leaf axils.

Propagation: Air layering and cuttings.

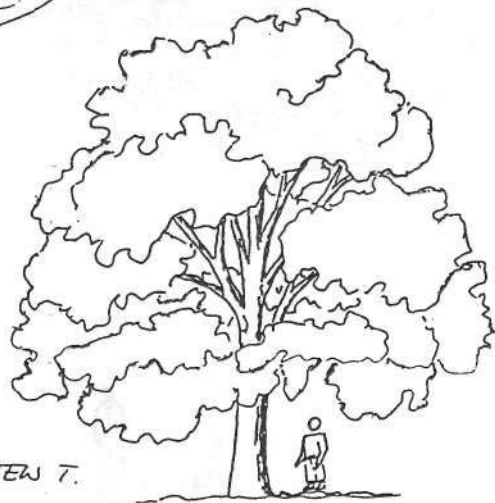
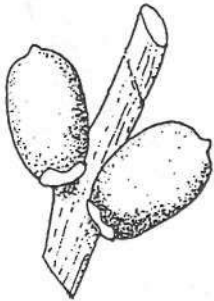
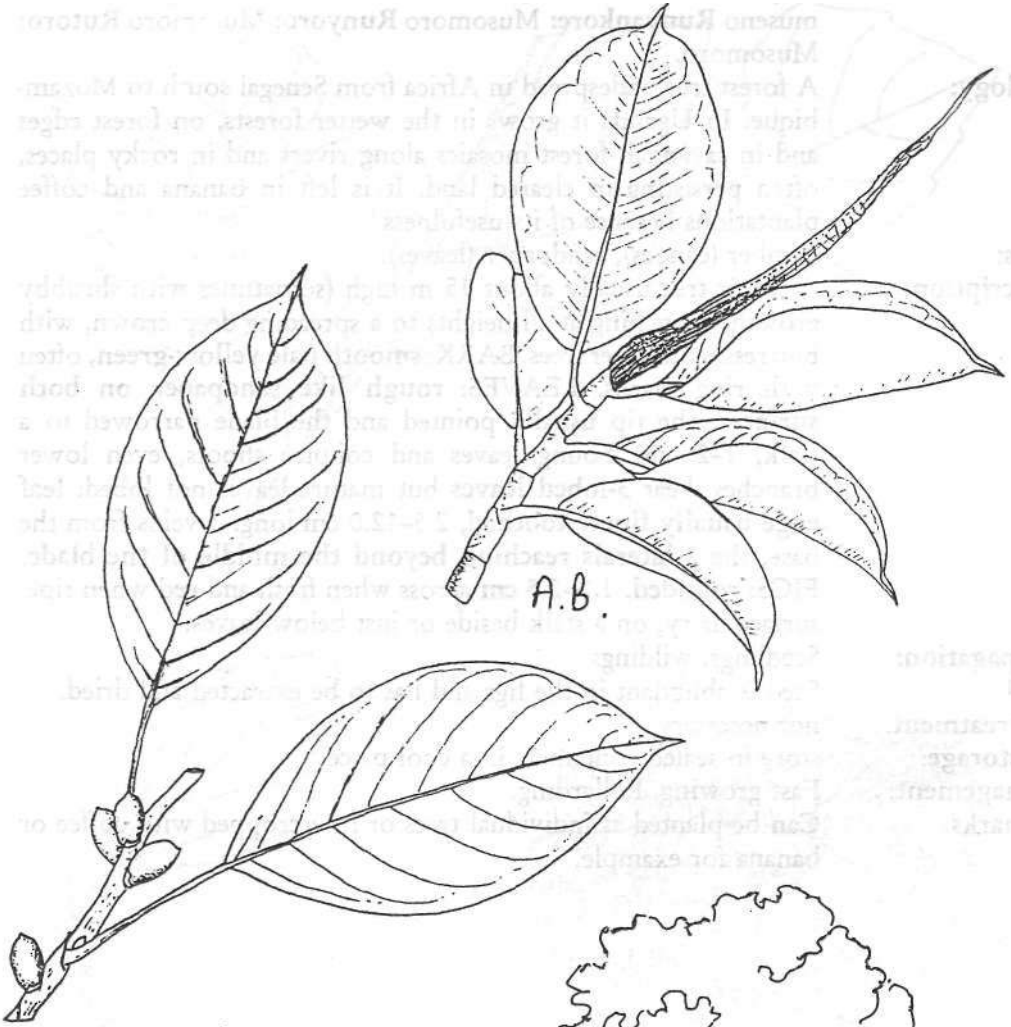
Seed:

treatment:

storage:

Management: Fast growing. Pollarding.

Remarks: White latex, "India rubber", was extracted from the trunk and prop roots but the rubber is inferior to that from *Hevea brasiliensis*. It contains too much resin and can only be tapped every three months. Plant widely spaced.



Ficus exasperata

Moraceae

Indigenous

Common names: **Luganda:** Luwawu **Lugwere:** Mkende, speri **Lusoga:** Luwawu, museno **Runyankore:** Musomoro **Runyoro:** Musomoro **Rutoro:** Musomoro.

Ecology: A forest tree widespread in Africa from Senegal south to Mozambique. In Uganda it grows in the wetter forests, on forest edges and in savannah forest mosaics along rivers and in rocky places, often persisting in cleared land. It is left in banana and coffee plantations because of its usefulness.

Uses: Timber (canoes), sandpaper (leaves).

Description: A forest tree usually about 15 m high (sometimes with shrubby growth) branching at all heights to a spreading deep crown, with buttresses on larger trees. **BARK:** smooth pale yellow-green, often with ring marks. **LEAVES:** rough like sandpaper on both surfaces, the tip usually pointed and the blade narrowed to a stalk, 1-2 cm. Young leaves and coppice shoots, even lower branches, bear **3-lobed leaves** but mature leaves not lobed; **leaf edge usually finely toothed**, 2.5-12.0 cm long, 3 veins from the base, the **2 laterals reaching beyond the middle of the blade**. **FIGS:** rounded, **1.0-2.5 cm** across when fresh and **red** when ripe, surface hairy, on a stalk beside or just below leaves.

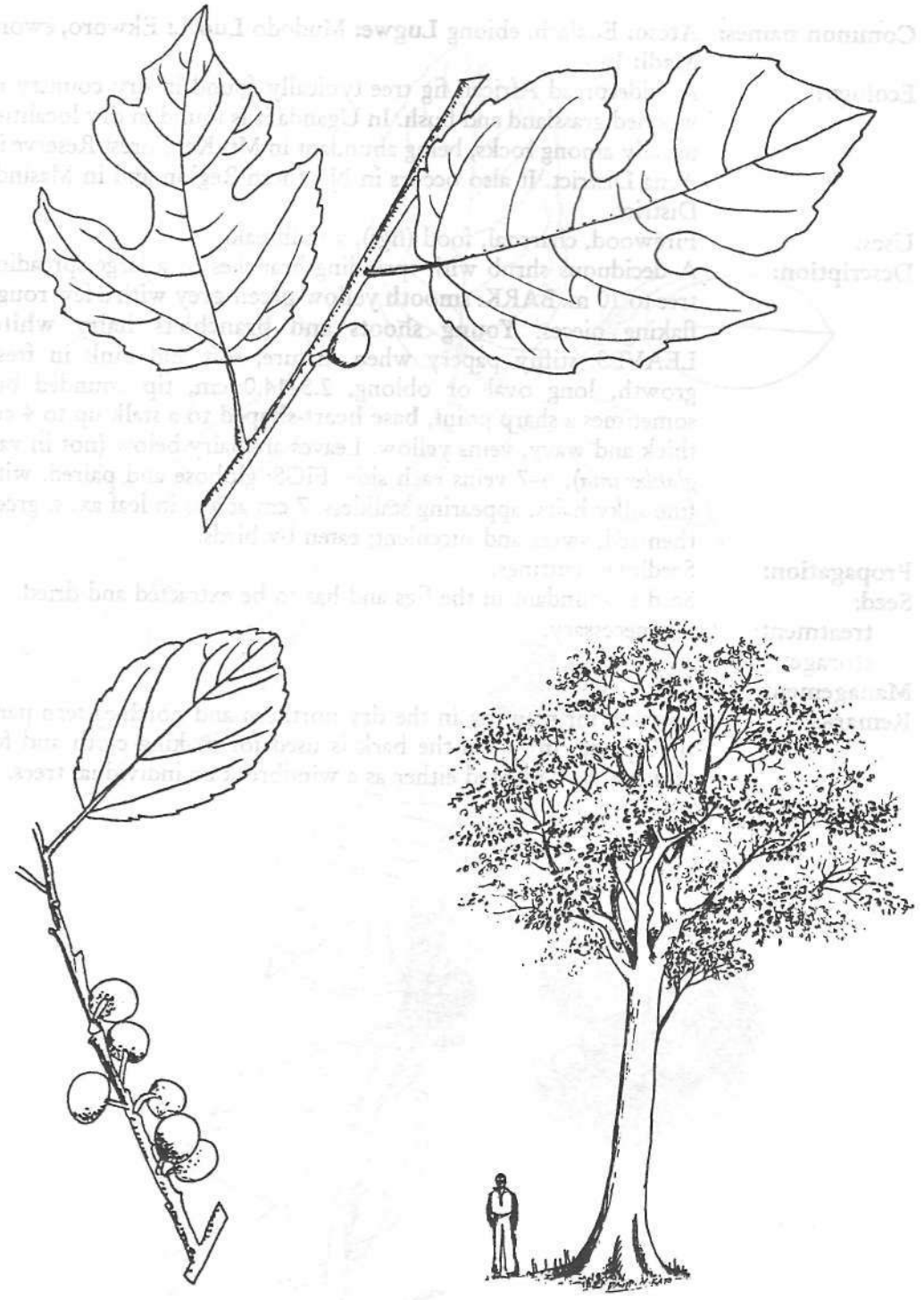
Propagation: Seedlings, wildings.

Seed: Seed is abundant in the figs and has to be extracted and dried, **treatment:** not necessary.

storage: store in sealed containers in a cool place.

Management: Fast growing. Pollarding.

Remarks: Can be planted as individual trees or intercropped with coffee or banana for example.



Ficus glumosa

Moraceae

Indigenous

Common names: **Ateso:** Edalach, ebiong **Lugwe:** Mudodo **Luo L:** Ekworo, eworo
Madi: Iyo.

Ecology: A widespread African fig tree typically found in dry country in wooded grassland and bush. In Uganda it is found in dry localities usually among rocks, being abundant in Mt. Kei Forest Reserve in Arua District. It also occurs in Northern Region and in Masinde District.

Uses: Firewood, charcoal, food (figs), windbreak.

Description: A deciduous shrub with spreading branches or a large spreading tree to 10 m. **BARK:** smooth yellow-green-grey with a few rough flaking pieces. **Young shoots and branchlets hairy white.** **LEAVES:** stiffly papery when mature, soft and pink in fresh growth, long oval or oblong, 2.5-14.0 cm, tip rounded but sometimes a sharp point, **base heart-shaped** to a stalk up to 4 cm thick and wavy, veins yellow. Leaves are hairy below (not in var. *glabberima*), 6-7 veins each side. **FIGS:** globose and paired, with fine silky hairs, appearing stalkless, 7 cm across in leaf axils, green then red, sweet and succulent; eaten by birds.

Propagation: Seedlings, cuttings.

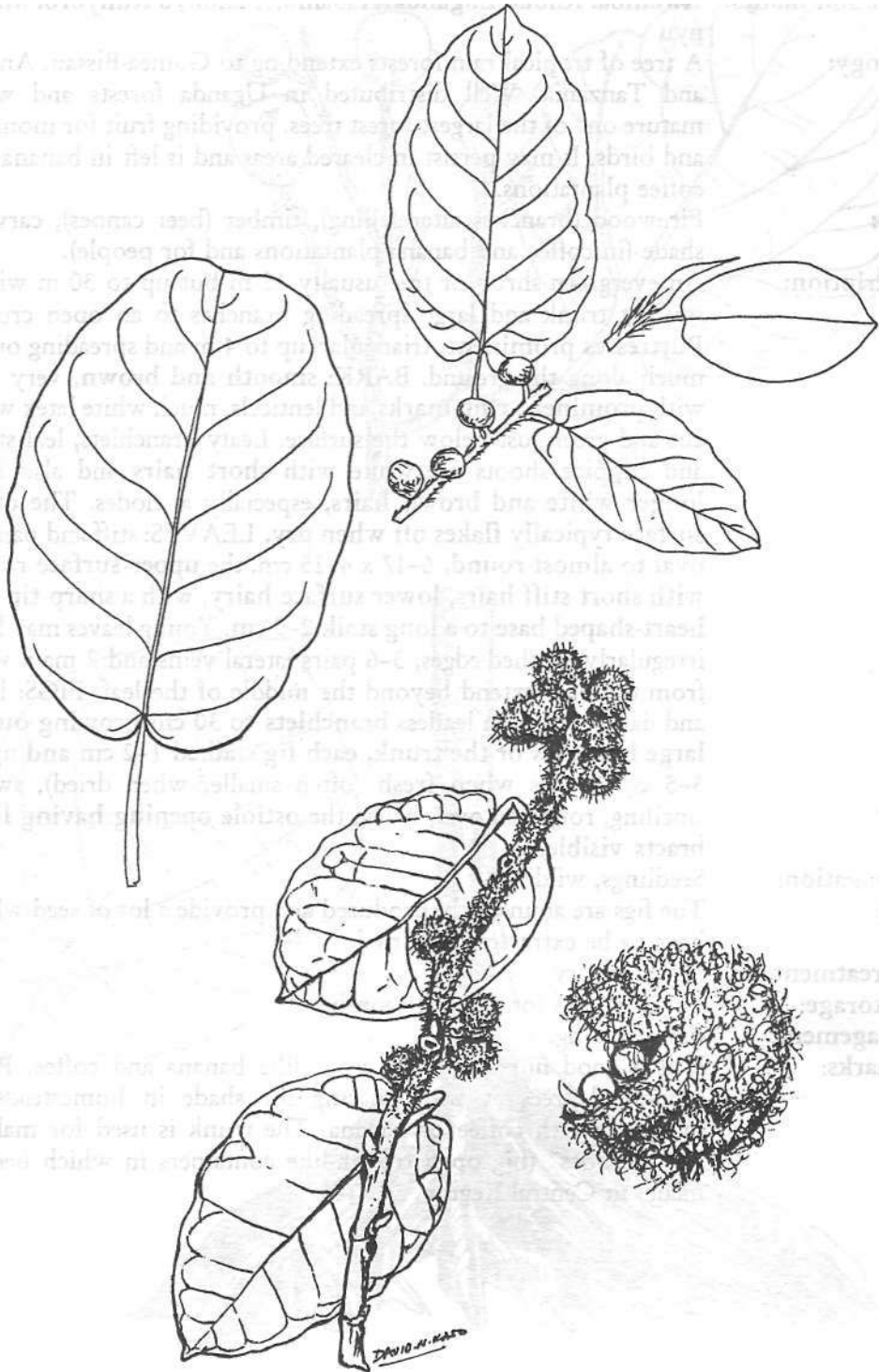
Seed: Seed is abundant in the figs and has to be extracted and dried.

treatment: not necessary.

storage:

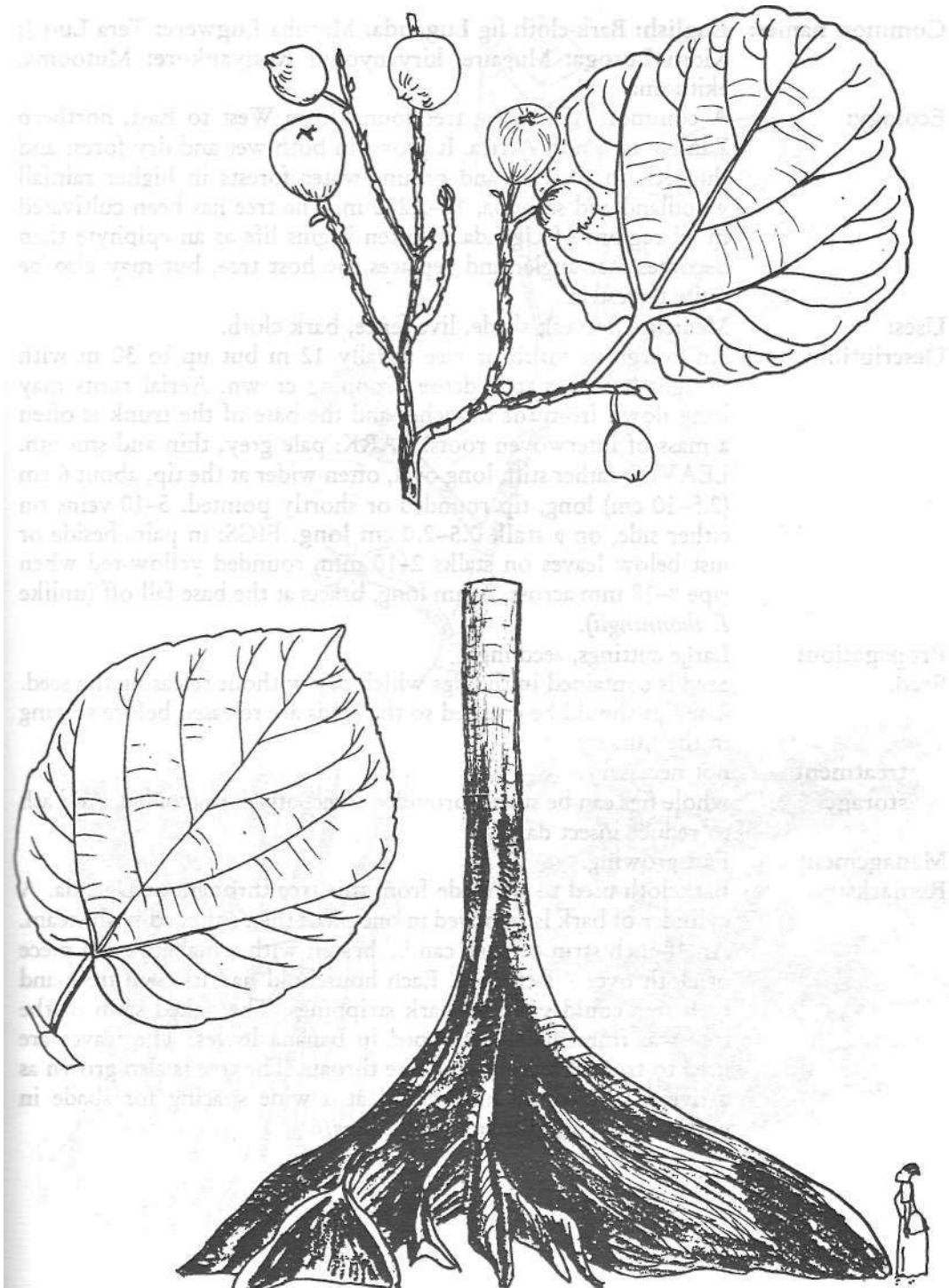
Management:

Remarks: Suitable for planting in the dry northern and north-eastern parts of Uganda. In Sudan the bark is used for making cloth and for tanning. Best planted either as a windbreak or individual trees.



Indigenous

- Common names:** **Kwamba:** Kiloko **Luganda:** Kabalira, mukunyu **Runyoro:** Mukunyu
- Ecology:** A tree of tropical rain forests extending to Guinea-Bissau, Angola and Tanzania. Well distributed in Uganda forests and when mature one of the largest forest trees, providing fruit for monkeys and birds. It may persist in cleared areas and is left in banana and coffee plantations.
- Uses:** Firewood (branches after felling), timber (beer canoes), carving, shade (in coffee and banana plantations and for people).
- Description:** An evergreen shrub or tree usually 12 m but up to 30 m with a straight trunk and large spreading branches to an open crown. **Buttresses prominent**, triangular, up to 4 m and spreading out as much along the ground. **BARK: smooth and brown**, very thin with **prominent ring marks** and lenticels, much white latex when cut and green just below the surface. Leafy branchlets, leaf stalks and coppice shoots are white with **short hairs** and also have **longer white and brown hairs**, especially at nodes. **The outer surface typically flakes off when dry.** **LEAVES:** stiff and papery, **oval to almost round**, 6-17 x 4-15 cm, the **upper surface rough with short stiff hairs, lower surface hairy**, with a **sharp tip and heart-shaped base to a long stalk 2-9 cm**. Young leaves may have irregularly-toothed edges; 3-6 pairs lateral veins and 2 main veins from the base extend beyond the middle of the leaf. **FIGS:** large and dark orange on leafless **branchlets to 30 cm growing out of large branches or the trunk, each fig stalked 1-2 cm and up to 3-5 cm across when fresh** (often smaller when dried), sweet-smelling, round to oval, hairy, the **ostiole opening having little bracts visible.**
- Propagation:** Seedlings, wildings.
- Seed:** The figs are abundantly produced and provide a lot of seed which have to be extracted and dried,
- treatment:** not necessary.
- storage:** can be stored for up to 2 months.
- Management:** Fast growing.
- Remarks:** It is a good nurse tree for crops like banana and coffee. Plant individual trees at wide spacing for shade in homesteads or intercrop with coffee or banana. The trunk is used for making beer "canoes" (big open trough-like containers in which beer is made) in Central Region.



Indigenous

Common names: **English:** Bark-cloth fig **Luganda:** Mutuba **Lugwere:** Tera **Luo J:** Kiditi **Lusoga:** Mugaire, kiryanyonyi **Runyankore:** Mutooma, ekitooma.

Ecology: A common African fig tree found from West to East, northern Zambia to South Africa. It grows in both wet and dry forest and thickets, in riverine and ground-water forests in higher rainfall woodland and savanna, 10-2,200 m. The tree has been cultivated in all regions of Uganda. It often begins life as an epiphyte then becomes a strangler and replaces the host tree, but may also be quite terrestrial.

Uses: Medicine (leaves), shade, live fence, bark cloth.

Description: An evergreen shrub or tree usually 12 m but up to 30 m with upright branches to a dense drooping crown. Aerial roots may hang down from the branches and the base of the trunk is often a mass of interwoven roots. **BARK:** pale grey, thin and smooth. **LEAVES:** rather stiff, long oval, often wider at the tip, about 6 cm (2.5-10 cm) long, tip rounded or shortly pointed, 5-10 veins on either side, on a **stalk 0.5-2.0 cm long**. **FIGS:** in pairs beside or just below leaves on stalks 2-10 mm, rounded yellow-red when ripe 8-18 mm across, 2 mm long, bracts at the base fall off (unlike *F. thonningii*).

Propagation: Large cuttings, seedlings.

Seed: Seed is contained in the figs which dry without releasing the seed. The figs should be crushed so the seeds are released before sowing in the nursery.

treatment: not necessary.

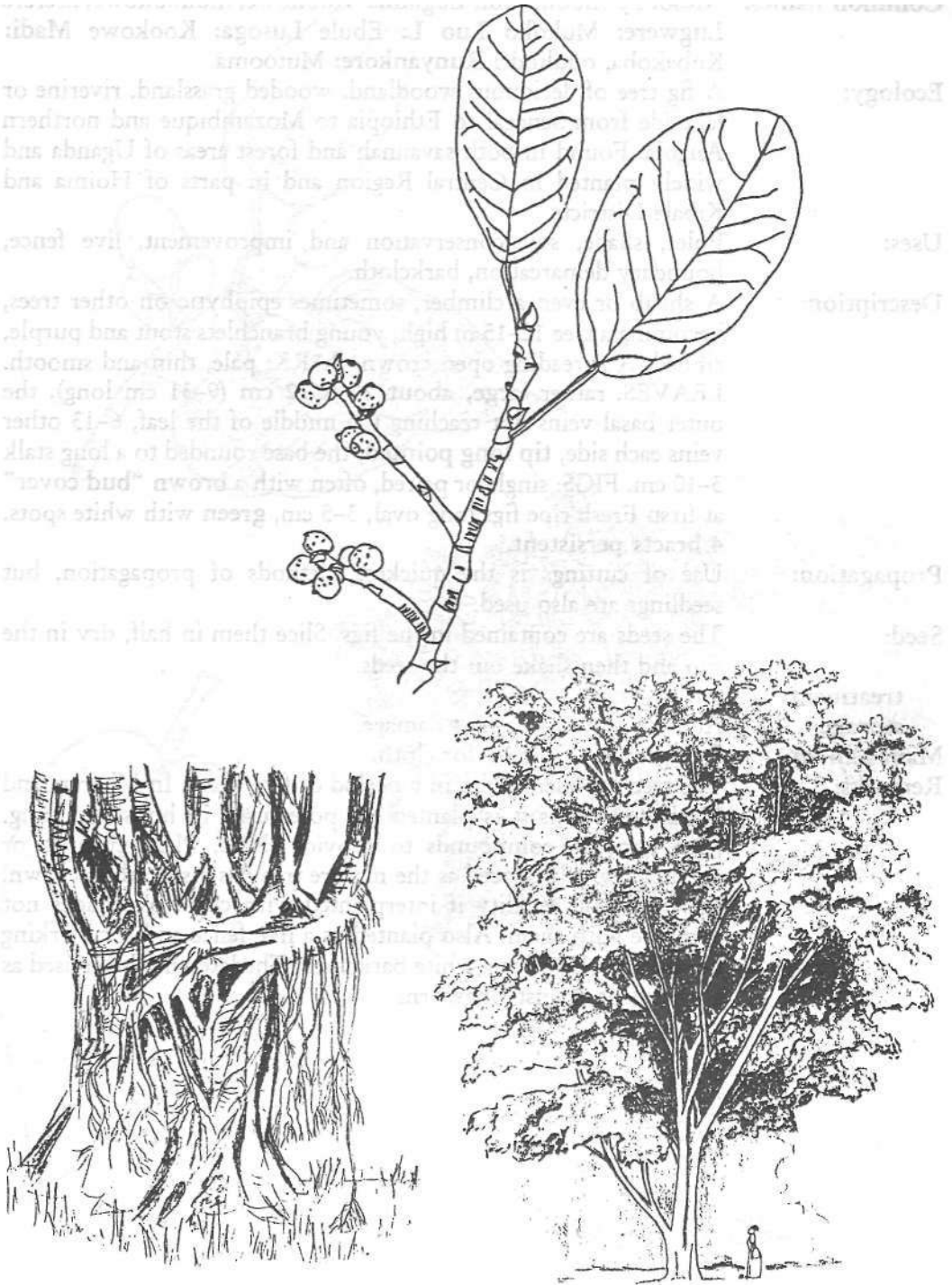
storage: whole figs can be stored provided insect attack is avoided. Add ash to reduce insect damage.

Management: Fast growing.

Remarks: Barkcloth used to be made from this tree throughout Uganda. A cylinder of bark is removed in one piece then softened with steam. An 18-inch strip of bark can be beaten with a mallet into a piece of cloth over 7 feet wide. Each household had its own trees and each tree could yield 40 bark strippings. The naked stem of the tree was immediately wrapped in banana leaves. The leaves are used to treat dysentery and sore throats. The tree is also grown as a live fence around homes and at a wide spacing for shade in coffee, cocoa and banana plantations.

"





Indigenous

Common names: **Ateso:** Eboliboli, ebuli **Luganda:** Kookowe, mukookowe, nserere **Lugwere:** Mukoko **Luo L:** Ebule **Lusoga:** Kookowe **Madi:** Kobakoba, odulindri **Runyankore:** Mutooma.

Ecology: A fig tree of deciduous woodland, wooded grassland, riverine or lakeside from Senegal to Ethiopia to Mozambique and northern Angola. Found in both savannah and forest areas of Uganda and widely planted in Central Region and in parts of Hoima and Kibale Districts.

Uses: Poles, shade, soil conservation and improvement, live fence, boundary demarcation, barkcloth.

Description: A shrub or even a climber, sometimes epiphytic on other trees, becoming a tree 12-15 m high, young branchlets stout and purple, ribbed. A spreading open crown. **BARK:** pale, thin and smooth. **LEAVES:** rather **large, about 22 x 12 cm** (9-31 cm long), the outer basal veins not reaching the middle of the leaf, 6-13 other veins each side, **tip long pointed**, the base rounded to a long stalk 3-10 cm. **FIGS:** single or paired, often with a **brown "bud cover"** at first: Fresh ripe figs long oval, 3-5 cm, **green** with white spots, **4 bracts persistent**.

Propagation: Use of cuttings is the quickest methods of propagation, but seedlings are also used.

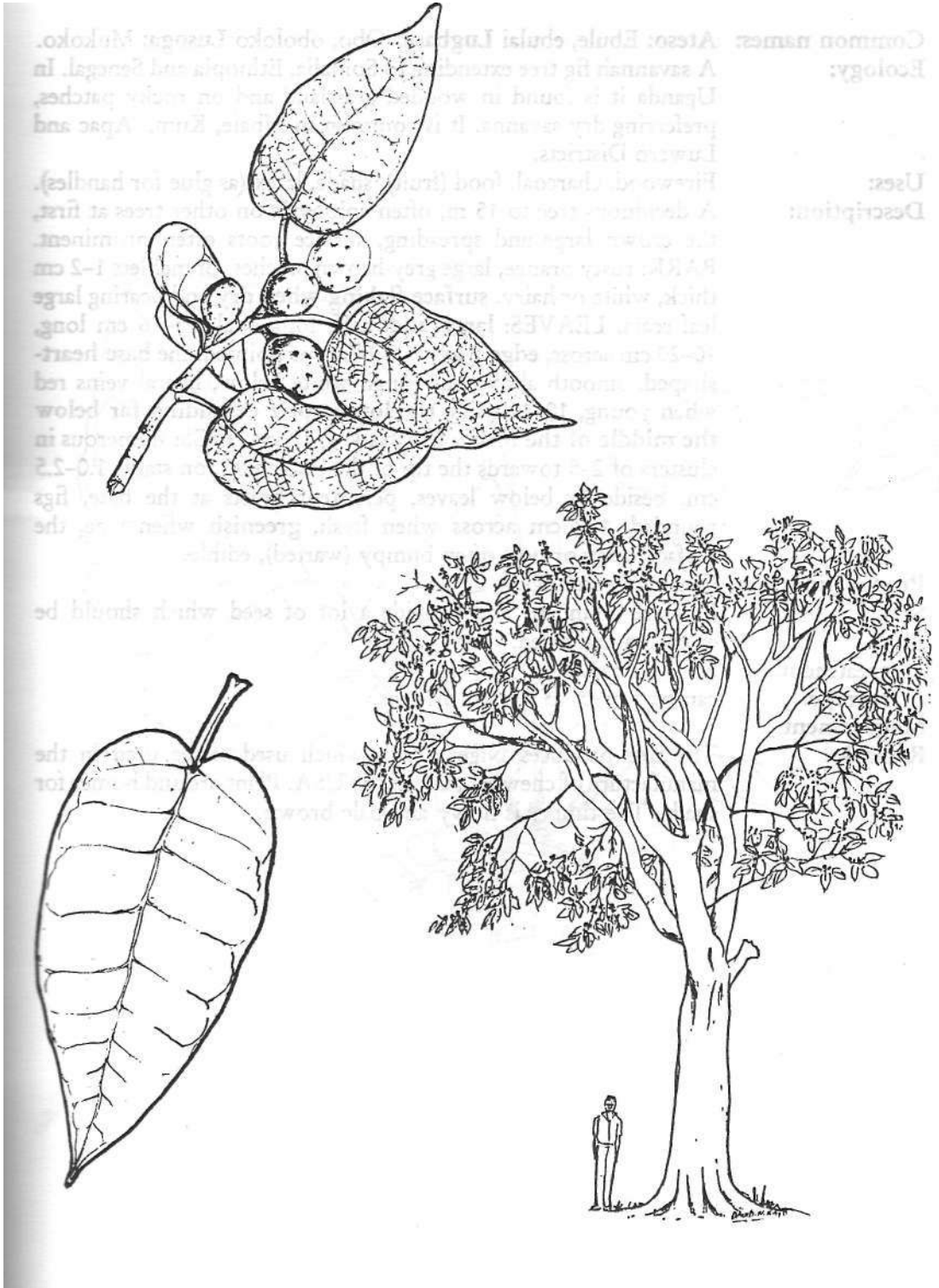
Seed: The seeds are contained in the figs. Slice them in half, dry in the sun and then shake out the seeds.

treatment: not necessary.

storage: Add ash to reduce insect damage.

Management: Fast growing. Debark for cloth.

Remarks: The tree produces poles in a period of five years. In Mbarara and Masaka Districts it is planted for poles used in house building. Also good in compounds to provide shade. Plant cuttings or seedlings widely spaced as the mature tree has a spreading crown. Improves soil fertility if interplanted with crops as it does not compete with them. Also planted as a live fence and for marking boundaries. It yields a white barkcloth. The latex has been used as a treatment against ringworm.



Indigenous

Common names: **Ateso:** Ebule, ebulai **Lugbara:** Obo, oboloko **Lusoga:** Mukoko.

Ecology: A savannah fig tree extending to Somalia, Ethiopia and Senegal. In Uganda it is found in wooded grassland and on rocky patches, preferring dry savanna. It is common in Mbale, Kumi, Apac and Luwero Districts.

Uses: Firewood, charcoal, food (fruit), shade, latex (as glue for handles).

Description: A deciduous tree to 15 m, often epiphytic on other trees at first, the crown large and spreading, surface roots often prominent. **BARK:** rusty orange, large grey-brown patches. Branchlets 1-2 cm thick, white or hairy, **surface flaking when dry** and bearing large leaf scars. **LEAVES:** **large and stiff**, long oval, 15-26 cm long, 10-20 cm across, **edge wavy**, tip blunt or pointed, the **base heart-shaped**, smooth above but rough white below, lateral veins red when young, 10-16 pairs, **the lowest pair extending far below the middle of the blade, leaf stalk 4-10 cm**. **FIGS:** numerous in clusters of 2-5 towards the tip of the branchlets, on stalks 1.0-2.5 cm, beside or below leaves, persistent bracts at the base, figs rounded, 1-2 **cm across** when fresh, **greenish** when ripe, the surface hairy or not, often bumpy (warted), edible.

Propagation: Cuttings, seedlings.

Seed: Figs are abundant and provide a lot of seed which should be extracted and dried,

treatment: not necessary,

storage: can be stored up to two months.

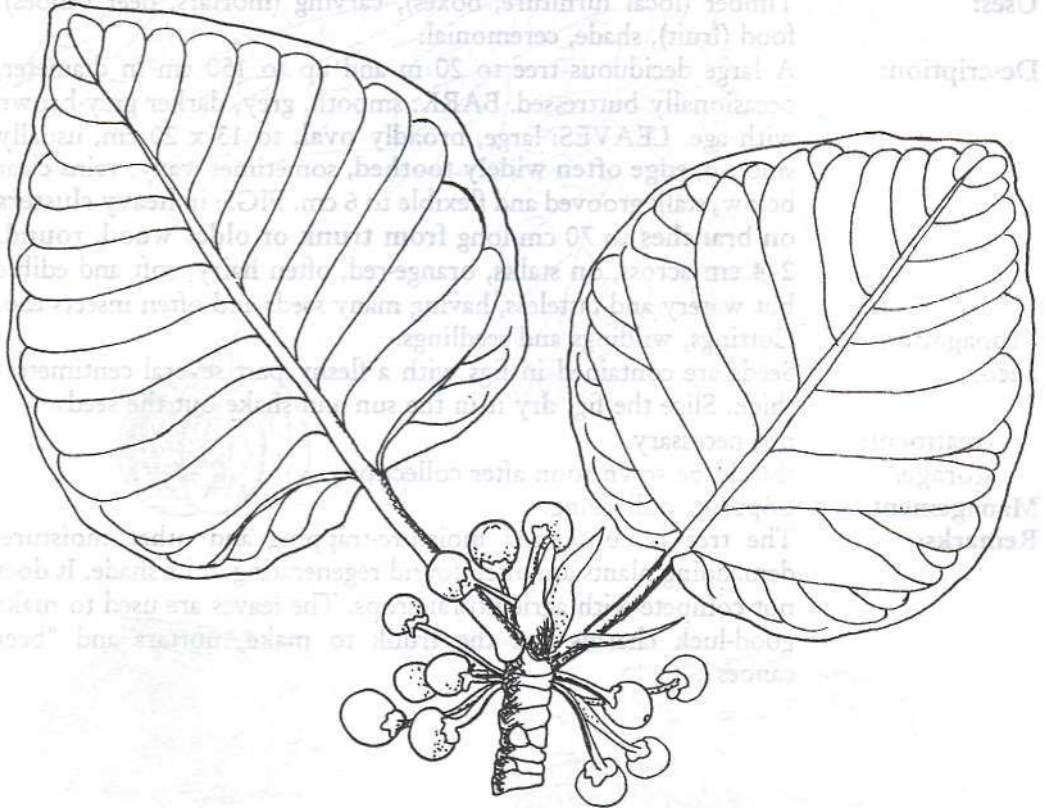
Management:

Remarks: The tree produces Niger Gutta which used to be used in the manufacture of chewing gum in the USA. Plant around homes for shade. The timber is heavy and pale brown.

Ficus platyphylla

Moraceae

ziro;^



Indigenous

Common names: **Ateso:** Edulo, edurokoi **Ateso K:** Ekonotorum **English:** Cape fig
Luganda: Kabalira **Lugbara:** Idio **Luo L:** Ebuu **Lusoga:** Mukunyu
Madi: Elo **Rukiga:** Musomoro.

Ecology: A widespread African fig tree occurring in East Africa and extending to Yemen, Angola and South Africa. In Uganda it occurs in lowland and intermediate forests, being most common in Moyo, Kitgum, Gulu and Lira Districts and in Central and Western Regions, often left in cleared land.

Uses: Timber (local furniture, boxes), carving (mortars, beer canoes), food (fruit), shade, ceremonial.

Description: A large deciduous tree to 20 m and up to 150 cm in diameter, occasionally buttressed. **BARK:** smooth, grey, darker grey-brown with age. **LEAVES:** large, **broadly oval**, to 13 x 20 cm, usually smooth, **edge often widely toothed**, sometimes wavy, veins clear below, stalk grooved and flexible to 6 cm. **FIGS:** in **heavy clusters on branches** to 70 cm long **from trunk or older wood, round, 2-4 cm** across, on stalks, orange-red, often hairy, soft and edible but watery and tasteless, having many seeds and often insects too.

Propagation: Cuttings, wildings and seedlings.

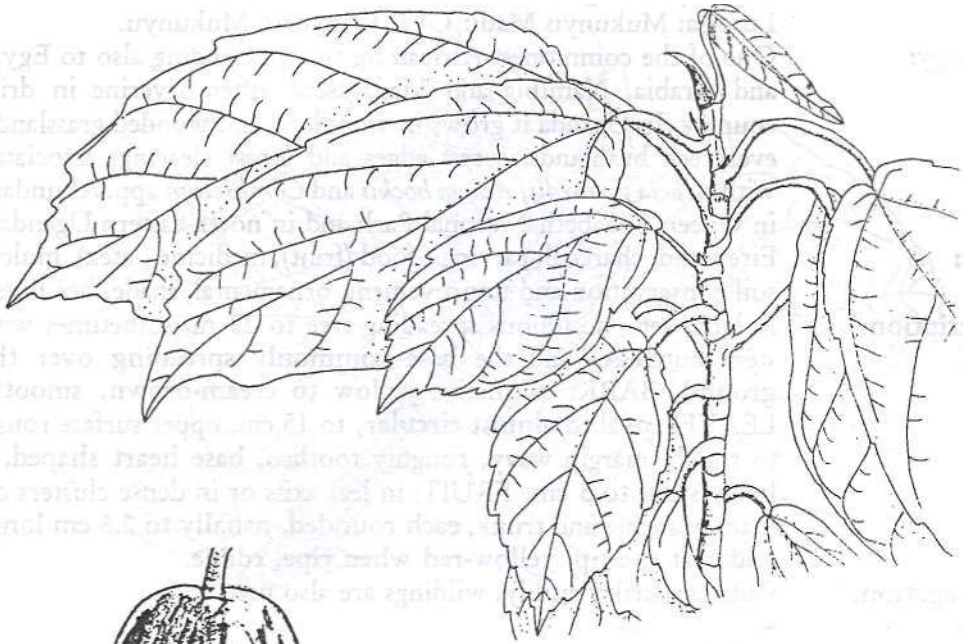
Seed: Seeds are contained in figs with a fleshy part several centimetres thick. Slice the fig, dry it in the sun and shake out the seeds,

treatment: not necessary.

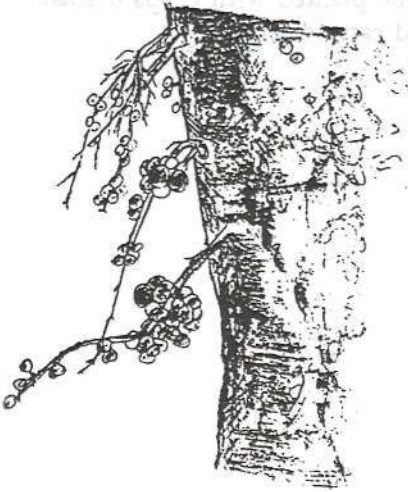
storage: should be sown soon after collection.

Management: Lopping, pollarding.

Remarks: The tree is considered moisture-trapping and other moisture-demanding plants are often found regenerating in its shade. It does not compete with agricultural crops. The leaves are used to make good-luck charms and the trunk to make mortars and "beer canoes



fruit



A. Birnie



Indigenous

Common names: **Ateso:** Eborborei, ejinga **English:** Sycomore fig **Luganda:** Mukunyu **Lugbara:** Ologo **Lugwere:** Kinabule **Luo:** Olam **Lusoga:** Mukunyu **Madi:** Oleo **Runyoro:** Mukunyu.

Ecology: One of the commonest African fig trees, extending also to Egypt and Arabia, Namibia and Madagascar, often riverine in drier country. In Uganda it grows in woodland and wooded grasslands, evergreen bushlands, forest edges and forest clearings associated with *Acacia gerrardii*, *Acacia hockii* and *Combretum* spp. Abundant in Queen Elizabeth National Park and in north-eastern Uganda.

Uses: Firewood, charcoal, carvings, food (fruit), medicine (latex), mulch, soil conservation and improvement, ornamental, shade, bee hives.

Description: A large semi-deciduous spreading tree to 25 m, sometimes with stem buttresses and the **base commonly spreading over the ground**. **BARK:** distinctive **yellow to cream-brown, smooth**. **LEAVES:** oval to **almost circular**, to 15 cm, upper surface rough to touch, margin wavy, roughly toothed, **base heart shaped**, a **hairy stalk to 3 cm**. **FRUIT:** in leaf axils or in dense clusters on main branches and trunk, **each rounded, usually to 2.5 cm long, wider at the tip, yellow-red when ripe**, edible.

Propagation: Cuttings strike readily, wildings are also used.

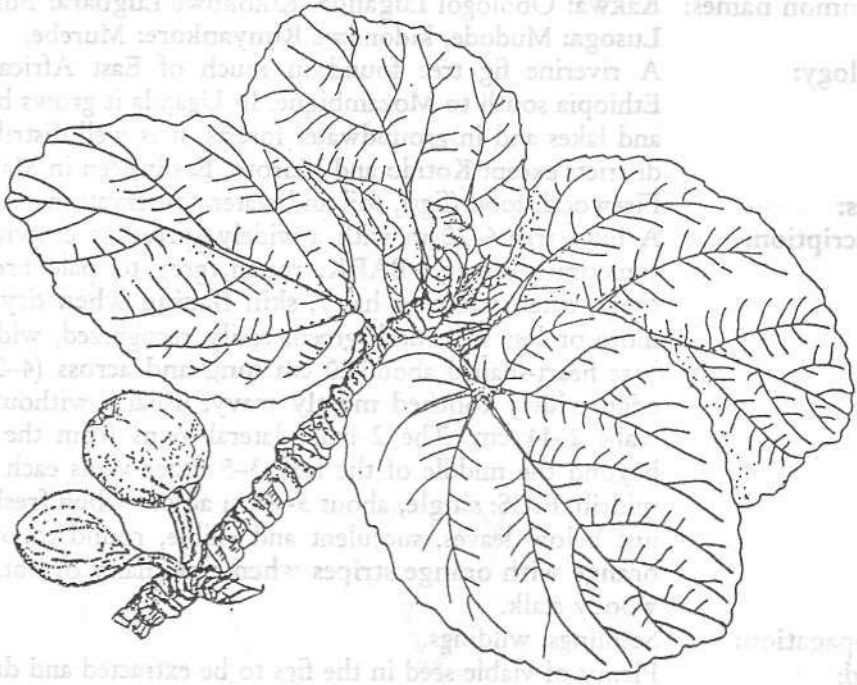
Seed:

treatment: -

storage:

Management: Fairly fast growing. Pruning, lopping to reduce shade.

Remarks: A sacred tree for various communities. Figs are eaten by livestock, birds and wild animals. They can also be dried and have a good flavour and high food value. Can be planted with crops if shade is controlled. The wood is pale and easy to work.



Ficus vallis-choudae

Moraceae

Indigenous

Common names: **Kakwa:** Obologoi **Luganda:** Kikokowe **Lugbara:** Bulabo, obulo **Lusoga:** Mudode, kidondwe **Runyankore:** Murebe.

Ecology: A riverine fig tree found in much of East Africa and from Ethiopia south to Mozambique. In Uganda it grows beside rivers and lakes and in groundwater forests. It is well distributed in all districts except Kotido and Moroto. Easily seen in Mabira Forest.

Uses: Firewood, food (figs), soil and water conservation.

Description: A huge tree 6-20 m with a widely spreading crown, buttresses sometimes present. **BARK:** rough, grey to pale brown. Leafy twigs, often white or hairy, **skin flaking when dry.** **LEAVES:** more or less stiff, dark green, easily recognized, wide oval, the base heart-shaped about **20 cm long and across (4-24 cm), the edge widely toothed mostly wavy**, usually without hairs, **the stalk 2-11 cm.** The 2 main lateral veins from the base reach beyond the middle of the leaf, 3-5 other veins each side of the midrib. **FIGS: single, about 3-6 cm across when fresh**, beside or just below leaves, succulent and edible, round to oval **yellow-orange with orange stripes when ripe**, hairy or not, on a short woody stalk.

Propagation: Seedlings, wildings.

Seed: Plenty of viable seed in the figs to be extracted and dried, **treatment:** not necessary.

storage: can be stored up to two months.

Management: Fast growing. Pollarding and lopping.

Remarks: Can be planted in areas where the watertable has been depleted and also along lake edges and streams.



Indigenous

Common names: Luo: Pwoyo.

Ecology: A fig tree of dry north and eastern Africa, Sudan, Ethiopia, Somalia and Saudi Arabia. In Uganda it is riverine in dry savannah often forming stands or thickets. Common in Moroto and Kotido Districts.

Uses: Firewood, timber (utensils, furniture), food (figs).

Description: A tree to 25 m with a spreading rounded crown, occasionally an epiphyte. Young branches thick with soft dense hairs, 5-12 mm, yellow-white-brown, skin flaking when dry. LEAVES: quite stiff and **almost circular 8-25 x 4-23 cm** across, the tip rounded but often with a blunt point, base rounded, heart-shaped, leaf stalk 3-12 cm, hairy, well-marked veins below also hairy, the two outer veins reach up to the middle of the leaf, all veins forking clearly at the leaf edge. FIGS: 1-2 together beside or just below leaves, hardly stalked, almost round about 2 cm across when fresh, green with paler spots when ripe, hairy, the opening clear.

Propagation: Cuttings, seedlings and wildings.

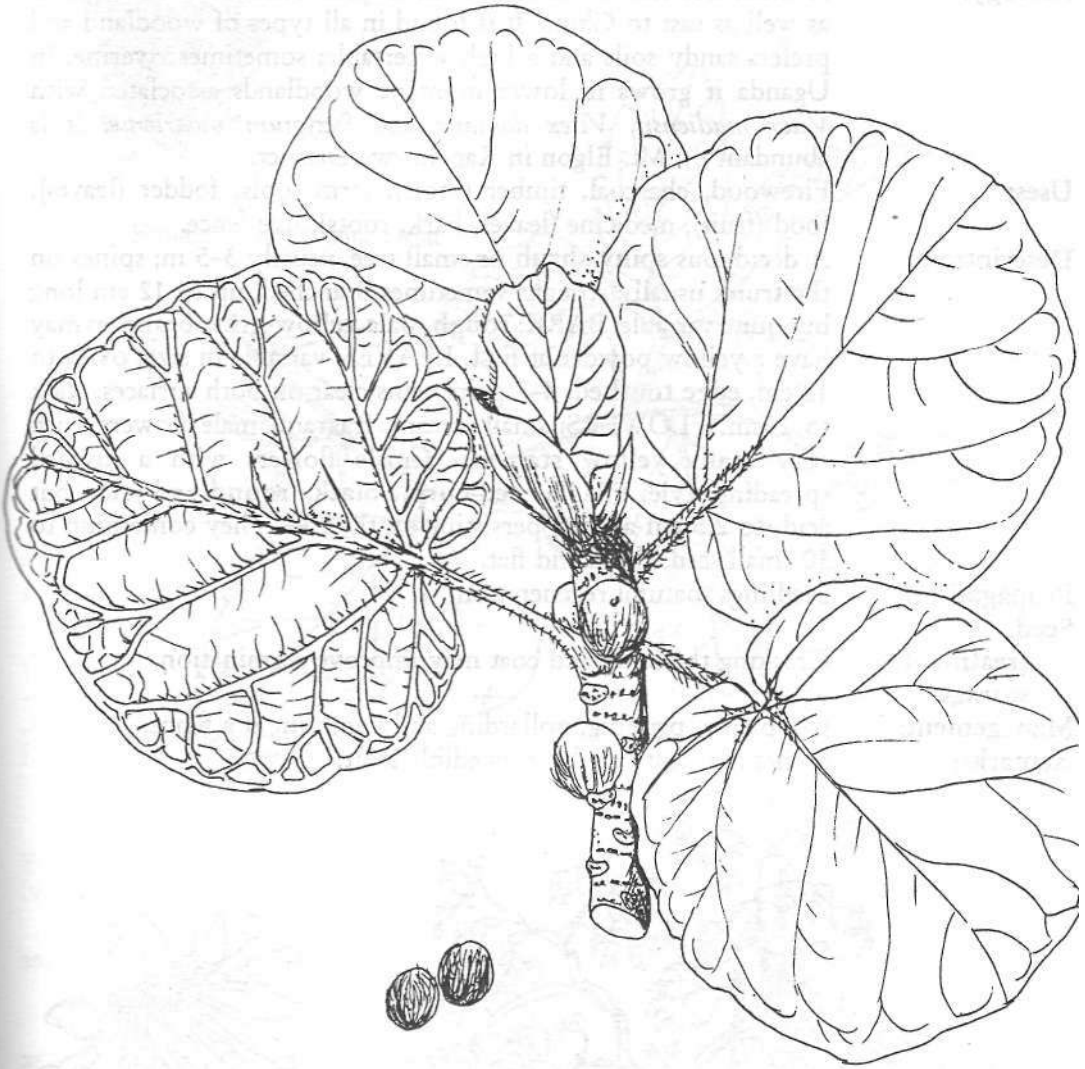
Seed: Seed is "abundant in the figs and has to be extracted and dried.

treatment: not necessary.

storage: can be stored up to two months.

Management: Lopping, pollarding.

Remarks: Wild *F. vasta* have provided food in times of famine and it is a useful tree to cultivate. The figs are either eaten when half dry or stored after drying completely and eaten stewed. Plant at wide spacing.



Indigenous

Common names: **English:** Indian plum **Lugishu:** Singululrwe **Luo L:** Kokowi **Runyankore:** Muzhebazhebe **Sebei:** Tungururu.

Ecology: A small tree that is widespread in tropical Africa and Madagascar as well as east to China. It is found in all types of woodland and prefers sandy soils and a high watertable; sometimes riverine. In Uganda it grows in lower montane woodlands associated with *Vitex madiensis*, *Vitex doniana* and *Syzygium owariense*. It is abundant on Mt. Elgon in Kapchorwa District.

Uses: Firewood, charcoal, timber (tools), farm tools, fodder (leaves), food (fruit), medicine (leaves, bark, roots), live fence.

Description: A deciduous **spiny shrub** or small tree, usually 3-5 m; spines on the trunk usually straight sometimes branched, up to 12 cm long but quite variable. **BARK:** **rough, pale yellow-grey**, branches may have a yellow powder at first. **LEAVES:** variable in size, **oval**, to **12 cm, edge toothed**, 4-7 pairs veins clear on both surfaces, stalk to 2 cm. **FLOWERS:** small, cream, fragrant; male flowers with very **many yellow stamens**, female flowers with a divided spreading style. **FRUIT:** **red-purple-black, round** and juicy but acid, **to 2.5 cm across**, persisting on the tree. They contain up to 10 small seeds, hard and flat.

Propagation: Seedlings (natural regeneration).

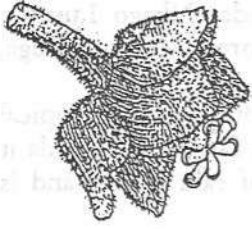
Seed:

treatment: Cracking the hard seed coat may improve germination.

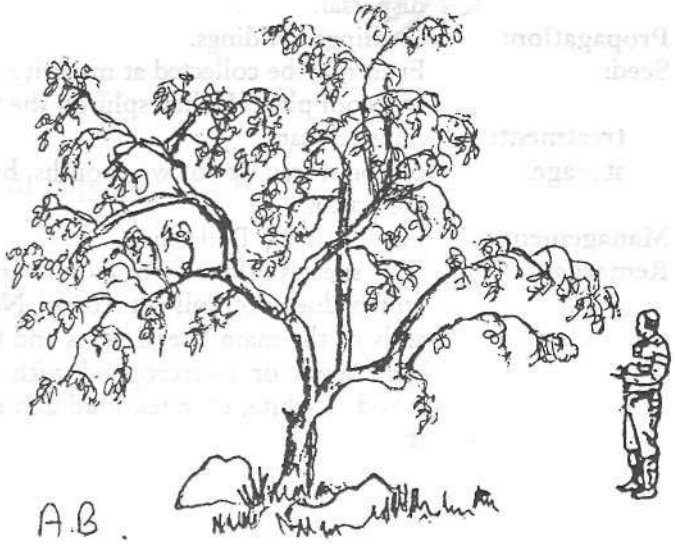
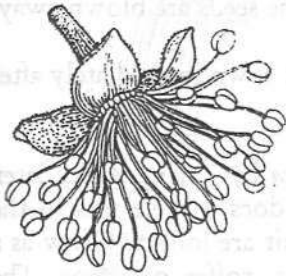
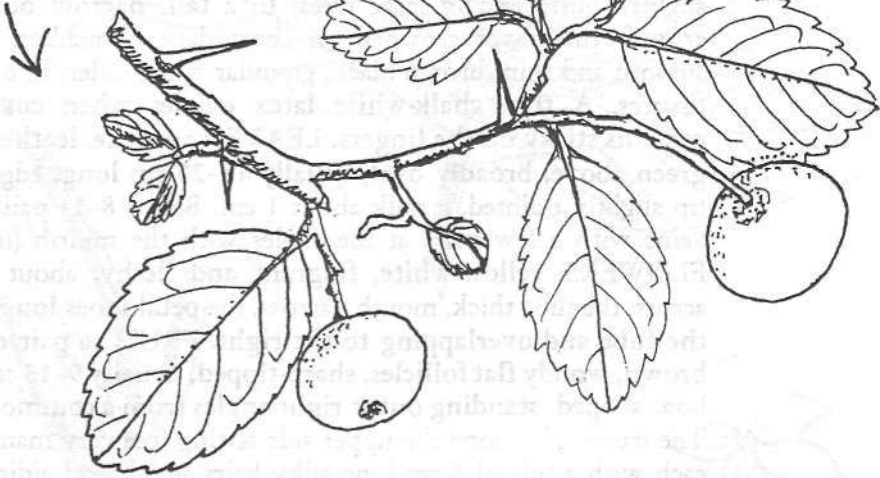
storage:

Management: Coppicing, pruning, pollarding and trimming if a fence..

Remarks: Sometimes cultivated for its edible fruit.



Female flowers produce fruit



Indigenous

Trade names: Bastard wild rubber

Common names: **English:** Bush rubber, False rubber **Luganda:** Nkago **Lusoga:** Nkago **Rukiga:** Munyamagosi **Runyankore:** Munyumatuga, nyamukago **Runyoro:** Musanda.

Ecology: The false rubber tree is widespread throughout much of tropical Africa in both evergreen and semi-deciduous forest. In Uganda it is commonly found in the middle storey of rain forests and is common in the Lake Victoria forest zone.

Uses: Firewood, charcoal (poor quality), timber (for fascia boards, furniture).

Description: An evergreen tree usually 8-25 m, the trunk cylindrical (only slightly buttressed in large trees) to a **tall, narrow but dense crown**, the leaves crowded on short dark branchlets. **BARK:** smooth and thin, brown-black, granular when older, fine vertical fissures. A **thin chalk-white latex exudes when cut which remains sticky on the fingers**. **LEAVES:** opposite, **leathery dark green above, broadly oval, usually 18-20 cm long**, edge wavy, tip slightly pointed, a stalk about 1 cm. Below 8-14 pairs lateral veins with a few hairs at the angles with the midrib (no pits). **FLOWERS:** **yellow-white, fragrant and fleshy**, about 1.5 cm across, the tube thick, mouth narrow, the **petal lobes longer than the tube and overlapping to the right**. **FRUIT:** a pair of **grey-brown, woody flat follicles, sharp-tipped, usually 9-15 cm long, boat-shaped, standing out at right angles from a common stalk**. The fruits split along the upper side setting free very many seeds, each with a tuft of 5 cm long silky hairs at one end aiding wind dispersal.

Propagation: Seedlings, wildings.

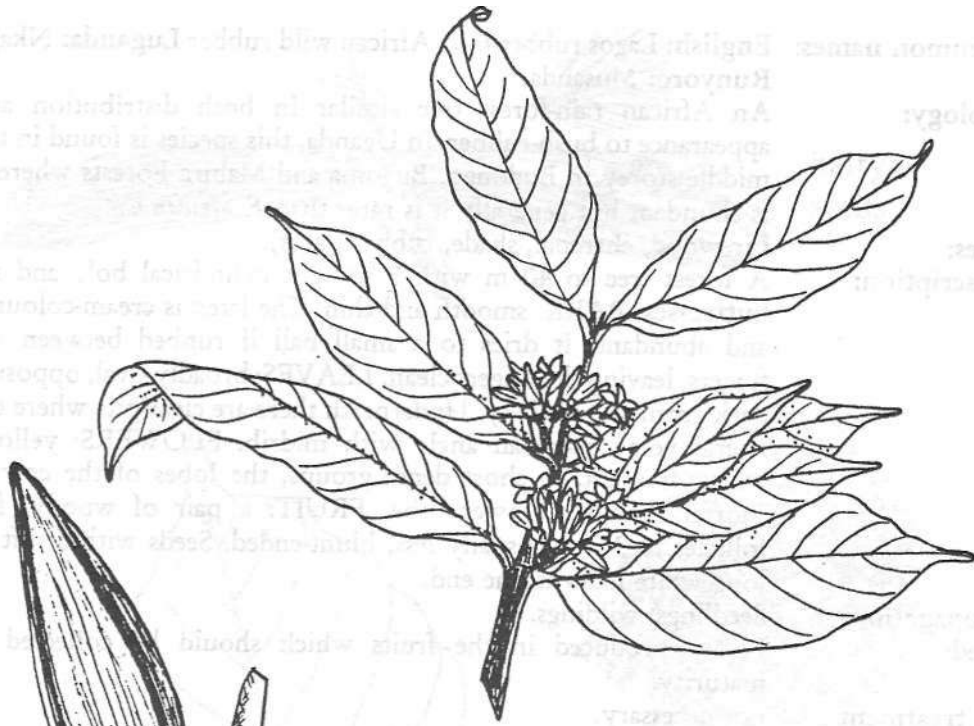
Seed: Fruit may be collected at maturity and left to split open gradually in a cool place. If they split on the tree, the seeds are blown away, not necessary.

treatment:

storage: can be stored up to two months, but best sown immediately after collection.

Management: Fast growing. Pollarding.

Remarks: This species differs from *Funtumia elastica* by having sticky latex which does not roll into balls. Neither does it have pits in the axils of the main lateral veins and the fruit are longer. Grow as a pure stand or intercropped with banana, coffee or cocoa. The wood is white, even-textured and cheap furniture is made out of it.



fruit capsules

one open



Indigenous

Common names: **English:** Lagos rubber tree, African wild rubber **Luganda:** Nkago
Runyoro: Musanda.

Ecology: An African rain-forest tree similar in both distribution and appearance to bush rubber. In Uganda, this species is found in the middle storey in Budongo, Bugoma and Mabira Forests where it is abundant but generally it is rarer than *F. africana*.

Uses: Firewood, charcoal, shade, rubber (latex).

Description: A forest tree to 40 m with a straight cylindrical bole and **no buttresses**. **BARK:** smooth and thin. The latex is cream-coloured and abundant. It dries to a small ball if rubbed between the fingers, leaving the fingers clean. **LEAVES:** broadly oval, opposite, dark green and leathery. Underneath there are clear pits where the lateral veins make an angle with midrib. **FLOWERS:** yellow-white, fragrant, in short dense groups, the lobes of the corolla shorter than the flower tube. **FRUIT:** a pair of woody, flat follicles to 30 cm, usually less, blunt-ended. Seeds with a tuft of long white hairs at one end.

Propagation: Seedlings, wildings.

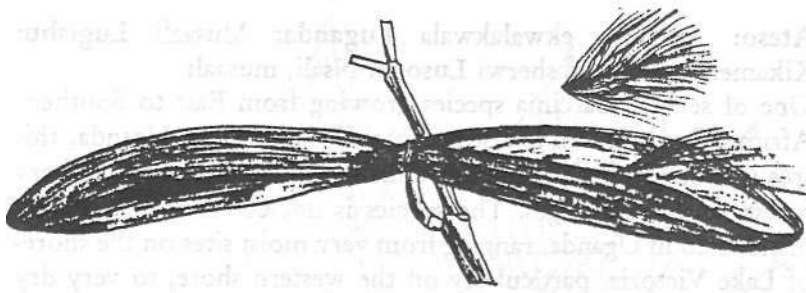
Seed: Plenty produced in the fruits which should be collected at maturity,

treatment: not necessary.

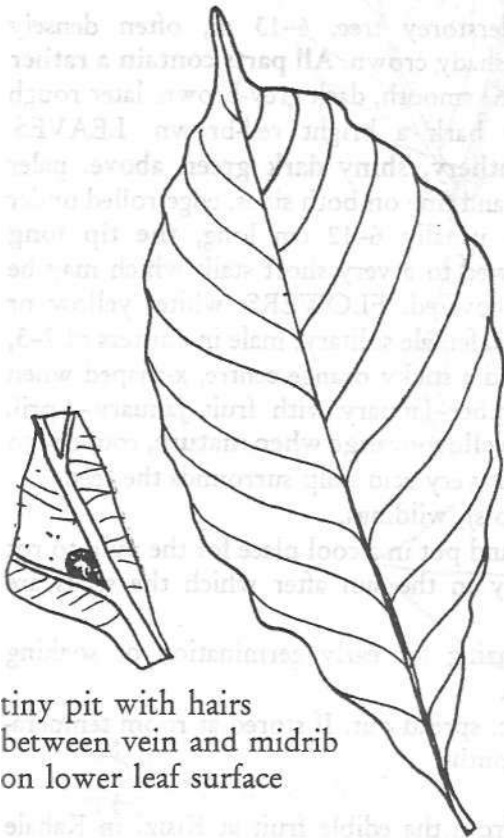
storage: can be stored up to two months.

Management: Fast growing.

Remarks: *F. elastica* produces a high-quality rubber and can be grown in plantations for tapping of rubber. During World War II it was much tapped in Mabira, Budongo and Bugoma Forests. The first serious botanical expeditions to Uganda were searching for rubber trees—with hopes of an economic crop when *F. elastica* was found. The discovery of this species in Uganda discouraged people from planting *Hevea brasiliensis*. At present no tapping of African wild rubber is being done.



hairy seeds



tiny pit with hairs between vein and midrib on lower leaf surface



Indigenous

Common names: **Ateso:** Atenum, ekwalakwala **Luganda:** Musaali **Lugishu:** Kikameri, mubidira, sherwi **Lusoga:** Nsali, musaali.

Ecology: One of several *Garcinia* species growing from East to Southern Africa. They contain a distinctive yellow latex. In Uganda, this tree is found in high-rainfall savannah woodland, thickets, gallery forests and forest edges. The species is not common but widely distributed in Uganda, ranging from very moist sites on the shores of Lake Victoria, particularly on the western shore, to very dry-sites in North Eastern Region.

Uses: Firewood, charcoal, timber, food (fruit), drink (fruit wine), ornamental.

Description: A small evergreen understorey tree, 6-13 m, often densely branched to a thick dark shady crown. **All parts contain a rather sticky yellow sap.** **BARK:** smooth, dark grey-brown, later rough and flaking, the under bark a bright red-brown. **LEAVES:** **opposite, thick and leathery, shiny dark green above**, paler below, lateral veins thin and fine on both sides, edge rolled under and wavy, oval-oblong, usually 6-12 cm long, **the tip long pointed**, the base narrowed to a very short stalk which may be pink. Buds often resin covered. **FLOWERS:** white, yellow or orange, about 1 cm across, female solitary, male in clusters of 2-3, 4 petals and sepals around a sticky orange centre, x-shaped when open. Flowers in December-January with fruit January-April. **FRUIT:** **Fleshy berries, yellow-orange when mature**, rounded to 2.5 cm across. Edible but very acid pulp surrounds the seed.

Propagation: Seedlings (sow seed in pots), wildings.

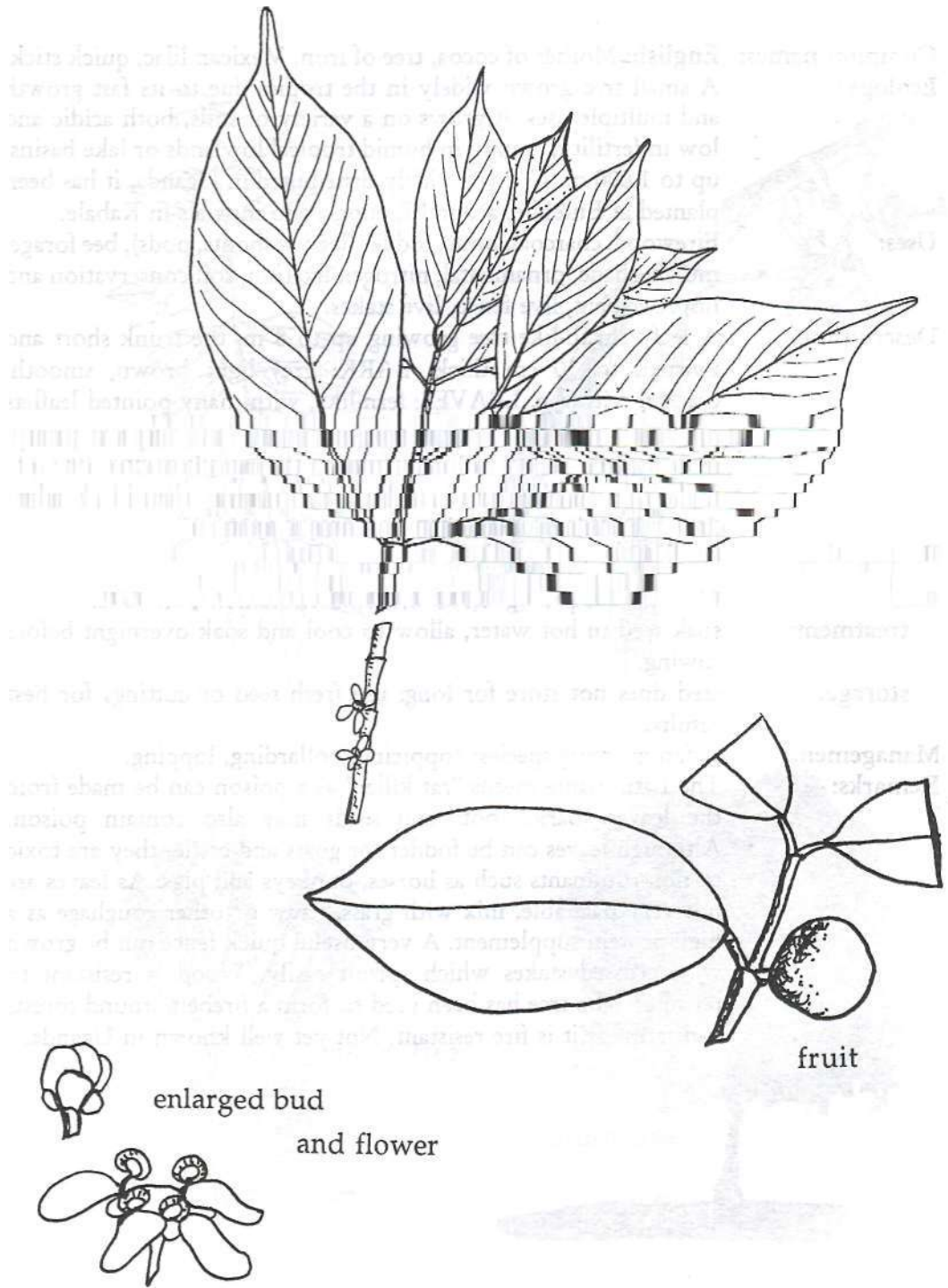
Seed: Ripe fruits are collected and put in a cool place for the pulp to rot and fall away. Then dry in the sun after which the seeds are separated.

treatment: the seed coat needs brazing for early germination or soaking overnight before sowing.

storage: Store in a dry cool place, spread out. If stored at room temperature, sow within two months.

Management: Lopping, pollarding.

Remarks: A wine is being made from the edible fruit at Kisizi in Kabale District. The hard yellow timber is suitable for buildings, and the firewood is of high quality. The species can be raised as a pure fruit orchard or intercropped with coffee. Individual trees are also good ornamentals. The fruit has a high vitamin-C content.



fruit

enlarged bud
and flower

Central America, Mexico

Common names: **English:** Mother of cocoa, tree of iron, Mexican lilac, quick stick.

Ecology: A small tree grown widely in the tropics due to its fast growth and multiple uses. It grows on a variety of soils, both acidic and low in fertility, mainly in humid tropical lowlands or lake basins, up to 1,600 m. Not yet widely distributed in Uganda, it has been planted at Entebbe, around Kampala and in trials in Kabale.

Uses: Firewood, charcoal, posts, fodder (leaves, shoots, pods), bee forage, mulch, shade, ornamental, nitrogen fixation, soil conservation and improvement, live fence, live stakes.

Description: A leafy shrub-like tree growing up to 8 m, the trunk short and twisted, to 30 cm thick. **BARK:** grey-light brown, smooth, cracked with age. **LEAVES:** fern-like, with many pointed leaflets on a leaf stalk to 25 cm, hanging down. **FLOWERS:** pretty, **mauve-pink**, centre yellow, **grow on the woody stems**. **FRUIT:** pods, thin and flat to 15 cm long, yellow-grey then black when dry; 3-8 seeds set free when pod breaks open.

Propagation: Seedlings,- cuttings, direct sowing at site.

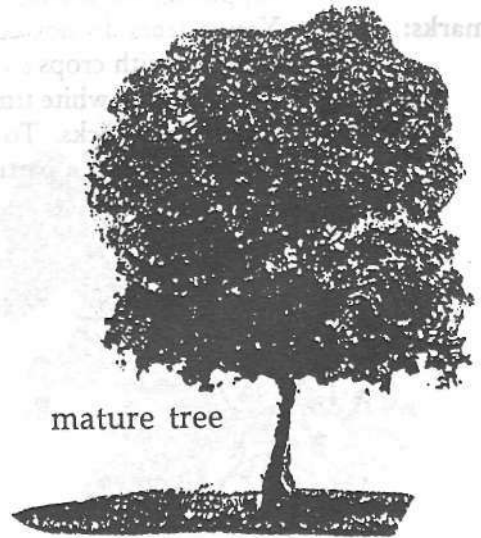
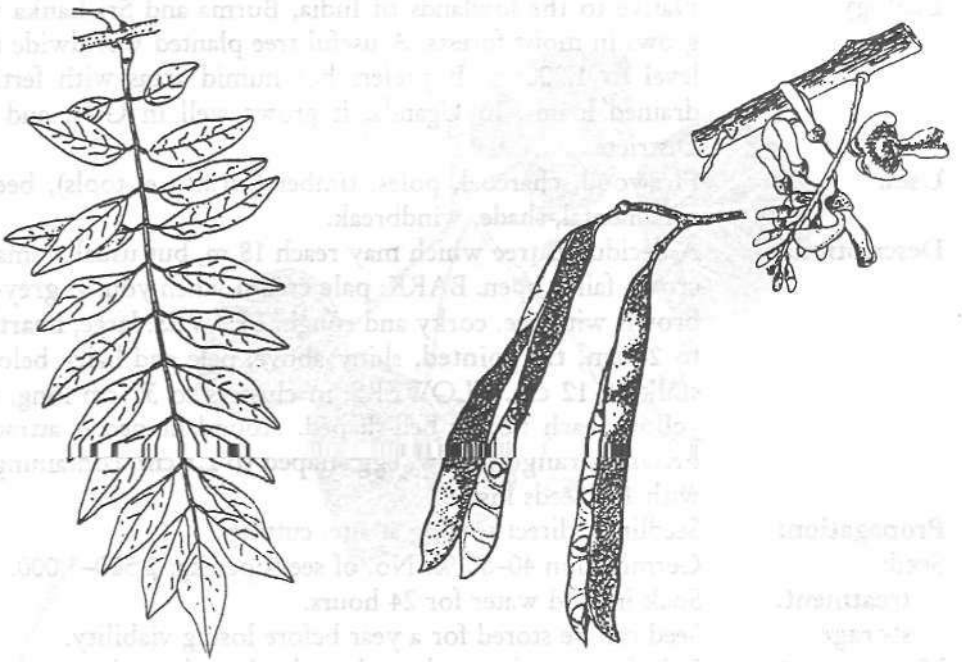
Seed: No. of seeds per kg: 6,500-8,000. Germination over 90%.

treatment: soak seed in hot water, allow to cool and soak overnight before sowing.

storage: seed does not store for long; use fresh seed or cuttings for best results.

Management: A fast-growing species; coppicing, pollarding, lopping.

Remarks: The Latin name means "rat killer" as a poison can be made from the leaves. Bark, roots and seeds may also contain poison. Although leaves can be fodder for goats and cattle, they are toxic to non-ruminants such as horses, donkeys and pigs. As leaves are not very palatable, mix with grass, straw or other roughage as a high-protein supplement. A very useful quick fence can be grown with crossed stakes which sprout easily. Wood is resistant to termites. The tree has been used to form a firebelt around forests and farms as it is fire resistant. Not yet well known in Uganda.



South Asia

Common names: **English:** Gmelina, white teak.

Ecology: Native to the lowlands of India, Burma and Sri Lanka where it grows in moist forests. A useful tree planted worldwide from sea level to 1,200 m. It prefers hot humid areas with fertile well-drained loams. In Uganda, it grows well in Gulu and Kitgum Districts.

Uses: Firewood, charcoal, poles, timber (furniture, tools), bee forage, ornamental, shade, windbreak.

Description: A deciduous tree which may reach 18 m, but usually smaller; the crown fairly open. **BARK:** **pale cream** when young, **grey-yellow-brown** with age, corky and rough. **LEAVES:** large, **heart-shaped to 20 cm, tip pointed**, shiny above, pale and hairy below, on a **stalk to 12 cm**. **FLOWERS:** in clusters to 30 cm long, **orange-yellow**, each flower bell-shaped. Abundant nectar attracts bees. **FRUIT:** **orange-yellow, egg shaped to 2.5 cm**, containing a stone with 1-4 seeds inside.

Propagation: Seedlings, direct sowing at site, cuttings.

Seed: Germination 40-80 %. No. of seeds per kg: 2,500-3,000.

treatment: Soak in cold water for 24 hours.

storage: Seed can be stored for a year before losing viability.

Management: It is fast growing and moderately drought resistant once established. Protect young trees from livestock. Pruning, lopping, coppicing, pollarding (while young).

Remarks: Young trees do not compete well with weeds. Established trees compete with crops so should not be grown near cultivated land. The soft grey-white timber is light but strong. It has been used to make matchsticks. To obtain best-quality trees, select the best provenances for a particular area.

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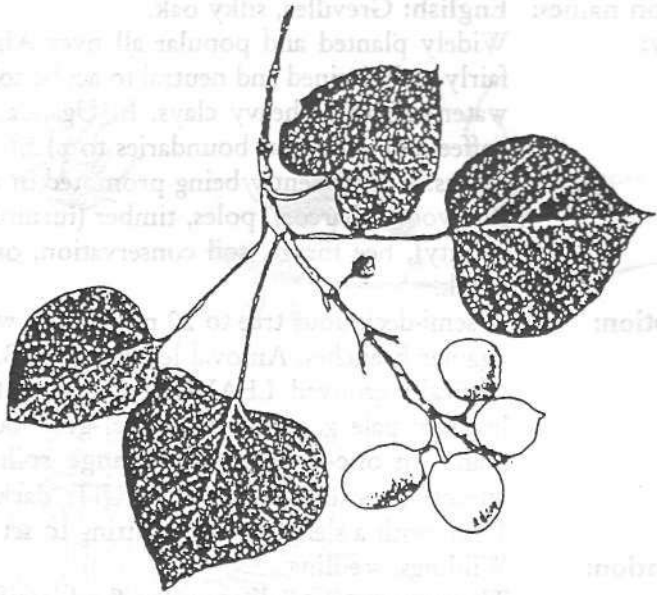
treatment: Soak in cold water for 24 hours.

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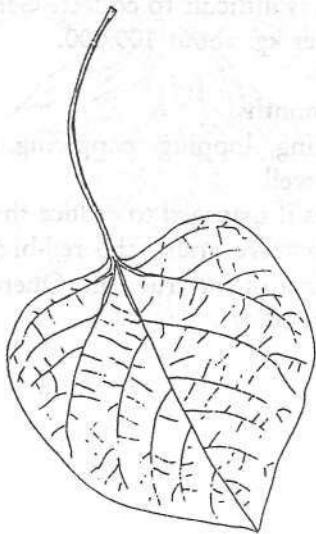
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Common name: English Oak
Widely planted and popular all over India. The tree grows in
early and medium to late rain forest. The leaves are
very dark green. The flowers are small and white. The
fruits are small and round. The tree is very hardy and
grows in all parts of India. It is a very useful tree for
timber, fuel, and other purposes. The leaves are used
for medicinal purposes. The bark is used for tanning.
The wood is very hard and strong. It is used for
building and other purposes. The tree is very
attractive and is planted in parks and gardens.
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The species is a deciduous tree, 20-30 m tall. It has a
thick, grey bark. The leaves are 10-15 cm long and 5-10 cm
wide. The flowers are small and white. The fruits are small
and round. The tree is very hardy and grows in all parts
of India. It is a very useful tree for many purposes.
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very hardy tree and grows in all parts of India. It is a
very useful tree for many purposes.



Grevillea robusta

Proteaceae

Eastern Australia

Common names: **English:** Grevillea, silky oak.

Ecology: Widely planted and popular all over Africa, this tree grows on fairly well drained and neutral to acidic soils but does not tolerate waterlogging or heavy clays. In Uganda, it is planted with tea, coffee and rubber as boundaries to plantations and as avenues in towns. It is presently being promoted in agroforestry projects.

Uses: Firewood, charcoal, poles, timber (furniture), fodder (leaves, low quality), bee forage, soil conservation, ornamental, shade, wind-break.

Description: A semi-deciduous tree to 20 m or more with a straight trunk and angular branches. An oval leafy crown. **BARK:** dark grey, rough, vertically grooved. **LEAVES:** compound, **fern-like, very divided**, leathery pale green above, **silver-grey below**. **FLOWERS:** very many, in **one-sided golden-orange spikes**, much nectar which attracts bees and sunbirds. **FRUIT:** dark brown capsule, about 1 cm, with a slender beak, splitting to set free 2 winged seeds.

Propagation: Wildings, seedlings.

Seed: The species is a prolific seeder. Seed is difficult to collect. Germination rate 30-90 %. No. of seeds per kg: about 100,000.

treatment: Not necessary.

storage: Seed can be stored for up to three months.

Management: Moderate to fast growing; pollarding, lopping, coppicing and pruning. Only young trees coppice well.

Remarks: The tree grows well with food crops if managed to reduce shade. The timber is hard and has an attractive grain—the red-brown colour and silky surface being like that of the true oak, *Quercus*. *Grevillea* is not recommended for woodlots.

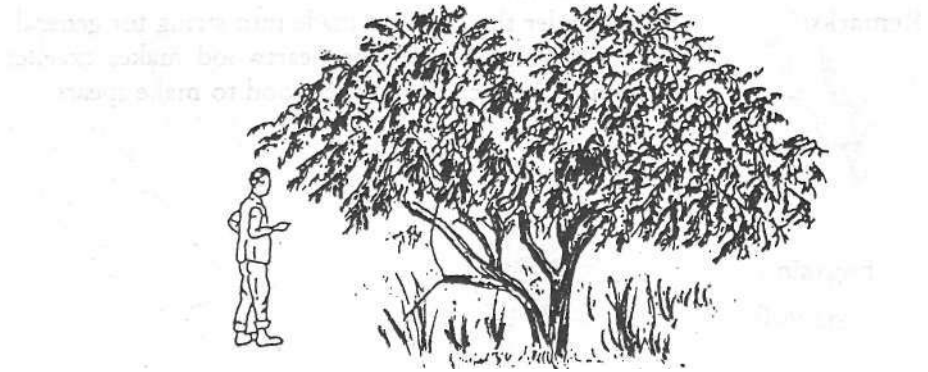
- Ecology:** A common tree of the semi-arid tropics in Africa and India. In Uganda, it is found in the dry areas of Gulu, Kitgum, Kotido, Moroto and Mbale Districts.
- Uses:** Firewood, charcoal, timber, tool handles, carving (clubs, javelins, walking sticks), medicine (roots, bark), fodder (leaves, fruit).
- Description:** A low shrub or tree, 2-10 m in dry deciduous woodland, produces suckers and branches from the base of the main trunk. **BARK:** smooth when young, dotted with breathing pores, later dark, rough and scaly. **LEAVES:** oval to oblong, pointed, **1-8 cm, the edge finely toothed, shiny green above but pale grey-white below**, drooping in heat. **FLOWERS:** **golden yellow**, sweet smelling, **small petals bent back over larger sepals**. **FRUIT:** rounded and **soft, 5 mm, orange then black, hairy at first**, edible, sweet but sharp on the tongue.
- Propagation:** Seedlings, root suckers.
- Seed:** No. of seeds per kg: 9,000-15,000. Germination is good but sporadic; completed after 6 weeks,
- treatment:** soak in cold water for 12 hours.
- storage:** can keep viability up to a year at room temperature if kept dry.
- Management:** Slow growing; coppicing.
- Remarks:** Twigs from the tree are used by water diviners to locate underground water.

Common names: Ateso: Ipaare; Luganda: Muboma; Masarwa: Muboma; Kikuyu: Muboma; Luo: A: Podo; Luo B: Cando; Luo C: Muboma; Luo D: Muboma; Luo E: Muboma; Luo F: Muboma; Luo G: Muboma; Luo H: Muboma; Luo I: Muboma; Luo J: Muboma; Luo K: Muboma; Luo L: Muboma; Luo M: Muboma; Luo N: Muboma; Luo O: Muboma; Luo P: Muboma; Luo Q: Muboma; Luo R: Muboma; Luo S: Muboma; Luo T: Muboma; Luo U: Muboma; Luo V: Muboma; Luo W: Muboma; Luo X: Muboma; Luo Y: Muboma; Luo Z: Muboma.

Ecology: Grewia bicolor is found in the parts of East Africa, particularly in the highlands of Kenya, Uganda, and Tanzania. It is a common tree in the savanna and woodland areas.



Propagation: Grewia bicolor is propagated by seeds and cuttings. The seeds are collected from the fruit and sown in a nursery. Cuttings are collected from the tree and planted in a nursery. The tree is a common tree in the savanna and woodland areas.



Grewia mollis

Tiliaceae

Indigenous

Common names: **Ateso:** Eparis **Luganda:** Mukoma, mukomakoma **Lugbara:** Nzu, onju **Lugwe:** Nabwor **Luo A:** Pobo **Luo J:** Omokoma **Luo L:** Opobo **Lusoga:** Lukomakoma **Madi:** Enzu **Runyoro:** Mukoma, mukomakoma.

Ecology: One of very many Grewia found in drier parts of East Africa. In Uganda, this species is found in wooded grassland along rivers and savannah woodland.

Uses: Firewood, charcoal, timber, walking sticks, fodder (leaves and fruits), fibre (strings from bark).

Description: A shrub or small tree 1.5-9.0 m, often multi-stemmed, with spreading hairy branches, twiggy at the tips, often purple on drying. **BARK: black and rough, thick and flaky, deeply fissured, a yellow-green fibrous undersurface. LEAVES: pale green above but grey-white silky hairs cover the lower surface, long oval 4-18 cm and 2-6 cm wide, 3 veins from the base, side veins clear and the parallel veins between, edge clearly toothed, sometimes double-toothed, tip pointed, sharply stalked. FLOWERS: beside leaves on 1-3 stalks over 1 cm long, each with 2-3 flowers, the 5 sepals about 1 cm long are hairy outside and enclose 5 smaller yellow petals. Many surrounding stamens enclose the hairy central ovary. Flowers in May-August and fruits August-October. FRUIT: 1-2 rounded lobes, slightly hairy and sharply tipped, each 5-7 mm, black and edible when ripe.**

Propagation: Direct sowing at site, seedlings.

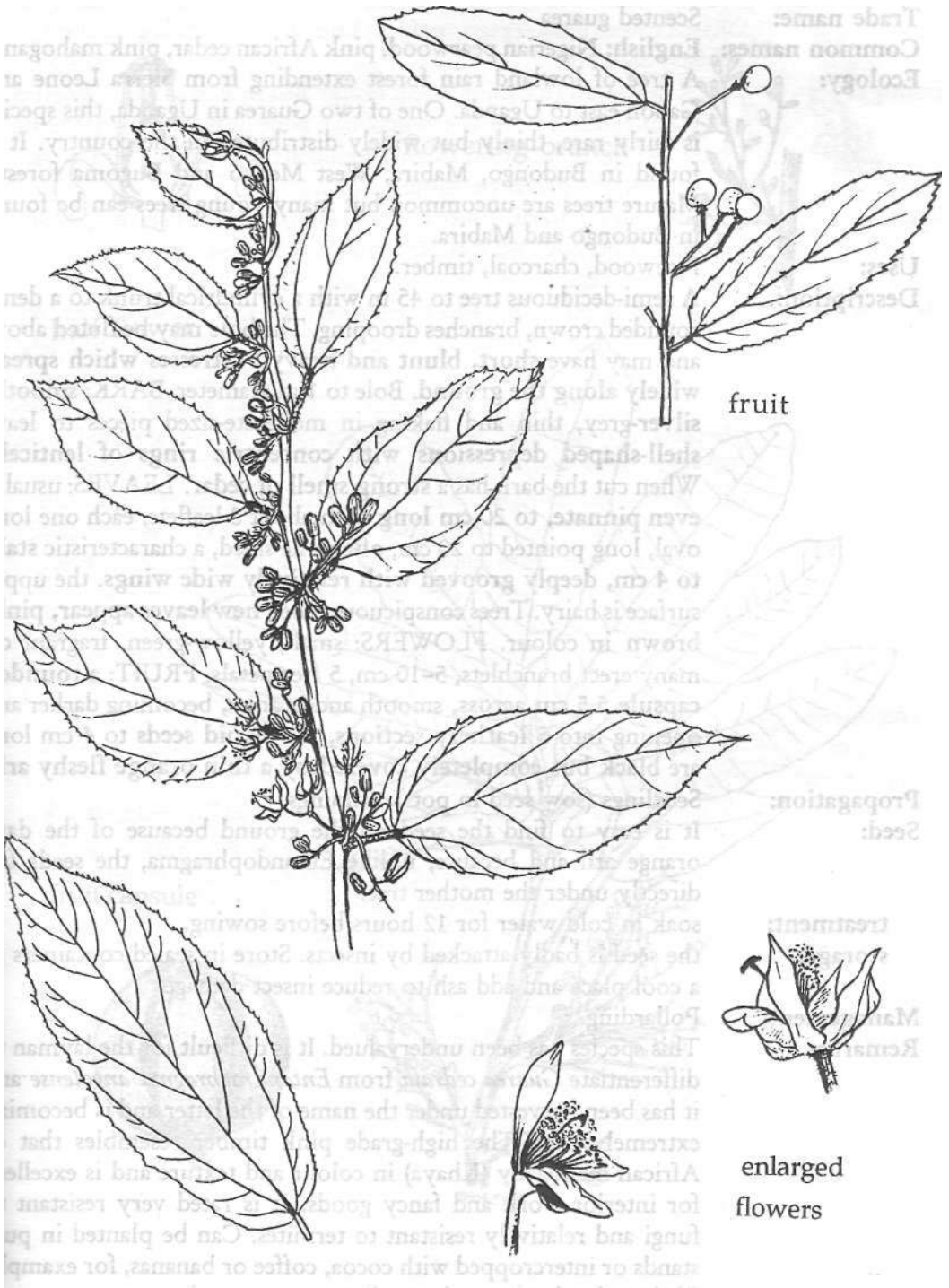
Seed: Seeds are collected from dry fruits after falling on the ground.

treatment: In the wild, germination occurs after a bush fire followed by rains. A similar light firing should be applied to the seeds before sowing.

storage: Can be stored in an open container in a dry cool place.

Management: Slow growing; coppicing, pollarding. Initial care is necessary for establishment.

Remarks: Fibres under the bark are made into string for general use and in constructing granaries. The heartwood makes excellent walking sticks and the Acholi use the wood to make spears.



fruit

enlarged
flowers

Indigenous

Trade name: Scented guarea.

Common names: **English:** Nigerian pearwood, pink African cedar, pink mahogany.

Ecology: A tree of lowland rain forest extending from Sierra Leone and Gabon east to Uganda. One of two *Guarea* in Uganda, this species is fairly rare, thinly but widely distributed in the country. It is found in Budongo, Mabira, West Mengo and Bugoma forests. Mature trees are uncommon but many young trees can be found in Budongo and Mabira.

Uses: Firewood, charcoal, timber.

Description: A semi-deciduous tree to 45 m with a cylindrical trunk to a dense rounded crown, branches drooping. The bole may be fluted above and may have **short, blunt and heavy buttresses which spread widely along the ground**. Bole to 1 m diameter. **BARK: smooth, silver-grey, thin and flaking in moderate-sized pieces to leave shell-shaped depressions with concentric rings of lenticels.** When cut the bark has a **strong smell of cedar**. **LEAVES:** usually **even pinnate, to 20 cm long** with about 8 leaflets, each one long oval, long pointed to 20 cm, often one-sided, a characteristic **stalk to 4 cm, deeply grooved with relatively wide wings**, the upper surface is hairy. Trees conspicuous when **new leaves appear, pink-brown** in colour. **FLOWERS:** small, yellow-green, fragrant on many erect branchlets, 5-10 cm, 5 free petals. **FRUIT: a rounded capsule 5.5 cm across, smooth and orange, becoming darker and opening into 5 leathery sections, 3-5 ovoid seeds to 4 cm long are black but completely covered by a thin orange fleshy aril.**

Propagation: Seedlings (sow seed in pots), wildings.

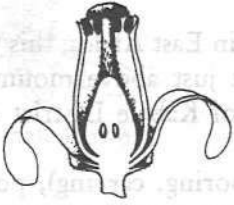
Seed: It is easy to find the seed on the ground because of the dark orange aril and because, unlike *Entandophragma*, the seeds fall directly under the mother tree,

treatment: soak in cold water for 12 hours before sowing,

storage: the seed is badly attacked by insects. Store in sealed containers in a cool place and add ash to reduce insect damage.

Management: Pollarding.

Remarks: This species has been undervalued. It is difficult for the layman to differentiate *Guarea cedrata* from *Entandophragma angolense* and it has been harvested under the name of the latter and is becoming extremely rare. The high-grade pink timber resembles that of African mahogany (*Khaya*) in colour and texture and is excellent for interior work and fancy goods. It is rated very resistant to fungi and relatively resistant to termites. Can be planted in pure stands or intercropped with cocoa, coffee or bananas, for example. Birds and animals eat the seeds.

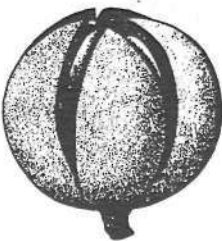


half flower

flowering branch



fruit capsule



T. N. S. K. M.

Indigenous

Common names: **Ateso:** Bushishi **Ateso K:** Chia **English:** Hagenia **Lugishu:** Kisichetwa, museregego, nafuru **Luo A:** Leo **Rukiga:** Omujesi **Sebei:** Sigurwa.

Ecology: First described in Ethiopia and found also in East Africa, this tree is often dominant in the woodland zone just above mountain bamboo. It is common in the highlands of Kabale District and large trees are found on Mount Elgon.

Uses: Firewood, charcoal, timber (furniture, flooring, carving), poles, medicine (bark, flowers, roots), mulch, soil conservation, ornamental, firebreak.

Description: A tree to 20 m with a short trunk and thick branches, the crown leafy and rounded. **BARK:** red-brown, thick, flaking irregularly, branchlets covered in silky brown hairs and ringed with leaf scars. **LEAVES:** compound to 40 cm in **large terminal tufts, 5-8 leaflets** on each side, leaflets bright green above, covered with **silvery hairs below**, red and sticky when young, **leaf edge toothed and fringed with hairs, stalk winged and hairy.** **FLOWERS:** in large **attractive masses to 60 cm**, female heads **pink-red**, male heads more feathery, orange-white. The sexes are on different trees. **FRUIT:** small and dry.

Propagation: Seedlings, wildings.

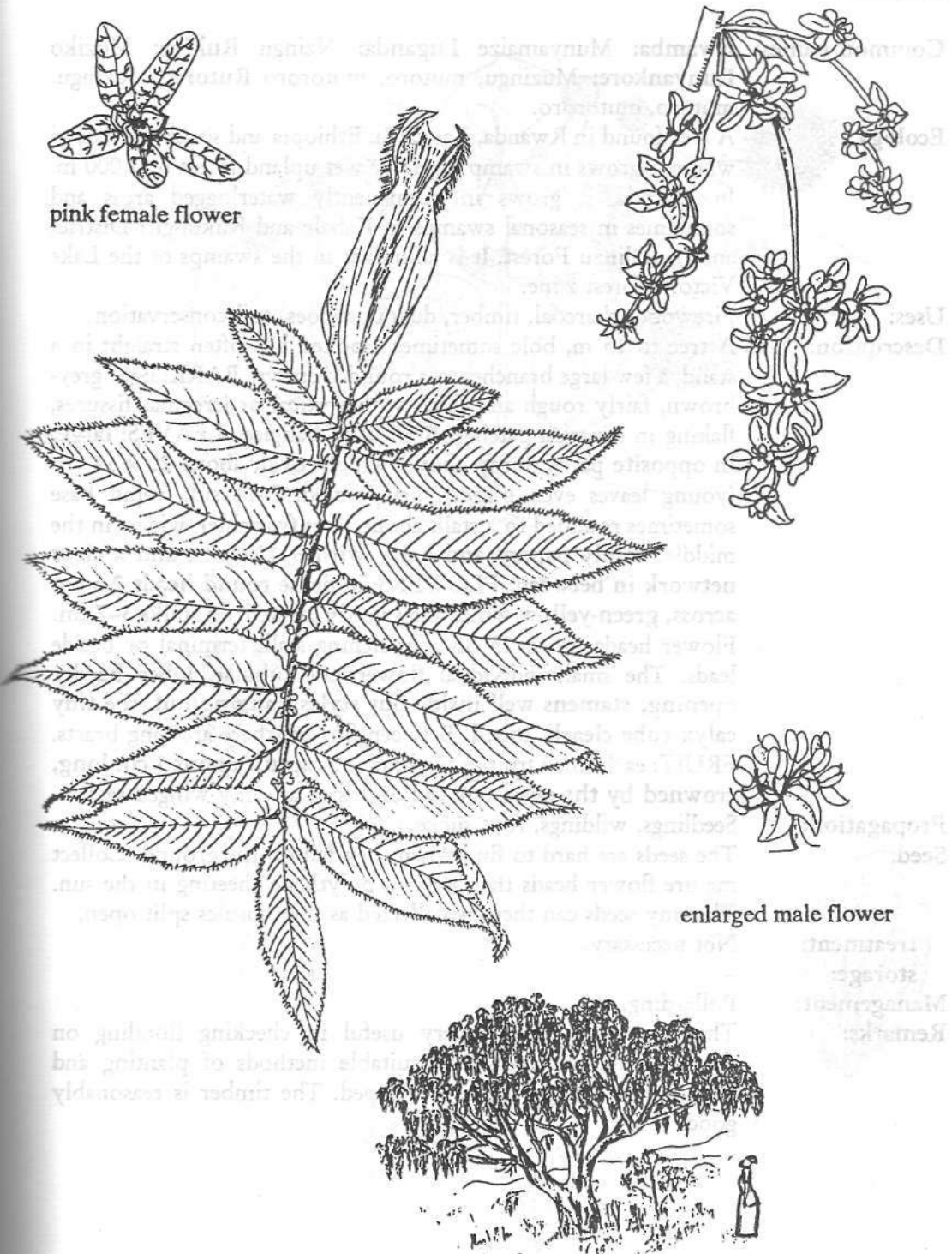
Seed: Germination 40-60% in 14-21 days. No. of seeds per kg: 400,000-500,000.

treatment: not necessary.

storage: seed stores for 6-12 months.

Management: Pollarding.

Remarks: The wood is dark red, hard and useful for furniture but attacked by borers. Not competitive with crops if managed to prevent shading, thus suitable for agroforestry. It is recommended for homestead planting for its good timber. It constantly sheds leaves forming a carpet of dried leaves below.



Hallea rubrostipulata (Mitragyne rubrostipulata) *Rubiaceae*

Indigenous

Common names: **Kwamba:** Munyamaize **Luganda:** Nzingu **Rukiga:** Muziko
Runyankore: Muzingu, mutoro, mutororo **Rutoro:** Muzingu, mutoro, mutororo.

Ecology: A tree found in Rwanda, Tanzania, Ethiopia and south to Malawi where it grows in swamp forest or wet upland forest to 2,000 m. In Uganda, it grows in permanently waterlogged areas and sometimes in seasonal swamps in Kabale and Rukungiri District and in Kalinzu Forest. It is abundant in the swamps of the Lake Victoria forest zone.

Uses: Firewood, charcoal, timber, dugout canoes, soil conservation.

Description: A tree to 15 m, bole sometimes crooked but often straight in a stand, a few large branches to a rounded crown. **BARK:** light grey-brown, fairly rough and thick with vertical or irregular fissures, flaking in squarish patches. Branchlets 4-angled. **LEAVES:** **large, in opposite pairs, shiny above, widely oval, about 20 x 14 cm** (young leaves even bigger), tip pointed, 7-11 side veins, base sometimes rounded to a stalk about 3 cm (variable), widest in the middle, **thinly papery and hairy with 6-10 veins and a clear network in between.** **FLOWERS:** in dense **round heads 2.5 cm across, green-yellow-white** and sweetly scented, on **stalks 3-7 cm.** Flower heads up to 15 on a branching stalk terminal or beside leads. The small individual flowers are tubular, **lobes hardly opening, stamens well inside but styles hanging out, the tiny calyx tube clearly lobed.** Between flowers there are long bracts. **FRUIT:** each small fruit in the head is a **capsule about 1 cm long, crowned by the persistent calyx,** Inside are tiny winged seeds.

Propagation: Seedlings, wildings, root suckers.

Seed: The seeds are hard to find when they fall on the ground. Collect mature flower heads then dry on polythene sheeting in the sun. The tiny seeds can then be collected as the capsules split open.

treatment: Not necessary.

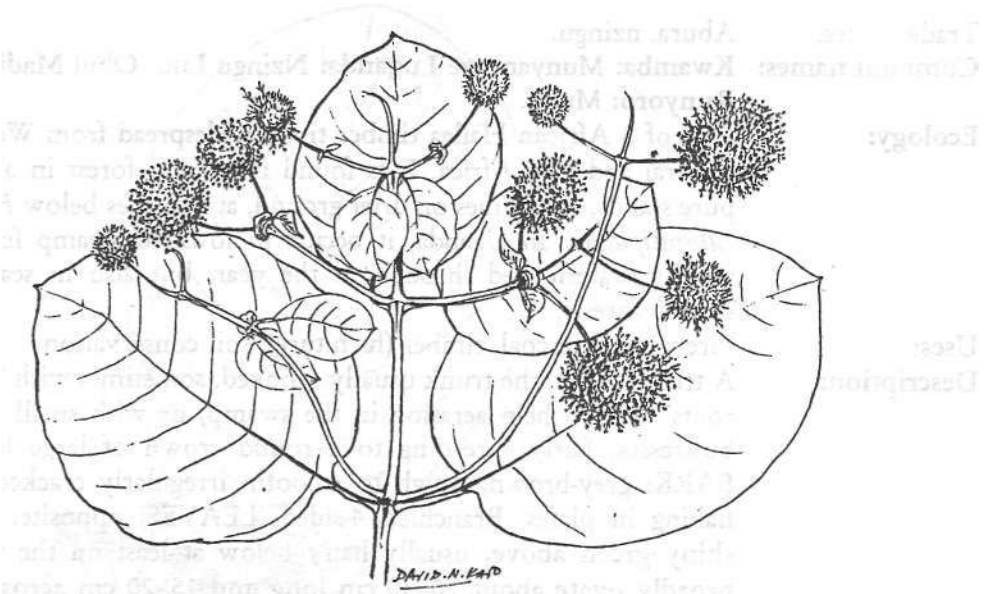
storage:

Management: Pollarding.

Remarks: This species would be very useful in checking flooding on degraded upland rivers, but suitable methods of planting and management are yet to be developed. The timber is reasonably good.

Hallea rubrostipulata (Mitragnye rubrostipulata)

Rubiaceae



enlarged
flower

leafy
stipule



enlarged
fruit



Hallea stipulosa (Mitragyne stipulosa)

Rubiaceae

Indigenous

Trade names: Abura, nzingu.

Common names: **Kwamba:** Munyamaize **Luganda:** Nzingu **Luo:** Obul Madi: **Oo Runyoro:** Muho.

Ecology: One of 3 African Hallea timber trees, widespread from West to Central and East Africa. It is found in swamp forest in almost pure stands, sometimes on drier ground, at altitudes below *Hallea rubrostipulata*. In Uganda, it occurs in lowland swamp forests, usually waterlogged throughout the year, but also in seasonal swamp forests.

Uses: Firewood, charcoal, timber (furniture), soil conservation.

Description: A tree to 30 m, the trunk usually crooked, sometimes with "knee roots" (which help aeration in the swamp) or with small blunt buttresses, fairly spreading to a round crown of large leaves. **BARK:** grey-brown, rough to smooth, irregularly cracked and flaking in plates. Branchlets 4-sided. **LEAVES:** opposite, **dark shiny green above**, usually hairy below at least on the veins, **broadly ovate about 20-30 cm long and 15-20 cm across**, tip rounded with 7-11 veins each side, often pinkish, a stalk about 3 cm. **Leafy green stipules at nodes, rounded 4-8 cm, stiff and thick with very many veins**, hairy at the base. **FLOWERS:** **yellow-white and tiny in round heads to 2.5 cm** across, on stalks 4-20 cm, the flowering branch to 20 cm with **3-10 heads and leafy bracts on the stalks**. Small, stiff bracts grow among the flowers which are fragrant, the tiny **calyx NOT lobed**, style just hanging out. **FRUIT:** dry capsules less than 1 cm in the fruit head, breaking to release tiny winged seeds.

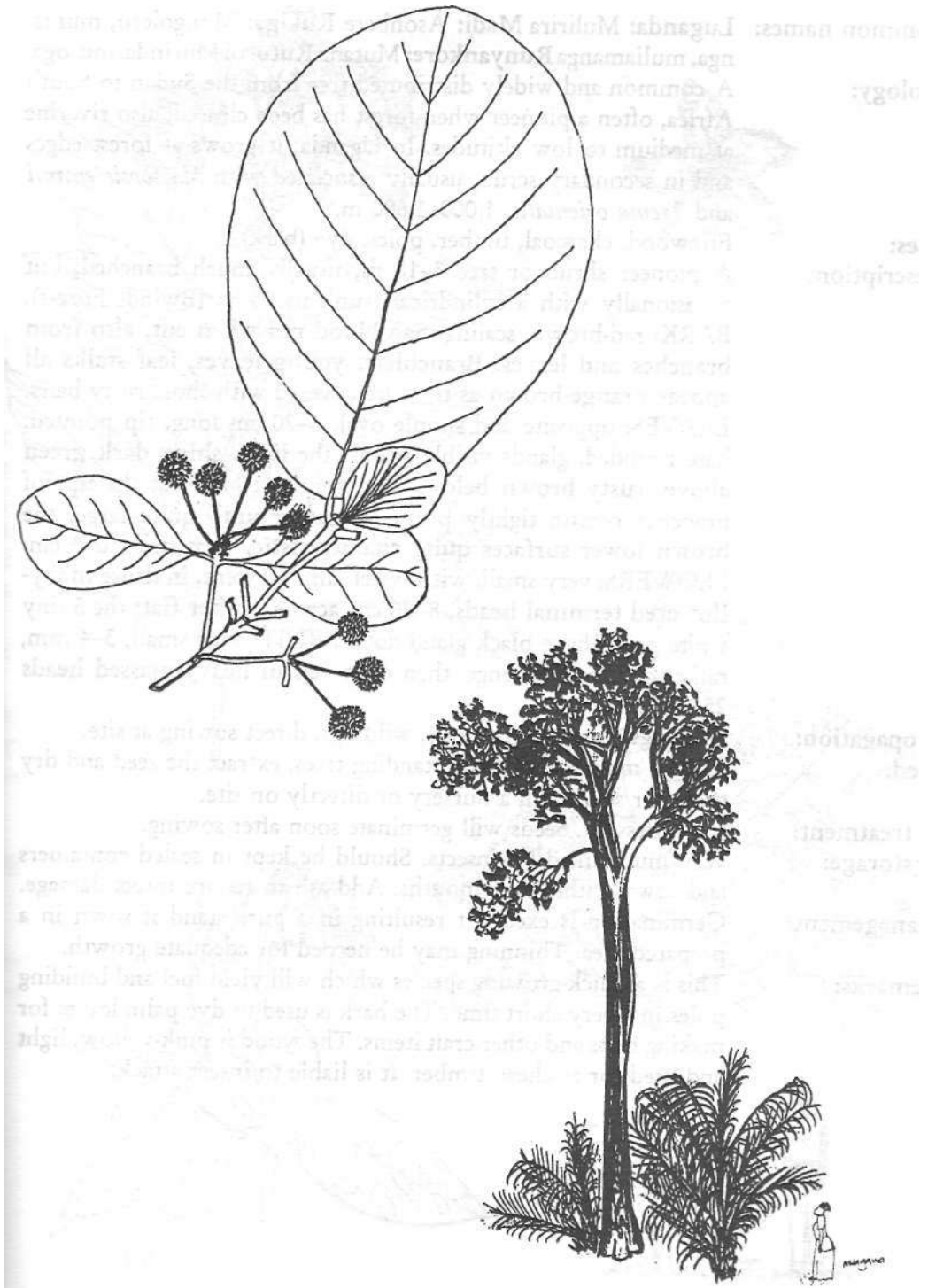
Propagation: Wildings are profuse under mother trees; seedlings, root suckers.
Seed: Seed is difficult to collect. Collect mature flower heads then dry on polythene sheeting in the sun. The tiny seeds can then be collected as the capsules split open.

treatment: not necessary.

storage: in sealed containers in a cool place.

Management: Coppices while young; pollarding.

Remarks: This is an important tree for soil and water conservation. The wood is soft, easy to saw and durable in water. It is exported commercially from Nigeria as abura. Because it is a plain wood it is easy to stain to match more popular woods and excellent for mouldings.



Indigenous

- Common names:** **Luganda:** Mulirira **Madi:** Asonbere **Rukiga:** Mungolero, munianga, muliamangaRunyankore: Mutaha **Rutoro:** Murinda, musoga.
- Ecology:** A common and widely distributed tree from the Sudan to South Africa, often a pioneer when forest has been cleared; also riverine at medium to low altitudes. In Uganda, it grows at forest edges and in secondary scrub, usually associated with *Maesopsis eminii* and *Trema orientalis*, 1,000-1,600 m.
- Uses:** Firewood, charcoal, timber, poles, dye (bark).
- Description:** A pioneer shrub or tree 3-18 m, usually much branched, but occasionally with a cylindrical trunk to 25 m (Bwindi Forest). **BARK:** red-brown, scaling. **Sap blood red when cut, also from branches and leaves. Branchlets, young leaves, leaf stalks all appear orange-brown** as they are covered with short rusty hairs. **LEAVES:** opposite and simple oval, 6-20 cm long, tip pointed, base rounded, glands visible against the light, **shiny dark green above, rusty brown below.** The youngest leaves at the tips of branches- remain tightly pressed together until quite large, the **brown lower surfaces quite characteristic.** Leaf stalk to 3 cm. **FLOWERS:** very small, with sweet almond scent, in dense **many-flowered terminal heads, 8-20 cm across, rather flat;** the 5 tiny white petals have black gland dots. **FRUIT:** very small, 3-4 mm, rather dry, green-orange, then **deep red in heavy massed heads 25-30 cm across.**
- Propagation:** Seedlings (sow seed in pots), wildings, direct sowing at site.
- Seed:** Collect mature fruit from standing trees, extract the seed and dry them for sowing in a nursery or directly on site,
- treatment:** not necessary. Seeds will germinate soon after sowing,
- storage:** very much liked by insects. Should be kept in sealed containers and sown within two months. Add ash to reduce insect damage.
- Management:** Germination is excellent resulting in a pure stand if sown in a prepared area. Thinning may be needed for adequate growth.
- Remarks:** This is a quick-growing species which will yield fuel and building poles in a very short time. The bark is used to dye palm leaves for making mats and other craft items. The wood is pink-yellow, light and used for as cheap timber. It is liable to insect attack.
- "



Holoptelea grandis

Ulmaceae

Indigenous

Common names: **Kwamba:** Butungu **Luganda:** Mumuli **Madi:** Mutaa **Runyoro:** Mumuli **Rutoro:** Mutawale.

Ecology: A large tree of lowland rain forest but also in drier deciduous and riverine forest, found in the Sudan and Zaire into West Africa. In Uganda, it grows in rain forest or on forest edges and in mixed but not climax forest. Abundant in Zoka Forest in Moyo District and also in Budongo and Mabira Forests.

Uses: Firewood, charcoal, timber (indoor carpentry, veneer, flooring, etc.), ornamental (avenue tree).

Description: A large deciduous forest tree 12—50 m, the bole with **sharp edged buttresses** reaching to 5 m up the trunk which is **slender, straight or wavy**, to a spreading crown. Branchlets drooping, angular, with dense white hairs. **BARK:** thin, smooth, pale grey, becoming thick and rough **LEAVES:** broad oval and stiff, about 9 cm long, tip pointed, sides equal with 5-8 veins each side, base rounded to a bright green stalk about 1 cm, upper surface rough to touch, soft white hairs below. **FLOWERS:** small, yellow-green in dense clusters on their stalks. **FRUIT:** **dry and stalked**, oval-round, about 4 cm long with **wide papery pale yellow wings**, persistent styles in the central notch, the seed about 1 cm long.

Propagation: Seedlings (sow seed in pots), wildings. Seeds are best sown in a seed bed and later potted.

Seed: Produces plenty of viable seed and although the winged fruits are scattered several metres away from the mother trees, they are very easy to collect. Plant with or without the wings of the fruit. No. of seeds per kg: 13,200-15,400.

treatment: not necessary.

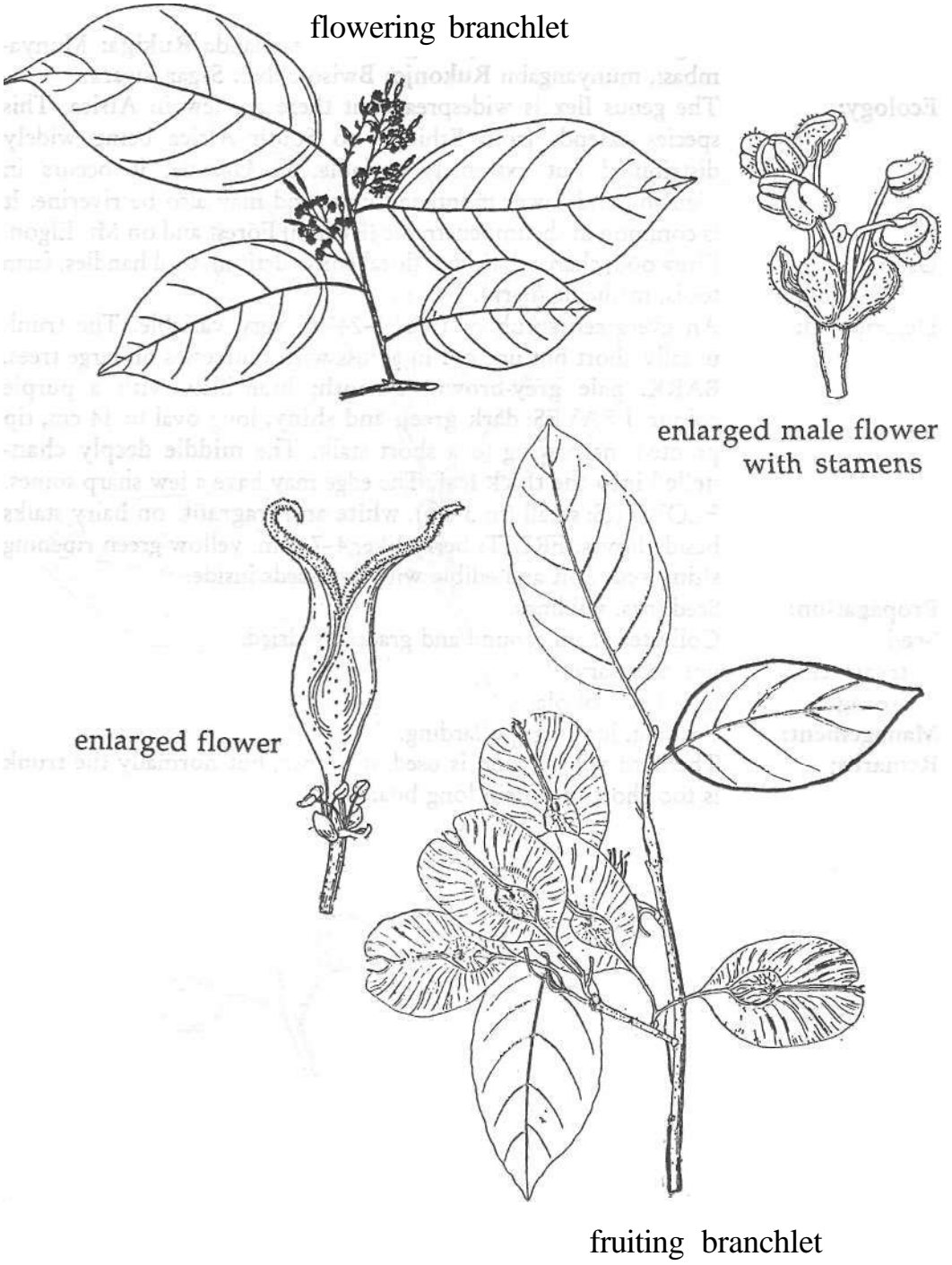
storage: may be stored spread out in a cool dry place with the seed still inside the fruit

Management: Requires tending until established.

Remarks: This is a quick-growing timber species which can yield timber and fuel in a very short time. Can be planted as a pure stand, intercropped with coffee, banana and cocoa or as an avenue tree.

Holoptelea grandis

Ulmaceae



Ilex mitis

Aquifoliaceae

Indigenous

Common names: **English:** African holly **Lugishu:** Mwandanda **Rukiga:** Munyambasi, munyangabu **Rukonjo:** Bwiso **Sebei:** Segar, sigara.

Ecology: The genus *Ilex* is widespread but there are few in Africa. This species extends from Ethiopia to South Africa being widely distributed but extremely variable. In Uganda, it occurs in highland and lower montane forests and may also be riverine. It is common in the Impenetrable (Bwindi) Forest and on Mt. Elgon.

Uses: Firewood, charcoal, timber (local construction), tool handles, farm tools, medicine (bark).

Description: An evergreen shrub or tree, 4-24 m, very variable. The trunk usually short but up to 1 m across with buttresses on large trees. **BARK:** pale grey-brown, smooth; branchlets with a purple colour. **LEAVES:** dark green and shiny, long oval to 14 cm, tip pointed, narrowing to a short stalk. The middle deeply channelled into the thick leaf. The edge may have a few sharp spines. **FLOWERS:** small (to 3 cm), white and fragrant, on hairy stalks beside leaves. **FRUIT:** berry-like, 4-7 mm, yellow-green ripening shiny red. Soft and edible with 4-6 seeds inside.

Propagation: Seedlings, wildings.

Seed: Collected from ground and gradually dried,

treatment: not necessary,

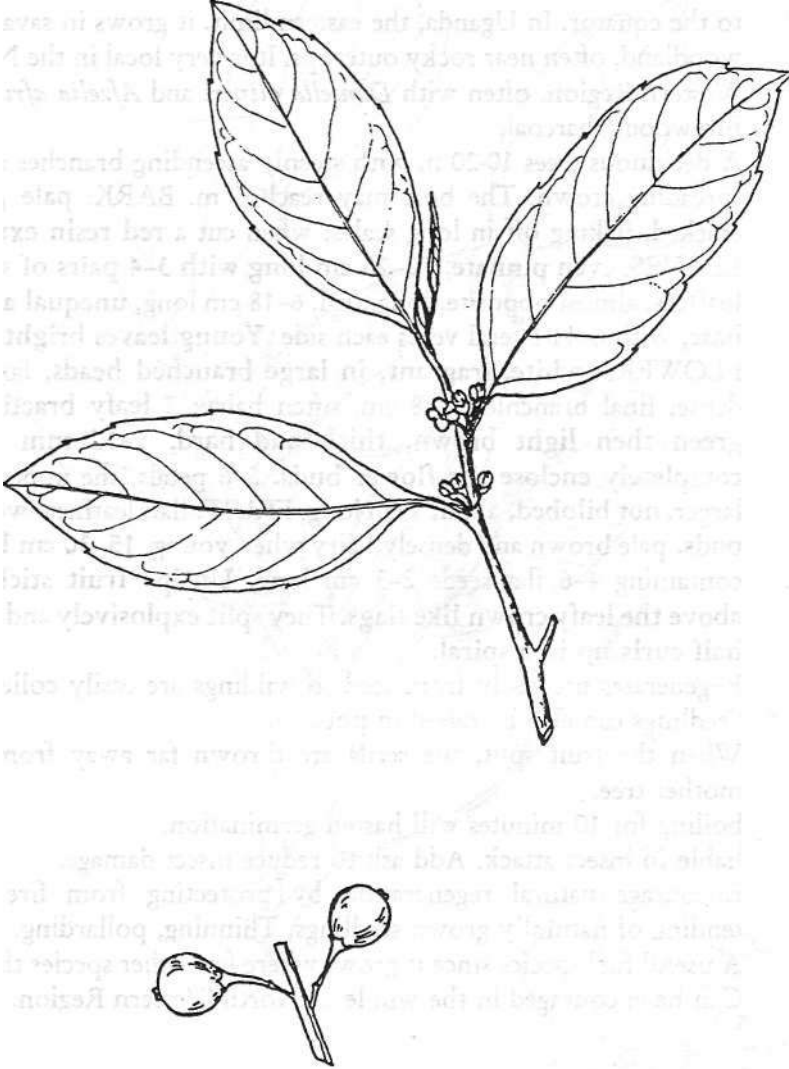
storage: in a dry cool place.

Management: Pruning, lopping, pollarding.

Remarks: The hard white wood is used as timber, but normally the trunk is too short to obtain long boards.

Ilex mitis

Aquijoliaceae



DAMTEW T.

Indigenous

Common names: **Kakwa:** Kobo **Lugbara:** Abogo.

Ecology: One of 5 tropical African species, *Isoberlinia doka* is found in deciduous woodland from Guinea to northern Zaire but not south to the equator. In Uganda, the eastern limit, it grows in savannah woodland, often near rocky outcrops. It is very local in the North Western Region, often with *Daniella oliveri* and *Afzelia africana*.
Uses: Firewood, charcoal.

Description: A deciduous trees 10-20 m with steeply ascending branches and a spreading crown. The bole may reach 4 m. **BARK:** pale grey, cracked, flaking off in long scales; when cut a red resin exudes. **LEAVES:** even pinnate, 10-25 cm long with 3-4 pairs of shiny leaflets, almost opposite, long oval, 6-18 cm long, unequal at the base, with 6-11 lateral veins each side. **Young leaves bright red.** **FLOWERS:** white, fragrant, in large branched heads, lax but dense, final branchlets 4-8 cm, often hairy; 2 leafy bractioles, green then light brown, thick and hard, 9-12 mm long completely enclose the flower buds. 5-6 petals, the upper one larger, not bilobed, about 1 cm long. **FRUIT:** flat, leathery-woody pods, pale brown and densely hairy when young, 15-30 cm long, containing 4-6 flat seeds 2-3 cm long. **Unripe fruit stick up above the leafy crown like flags. They split explosively and each half curls up in a spiral.**

Propagation: Regenerates profusely from seed so wildings are easily collected. Seedlings can also be raised in pots.

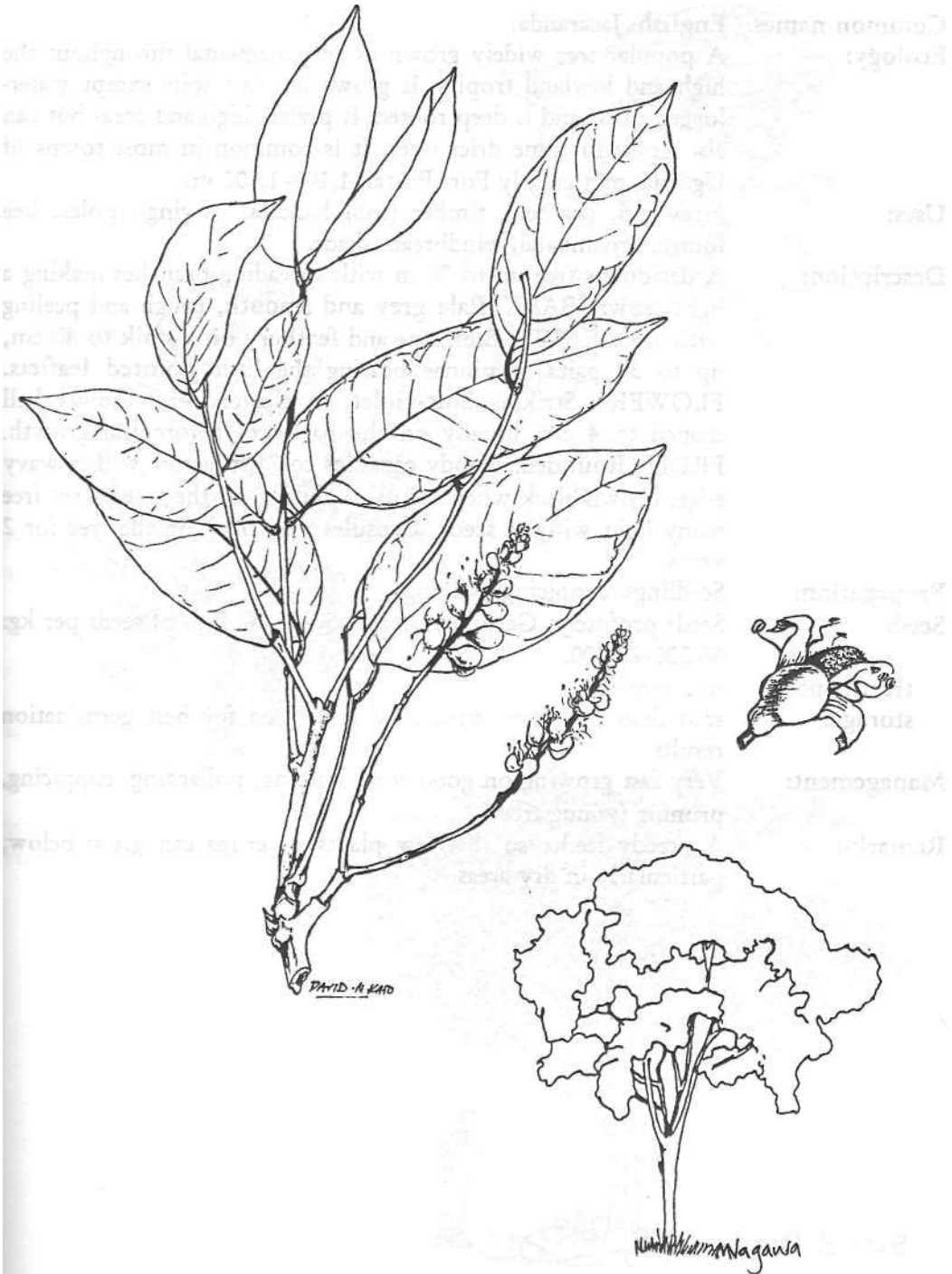
Seed: When the fruit split, the seeds are thrown far away from the mother tree.

treatment: boiling for 10 minutes will hasten germination.

storage: liable to insect attack. Add ash to reduce insect damage.

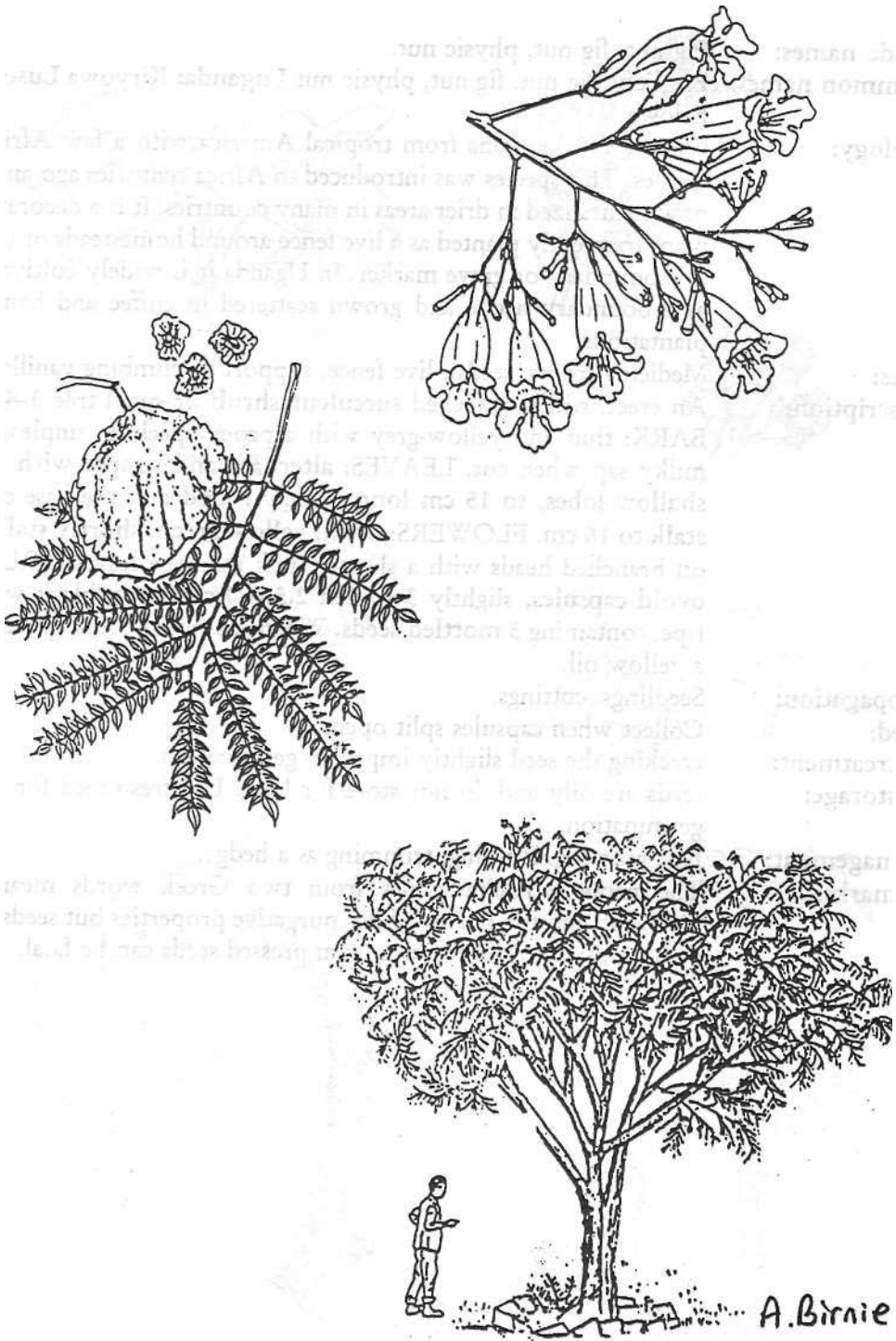
Management: Encourage natural regeneration by protecting from fire and tending of naturally grown seedlings. Thinning, pollarding.

Remarks: A useful fuel species since it grows where few other species thrive. Can be encouraged in the whole of North Western Region.



Brazil

Common names: **English:** Jacaranda.**Ecology:** A popular tree widely grown as an ornamental throughout the high and lowland tropics. It grows in most soils except water-logged ones, and is deep rooted. It prefers highland areas but can also grow in some drier ones. It is common in most towns of Uganda, particularly Fort Portal, 1,100-1,600 m.**Uses:** Firewood, charcoal, timber (tool handles, carving), poles, bee forage, ornamental, windbreak, shade.**Description:** A deciduous tree up to 20 m with spreading branches making a light crown. **BARK:** **Pale grey and smooth**, rough and peeling with age. **LEAVES:** Bipinnate and **feathery on a stalk to 40 cm**, up to 30 pairs of pinnae bearing the little **pointed leaflets**. **FLOWERS:** Striking **blue-violet**, in clusters, each flower bell shaped to 4 cm, usually on the bare tree before leaf growth. **FRUIT:** **Rounded, woody capsules to 7 cm** across with a wavy edge, brown-black when mature, splitting on the tree to set free many light **winged seeds**. Capsules may hang on the tree for 2 years.**Propagation:** Seedlings, coppicing, wildings.**Seed:** Seeds profusely. Germination rate 50-85 %. No. of seeds per kg: 63,000-80,000.**treatment:** not necessary.**storage:** seed does not store well. Sow fresh seed for best germination results.**Management:** Very fast growing on good sites; lopping, pollarding, coppicing, pruning (young trees).**Remarks:** A greedy feeder so that few plants or crops can grow below, particularly in dry areas.



Jatropha curcas

Euphorbiaceae

Tropical America

Trade names: Pig nut, fig nut, physic nut.

Common names: **English:** Pig nut, fig nut, physic nut **Luganda:** Kiryowa **Lusoga:** Kilowa.

Ecology: One of 150 *Jatropha* from tropical America with a few African species. This species was introduced to Africa centuries ago and is now naturalized in drier areas in many countries. It is a decorative plant frequently planted as a live fence around homesteads or used as a boundary or grave marker. In Uganda it is widely cultivated as a boundary hedge and grown scattered in coffee and banana plantations.

Uses: Medicine (roots, seeds), live fence, support to climbing vanilla.

Description: An erect, stiffly branched **succulent shrub** or small tree 3-4 m. **BARK:** thin and yellow-grey with a papery peel; an unpleasant milky sap when cut. **LEAVES:** **alternate and simple with 3-5 shallow lobes, to 15 cm long**, widely rounded at the base on a **stalk to 16 cm**. **FLOWERS:** **small, yellow-green, shortly stalked** on branched heads with a shorter stalk than the leaves. **FRUIT:** **ovoid capsules, slightly 3-angled 2.5-4.0 cm long**, black when ripe, containing **3 mottled seeds**. When crushed the seeds produce a yellow oil.

Propagation: Seedlings, cuttings.

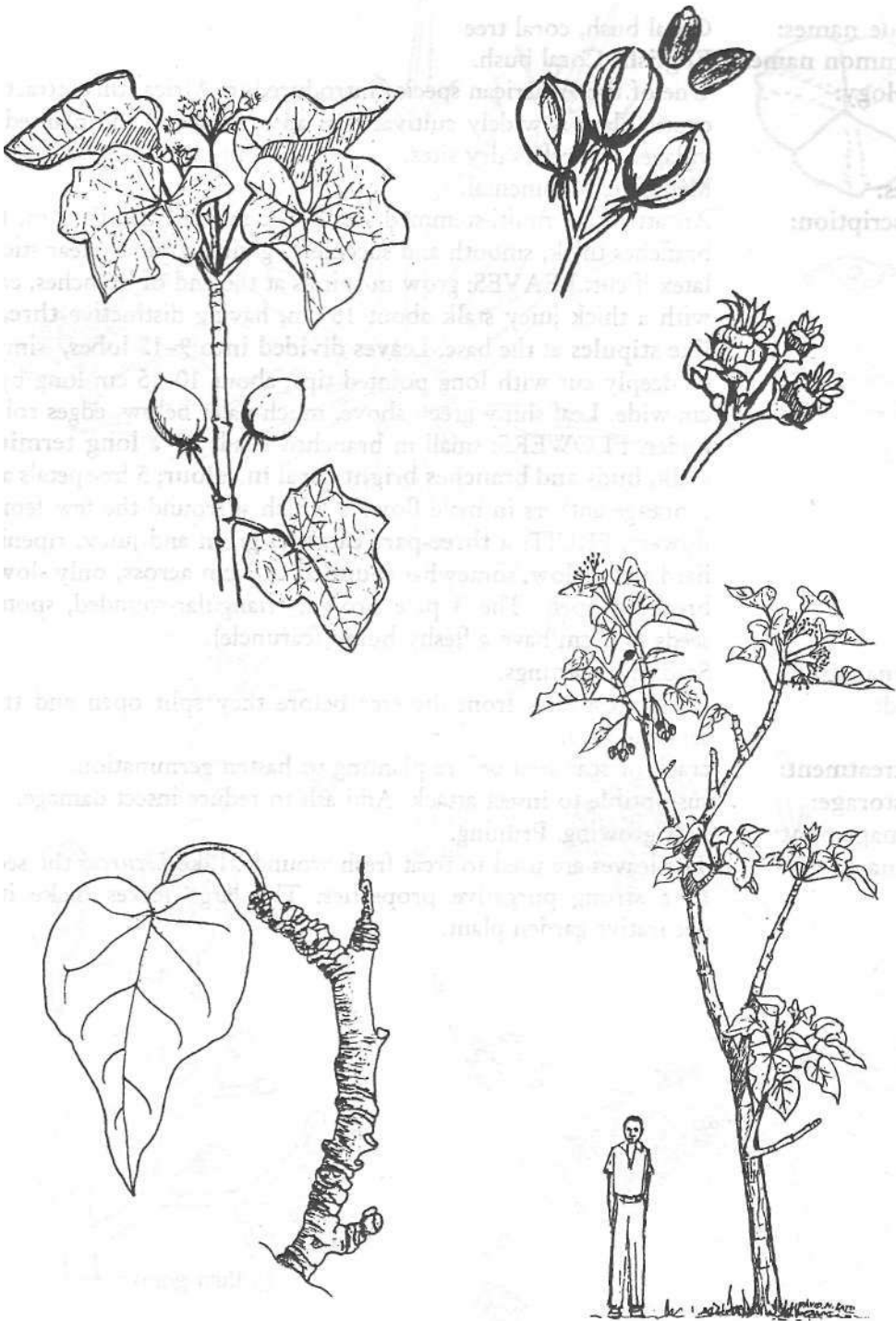
Seed: Collect when capsules split open.

treatment: cracking the seed slightly improves germination.

storage: seeds are oily and do not store for long. Use fresh seed for best germination.

Management: Fast growing. Pruning, trimming as a hedge.

Remarks: The name *Jatropha* comes from two Greek words meaning physician and food. The oil has purgative properties but seeds are poisonous: even the remains from pressed seeds can be fatal.



Jatropha multifida

Euphorbiaceae

Tropical America

Trade names: Coral bush, coral tree

Common names: **English:** Coral bush.

Ecology: One of the American species introduced to Africa, this attractive exotic plant is widely cultivated as an ornamental and planted in villages. It prefers dry sites.

Uses: Medicine, ornamental.

Description: An attractive multi-stemmed shrub 1-2 m or a tree to 6 m, the branches thick, smooth and succulent, giving copious clear sticky latex if cut. **LEAVES:** grow in spirals at the end of branches, each with a thick juicy stalk about 16 cm, having distinctive **thread-like stipules** at the base. **Leaves divided into 9-12 lobes**, simple or deeply cut with long pointed tips, about 10-15 cm long by 3 cm wide. Leaf shiny green above, much paler below, edges rolled under. **FLOWERS:** small in branched heads on **a long terminal stalk, buds and branches bright coral in colour**; 5 free petals and 5 orange anthers in male flowers which surround the few female flowers. **FRUIT:** a **three-part capsule**, green and juicy, ripening hard and yellow, somewhat **rounded to 3 cm across**, only slowly breaking open. The 3 pale brown, triangular-rounded, spotted seeds to 2 cm have a fleshy bump (caruncle).

Propagation: Seedlings, cuttings.

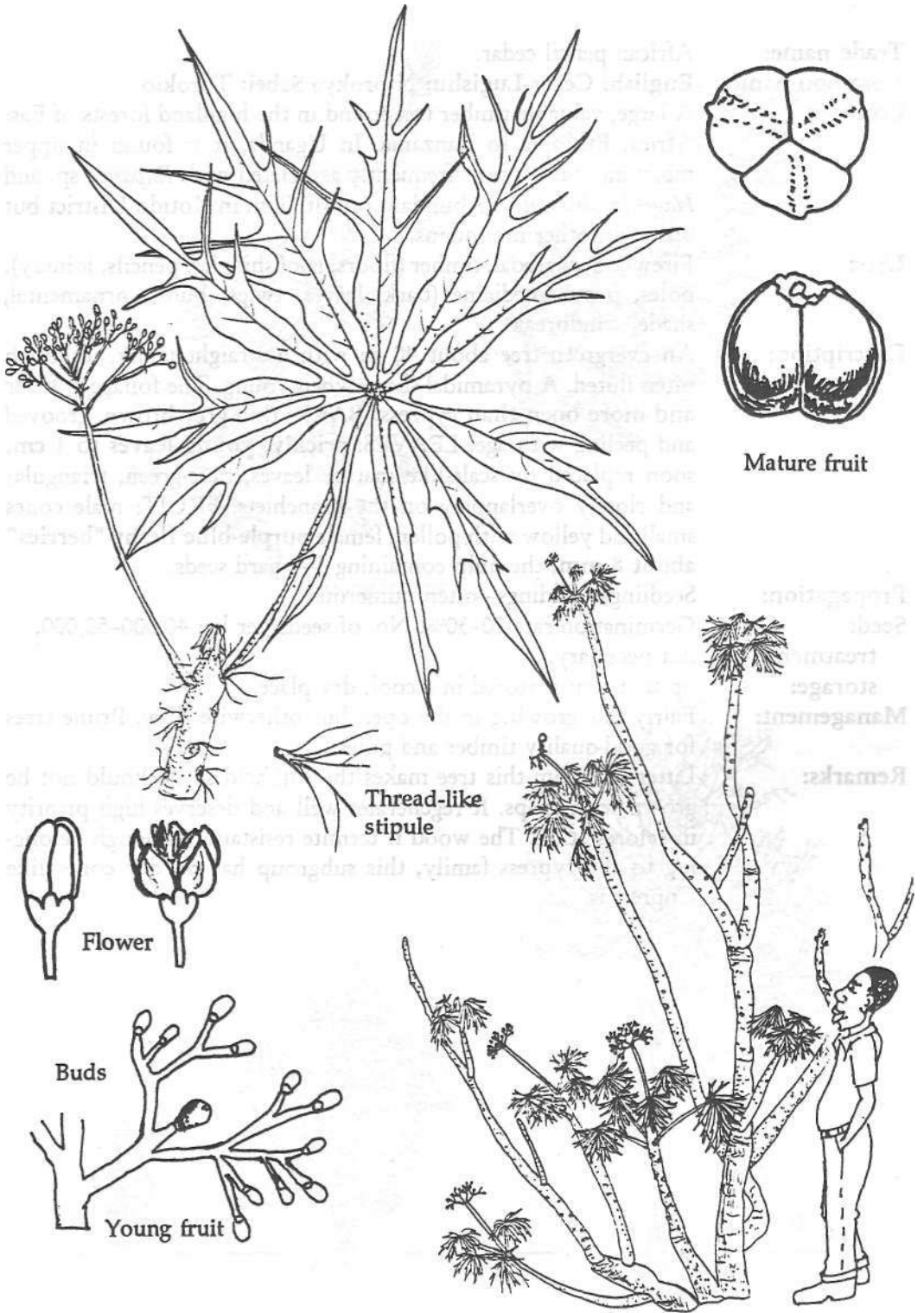
Seed: Collect capsules from the tree before they split open and then separate seed.

treatment: crack or scar seed before planting to hasten germination,

storage: susceptible to insect attack. Add ash to reduce insect damage.

Management: Fast growing. Pruning.

Remarks: The leaves are used to treat fresh wounds. Like *J. curcas* the seeds have strong purgative properties. The large leaves make it a decorative garden plant.



Indigenous

Trade name: African pencil cedar.

Common names: **English:** Cedar **Lugishu:** Ntorokya **Sebei:** Torokio

Ecology: A large, valuable timber tree found in the highland forests of East Africa, Ethiopia to Tanzania. In Uganda, it is found in upper moist montane forests frequently associated with *Rapanea* sp. and *Hagenia abyssinica*. Abundant on Mt. Tim in Kotido District but scarce on other mountains.

Uses: Firewood, charcoal, timber (floors, roof shingles, pencils, joinery), poles, posts, medicine (bark, leaves, twigs, buds), ornamental, shade, windbreak.

Description: An evergreen tree about 40 m with a straight trunk, although often fluted. A pyramidal shape when young. The foliage is **finer and more open than cypress**. **BARK:** thin grey-brown, grooved and peeling with age. **LEAVES:** **prickly, young leaves to 1 cm**, soon replaced by scale-like mature leaves, blue-green, triangular and closely overlapping on the branchlets. **FRUIT:** male cones small and yellow with pollen, female **purple-blue fleshy "berries" about 8 mm**, the pulp containing 1-4 hard seeds.

Propagation: Seedlings, wildings—often numerous.

Seed: Germination rate 20-30%. No. of seeds per kg: 40,000-50,000.

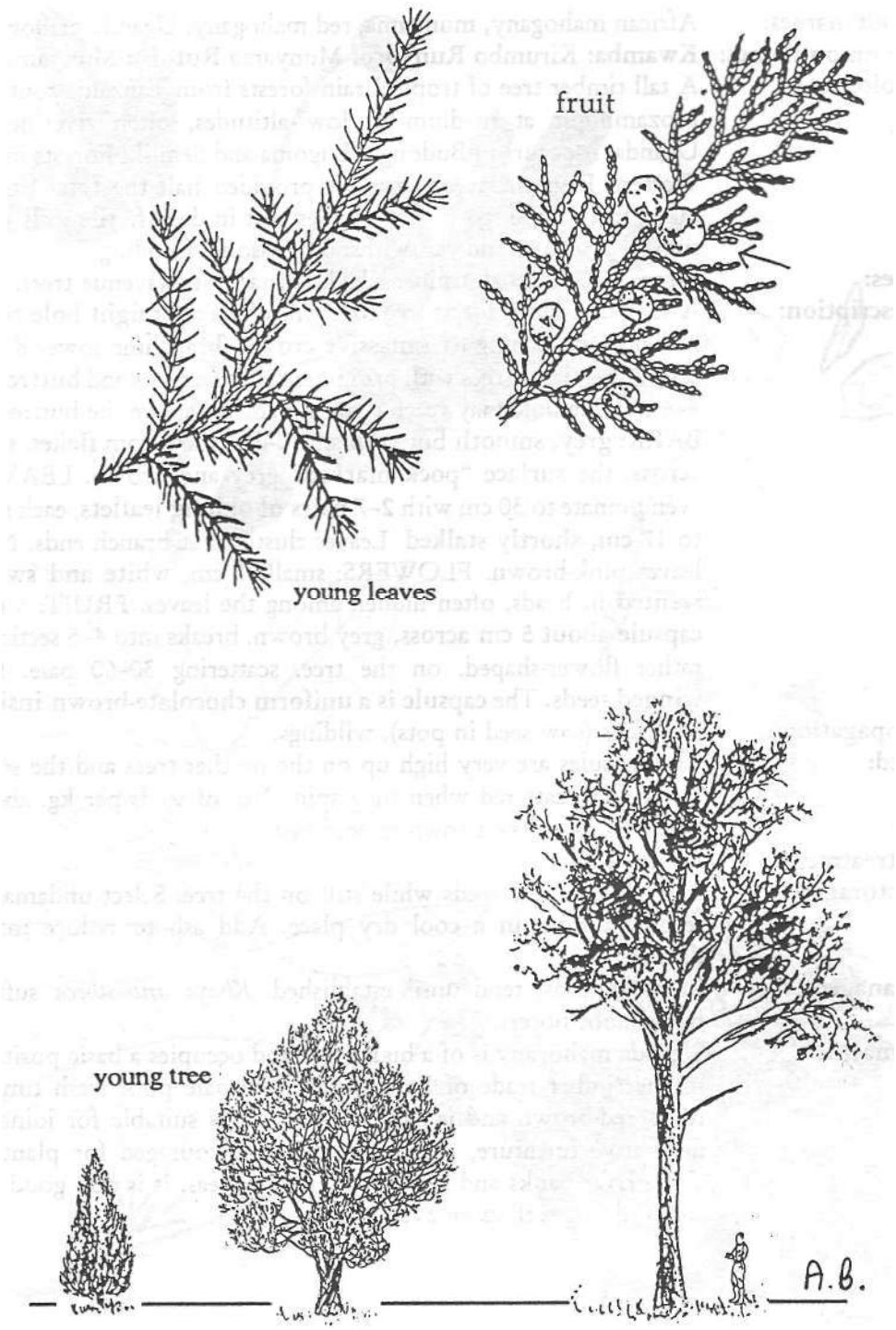
treatment: not necessary.

storage: up to a year if stored in a cool, dry place.

Management: Fairly fast growing in the open but otherwise slow. Prune trees for good-quality timber and poles.

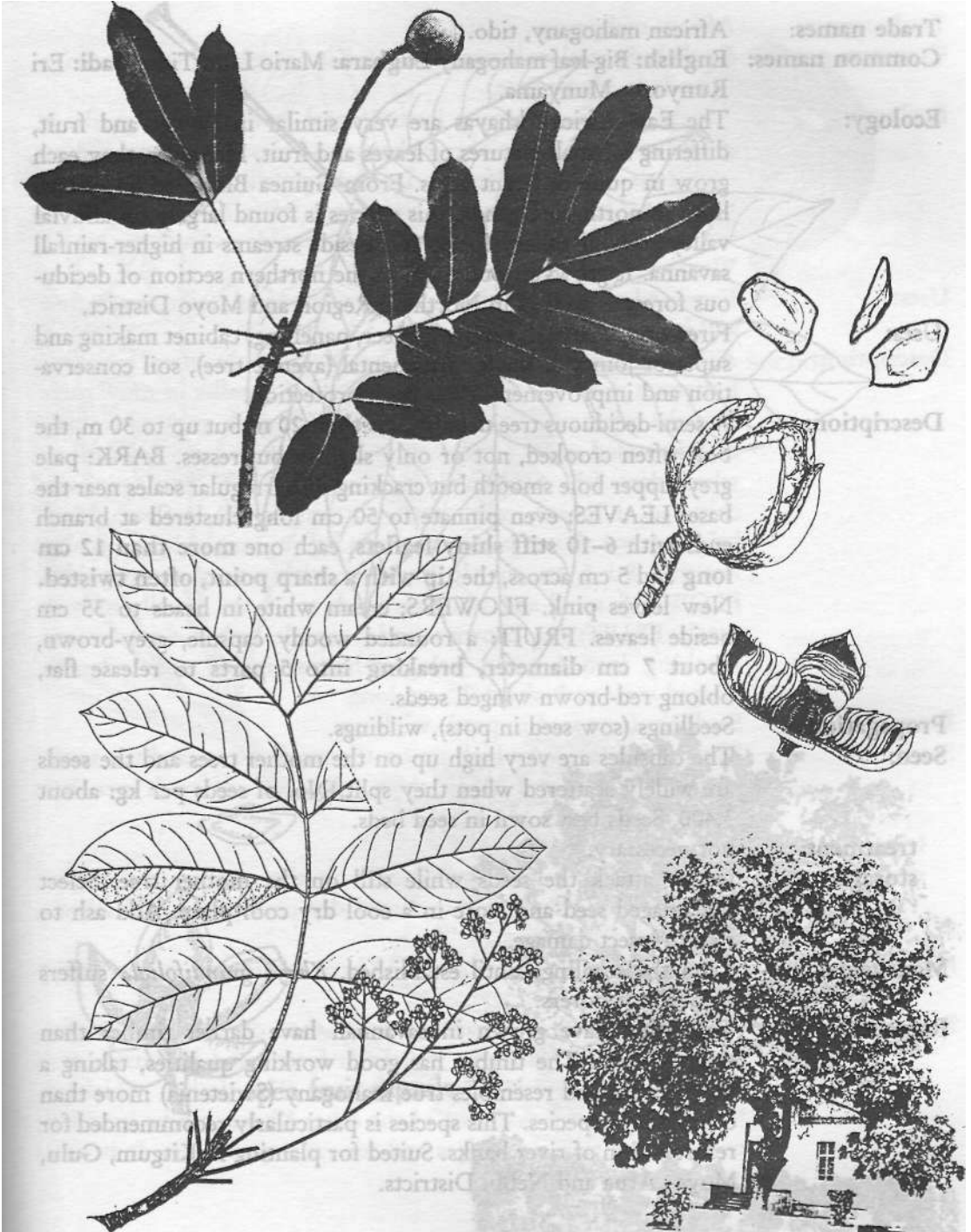
Remarks: Litter fall from this tree makes the soil acid so it should not be grown with crops. It regenerates well and deserves high priority in reforestation. The wood is termite resistant. Although belonging to the cypress family, this subgroup has no dry cones like Cupressus.

|



Indigenous

- Trade names:** African mahogany, munyama, red mahogany, Uganda mahogany.
- Common names:** **Kwamba:** Kirumbo **Runyoro:** Munyama **Rutoro:** Munyama.
- Ecology:** A tall timber tree of tropical rain forests from Tanzania south to Mozambique at medium to low altitudes, often riverine. In Uganda, it occurs in Budongo, Bugoma and Semliki Forests in the Western Region. At one time it provided half the total timber taken from Budongo Forest. It does best in deep fertile soils with subsoil moisture and can withstand seasonal flooding.
- Uses:** Firewood, charcoal, timber, shade, ornamental (avenue tree).
- Description:** A semi-deciduous forest tree to **60 m, often a straight bole to 30 m** before branching to a **massive crown** (branching lower down if riverine), large trees with prominent surface roots and **buttresses 4-6 m**. The bole may reach 4 m in diameter above the buttresses. **BARK: grey, smooth** but with shield-like scars from **flakes 3 cm across, the surface "pock marked"** grey and brown. **LEAVES:** even pinnate to 30 cm with **2-7 pairs of oblong leaflets, each stiff to 17 cm, shortly stalked**. Leaves clustered at branch ends. New leaves pink-brown. **FLOWERS:** small, 1 cm, **white and sweet-scented** in heads, often hidden among the leaves. **FRUIT:** a **dry capsule about 5 cm across**, grey brown, breaks into 4-5 sections, rather flower-shaped, on the tree, scattering 30-60 pale, **flat winged seeds**. **The capsule is a uniform chocolate-brown inside.**
- Propagation:** Seedlings (sow seed in pots), wildings.
- Seed:** The capsules are very high up on the mother trees and the seeds are widely scattered when they split. No. of seeds per kg: about 3,600. Seeds are best sown in seed beds,
- treatment:** not necessary.
- storage:** insects attack the seeds while still on the tree. Select undamaged seed and store in a cool dry place. Add ash to reduce insect damage.
- Management:** In plantations, tend until established. *Khaya anthotheca* suffers from shoot borers.
- Remarks:** Uganda mahogany is of a high grade and occupies a basic position in the timber trade of East Africa. The pale pink fresh timber turns red-brown and is easy to work. It is suitable for joinery, decorative furniture, etc. It should be encouraged for planting along river banks and in degraded forest areas. It is also good for shade, doing well as an avenue tree.



Indigenous

Trade names: African mahogany, tido.

Common names: **English:** Big-leaf mahogany **Lugbara:** Mario **Luo:** Tido **Madi:** Eri **Runyoro:** Munyama.

Ecology: The East African khayas are very similar in flower and fruit, differing in small features of leaves and fruit. However, they each grow in quite different areas. From Guinea Bissau to an eastern limit in northern Uganda, this species is found largely on alluvial valley soils of gallery forest and beside streams in higher-rainfall savanna. It grows in Budongo, in the northern section of deciduous forest as well as in Northern Region and Moyo District.

Uses: Firewood, charcoal, timber (veneer, panelling, cabinet making and superior joinery), shade, ornamental (avenue tree), soil conservation and improvement, river-bank protection.

Description: A semi-deciduous tree **usually less than 20 m** but up to 30 m, the bole often crooked, not or only slightly buttresses. **BARK:** pale grey, upper bole smooth but cracking into irregular scales near the base. **LEAVES:** even pinnate to 50 cm long clustered at branch ends with **6-10 stiff shiny leaflets**, each one **more than 12 cm long** and 5 cm across, the **tip with a sharp point, often twisted**. New leaves pink. **FLOWERS:** cream white in heads to 35 cm beside leaves. **FRUIT:** a rounded woody capsule, grey-brown, **about 7 cm diameter, breaking into 5 parts** to release flat, oblong red-brown winged seeds.

Propagation: Seedlings (sow seed in pots), wildings.

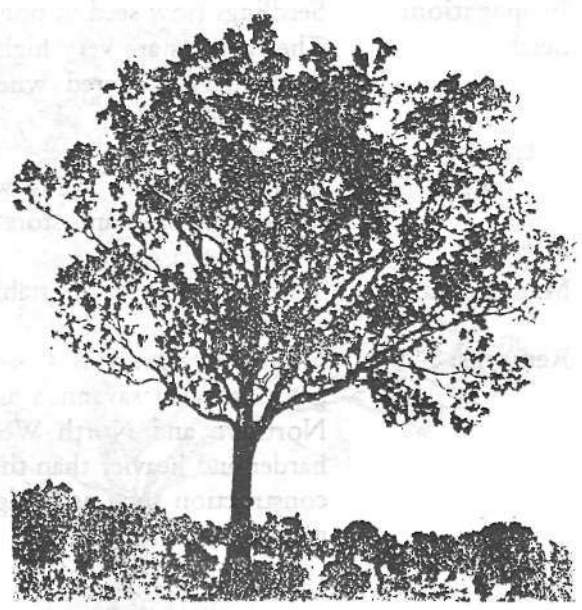
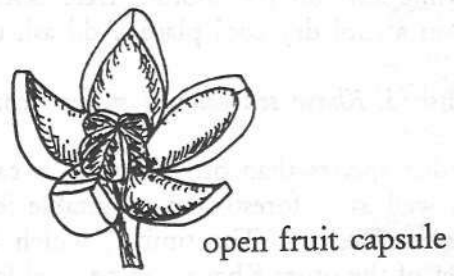
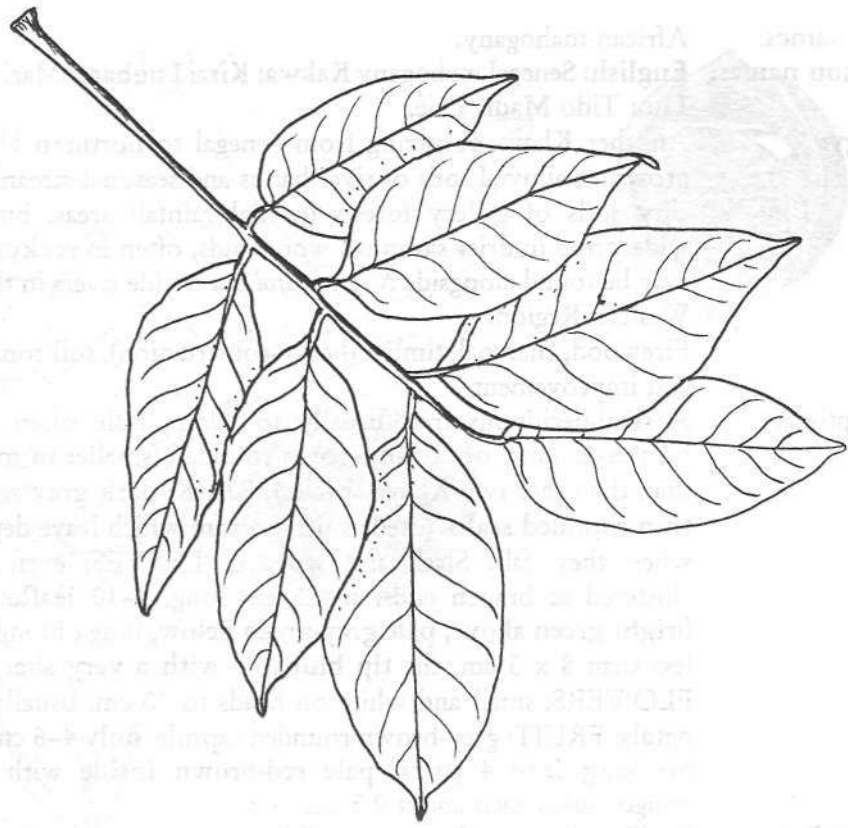
Seed: The capsules are very high up on the mother trees and the seeds are widely scattered when they split. No. of seeds per kg: about 3,400. Seeds best sown in seed beds,

treatment: not necessary.

storage: insects attack the seeds while still on the mother tree. Select undamaged seed and store in a cool dry cool place. Add ash to reduce insect damage.

Management: Tend the seedlings until established. *Khaya grandifoliola* suffers from shoot borers.

Remarks: Trees that have grown in savannah have darker timber than riverine ones. The timber has good working qualities, taking a high polish, and resembles true mahogany (*Swietenia*) more than other *Khaya* species. This species is particularly recommended for reforestation of river banks. Suited for planting in Kitgum, Gulu, Moyo, Arua and Nebbi Districts.

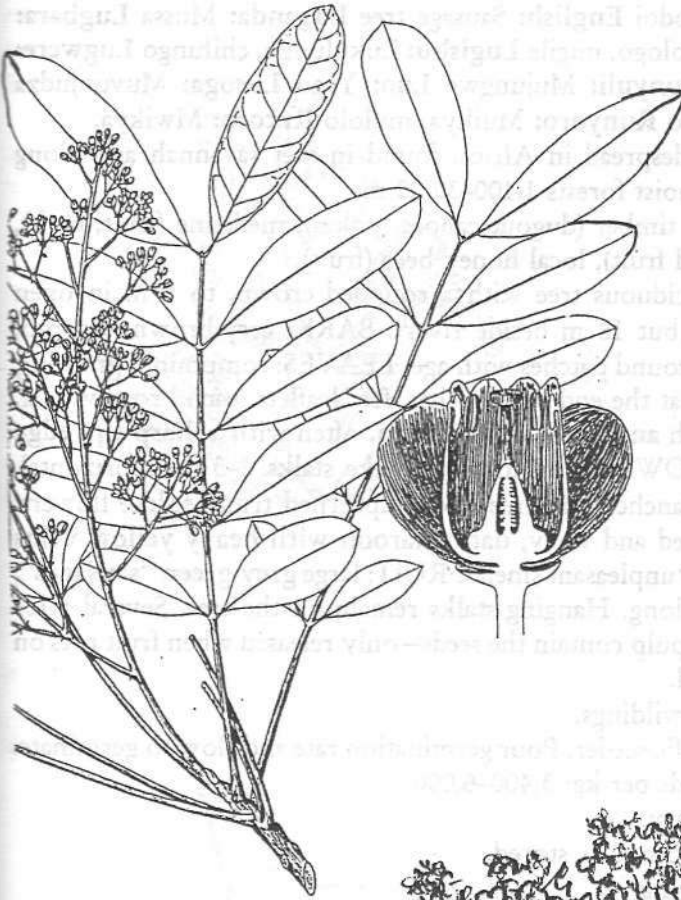


Indigenous

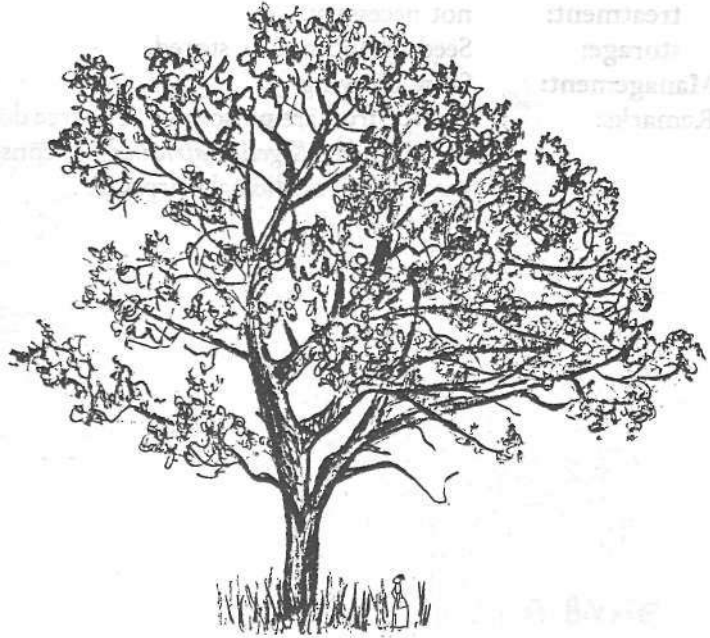
- Trade names:** African mahogany.
- Common names:** **English:** Senegal mahogany **Kakwa:** Kirai **Lugbara:** Mario, marigo **Luo:** Tido **Madi:** Erie.
- Ecology:** Another Khaya occurring from Senegal to northern Uganda. It grows on alluvial soils of river banks and seasonal streams and on silty soils of gallery forests in high-rainfall areas, but is also widespread in drier savannah woodlands, often in rocky places. It may be found alongside *K. grandifoliola* beside rivers in the North Western Region.
- Uses:** Firewood, charcoal, timber (heavy construction), soil conservation and improvement.
- Description:** A semi-deciduous tree, usually to 20 m, bole often crooked, buttresses short or absent, crown rounded (smaller in most parts than the other two Khaya species). **BARK:** **dark grey** with small **thin rounded scales** (used as fish poison) which leave depressions when they fall. Slash and sap red. **LEAVES:** even pinnate, clustered at branch ends, to 25 cm long, **4-10 leaflets, shiny bright green above, pale grey-green below**, long oblong, usually less than 8 x 5 cm, the **tip blunt or with a very sharp point**. **FLOWERS:** small and white on heads to 20 cm, usually **only 4 petals**. **FRUIT:** grey-brown rounded capsule, **only 4-6 cm across, breaking into 4 parts, pale red-brown inside** with piles of winged seeds each about 2.5 cm long.
- Propagation:** Seedlings (sow seed in pots), wildings.
- Seed:** The capsules are very high up on the mother trees and the seeds are widely scattered when they split. No. of seeds per kg: 4,500-7,000.
- treatment:** not necessary.
- storage:** insects attack the seeds while still on the mother tree. Select undamaged seed and store in a cool dry cool place. Add ash to reduce insect damage.
- Management:** Tend seedlings until established. *Khaya senegalensis* suffers from shoot borers.
- Remarks:** *Khaya senegalensis* is a hardier species than other Khaya. It can grow in open savannah as well as in forests and is suitable for Northern and North Western Regions. The timber, which is harder and heavier than that of the other Khaya, can be used for construction such as bridges and for railway sleepers. It is also more termite resistant.

Khaya senegalensis

Meliaceae



fruit section



Kigelia africana (K. aethiopum, K. pinnata)

Bignoniaceae

Indigenous

Common names: Ateso: Edodoi **English:** Sausage tree **Luganda:** Mussa **Lugbara:** Odolo, odologo, nugile **Lugishu:** Lukulungu, chifungo **Lugwere:** Mwiago **Lunyuli:** Mujungwe **Luo:** Yago **Lusoga:** Muvunjudza **Madi:** Lado **Runyoro:** Muikya, mulolo **Rutoro:** Mwikya.

Ecology: A tree widespread in Africa, found in wet savannah and along rivers in moist forests 1,100-3,000 m.

Uses: Firewood, timber (dugout canoes, yokes), medicine (fruit, bark), dye (boiled fruit), local honey beer (fruit).

Description A semi-deciduous tree with a rounded crown, to 9 m in open woodland but 18 m beside rivers. **BARK:** grey-brown, smooth, flaking in round patches with age. **LEAVES:** compound, **growing in threes**, at the end of branches, few leaflets, each broadly oval, **very rough and hard, up to 10 cm**, often with a **sharp tip, edge wavy**. **FLOWERS:** on long rope-like stalks 2-3 m. Horizontal, reddish branches, in threes, bear upturned trumpet-like flowers, petals folded and wavy, **dark maroon with heavy yellow veins** outside, an'unpleasant smell. **FRUIT:** large **grey-green "sausages"**, 30-60 cm long. Hanging stalks remain on the tree. Several kilos of fibrous pulp contain the seeds—only released when fruit rots on the ground.

Propagation: Seedlings, wildings.

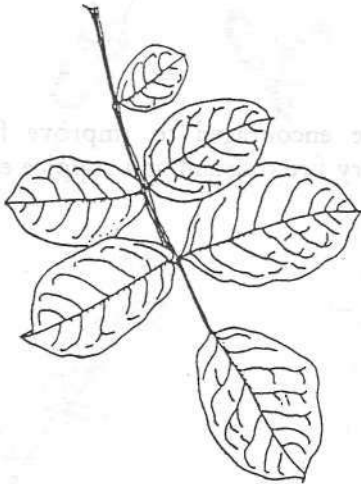
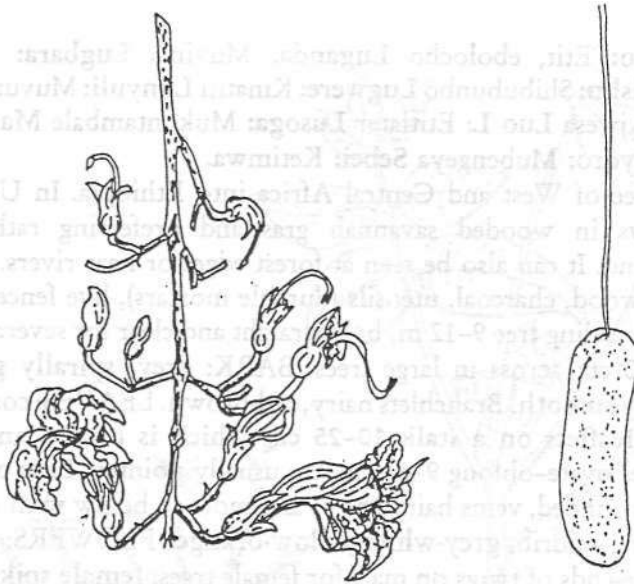
Seed: not a prolific seeder. Poor germination rate and slow to germinate. No. of seeds per kg: 3,400-6,000.

treatment: not necessary.

storage: Seed should not be stored.

Management: Slow growing.

Remarks: Unripe fruit are poisonous. The tree does not compete with crops. In Uganda, *Kigelia africana* is conserved around homes and gardens for medicinal purposes.



Lanea barteri (L. kerstingii)

Anacardiaceae

Indigenous

Common names: **Ateso:** Etit, ebolocho **Luganda:** Muyinja **Lugbara:** Odikodi **Lugishu:** Shibubunbo **Lugwere:** Kinatiti **Lunyuli:** Muvumbo **Luo A:** Ajwesa **Luo L:** Etitiatar **Lusoga:** Mukontambale **Madi:** Adza **Runyoro:** Mubengeya **Sebei:** Ketimwa.

Ecology: A tree of West and Central Africa into Ethiopia. In Uganda, it grows in wooded savannah grassland preferring rather hilly ground. It can also be seen at forest edges or near rivers.

Uses: Firewood, charcoal, utensils (durable mortars), live fence.

Description A spreading tree 9-12 m, bole straight and clear for several metres, to 40 cm across in large trees. **BARK:** grey, spirally grooved, fairly smooth. Branchlets hairy, red-brown. **LEAVES:** compound, 5-9 leaflets on a stalk 10-25 cm which is brown and hairy, leaves ovate-oblong 9-13 cm, tip usually pointed, base one-sided and rounded, veins hairy above and more so below with stiff hairs on the midrib, grey-white-yellow-orange. **FLOWERS:** clustered at the ends of twigs on male for female trees; female spikes 12 cm or less, male longer, flowers yellow, when the tree is bare. **FRUIT:** oval-oblong, about 1 cm, dull purple when ripe, flattened.

Propagation Seedlings, cuttings, direct sowing on site. Cuttings made from large branches will strike.

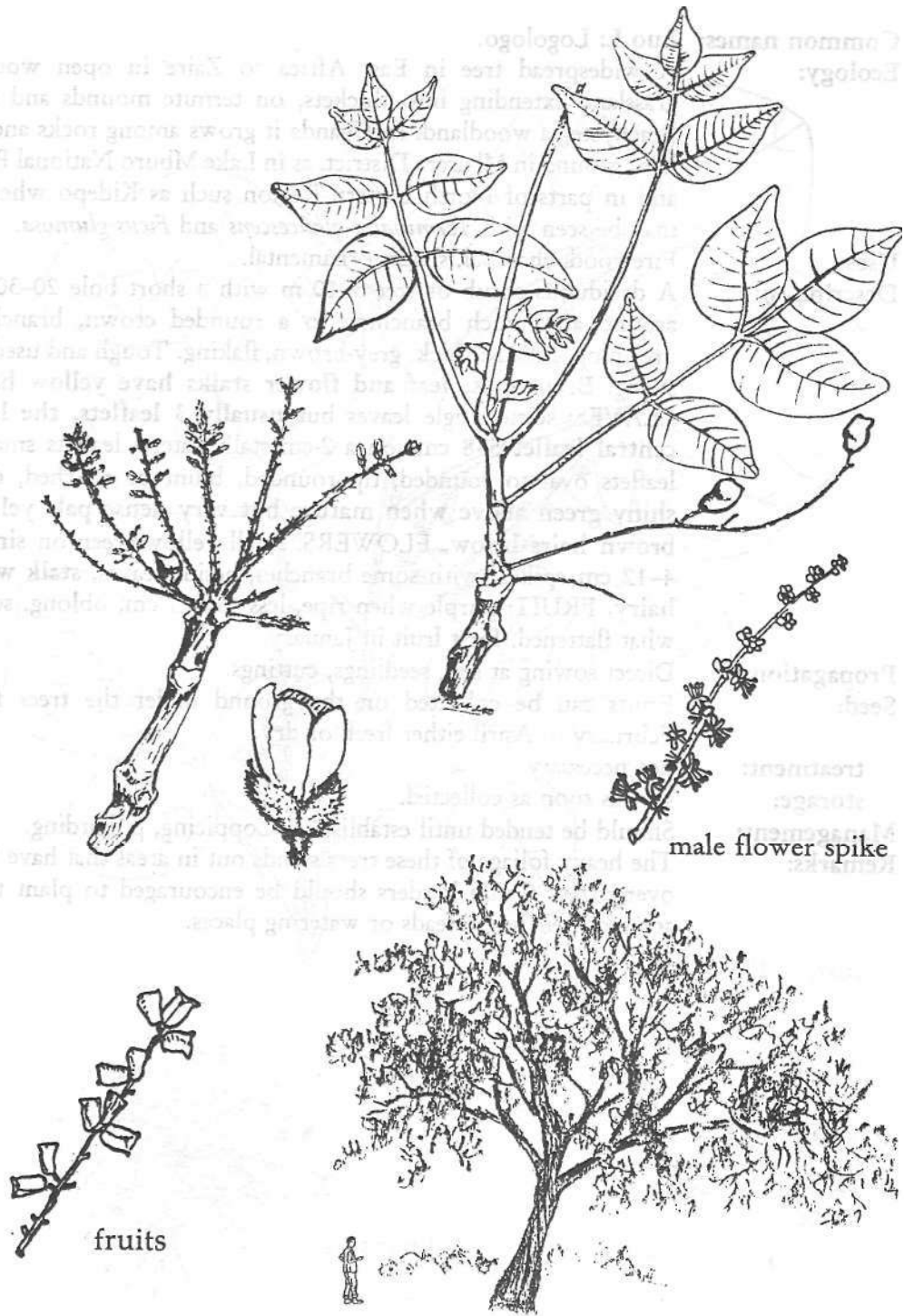
Seed: Fruit can be collected from the ground, gradually dried and the seed extracted,

treatment: not necessary,

storage: sow within two months.

Management: Coppicing, pollarding.

Remarks: A species that should be encouraged to improve fuelwood supplies. All Laneea are very fire resistant and coppice easily.



male flower spike

fruits

Indigenous

Common names: Luo L: Logologo.

Ecology: A widespread tree in East Africa to Zaire in open wooded grassland extending into thickets, on termite mounds and into Brachystegia woodland. In Uganda it grows among rocks and on hard ground in Mbarara District, as in Lake Mburo National Park, and in parts of North Eastern Region such as Kidepo where it may be seen with *Terminalia glaucescens* and *Ficus glumosa*.

Uses: Firewood, charcoal, shade, ornamental.

Description: A deciduous shrub or tree 3-10 m with a short bole 20-30 cm around and much branching to a rounded crown, branchlets drooping. BARK: thick, grey-brown, flaking. Tough and used for string. **Branchlets, leaf and flower stalks have yellow hairs.** LEAVES: some single leaves but **usually 3 leaflets, the large central leaflet 5-8 cm**, on a 2-cm stalk, lateral leaflets smaller, leaflets oval to rounded, tip rounded, blunt or notched, **dark shiny green above when mature but very dense pale yellow-brown hairs below.** FLOWERS: small yellow-green on **simple 4-12 cm spikes**, with some branches, beside leaves, **stalk white hairy.** FRUIT: purple when ripe, less than 1 cm, oblong, somewhat flattened. First fruit in January.

Propagation: Direct sowing at site, seedlings, cuttings.

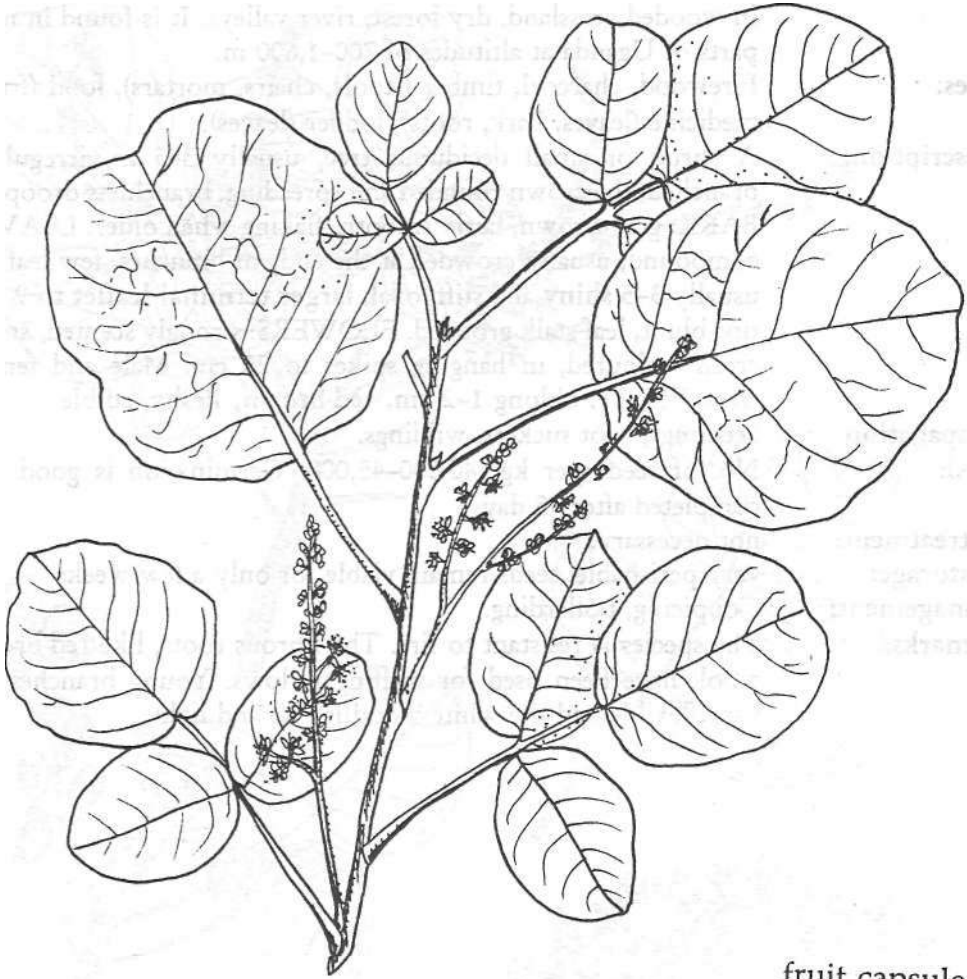
Seed: Fruits can be collected on the ground under the trees from February to April either fresh or dry.

treatment: not necessary,

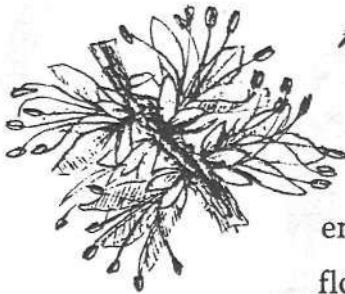
storage: sow as soon as collected.

Management: Should be tended until established. Coppicing, pollarding.

Remarks: The heavy foliage of these trees stands out in areas that have been overgrazed. Cattle herders should be encouraged to plant them around their homesteads or watering places.

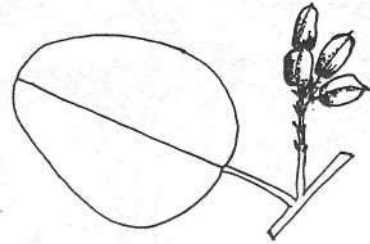


fruit capsules



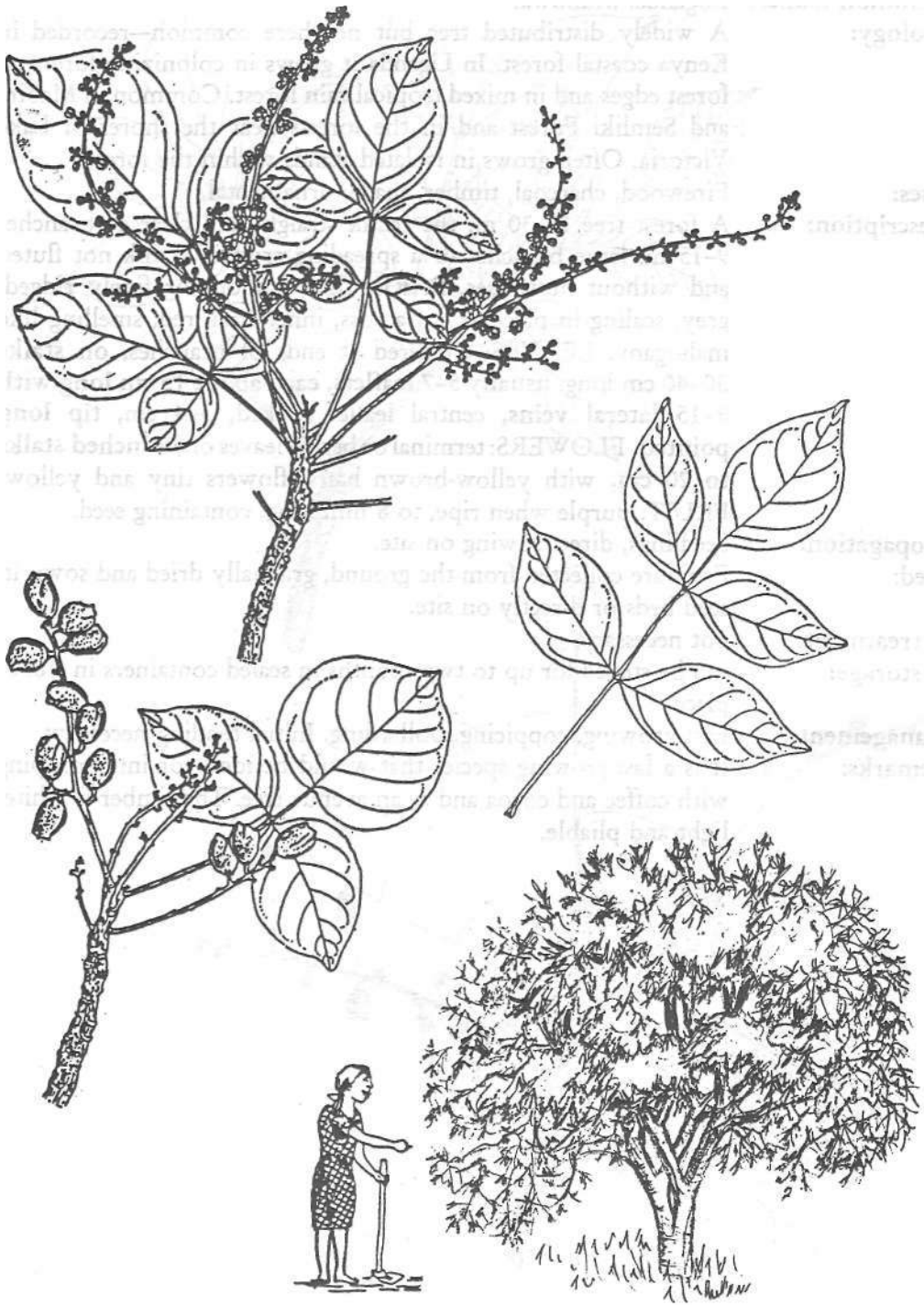
DAVID A. KATZ

enlarged
flowers



Indigenous

- Common names:** **Ateso:** Egarai, ematakiro **Luo A:** Elogologo **Luo L:** Kwogo.
- Ecology:** Widespread in Africa from Somalia to southern Africa. Common in wooded grassland, dry forest, river valleys. It is found in most parts of Uganda at altitudes of 700-1,600 m.
- Uses:** Firewood, charcoal, timber (stools, chairs, mortars), food (fruit), medicine (leaves, bark, roots), fodder (leaves).
- Description:** A shrub or small deciduous tree, usually 3-5 m, irregularly branched, the crown rounded and spreading, branchlets drooping. **BARK:** grey-brown, fairly smooth, flaking when older. **LEAVES:** compound, usually crowded at the ends of branches, few leaflets, usually 3-5 **shiny** and stiff, oval, **larger terminal leaflet to 9 cm**, tips blunt, leaf stalk grooved. **FLOWERS:** strongly scented, small, cream coloured, in hanging spikes to 20 cm. Male and female trees. **FRUIT:** oblong **1-2 cm, red-brown**, fleshy, edible.
- Propagation** Seedlings, root suckers, wildings.
- Seed:** No. of seeds per kg: 40,000-45,000. Germination is good and completed after 45 days.
- treatment:** not necessary.
- storage:** very perishable; seeds remain viable for only a few weeks.
- Management:** Coppicing, pollarding.
- Remarks:** The species is resistant to fire. The fibrous roots, like red-brown wool, have been used for stuffing pillows. Young branches are very flexible and the white wood is soft and light.



Indigenous

Common names: Luganda: Mukowa.

Ecology: A widely distributed tree but nowhere common—recorded in Kenya coastal forest. In Uganda it grows in colonizing forest, at forest edges and in mixed tropical rain forest. Common in Mabira and Semliki Forest and in the forests near the shores of Lake Victoria. Often grows in isolated stands within the forests.

Uses: Firewood, charcoal, timber, shade, ornamental.

Description: A forest tree 10-30 m, the trunk straight and clear of branches 9-15 m, large branches to a spreading crown. Trunk not fluted and without buttresses. **BARK:** thin, smooth or finely ridged, grey, scaling in pieces 5 cm across, inner bark red, smelling like mahogany. **LEAVES:** clustered at ends of branches, **on stalks 30-40 cm long, usually 5-7 leaflets, each about 13 cm long with 9-15 lateral veins, central leaflet stalked, 3-4 cm, tip long pointed.** **FLOWERS:** terminal or beside leaves on **branched stalks to 20 cm**, with yellow-brown hairs, flowers tiny and yellow. **FRUIT:** purple when ripe, to 8 mm long, containing seed.

Propagation: Seedlings, direct sowing on site.

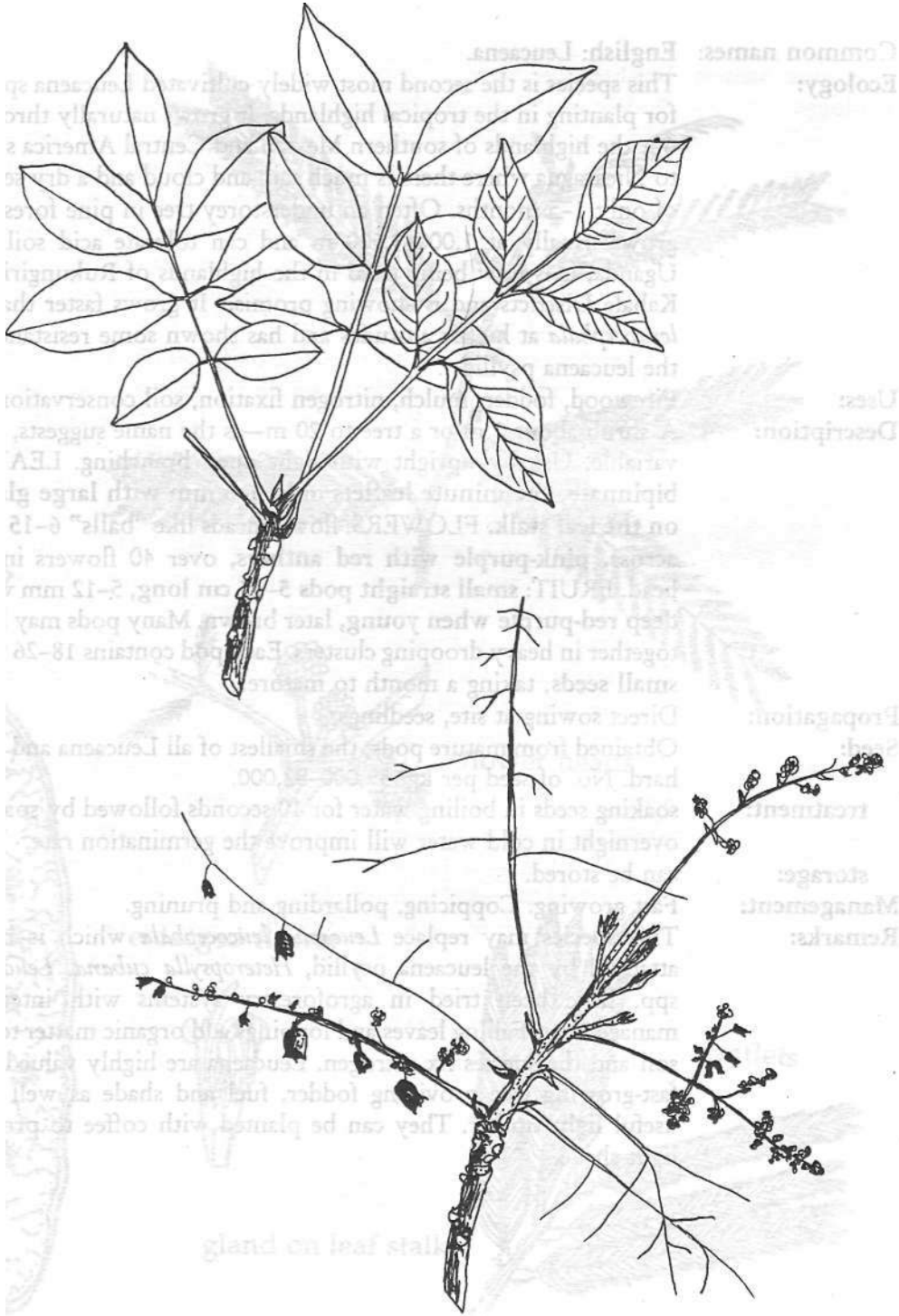
Seed: Fruit are collected from the ground, gradually dried and sown in seed beds or directly on site.

treatment: not necessary.

storage: can be stored for up to two months in sealed containers in a cool place.

Management: Fast growing; coppicing, pollarding. Initial tending necessary.

Remarks: It is a fast-growing species that would be ideal for intercropping with coffee and cocoa and as an avenue tree. The timber is white, light and pliable.



Mexico, Guatemala, Central America

Common names: **English:** Leucaena.

Ecology: This species is the second most widely cultivated *Leucaena* species for planting in the tropical highlands. It grows naturally throughout the highlands of southern Mexico and Central America south to Nicaragua where there is much rain and cloud and a dry season of only 1-5 months. Often an understorey tree in pine forests, it grows usually at 1,000-1,500 m and can tolerate acid soils. In Uganda, it is now being tried in the highlands of Rukungiri and Kabale Districts and is showing promise. It grows faster than *L. leucocephala* at higher altitudes and has shown some resistance to the leucaena psyllid.

Uses: Firewood, fodder, mulch, nitrogen fixation, soil conservation.

Description: A shrub about 2 m or a tree to 20 m—as the name suggests, very variable. Usually upright with light open branching. **LEAVES: bipinnate, the minute leaflets only 3-6 mm with large glands on the leaf stalk.** **FLOWERS:** flower heads like "balls" **6-15 mm across, pink-purple with red anthers**, over 40 flowers in the head. **FRUIT: small straight pods 5-15 cm long**, 5-12 mm wide, **deep red-purple when young**, later brown. Many pods may hang together in heavy drooping clusters. Each pod contains 18-26 **very small seeds**, taking a month to mature.

Propagation: Direct sowing at site, seedlings.

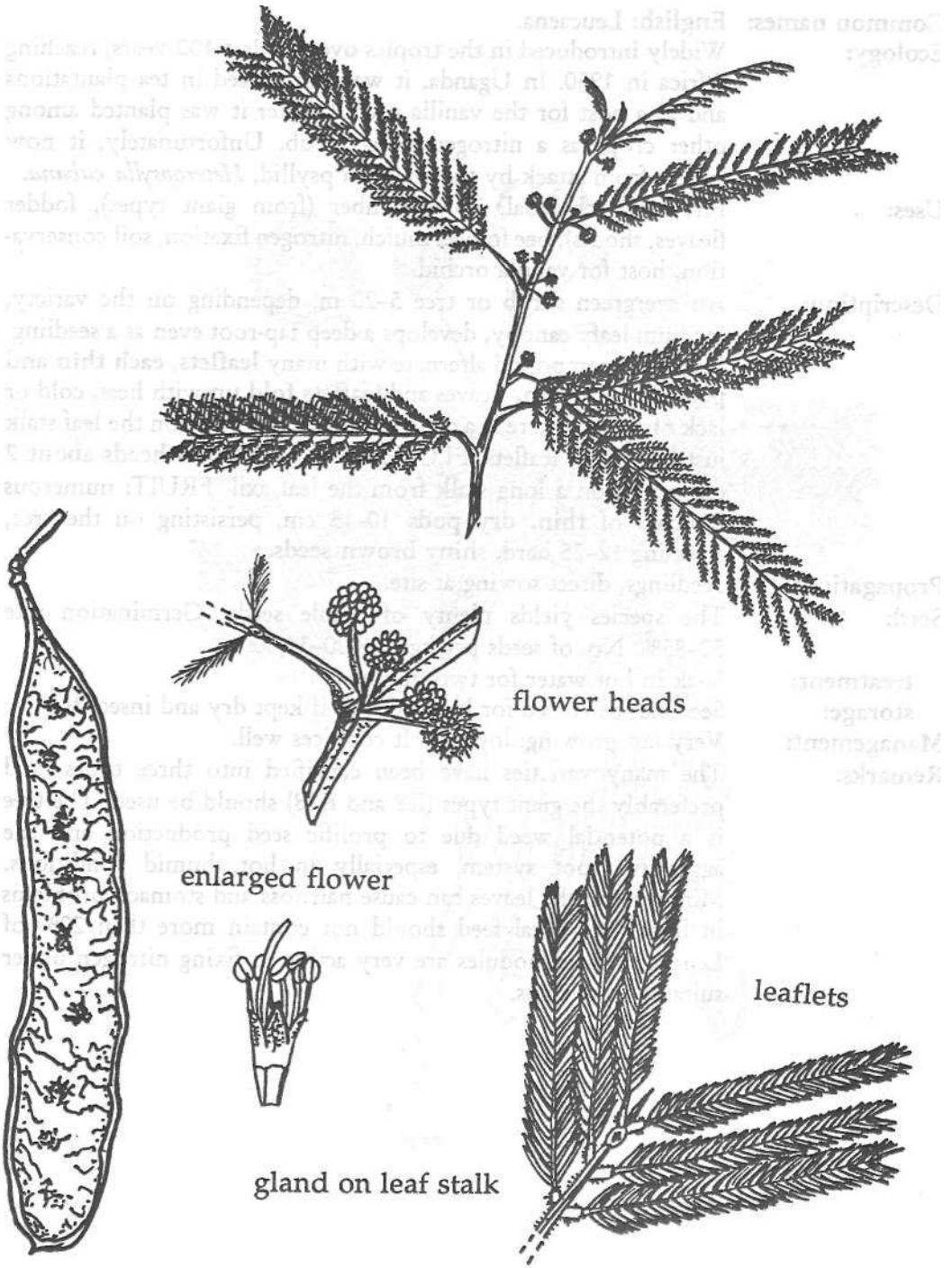
Seed: Obtained from mature pods; the smallest of all *Leucaena* and very hard. No. of seed per kg: 59,000-82,000.

treatment: soaking seeds in boiling water for 10 seconds followed by soaking overnight in cold water will improve the germination rate, can be stored.

storage:

Management: Fast growing. Coppicing, pollarding and pruning.

Remarks: This species may replace *Leucaena leucocephala* which is being attacked by the leucaena psyllid, *Heteropsylla cubana*. *Leucaena* spp. have been tried in agroforestry systems with intensive management. Falling leaves and loppings add organic matter to the soil and the species fix nitrogen. *Leucaena* are highly valued as a fast-growing tree providing fodder, fuel and shade as well as a useful light timber. They can be planted with coffee to provide light shade.



Leucaena leucocephala

Mimosaceae

Central America

Common names: **English:** Leucaena.

Ecology: Widely introduced in the tropics over the last 100 years, reaching Africa in 1950. In Uganda, it was introduced in tea plantations and as a host for the vanilla orchid. Later it was planted among other crops as a nitrogen-fixing shrub. Unfortunately, it now suffers from attack by the leucaena psyllid, *Heteropsylla cubana*.

Uses: Firewood, charcoal, poles, timber (from giant types), fodder (leaves, shoots), bee forage, mulch, nitrogen fixation, soil conservation, host for vanilla orchid.

Description: An evergreen shrub or tree 5-20 m, depending on the variety, medium leafy canopy, develops a deep tap-root even as a seedling. **LEAVES:** compound alternate with many **leaflets, each thin and pointed to 1.5 cm**. Leaves and **leaflets fold up** with heat, cold or lack of water. There is a conspicuous round mark on the leaf stalk just before the leaflets. **FLOWERS:** **white, round heads about 2 cm** across on a long stalk from the leaf axil. **FRUIT:** numerous bunches of **thin, dry pods** 10-15 cm, persisting on the tree, releasing 12-25 hard, **shiny brown seeds**.

Propagation: Seedlings, direct sowing at site.

Seed: The species yields plenty of viable seeds. Germination rate 50-85%. No. of seeds per kg: 13,000-34,000.

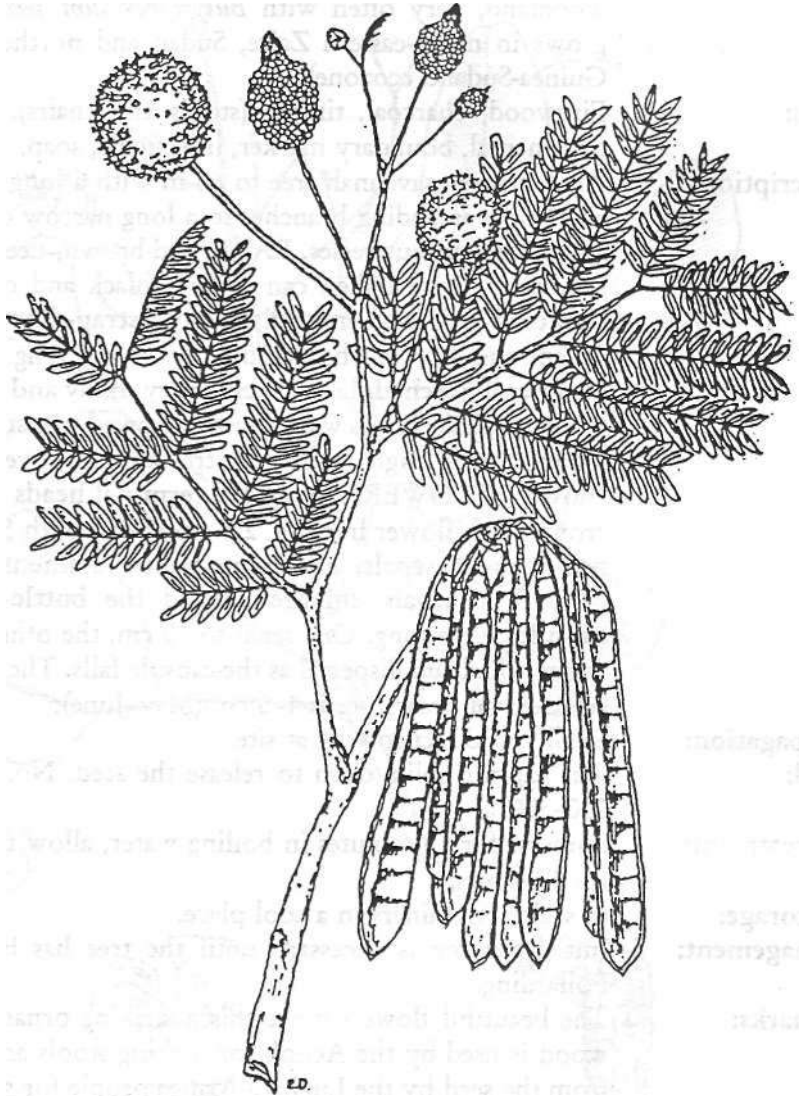
treatment: Soak in hot water for two minutes.

storage: Seed can be stored for long periods if kept dry and insect free.

Management: Very fast growing; lopping. It coppices well.

Remarks: The many varieties have been classified into three types, and preferably the giant types (K8 and K28) should be used. The tree is a potential weed due to prolific seed production and the aggressive" root system, especially in hot, humid conditions. Mimosine in the leaves can cause hair loss and stomach problems in livestock. Total feed should not contain more than 20% of Leucaena. Root nodules are very active in fixing nitrogen under suitable conditions.

-



Indigenous

Trade names: Azobe, ekki, meni oil tree.

Common names: **Lugbara:** Iku **Luo:** Oteng **Luo A:** Otlug **Madi:** Liku.

Ecology: One of the largest African timber trees from Sierra Leone and Gabon and a major export from Cameroon to France. In Uganda, it is not plentiful but grows in high-rainfall wooded grassland and woodland, very often with *Butyrospermum paradoxum*. It also grows in north-eastern Zaire, Sudan and northern Uganda (the Guinea-Sudano ecozone).

Uses: Firewood, charcoal, timber (stools and chairs), building poles, ornamental, boundary marker, insecticide, soap.

Description: An evergreen savannah tree to 60 m with a long cylindrical bole and heavy ascending branches to a long narrow crown, occasionally with low buttresses. **BARK:** red-brown, deeply fissured and peeling in loose flakes; can be grey-black and corky. **LEAVES:** **clustered at branch ends, distinctive, strap-shaped and shiny** (to 60 cm and 12.5 cm broad) usually 30 cm long, the tip usually **blunt and notched**. **Lateral veins very many and parallel, angled to the midrib**. Edges wavy, base narrowed to a **stalk about 2 cm**. Young leaves bright red so the tree appears covered in attractive "flower". **FLOWERS:** in **big lax terminal heads** seen all over the crown, each flower fragrant, **2.5 cm across** with **5 unequal white petals and 5 sepals, numerous yellow stamens in the centre**. **FRUIT:** **2 sepals enlarge** around the **bottle-shaped woody capsule**, 3 cm long. One sepal to 10 cm, the other 6 cm, become wings which aid dispersal as the capsule falls. The capsule splits to release oval brown seeds 1-5 cm (May-June).

Propagation: Seedlings, direct sowing at site.

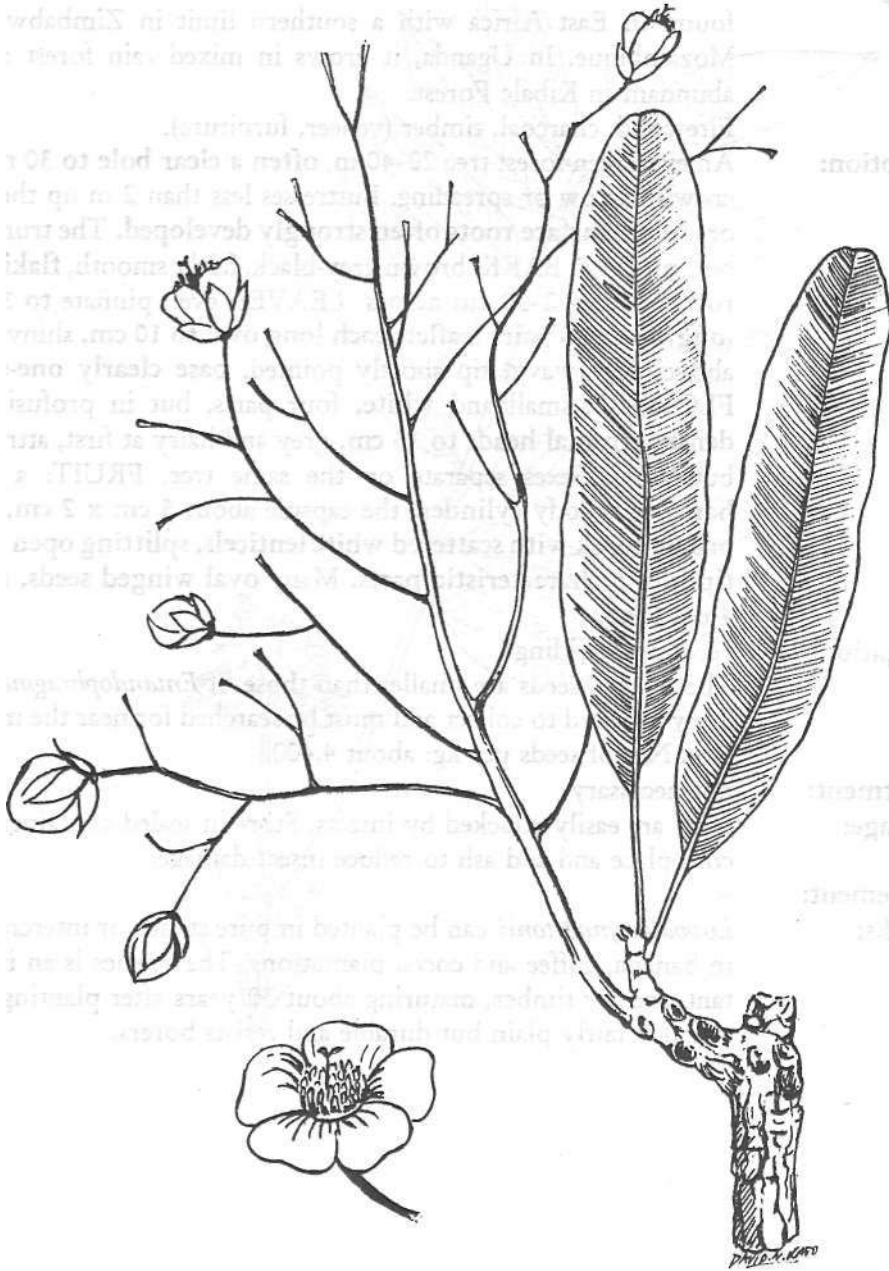
Seed: The capsule splits open to release the seed. No. of seed per kg: 250-300.

treatment: immerse for 15 minutes in boiling water, allow to cool and soak for 12 hours.

storage: in sealed containers in a cool place.

Management: Initial tending is necessary until the tree has been established. Pollarding.

Remarks: The beautiful flowers make this a striking ornamental tree. The wood is used by the Acholi for making stools and chairs and oil from the seed by the Lugbara-Aringa people for soap making and lamps. The plant is also used as an insecticide, but the active ingredient has not been identified. The timber is the most durable in West Africa and is used for heavy construction, etc., especially for harbours as it resists fungi, termites and borers. It is stronger, harder and heavier than teak. Plant as a stand or boundary marker.



Lovoa swynnertonii

Meliaceae

Indigenous

Common names: **English:** Brown mahogany **Luganda:** Nabulagala **Rukiga:** Mukumbo **Runyankore:** Mukusu **Rutoro:** Mukusu.

Ecology: A valuable timber tree of lowland and mid-altitude rain forest found in East Africa with a southern limit in Zimbabwe and Mozambique. In Uganda, it grows in mixed rain forest and is abundant in Kibale Forest.

Uses: Firewood, charcoal, timber (vener, furniture).

Description: An evergreen forest tree 20-40 m, **often a clear bole to 30 m**, the crown narrow or spreading. Buttresses less than 2 m up the bole or absent, **surface roots often strongly developed**. The trunk can be 2 m across. **BARK:** brown-grey-black, fairly smooth, **flaking in round pieces 2-30 cm across**. **LEAVES:** even pinnate **to 30 cm long with 3-8 pairs leaflets each long oval to 10 cm**, shiny green above, edge wavy, tip shortly pointed, **base clearly one-sided**. **FLOWERS:** small and **white**, four parts, but in profusion **in dense terminal heads to 15 cm**, grey and hairy at first, attracting butterflies. Sexes separate on the same tree. **FRUIT:** a small **hanging woody cylinder**, the capsule about **5 cm x 2 cm**, **dark brown-black with scattered white lenticels, splitting open at the tip into 5 characteristic parts**. Many **oval winged seeds, about 4 cm long**.

Propagation: Seedlings, wildings.

Seed: The winged seeds are smaller than those of *Entandophragma* spp. They are hard to collect and must be searched for near the mother tree. No. of seeds per kg: about 4,400.

treatment: not necessary.

storage: seeds are easily attacked by insects. Store in sealed containers in a cool place and add ash to reduce insect damage.

Management:

Remarks: *Lovoa swynnertonii* can be planted in pure stands or intercropped in banana, coffee and cocoa plantations. The species is an important one for timber, maturing about 30 years after planting. The wood is fairly plain but durable and resists borers.



Indigenous

Trade names: Nkoba, Uganda walnut.

Common names: **Luganda:** Nkoba **Runyoro:** Nkoba **Rutoro:** Mukusu.

Ecology: A canopy tree of rain forest from Sierra Leone east to Tanzania and south to Angola. It is relatively common and exported from "West Africa as timber. In Uganda it is found in thickets, gallery forest and mixed tropical rain forests and is abundant in forest on the shores of Lake Victoria.

Uses: Firewood, charcoal, timber (furniture, doors, windows, veneer, canoes), ornamental (avenue tree).

Description: An evergreen tree to 40 m, the trunk straight or wavy to a small or spreading dark crown. Buttresses usually absent, but trunk may spread out at the base. **BARK:** thin and smooth, **brown, sometimes dark and fissured in older trees, strongly scented if cut.** **LEAVES:** even pinnate on stalks to 24 cm, stalk flat or winged between leaflet pairs, **6-12 leaflets, the same size at the base, about 10 cm long with about 20 closely spaced side veins each side.** **FLOWERS:** abundant, small and white in large heads to 30 cm (stalks not hairy). **FRUIT:** a brown capsule, hanging down, about 5 mm long, **4-angled, opening first from below, or both ends together,** to release winged seeds about 5 cm long.

Propagation: Seedlings, wildings.

Seed: The species seeds profusely and winged seeds have to be searched for on the ground. No. of seeds per kg: about 4,400.

treatment: sow with wings up and cover ³A of actual seed with soil.

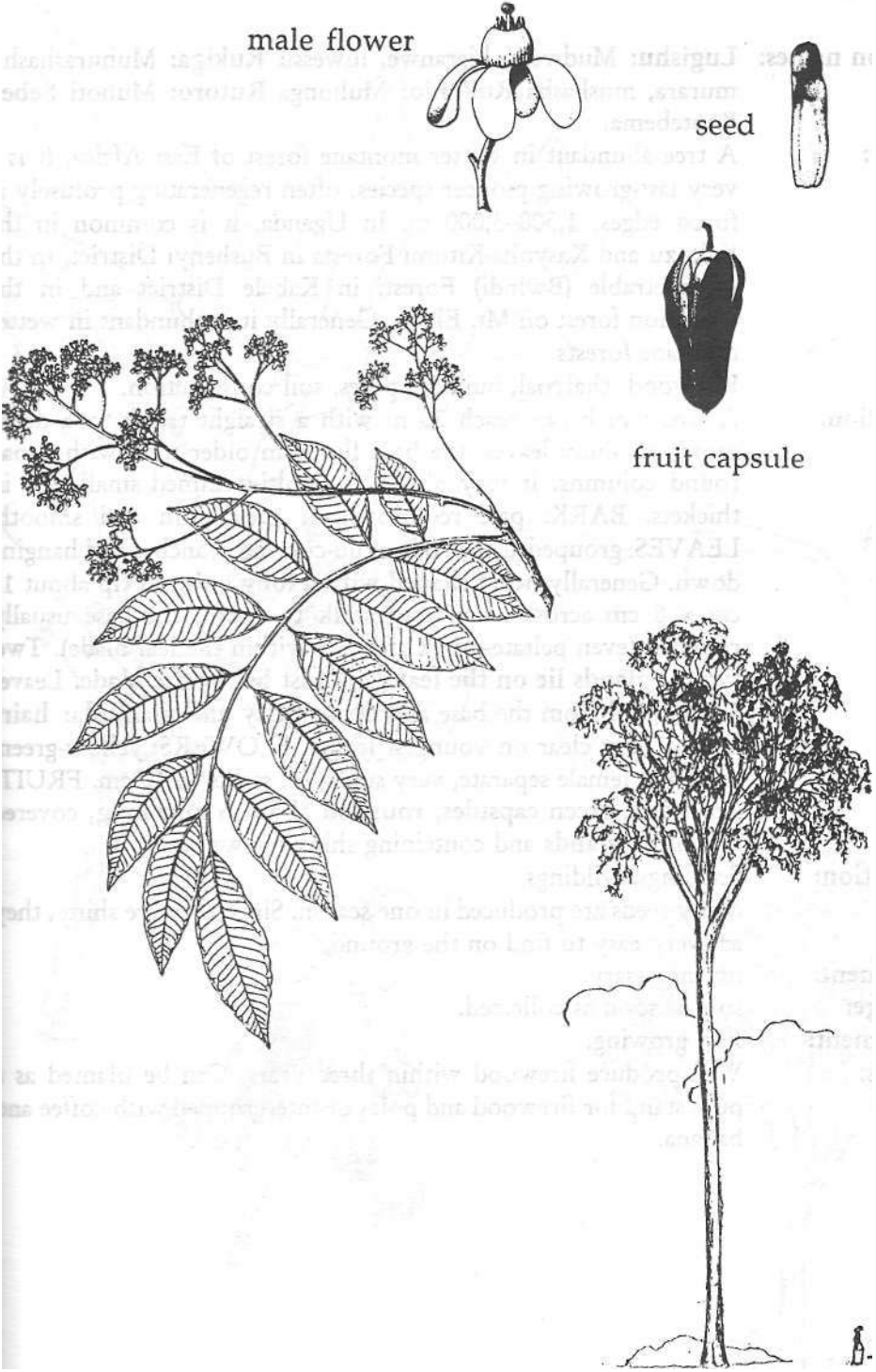
storage: very susceptible to insect attack. Store in sealed containers in a cool place and add ash to reduce insect damage.

Management: *Lovoa trichilioides* tends to branch early and pruning should be done.

Remarks: Does well as a pure stand or together with crops, e.g. in coffee and banana plantations. It is also a good avenue tree. It is being promoted in Masaka and Rakai Districts in tree-planting projects. The timber is well known in the Lake Victoria area where it is common and regenerating and where the golden-brown timber is well known to carpenters and used for furniture. However, it is rare elsewhere.

Lovoa trichilioides (L. brownii)

Meliaceae



Macaranga kilimandscharica

Euphorbiaceae

Indigenous

Common names: **Lugishu:** Mudwess, kiaranwe, luwessu **Rukiga:** Muburashasha, murara, mushasha **Rukonjo:** Muhunga **Rutoro:** Muhoti **Sebei:** Kaptebema.

Ecology: A tree abundant in wetter montane forest of East Africa. It is a very fast-growing pioneer species, often regenerating profusely at forest edges, 1,500-3,000 m. In Uganda, it is common in the Kalinzu and Kasyoha-Kitomi Forests in Bushenyi District, in the Impenetrable (Bwindi) Forest, in Kabale District and in the transition forest on Mt. Elgon. Generally it is abundant in wetter montane forests.

Uses: Firewood, charcoal, building poles, soil conservation.

Description: A tree which can reach 20 m with a straight trunk to a dense crown of shiny leaves, the bole fluted in older trees with broad round columns. It may also be a multi-stemmed small tree in thickets. **BARK:** pale red-brown or grey, thin and smooth. **LEAVES:** grouped at the ends of up-curving branches and hanging down. Generally **heart shaped with a long pointed tip** about 13 cm x 8 cm across on **a long stalk to 9 cm**, the base usually rounded (even peltate—stalk attached within the leaf blade). **Two typical glands lie on the leaf stalk just below the blade.** Leaves **3-7 nerved** from the base and **dense rusty and glandular hairs below**, very clear on youngest leaves. **FLOWERS:** yellow-green, male and female separate, very small, on stalks to 10 cm. **FRUIT:** small **dull green capsules, rounded about 6 mm long**, covered in **yellow glands** and containing shiny brown seeds.

Propagation: Seedlings, wildings.

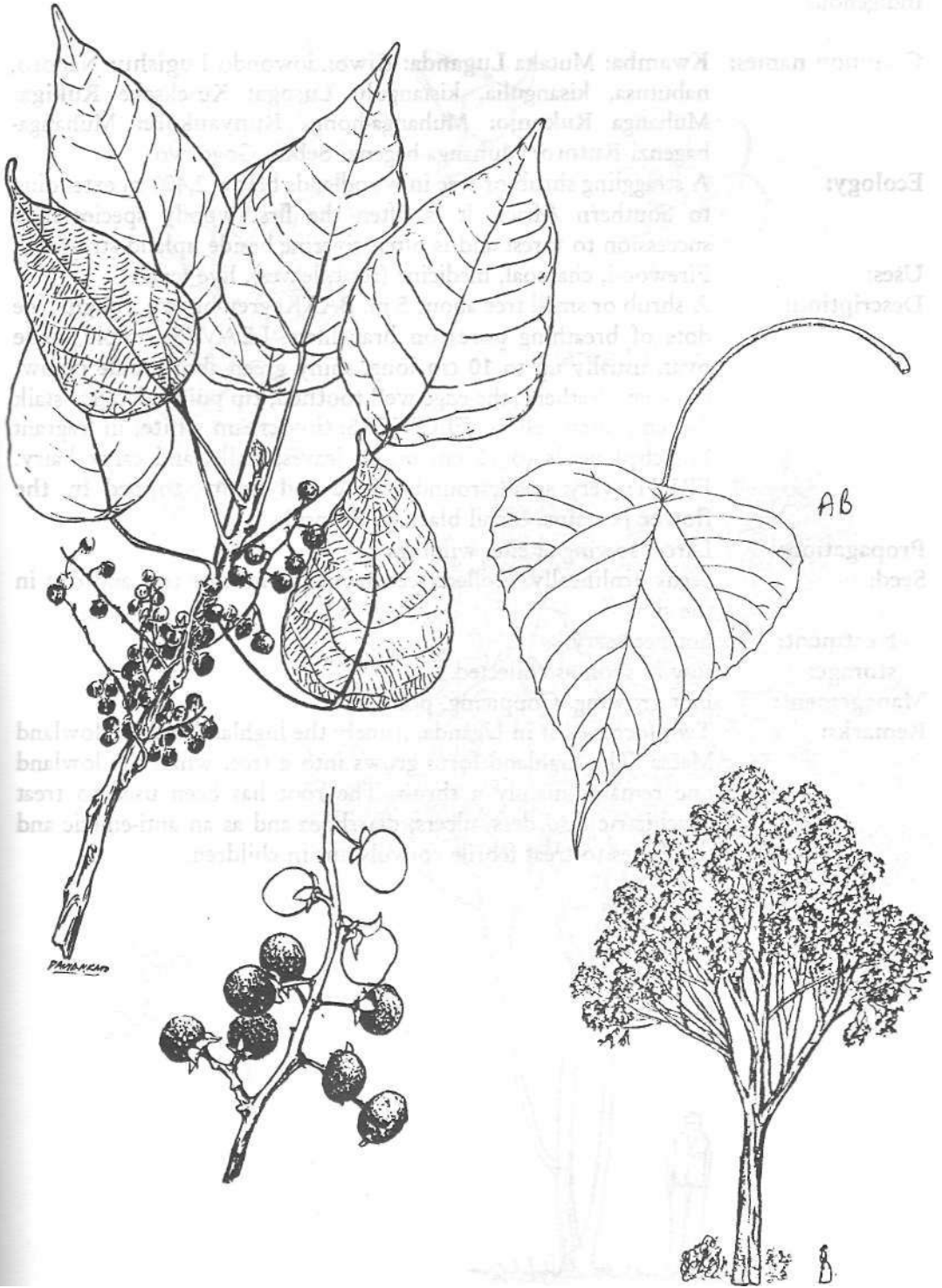
Seed: Many seeds are produced in one season. Since they are shiny, they are very easy to find on the ground.

treatment: not necessary.

storage: sow as soon as collected.

Management: Fast growing.

Remarks: Will produce firewood within three years. Can be planted as a pure stand for firewood and poles or intercropped with coffee and banana.



Indigenous

Common names: **Kwamba:** Mutaka **Luganda:** Kiwondowondo **Lugishu:** Naporo, nabutusa, kisangulia, kisiangulu **Lusoga:** Kusekseke **Rukiga:** Muhanga **Rukonjo:** Muhanga-honga **Runyankore:** Muhanga-bagenzi **Rutoro:** Muhanga-bagenzi **Sebei:** Gogorwo.

Ecology: A straggling shrub or tree in woodlands below 2,400 m extending to Southern Africa. It is often the first woody species in a succession to forest and is often riverine beside upland streams.

Uses: Firewood, charcoal, medicine (root, leaves), live fence.

Description: A shrub or small tree about 5 m. **BARK:** grey-brown, rough; pale dots of breathing pores on branchlets. **LEAVES:** simple, **wide oval**, usually up to 10 cm long, shiny green above, **pale below**, thick and leathery, the edge **well toothed, tip pointed**, a leaf stalk 2-3 cm, often yellow. **FLOWERS:** **tiny cream-white**, in fragrant branched heads to 10 cm beside leaves; stalks and calyx hairy. **FRUIT:** very small, round, **white and fleshy, topped by the flower remains**. Small black seeds inside.

Propagation: Direct sowing at site, wildings.

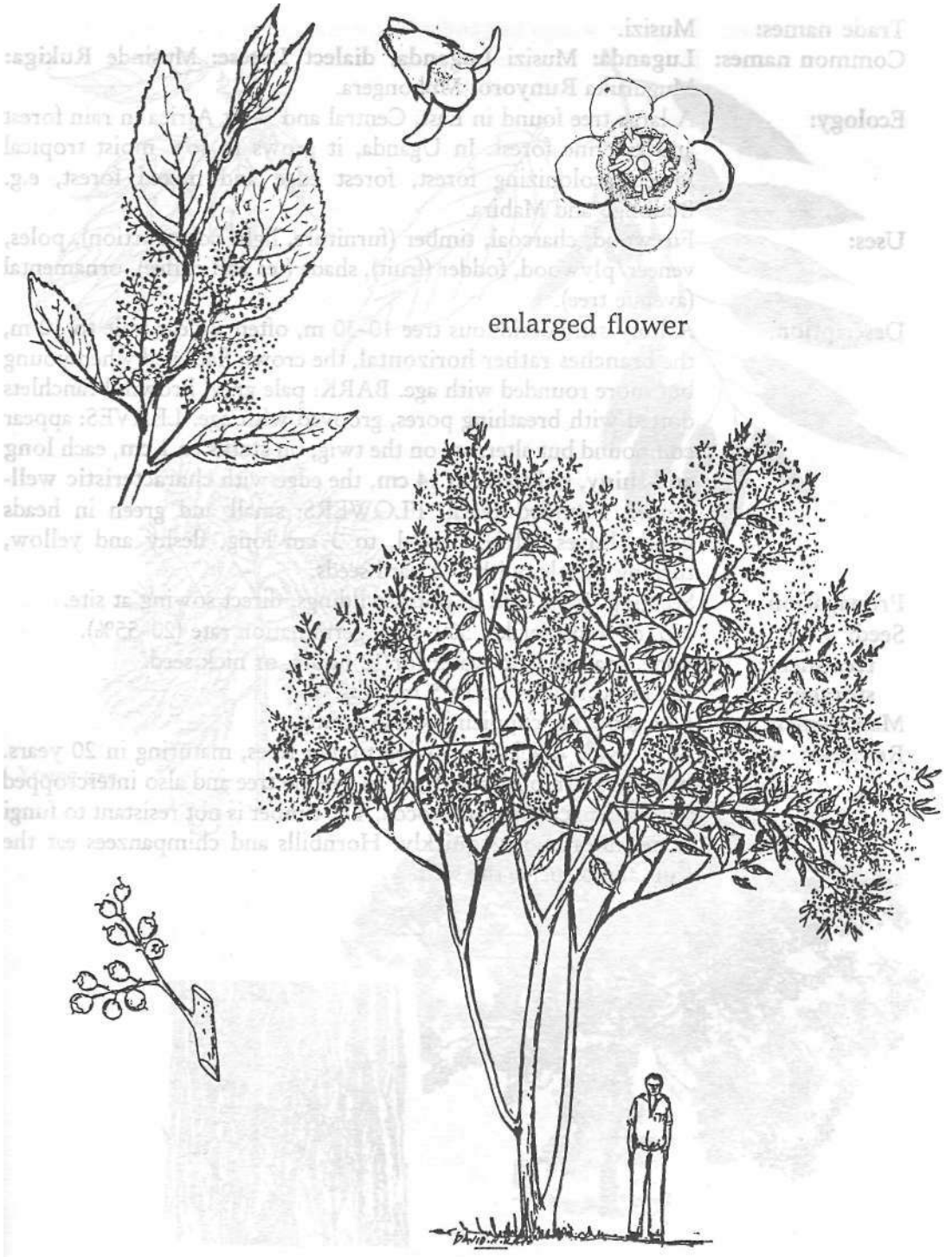
Seed: Seeds prolifically. Collect seed from the mother tree and dry in the sun.

treatment: not necessary.

storage: sow as soon as collected.

Management: Fast growing. Coppicing, pollarding.

Remarks: Two forms exist in Uganda, namely the highland and the lowland Maesa. The highland form grows into a tree, while the lowland one remains mainly a shrub. The root has been used to treat psychiatric disorders, ulcers, diarrhoea and as an anti-emetic and the leaves to treat febrile convulsions in children.



Indigenous

Trade names: Musizi.

Common names: **Luganda:** Musizi **Luganda, dialect Lusese:** Musinde **Rukiga:** Muguruka **Runyoro:** Muhongera.

Ecology: A large tree found in East, Central and West Africa in rain forest and riverine forest. In Uganda, it grows in low moist tropical forests, colonizing forest, forest edge and mixed forest, e.g. Budongo and Mabira.

Uses: Firewood, charcoal, timber (furniture, light construction), poles, veneer/plywood, fodder (fruit), shade (tea and coffee), ornamental (avenue tree).

Description: A leafy semi-deciduous tree 10-30 m, often a clear bole to 10 m, the **branches rather horizontal**, the crown flattened when young but more rounded with age. **BARK:** pale grey- brown, branchlets dotted with breathing pores, grooved with age. **LEAVES:** appear compound but alternate on the twig, on **stalks to 1 cm**, each **long and shiny, pointed, to 14 cm**, the edge with **characteristic well-spaced rounded teeth**. **FLOWERS:** small and green in heads beside leaves. **FRUIT:** oval, to 3 cm long, fleshy and yellow, turning purple, with 1-2 hard seeds.

Propagation Seedlings (sow seed in pots), wildings, direct sowing at site.

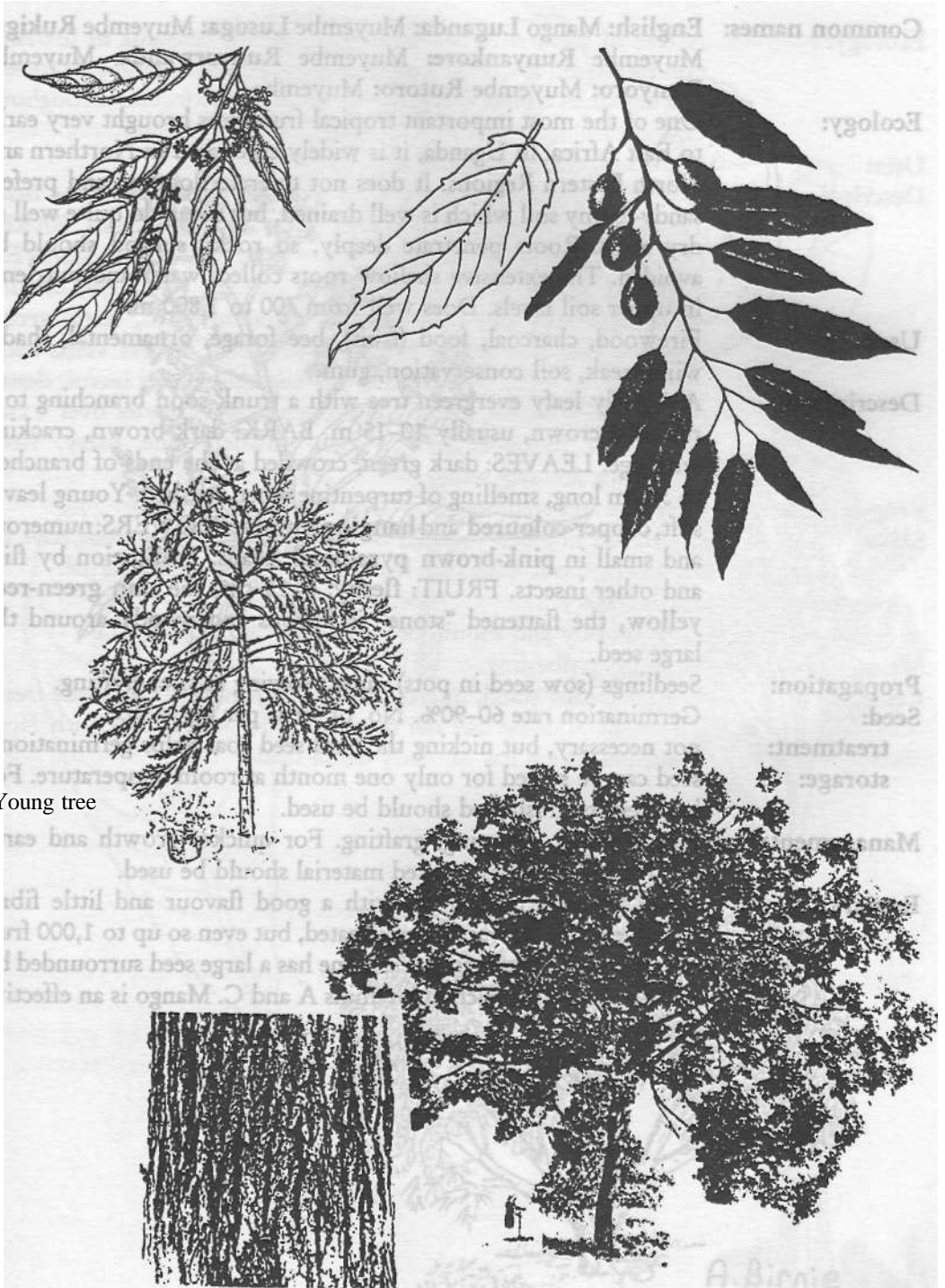
Seed: No. of seeds per kg: 500. Low germination rate (20-55%).

treatment: none, soak in cold water for 12 hours, or nick seed,

storage: can be stored for up to 5 months.

Management: Fast growing; coppicing while young.

Remarks: One of the quickest growing timber trees, maturing in 20 years. It is grown in pure stands, as an avenue tree and also intercropped with banana, coffee and cocoa. The timber is not resistant to fungi or termites so rots quickly. Hornbills and chimpanzees eat the fruit and disperse the seed.



Young tree

Northern India, Burma

Common names: **English:** Mango **Luganda:** Muyembe **Lusoga:** Muyembe **Rukiga:** Muyembe **Runyankore:** Muyembe **Runyarwanda:** Muyembe **Runyoro:** Muyembe **Rutoro:** Muyembe.

Ecology: One of the most important tropical fruit trees brought very early to East Africa. In Uganda, it is widely cultivated in Northern and North Eastern Regions. It does not tolerate flooding and prefers sandy-loamy soil which is well drained, but it can do quite well in dry areas. Roots penetrate deeply, so rocky subsoil should be avoided. The extensive shallow roots collect water and nutrients in upper soil levels. Does well from 700 to 1,800 m. Firewood, charcoal, food (fruit), bee forage, ornamental, shade, windbreak, soil conservation, gum.

Description: A densely leafy evergreen tree with a trunk soon branching to a rounded crown, usually 10-15 m. **BARK:** dark brown, cracking with age. **LEAVES:** dark green, crowded at the ends of branches, to 30 cm long, smelling of turpentine when crushed. Young leaves soft, **copper-coloured** and **hanging limply**. **FLOWERS:** numerous and small in **pink-brown pyramidal heads**. Pollination by flies and other insects. **FRUIT:** **fleshy, 8-15 cm, the skin green-red-yellow**, the flattened "stone" is fibrous and woody around the large seed.

Propagation: Seedlings (sow seed in pots), direct sowing at site, grafting.

Seed: Germination rate 60-90%. No. of seeds per kg: +50.

treatment: not necessary, but nicking the hard seed coat helps germination,
storage: seed can be stored for only one month at room temperature. For best results, fresh seed should be used.

Management: Fast growing. Lopping, grafting. For quicker growth and early production of fruits, grafted material should be used.

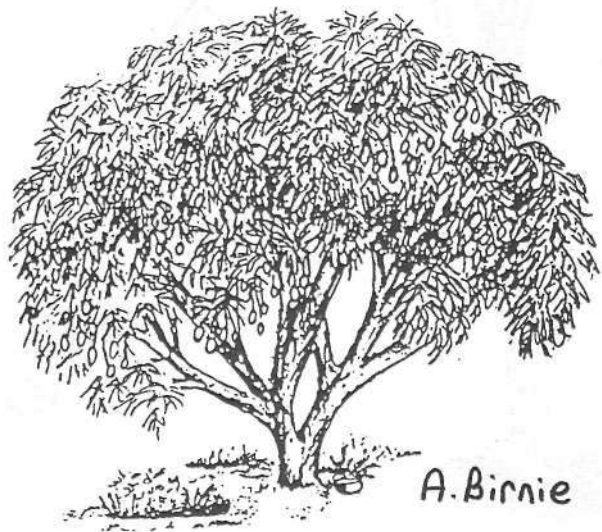
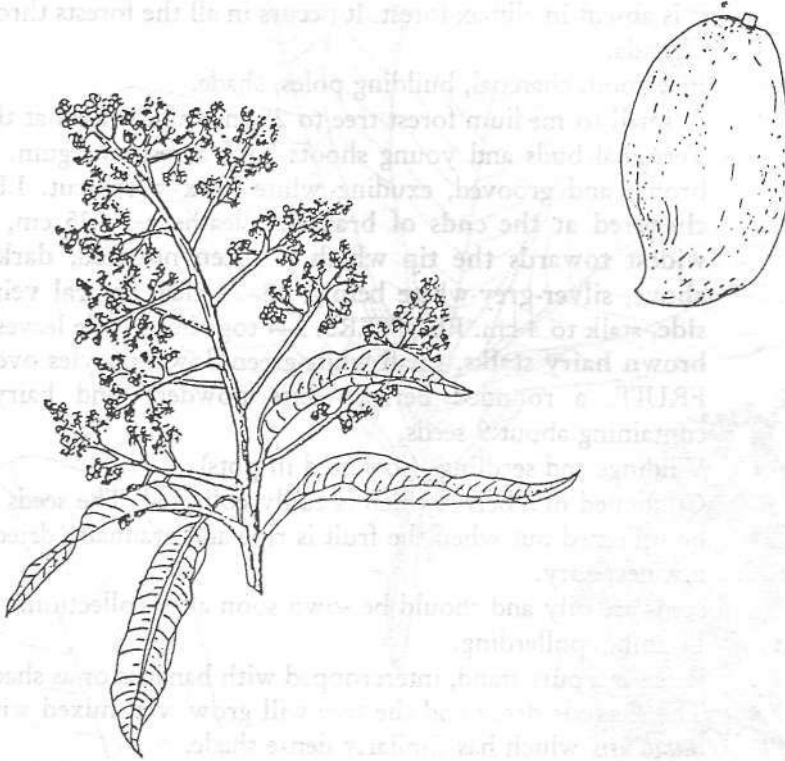
Remarks: Good varieties have fruits with a good flavour and little fibre. Relatively few flowers are pollinated, but even so up to 1,000 fruit develop on a mature tree. Each one has a large seed surrounded by golden juicy flesh, rich in vitamins A and C. Mango is an effective

vs-. firebreak.

195

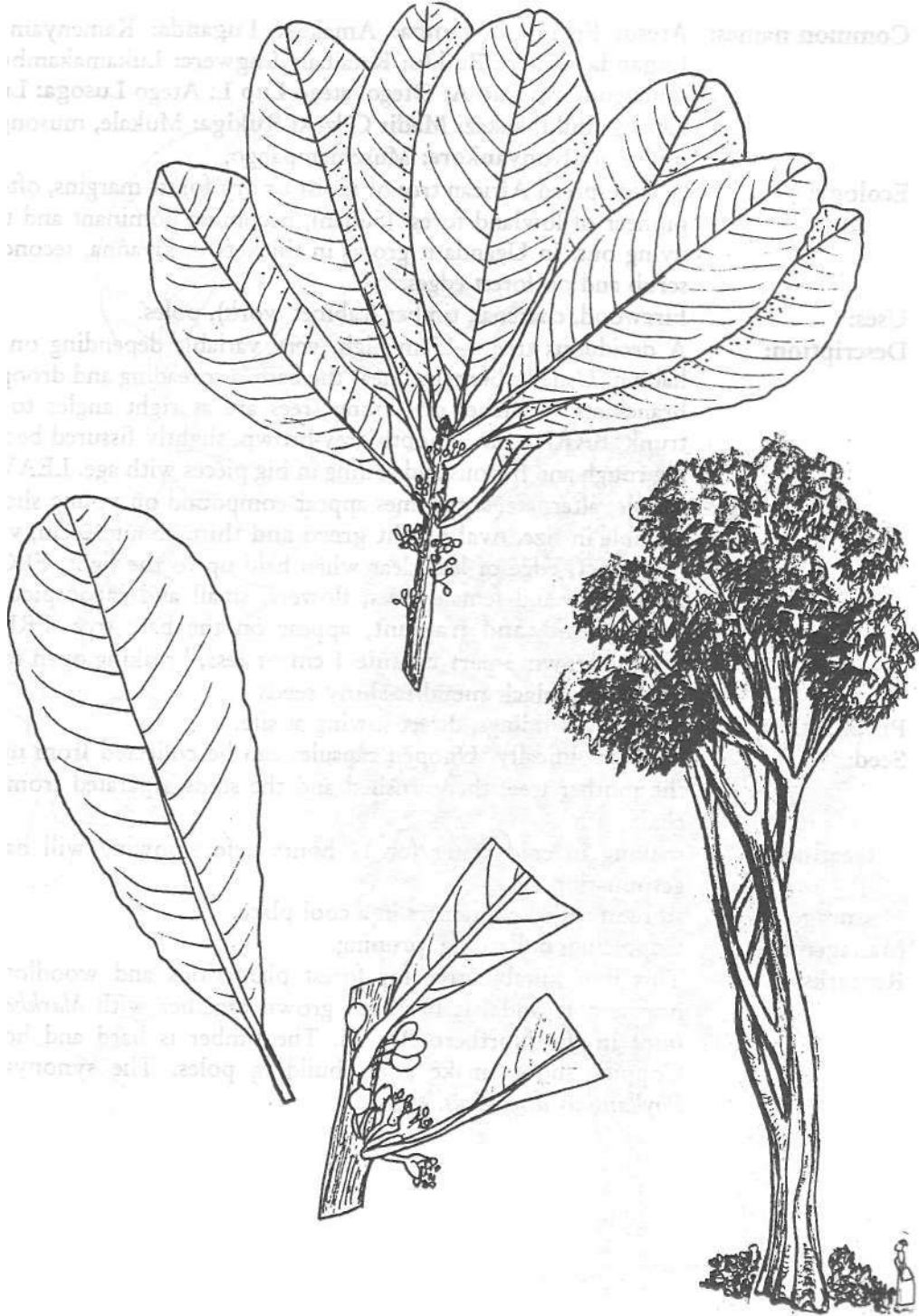
Mangifera indica

Anacardiaceae



Indigenous

- Ecology:** A tree of Central Africa extending east to Tanzania in lowland rain forest and riverine forest. A tree of mixed tropical rain forest, it is absent in climax forest. It occurs in all the forests throughout Uganda.
- Uses:** Firewood, charcoal, building poles, shade.
- Description:** A small to medium forest tree to 25 m, trunk fluted at the **base**. Terminal buds and young shoots have a resinous gum. **BARK:** brown and grooved, exuding white latex when cut. **LEAVES:** **clustered at the ends of branches**, leathery to 25 cm, usually **widest towards the tip which is often notched, dark green above, silver-grey-white below, 18-22 clear lateral veins each side**, stalk to 4 cm. **FLOWERS:** 2-4 together beside leaves, **dense brown hairy stalks**, small white-green flowers, styles over 1 cm. **FRUIT:** a rounded berry, white powdery and hairy, flesh containing about 9 seeds.
- Propagation:** Wildings and seedlings (sow seed in pots).
- Seed:** Contained in a berry which is easily collected. The seeds have to be squeezed out when the fruit is ripe and gradually dried.
- treatment:** not necessary.
- storage:** seeds are oily and should be sown soon after collection.
- Management:** Lopping, pollarding.
- Remarks:** Raise as a pure stand, intercropped with bananas or as shade trees. The shade is dense and the tree will grow well mixed with *Ficus natalensis* which has similarly dense shade.



Indigenous

Common names: **Ateso:** Erionoi **Kwamba:** Amakeke **Luganda:** Kamenyambazi **Luganda, dialect Buddu:** Kataibale **Lugwere:** Lukamakambugo, mutaigumbwa **Luo A:** Otego, atego **Luo L:** Atego **Lusoga:** Luka, kattinganfulu, kakazi **Madi:** Odzeki **Rukiga:** Mukale, musongati, muhahara **Runyankore:** Muremampango.

Ecology: A widespread African tree of moist or dry forest margins, often a pioneer of lowland forest (Sudan), becoming dominant and then dying out. In Uganda it grows in thickets in savanna, secondary scrub and on forest edges.

Uses: Firewood, charcoal, timber (cabinet work), poles.

Description: A deciduous tree 4-25 m high, very variable depending on the habitat. Usually branched near the base, a spreading and drooping branchlets. Branches on young trees are at right angles to the trunk. **BARK:** thin, smooth grey-brown, slightly fissured becoming rough and fibrous and scaling in big pieces with age. **LEAVES:** simple, alternate, sometimes appear compound on young shoots, variable in size, **oval bright green and thin**, about 10 cm, **veins indistinct**, edge of leaf clear when held up to the light. **FLOWERS:** male and female trees, flowers, small and inconspicuous, **green-yellow and fragrant**, appear on the bare tree. **FRUIT:** **yellow-brown 3-part capsule 1 cm or less**, breaking open to set free **3 blue-black metallic-shiny seeds**.

Propagation: Seedlings, wildings, direct sowing at site.

Seed: Seeds prolifically. Unopen capsules can be collected from under the mother tree, then crushed and the seeds separated from the chaff.

treatment: soaking in cold water for 12 hours before sowing will hasten germination.

storage: store in sealed containers in a cool place.

Management: Coppicing, pollarding, pruning.

Remarks: This is a suitable tree for forest plantations and woodlots in northern Uganda. It has been grown together with *Markhamia lutea* in the Northern Region. The timber is hard and heavy. Coppice shoots make good building poles. The synonym is *Phyllanthus discoideus*.



Indigenous

Common names: **Ateso:** Emiti **English:** Markhamia **Kwamba:** Mukana, ndoro
Luganda: Nsambya, lusambya **Lugbara:** Abonigo **Lugishu:** Lusola
Lugwe: Ilisiola **Lunyuli:** Solwa **Luo J:** Misola **Rukiga:** Musavu
Runyankore: Mushambya, rusambya **Sebei:** Swaya.

Ecology: A tree which is common in high-rainfall areas, forest edges and in river valleys to 2,000 m. It will stand acid heavy clay soil but not waterlogging. It prefers red loam and has deep roots. It occurs in most areas of Uganda.

Uses: Firewood, charcoal, timber, poles, posts, tool handles, medicine (leaves), bee forage, shade, mulch, soil conservation, ornamental.

Description: An upright evergreen tree with a narrow irregular crown, usually 10-15 m. **BARK:** light brown, finely cracked. **LEAVES:** compound pinnate with 7-11 leaflets, often in bunches, thin and wavy, each leaflet to 10 cm, wider at the tip. Often **round leafy outgrowths at the base**. **FLOWERS:** **bright yellow** clusters, each trumpet shaped, orange-red stripes in the throat, buds furry, splitting on one side. **FRUIT:** **long thin capsules, to 75 cm**, hang in spiralling clusters, split on the tree to release many flat winged seeds. Mature seed is yellow-white, prematurely collected seed turns black.

Propagation: Seedlings, wildings, cuttings (less common).

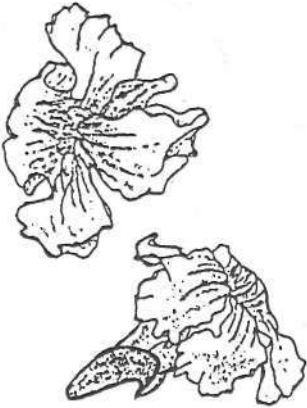
Seed: The tree is a prolific seeder throughout the year. High seed germination rate. No. of seeds per kg: about 75,000.

treatment: not necessary.

storage: seed does not store well. Sow fresh seed.

Management: Fast growing. Coppicing.

Remarks: A very useful general timber and can be an attractive avenue tree. The wood is fairly termite resistant. Young Markhamia trees are often attacked by shoot borers resulting in crooked stems.

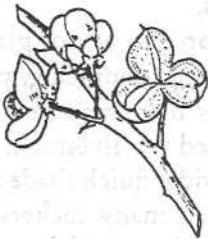
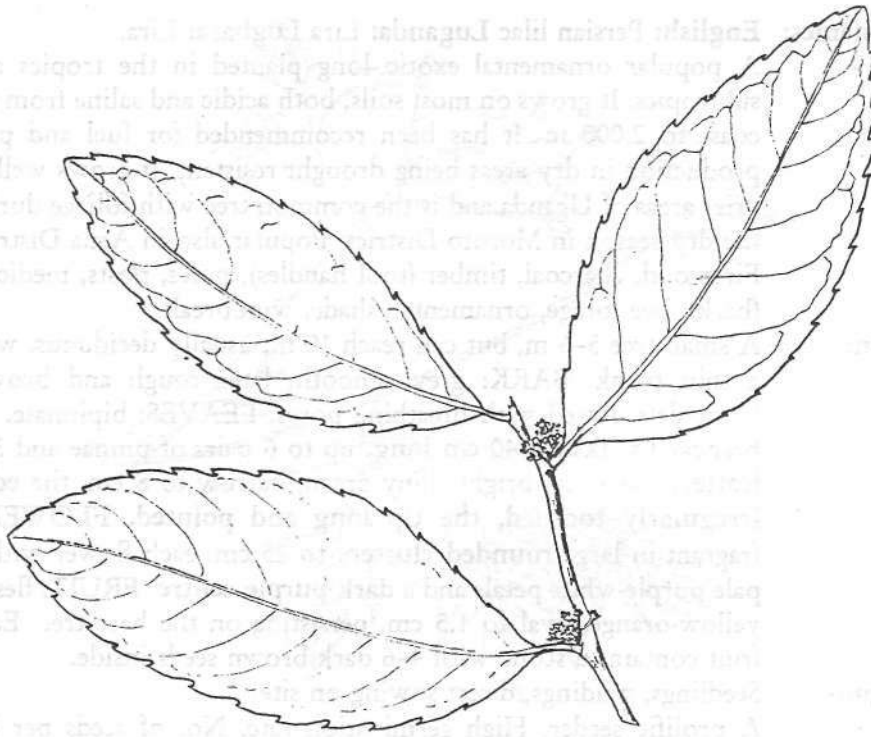


Maytenus undata

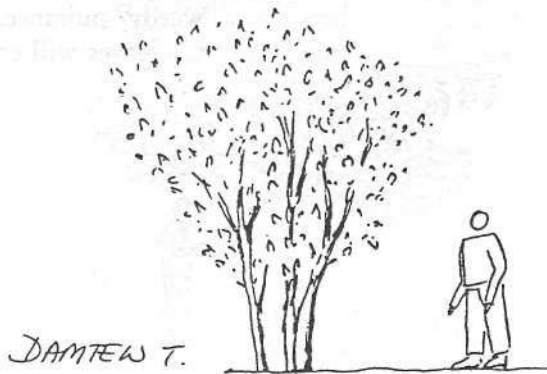
Celastraceae

Indigenous

- Ecology:** A shrubby tree widespread in Africa, very variable with different forms in different habitats from rain forest to woodland and bushland. In Uganda, it grows in secondary forests, thickets and at forest edges and is abundant in the Kibale, Maramagambo and Impenetrable (Bwindi) Forests.
- Uses:** Firewood, charcoal, timber (local construction), farm tools, medicine (roots), live fence, ornamental.
- Description:** Usually a **spineless shrub** 2-3 m, but may be a well-branched tree to 10 m. **BARK:** grey-brown, smooth, later finely grooved. The branches have **no hairs or spines**. **LEAVES:** thinly leathery and shiny, **oval to circular, 3-13 cm** long, the **edge toothed**, narrowing to a short stalk. Alternate, **rarely grouped together**. **FLOWERS:** tiny, white-cream-yellow, in small heads of 2-10 flowers, only 1 cm long. **FRUIT:** small red capsules about 5 mm, in 3 parts. Shiny orange-brown seeds **half covered by a thin aril**, orange and soft.
- Propagation:** Seedlings, wildings.
- Seed:** Contained in a capsule. Seeds can be collected from the ground, not necessary.
- treatment:**
- storage:** store in sealed containers in a cool place.
- Management:** Coppicing, pollarding.
- Remarks:** The wood is red and heavy. The trees grow easily from seed. Raise as a pure stand.



seed with aril



Western Asia, Himalayas

Common names: **English:** Persian lilac **Luganda:** Lira **Lugbara:** Lira.

Ecology: A popular ornamental exotic long planted in the tropics and subtropics. It grows on most soils, both acidic and saline from the coast to 2,000 m. It has been recommended for fuel and pole production in dry areas being drought resistant. It grows well in drier areas of Uganda and is the common tree with foliage during the dry season in Moroto District. Popular also in Arua District.

Uses: Firewood, charcoal, timber (tool handles), poles, posts, medicine (bark), bee forage, ornamental, shade, windbreak.

Description: A small tree 5-6 m, but can reach 10 m, usually deciduous, with a thin trunk. **BARK:** grey, smooth, later rough and brown, branchlets dotted with breathing pores. **LEAVES:** bipinnate, on branched stalks, **to 40 cm long**, up to 6 pairs of pinnae and **3-9 leaflets**, each one bright shiny green, narrow to 8 cm, the **edge irregularly toothed, the tip long and pointed**. **FLOWERS:** fragrant in large **rounded clusters** to 25 cm, each flower with 5 pale purple-white petals and a **dark purple centre**. **FRUIT:** fleshy yellow-orange, oval to 1.5 cm, persisting on the bare tree. Each fruit contains a **stone** with 4-6 dark brown seeds inside.

Propagation: Seedlings, wildings, direct sowing on site.

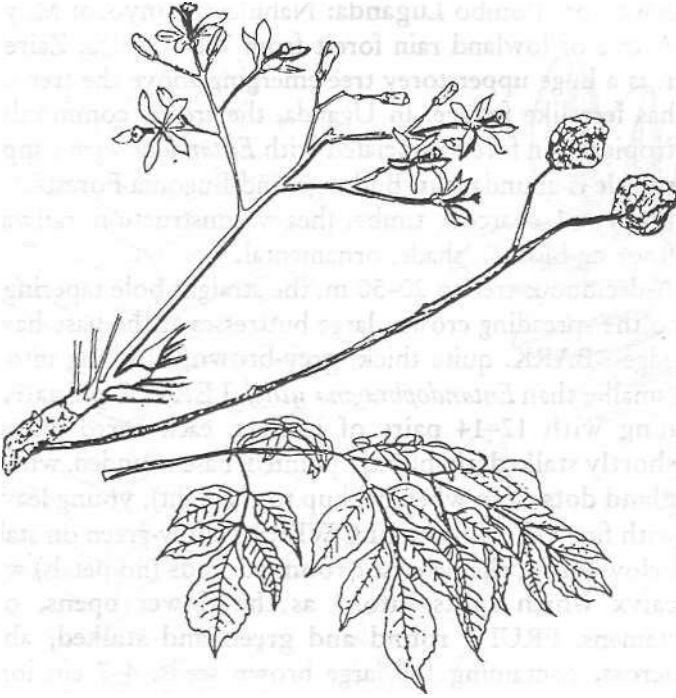
Seed: A prolific seeder. High germination rate. No. of seeds per kg: 500-3,000. Sow in a seed bed then prick out seedling when large enough.

treatment: soak seed in cold water for 24 hours,

storage: seed can be kept for some time if stored in a cool place.

Management: Fairly fast growing; pollarding, lopping, coppicing, pruning.

Remarks: The berries are extremely poisonous to human beings, livestock and poultry. Leaves are not browsed by livestock. The tree is moderately termite resistant and provides quick shade and building poles. In good conditions, it grows so many suckers that it may become a weedy nuisance. It has insecticidal properties: an infusion of the leaves will control insect attack on vegetables.



Indigenous

Common names: **Kwamba:** Bombo **Luganda:** Nabulere **Runyoro:** Muyati.

Ecology: A tree of lowland rain forest from West Africa, Zaire to Sudan. It is a huge upperstorey tree emerging above the tree canopy and has fern-like foliage. In Uganda, the tree is commonly found in tropical rain forest associated with *Entandophragma* spp. and *Ficus* spp. It is abundant in Budongo and Bugoma Forests.

Uses: Firewood, charcoal, timber (heavy construction, railway sleepers, flooring blocks), shade, ornamental.

Description: A deciduous tree to 20-50 m, the straight bole tapering very little to the spreading crown; large buttresses at the base have rounded edges. **BARK:** quite thick, **grey-brown**, cracking into rectangles (smaller than *Entandophragma utile*). **LEAVES:** **pinnate, 25-45 cm long with 12-14 pairs of leaflets**, each narrow oval 3-8 cm, **shortly stalked**, tip bluntly pointed, base rounded, with numerous **gland dots** (seen when held up to the light), young leaves covered with fine yellow hairs. **FLOWERS:** yellow-green on stalks 1-4 cm below leaves, characteristic **rounded buds** (no petals) with a **large calyx which splits into 3 as the flower opens**, only 12-18 stamens. **FRUIT:** **round and green and stalked, about 5 cm across**, containing 1-3 large brown seeds, 4-7 cm long, in soft pulp.

Propagation: Seedlings (sow seed in pots), wildings.

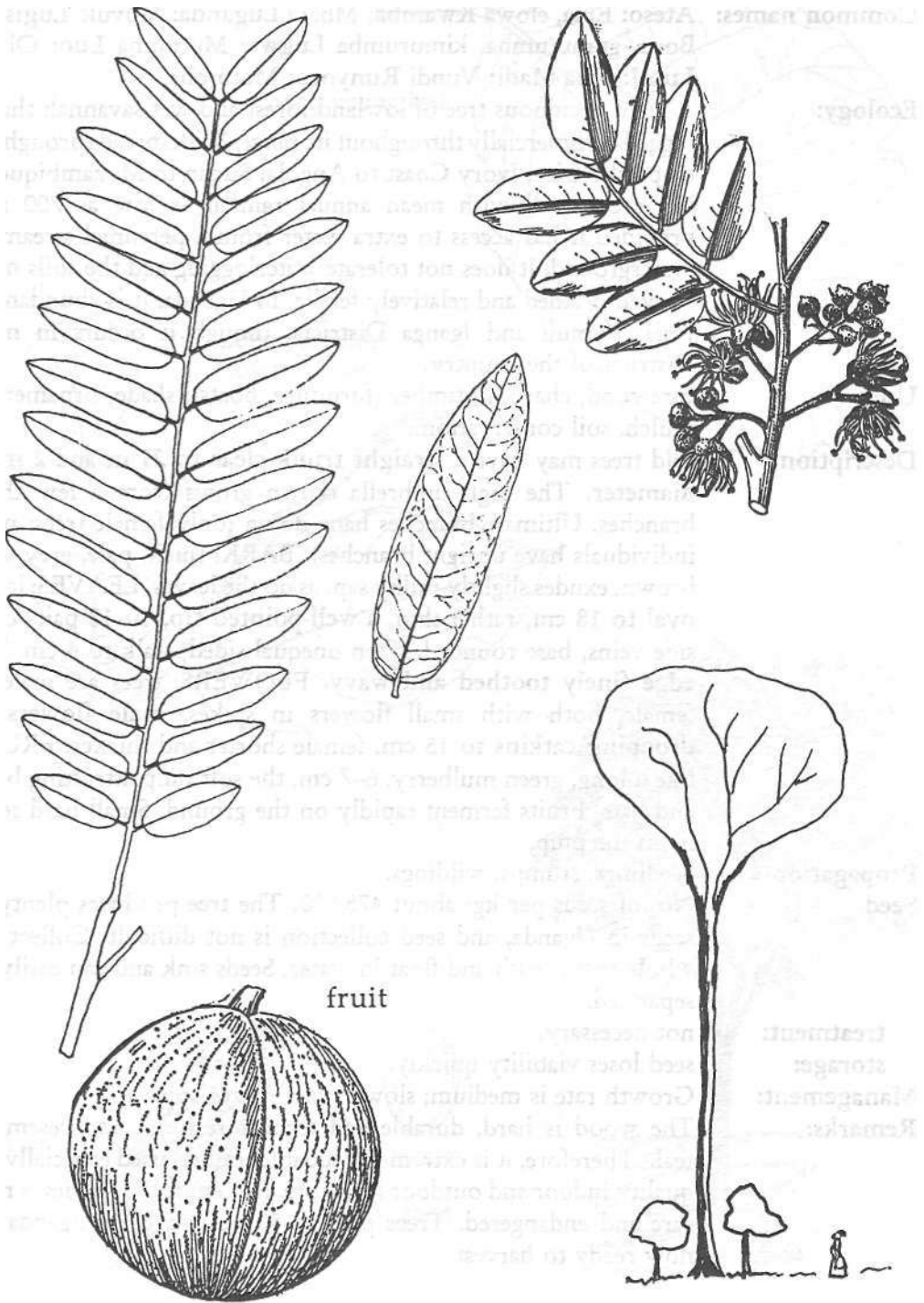
Seed: Collect ripe fruit, squeeze out the seed and dry gradually. Susceptible to insect attack.

treatment:

storage: mix with ash and store in a cool and dry place.

Management: Slow growing; lopping, pollarding.

Remarks: A magnificent tree. Suitable for intercropping with coffee, cocoa and banana or for planting with mahoganies or *Maesopsis eminii* in a mixed stand. Also good as a shade tree. The wood is a handsome pale colour and is durable both in the ground and in water.



Milicia excelsa (Chlorophora excelsa)

Moraceae

Indigenous

Trade names: Iroko, Mvule, Muvule.

Common names: **Ateso:** Elua, elowa **Kwamba:** Mbara **Luganda:** Muvule **Lugishu:** Boru, gumutumba, kimurumba **Lugwe:** Mutumba **Luo:** Olwaa **Luo J:** Olia **Madi:** Vundi **Runyoro:** Mutumba.

Ecology: A giant deciduous tree of lowland forest and wet savannah that is logged commercially throughout its range. Widespread throughout tropical Africa, Ivory Coast to Angola, Sudan to Mozambique. It can grow well with mean annual rainfall as low as 700 mm provided it has access to extra water from a perennial stream or underground. It does not tolerate waterlogging and the soils must be well drained and relatively fertile. In Uganda, it is abundant in Jinja, Kamuli and Iganga Districts, though it occurs in most Districts of the country.

Uses: Firewood, charcoal, timber (furniture, boats), shade, ornamental, mulch, soil conservation..

Description: Old trees may have a **straight trunk clear to 21 m and 2 m in diameter**. The high umbrella crown grows from a few thick branches. Ultimate branches hang down (only female trees; male individuals have upright branches). **BARK:** thick, pale, grey then brown, exudes slightly milky sap, as do the leaves. **LEAVES:** large, **oval to 18 cm**, rather thin, **a well-pointed tip**, 10-18 pairs clear side veins, base rounded, often unequal sided, stalk to 4 cm, **leaf edge finely toothed and wavy**. **FLOWERS:** trees are male or female, both with small flowers in spikes, **male flowers in drooping catkins to 15 cm**, female shorter and thicker. **FRUIT:** like a long, green mulberry, 6-7 cm, the soft pulp attracting birds and bats. Fruits ferment rapidly on the ground. Small hard seeds lie in the pulp.

Propagation: Seedlings, stumps, wildings.

Seed: No. of seeds per kg: about 475,000. The tree produces plenty of seeds in Uganda, and seed collection is not difficult. Collect the whole fruit, crush and float in water. Seeds sink and can easily be separated.

treatment: not necessary.

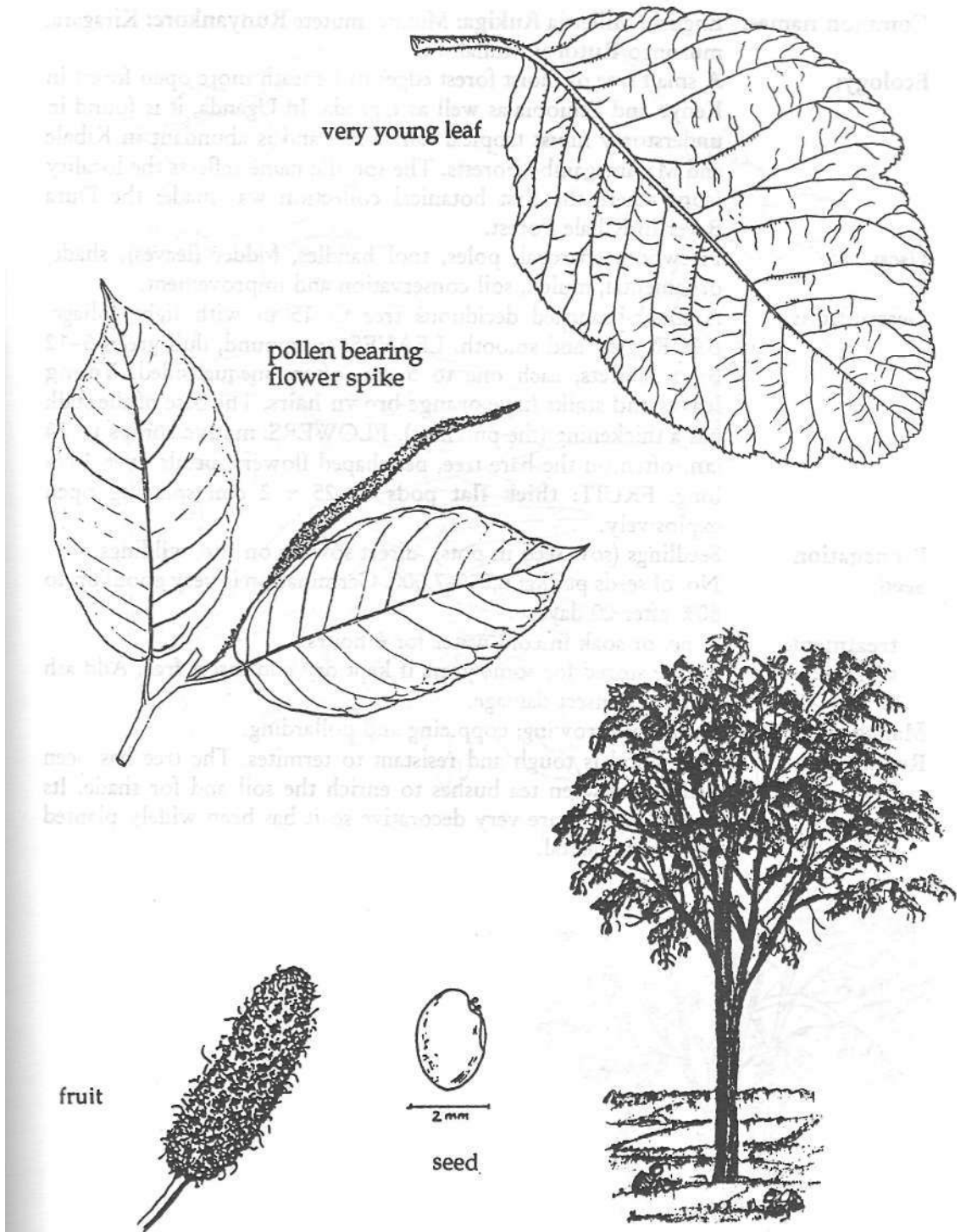
storage: seed loses viability quickly.

Management: Growth rate is medium; slower than *Khaya* spp.

Remarks: The wood is hard, durable and termite resistant and resembles teak. Therefore, it is extremely valuable timber, used especially for quality indoor and outdoor furniture. In Kenya, the species is now rare and endangered. Trees planted 50 years ago in Uganda are now ready to harvest.

Milicia excelsa (Chlorophora excelsa)

Moraceae



Indigenous

Common names: English: Milletia **Rukiga:** Mutate, mutete **Runyankore:** Kiragara, murongo **Rutoro:** Muhakwa.

Ecology: A small tree of moist forest edges or beneath more open forest in Kenya and Ethiopia as well as Uganda. In Uganda, it is found in understorey moist tropical rain forest and is abundant in Kibale and Maramagambo Forests. The specific name reflects the locality from where the first botanical collection was made: the Dura River in Kibale Forest.

Uses: Firewood, charcoal, poles, tool handles, fodder (leaves), shade, ornamental, mulch, soil conservation and improvement.

Description: A much-branched deciduous tree to 15 m with light foliage. **BARK:** grey and smooth. **LEAVES:** compound, dull green **5-12 pairs leaflets**, each one to 5 cm, often unequal-sided. **Young leaves and stalks have orange-brown hairs.** The base of the stalk has a thickening (the pulvinus). **FLOWERS:** **mauve sprays to 20 cm**, often on the bare tree, pea-shaped flowers, petals over 2 cm long. **FRUIT:** **thick flat pods** to 25 x 2 cm, splitting open explosively.

Propagation Seedlings (sow seed in pots), direct sowing on site, wildings.

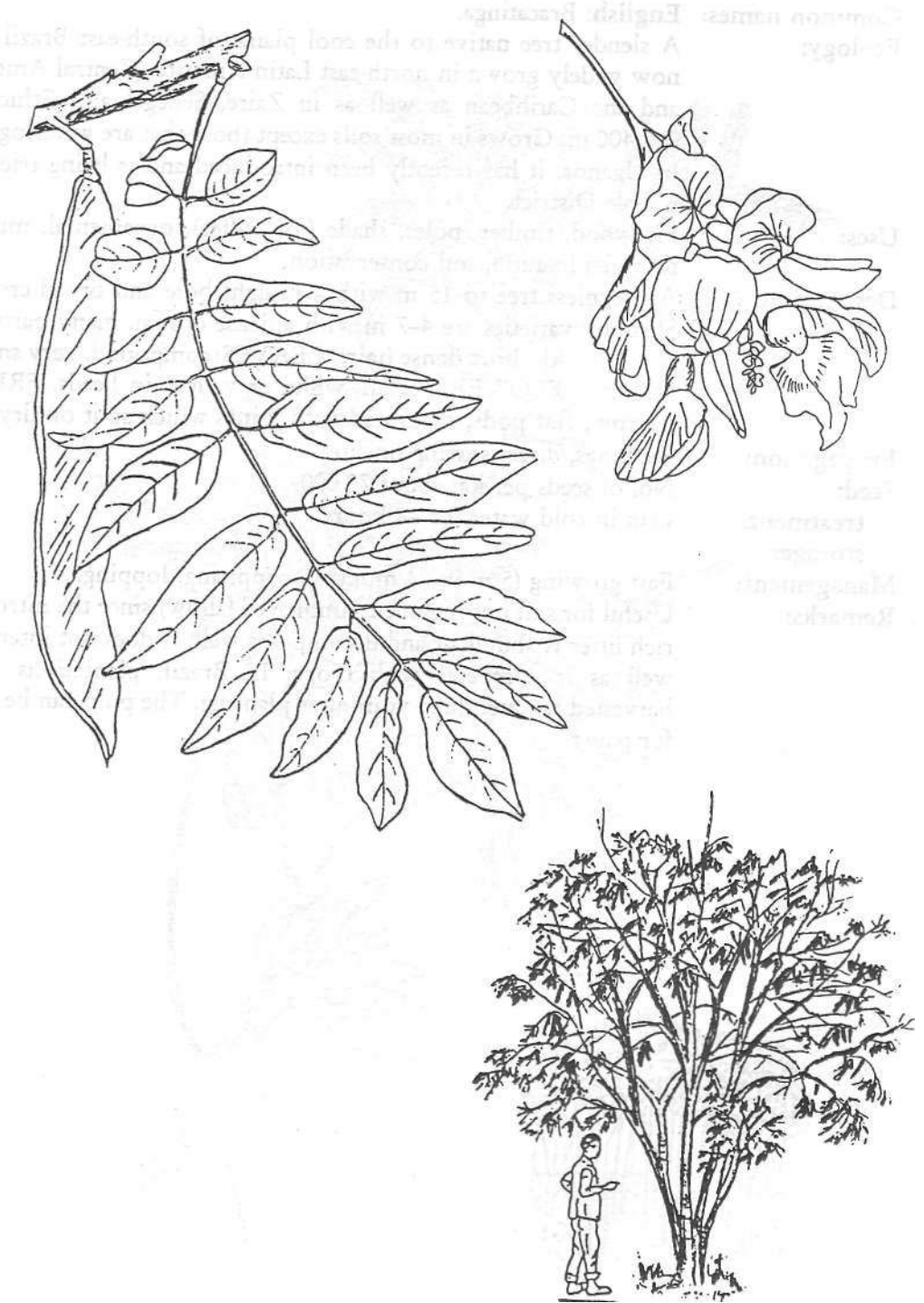
Seed: No. of seeds per kg: 6,000-7,000. Germination is very good; up to 80% after 20 days.

treatment: none, or soak in cold water for 6 hours.

storage: can be stored for some years if kept dry and insect free. Add ash to reduce insect damage.

Management: Fairly fast growing; coppicing and pollarding.

Remarks: The wood is tough and resistant to termites. The tree has been planted between tea bushes to enrich the soil and for shade. Its purple flowers are very decorative so it has been widely planted as an ornamental.



Mimosa scabrella (M. bracatinga)

Mimosaceae

S.E. Brazil

Common names: **English:** Bracatinga.

Ecology: A slender tree native to the cool plains of south-east Brazil but now widely grown in north-east Latin America, Central America and the Caribbean as well as in Zaire, Senegal and Ethiopia, 0-2,400 m. Grows in most soils except those that are waterlogged. In Uganda, it has recently been introduced and is being tried in Kabale District.

Uses: Firewood, timber, poles, shade (for coffee), ornamental, mulch, nitrogen fixation, soil conservation.

Description: A thornless tree to 15 m with a straight bole and broad crown. Shrubby varieties are 4-7 m with a dense crown, many parts are covered with **short dense hairs**. LEAVES: compound, **very small, feathery**. FLOWERS: small, white or yellow in heads. FRUIT: **narrow, flat pods, separated into joints** which split on drying.

Propagation: Seedlings, direct sowing on site.

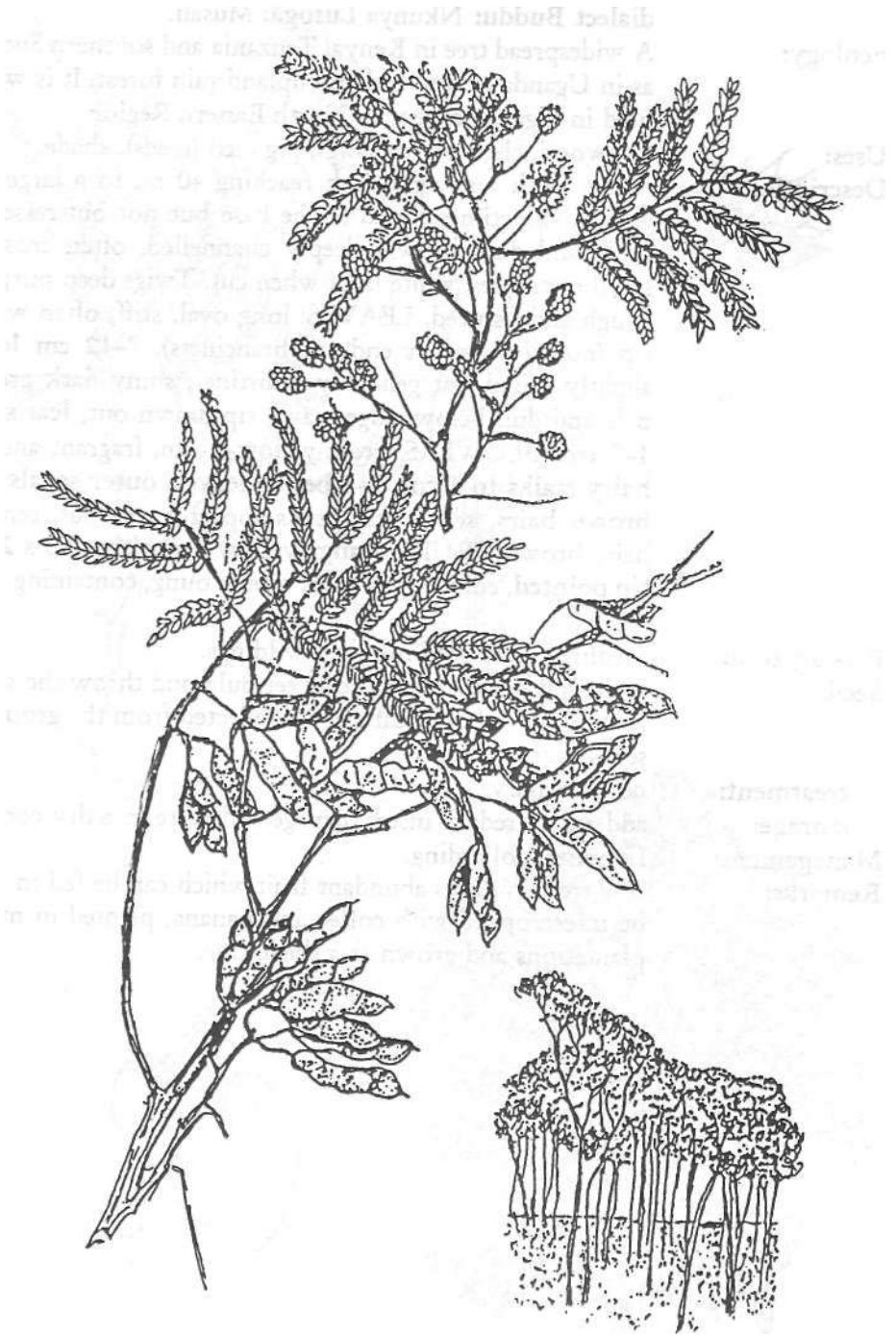
Seed: No. of seeds per kg: about 70,000.

treatment: soak in cold water for 48 hours.

storage:

Management: Fast growing (5 m in 14 months); coppicing, lopping.

Remarks: Useful for soil improvement (improved fallow) since the nitrogen-rich litter is abundant and decomposes well. It does not intercrop well as it competes with crops. In Brazil, plantations were harvested for fuel three years after planting. The pulp can be used for paper.



Mimusops bagshawei

Sapotaceae

Indigenous

Common names: **Kwamba:** Mbande **Luganda:** Musandasanda, musali **Luganda, dialect Buddu:** Nkunya **Lusoga:** Musali.

Ecology: A widespread tree in Kenya, Tanzania and southern Sudan as well as in Uganda in lowland and upland rain forest. It is well distributed in Uganda except in North Eastern Region.

Uses: Firewood, charcoal, carvings, pig feed (seeds), shade.

Description: A tree with a straight high reaching 40 m, to a large spreading crown, sometimes fluted at the base but not buttressed. **BARK:** thick and dark brown, deeply channelled, often cross cut into small rectangles, white latex when cut. Twigs deep purple-brown, rough and fissured. **LEAVES:** long oval, stiff, often wider at the tip (not clustered at ends of branchlets), **7-12 cm long**, veins slightly raised but generally indistinct, shiny dark green above, pale and dull below, edge wavy, tip drawn out, **leaf stalk hairy 1-2 cm**. **FLOWERS:** green-yellow-cream, fragrant and small on **hairy stalks to 1 cm, 2-4 beside leaves, outer sepals with pale brown hairs**, sepals and petals appear numerous, central ovary hairy brown. **FRUIT: orange-yellow berry about 3 x 2 cm, oval, tip pointed**, edible, grey hairs when young, containing 1-3 brown seeds.

Propagation: Seedlings (sow seed in pots), wildings.

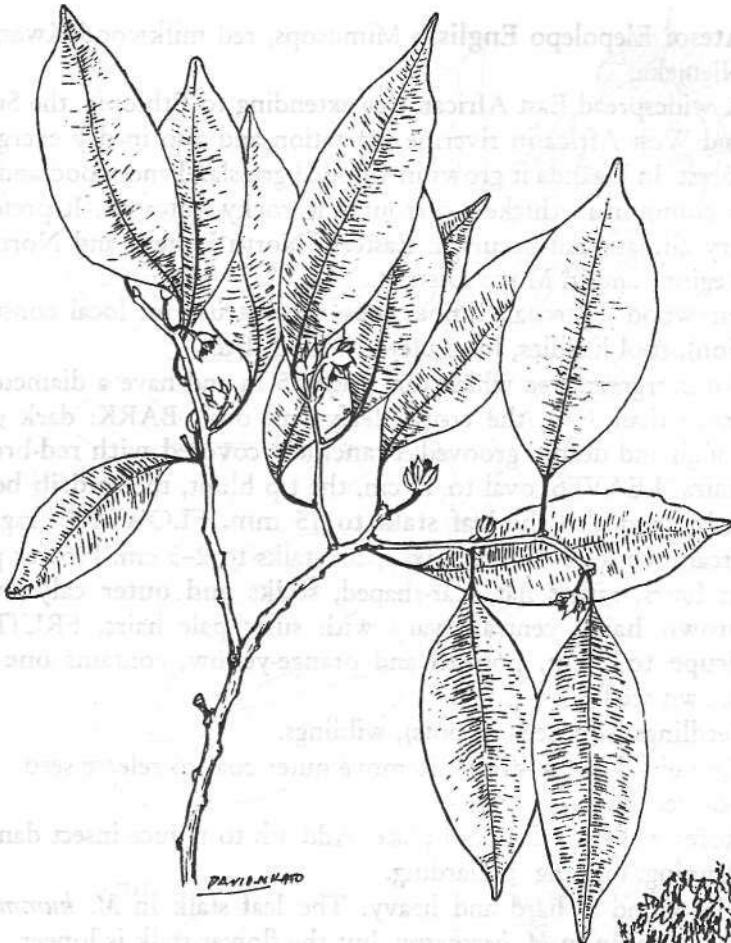
Seed: Birds and monkeys eat the sweet pulp and throw the seeds to the ground. Or whole fruit can be collected from the ground and the seeds squeezed out.

treatment: not necessary.

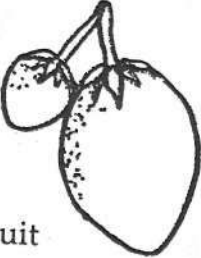
storage: add ash to reduce insect damage and store in a dry cool place.

Management: Lopping, pollarding.

Remarks: The tree produces abundant fruit which can be fed to pigs. It can be intercropped with coffee and banana, planted in mixed forest plantations and grown as a shade tree.



flower



fruit



Indigenous

Common names: **Ateso:** Elepolepo **English:** Mimusops, red milkwood **Kwamba:** Njenjeka.

Ecology: A widespread East African tree extending to Ethiopia, the Sudan and West Africa in riverine vegetation and also in dry evergreen forest. In Uganda it grows in wooded grassland and woodland and is common in thickets surrounding rocky outcrops. It prefers a dry climate and occurs in Eastern, North Eastern and Northern Regions and in Moyo District.

Uses: Firewood, charcoal, timber (heavy construction, local construction), tool handles, local utensils, food (fruit).

Description: An evergreen tree which can reach 35 m and have a diameter of more than 1 m, the crown leafy and oval. **BARK:** dark grey, rough and deeply grooved, **branchlets covered with red-brown hairs.** **LEAVES:** oval to 10 cm, the tip blunt, the **midrib below hairy** and also the **leaf stalk to 15 mm.** **FLOWERS:** fragrant, cream-white, 1-4 in leaf axils, on stalks to 2-5 cm. Flower parts in fours, rather flat, star-shaped, **stalks and outer calyx with brown hairs,** central ovary with silky pale hairs. **FRUIT:** A **drupe to 2 cm,** pointed and orange-yellow, contains **one** red-brown seed.

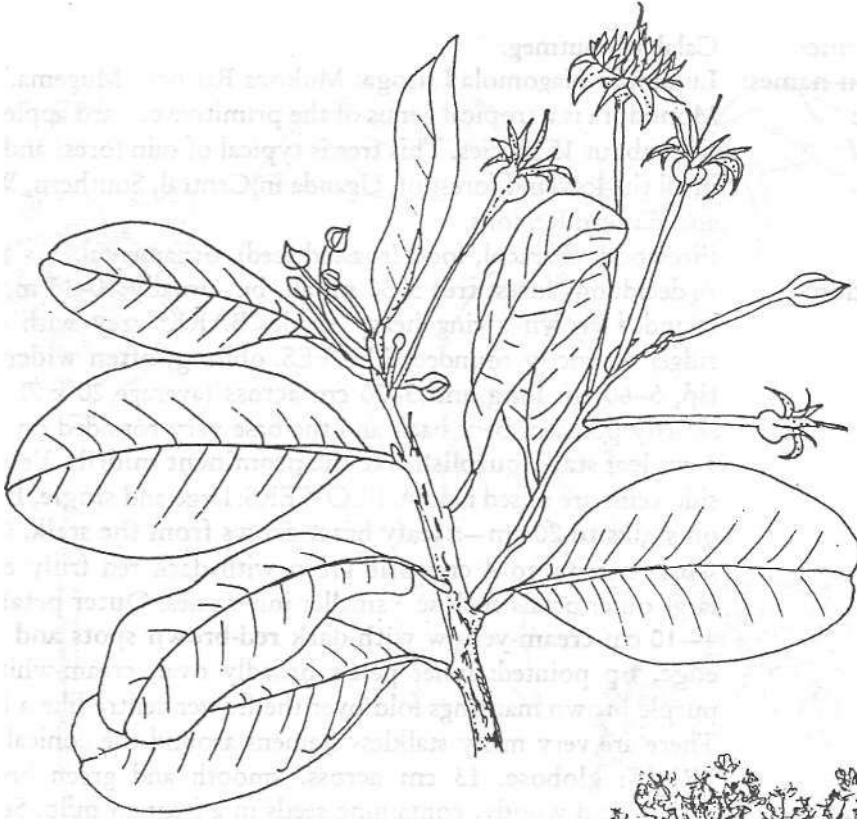
Propagation: Seedlings (sow seed in pots), wildings.

Seed: Contained in the drupe. Remove outer coat to release seed, **treatment:** not necessary.

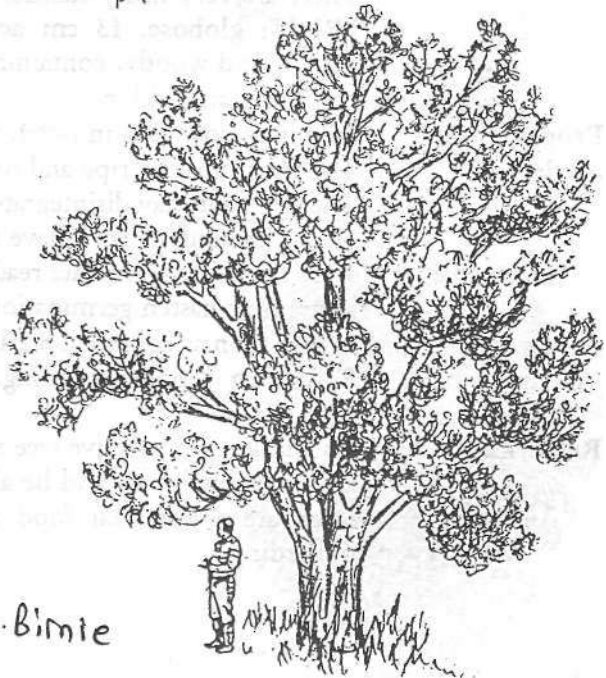
storage: stores well in a dry cool place. Add ash to reduce insect damage.

Management: Pruning, lopping, pollarding.

Remarks: The wood is hard and heavy. The leaf stalk in *M. kummel* is shorter than in *M. bagshawei*, but the flower stalk is longer.



fruit



A. Bimie

Monodora myristica

Annonaceae

Indigenous

Trade name: Calabash nutmeg.

Common names: **Luganda:** Nagomola **Lusoga:** Mukoza **Rutoro:** Mugema.

Ecology: Monodora is a tropical genus of the primitive custard apple family with about 15 species. This tree is typical of rain forest and occurs in all the lowland forest of Uganda in Central, Southern, Western and Eastern Regions.

Uses: Firewood, charcoal, food (roasted seed), ornamental.

Description: A deciduous forest tree 5-30 m tall, but usually 10-15 m, with a rounded crown giving heavy shade. **BARK:** grey with vertical ridges distinctly rounded. **LEAVES:** **oblong, often wider at the tip, 5-60 cm long and 3-20 cm across** (average 20 x 7), the tip shortly pointed, bent back and the base very rounded on a **thick 1 cm leaf stalk, purplish like the prominent midrib**. Very many side veins are raised below. **FLOWERS:** large and **single, hanging on stalks to 20 cm—a leafy bract grows from the stalk**. Outer 3 sepals narrow to 4 cm, pale green with dark red frilly edges, 3 large outer petals enclose 3 smaller inner ones. **Outer petals oval, 4–10 cm cream-yellow with dark red-brown spots and a frilly edge**, tip pointed; inner petals broadly oval, cream-white, with purple-brown markings fold over the flower centre like a lantern. There are very many stalkless stamens around the conical ovary. **FRUIT:** **globose, 13 cm across**, smooth and green becoming **brown and woody**, containing seeds in a fragrant pulp. Seeds 2.5 cm, shiny and edible.

Propagation: Seedlings (sow seed in pots), wildings.

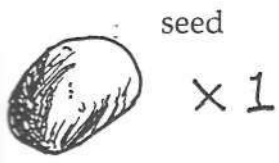
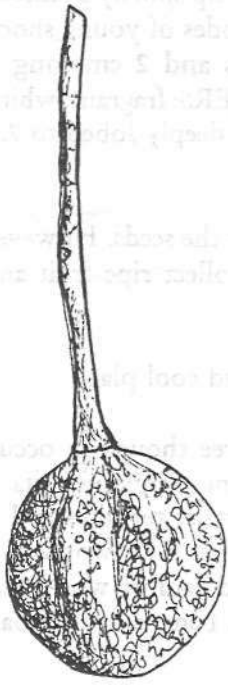
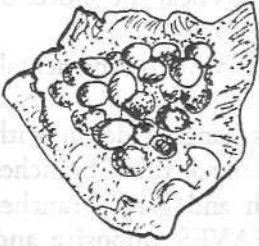
Seed: The fruit must be ripe and dry before the seeds can be extracted. The dry fruit may disintegrate and scatter the seeds when they fall on the ground, or they have to be cracked open, seeds normally germinate readily but soaking in cold water for 12 hours may hasten germination.

treatment: sow as soon as collected. Seeds are oily and lose viability if stored.

Management: Pollarding, lopping, pruning. Branches should be cut back from time to time.

Remarks: This is a very attractive tree when in flower and when planted as an ornamental it should be allowed plenty of space. The roasted seeds are a potential food and firewood can be obtained by pollarding.

fallen pieces
of fruit



Indigenous

Common names: **Kwamba:** Mukiringi **Luganda:** Mubajansayi **Lugwe:** Musinganjovu **Lusoga:** Mulyambwa.

Ecology: A small tree, sometimes shrubby, and light demanding. In Uganda it grows in secondary scrub, in thickets on termite mounds and at forest margins. Common in thickets and forests near the shores of Lake Victoria.

Uses: Firewood, charcoal, timber (furniture, cabinet work), ornamental, dye (roots).

Description: A small tree to 12 m high, the branchlets hanging down with many curves and bends; the bole often crooked, thick branches and a dense shady crown. **BARK:** smooth and grey, branches corky, sometimes purple, often 4-sided. **LEAVES:** **opposite and shiny, about 13 cm long to 18 cm) with 7-10 main side veins each side of the midrib all quite yellow**, tip shortly pointed, base wide to a 1 cm stalk. **Leafy stipules** at nodes of young shoots are large and rounded **about 1.5 cm across and 2 cm long** (soon falling). Hairs in vein axils below. **FLOWERS:** fragrant, white, 1-3 in leaf axils, about 2.5 cm long. **FRUIT:** deeply lobed to 2.0 cm, black when ripe, containing the seeds.

Propagation: Wildings, seedlings.

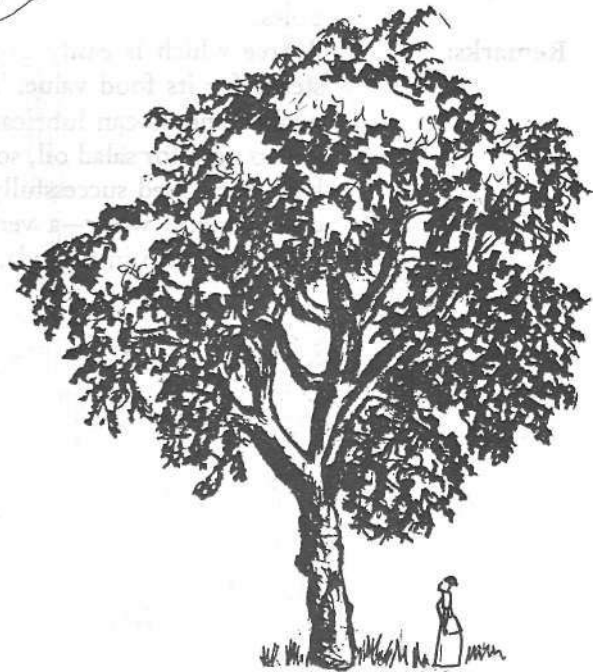
Seed: A composite fruit which opens to set free the seeds. However, the seeds are small therefore it is better to collect ripe fruit and put them on plastic sheeting to dry out.

treatment: not necessary.

storage: can be stored up to 2 months in a dry and cool place.

Management: Lopping, pollarding.

Remarks: Little attention has been paid to this tree though it occurs on farms. With development of management techniques, its status would improve. The timber is said to resist termites and damp conditions. The root yields a yellow dye. The wood is fairly attractive and is suitable for furniture and cabinet work. Plant as a pure stand or intercropped with coffee, banana and cocoa.



Moringa oleifera

Moringaceae

India, Arabia

Common names: **English:** Horse-radish tree.

Ecology: This species is commonly grown by Indian families in their back yards. It can still be found growing in dry areas around Butiaba pier.

Uses: Food (young leaves, young fruit), medicine, fodder (leaves, fruit), bee forage, soil conservation, shade, windbreak, live fence, boundary marker, fibres, spice (young roots), oil (seeds), water purification (seeds).

Description: A deciduous tree to 10 m, usually smaller, **pale feathery foliage**. **BARK:** grey, thick and corky, peeling in patches. **LEAVES:** pale green, **thrice compound**, the whole leaf 30-60 cm, leaflets **usually oval, tip rounded 1-2 cm long**. **FLOWERS:** **cream**, fading yellow, in long sprays, each flower with 5 petals, one erect and 4 bent back, sweet-scented, attracting insects. **FRUIT:** long capsules, to 45 cm, **bluntly triangular in section**, splitting when dry to release **9 dark brown 3-winged seeds** from the pith.

Propagation: Direct sowing on site, cuttings, seedlings.

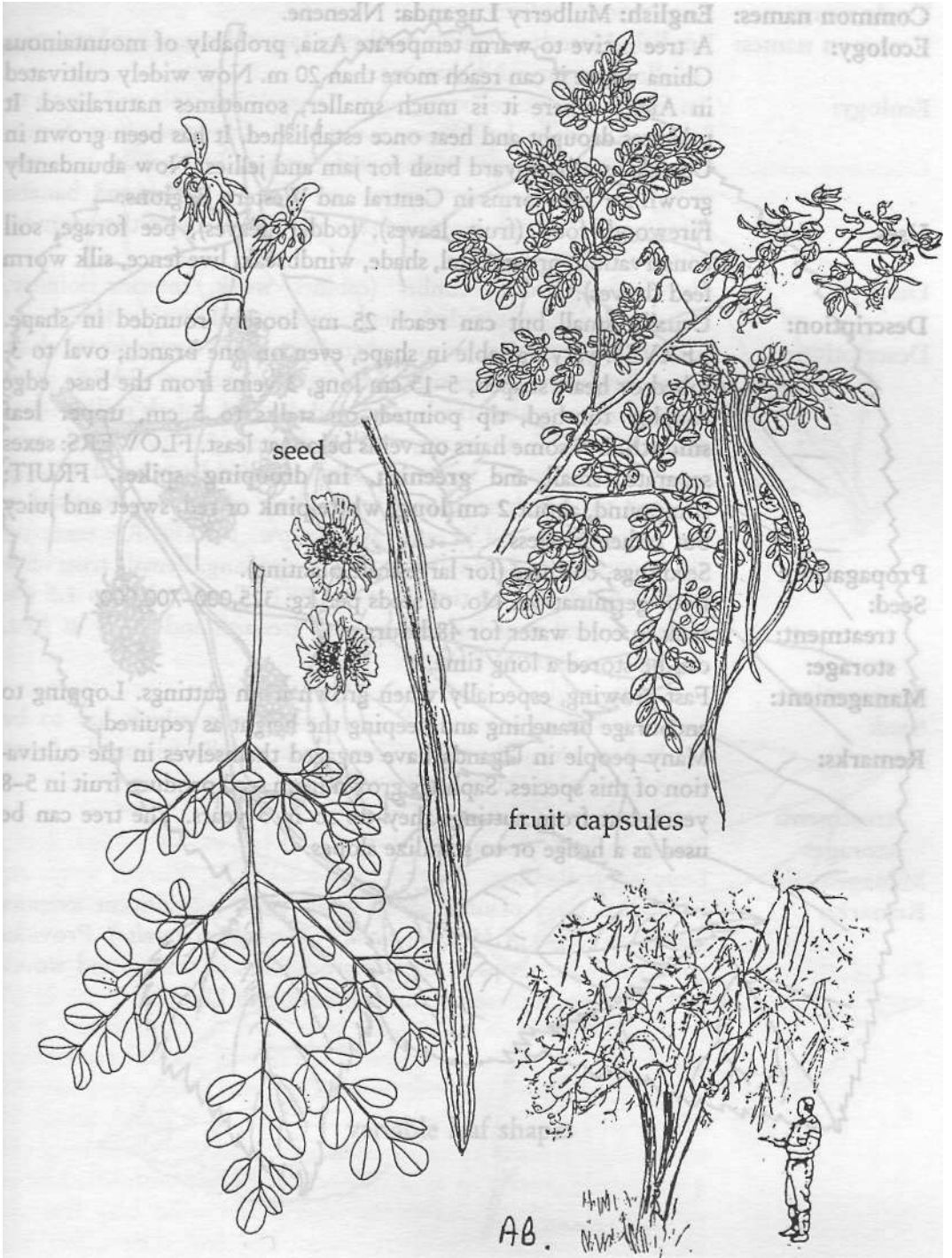
Seed: Germination rate 60-70%. No. of seeds per kg: 4,000-5,000.

treatment: not necessary.

storage: properly dried seed can be stored for a long time in sealed containers in a refrigerator.

Management: Fast growing; pollarding, coppicing, lopping. Grows easily from poles.

Remarks: A tree which is easily propagated and recommended for homesteads for its food value. The "Ben oil" from the seeds keeps its quality and so can lubricate precision machinery like watches. It is also used for salad oil, soap and cosmetics. The ground-up seeds have been used successfully in the Sudan, Burundi and Kenya to clear muddy water—a very valuable property. Could be given more attention in Uganda.



China

Common names: **English:** Mulberry **Luganda:** Nkenene.

Ecology: A tree native to warm temperate Asia, probably of mountainous China where it can reach more than 20 m. Now widely cultivated in Africa where it is much smaller, sometimes naturalized. It tolerates drought and heat once established. It has been grown in Uganda as a back-yard bush for jam and jellies. Now abundantly grown for silkworms in Central and Western Regions.

Uses: Firewood, food (fruit, leaves), fodder (leaves), bee forage, soil conservation, ornamental, shade, windbreak, live fence, silk worm feed (leaves).

Description: Usually small but can reach 25 m; loosely rounded in shape. LEAVES: very variable in shape, even on one branch; oval to 3-lobed or heart shaped, 5-15 cm long, 3 veins from the base, edge roughly toothed, tip pointed, on stalks to 5 cm, **upper leaf smooth**, but some hairs on veins below at least. FLOWERS: sexes separate, small and **greenish, in drooping spikes**. FRUIT: compound, about **2 cm long, white-pink** or red, sweet and juicy but rather tasteless.

Propagation: Seedlings, cuttings (for large-scale planting).

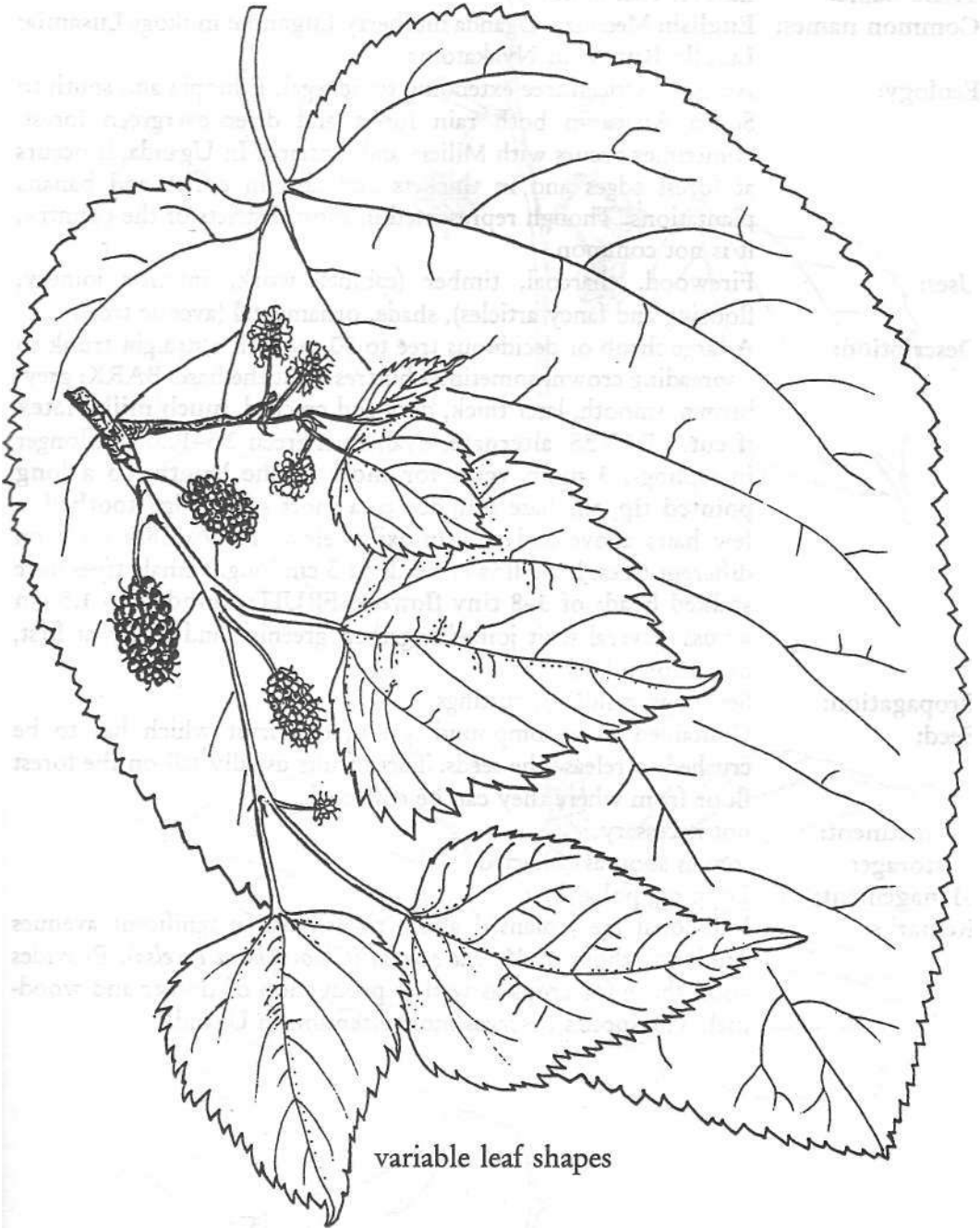
Seed: Poor germination. No. of seeds per kg: 325,000-700,000.

treatment: soak in cold water for 48 hours,

storage: can be stored a long time.

Management: Fast growing, especially when grown from cuttings. Lopping to encourage branching and keeping the height as required.

Remarks: Many people in Uganda have engaged themselves in the cultivation of this species. Saplings grown from seed produce fruit in 5-8 years, but from cuttings they do so in 3 years. The tree can be used as a hedge or to stabilize slopes.



variable leaf shapes

Indigenous

Trade name: East African mulberry.

Common names: **English:** Mecodze, Uganda mulberry **Luganda:** mukoge **Lusamia:** Lufullo **Runyoro:** Nyakatoma.

Ecology: An East African tree extending to Senegal, Ethiopia and south to South Africa in both rain forest and drier evergreen forest. Sometimes occurs with *Milicia* and *Antiaris*. In Uganda, it occurs at forest edges and in thickets and also in coffee and banana plantations. Though represented in most districts of the country, it is not common.

Uses: Firewood, charcoal, timber (cabinet work, interior joinery, flooring and fancy articles), shade, ornamental (avenue tree).

Description: A large shrub or deciduous tree to 30 m, with a straight trunk to a spreading crown, sometimes buttressed at the base. **BARK:** grey-brown, smooth, later thick, dark and cracked, **much milky latex if cut**. **LEAVES:** **alternate**, oval, dark green 2.5-10.0 cm, longer in saplings, **3 main veins for most of the length, to a long pointed tip**, the base rounded to a short stalk, **edge toothed**, a few hairs above and in vein axils below. **FLOWERS:** sexes on different trees. Male flower heads to 3 cm long. Female trees have **stalked heads of 3-8 tiny flowers**. **FRUIT: rounded to 1.5 cm across**, several fruit joined together, greenish and fleshy at first, dry, brown later.

Propagation: Seedlings, wildings, cuttings.

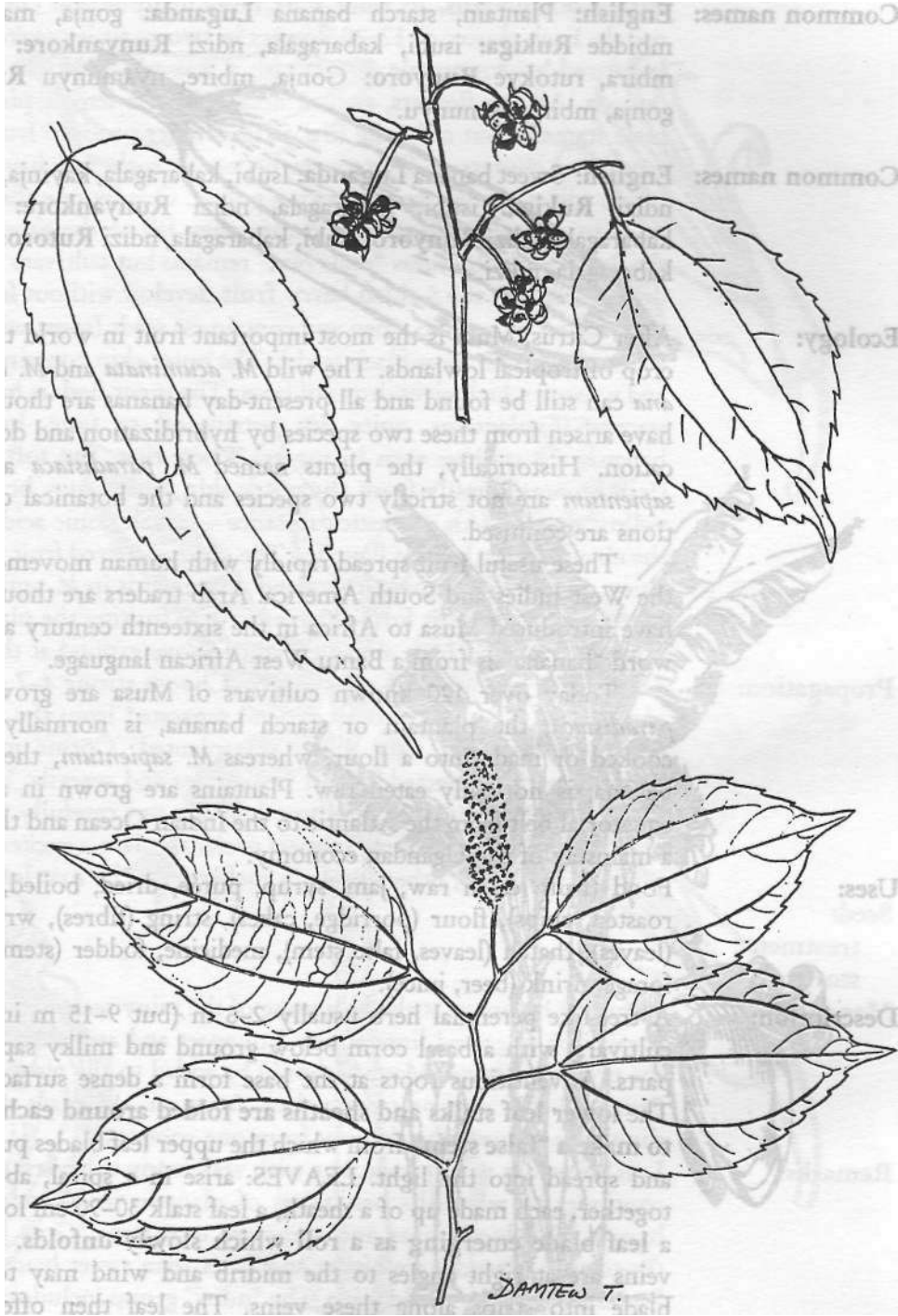
Seed: Contained in a compound, green, dry fruit which has to be crushed to release the seeds. These fruits usually fall on the forest floor from where they can be collected,

treatment: not necessary,

storage: sow as soon as collected.

Management: Lopping, pollarding.

Remarks: Individual trees planted along roads form magnificent avenues similar to those of *Milicia excelsa* (*Chlorophora excelsa*). Provides good shade for crops as well as production of timber and wood-fuel. The species deserves more attention in Uganda.



Indonesian region

Common names: **English:** Plantain, starch banana **Luganda:** gonja, matooke, mbidde **Rukiga:** isubi, kabaragala, ndizi **Runyankore:** gonje, mbira, rutokye **Runyoro:** Gonja, mbire, nyamunyu **Rutoro:** gonja, mbire, nymunyu.

Common names: **English:** Sweet banana **Luganda:** Isubi, kabaragala, kayinja, musa, ndizi **Rukiga:** isubi, kabaragala, ndizi **Runyankore:** isubi, kabaragala, ndizi **Runyoro:** isubi, kabaragala, ndizi **Rutoro:** isubi, kabaragala, ndizi.

Ecology:

After Citrus, Musa is the most important fruit in world trade, a crop of tropical lowlands. The wild *M. acuminata* and *M. balbisi-ana* can still be found and all present-day bananas are thought to have arisen from these two species by hybridization and domestication. Historically, the plants named *M. paradisiaca* and *M. sapientum* are not strictly two species and the botanical distinctions are confused.

These useful fruit spread rapidly with human movements to the West Indies and South America. Arab traders are thought to have introduced Musa to Africa in the sixteenth century and the word "banana" is from a Bantu West African language.

Today over 120 known cultivars of Musa are grown. *M. paradisiaca*, the plantain or starch banana, is normally eaten cooked or made into a flour, whereas *M. sapientum*, the sweet banana, is normally eaten raw. Plantains are grown in a wide equatorial belt from the Atlantic to the Indian Ocean and they are a mainstay of the Ugandan economy.

Uses:

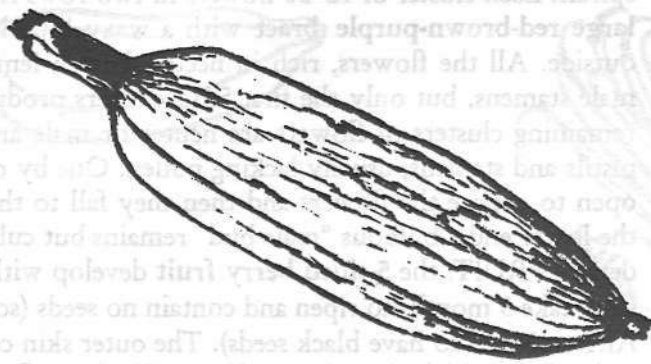
Food (fruh: eaten raw, jam, syrup, puree, dried, boiled, fried, roasted, chips), flour (porridge, cakes), string (fibres), wrapping (leaves), thatch (leaves, false stem), medicine, fodder (stems), bee forage, drink (beer, juice).

Description:

A tree-like perennial herb usually 2-6 m (but 9-15 m in some cultivars) with a basal corm below ground and milky sap in all parts. Adventitious roots at the base form a dense surface mat. **The lower leaf stalks and sheaths are folded around each other to make a "false stem"** from which the upper leaf blades push out and spread into the light. LEAVES: arise in a spiral, about 30 together, each made up of a sheath, a leaf stalk 30-90 cm long and a **leaf blade emerging as a roll which slowly unfolds**. Lateral veins are at right angles to the midrib and wind may tear the blade into strips along these veins. The leaf then offers less resistance to the wind and heavy rain. Old leaves hang down and

emerge between the leaves. The single large flower
curves downwards. Its thick stalk bears many flower
spikes. Each cluster of 12-20 flowers in two rows is
large red-brown-purple flower with a
purple. All the flowers
but only
flowering clusters
and
by one
to the
the
fruit develop without
and contain no seeds (some
black seeds). The outer skin contain
and a tissue which gives drops of latex. The inner flesh is
starchy. The plantain is quite dry (starchy) to taste. I
because the water turn to sugar. When ripe, the soft
flesh separates from the outer skin which may be
yellow. The ripe plantain is sweet and has a
the characteristic flavour. The plantain is used for
and down wards in M. s.
for 5-20 years. The fruiting
already formed above ground at
Choose strong 4-7
and separated from the
Corms
and weevils.
then they are carefully
the farmer prefer to plant a sucker
others prefer a sucker with the first

Seed:
treatment:
the
Musa
Remarks:
containing
and some are exported. Good
and later than sweet plantain
called Dwarf, Giant Dwarf, Robusta and Valck—the C



the blades die. When a certain number of leaves have grown, the flowering stem begins to die. FLOWERS: the flower stem arises from the tip of the corm taking 9-10 months to develop and emerge between the leaves. The **single large flowering head curves downwards**. Its thick stalk bears many flower clusters in spirals. Each cluster of 12-20 flowers in two rows is covered by a **large red-brown-purple bract** with a waxy blue bloom on the outside. All the flowers, rich in nectar, have a female pistil and male stamens, but only the first 5-15 clusters produce fruit. The remaining clusters of flowers are neuter or male and have small pistils and stamens, usually lacking pollen. One by one the bracts open to expose the flowers and then they fall to the ground. At the lower end a bulbous "male bud" remains but cultivars vary in details. FRUIT: the **5-sided berry fruit** develop without fertilization, take 3 months to ripen and contain no seeds (some wild East African Musa do have black seeds). The outer skin contains fibres and a tissue which gives drops of latex. The inner flesh is hard and starchy in plantains, quite dry (astringent) to taste. In sweet bananas the starches turn to sugars. **When ripe, the soft inside flesh separates easily from the outer skin which may be green, yellow or red.** (An aromatic substance —isovaleric acid—gives the characteristic banana flavour.) The oblong curved fruit usually curve upwards in *M. paradisiaca* and downwards in *M. sapientum*. Plants will yield fruit for 5-20 years. After fruiting the plant dies down but suckers have already formed above ground at the base.

Propagation:

Seed:

treatment:

storage:

Management:

Plant just before or at the beginning of the rainy season in straight parallel or staggered lines about 2 m apart and at right angles to the prevailing wind. Manure should be added to the weeded plot. Prune all but one or two suckers from an old plant as there should be 2 flower heads only from one rootstock.

Remarks:

Less known in world trade, but with very many cultivars, research continues to select the best types of plantain in Uganda. They have a high local value and some are exported. "Gros Michel" (Bogoya in Uganda) are bigger and fatter than sweet bananas, the leading cultivar in world trade. The "ndizi" group include cultivars called Dwarf, Giant Dwarf, Robusta and Valek—the Cavendish group.

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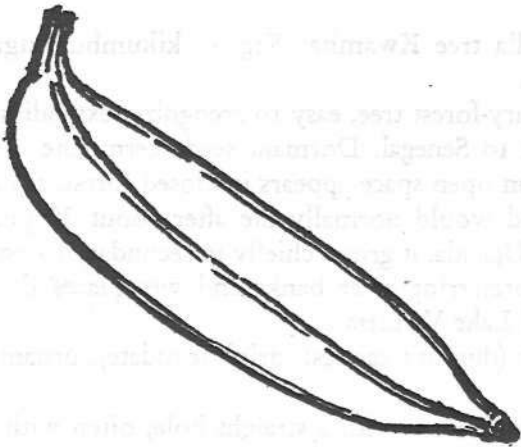
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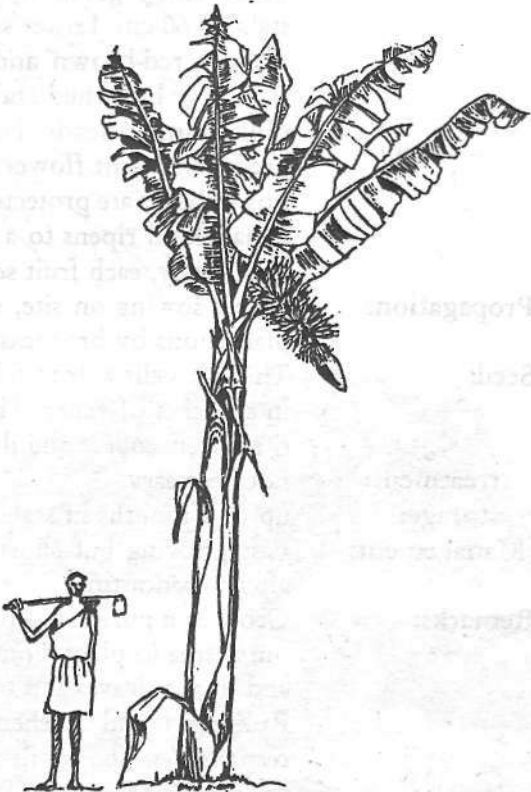
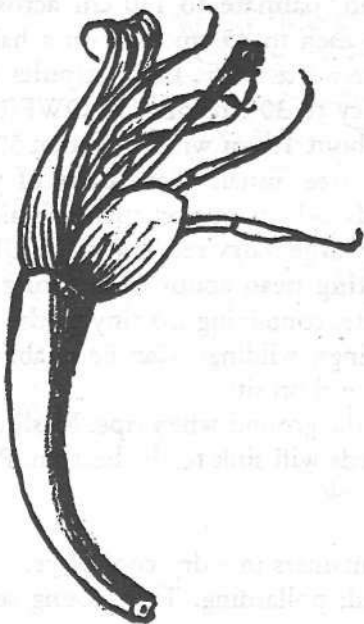
Musa are grown in home gardens for home consumption or the local market but also in large plantations for export. They can be mixed with maize, coffee, cocoa and citrus or grown alone as a pure stand. In Africa large quantities of beer are brewed from Musa using special cultivars selected for this purpose.

Banana fruit heads can be called a "bunch". Each fruit cluster is called a "hand", and a single fruit a "finger". Cultivars differ in shape, size, colour and thickness of skin, texture and flavour of the fruit. A good bunch may have 8 hands of 15 fingers each weighing 150 g, the hand 1.8 kg and the entire bunch 20 kg. The Bogoya bunch makes a neat shape which can be transported unwrapped, but in most cultivars the fruit stick out in all directions so are easily damaged in transport.

Information on Musa and its cultivars is plentiful and farmers should always seek advice from local agricultural extension officers. Good planting material can be obtained from District farm institutes or well-known farmers. Quite different cultivars are favoured in other countries, e.g. Asia, Israel and the Americas and West Indies where sweet bananas are generally preferred.



ggonja



Indigenous

Common names: **English:** Umbrella tree **Kwamba:** Kigere, kikumbu **Luganda:** kaliba, namagulu.

Ecology: A typical secondary-forest tree, easy to recognize, extending into Angola and west to Senegal. Dormant seeds germinate in large quantities when an open space appears in closed forest. It cannot tolerate shade and would normally die after about 20 years in natural forest. In Uganda, it grows chiefly in secondary forests and at forest edges, preferring river banks and wet places near the western shores of Lake Victoria.

Uses: Firewood, timber (dug out canoes), drink (exudate), ornamental, shade.

Description: A **deciduous** tree to 30 m with a straight bole, often with prop roots at the base, sometimes entirely supporting the tree. Branches arise at an angle towards the top of the trunk thus making a fine umbrella crown only one leaf thick. **BARK: thin, pale grey**, with ring marks and corky outgrowths, underbark green-grey. Broken branches,-soft and pithy, exude a lot of **watery sap which can be drunk**. **LEAVES: compound, palmate to 110 cm across with 11-25 shiny green leaflets**, each to 45 cm long on a hairy leaf stalk to 60 cm. Lower surface white hairy. **Leafy stipules at base of stalk red-brown and hairy to 30 cm long**. **FLOWERS:** male trees have **branched stalks about 10 cm** with more than 50 round **pink stamen heads**. Female trees usually have **pairs of yellow-green succulent flower heads** 2-3 cm long on a 12-cm stalk. Both flower heads are protected by **large hairy red bracts**. **FRUIT:** The female head ripens to a **fruiting head about 12 cm long, green and fleshy**, each fruit separate, containing the tiny seeds.

Propagation: Direct sowing on site, seedlings, wildings. Can be established in plantations by broadcasting seed on site.

Seed: The soft yellow fruit fall to the ground when ripe. Mash up fruit in a bucket of water. The seeds will sink to the bottom. Pour off the water, collect and dry.

treatment: not necessary.

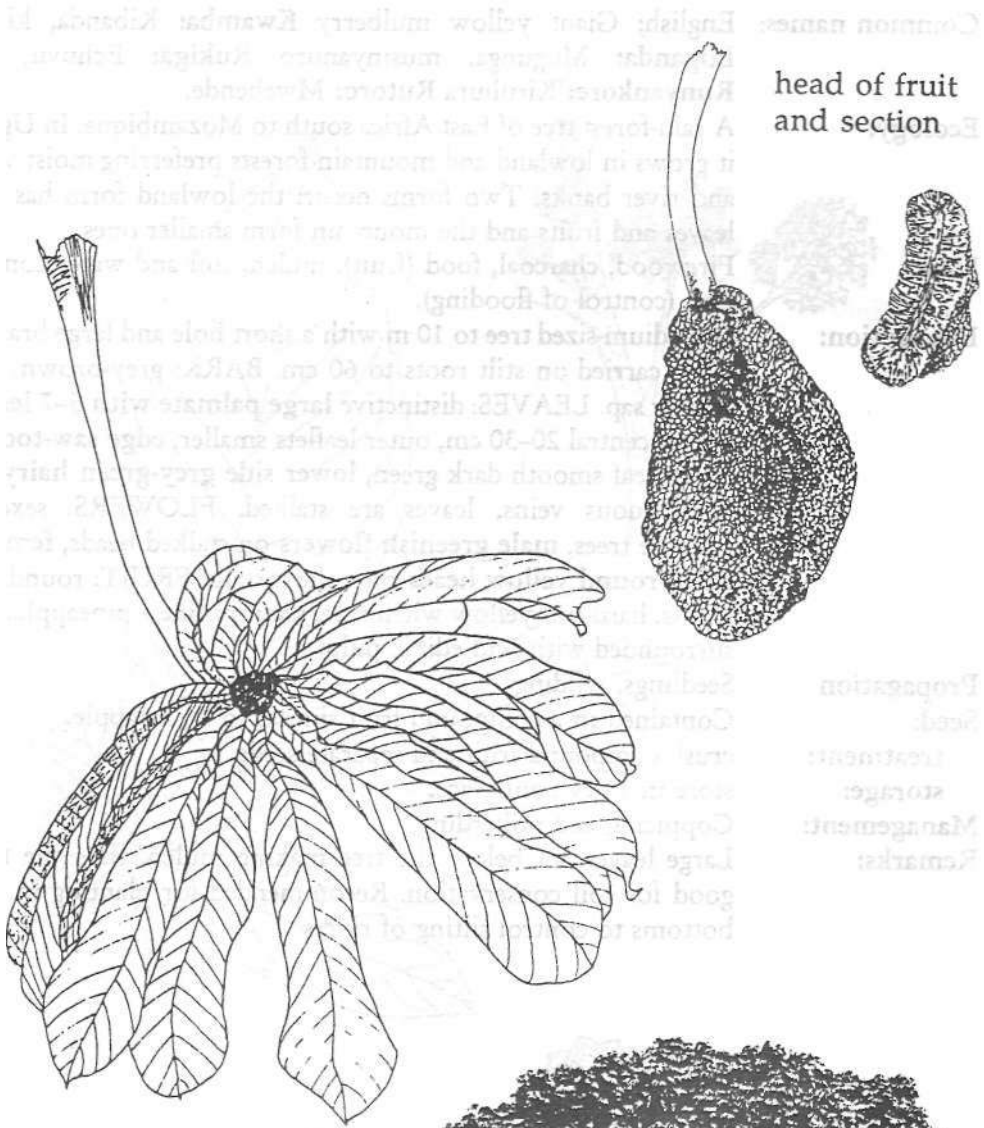
storage: up to 2 months in sealed containers in a dry cool place.

Management: Fast growing but short lived; pollarding. Thin young seedlings after broadcasting.

Remarks: Grow as a pure stand or as a single ornamental, for shade or as a nurse tree in plantations. *Musanga leo-errariae*, with slender trunk and smaller leaves and fruit, grows in the upland forests of Kabale, Rukungiri and Bushenyi Districts. It has similar uses to *M. cecropioides*. The family Cecropiaceae has now been separated from the related Moraceae. There are 5 species in East Africa.

Musanga cecropioides

Cecropiaceae



Indigenous

Common names: English: Giant yellow mulberry **Kwamba:** Kibanda, kibende
Luganda: Mugunga, musinyanuro **Rukiga:** Echuvu, mufe
Runyankore: Kiruhura **Rutoro:** Mwebende.

Ecology: A rain-forest tree of East Africa south to Mozambique. In Uganda, it grows in lowland and mountain forests preferring moist valleys and river banks. Two forms occur: the lowland form has larger leaves and fruits and the mountain form smaller ones.

Uses: Firewood, charcoal, food (fruit), mulch, soil and water conservation (control of flooding).

Description: A medium-sized tree to 10 m with a short bole and large branches, often carried on stilt roots to 60 cm. **BARK:** grey-brown, much watery sap. **LEAVES:** distinctive **large palmate with 5-7 leaflets**, largest central 20-30 cm, outer leaflets smaller, **edge saw-toothed**, upper leaf smooth dark green, **lower side grey-green hairy** with conspicuous veins, leaves are stalked. **FLOWERS:** sexes on separate trees, **male greenish flowers** on stalked heads, **female in small round yellow heads** on a short stalk. **FRUIT:** round, 4 cm across, hard and yellow when ripe, sections like a pineapple. Seeds surrounded with acid edible pulp.

Propagation Seedlings, wildings.

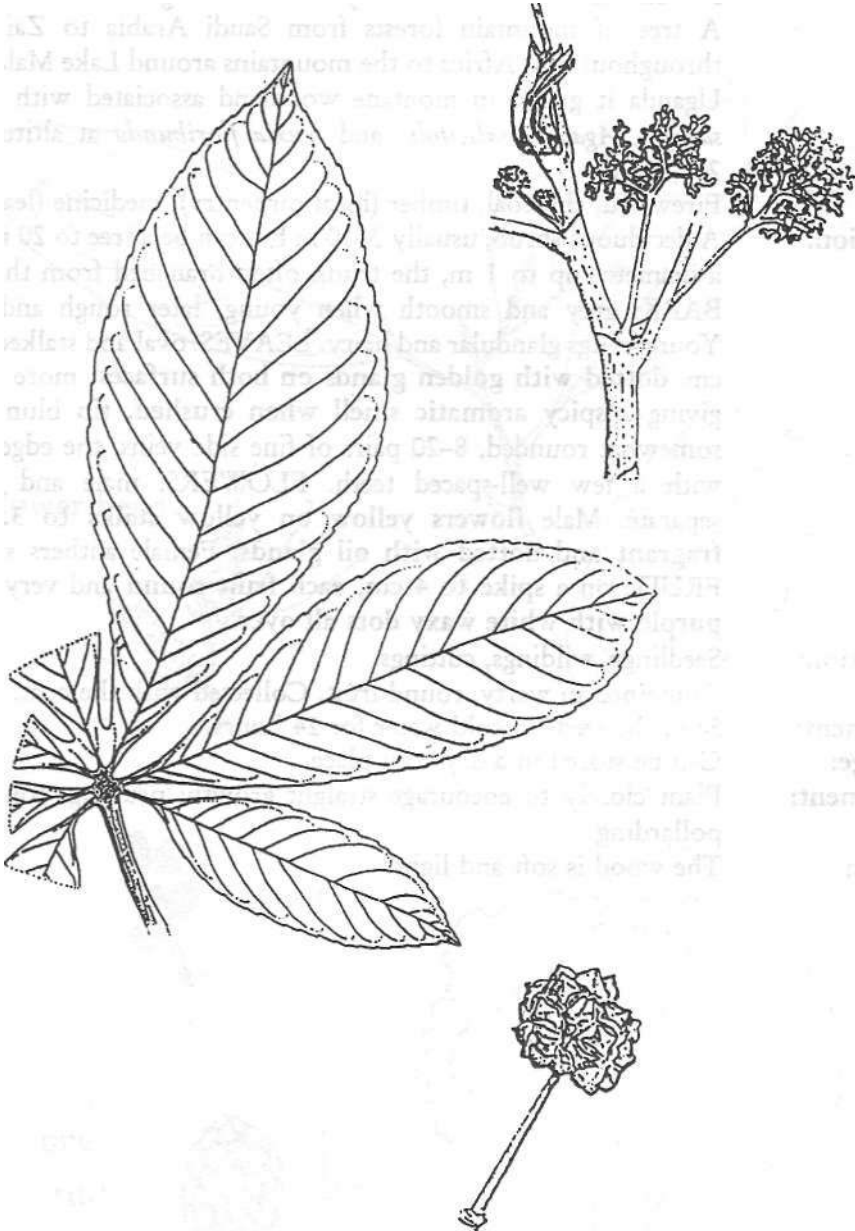
Seed: Contained in a compound fruit similar to a pineapple,

treatment: crush compound fruit and separate seeds,

storage: store in a dry cool place.

Management: Coppicing and pollarding.

Remarks: Large leaves rot below the tree making mulch, thus the tree is good for soil conservation. Recommended for planting in valley bottoms to control silting of rivers.



Indigenous

Common names: **Lugishu:** Maruss, kiberassia **Rukiga:** Mujeje, ekijeje **Rukonjo:** Mukikembo, mundrindi **Runyarwanda:** Mugezi **Sebei:** Segatetit.

Ecology: A tree of mountain forests from Saudi Arabia to Zaire and throughout East Africa to the mountains around Lake Malawi. In Uganda it grows in montane woodland associated with *Faurea saligna*, *Agauria salicifolia* and *Nuxia floribunda* at altitudes of 2-2,500 m.

Uses: Firewood, charcoal, timber (local carpentry), medicine (leaves).

Description: A deciduous shrub, usually 3-10 m but can be a tree to 20 m with a diameter up to 1 m, the trunk often branched from the base. **BARK:** grey and smooth when young, later rough and dark. Young twigs glandular and hairy. **LEAVES:** oval and stalked, **4-14 cm, dotted with golden glands on both surfaces**, more below, giving a **spicy aromatic smell when crushed**, tip blunt, base somewhat rounded, 8-20 pairs of fine side veins, the edge wavy with a few well-spaced teeth. **FLOWERS:** male and female separate. Male **flowers yellow on yellow stalks to 3.5 cm, fragrant and dotted with oil glands**. Female anthers shorter. **FRUIT:** on a **spike to 4 cm, each fruit round** and very small, **purple with white waxy dots all over**.

Propagation: Seedlings, wildings, cuttings.

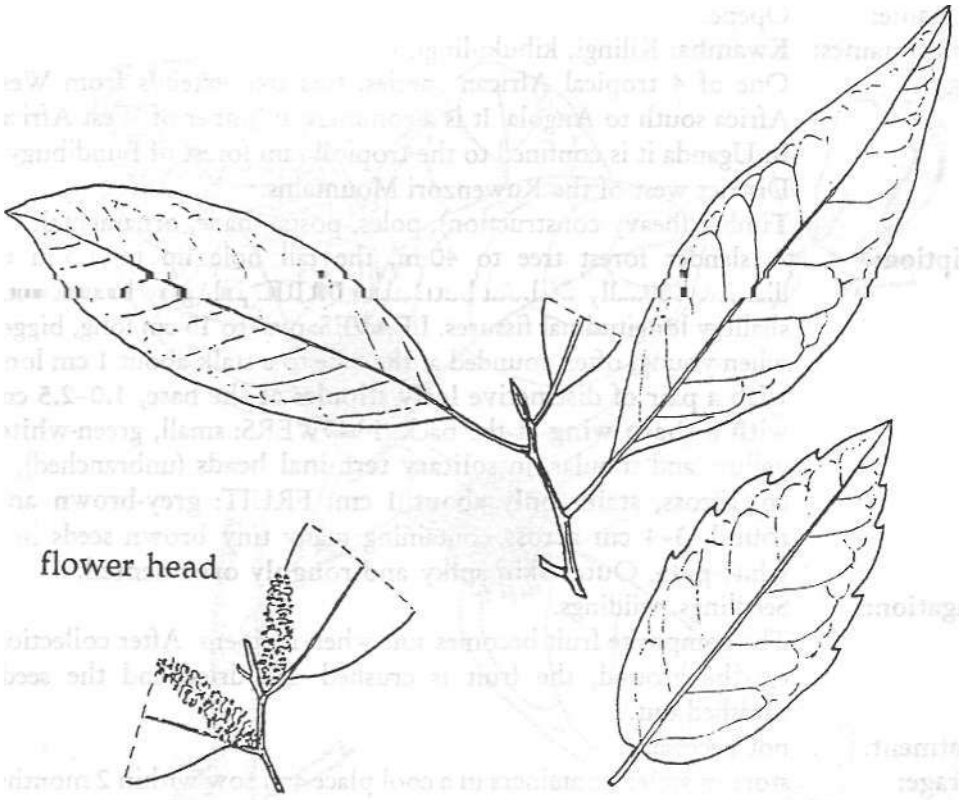
Seed: Contained in warty, round fruit. Collected with the coat.

treatment: Soak the seeds in cold water for 24 hours.

storage: Can be stored in a dry cool place.

Management: Plant closely to encourage straight growth; pruning, coppicing, pollarding.

Remarks: The wood is soft and light.



flower head



fruit

one fruit



0.5 cm



Indigenous

Trade name: Opepe.

Common names: **Kwamba:** Kilingi, kibuki-lingi.

Ecology: One of 4 tropical African species, this tree extends from West Africa south to Angola. It is a commercial timber of West Africa. In Uganda it is confined to the tropical rain forest of Bundibugyo District west of the Ruwenzori Mountains.

Uses: Timber (heavy construction), poles, posts, shade, ornamental.

Description: A slender forest tree to 40 m, the tall bole up to 15 m in diameter, usually without buttresses. **BARK:** pale grey-brown with shallow longitudinal fissures. **LEAVES:** oval to 15 cm long, bigger when young, often rounded at the base to a stalk about 1 cm long **with a pair of distinctive leafy stipules at the base, 1.0-2.5 cm with a sharp wing** at the back. **FLOWERS:** small, green-white-yellow and tubular, in **solitary terminal heads** (unbranched), **3 cm across, stalks only about 1 cm.** **FRUIT: grey-brown and round, 3-4 cm across** containing many tiny brown seeds in a white pulp. **Outer skin spiky and roughly ornamented.**

Propagation: Seedlings, wildings.

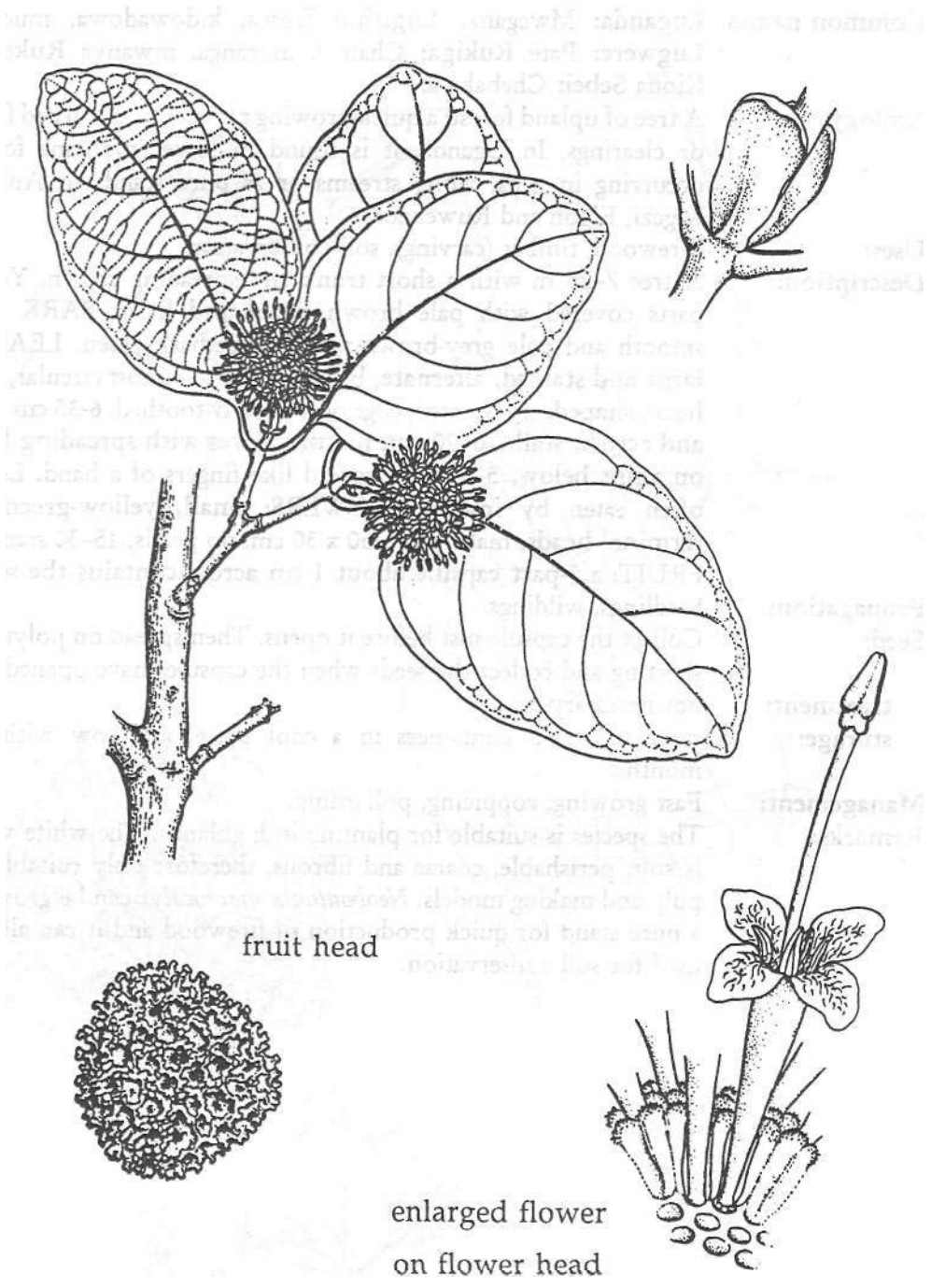
Seed: The composite fruit becomes soft when it ripens. After collection on the ground, the fruit is crushed and dried and the seeds threshed out.

treatment: not necessary.

storage: store in sealed containers in a cool place and sow within 2 months.

Management: Pruning.

Remarks: The wood is suitable for fence posts and bridges being resistant to fungi and moderately termite resistant. It is a good shade tree and has been successfully tried by the Forestry Department planted as pure stands. In West Africa the heavy durable wood, bright orange-yellow in colour, has been used for harbours, docks and piers as it resists marine borers.



fruit head

enlarged flower
on flower head

Indigenous

Common names: **Luganda:** Mweganza **Lugishu:** Dowa, kidowadowa, mudowa **Lugwere:** Pate **Rukiga:** Chanya, muranga, mwanya **Rukonjo:** Kiona **Sebei:** Chebakwa.

Ecology: A tree of upland forest; a quick-growing pioneer of disturbed forest or clearings. In Uganda, it is found in lower montane forests occurring in gaps, along streams or as pure stands in Ankole, Kigezi, Elgon and Ruwenzori.

Uses: Firewood, timber (carving), soil conservation.

Description A tree 7-25 m with a short trunk and spreading crown. Young parts covered with pale brown star-shaped hairs. BARK thin, smooth and pale grey-brown-white, underbark green. LEAVES: **large and stalked, alternate**, broadly oval to almost circular, **base heart-shaped**, tip pointed, edge occasionally toothed, **6-35 cm long and across, stalk 10-20 cm, mature leaves with spreading hairs on veins below, 5-9 veins** spread like fingers of a hand. Leaves often eaten by insects. FLOWERS: **small, yellow-green, in terminal heads**, male larger, 50 x 30 cm, no petals, 15-30 stamens. FRUIT: a **3-part capsule about 1 cm across contains the seeds**.

Propagation: Seedlings, wildings.

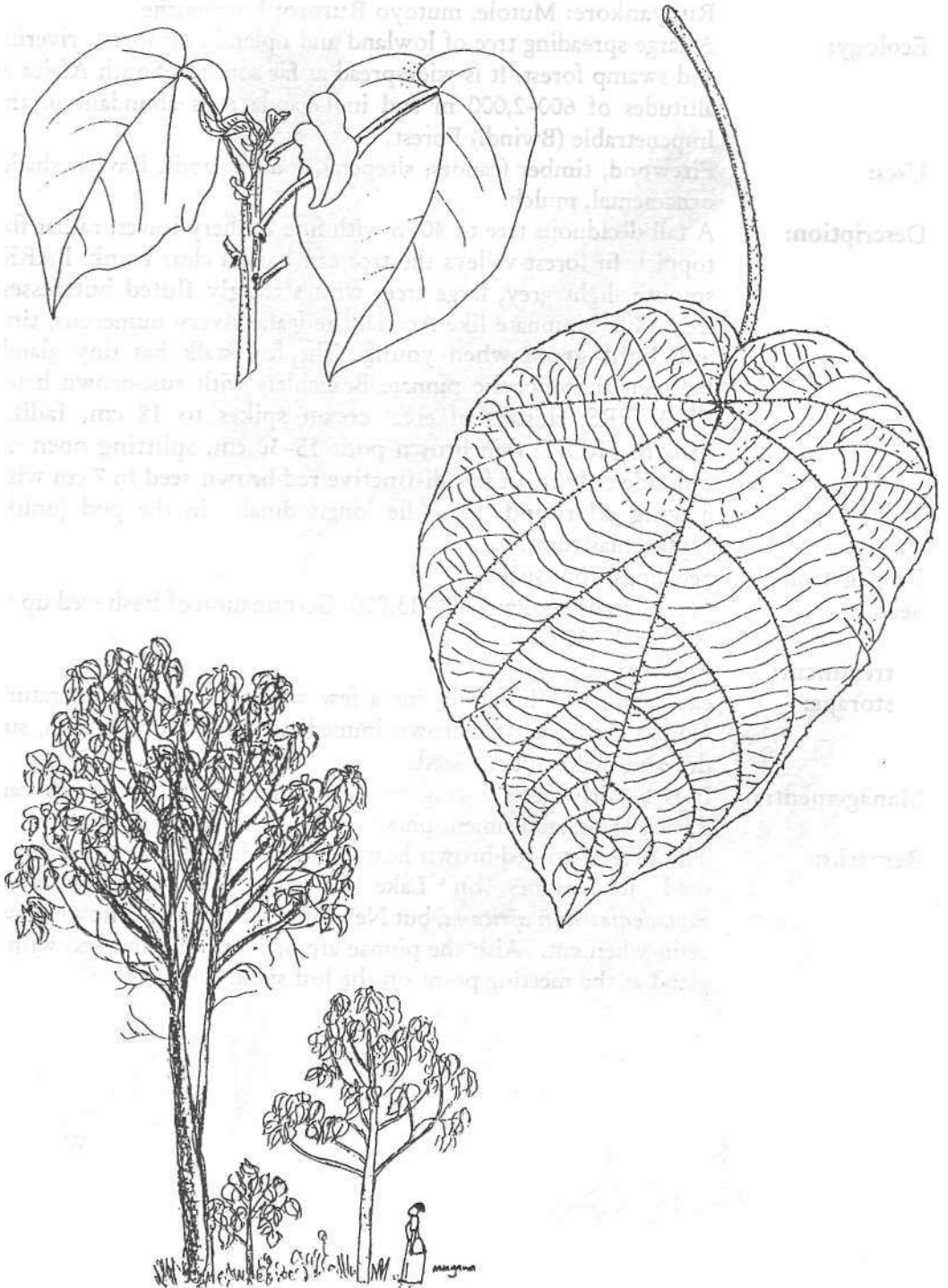
Seed: Collect the capsule just before it opens. Then spread on polythene sheeting and collect the seeds when the capsules have opened,

treatment: not necessary.

storage: store in sealed containers in a cool place, and sow within 2 months.

Management: Fast growing; coppicing, pollarding.

Remarks: The species is suitable for planting in highlands. The white wood is soft, perishable, coarse and fibrous, therefore only suitable for pulp and making models. *Neoboutonia macrocalyx* can be grown as a pure stand for quick production of firewood and it can also be used for soil conservation.



Newtonia buchananii

Mimosaceae

Indigenous

Common names: English: Newtonia **Luganda:** Mpewere **Rukiga:** Mukungu **Runyankore:** Mutole, mutoyo **Rutoro:** Muchenche.

Ecology: A large spreading tree of lowland and upland rain forest, riverine and swamp forest. It is widespread as far south as South Africa at altitudes of 600-2,000 m and in Uganda it is abundant in the Impenetrable (Bwindi) Forest.

Uses: Firewood, timber (canoes, sleepers), fodder (pods, leaves), shade, ornamental, mulch.

Description: A tall deciduous tree to 40 m with fine feathery leaves; rather flat topped. In forest valleys the tree can have a clear trunk. **BARK:** smooth, light grey, large trees with **strongly fluted buttresses**. **LEAVES:** bipinnate like Acacia, the leaflets very numerous, **tiny and light green when young**. The leaf stalk has tiny glands between the opposite pinnae. Branchlets with rust-brown hairs. **FLOWERS:** clusters of erect **cream spikes to 18 cm, fading brown**. **FRUIT:** thin **brown pods 15-30 cm, splitting open on one side** only to set free **distinctive red-brown seed to 7 cm with a wing all round**. Seeds lie longitudinally in the pod (unlike *Piptadeniastrum*).

Propagation Seedlings, root suckers.

Seed: No. of seeds per kg: 9,000-13,000. Germination of fresh seed up to 90% in 20-30 days.

treatment: not necessary.

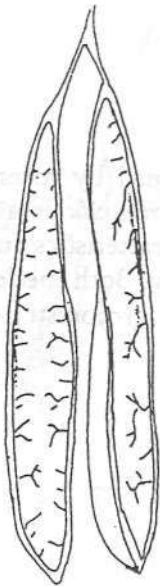
storage: can retain viability only for a few weeks- at room temperature. Collect from the tree crown immediately pods turn brown, sun dry and shake out the seeds.

Management: It is a fairly fast-growing tree once established, but needs care during the establishment phase.

Remarks: The brown-to-red-brown heartwood is durable in water and is used for canoes on Lake Victoria. The tree resembles *Piptadeniastrum africana*, but *Newtonia* bark exudes yellow-brown resin when cut. Also the pinnae are opposite and marked with a gland at the meeting point on the leaf stalk.

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winged seed



Indigenous

Common names: **Rukiga:** Mumuli **Runyankore:** Muboroboro Sebei: Chorowa.

Ecology: A variable tree with several forms extending to South Africa from the coast to medium altitudes in evergreen forest, rocky gorges and in dry rocky areas. In Uganda, it grows in upland woodland, margins and relicts of upland rain forest.

Uses: Firewood, charcoal, medicine (leaves, bark), bee forage, live fence.

Description: A deciduous shrub or tree to 20 m tall. The bole is often short, **twisted and the low branches droop down**. Older trunks often bumpy and fluted and younger trees multi-stemmed. **BARK:** rough, brownish grey, shedding long **fibrous strips** with age. Young **branchlets** clearly **3- or 6-sided** with thick nodes where the leaves grow out. **LEAVES:** rather leathery, **dull green**, scaly, usually growing out **in threes**, crowded at the ends of branches, variable is size, shape and texture, hairy or not, oval to rounded, 1-8 cm, **tip rounded or notched**, edge occasionally toothed, a stalk to 2 cm, midrib clear. **FLOWERS:** fragrant **white-mauve in dense crowded heads**, flat or round-topped at the ends of branches, the 4 petals hardly longer than the **bell-shaped calyx**, which is sticky and attracting bees. The dry flowers persist on the tree. **FRUIT:** the **calyx continues** to surround **small hairy capsules** which split to set free many seeds.

Propagation: Wildings, seedlings.

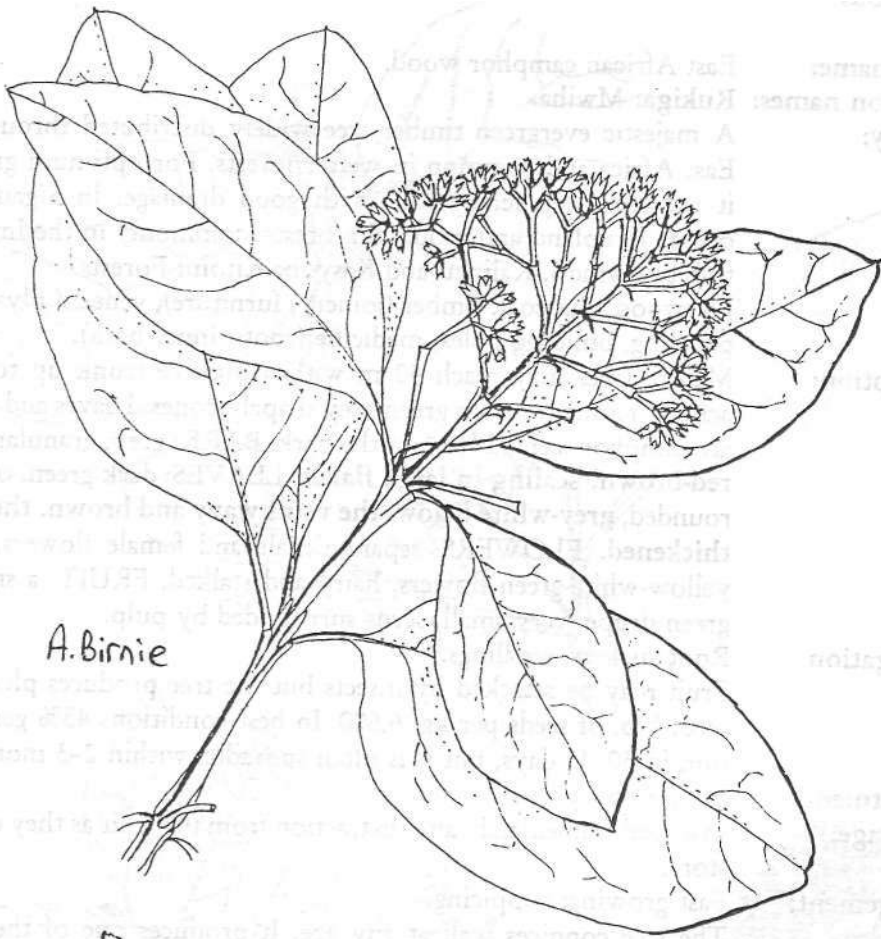
Seed: Collect mature capsules and thresh out seed,

treatment: not necessary.

storage: can be stored in a dry and cool place.

Management: Slow growing; coppicing, pollarding.

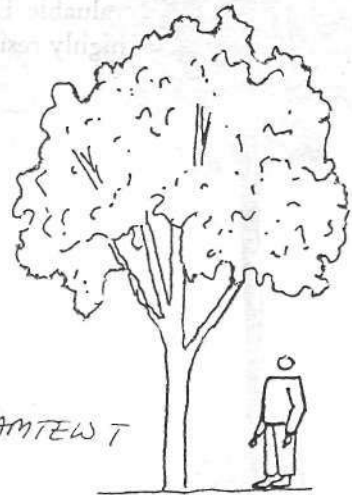
Remarks: A good bee tree. The species is being threatened by forest encroachment and expanded farmland. *Nuxia floribunda* is a very similar species both in appearance and other characteristics but has short pointed leaves which are always very hairy. Both species are good for fuel production and could be good for agroforestry. Bark is used to treat impotence and toothache.



DAVID N. KATO



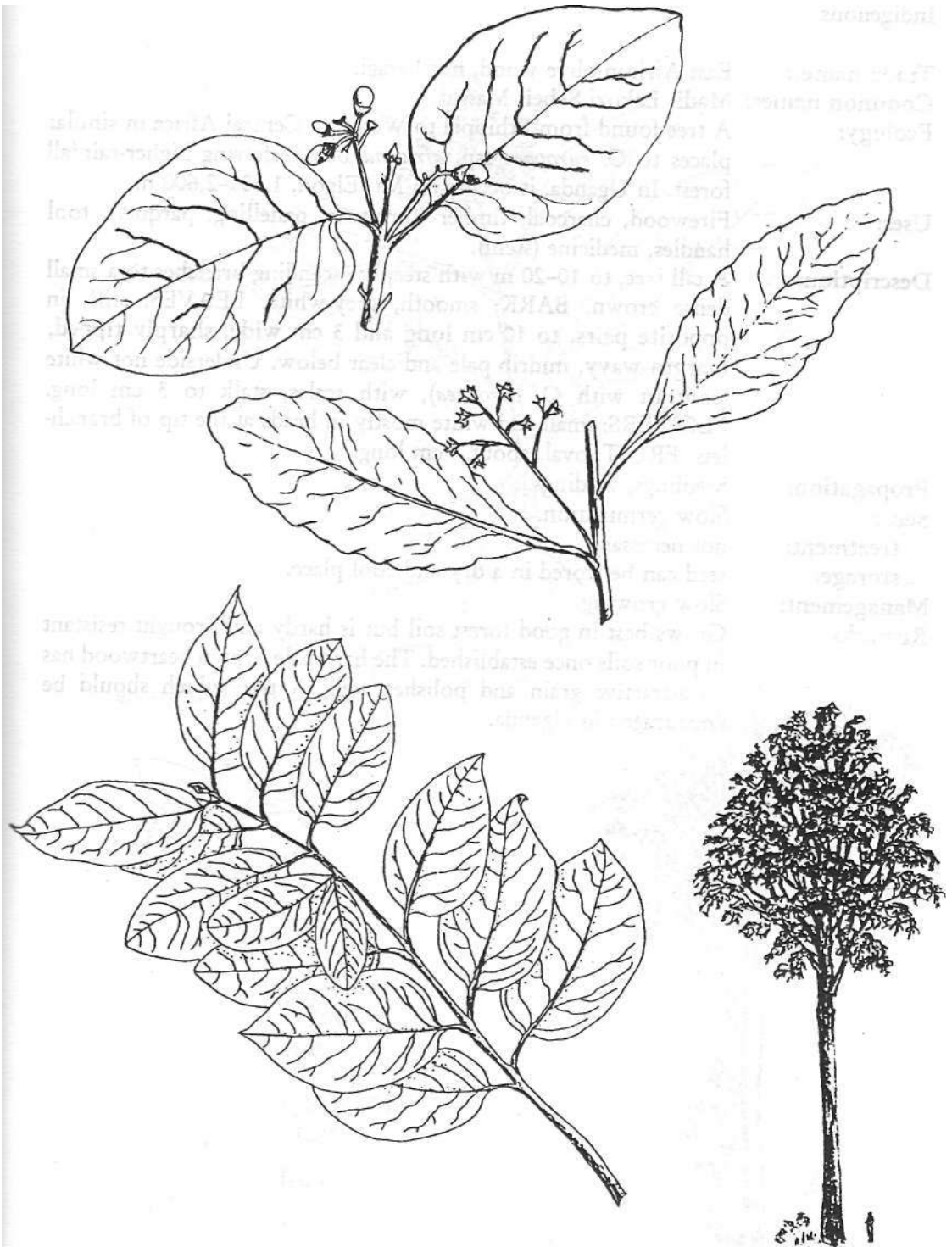
flowers
(enlarged)



DAMTEW T

Indigenous

- Trade name:** East African camphor wood.
- Common names; Rukiga:** Mwiha.
- Ecology:** A majestic evergreen timber tree widely distributed throughout East Africa and common in wetter forests. For optimum growth it requires deep fertile soils with good drainage. In Uganda, it occurs in upland and mountain forests, commonly in the Impenetrable (Bwindi), Kalinzu and Kasyoha-Kitomi Forests.
- Uses:** Firewood, charcoal, timber (joinery, furniture), veneer/ plywood, paneling, building poles, medicine (roots, inner bark).
- Description:** Mature trees may reach 40 m with a massive trunk up to 3 m across. Young trees are green-grey shapely cones. Leaves and wood are camphor scented but not the bark. **BARK:** grey, granular, then **red-brown, scaling in large flakes.** **LEAVES:** dark green, oval to rounded, **grey-white below, the veins wavy and brown, the edge thickened.** **FLOWERS:** separate male and female flowers, 8-10 yellow-white-green flowers, hairy and stalked. **FRUIT:** a smooth green drupe, very small, seeds surrounded by pulp.
- Propagation** Root suckers, seedlings.
- Seed:** Fruit may be attacked by insects but the tree produces plenty of seed. No. of seeds per kg: 6,600. In best conditions 45% germination in 30-45 days, but it is often sporadic, within 2-3 months, not necessary.
- treatment:**
- storage:** sow seed immediately after extraction from the fruit as they do not store.
- Management:** Fast growing; coppicing.
- Remarks:** The tree coppices well at any age. It produces one of the most valuable East African timbers. The dark brown wood is strong, highly resistant to acids and fungi, though less resistant to termites.



Indigenous

Trade names: East African olive wood, musharagi.

Common names: **Madi:** Lakozi **Sebei:** Masgat.

Ecology: A tree found from Ethiopia to West and Central Africa in similar places to *O. europaea* ssp. *africana* but preferring higher-rainfall forest. In Uganda, it occurs on Mt. Elgon, 1,500-2,600 m.

Uses: Firewood, charcoal, timber (furniture, panelling, parquet), tool handles, medicine (stem).

Description: A tall tree, to 10-20 m with steeply ascending branches to a small dense crown. **BARK:** smooth, grey-white. **LEAVES:** stiff, in **opposite pairs, to 10 cm long and 3 cm wide, sharply tipped, margin wavy**, midrib pale and clear below. Underside not white (contrast with *O. europaea*), with scales, stalk to 3 cm long. **FLOWERS:** small and white mostly in heads at the tip of branchlets. **FRUIT:** oval, about 2 cm long.

Propagation: Seedlings, wildings.

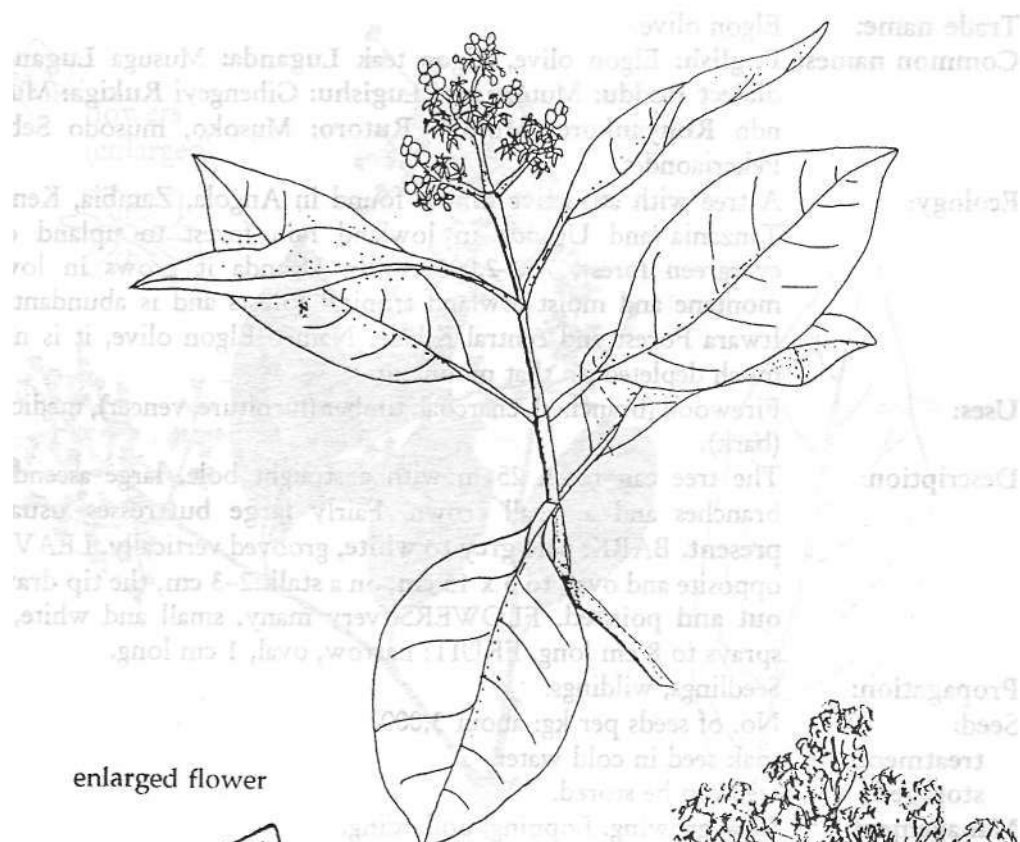
Seed: Slow germination,

treatment: not necessary

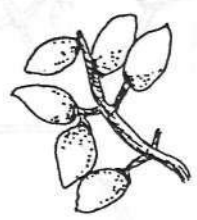
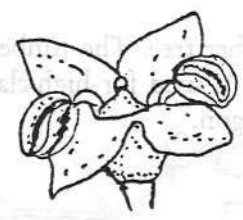
storage: seed can be stored in a dry and cool place.

Management: Slow growing.

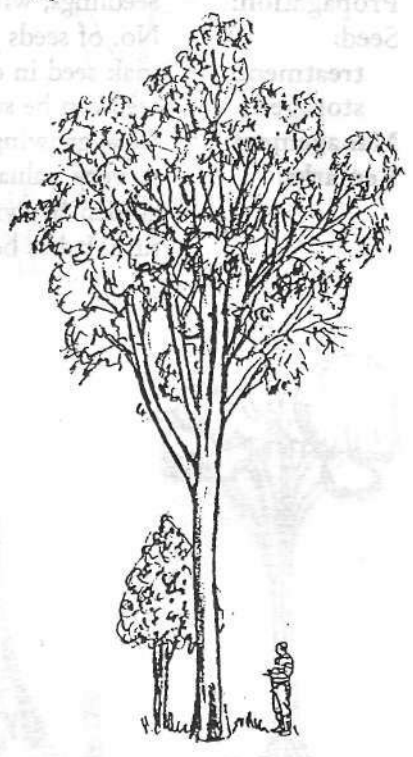
Remarks: Grows best in good forest soil but is hardy and drought resistant in poor soils once established. The hard pale brown heartwood has an attractive grain and polishes well. A tree which should be encouraged in Uganda.



enlarged flower



fruit



Indigenous

Trade name: Elgon olive.

Common names: **English:** Elgon olive, Elgon teak **Luganda:** Musuga **Luganda, dialect Buddu:** Mutonganyi **Lugishu:** Gibengeyi **Rukiga:** Mugando **Runyankore:** Musoko **Rutoro:** Musoko, musodo **Sebei:** Pakeriaondet.

Ecology: A tree with attractive timber found in Angola, Zambia, Kenya, Tanzania and Uganda in lowland rain forest to upland dry evergreen forest, 750-2,000 m. In Uganda it grows in lower montane and moist lowland tropical forests and is abundant in Itwara Forest and central Kibale. Named Elgon olive, it is now much depleted on that mountain.'

Uses: Firewood (branches), charcoal, timber (furniture, veneer), medicine (bark).

Description: The tree can reach 25 m with a straight bole, large ascending branches and a small crown. Fairly **large buttresses usually present. BARK: pale grey to white**, grooved vertically. **LEAVES:** opposite and oval, **to 5 x 15 cm**, on a **stalk 2-3 cm**, the **tip drawn out and pointed**. **FLOWERS:** very many, small and white, in sprays to 8 cm long. **FRUIT:** narrow, oval, 1 cm long.

Propagation: Seedlings, wildings.

Seed: No. of seeds per kg: about 3,000.

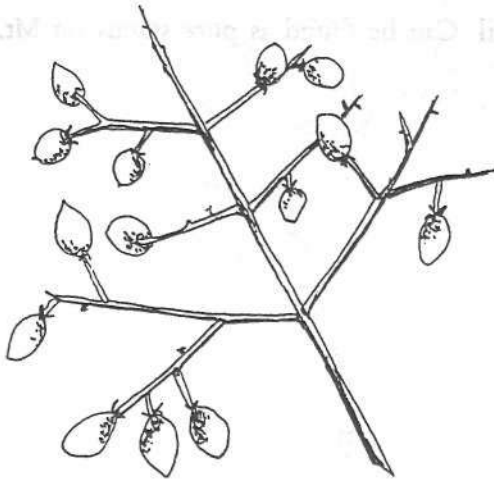
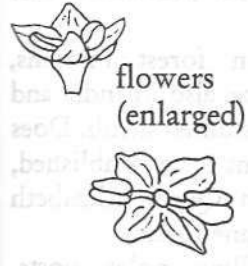
treatment: soak seed in cold water,

storage: seed can be stored.

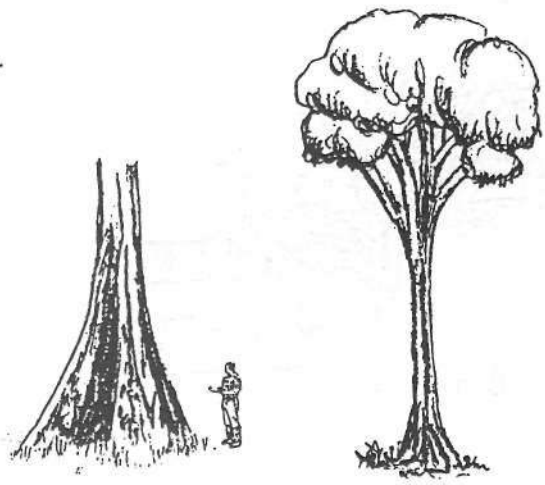
Management: Slow growing. Lopping, pollarding.

Remarks: A very valuable termite-resistant timber tree. The timber is pale golden brown with paler streaks and is used for high-class furniture. It has been re-planted on Mt. Elgon.

Olea capensis subsp. *welwitschii* (*O. welwitschii*) *Oleaceae*



A. Birnie



Olea europaea subsp. *africana* (*O. chrysophylla*)

Oleaceae

Indigenous

Common names: **English:** Brown olive, wild olive **Runyankore:** Murama **Sebei:** Yemit.

Ecology: Widely distributed in dry forest and on forest margins, 700-3,000 m, from Ethiopia to Southern Africa; also in India and China. In size it can range from a tall tree to a stunted shrub. Does best in good forest soil and is drought resistant once established, even in poor soils. In Uganda it occurs in Queen Elizabeth National Park, Sango Bay Forest and in montane forests.

Uses: Firewood, charcoal, timber, furniture, panelling, poles, posts, carving, walking sticks, flooring, fruit, medicine (stem, bark), bee forage, windbreak, ornamental, tooth brushes.

Description: A handsome tree, 10-15 m, with a rounded crown and grey-green foliage, trunk often crooked and with **characteristic pockets**. **BARK:** rough dark brown, **white branchlets, dotted with breathing pores**. **LEAVES:** stiff, **narrowly oval, sharply pointed in opposite pairs, underside pale to white**, the midrib prominent, to 8 cm. **FLOWERS:** small, white, in branched heads to 5 cm. **FRUIT: oval, fleshy, to 1 cm**, purple and bitter-sweet when ripe. Seed about 1 cm long.

Propagation: Wildings, seedlings (difficult to raise).

Seed: A poor seeder. Low germination rate. No. of seed per kg: 13,000-16,000.

treatment: not necessary for fresh seed. For old seed, soak in cold water for 48 hours.

storage: seed can be stored for up to 2 months.

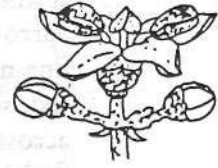
Management: Slow growing.

Remarks: Fruits do not produce oil. Can be found as pure stands on Mt. Elgon.

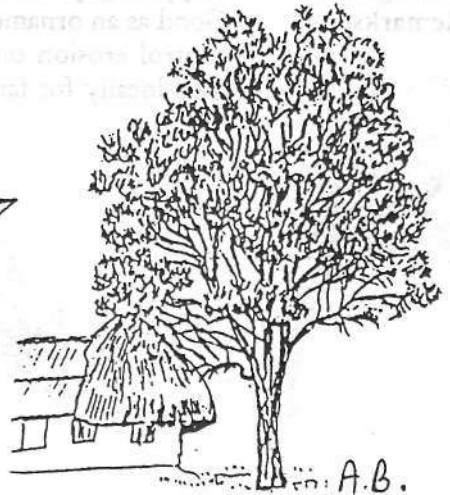
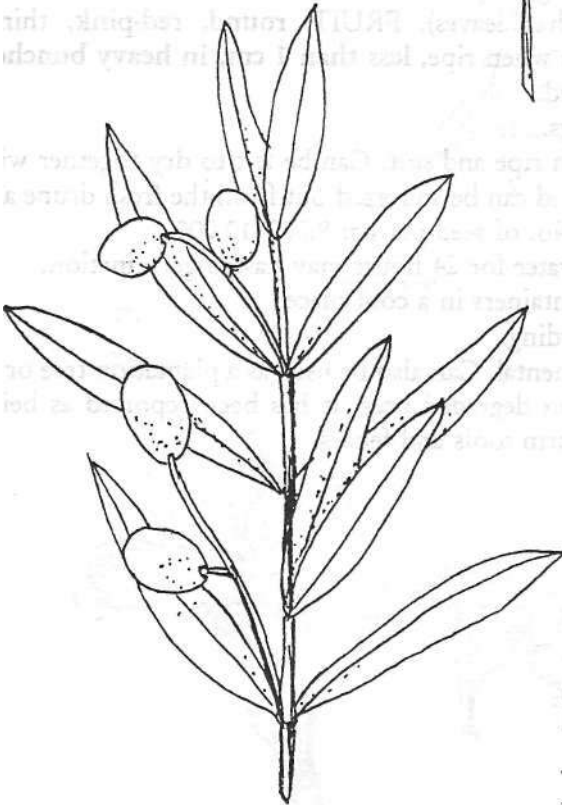


Olea europaea subsp. *africana* (*O. chrysophylla*)

Oleaceae



enlarged flower



Indigenous

Common names: **Rukiga:** Mubaba **Sebei:** Narekio.

Ecology: A tree of the cedar forests and dry upland forest, or its remnants, in Eastern Africa. In Uganda it grows in mountain forests between 1,600 and 2,900 m, sometimes in climax forest on drier sites but more often in secondary forest or on forest edges.

Uses: Firewood, charcoal, medicine (bark, roots), ornamental, soil conservation.

Description: Usually a small shrub or tree 4-9 m, occasionally to 20 m, with a straight trunk. **BARK:** grey-light brown, smooth to rough, when older, flaking in thin yellow-brown flakes. When cut a characteristic unpleasant burnt smell. **Branchlets square.** **LEAVES: opposite, bright red when young** (edge toothed), long oval to 7 cm, wider at the tip, which is blunt or notched, edge rolled under, base narrowed to a **short grooved stalk, often pink.** Lower leaf with fine network of veins. **FLOWERS: white-cream fading to pink-red,** strong smelling, very small in **dense rounded heads to 7.5 cm across** (shorter than leaves). **FRUIT: round, red-pink,** thinly fleshy, red-brown when ripe, **less than 1 cm, in heavy bunches,** containing the seed.

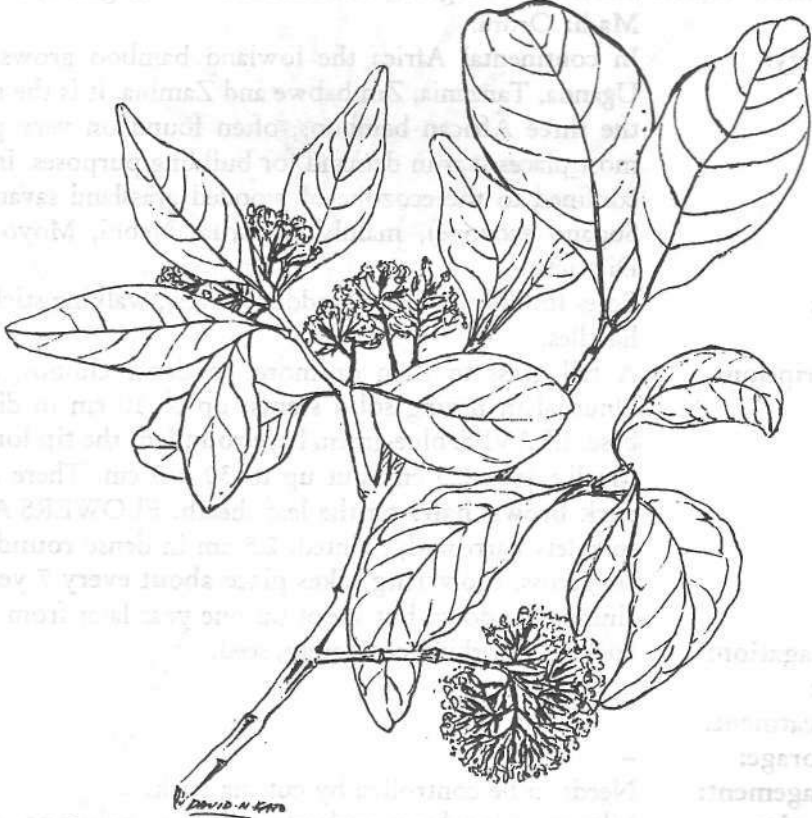
Propagation: Seedlings, wildings.

Seed: Collect fruit when ripe and soft. Can be left to dry together with the pulp or the seed can be squeezed out from the fresh drupe and gradually dried. No. of seed per kg: 8,000-10,000.

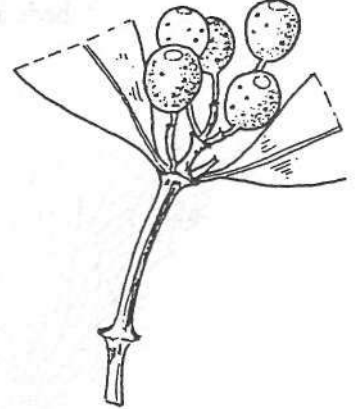
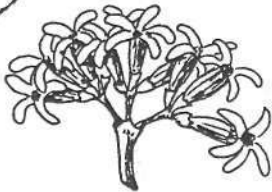
treatment: soaking in cold water for 24 hours may hasten germination,
storage: store in sealed containers in a cool place.

Management: Coppicing, pollarding.

Remarks: Good as an ornamental. Can also be used as a plantation tree or to control erosion on degraded sites. It has been reported as being used locally for farm tools and fences.



enlarged
flower



Indigenous

Common names: Ateso: Keo **English:** Lowland bamboo **Lugbara:** Odra **Luo:** Koo **Madi:** Ordra.

Ecology: In continental Africa the lowland bamboo grows in Ethiopia, Uganda, Tanzania, Zimbabwe and Zambia. It is the most hardy of the three African bamboos, often found on very poor soils. In most places it is in demand for building purposes. In Uganda it is confined to the ecozone of wooded grassland savannah (Guinea-Sudano ecozone), mainly in Arua, Nebbi, Moyo and Kitgum Districts.

Uses: Poles (building), fences, fodder (leaves), walking sticks, tools, tool handles.

Description: A tall grass to 7 m or more, in dense clumps, arching over. Unusual in having **solid stems**, up to 10 cm in diameter at the base. **LEAVES:** blue-green, **base rounded**, the **tip long and spiny**, usually 15 x 2.5 cm, but up to 30 x 5 cm. There are **irritating dark brown hairs** on the leaf sheath. **FLOWERS AND FRUIT:** spikelets narrowed, pointed, 2.5 cm in dense **rounded clusters** 6 cm across. **Flowering takes place about every 7 years.** Then the clumps die down but shoot up one year later from the rhizomes. **Propagation:** Suckers and rhizomes; rarely, seed.

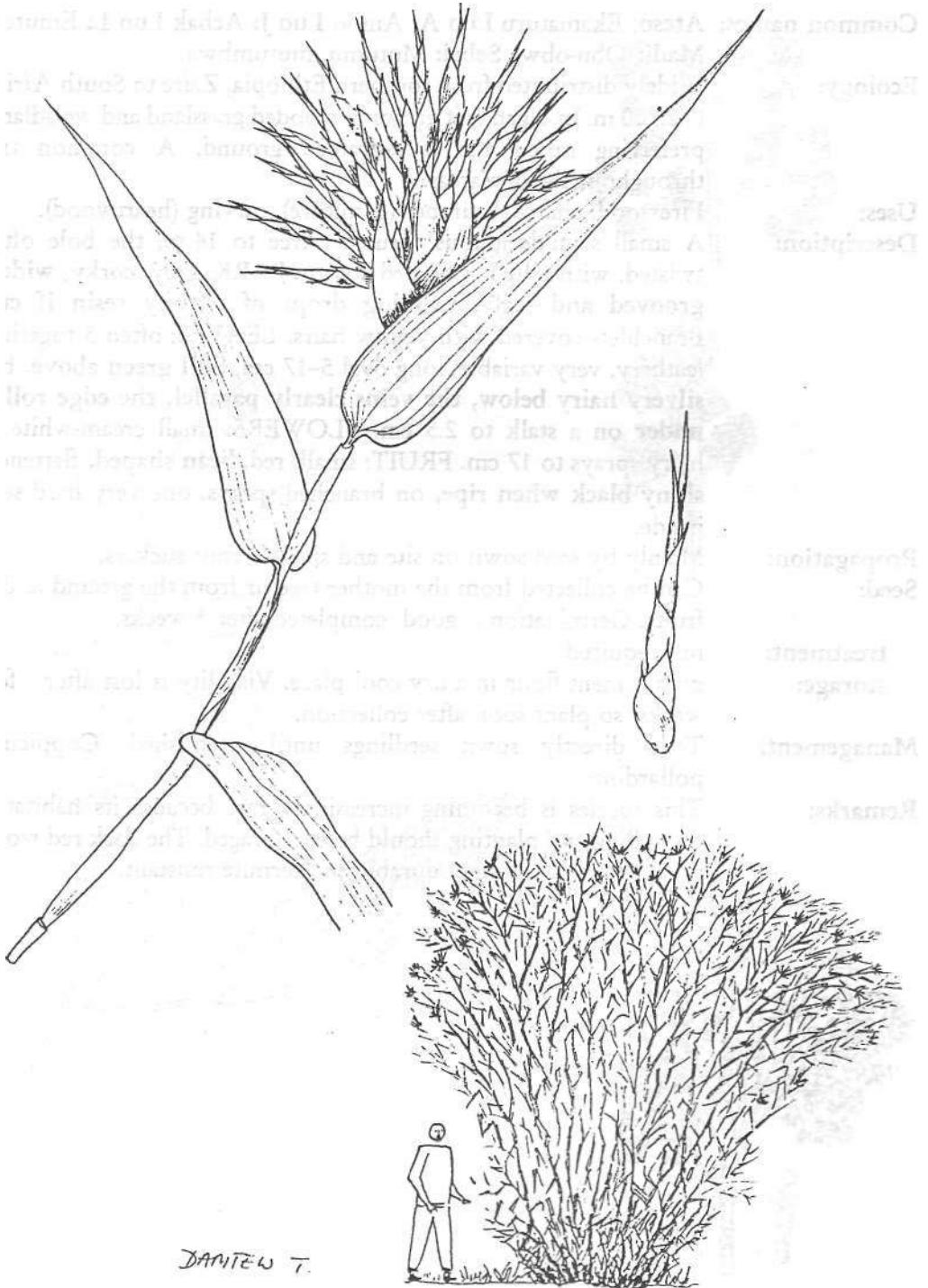
Seed:

treatment:

storage:

Management: Needs to be controlled by cutting back.

Remarks: Like most bamboos, each plant flowers only once and then dies. Fences are susceptible to damage by termites and borers. The plant survives fire in its natural habitat. Small stems can be used for pipes and arrow shafts, larger ones for fences, building, furniture, beds and baskets.



Indigenous

Common names: **Ateso:** Ekamaturu **Luo A:** Anino **Luo J:** Achak **Luo L:** Emuturu
Madi: Obu-obwa **Sebei:** Mutumu, mutumbwa.

Ecology: Widely distributed from southern Ethiopia, Zaire to South Africa, 0-2,700 m. In Uganda it grows in wooded grassland and woodland, preferring raised and well-drained ground. A common tree throughout the dry areas.

Uses: Firewood, charcoal, timber (furniture), carving (heartwood).

Description: A small semi-deciduous shrub or tree to 14 m, the bole often twisted, with a light rounded crown. **BARK:** grey, corky, **widely grooved and scaly, exuding drops of creamy resin if cut.** Branchlets covered with yellow hairs. **LEAVES:** often 3 together, leathery, very variable, long oval 5-17 cm, **dull green above, but silvery hairy below, the veins clearly parallel, the edge rolled under** on a stalk to 2.5 cm. **FLOWERS:** small cream-white in hairy sprays to 17 cm. **FRUIT:** small, red, **bean shaped, flattened, shiny black when ripe**, on branched sprays, one very hard seed inside.

Propagation: Mainly by seed sown on site and shaded; root suckers.

Seed: Can be collected from the mother tree or from the ground as dry-fruits. Germination is good, completed after 3 weeks,

treatment: not required.

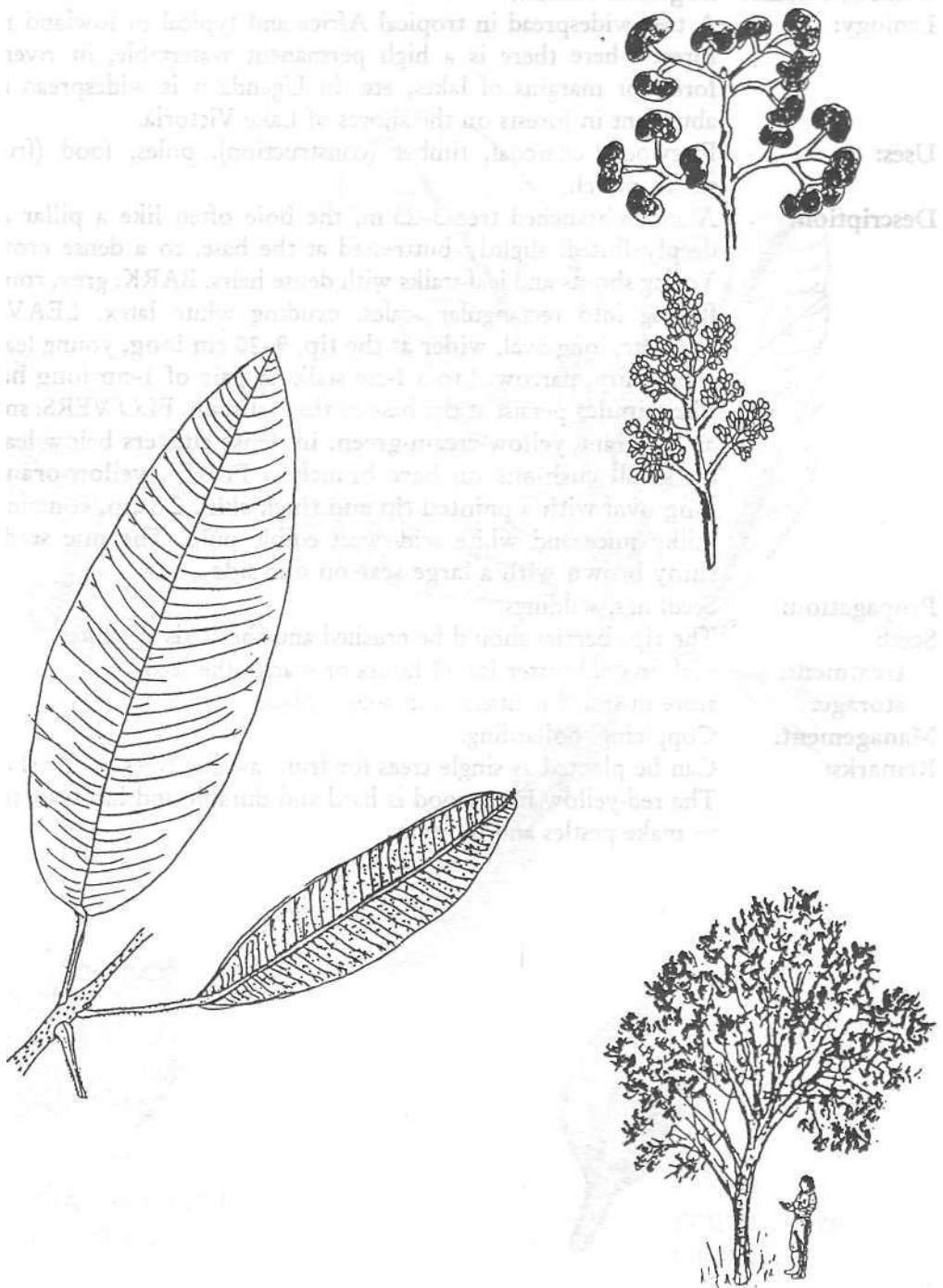
storage: on a cement floor in a dry cool place. Viability is lost after a few weeks, so plant soon after collection.

Management: Tend directly sown seedlings until established. Coppicing, pollarding.

Remarks: This species is becoming increasingly rare because its habitat is dwindling and planting should be encouraged. The dark red wood is easy to work, tough, durable and termite resistant.

Ozoroa insignis subsp. *reticulata*

Anacardiaceae



Indigenous

Common names: **Luganda:** Nkalate.

Ecology: A tree widespread in tropical Africa and typical of lowland rain forest where there is a high permanent watertable, in riverine forest or margins of lakes, etc. In Uganda it is widespread and abundant in forests on the shores of Lake Victoria.

Uses: Firewood, charcoal, timber (construction), poles, food (fruit), shade, mulch.

Description: A much-branched tree 3-25 m, the bole often like a pillar and deeply fluted, slightly buttressed at the base, to a dense crown. Young shoots and leaf stalks with dense hairs. **BARK:** grey, rough, flaking into rectangular scales, exuding white latex. **LEAVES:** alternate, long oval, **wider at the tip, 9-20 cm long**, young leaves grey, hairy, narrowed to a 1-cm stalk. **A pair of 1-cm long hair-like stipules** persist at the base of the leaf stalk. **FLOWERS:** small and fragrant, **yellow-cream-green, in dense clusters** below leaves **on small cushions on bare branches**. **FRUIT:** **yellow-orange, long oval with a pointed tip and thick skin, 2.5 cm**, containing milky juice and white acid-sweet edible pulp. **The one seed is shiny brown with a large scar on one side.**

Propagation: Seedlings, wildings.

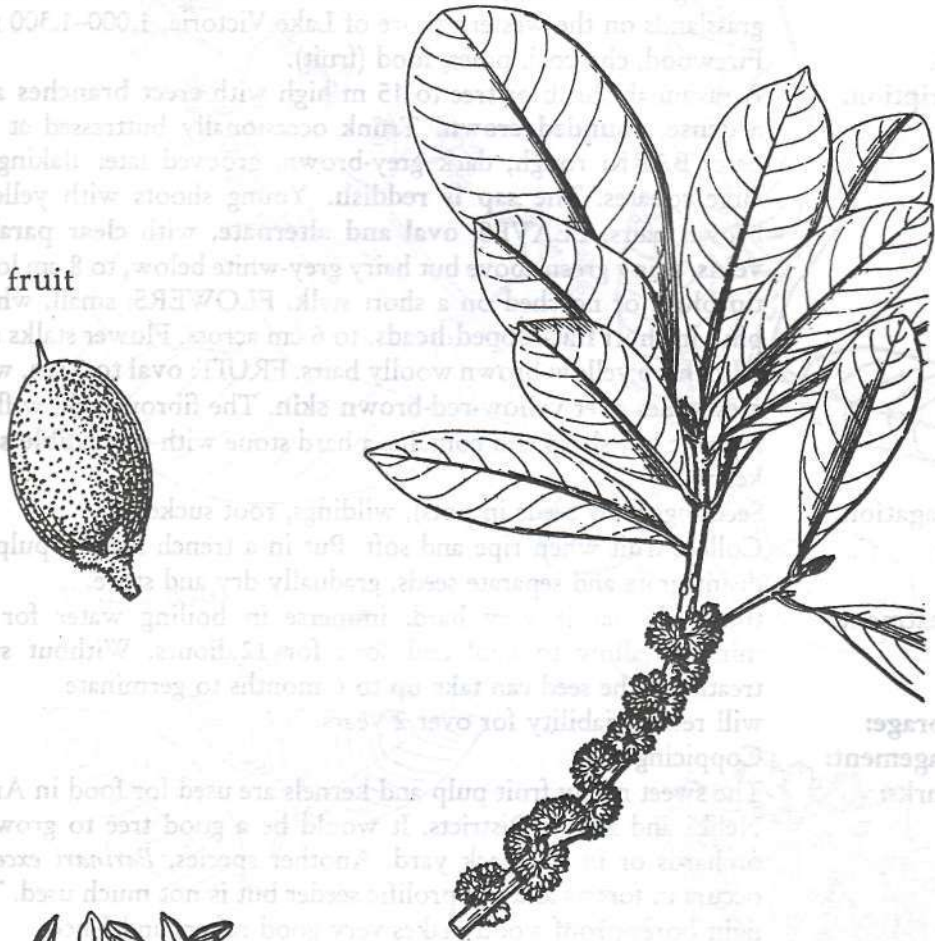
Seed: The ripe berries should be crushed and the seeds separated,

treatment: soak in cold water for 12 hours or scarify the seed,

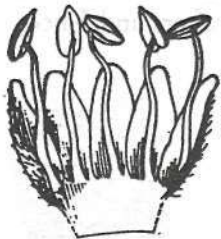
storage: store in sealed containers in a cool place.

Management: Coppicing, pollarding.

Remarks: Can be planted as single trees for fruit, avenue trees or for shade. The red-yellow heartwood is hard and durable and has been used to make pestles and mortars.



fruit



flower enlarged
opened out



young flower
enlarged

Indigenous

Comon names: **Kakwa:** Andzili, angili **Luganda, dialect Buddu:** Munazi **Lugbara:** Andzili, angili **Madi:** Andzili, angili.

Ecology: In Uganda it grows in wooded grassland and woodlands occurring as single trees on hills and is sometimes found scattered in grasslands on the western shore of Lake Victoria, 1,000-1,300 m.

Uses: Firewood, charcoal, poles, food (fruit).

Description: A savannah shrub or tree to 15 m high with **erect branches and a dense, rounded crown**. Trunk occasionally buttressed at the base. **BARK:** rough, dark grey-brown, grooved later flaking in large squares. **The sap is reddish**. Young shoots with yellow-brown hairs. **LEAVES:** **oval and alternate**, with **clear parallel veins**, shiny green above but hairy grey-white below, to 8 cm long, tip blunt or notched on a short stalk. **FLOWERS:** small, white-pink in short **flat-topped heads**, to 6 cm across. Flower stalks and calyx have yellow-brown woolly hairs. **FRUIT:** **oval to 5 cm**, with grey scales over **yellow-red-brown skin**. The fibrous yellow flesh is sweet but sharp and contains a hard stone with **one edible seed kernel**.

Propagation: Seedlings (sow seeds in pots), wildings, root suckers.

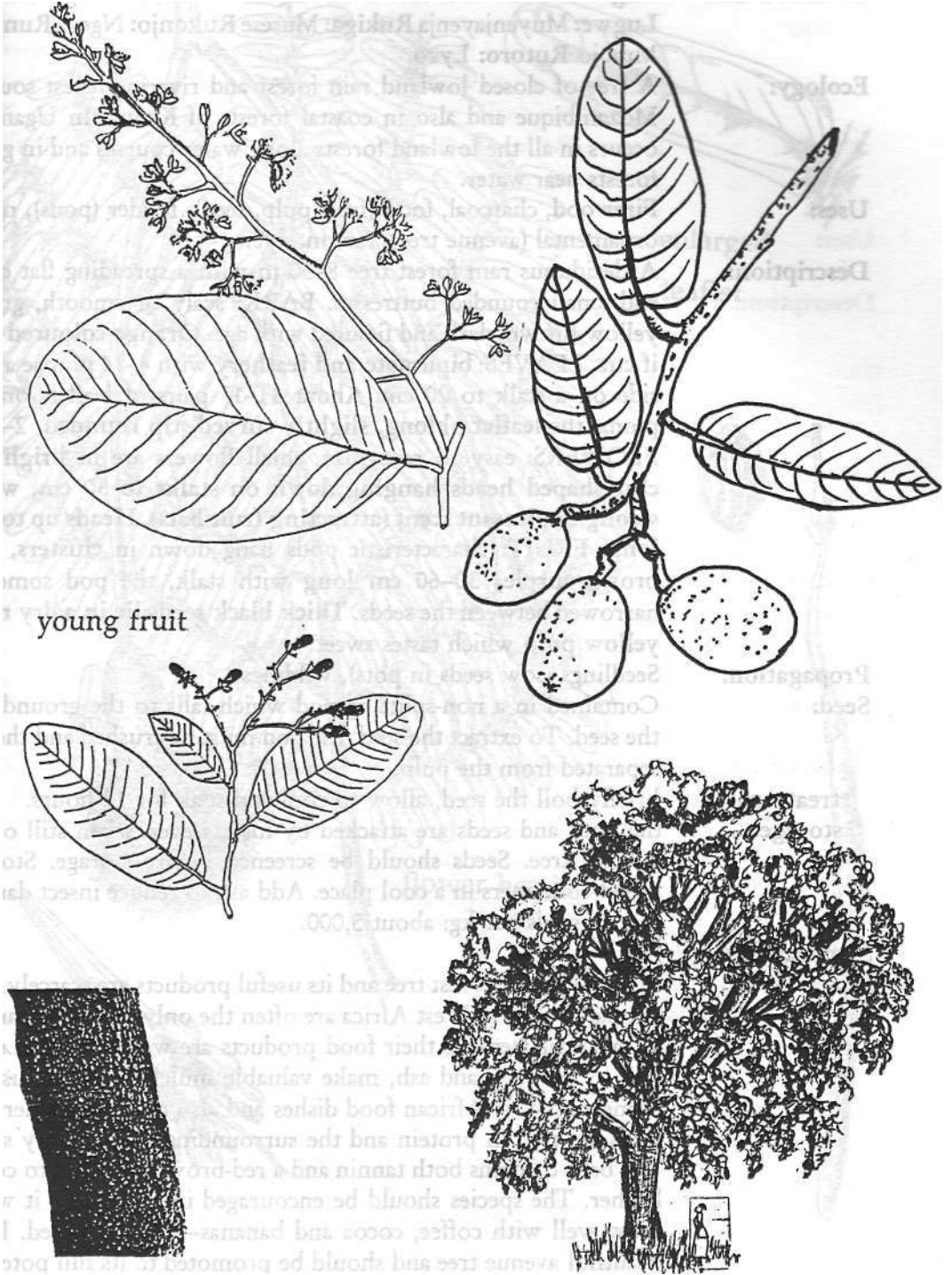
Seed: Collect fruit when ripe and soft. Put in a trench for the pulp to disintegrate and separate seeds, gradually dry and store,

treatment: the seed coat is very hard; immerse in boiling water for 15 minutes, allow to cool and soak for 12 hours. Without such treatment the seed can take up to 6 months to germinate, will retain viability for over 2 years.

storage:

Management: Coppicing.

Remarks: The sweet mealy fruit pulp and kernels are used for food in Arua, Nebbi and Moyo Districts. It would be a good tree to grow in orchards or in the back yard. Another species, *Parinari excelsa*, occurs in forests and is a prolific seeder but is not much used. The light borer-proof wood makes very good rafters and fences.



young fruit

Indigenous

Common names: **English:** African locust bean **Kwamba:** Kidiki **Luganda:** Joge **Lugwe:** Muyenjajenja **Rukiga:** Musese **Rukonjo:** Ngega **Runyoro:** Mujojo **Rutoro:** Lyzo.

Ecology: A tree of closed lowland rain forest and riverine forest south to Mozambique and also in coastal forests of Kenya. In Uganda, it occurs in all the lowland forests along water courses and in gallery forests near water.

Uses: Firewood, charcoal, food (fruit pulp, seed), fodder (pods), mulch, ornamental (avenue tree), tannin, dye.

Description: A deciduous rain forest tree 8-30 m with a spreading flat crown and small rounded buttresses. **BARK:** scaly or smooth, grey to yellow-brown, dark and fissured with age. **Orange-coloured resin if cut.** **LEAVES:** **bipinnate and feathery** with 4-14 pinnae at each side on a stalk to 20 cm. About 11-17 pairs of leaflets on each pinna, the **leaflet oblong, slightly curved, tip rounded**, 2-3 cm. **FLOWERS:** easy to recognize, small flowers are in **bright red club-shaped heads hanging down on stalks to 30 cm, with a strong unpleasant scent (attracting fruit bats). Heads up to 8 cm long.** **FRUIT:** characteristic pods hang down in **clusters, dark brown-purple, 30-60 cm long** with stalk, the pod somewhat narrowed between the seeds. **Thick black seeds lie in a dry mealy yellow pulp** which tastes sweet.

/ J

Propagation: Seedlings (sow seeds in pots), wildings.

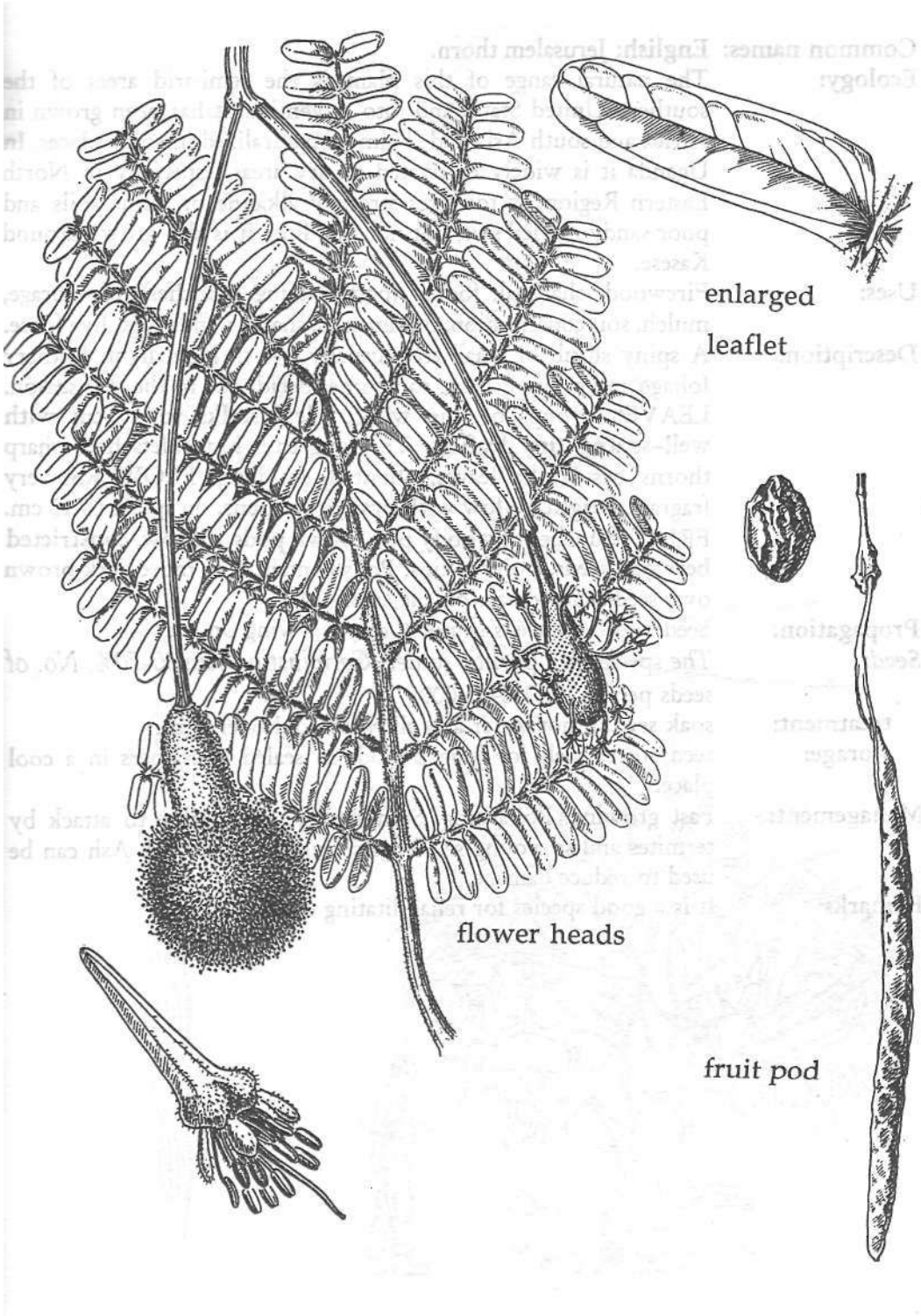
Seed: Contained in a non-splitting pod which falls to the ground with the seed. To extract the seed, the pod must be crushed and the seed separated from the pulp.

treatment: briefly boil the seed, allow to cool and soak for 12 hours.

storage: the pods and seeds are attacked by insects even when still on the mother tree. Seeds should be screened before storage. Store in sealed containers in a cool place. Add ash to reduce insect damage. No. of seeds per kg: about 5,000.

Management:

Remarks: In Uganda, this forest tree and its useful products are scarcely used. Similar species in West Africa are often the only trees left standing in savannah because their food products are well known. Leaves, rich in nitrogen and ash, make valuable mulch. Pods are used in numerous West African food dishes and also as cattle fodder. The seeds are rich in protein and the surrounding pulp is very sweet. The bark contains both tannin and a red-brown dye used to colour leather. The species should be encouraged in Uganda as it would grow well with coffee, cocoa and bananas—widely spaced. It is a beautiful avenue tree and should be promoted to its full potential.



Tropical America

Common names: **English:** Jerusalem thorn.

Ecology: The natural range of this plant is the semi-arid areas of the southern United States and into Argentina. It has been grown in Africa and south Asia and is almost naturalized in some places. In Uganda it is widely cultivated in dry areas, especially in North Eastern Region. It tolerates strongly alkaline or saline soils and poor sandy eroded soil, but not flooding. It is also grown around Kasese.

Uses: Firewood, charcoal, fodder (pods, young branches), bee forage, mulch, soil conservation, ornamental, shade, windbreak, live fence.

Description: A spiny shrub or small tree, usually 5-8 m high, light, feathery foliage and a low crown, sometimes deciduous in the dry season. **LEAVES:** groups of thin **winged leaf stalks to 30 cm with well-spaced tiny leaflets**. The long thin branchlets have sharp thorns beside the leaves, about 1 cm long. **FLOWERS:** very fragrant, **bright yellow with orange stamens**, on spikes to 15 cm. **FRUIT:** bunches of **woody** pale brown pods, narrow, **constricted between seeds**, pointed tips. Pods contain 6 or more dark brown oval seeds and remain on the tree.

Propagation: Seedlings (sow seeds in pots), direct sowing on site.

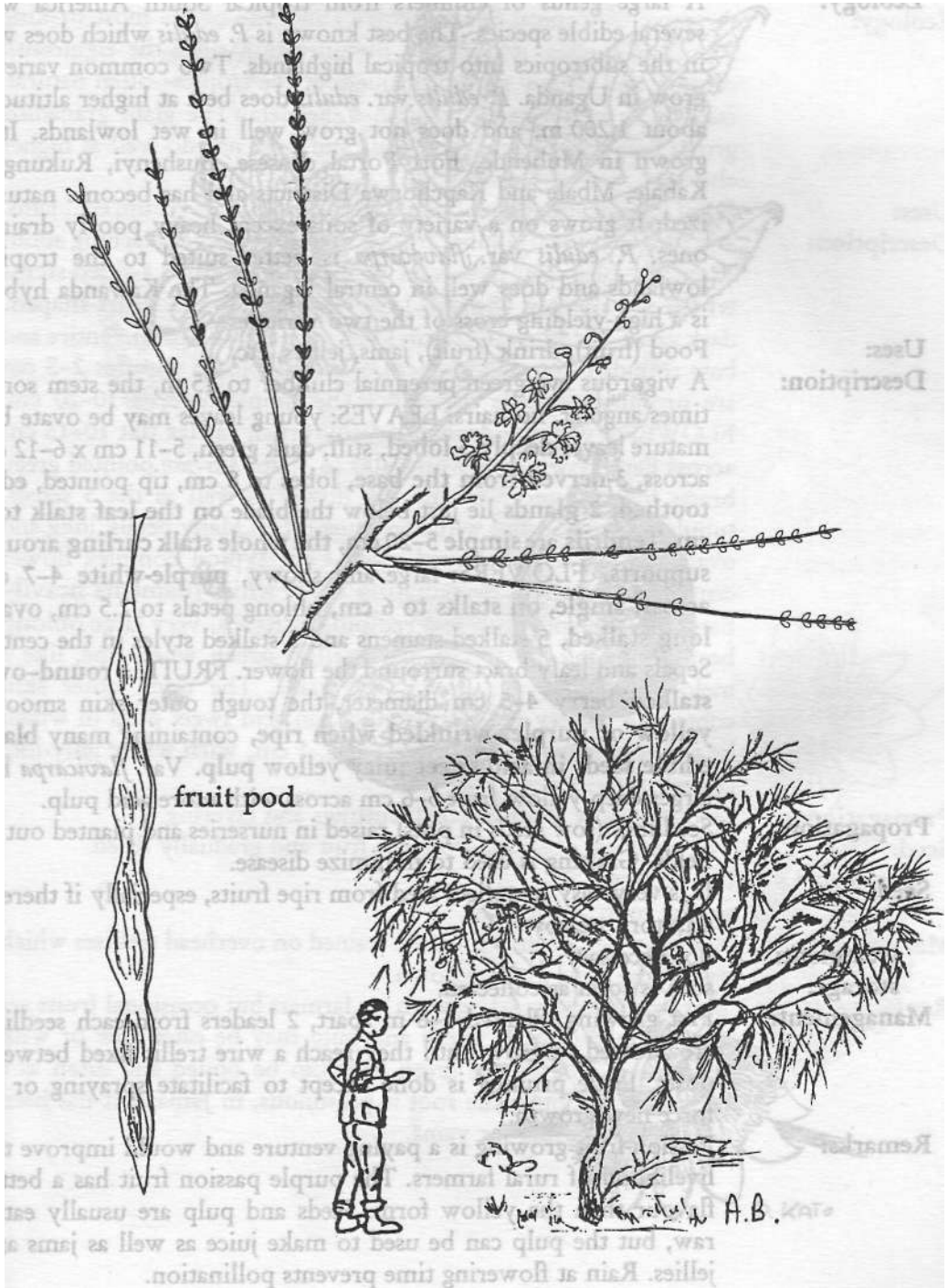
Seed: The species is a prolific seeder. Germination rate 30-70%. No. of seeds per kg: 11,000-15,000.

treatment: soak seed in hot water and allow to cool overnight.

storage: seed stores well for long periods in sealed containers in a cool place.

Management: Fast growing. Pollarding. Seedlings are susceptible to attack by termites and so young seedlings should be protected. Ash can be used to reduce damage.

Remarks: It is a good species for rehabilitating eroded land.



South America

Trade names: Passion fruit, granadilla.

Common names: **English:** Passion fruit, granadilla **Luganda:** Katunda.

Ecology: A large genus of climbers from tropical South America with several edible species. The best known is *P. edulis* which does well in the subtropics into tropical highlands. Two common varieties grow in Uganda. *P. edulis* var. *edulis* does best at higher altitudes, about 1,200 m, and does not grow well in wet lowlands. It is grown in Mubende, Fort Portal, Kasese, Bushenyi, Rukungiri, Kabale, Mbale and Kapchorwa Districts and has become naturalized. It grows on a variety of soils except heavy poorly drained ones. *P. edulis* var. *flavocarpa* is better suited to the tropical lowlands and does well in central Uganda. The Kawanda hybrid is a high-yielding cross of the two varieties.

Uses: Food (fruit), drink (fruit), jams, jellies, etc.

Description: A vigorous evergreen perennial climber to 15 m, the stem sometimes angular, no hairs. **LEAVES:** young leaves may be ovate but mature leaves **deeply 3-lobed**, stiff, dark green, 5-11 cm x 6-12 cm across, **3-nerved from the base**, lobes to 8 cm, tip pointed, **edge toothed; 2 glands** lie just below the blade **on the leaf stalk to 4 cm**. **Tendrils** are **simple 5-20 cm, the whole stalk curling around supports**. **FLOWERS:** large and showy, **purple-white 4-7 cm across, single, on stalks to 6 cm**, oblong petals to 2.5 cm, **ovary long stalked**, 5 stalked stamens and 3 stalked styles in the centre. Sepals and leafy bract surround the flower. **FRUIT:** a **round-oval stalked' berry 4-5 cm** diameter, the tough outer skin smooth, **yellow or purple, wrinkled when ripe**, containing many **black edible seeds in acid-sweet juicy yellow pulp**. Var. *flavocarpa* has larger deep yellow fruit 5-6 cm across with more acid pulp.

Propagation: Seedlings (sow seeds in pots) raised in nurseries and planted out in fields. Grafting is used to minimize disease.

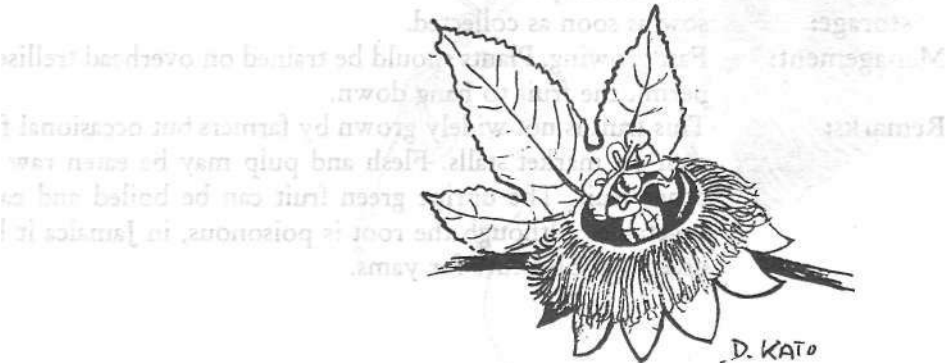
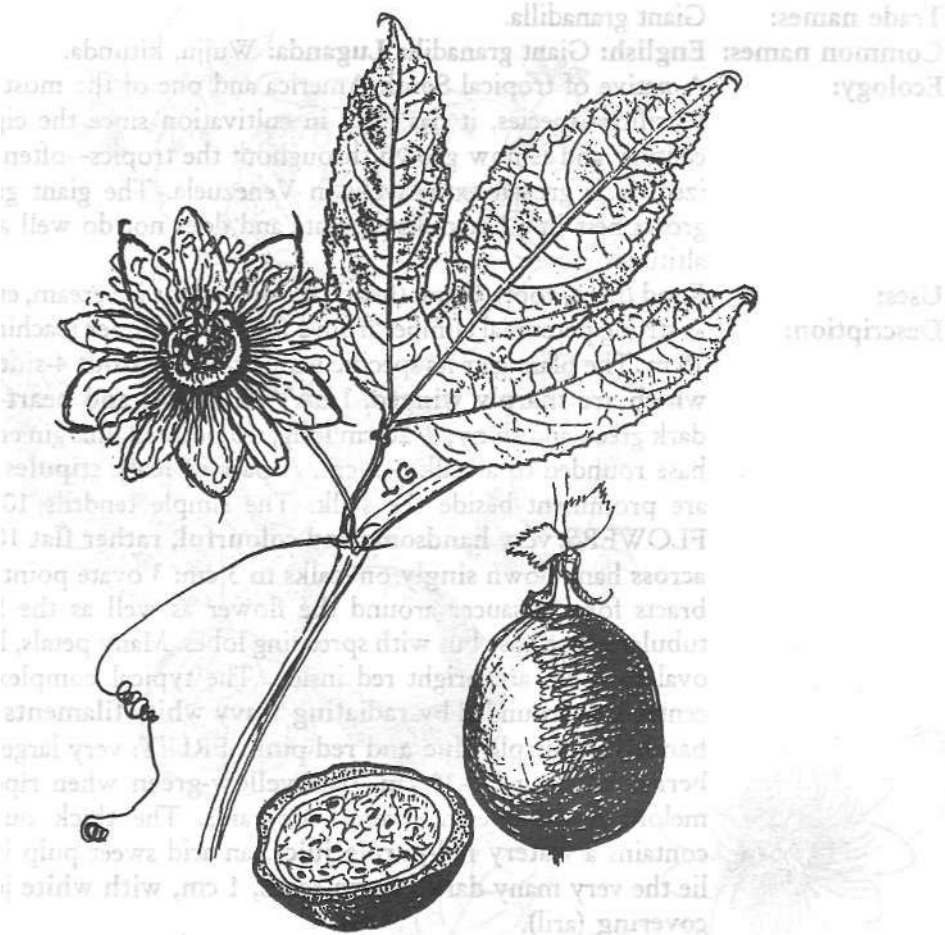
Seed: It is very easy to collect seed from ripe fruits, especially if there is a factory nearby,

treatment: not necessary,

storage: sow as soon as collected.

Management: Fast growing. Planted 3-6 m apart, 2 leaders from each seedling are allowed to grow until they reach a wire trellis fixed between posts. Little pruning is done except to facilitate spraying or to force new growth.

Remarks: Passion-fruit growing is a paying venture and would improve the livelihood of rural farmers. The purple passion fruit has a better flavour than the yellow form. Seeds and pulp are usually eaten raw, but the pulp can be used to make juice as well as jams and jellies. Rain at flowering time prevents pollination.



Tropical America

Trade names: Giant granadilla.

Common names: **English:** Giant granadilla **Luganda:** Wujju, kitunda.

Ecology: A native of tropical South America and one of the most striking Passiflora species, it has been in cultivation since the eighteenth century and is now grown throughout the tropics—often naturalized. It is grown extensively in Venezuela. The giant granadilla grows best in a hot moist climate and does not do well at higher altitudes.

Uses: Food (fruit, root), drink (fruit), flavouring for ice cream, etc., jams.

Description: A strong perennial climber from a fleshy root tuber reaching about 15 m. The plant gets its specific name from the **stout 4-sided stems which are sharply winged**. **LEAVES: simple and heart-shaped**, dark green and shiny, 9-20 cm long, tip pointed, margin entire and base rounded to a stalk 2-5 cm. A **pair of leafy stipules 2-5 cm** are prominent beside the stalk. The simple tendrils 10-20 cm. **FLOWERS: very handsome and colourful, rather flat 10-15 cm across** hang down **singly** on stalks to 3 cm; 3 ovate pointed green bracts form a saucer around the flower as well as the 5 sepals, tubular at the base but with spreading lobes. Many petals, long and oval to 4 cm are bright red inside. The typical complex flower centre is surrounded by **radiating wavy white filaments heavily banded in purple-blue and red-pink**. **FRUIT: very large oblong berry reaching 20-30 cm, pale yellow-green** when ripe, like a melon. It can weigh several kilograms. The thick outer skin contains a **watery red-purple juice**, an acid sweet pulp in which lie the very many **dark brown seeds, 1 cm, with white jelly-like covering** (aril).

Propagation: Seedlings (sow seeds in pots), cuttings and layering.

Seed: The seeds are obtained from the fruit and gradually dried,

treatment: not necessary,

storage: sow as soon as collected.

Management: Fast growing. Plants should be trained on overhead trellises which permit the fruit to hang down.

Remarks: This fruit is not widely grown by farmers but occasional fruits are seen on market stalls. Flesh and pulp may be eaten raw or with other fruit. The unripe green fruit can be boiled and eaten as a vegetable. Although the root is poisonous, in Jamaica it has been used as a substitute for yams.



Indigenous

Common names: **Rukiga:** Mushinya.

Ecology: A shrub common at forest margins, sometimes riverine bushland and thicket from West to Central Africa and Angola. In Uganda it is a tree of forest understorey, thickets and forest edges. Abundant in the Impenetrable (Bwindi) Forest.

Uses: Firewood, charcoal, fibres (bark for strings and buildings).

Description: An evergreen shrub or small tree 2-9 m. **BARK:** smooth grey-brown, sometimes with vertical lines; **fibrous**. **LEAVES:** alternate, blade long oval, about 11 cm long, narrowed to a very short stalk. **FLOWERS: white-yellow-green**, each stalked in a **terminal head with 8-12 flowers**, no petals but 4-5 sepals make a **tubular calyx**, the lobes and ovary hairy. **FRUIT: ovoid drupes about 1 cm long, pink-white to red**, hairy at the top, each containing one seed.

Propagation: Wildings, seedlings.

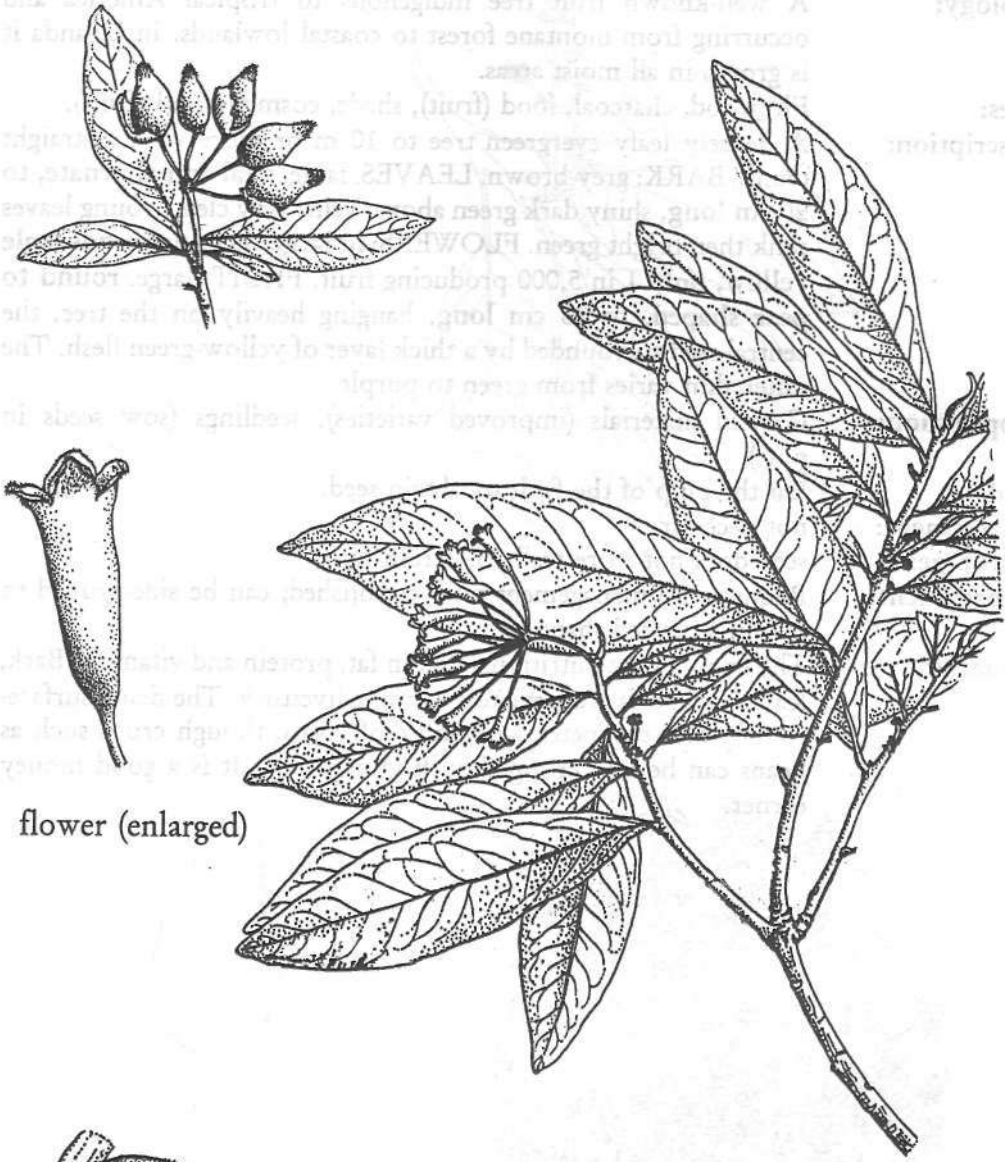
Seed: Normally the plants are shrubs and fruit are easy to reach and collect when they are ripe,

treatment: not necessary.

storage: store in sealed containers in a cool place.

Management: Slow growing. Coppicing, pollarding.

Remarks: The plant should mainly be grown for its strong fibres extracted from the bark. It could be grown as a plantation.



flower (enlarged)

fruit and seed (enlarged)

Tropical America

Common names: **English:** Avocado pear.

Ecology: A well-known fruit tree indigenous to tropical America and occurring from montane forest to coastal lowlands. In Uganda it is grown in all moist areas.

Uses: Firewood, charcoal, food (fruit), shade, cosmetics, oil (fruit).

Description: A densely leafy evergreen tree to 10 m or more with a straight trunk. **BARK:** grey-brown. **LEAVES:** large, **oval and alternate, to 20 cm long**, shiny dark green above, veins very clear, young leaves pink then bright green. **FLOWERS:** in **large terminal heads, pale yellow**, only 1 in 5,000 producing fruit. **FRUIT:** large, **round to pear shaped, to 25 cm long**, hanging heavily on the tree, the central seed surrounded by a thick layer of yellow-green flesh. The outer skin varies from green to purple.

Propagation: Grafted materials (improved varieties), seedlings (sow seeds in pots).

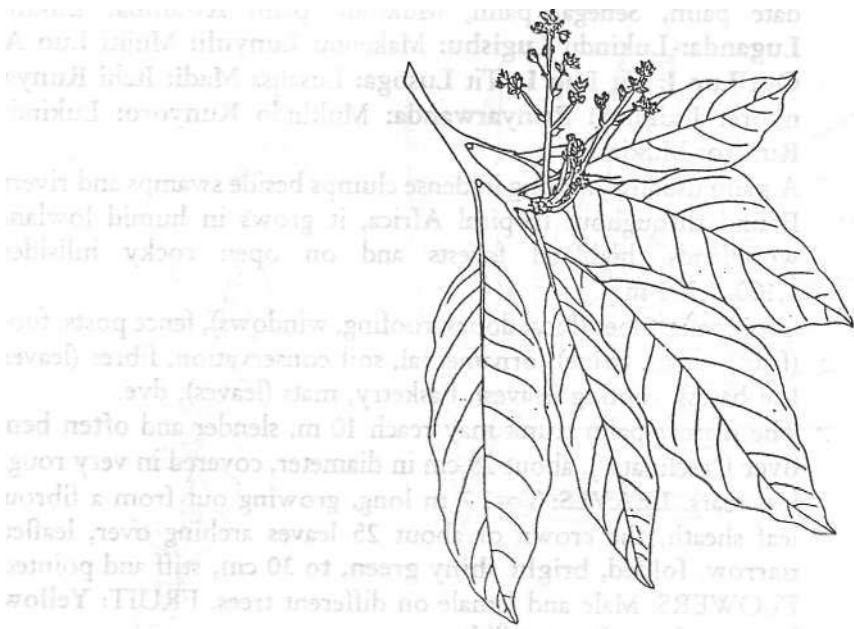
Seed: Eat the pulp of the fruit to obtain seed.

treatment: not necessary.

storage: seed does not store well. Use fresh seed.

Management: Requires no management once established; can be side-pruned to obtain a desired shape.

Remarks: The fruit is very nutritious, rich in fat, protein and vitamins. Bark, leaves and seeds are toxic to browsing livestock. The dense surface-root system competes with those of crops, though crops such as beans can be intercropped with young trees. It is a good money



Indigenous

Common names: **Ateso:** Emusogot **Ateso K dialect Kadam:** Ekingol **English:** Wild date palm, Senegal palm, Mukindu palm **Kwamba:** Enkinu **Luganda:** Lukindu **Lugishu:** Makendu **Lunyuli:** Mujiti **Luo A:** Otit **Luo J:** Tit **Luo L:** Tit **Lusoga:** Lusansa **Madi:** Itchi **Runyankore:** Ekikindu **Runyarwanda:** Mukindo **Runyoro:** Lukindu **Rutoro:** Mukindu.

Ecology: A palm usually growing in dense clumps beside swamps and rivers. Found throughout tropical Africa, it grows in humid lowland woodlands, highland forests and on open rocky hillsides, 1,100-2,200 m.

Uses: Charcoal, timber (local doors, roofing, windows), fence posts, food (fruit), drink (wine), ornamental, soil conservation, fibres (leaves, leaf bases), roofing (leaves), basketry, mats (leaves), dye.

Description: The mature palm trunk may reach 10 m, slender and **often bent over** ("reclinata"), about 25 cm in diameter, covered in very rough leaf scars. **LEAVES:** To 2.7 m long, growing out from a fibrous leaf sheath, the crown of about 25 leaves arching over, leaflets **narrow, folded, bright shiny green, to 30 cm**, stiff and pointed. **FLOWERS:** Male and female on different trees. **FRUIT: Yellow-brown, about 2 cm, edible.**

Propagation: Seedlings, suckers.

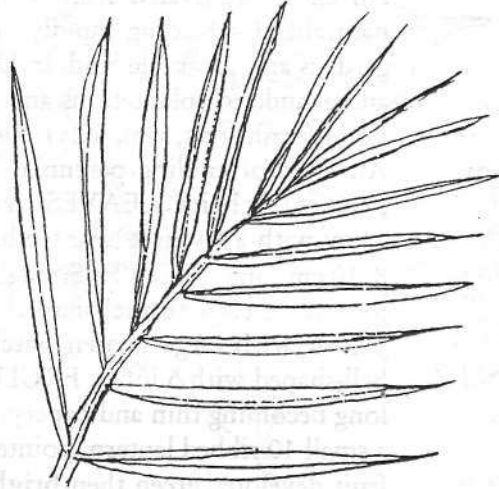
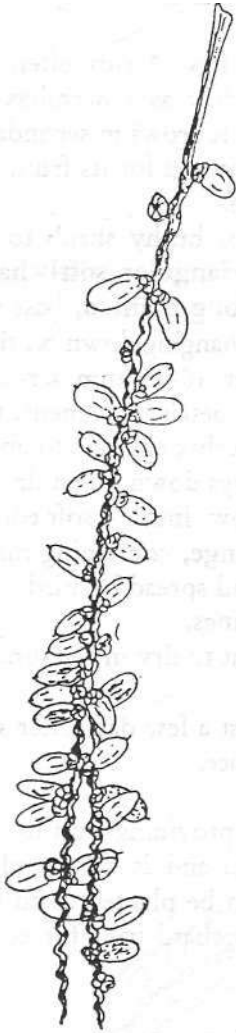
Seed: No. of seeds per kg: 900-5,000.

treatment: not necessary,

storage: seed stores well.

Management: Thinning if planted or growing in groups.

Remarks: Strong fibres from the leaves are used all over Africa for making baskets, mats, etc. This tree has been over-harvested in Uganda and requires immediate attention by replanting and restricting removal of all leaves.



A. Birnie

Physalis peruviana

Solanaceae

South America

Common names: **English:** Cape gooseberry **Luganda:** Ntuntunu **Runyoro:** Ntuutu **Rutoro:** Ntuutu.

Ecology: An exotic cultivated fruit which in East Africa often becomes naturalized spreading rapidly and widely as a harmless weed in gardens and on arable land. In Uganda it grows in secondary scrub and abandoned plantations and is cultivated for its fruit.

Uses: Food (fresh fruit, jam, jelly), medicine.

Description: An erect or trailing perennial herb or bushy shrub to 1 m, **all parts softly hairy**. **LEAVES:** oval to triangular, softly hairy, edge wavy with a few irregular teeth, **tip long pointed**, base rounded, 8-10 cm long. **FLOWERS:** single and hanging down on thin stalks to 8 mm, each **funnel-shaped flower** 10-15 mm across, **cream yellow with large brown patches**, 5 petals, 5 stamens, the calyx bell-shaped with 5 lobes. **FRUIT:** the calyx enlarges to about 4 cm long becoming thin and papery. It hangs down on a thin stalk like a small 10-ribbed lantern, pointed below. Inside a soft edible berry fruit develops, green then **bright orange**, containing many seeds in rather acid flesh. Probably eaten and spread by birds.

Propagation: Direct sowing on site, wildings, seedlings.

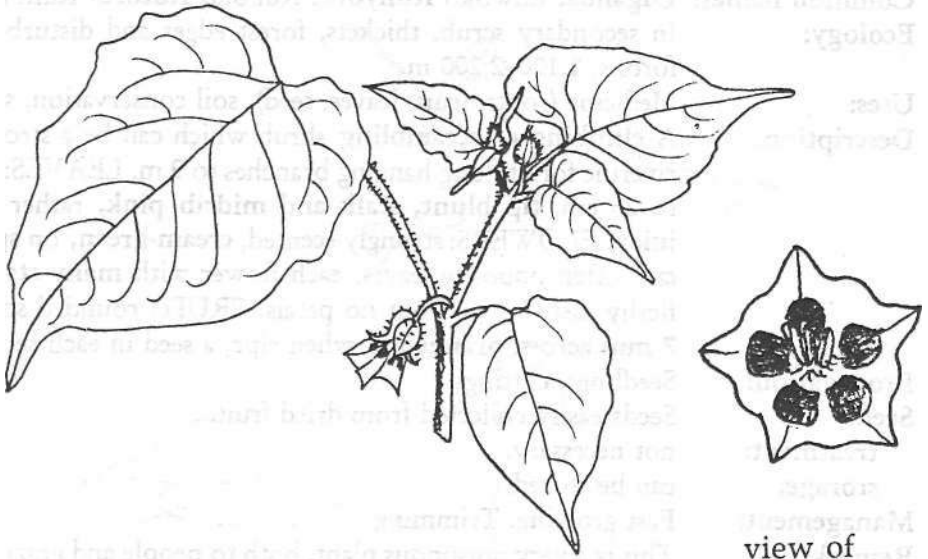
Seed: The berry must be crushed and put out to dry in the sun. Separate the seeds from the dry pulp.

treatment: not necessary. The seeds germinate just a few days after sowing.

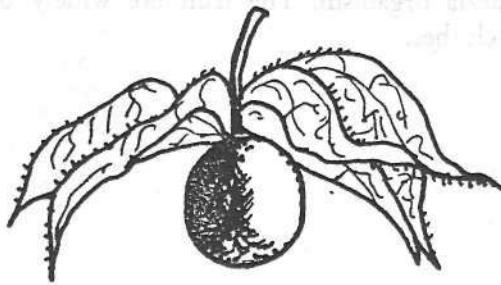
storage: store in sealed containers in a cool place.

Management: Fast growing.

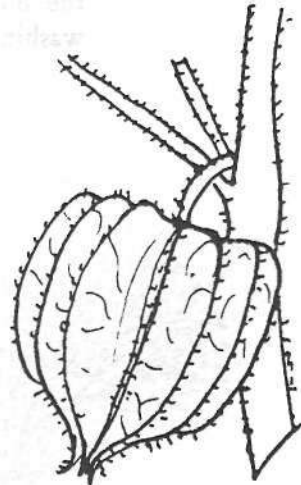
Remarks: In rural areas this plant is regarded as providing fruit for children. However, it is marketed in Kampala and is also used to treat epileptic convulsions in children. Can be planted as an intercrop with maize or sugar cane or as an orchard fruit for commercial sales.



view of
open flower



calyx split
to show berry



Indigenous

Common names: **Luganda:** Luwoko **Runyoro:** Ruhoko **Rutoro:** Ruhoko.

Ecology: In secondary scrub, thickets, forest edges and disturbed areas in forests, 1,100-2,200 m.

Uses: Medicine (roots, fruit, leaves, seed), soil conservation, soap (fruit).

Description: A **climbing or scrambling** shrub which can be a strong liane in riverine forest; long hanging branches to 9 m. **LEAVES:** shiny oval to 25 cm, **tip blunt, stalk and midrib pink**, rather **thick and juicy**. **FLOWERS:** strongly scented, **cream-green**, on **spikes to 40 cm**, often opposite leaves, each flower with **many stamens** on a fleshy disc, 5 sepals but no petals. **FRUIT:** rounded **soft fruit to 7 mm** across, **orange-red** when ripe, a seed in each section.

Propagation: Seedlings, cuttings.

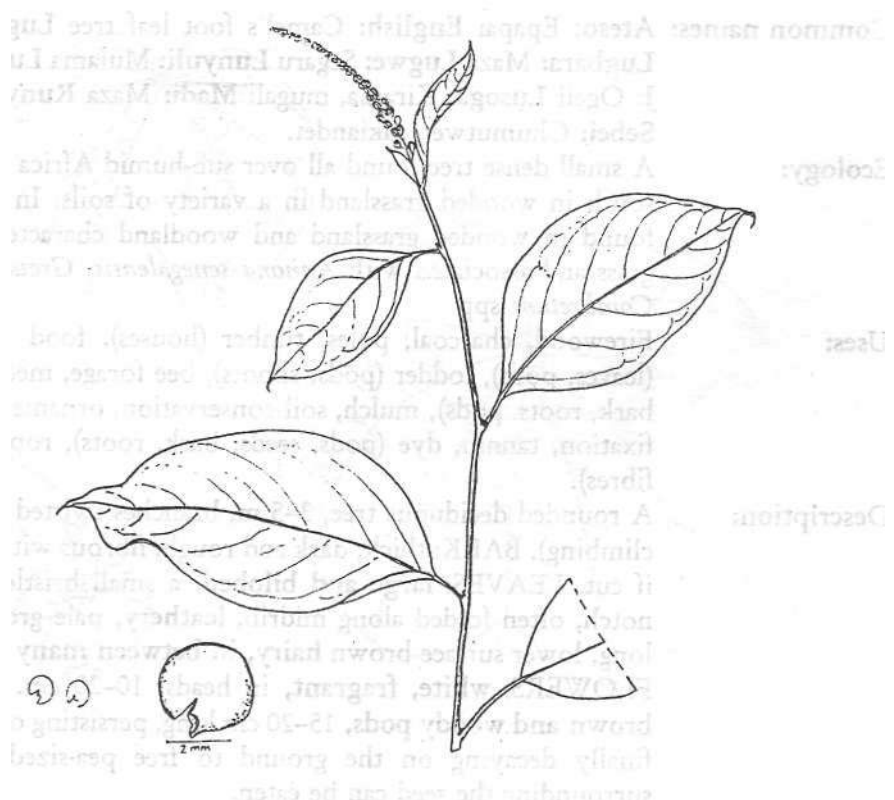
Seed: Seeds easily collected from dried fruit.

treatment: not necessary.

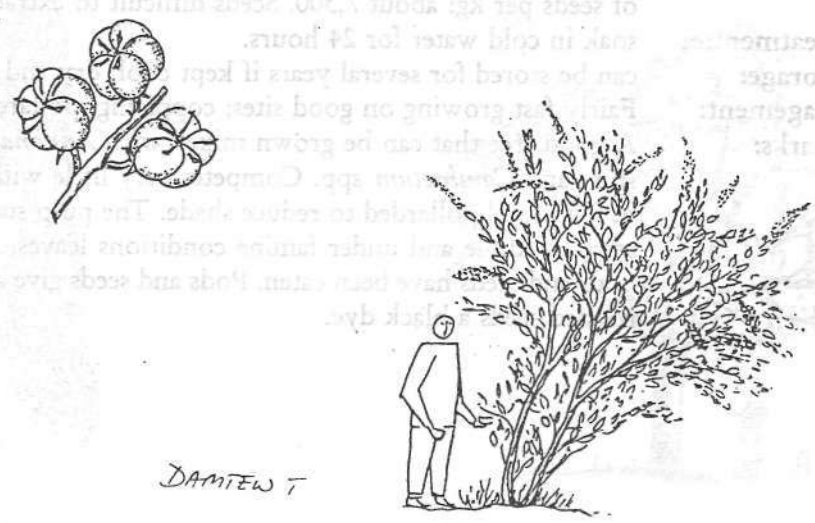
storage: can be stored.

Management: Fast growing. Trimming.

Remarks: This is a very poisonous plant, both to people and grazing animals. The leaves and roots are particularly poisonous. It should, therefore, be used with great care as an overdose of medicine can cause death. Sheep and cattle have died from eating the leaves during times of drought. Juice from the leaves or roots can cause abortion, and, suitably applied, can kill sperm. The commonest medicinal use is for killing intestinal worms. The juice can also be used to kill mosquito larvae in ponds, etc., and to kill snails and the bilharzia organism. The fruit are widely used as soap for washing clothes.



fruit and seed



DAMTEW T

Indigenous

Common names: **Ateso:** Epapai **English:** Camel's foot leaf tree **Luganda:** **Kigali** **Lugbara:** Maza **Lugwe:** Segaru **Lunyuli:** Mulama **Luo:** Ogali **Luo J:** Ogeli **Lusoga:** Kirama, mugali **Madi:** Maza **Runyoro:** Mugare **Sebei:** Chumutwet, sakiandet.

Ecology: A small dense tree found all over sub-humid Africa from west to south in wooded grassland in a variety of soils. In Uganda it is found in wooded grassland and woodland characterized by tall grass and associated with *Annona senegalensis*, *Grewia mollis* and *Combretum* spp.

Uses: Firewood, charcoal, poles, timber (houses), food (pods), drink (leaves, pods), fodder (pods, shoots), bee forage, medicine (leaves, bark, roots, pods), mulch, soil conservation, ornamental, nitrogen fixation, tannin, dye (pods, seeds, bark, roots), rope (bark, root fibres).

Description: A rounded deciduous tree, 3-5 m, branches twisted (occasionally climbing). **BARK:** thick, dark and rough, fibrous within. Dark red if cut. **LEAVES:** **large and bilobed**, a small bristle in the deep notch, often folded along midrib, **leathery**, pale green, to 12 cm long, lower surface brown **hairy, in between many raised veins**. **FLOWERS:** **white, fragrant**, in heads, 10-20 cm. **FRUIT:** **flat brown and woody pods**, 15-20 cm long, persisting on the tree but finally decaying on the ground to free pea-sized seeds. Pulp surrounding the seed can be eaten.

Propagation: Seedlings (sow seeds in pots), direct sowing on site.

Seed: The tree produces many seeds with a good germination rate. No. of seeds per kg: about 7,300. Seeds difficult to extract.

treatment: soak in cold water for 24 hours.

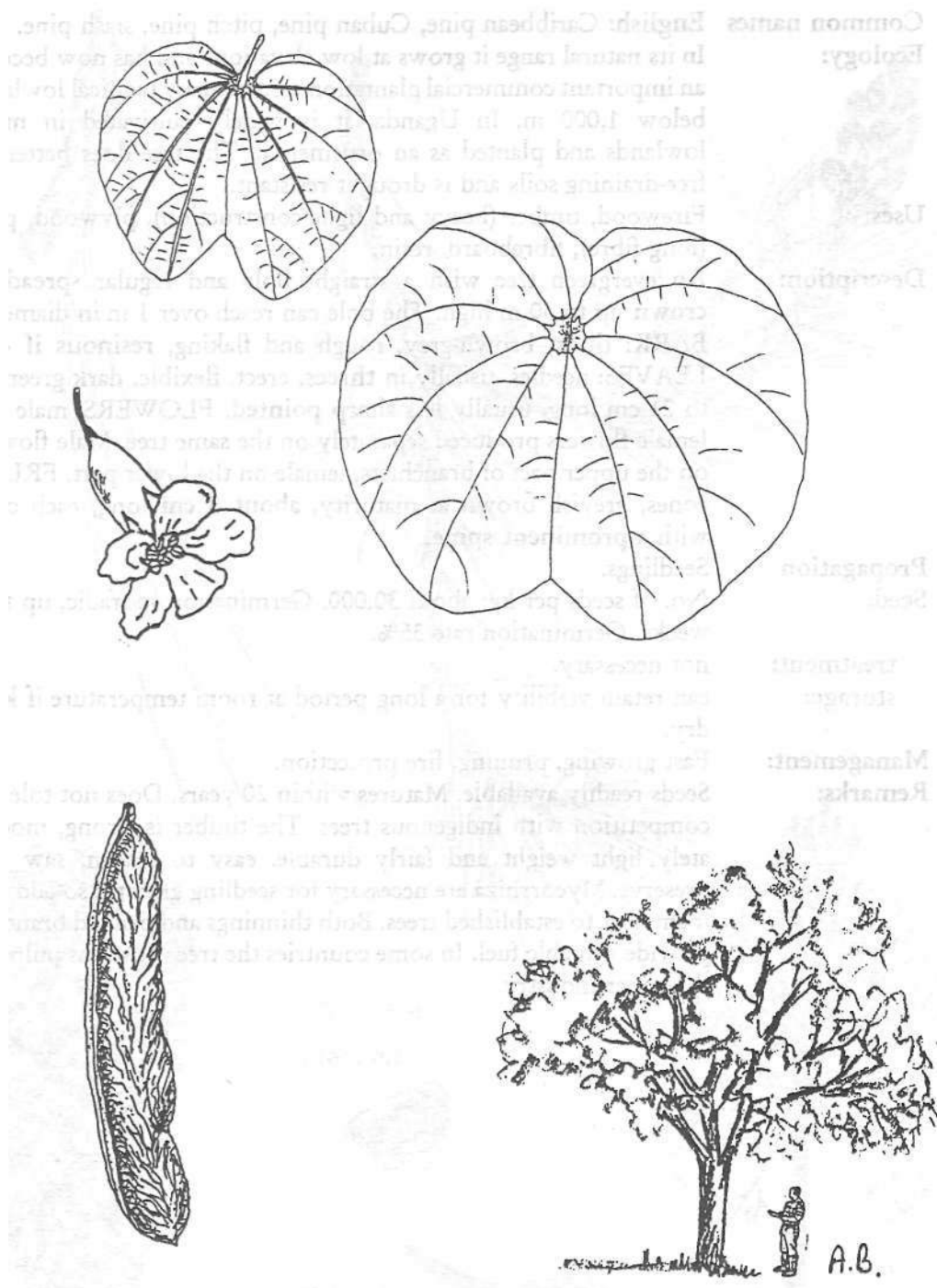
storage: can be stored for several years if kept cool, dry and insect free.

Management: Fairly fast growing on good sites; coppicing, pollarding.

Remarks: A good tree that can be grown mixed with *Annona* spp., *Grewia* spp., and *Combretum* spp. Competes very little with maize if left in fields and pollarded to reduce shade. The pulp surrounding the seeds is edible and under famine conditions leaves, crushed green pods and seeds have been eaten. Pods and seeds give a blue dye and roasted seeds a black dye.

Piliostigma thonningii

Caesalpinaceae



Pinus caribaea

Pinaceae

Central America

Common names **English:** Caribbean pine, Cuban pine, pitch pine, slash pine.

Ecology: In its natural range it grows at low elevations and has now become an important commercial plantation tree in many tropical lowlands below 1,000 m. In Uganda, it is widely cultivated in moist lowlands and planted as an ornamental. The tree does better on free-draining soils and is drought resistant.

Uses: Firewood, timber (heavy and light construction), plywood, pulp (long fibre), fibreboard, resin.

Description: An evergreen tree with a straight bole and regular **spreading crown** up to 30 m high. The bole can reach over 1 m in diameter. **BARK:** thick, brown-grey, rough and flaking, **resinous if cut**. **LEAVES:** needles, usually in **threes**, erect, flexible, dark green up to 21 cm long, usually less **sharp pointed**. **FLOWERS:** male and female flowers produced separately on the same tree. Male flowers on the upper part of branchlets, female on the lower part. **FRUIT:** cones, greyish brown at maturity, **about 8 cm** long, each cone with a **prominent spine**.

Propagation Seedlings.

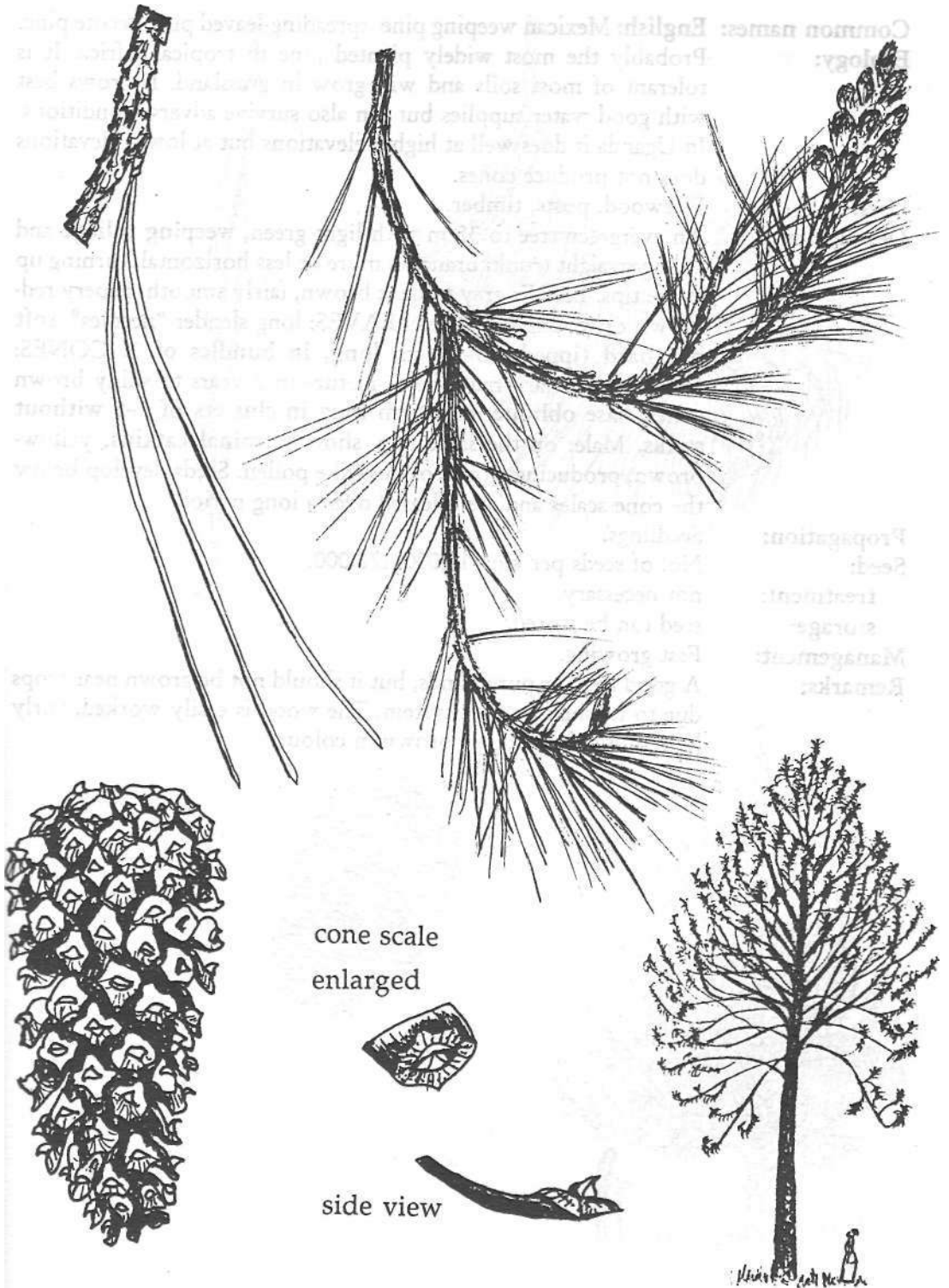
Seed: No. of seeds per kg: about 30,000. Germination sporadic, up to 6 weeks. Germination rate 35%.

treatment: not necessary.

storage: can retain viability for a long period at room temperature if kept dry.

Management: Fast growing; pruning, fire protection.

Remarks: Seeds readily available. Matures within 20 years. Does not tolerate competition with indigenous trees. The timber is strong, moderately light weight and fairly durable, easy to season, saw and preserve. Mycorrhiza are necessary for seedling growth, so add soil from next to established trees. Both thinnings and pruned branches provide valuable fuel. In some countries the tree is used as pulp for the paper industry.

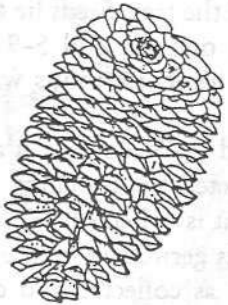
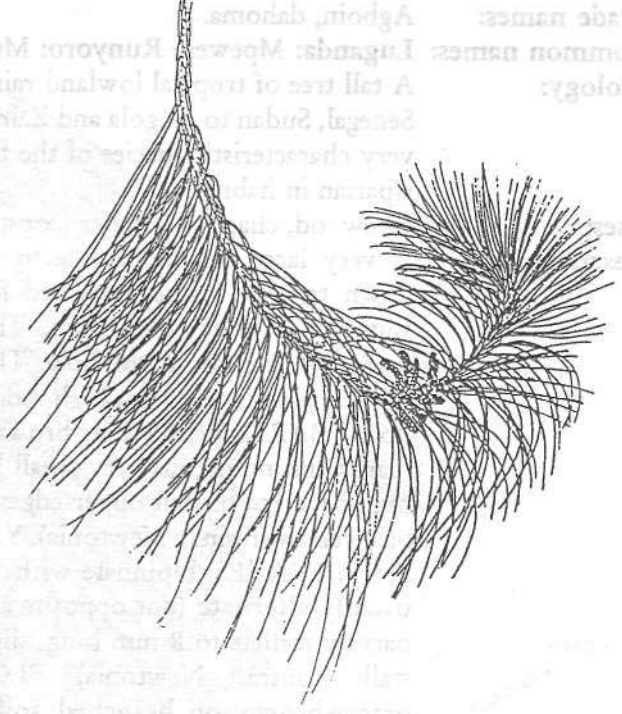
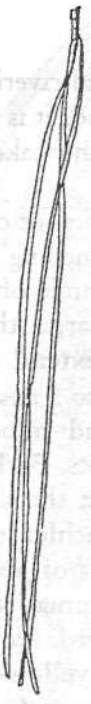


cone scale enlarged

side view

Mexico

- Common names** **English:** Mexican weeping pine, spreading-leaved pine, tecote pine.
- Ecology:** Probably the most widely planted pine in tropical Africa. It is tolerant of most soils and will grow in grassland. It grows best with good water supplies but can also survive adverse conditions. In Uganda it does well at higher elevations but at lower elevations does not produce cones.
- Uses:** Firewood, posts, timber.
- Description:** An evergreen tree to 35 m with light green, **weeping foliage** and a long straight trunk; branches more or less horizontal, turning up at the tips. **BARK:** grey to dark brown, fairly smooth, papery red-brown on young branches. **LEAVES:** long slender "needles", **soft but hard tipped, 15-23 cm long, in bundles of 3.** **CONES:** female: small hard red spheres mature in 2 years to shiny brown cones, **base oblique, to 10 cm long in clusters of 2-5 without stalks.** Male: on the same tree, **short terminal catkins**, yellow-brown, producing clouds of dust-like pollen. Seeds develop below the cone scales and are released over a long period.
- Propagation:** Seedlings.
- Seed:** No. of seeds per kg: 110,000-170,000.
- treatment:** not necessary,
- storage:** seed can be stored.
- Management:** Fast growing.
- Remarks:** A good tree for pure stands, but it should not be grown near crops due to its shallow root system. The wood is easily worked, fairly light and soft, and pale brown in colour.



A.B.

Indigenous

Trade names: Agboin, dahoma.

Common names: **Luganda:** Mpewere **Runyoro:** Mugeye.

Ecology: A tall tree of tropical lowland rain forest and riverine forest from Senegal, Sudan to Angola and Zaire. In Uganda it is a common and very characteristic species of the forests of the Lake Victoria belt, riparian in habit.

Uses: Firewood, charcoal, timber (construction, dugout canoes), shade.

Description: A very large deciduous tree to 50 m, branching relatively low down to give feathery layered foliage. Trunk often leaning or wavy to a wide flat crown. There are **large thin buttresses** extending 3-5 m up the bole. They may **extend outwards like curved planks to 30 cm** high radiating out to 5 m along the forest floor. **BARK:** yellow-grey-brown, thin and smooth with ring marks and numerous very small lenticel dots. Bark on buttresses may have red-brown upper edges; when cut the slash is dry and pale yellow (resin in Newtonia). **Young branchlets densely brown hairy.** **LEAVES:** bipinnate with 10-19 pairs of pinnae which are **usually alternate** (not opposite as in Newtonia), very many tiny narrow leaflets to 8 mm long, slightly curved. No glands on leaf stalk (contrast Newtonia). **FLOWERS:** **yellow-white**, fading orange-brown, on **branched spikes each one 4-11 cm with a hairy brown stalk.** Each tiny flower has a cup-like calyx, 5 petals and 10 longer stamens. Flowering is irregular but dense masses of flowers appear on upper branches. **FRUIT: flat pods, dark brown, 17-36 cm long**, about 2.5 cm wide, split open on one side only to release seed while still on the tree. Seeds lie transversely in the pod (unlike Newtonia), each one flat and 5-9 cm long, brown and **oblong, surrounded by a membranous wing.**

Propagation: Wildings, seedlings.

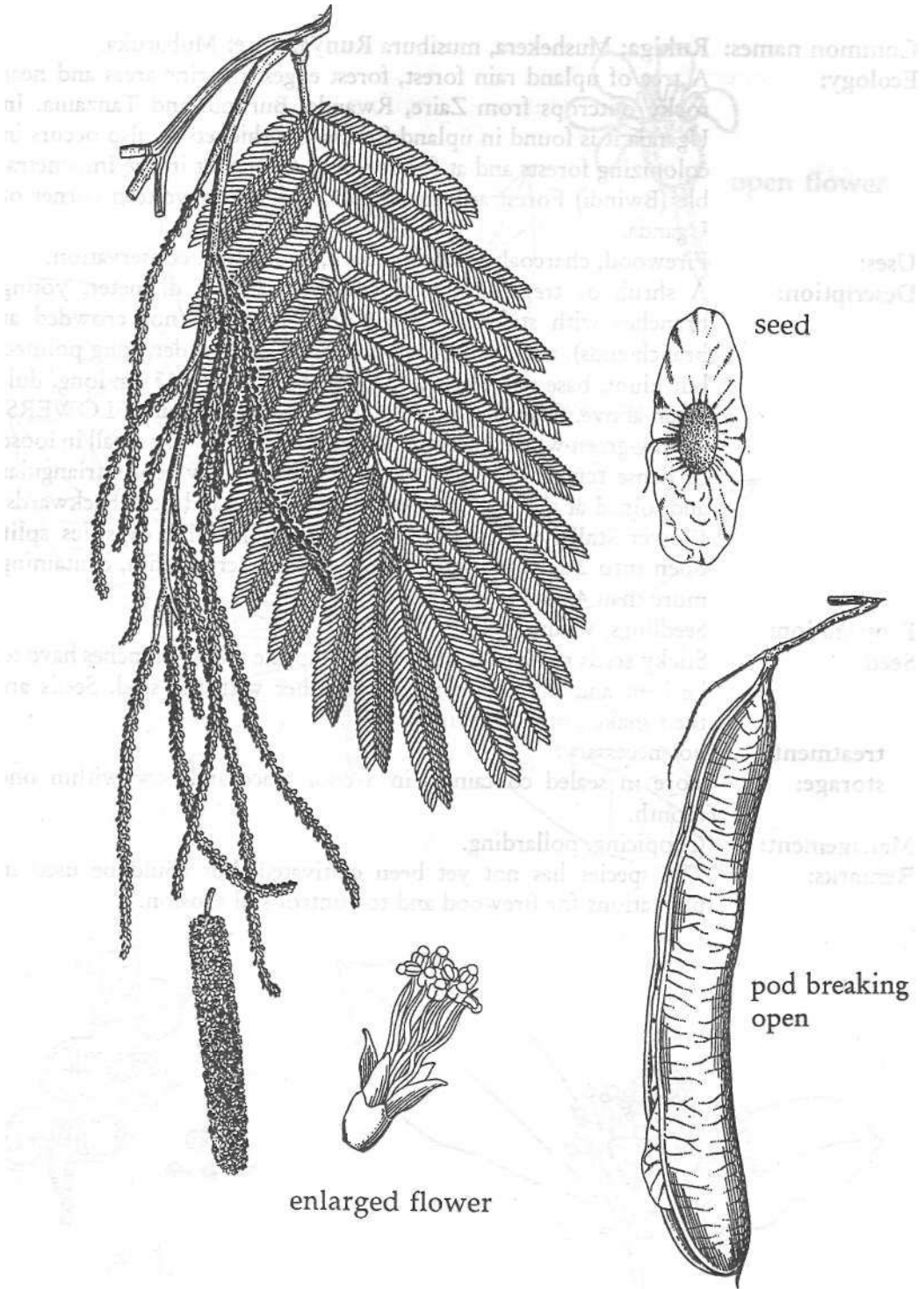
Seed: On dehiscing, the winged seeds are blown away from the mother tree. Seed must be collected by searching throughout the forest until the required amount is collected,

treatment: not necessary. Fresh seeds germinate in one or two weeks,

storage: preferably plant as soon as collected and do not store for more than one month.

Management:

Remarks: The timber has been used in Kenya for cabinet work, sleepers and wagon building. The species has been successfully tried in plantations by the Uganda Forest Department. It is also suitable as a shade tree in banana, coffee and cocoa plantations. Many fine specimens can be seen in the Entebbe Botanic Gardens.



Indigenous

Common names: **Rukiga:** Mushekera, musibura **Runyankore:** Mubaruka.

Ecology: A tree of upland rain forest, forest edges, riverine areas and near rocky outcrops from Zaire, Rwanda, Burundi and Tanzania. In Uganda it is found in upland forests and thickets. It also occurs in colonizing forests and at forest edges. Abundant in the Impenetrable (Bwindi) Forest and confined to this south-western corner of Uganda.

Uses: Firewood, charcoal, medicine (bark, roots), soil conservation.

Description: A shrub or tree 3-12 m, the bole to 15 cm diameter, young branches with stiff hairs. **LEAVES:** alternate (not crowded at branch ends), narrow oval, upper blade often wider, long pointed but blunt, base narrowed to a 1 cm stalk, leaf to 13 cm long, dull green above, paler below, vein network conspicuous. **FLOWERS:** yellow-green-white, sweet smelling like jasmine, very small in loose or dense **terminal heads, to 15 cm long.** Tiny sepals triangular and joined at the base, 5 petals much longer and bent backwards. **Flower stalks with rusty brown hairs. FRUIT: capsules split open into 2 sections** shiny inside to 1 cm across, thin, containing more than 4 seeds.

Propagation: Seedlings, wildings.

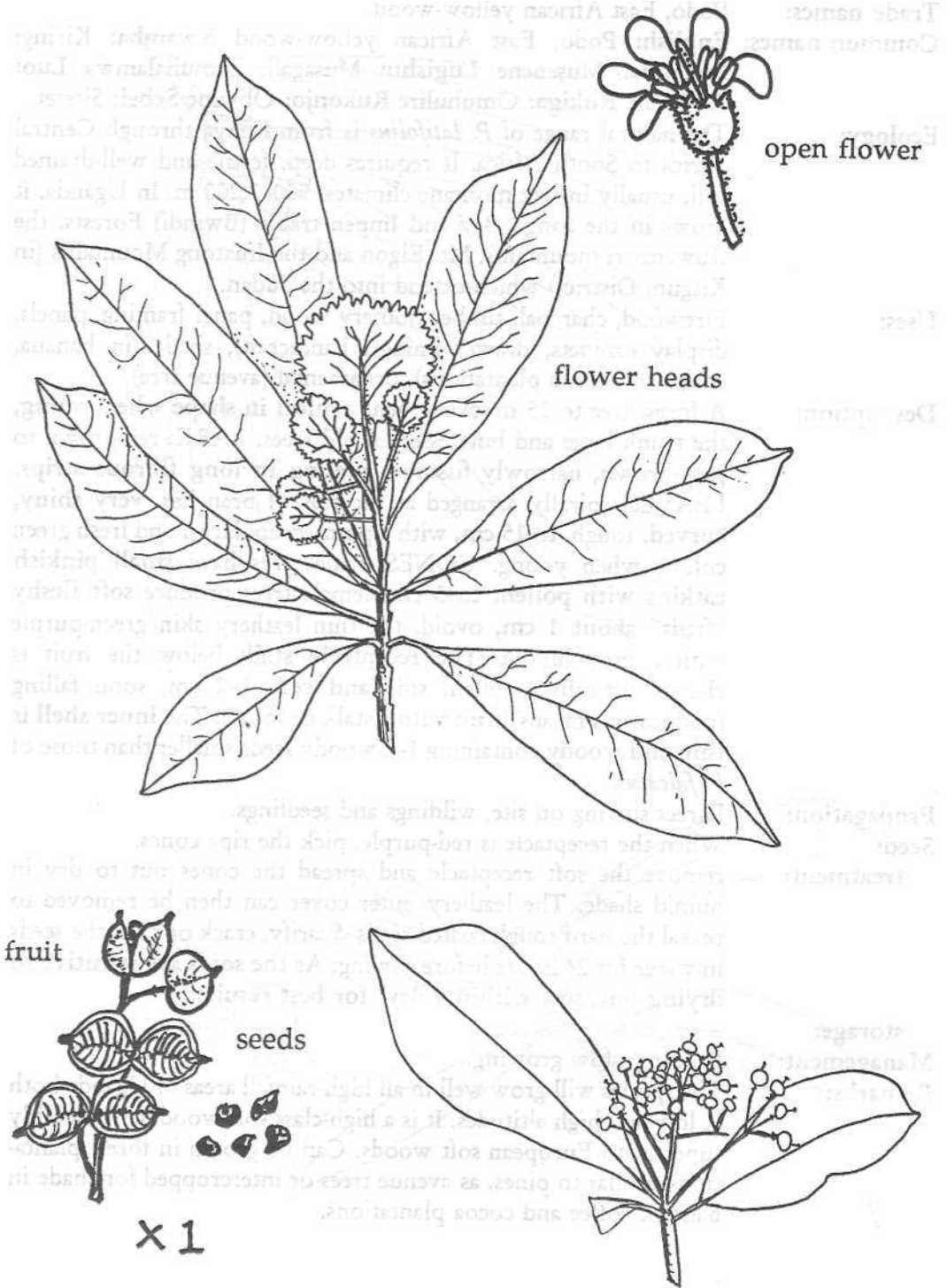
Seed: Sticky seeds remain attached to the capsule walls. Branches have to be bent and capsules collected together with the seed. Seeds are then shaken off as required,

treatment: not necessary.

storage: store in sealed containers in a cool place and sow within one month.

Management: Coppicing, pollarding.

Remarks: The species has not yet been cultivated, but could be used in plantations for firewood and to control soil erosion.



Indigenous

Trade names: Podo, East African yellow-wood.

Common names: **English:** Podo, East African yellow-wood **Kwamba:** Kiringi **Luganda:** Musenene **Lugishu:** Musagali, gumuhalamwa **Luo:** Akikache **Rukiga:** Omuhulire **Rukonjo:** Obwipe **Sebei:** Sitetet.

Ecology: The natural range of *P. latifolius* is from Kenya through Central Africa to South Africa. It requires deep, fertile and well-drained soil, usually in wet montane climates, 900-3,200 m. In Uganda, it grows in the Sango Bay and Impenetrable (Bwindi) Forests, the Ruwenzori mountains, Mt. Elgon and the Imatong Mountains (in Kitgum District) which extend into the Sudan.

Uses: Firewood, charcoal, timber (joinery wood, panel framing, panels, display cabinets, drawer linings, handicraft), shade (in banana, coffee and cocoa plantations), ornamental (avenue tree).

Description: A forest tree to 35 m, **evergreen, conical in shape when young**, the trunk large and buttressed in old trees. **BARK:** red-brown to grey-brown, narrowly fissured, **peeling in long fibrous strips**. **LEAVES:** spirally arranged at the tips of branches, **very shiny, curved**, tough, **to 15 cm**, with a pointed tip, larger and fresh green colour when young. **CONES:** male trees have **small pinkish catkins with pollen, to 5 cm**; female trees produce **soft fleshy "fruit" about 1 cm**, ovoid, the thin leathery skin green-purple with a grey bloom. **The receptacle stalk** below the fruit is characteristically swollen, **soft and red**, 1-2 cm, soon falling (podocarpus means "fruit with a stalk or foot"). The **inner shell is thin and woody** containing 1-2 woody seeds smaller than those of *P. falcatus*.

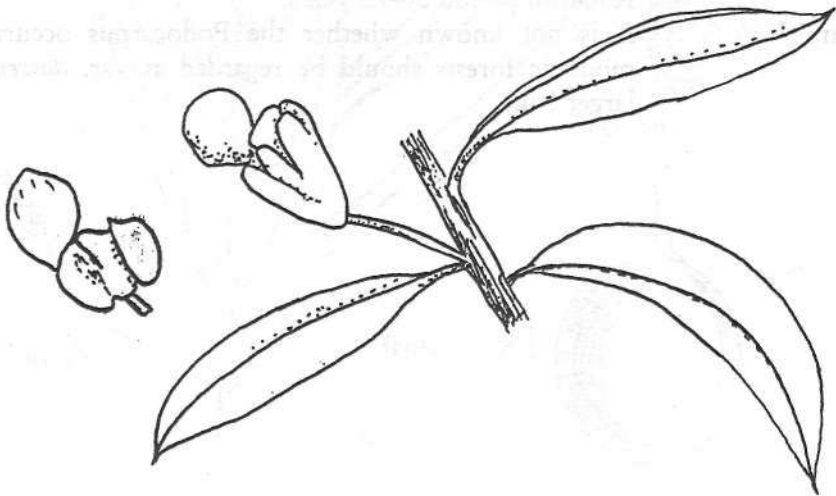
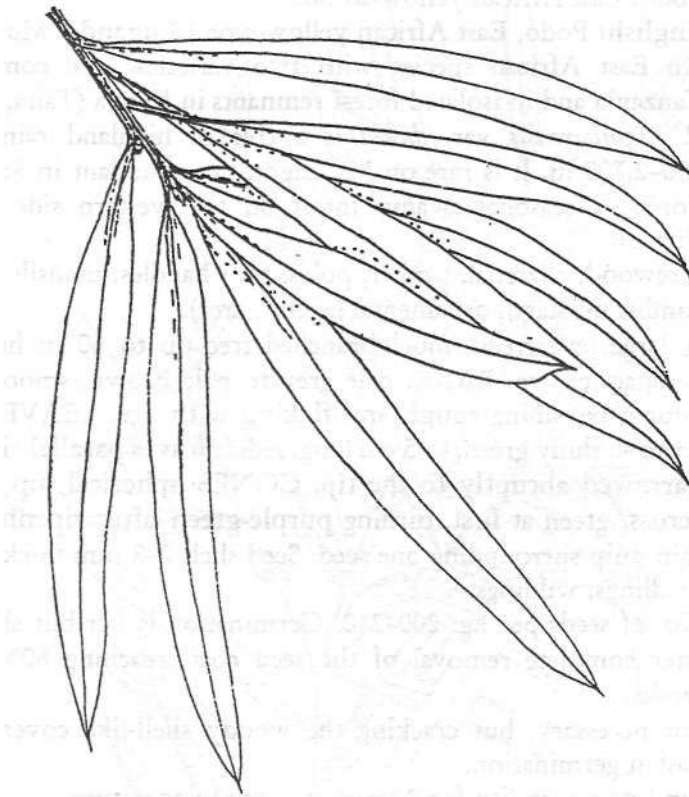
Propagation: Direct sowing on site, wildings and seedlings.

Seed: When the receptacle is red-purple, pick the ripe cones, **treatment:** remove the soft receptacle and spread the cones out to dry in humid shade. The leathery outer cover can then be removed to reveal the hard rough coated seeds. Scarify, crack or soak the seeds in water for 24 hours before sowing. **As the seeds are sensitive to drying out, sow within 4 days for best results.**

storage:

Management: Pruning; slow growing.

Remarks: The species will grow well in all high-rainfall areas of Uganda both at low and high altitudes. It is a high-class soft wood, considerably superior to European soft woods. Can be grown in forest plantations similar to pines, as avenue trees or intercropped for shade in banana, coffee and cocoa plantations.



Indigenous

Trade names: Podo, East African yellow-wood.

Common names: **English:** Podo, East African yellow-wood **Luganda:** Musenene.

Ecology: An East African species with two varieties, one common in Tanzania and in isolated forest remnants in Kenya (Taita, Ngulia). *P. usambarensis* var. *dawei* is a tree of highland rain forests, 950-2,700 m. It is rare on Mt. Elgon but abundant in Sango Bay Forest, a seasonal swamp forest on the western side of Lake Victoria.

Uses: Firewood, charcoal, timber, poles, tool handles, utensils (spoons, combs, mortars), ornamental (avenue tree).

Description: A large, evergreen, much-branched tree up to 60 m high with compact crown. **BARK:** pale grey to pale brown, smooth when young, becoming **rough and flaking with age**. **LEAVES:** small, narrow, shiny green, to 5 cm long. Adult **leaves parallel sided, but narrowed abruptly to the tip**. **CONES:** **spherical, up to 3 cm across**, green at first, turning **purple-green after ripening**, with thin pulp surrounding one seed. Seed shell 2-8 mm thick.

Propagation Seedlings, wildings.

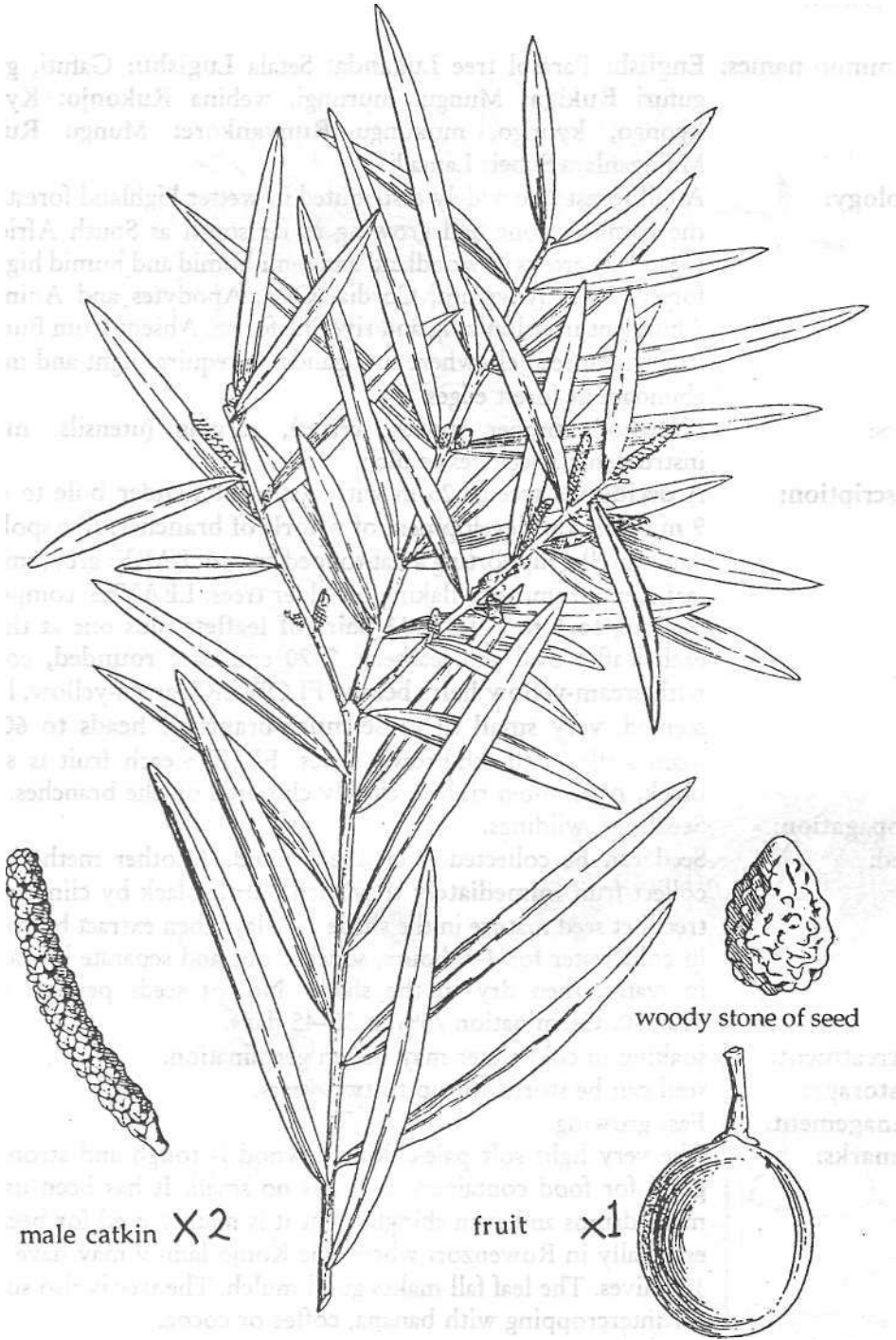
Seed: No. of seeds per kg: 200-210. Germination is fair but slow even after complete removal of the seed coat, reaching 60% after 9 weeks.

treatment: not necessary, but cracking the woody shell-like covering may hasten germination.

storage: can retain viability for 2 years at room temperature.

Management: A slow-growing species. It needs nurse trees for the first 15 years. Rotation period 50-75 years.

Remarks: It is not known whether the Podocarpus occurring in moist montane forests should be regarded as var. *dawei* which has a larger fruit.



Indigenous

Common names: **English:** Parasol tree **Luganda:** Setala **Lugishu:** Gafuti, gufuti, gufuri Rukiga: Mungu, murungi, webina **Rukonjo:** Kyango, kyongo, kyungo, mukungu **Runyankore:** Mungu **Rutoro:** Mujuganlara **Sebei:** Lamadi.

Ecology: A tall forest tree widely distributed in wetter highland forests into the bamboo zone and growing as far south as South Africa. In Uganda it grows in woodland and semi-humid and humid highland forests with Syzygium, Cordia, Olea, Apodytes and Aningeria. Abundant in colonizing and riverine forest. Absent from Bunyoro it is widespread elsewhere in Uganda. It requires light and may be abundant at forest edges.

Uses: Firewood, timber (boxes, crates), carving (utensils, musical instruments), beehives, mulch.

Description: A **deciduous** tree to 25 m with a straight **slender bole** to about 9 m before the development of **whorls of branches**, like spokes of an umbrella, supporting a flat-topped crown. **BARK:** grey, smooth, leaf scars prominent, flaking on older trees. **LEAVES:** compound, pinnate, **to 1 m with 9-13 pairs of leaflets** plus one at the tip, each leaflet oval and leathery, 9-20 cm, **base rounded**, covered with **cream-yellow hairs below**. **FLOWERS:** green-yellow, honey scented, **very small in loose much-branched heads to 60 cm**, main stalks with red-brown scales. **FRUIT:** each fruit is **small, black, oval**, often ribbed, closely clustered on the branches.

Propagation: Seedlings, wildings.

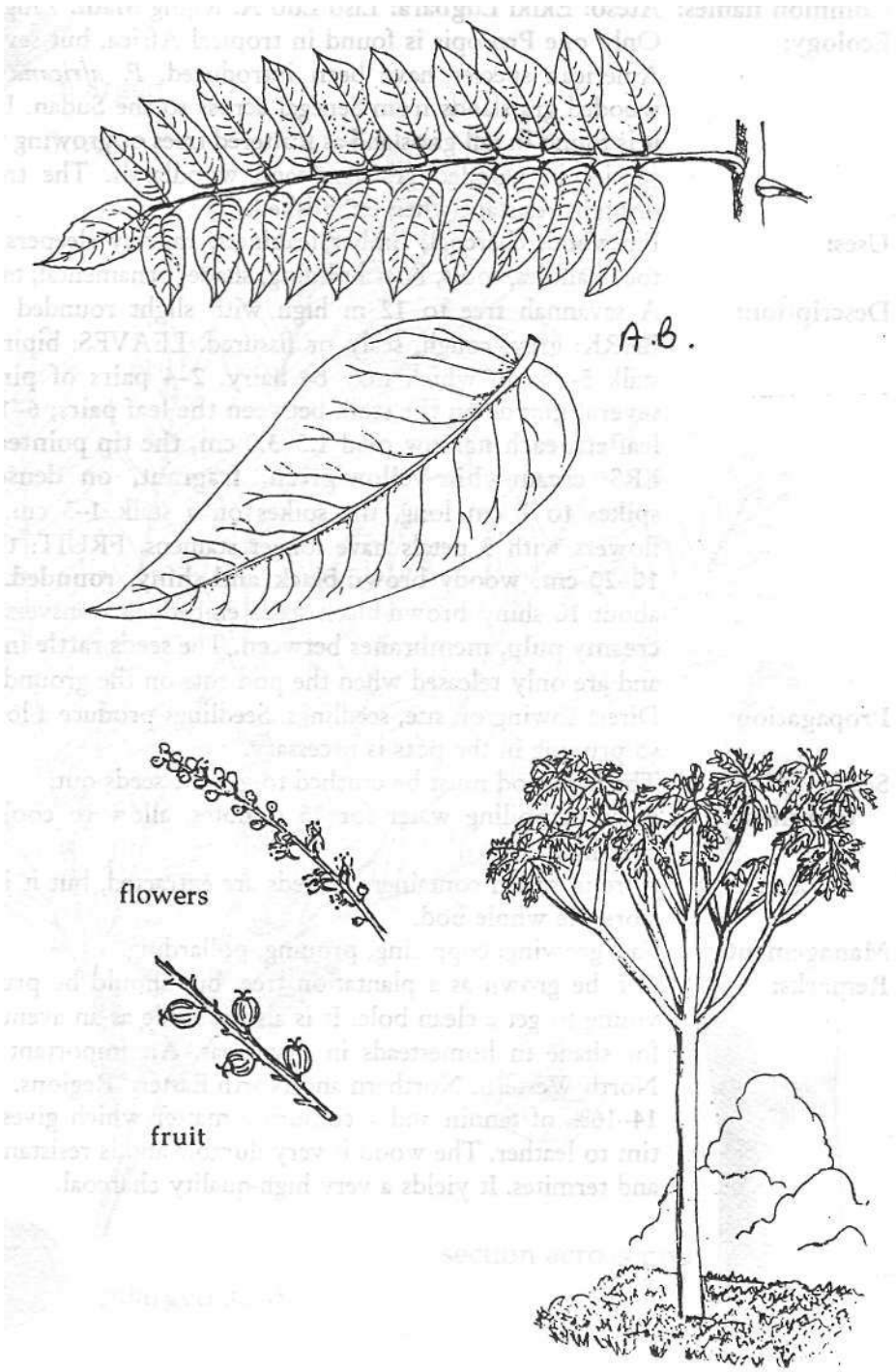
Seed: Seed can be collected from the ground. Another method is to collect fruit **immediately** they turn purple-black by climbing the tree. Let seed mature in the shade 1-2 days then extract by soaking in cold water for 4-6 hours, squeeze out and separate by floating in water, then dry in the shade. No. of seeds per kg: about 310,000. Germination 75% in 35-45 days,

treatment: soaking in cold water may hasten germination,

storage: seed can be stored for up to two years.

Management: Fast growing.

Remarks: The very light soft pale-coloured wood is tough and strong and good for food containers as it has no smell. It has been used to make drums and even shingles, but it is mainly used for beehives, especially in Ruwenzori where one Konjo family may have up to 100 hives. The leaf fall makes good mulch. The tree is also suitable for intercropping with banana, coffee or cocoa.



Indigenous

Common names: Ateso: Ekiki **Lugbara:** Liso **Luo A:** Kijing **Madi:** Zingili.

Ecology: Only one Prosopis is found in tropical Africa, but several South American species have been introduced. *P. africana* grows in wooded grasslands from Senegal across to the Sudan. In Uganda, it is found in tall grassland as scattered trees or growing with other species in wooded grassland and woodlands. The tree is very drought resistant when established.

Uses: Firewood, charcoal, timber (cabinets, railway sleepers, turnery), tool handles, tools, boat building, shade, ornamental, tannin, dye.

Description: A savannah tree to 12 m high with slight rounded buttresses. **BARK:** grey, rough, scaly or fissured. **LEAVES:** bipinnate on a stalk 5-15 cm which may be hairy. **2-4 pairs of pinnae with several glands on the stalk between the leaf pairs; 6-12 pairs of leaflets, each narrow oval 1.5-3.0 cm, the tip pointed.** **FLOWERS:** cream-white-yellow-green, fragrant, on dense axillary spikes to 7 cm long, the spikes on a stalk 1-3 cm. The tiny flowers with 5 petals have longer stamens. **FRUIT: thick pods 10-20 cm, woody brown-black and shiny, rounded.** Inside lie about 10 shiny brown-black seeds embedded transversely in **dry creamy pulp, membranes between. The seeds rattle in ripe pods** and are only released when the pod rots on the ground.

Propagation: Direct sowing on site, seedlings. Seedlings produce a long taproot so pruning in the pots is necessary.

Seed: The hard pod must be crushed to get the seeds out.

treatment: Place in boiling water for 15 minutes, allow to cool and soak overnight.

storage: store in sealed containers if seeds are extracted, but it is better to store the whole pod.

Management: Fast growing; coppicing, pruning, pollarding.

Remarks: Can be grown as a plantation tree, but should be pruned while young to get a clean bole. It is also suitable as an avenue tree and for shade in homesteads in dry areas. An important species in North Western, Northern and North Eastern Regions. It contains 14-16% of tannin and a colouring matter which gives a reddish tint to leather. The wood is very durable and is resistant to borers and termites. It yields a very high-quality charcoal.



Prosopis juliflora

Mimosaceae

Central America, Mexico

Common names: **English:** Mesquite.

Ecology: A thorny shrub or tree cultivated all over the tropics. It grows well in arid regions, producing deep roots and tolerating sandy, rocky or poor and saline soils. It has only recently been introduced in Uganda and has mainly been tried in Kasese District.

Uses: Firewood, charcoal, posts, timber, carving, food (fruit, leaves), fodder (leaves, pods), bee forage, medicine, soil conservation, nitrogen fixation, shade, windbreak, live fence.

Description: Often a shrub, but can become a shapely tree to 15 m, though usually 3-5 m. The bole short, young branches smooth green. **BARK:** thick, **rough green-grey**, scaly with age. Some with **pairs of thorns to 5 cm**. **LEAVES:** bipinnate with 2-3 pairs of pinnae, stalks to 6 cm, **leaflets oblong narrow**, 1.5 cm long, no terminal leaflet. **FLOWERS:** gold-yellow, densely crowded in **spikes 5-10 cm, fragrant**. **FRUIT:** **yellow pod, 10-20 cm (more brittle than *P. chilensis*)**, sweeter, darker; 10-20 hard seeds inside, difficult to extract.

Propagation: Seedlings, direct sowing on site.

Seed: Germination 40-80 %. No. of seeds per kg: 30,000-35,000. Seeds can be extracted by exposing pods to termites or soaking in water.

treatment: not necessary.

storage: seed stores well both in pods and when extracted as it is not attacked by insects.

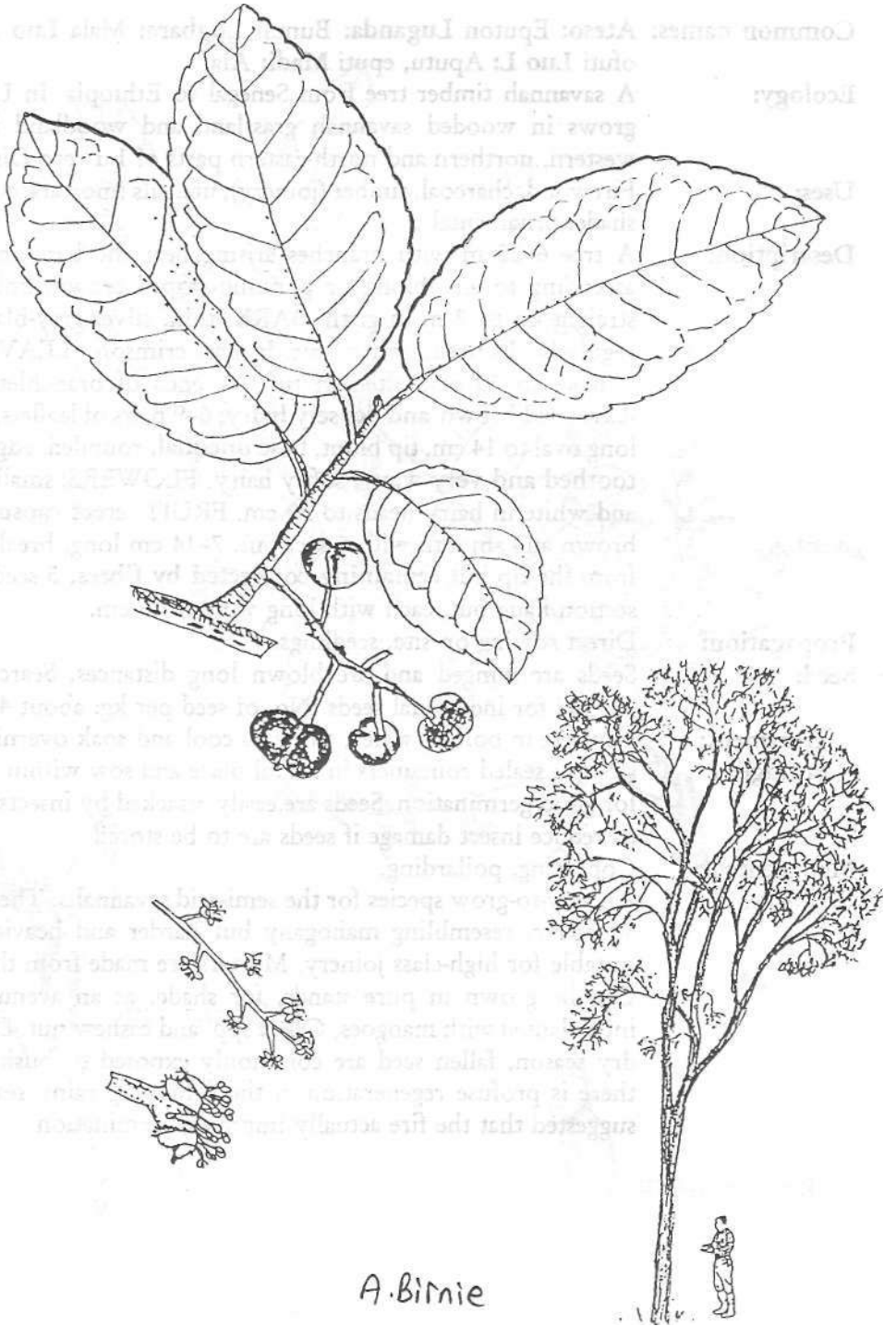
Management: Fast growing; lopping, pollarding and coppicing.

Remarks: Sets seed after 3-4 years. A thorny shrub or tree with a great many variants and closely related species causing some confusion in identification. Unlike *P. chilensis*, young shoots are brown and the tree is better shaped. It also grows faster and competes with crops. The sweet pods contain both glucose and protein so are valuable as fodder. The hard, dense wood burns with great heat. May become a weed, e.g. in irrigation schemes and other wet places in hot areas.



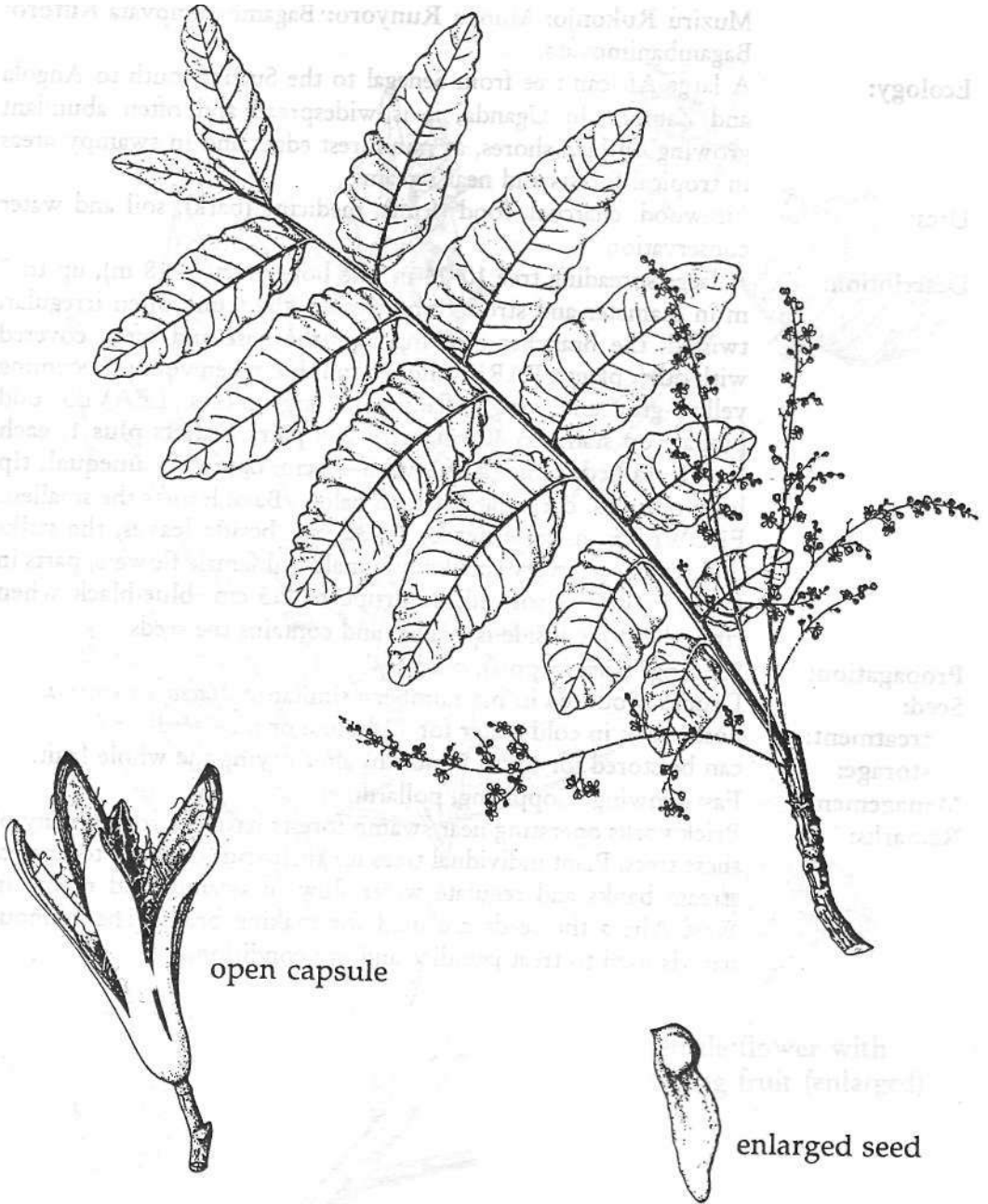
Indigenous

- Common names:** **English:** Red stinkwood **Luganda:** Ngwabuzito, ntasesa **Lugishu:** Chiramat, charamandi **Rukiga:** Musuba.
- Ecology:** A useful timber tree widespread from West to South Africa, usually in high-rainfall areas, but it is becoming rare in some places due to over-exploitation. In Uganda it grows in moist tropical rain forests, 1,100-2,200 m. Abundant in mixed forests, forest edges and gallery forests. The biggest specimens grow in the Bwindi and Kalinzu Forests and on parts of Mt. Elgon.
- Uses:** Firewood, charcoal, poles, timber (construction, flooring), utensils (mortars), medicine (leaves, bark), bee forage, mulch, shade, windbreak.
- Description:** An evergreen tree to 40 m. In forests, the high foliage is open, the branches often pendulous, small buttresses occasionally present. **BARK:** rough, dark, scaling irregularly, branches corky, **branchlets dotted with breathing pores.** **LEAVES:** leathery, glossy dark green above, oval to 10 cm, **margin with shallow rounded teeth, leaf stalk typically pink,** to 2 cm. Crushed leaves have a bitter almond smell. **FLOWERS:** sprays on stalks about 8 cm long, very small, fragrant, green-white. **FRUIT:** rounded **about 1 cm, dark red, often bilobed,** containing one seed and topped by a persistent style.
- Propagation:** Seedlings (sow seeds in pots), wildings.
- Seed:** No. of seeds per kg: 3,400-6,000. Collect only dark brown ripe fruits from the crown of the tree or the ground. Remove the pulp by soaking for 24 hours, then wash over a wire mesh. Spread in a thin layer in an airy shaded place to dry—but for 4 hours only.
- treatment:** not necessary, but remove pulp from the seed.
- storage:** seed does not store; fresh seed should be used. Moist leaves around the seed minimize moisture loss during temporary storage and transport.
- Management:** Fairly slow growing.
- Remarks:** The heartwood darkens to a dense red. It is strong and tough and used for flooring. The stem bark has been harvested for certain pharmaceuticals manufactured in Europe.



Indigenous

- Common names:** **Ateso:** Eputon **Luganda:** Bunuli **Lugbara:** Mala **Luo A:** Oput, ofuti **Luo L:** Aputu, eputi **Madi:** Ala.
- Ecology:** A savannah timber tree from Senegal to Ethiopia. In Uganda, it grows in wooded savannah grassland and woodland in north-western, northern and north-eastern parts of Luwero District.
- Uses:** Firewood, charcoal, timber (joinery), utensils (mortars, etc.), poles, shade, ornamental.
- Description:** A tree 6-20 m with branches arising near the base and steeply ascending to an oblong or pyramid-shaped crown, bole usually straight up to 2 m in girth. **BARK:** thin, silver-grey-black, fairly regularly fissured, when cut bright crimson. **LEAVES:** even pinnate to 30 cm, often in tufts at ends of branchlets, **young leaves red-brown and densely hairy;** 6-9 pairs of leaflets, each one long oval to 14 cm, tip blunt, **base unequal**, rounded, **edge round-toothed and very wavy**, softly hairy. **FLOWERS:** small, fragrant and white in hairy heads to 30 cm. **FRUIT:** **erect capsules**, grey-brown and smooth with 5 sections, 7-14 cm long, breaking open from the tip but **remaining connected by fibres**, 5 seeds in each section hang out, each with long wings to 6 cm.
- Propagation:** Direct sowing on site, seedlings.
- Seed:** Seeds are winged and are blown long distances. Search on the ground for individual seeds. No. of seed per kg: about 4,400.
- treatment:** Immerse in boiling water, allow to cool and soak overnight,
- storage:** store in sealed containers in a cool place and sow within 2 months for good germination. Seeds are easily attacked by insects. Add ash to reduce insect damage if seeds are to be stored.
- Management:** Coppicing, pollarding.
- Remarks:** An easy-to-grow species for the semi-arid savannahs. The timber is attractive, resembling mahogany but harder and heavier, and is suitable for high-class joinery. Mortars are made from the trunks. Can be grown in pure stands, for shade, as an avenue tree or interplanted with mangoes, *Cassia* spp. and cashew nut. During the dry season, fallen seed are commonly exposed to bush fires. As there is profuse regeneration in the following rainy season, it is suggested that the fire actually improves germination.



open capsule

enlarged seed

Indigenous

Common names: **Kwamba:** Mbolu **Luganda:** Muziru **Lunyuli:** Muhohote **Lusoga:** Muziru **Rukonjo:** Mungu **Runyoro:** Bagambanimpyata **Rutoro:** Bagambanimpyata.

Ecology: A large African tree from Senegal to the Sudan, south to Angola and Zambia. In Uganda, it is widespread and often abundant growing on lake shores, at rain-forest edges and in swampy areas in tropical forests and near streams.

Uses: Firewood, charcoal, food (fruit), medicine (bark), soil and water conservation.

Description: A large spreading tree 10-14 m, the bole short (3-18 m), up to 2 m in diameter and strongly buttressed, the trunk often irregular, twisted, the branches growing near the base and often covered with other plants. **BARK:** smooth and thin when young, becoming yellow-grey and rough, flaking in large pieces. **LEAVES:** odd pinnate on stalks to 30 cm, with **2-8 pairs leaflets plus 1, each leaflet stalked**, rather stiff, oval 5-20 cm, **base very unequal, tip long pointed**, darker above than below. Basal leaflets the smallest. **FLOWERS:** in **loose heads, 10-32 cm, beside leaves**, the stalks dull red-brown, very small white male and female flowers, parts in fours. **FRUIT:** a **soft edible drupe to 2.5 cm, blue-black when ripe**, the stone inside is 4-sided and contains the seeds.

Propagation: Seedlings (sow in pots), wildings.

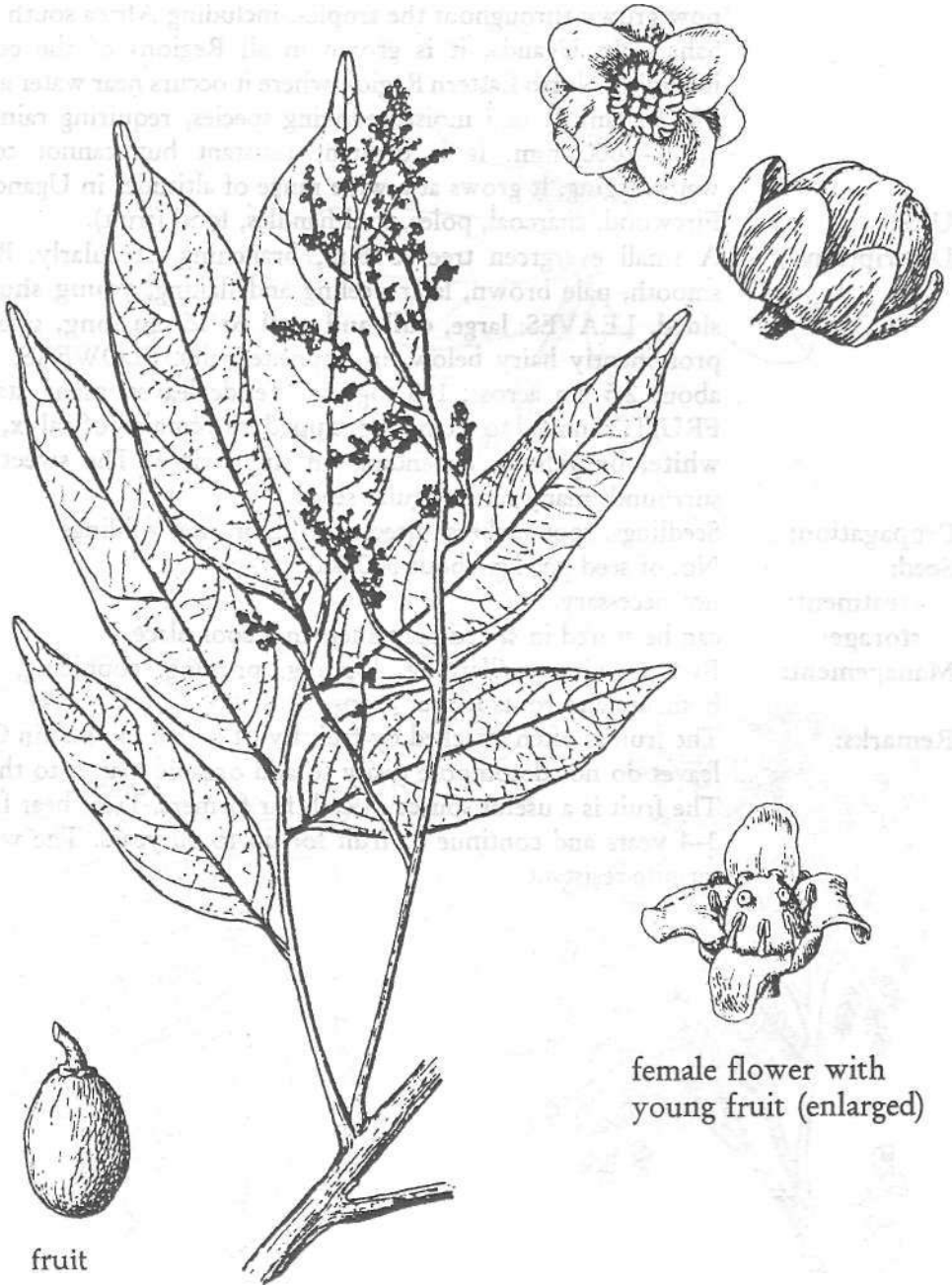
Seed: Drupes produced in big numbers; similar to *Maesopsis eminii*.

treatment: none, soak in cold water for 12 hours, or nick seed.

storage: can be stored for up to 5 months after drying the whole fruit.

Management: Fast growing. Coppicing, pollarding.

Remarks: Brickworks operating near swamp forests have destroyed many of these trees. Plant individual trees for their fruit or many to protect stream banks and regulate water flow in swamps and rivers. In West Africa the seeds are used for making beads. The resinous bark is used to treat jaundice and eye conditions.



female flower with
young fruit (enlarged)

fruit

Tropical America

Common names: **English:** Guava **Luganda:** Mupeera.

Ecology: This tree originates from South America, probably Brazil, but is now grown throughout the tropics, including Africa south of the Sahara. In Uganda, it is grown in all Regions of the country including North Eastern Region where it occurs near water around Mt. Kadam. It is a moisture-loving species, requiring rainfall of 1,000-2,000 mm. It is drought resistant but cannot tolerate waterlogging. It grows at a wide range of altitudes in Uganda.

Uses: Firewood, charcoal, poles, tool handles, food (fruit).

Description: A small evergreen tree to 8 m, branching irregularly. **BARK:** smooth, pale brown, later peeling and flaking; **young shoots 4-sided.** **LEAVES:** large, **dull and oval to 15 cm long**, side veins prominently hairy below, in opposite pairs. **FLOWERS:** white, about 2.5 cm across, 1-3 together beside leaves, many stamens. **FRUIT:** rounded to 6 cm long, **tipped by remains of calyx, pink, white, or yellow**, depending on the variety. The **sweet flesh** surrounds many hard angular seeds.

Propagation: Seedlings, root suckers, direct sowing on site, wildings.

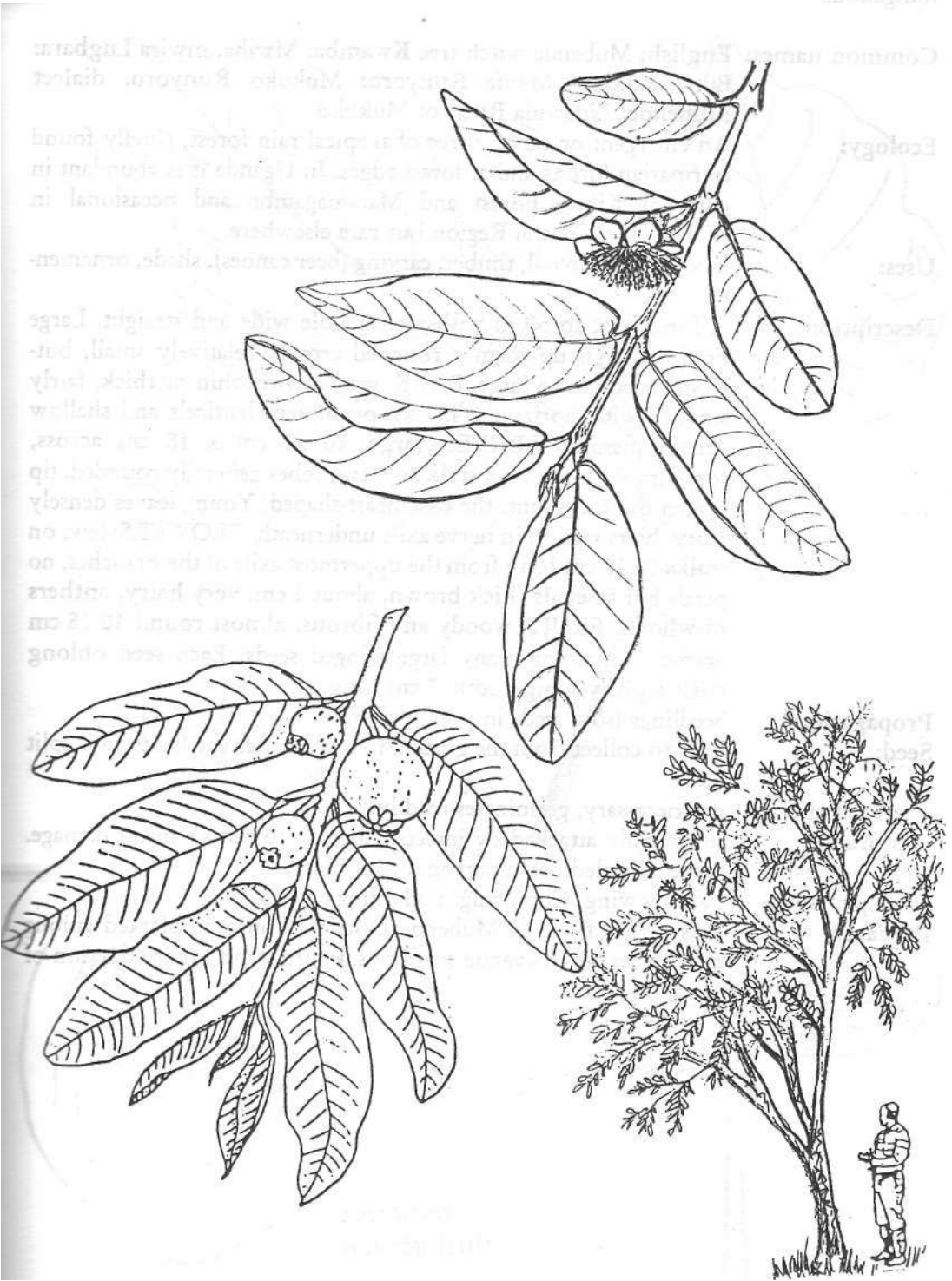
Seed: No. of seed per kg: about 500,000.

treatment: not necessary.

storage: can be stored in sealed containers in a cool place.

Management: Fast growing; pollarding, lopping, pruning, coppicing. Prune branches and roots if near crops.

Remarks: The fruit is often attacked by fruit fly. It is rich in vitamin C. The leaves do not decompose easily to add organic matter to the soil. The fruit is a useful source of cash for farmers. Trees bear fruit in 3-4 years and continue to fruit for up to 30 years. The wood is termite resistant.



Indigenous

Common names: **English:** Mubende witch tree **Kwamba:** Mwiha, mwira **Lugbara:** Butri **Rukiga:** Mwifa **Runyoro:** Mukoko **Runyoro, dialect Mubende:** Ndawula **Rutoro:** Mukoko.

Ecology: An emergent or canopy tree of tropical rain forest, chiefly found in riparian forests and at forest edges. In Uganda it is abundant in parts of Kibale Forest and Maramagambo and occasional in Mubende in Central Region but rare elsewhere.

Uses: Firewood, charcoal, timber, carving (beer canoes), shade, ornamental.

Description: A forest tree to 50 m with a clear bole wide and straight. Large branches high up form a rounded crown, relatively small, buttresses medium to large. **BARK:** grey-brown, thin or thick, fairly smooth with horizontal marks, prominent lenticels and shallow vertical fissures. **LEAVES:** large, to 30 cm x 18 cm across, sometimes 3-lobed on a stalk to 9 cm, lobes generally rounded, tip drawn out but blunt, the base heart-shaped. Young leaves densely hairy; hairs remain in nerve axils underneath. **FLOWERS:** few, on stalks to 10 cm long from the uppermost axils of the branches, no petals but 5 sepals thick brown, about 1 cm, very hairy, anthers in whorls. **FRUIT:** woody and fibrous, almost round 10-15 cm across, containing many large winged seeds. Each seed oblong with a pithy wing about 7 cm long.

Propagation: Seedlings (sow seeds in pots), wildings.

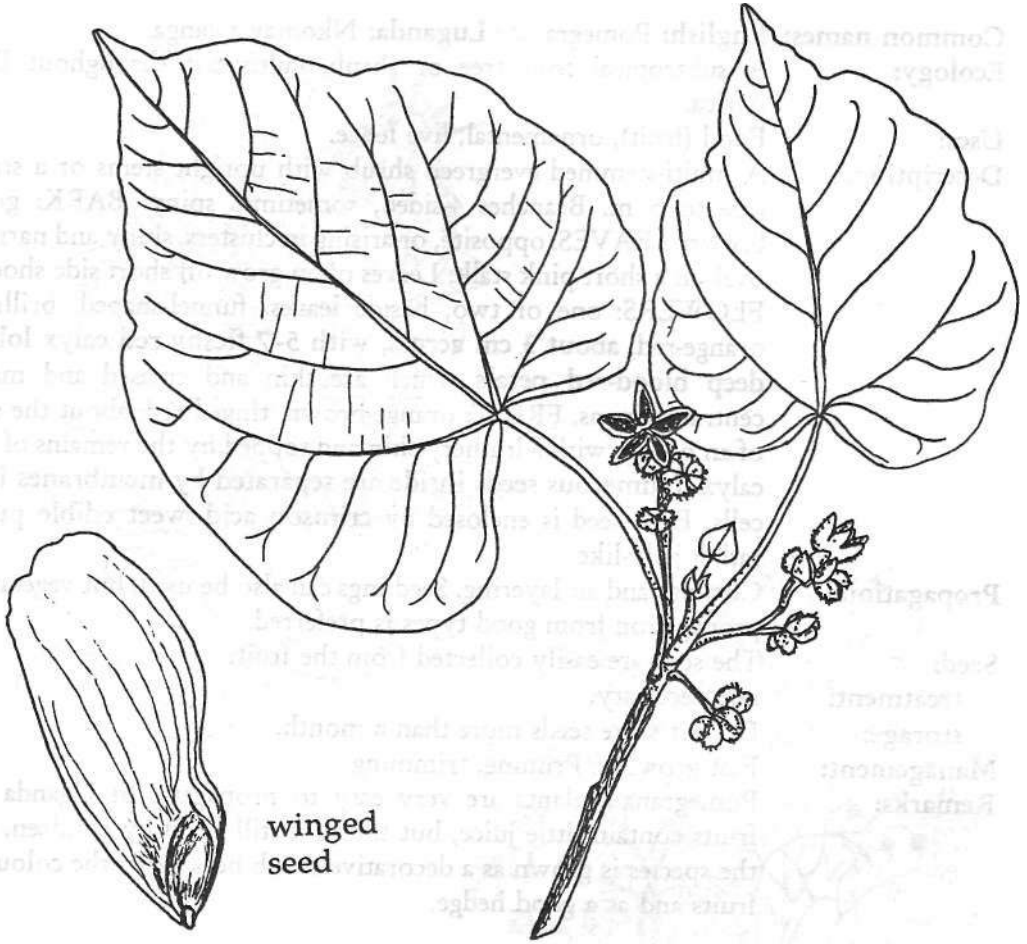
Seed: Easy to collect from the ground in forests after the fruits have split open.

treatment: not necessary; germinates readily.

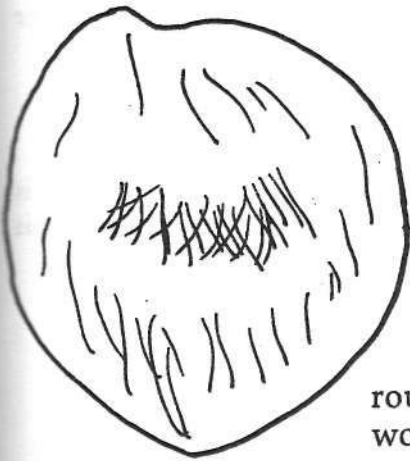
storage: seeds easily attacked by insects. Add ash to reduce insect damage. Store in sealed containers in a cool place.

Management: Fast growing. Coppicing, pollarding.

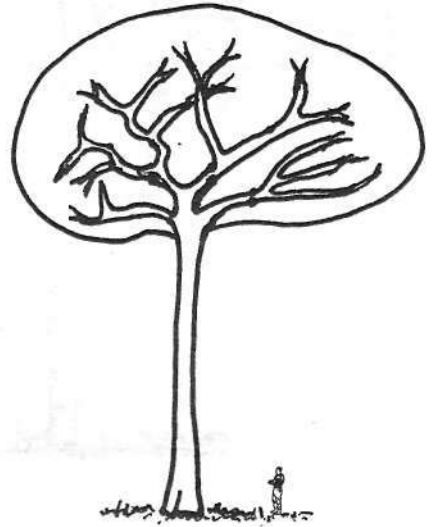
Remarks: It is a sacred tree in Mubende District. Could be planted among other trees, as an avenue tree or as a pure stand for production of firewood.



winged seed



rounded woody fruit



India, Persia

Common names: **English:** Pomegranate **Luganda:** Nkomawawanga.

Ecology: A subtropical fruit tree or shrub, cultivated throughout East Africa.

Uses: Food (fruit), ornamental, live fence.

Description: A multi-stemmed evergreen shrub with upright stems or a small tree to 5 m. Branches 4-sided, sometimes spiny. **BARK:** grey-brown. **LEAVES:** opposite, or arising in clusters, shiny and narrow oval on a short pink stalk. Leaves often grow off short side shoots. **FLOWERS:** one or two, beside leaves, funnel-shaped, brilliant orange-red, **about 3 cm across, with 5-7 fleshy red calyx lobes, deep blood-red petals** which are thin and creased and many central stamens. **FRUIT:** orange-brown, tinged red, about the size of an orange with a leathery skin and topped by the remains of the calyx. **Numerous seeds inside are separated by membranes** into cells. Each seed is enclosed by **crimson acid-sweet edible pulp**, rather jelly-like.

Propagation: Cuttings and air layering. Seedlings can also be used, but vegetative propagation from good types is preferred.

Seed: The seed are easily collected from the fruit, not necessary.

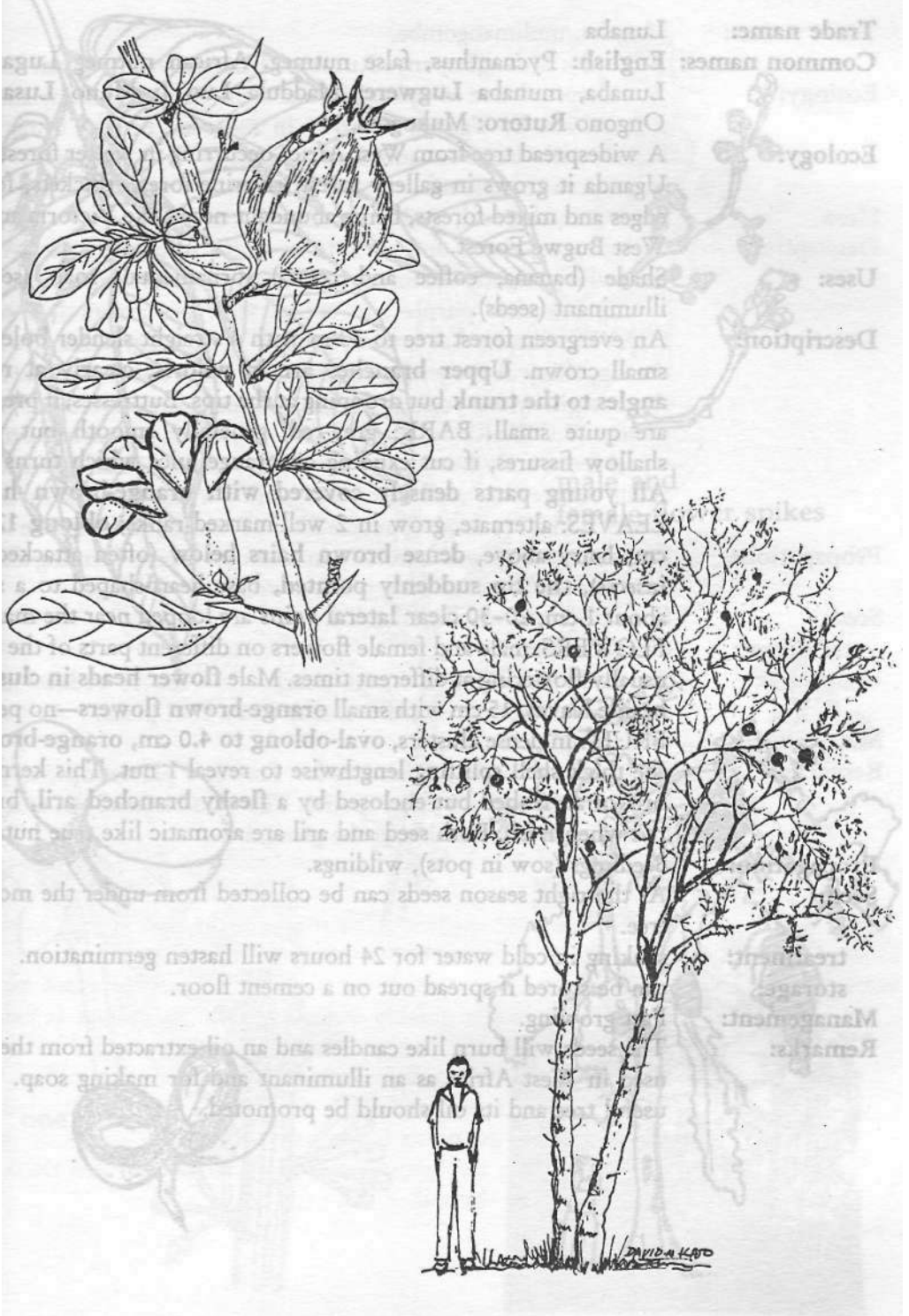
treatment:

storage:

Do not store seeds more than a month.

Management: Fast growing. Pruning, trimming.

Remarks: Pomegranate plants are very easy to propagate. In Uganda the fruits contain little juice, but they are still liked by children, and the species is grown as a decorative shrub because of the colourful fruits and as a good hedge.



Indigenous

Trade name: Lunaba

Common names: **English:** Pycnanthus, false nutmeg, African nutmeg **Luganda:** Lunaba, munaba **Lugwere:** Maddula **Luo J:** Muno **Lusamia:** Ongono **Rutoro:** Mukogota.

Ecology: A widespread tree from West Africa occurring in wetter forests. In Uganda it grows in gallery forest, riverine forest, thickets, forest edges and mixed forests, being abundant near Lake Victoria and in West Bugwe Forest,

Uses: Shade (banana, coffee and cocoa), ornamental, soap (seeds), illuminant (seeds).

Description: An evergreen forest tree to 30 m with a straight slender bole and small crown. **Upper branches are in whorls, clearly at right angles to the trunk** but drooping at the tips. Buttresses, if present, are quite small. **BARK:** grey-red, generally smooth but with shallow fissures, if cut exuding an orange juice which turns red. **All young parts densely covered with orange-brown hairs.** **LEAVES:** alternate, grow in 2 well-marked ranks; **oblong 12-20 cm**, hairy above, **dense brown hairs below** (often attacked by insects), **the tip suddenly pointed**, base heart-shaped to a stalk about 1 cm, **20-30 clear lateral veins** are looped near the margin. **FLOWERS:** male and female flowers on different parts of the tree, usually flowering at different times. Male **flower heads in clusters beside leaves**, 15 cm with small **orange-brown flowers**—no petals. **FRUIT:** in dense clusters, **oval-oblong to 4.0 cm, orange-brown**, the thick shell splitting lengthwise to reveal 1 nut. This kernel is brown and ribbed but enclosed by a **fleshy branched aril**, bright red when fresh. Both seed and aril are aromatic like true nutmeg.

Propagation:

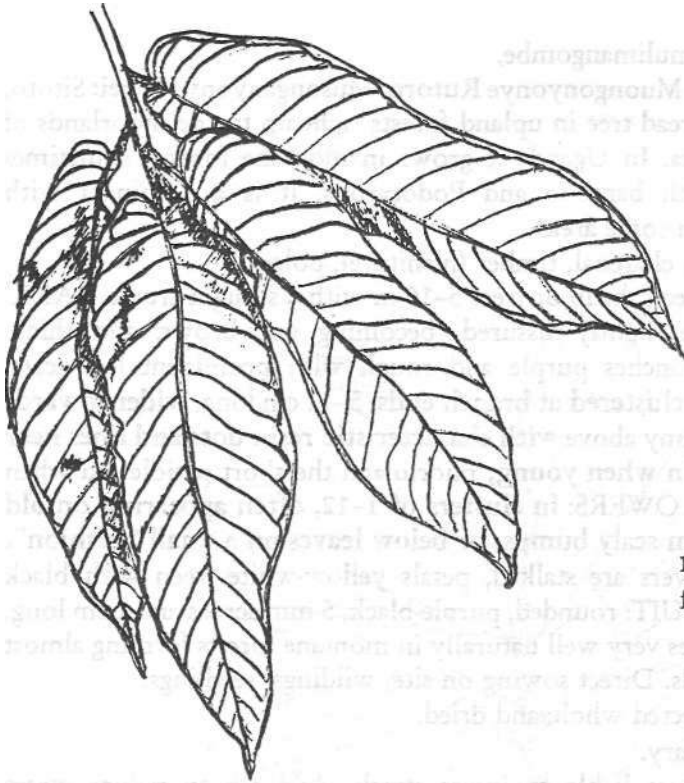
Seed: At the right season seeds can be collected from under the mother tree.

treatment: soaking in cold water for 24 hours will hasten germination.

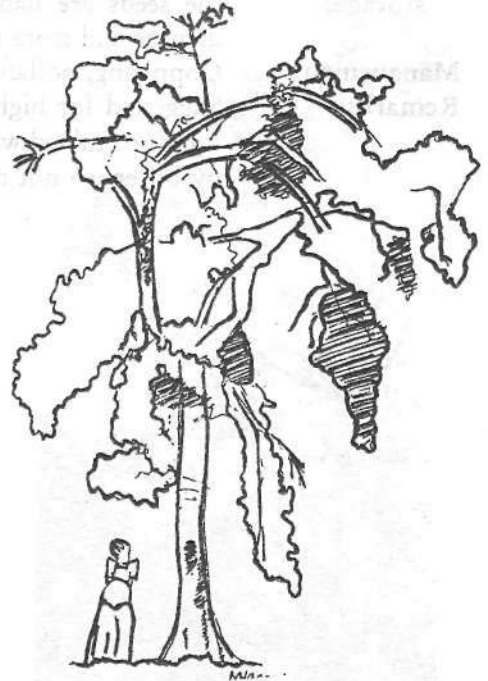
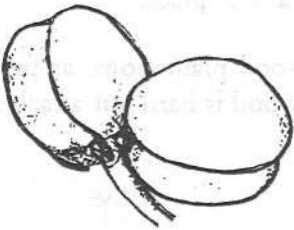
storage: can be stored if spread out on a cement floor.

Management: Fast growing.

Remarks: The seeds will burn like candles and an oil extracted from them is used in West Africa as an illuminant and for making soap. This useful tree and its oil should be promoted.



male and female flower spikes



Rapanea melanophloeos (R. rhododendroides)

Myrsinaceae

Indigenous

Trade names: Mugaita, mulimangombe.

Common names: **Rukonjo:** Muongonyonye **Rutoro:** Musonganyonye **Sebei:** Sitoto.

Ecology: A widespread tree in upland forests right up to the moorlands of East Africa. In Uganda it grows in montane forests, sometimes mixed with bamboo and Podocarpus. It is a dominant with Hagenia in some areas.

Uses: Firewood, charcoal, timber (furniture), poles.

Description: An evergreen shrub or trees 5-16 m with a straight trunk. **BARK:** grey-white, lightly fissured, becoming grey-brown and thick. Young branches purple and rough with prominent leaf scars. **LEAVES:** clustered at branch ends, 5-11 cm long, wider towards the tip, shiny above with characteristic resin dots and lines near the margin when young, midrib and the short petiole red when young. **FLOWERS:** in clusters of 1-12, often appearing on old wood from scaly bumps, or below leaves on a small "cushion". Small flowers are stalked, petals yellow-white-green with black marks. **FRUIT:** rounded, purple-black, 5 mm across and 1 cm long.

Propagation: Regenerates very well naturally in montane forests forming almost pure stands. Direct sowing on site, wildings, seedlings.

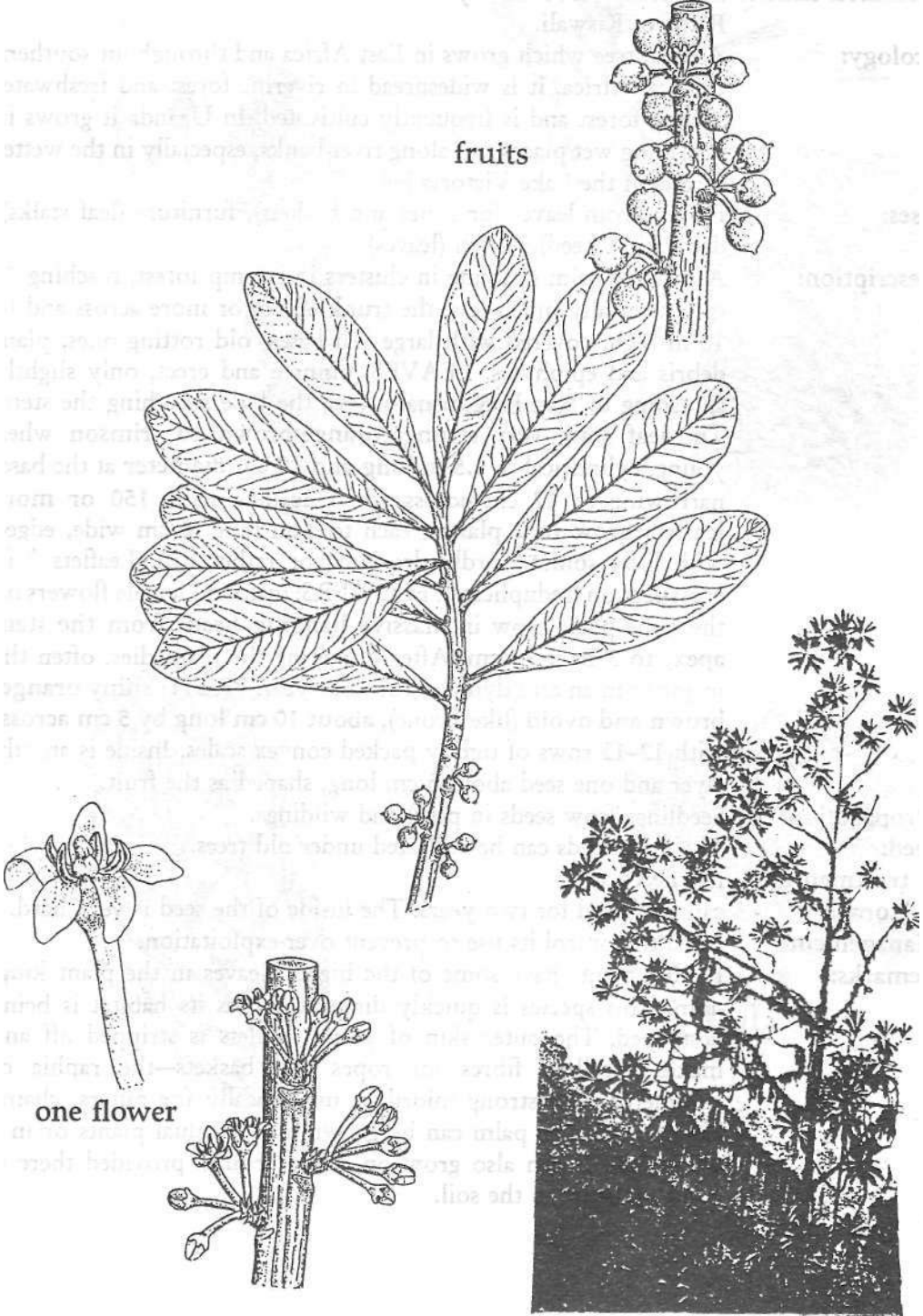
Seed: Fruit collected whole and dried.

treatment: not necessary.

storage: the seeds are liable to insect attack. Add ash to reduce insect damage and store in sealed containers in a cool place.

Management: Coppicing, pollarding.

Remarks: Suggested for highland farmers for firewood plantations, as pure stands or mixed with other species. The wood is hard but attacked by borers so not durable in the ground.



Indigenous

Common names: **Luganda:** Kibo **Runyankore:** Mbuhibu **Runyoro:** Muswale **Rutoro:** Kiswali.

Ecology: A palm tree which grows in East Africa and throughout southern tropical Africa. It is widespread in riverine forest and freshwater swamp forest and is frequently cultivated. In Uganda it grows in low-lying wet places and along river banks, especially in the wetter forests of the Lake Victoria belt.

Uses: Fibres (from leaves for ropes and baskets), furniture (leaf stalks), decoration (seed), thatch (leaves).

Description: A massive palm growing in clusters in swamp forest, reaching 25 m but usually much less; the trunk 60 cm or more across and to 10 m high, covered with large leaf bases, old rotting ones, plant debris and epiphytes. **LEAVES:** pinnate and erect, only slightly spreading to 8 m long, usually less, the base sheathing the stem. The **leaf stalk very strong, orange-brown to crimson** when young, cylindrical to **1.5 m long and 20 cm diameter** at the base, narrowing to 12 cm across where leaflets arise. **150 or more leaflets grow in 2 planes**, each to 1 m long, 8 cm wide, edged with little spines, hardly drooping or rather stiff. Leaflets ^A in cross-section (reduplicate). **FLOWERS:** male and female flowers on the same plant grow in **massive hanging heads from the stem apex, to 3 m x 35 cm**. After flowering the plant dies, often the majority in an area dying in the same year. **FRUIT: shiny orange-brown and ovoid** (like a cone), **about 10 cm long by 5 cm across**, with 12-13 rows of tightly packed convex scales. Inside is an oily layer and one seed about 5 cm long, shaped as the fruit.

Propagation: Seedlings (sow seeds in pots) and wildings.

Seed: The large seeds can be collected under old trees, not necessary.

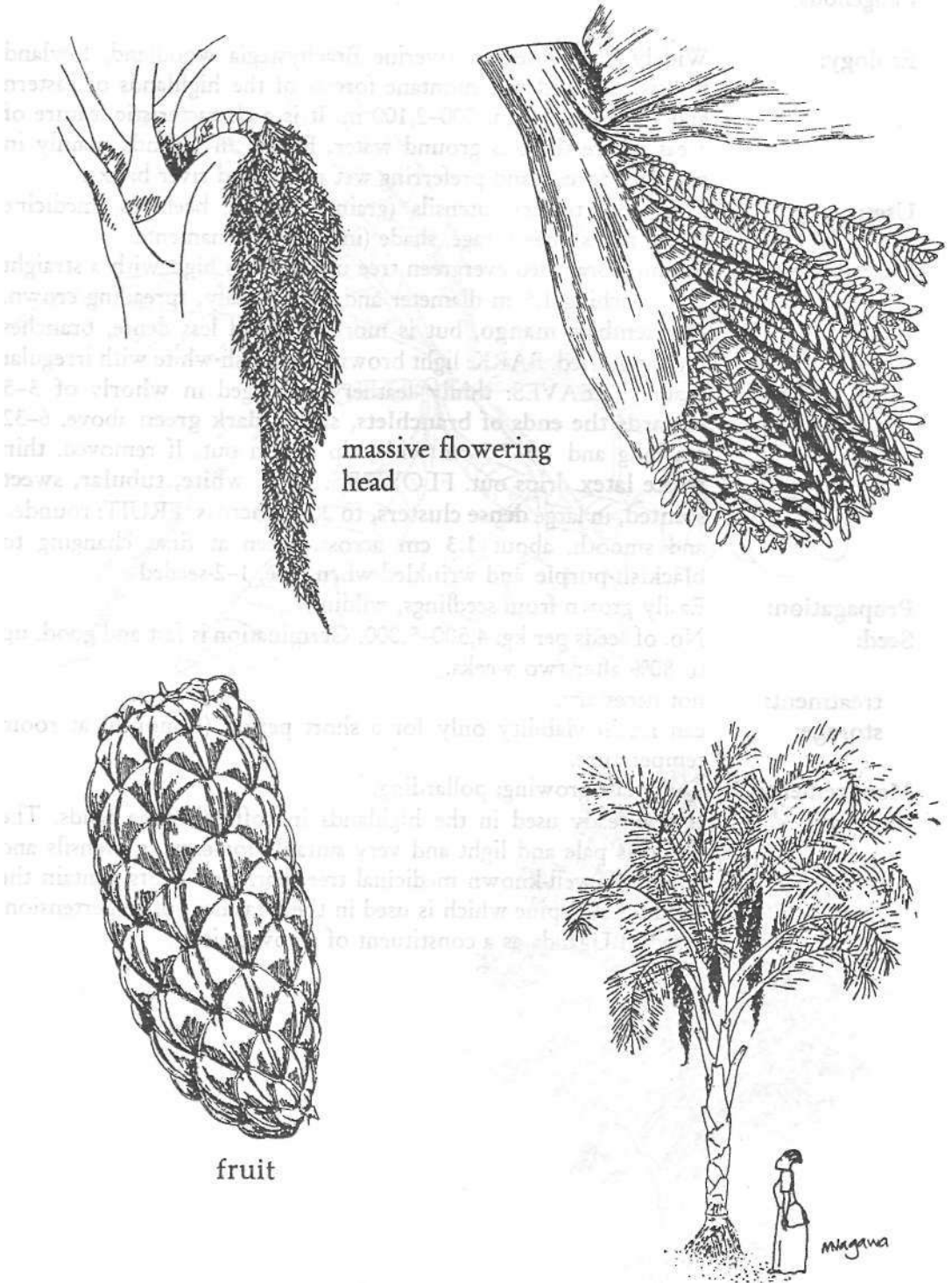
treatment:

storage:

can be stored for two years. The inside of the seed is very hard.

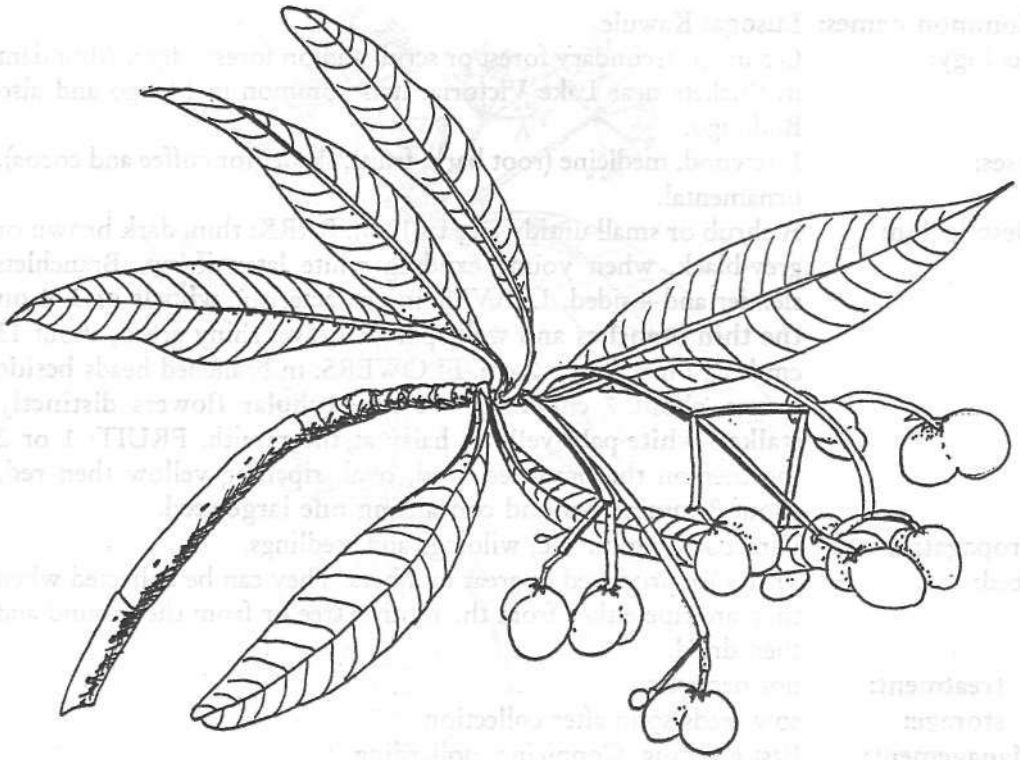
Management: Need to control its use to prevent over-exploitation.

Remarks: Raphia plants have some of the biggest leaves in the plant kingdom. This species is quickly disappearing as its habitat is being destroyed. The outer skin of young leaflets is stripped off and makes excellent fibres for ropes and baskets—the raphia of commerce. The strong midrib is used locally for rafters, chairs, ladders, etc. The palm can be grown as individual plants or in a plantation. It can also grow on raised ground provided there is good moisture in the soil.



Indigenous

- Ecology:** Widely distributed in riverine Brachystegia woodland, lowland forests, dry and wet montane forests of the highlands of eastern and southern Africa, 500-2,100 m. It is a characteristic feature of areas where there is ground water. Found in Uganda mainly in montane forests and preferring wet places and river banks.
- Uses:** Firewood, timber, utensils (grain mortars), beehives, medicine (bark, roots), bee forage, shade (in coffee), ornamental.
- Description:** A much-branched evergreen tree up to 35 m high with a straight bole reaching 1.5 m diameter and with a leafy, spreading crown. **It resembles mango**, but is more oval and less dense, branches often whorled. **BARK:** light brown or greyish-white with irregular fissures. **LEAVES:** thinly leathery, arranged in **whorls of 3-5 towards the ends of branchlets, shiny, dark green** above, 6-32 cm long and 1.5-7.5 cm wide, tip drawn out. If removed, thin **white latex** drips out. **FLOWERS:** small, **white, tubular, sweet scented**, in large **dense clusters, to 20 cm across**. **FRUIT:** rounded and smooth, about 1.3 cm across, green at first, changing to **blackish-purple** and wrinkled when ripe, 1-2-seeded.
- Propagation:** Easily grown from seedlings, wildings.
- Seed:** No. of seeds per kg: 4,500-5,000. Germination is fast and good, up to 80% after two weeks.
- treatment:** not necessary.
- storage:** can retain viability only for a short period (1 month) at room temperature.
- Management:** Quite fast growing; pollarding.
- Remarks:** It is already used in the highlands in coffee/banana fields. The wood is pale and light and very suitable for carving utensils and curios. A well-known medicinal tree: bark and roots contain the alkaloid reserpine which is used in the treatment of hypertension. Used in Uganda as a constituent of arrow poison.



Rauvolfia vomitoria

Apocynaceae

Indigenous

Common names: Lusoga: Kawule.

Ecology: Occurs in secondary forest or scrub and on forest edges. Abundant in thickets near Lake Victoria. It is common in Mengo and also Budongo.

Uses: Firewood, medicine (root bark, fruit), shade (for coffee and cocoa), ornamental.

Description: A shrub or small untidy tree to 10 m. **BARK:** thin, dark brown or grey-black, when young exuding white latex if cut. Branchlets slender and 4-sided. **LEAVES:** in characteristic **whorls of 3-4 on the thin branches and well spaced**. Leaves shiny green, about 13 cm long on stalks to 2 cm. **FLOWERS:** in branched heads **beside leaves, about 7 cm long, the tiny tubular flowers distinctly stalked white-pale yellow**, hairy at the mouth. **FRUIT:** 1 or 2 together on the branched head, oval, ripening yellow then **red**, about **8 mm across and containing one large seed**.

Propagation: Direct sowing on site, wildings and seedlings.

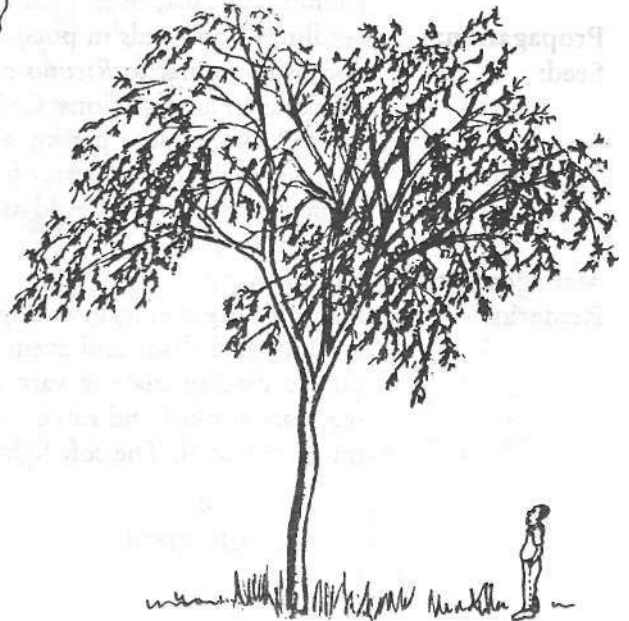
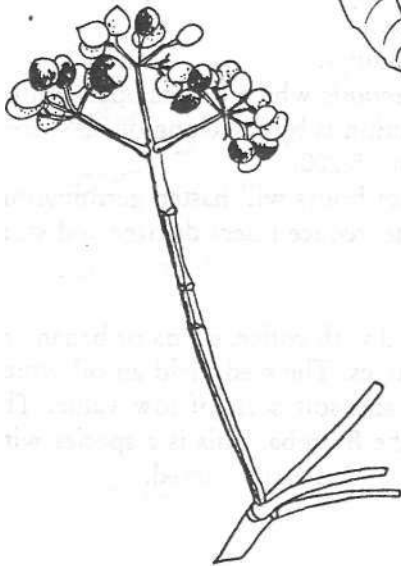
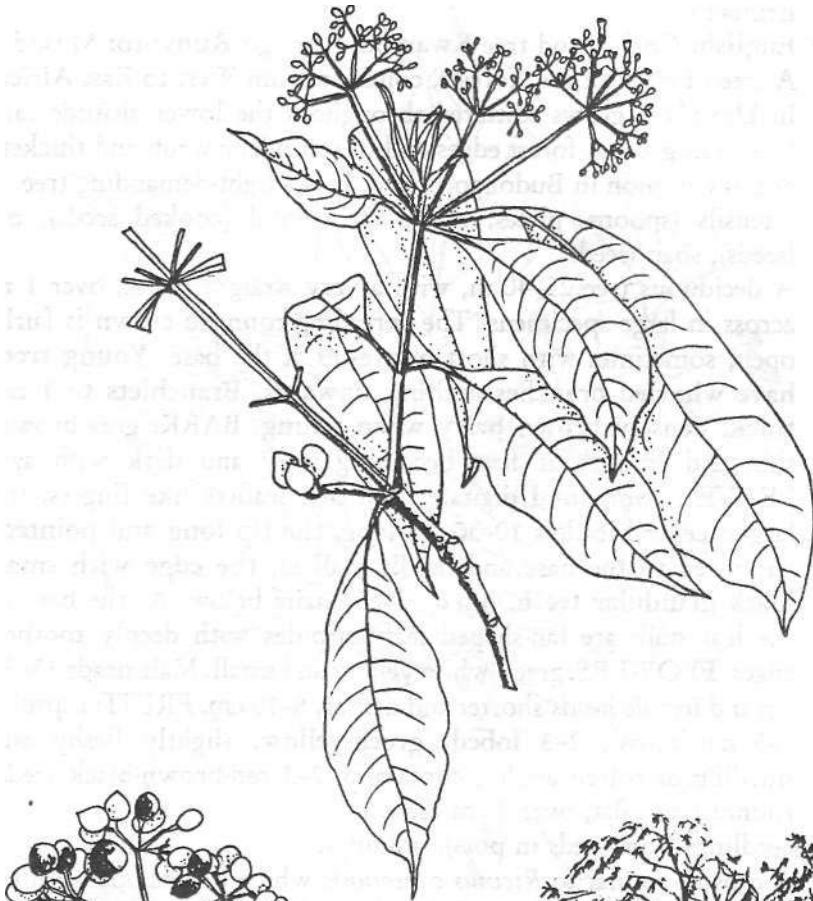
Seed: Fruits are produced in great numbers. They can be collected when they are ripe either from the mother tree or from the ground and then dried.

treatment: not necessary.

storage: sow seeds soon after collection.

Management: Fast growing. Coppicing, pollarding.

Remarks: The roots and fruits are used to control hypertension. It is useful for shade in coffee and cocoa plantations. Sowing directly in degraded areas is recommended.



Indigenous

Trade name: Erimado.

Common names: **English:** Cork wood tree **Kwamba:** Kisongo **Runyoro:** Musodo.

Ecology: A tree of tropical rain forests, common from West to East Africa. In Uganda it grows scattered throughout the lower altitude rain forests in gaps, at forest edges and in secondary scrub and thickets and is common in Budongo Forest. It is a light-demanding tree.

Uses: Utensils (spoons, plates, bowls etc.), food (cooked seeds), oil (seeds), soap (seeds).

Description: A deciduous tree 25-40 m, with a very straight trunk, over 1 m across in large specimens. The spreading rounded crown is fairly open, sometimes with short buttresses at the base. **Young trees have whorled branches arching upwards. Branchlets to 1 cm thick, densely brown hairy when young.** BARK: grey-brown, thin and smooth at first becoming scaly and dark with age. LEAVES: compound digitate with 3-6 leaflets like fingers, the largest central leaflets 10-30 cm long, **the tip long and pointed**, narrowed to the base and hardly stalked, **the edge with small black glandular teeth**, often silvery hairs below. At the base of the leaf stalk are fan-shaped leafy stipules with deeply toothed edges. FLOWERS: green-white-yellow and small. Male heads 15-30 cm and female heads shorter and denser, 6-10 cm. FRUIT: capsules 4-5 cm across, **2-3 lobed, green-yellow**, slightly fleshy and smelling of rotten apples, containing 2-3 red-brown-black seeds, rounded and flat, over 1 cm across.

Propagation: Seedlings (sow seeds in pots), wildings.

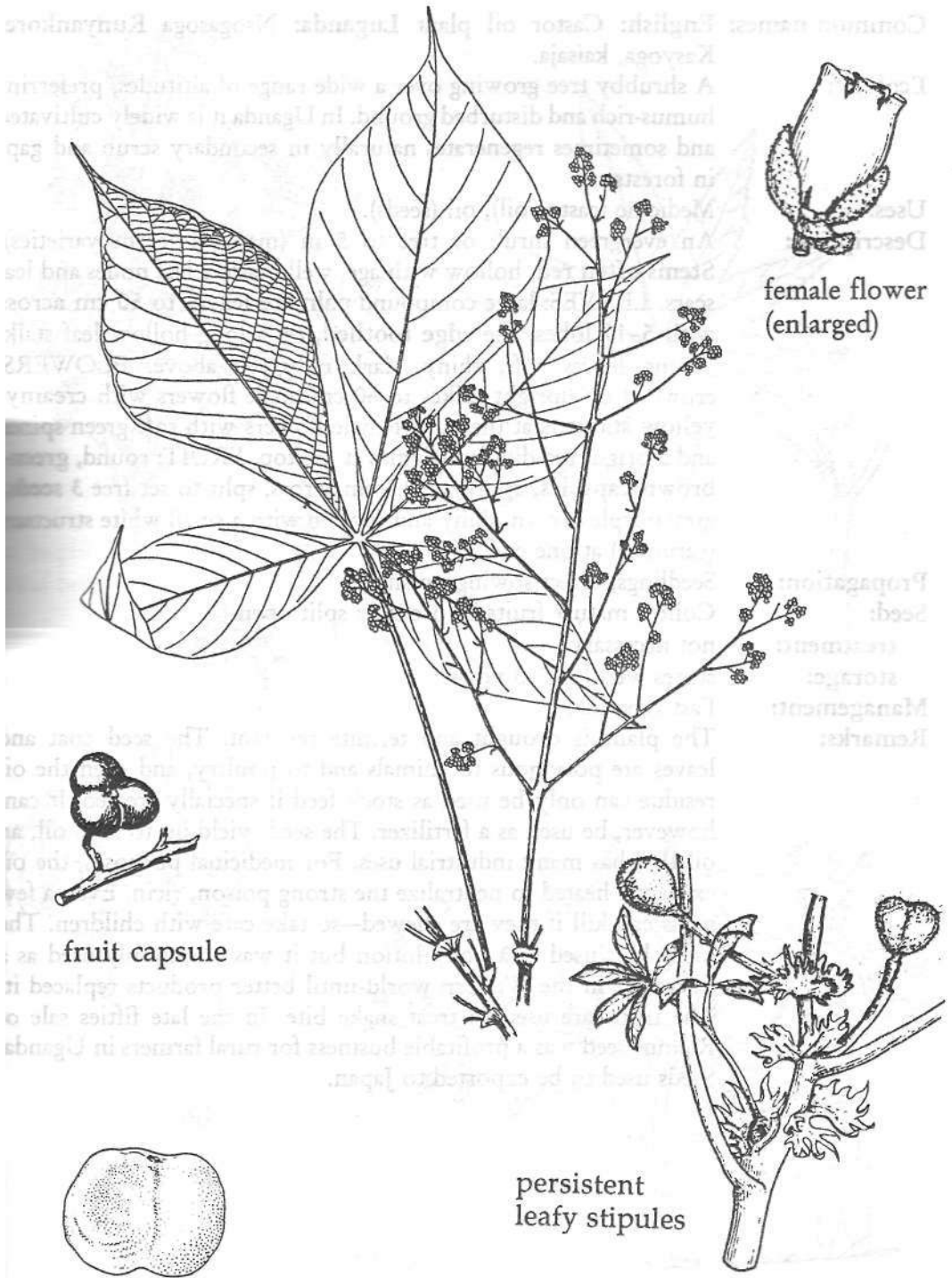
Seed: A capsule similar to *Ricinus communis* which breaks open scattering seeds in all directions. Collection is by searching on the forest ground. No. of seed per kg: about 5,200.

treatment: soaking seeds in cold water for 24 hours will hasten germination, liable to insect attack. Add ash to reduce insect damage and store in a dry cool place.

storage:

Management: Fast growing.

Remarks: Plant in pure stands, intercropped with coffee, cocoa or banana or as individual shade and avenue trees. The seed yield an oil which can be used in making varnish and soft soap of low value. The seeds are cooked and eaten by the Baamba. This is a species with much potential. The soft light wood is easily carved.



Indigenous to Africa

Common names: **English:** Castor oil plant **Luganda:** Nsogasoga **Runyankore:** Kasyoga, kaisaja.

Ecology: A shrubby tree growing over a wide range of altitudes, preferring humus-rich and disturbed ground. In Uganda it is widely cultivated and sometimes regenerates naturally in secondary scrub and gaps in forests.

Uses: Medicine (castor oil), oil (seeds).

Description: An evergreen shrub or tree to 5 m (many different varieties). **Stems often red**, hollow with age, well-marked leaf nodes and leaf scars. **LEAVES:** large compound **palmate leaves to 50 cm across with 5-11 lobes**, the **edge toothed**, on a long hollow leaf stalk. Young leaves soft, shiny, dark red-green above. **FLOWERS:** crowded on upright spikes to 60 cm, male flowers with **creamy-yellow stamens** at the base; female flowers with soft green spines and 3 bright red divided stigmas at the top. **FRUIT:** round, **green-brown capsules**, spiny, to 2.5 cm across, split to set free **3 seeds**, grey-purple-brown, shiny and spotted with a small white structure (caruncle) at one end.

Propagation: Seedlings, direct sowing on site.

Seed: Collect mature fruits before they split open,

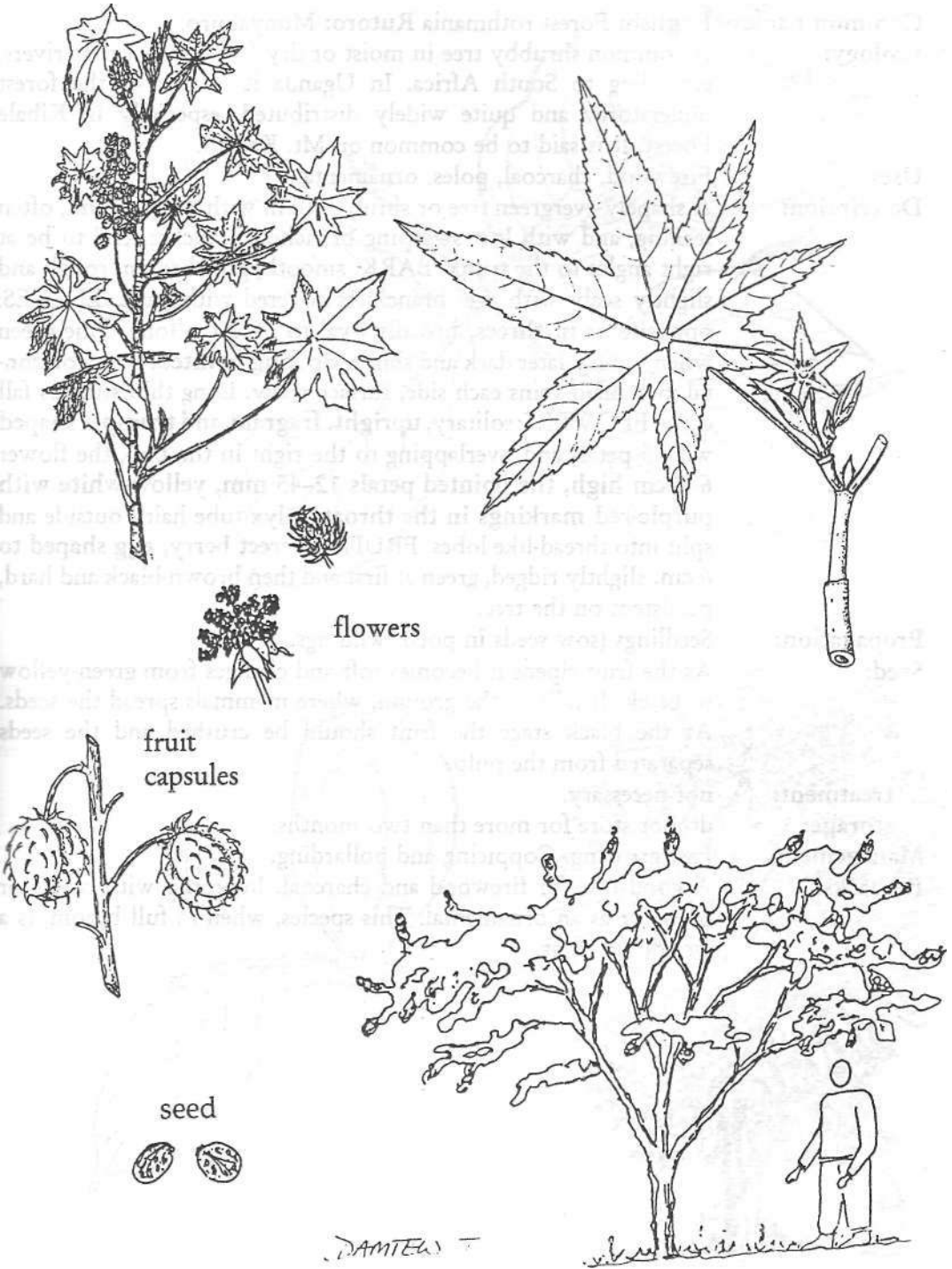
treatment: not necessary,

storage: stores well for 2-3 years.

Management: Fast growing.

Remarks: The plant is drought and termite resistant. The seed coat and leaves are poisonous to animals and to poultry, and even the oil residue can only be used as stock feed if specially treated. It can, however, be used as a fertilizer. The seeds yield up to 50% oil, an oil that has many industrial uses. For medicinal purposes, the oil extract is heated to neutralize the strong poison, ricin. Even a few seeds can kill if they are chewed—so take care with children. The oil is best used as a body lotion but it was commonly used as a purgative in the Western world until better products replaced it. The fruits are used to treat snake bite. In the late fifties sale of Ricinus seed was a profitable business for rural farmers in Uganda. Seeds used to be exported to Japan.

:



Rothmannia urcelliformis (Randia urcelliformis) *Rubiaceae*

Indigenous

Common names: **English:** Forest rothmania **Rutoro:** Munyaburo.

Ecology: A common shrubby tree in moist or dry forest, often near rivers, extending to South Africa. In Uganda it is part of the forest understorey and quite widely distributed, especially in Kibale Forest. It is said to be common on Mt. Kadam.

Uses: Firewood, charcoal, poles, ornamental.

Description: A shapely evergreen tree or shrub 2-10 m with a thin trunk, often leaning, and with low sweeping branches. Branches tend to be at right angles to the trunk. **BARK:** smooth, grey-brown, rough and slightly scaly with age, branchlets covered with hairs. **LEAVES:** opposite or **in threes**, broadly oval to 7-12 cm long, lime green when young, later dark and shiny, **tip long pointed**, base horizontal, 5-8 main veins each side, surface wavy. Long thin stipules fall early. **FLOWERS:** solitary, **upright, fragrant and trumpet shaped** with 5 petals and overlapping to the right in the bud, the flower **6-8 cm high, the pointed petals 12-45 mm, yellow-white with purple-red markings in the throat**, calyx tube hairy outside and split into thread-like lobes. **FRUIT:** an **erect berry, egg shaped to 6 cm**, slightly ridged, green at first and then brown-black and hard, persistent on the tree.

Propagation: Seedlings (sow seeds in pots), wildings.

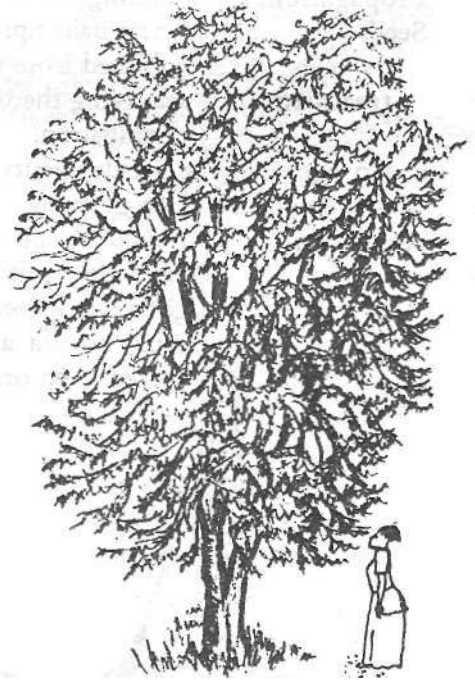
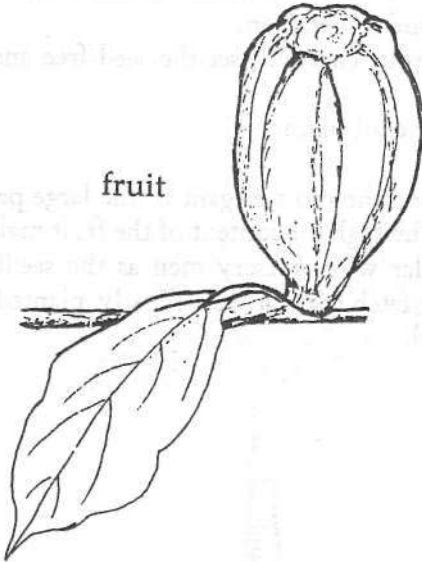
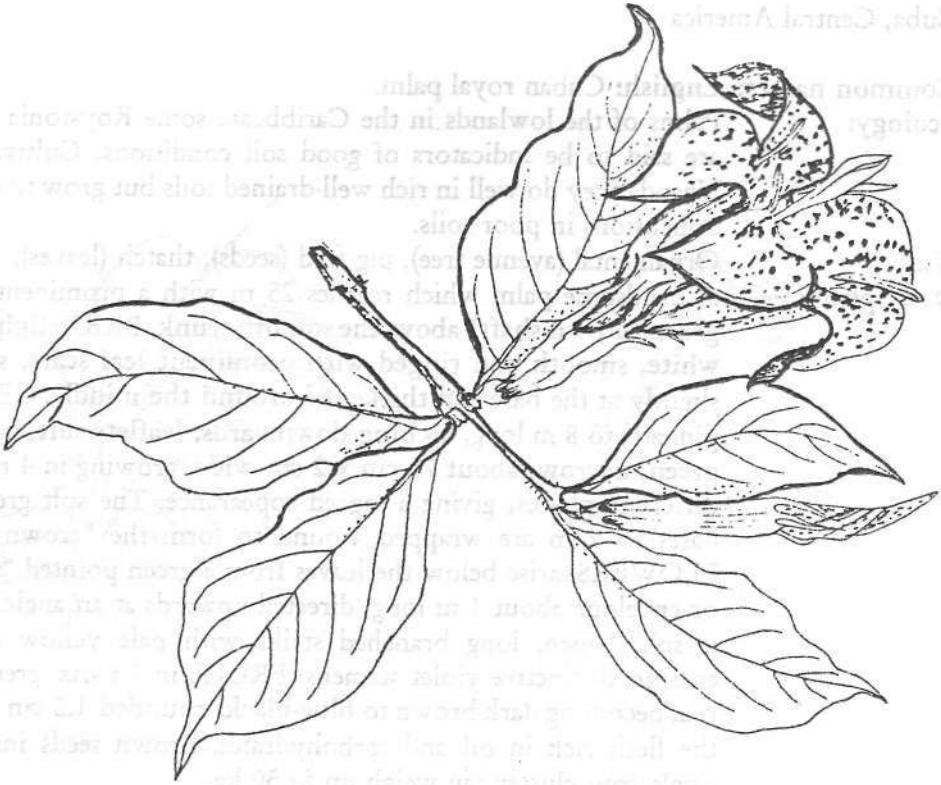
Seed: As the fruit ripens it becomes soft and changes from green-yellow to black. It falls to the ground, where mammals spread the seeds. At the black stage the fruit should be crushed and the seeds separated from the pulp,

treatment: not necessary.

storage: do not store for more than two months.

Management: Fast growing. Coppicing and pollarding.

Remarks: A good tree for firewood and charcoal. Intercrop with coffee or cocoa or as an ornamental. This species, when in full bloom, is a wonderful sight.



Cuba, Central America

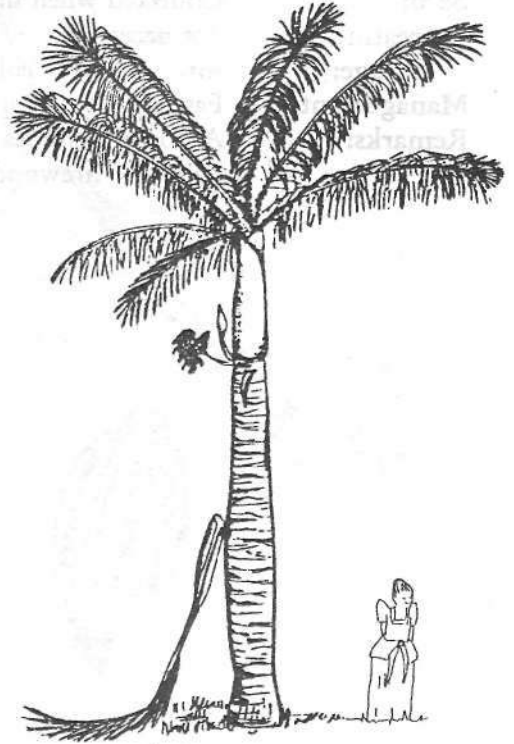
Common names: **English:** Cuban royal palm.**Ecology:** Palms of the lowlands in the Caribbean, some Roystonea species are said to be indicators of good soil conditions. Cultivated in Uganda they do well in rich well-drained soils but grow to smaller dimensions in poor soils.**Uses:** Ornamental (avenue tree), pig feed (seeds), thatch (leaves).**Description:** A handsome palm which reaches 25 m with a prominent **shiny green "crown shaft" above the smooth trunk. BARK: light grey-white, smooth and ringed with prominent leaf scars**, swollen slightly at the base and **thickened around the middle. LEAVES:** pinnate, to 8 m long, **arching downwards, leaflets soft, brilliant green, narrow, about 75 cm x 2 cm wide**, growing in **4 rows in different planes**, giving a ragged appearance. The soft green leaf bases to 2 m are wrapped around to form the "crown shaft". **FLOWERS:** arise below the leaves from a green pointed "spadix" or envelope about 1 m long, directed upwards at an angle. When it splits open, long branched stalks with pale yellow flowers emerge; distinctive violet stamens. **FRUIT:** in 3 parts, green then red, becoming dark brown to **blue-black, rounded 1.5 cm across**, the flesh rich in oil and carbohydrates. Brown seeds inside. A single fruit cluster can weigh up to 50 kg.**Propagation:** Seedlings (sow seeds in pots), and wildings.**Seed:** These palms produce an enormous amount of fruit which can be collected from the ground under them.**treatment:** scarifying the outer fibrous coat will set the seed free and hasten germination.**storage:** store dry fruits in a dry cool place.**Management:** Fast growing.**Remarks:** *Roystonea* spp. are among the most elegant of the large palms and are widely cultivated. The high oil content of the fruit makes them good stock feed. Popular with nursery men as the seedlings are much sought after and fetch high prices. Mostly planted widely spaced as an ornamental.



flowering branch



flower detail



Sambucus africana

Caprifoliaceae

Indigenous

Ecology: A common shrub only recorded from Uganda, Kenya and Tanzania. It is found in upland grassland, evergreen bushland, upland rain forest and in openings in montane forests associated with *Olea*, *Podocarpus* and *Afrocrania* near the bamboo zone. It may be dominant after bamboo has flowered and died. It is also cultivated by highland farmers. At lower altitudes it may be a tree.

Uses: Firewood, food (fruits), ornamental, live fence.

Description: A fleshy herb or woody shrub usually 1-2 m but up to 5 m, the stem juicy at first but later woody at the base, pithy or hollow; young shoots hairy. **LEAVES: pinnate, reaching 75 cm with 6-11 leaflets, the leaflets large with edges sharply toothed and a long pointed tip about 12 cm long and 4 cm across, leaflets one-sided** or attached to the leaf stalk, up to 12 cm with leafy stipules at the base. **FLOWERS: small, white** and sweetly scented in a **flattened head 7-15 cm across, calyx tube pinkish and ribbed, 5 tiny white petals, tube shorter than lobes and 5 stamens hanging out**. **FRUIT:** a small purple-black edible berry, only 7 mm, oblong and ribbed containing 3-4 hard red-brown seeds.

Propagation: Seedlings, wildings.

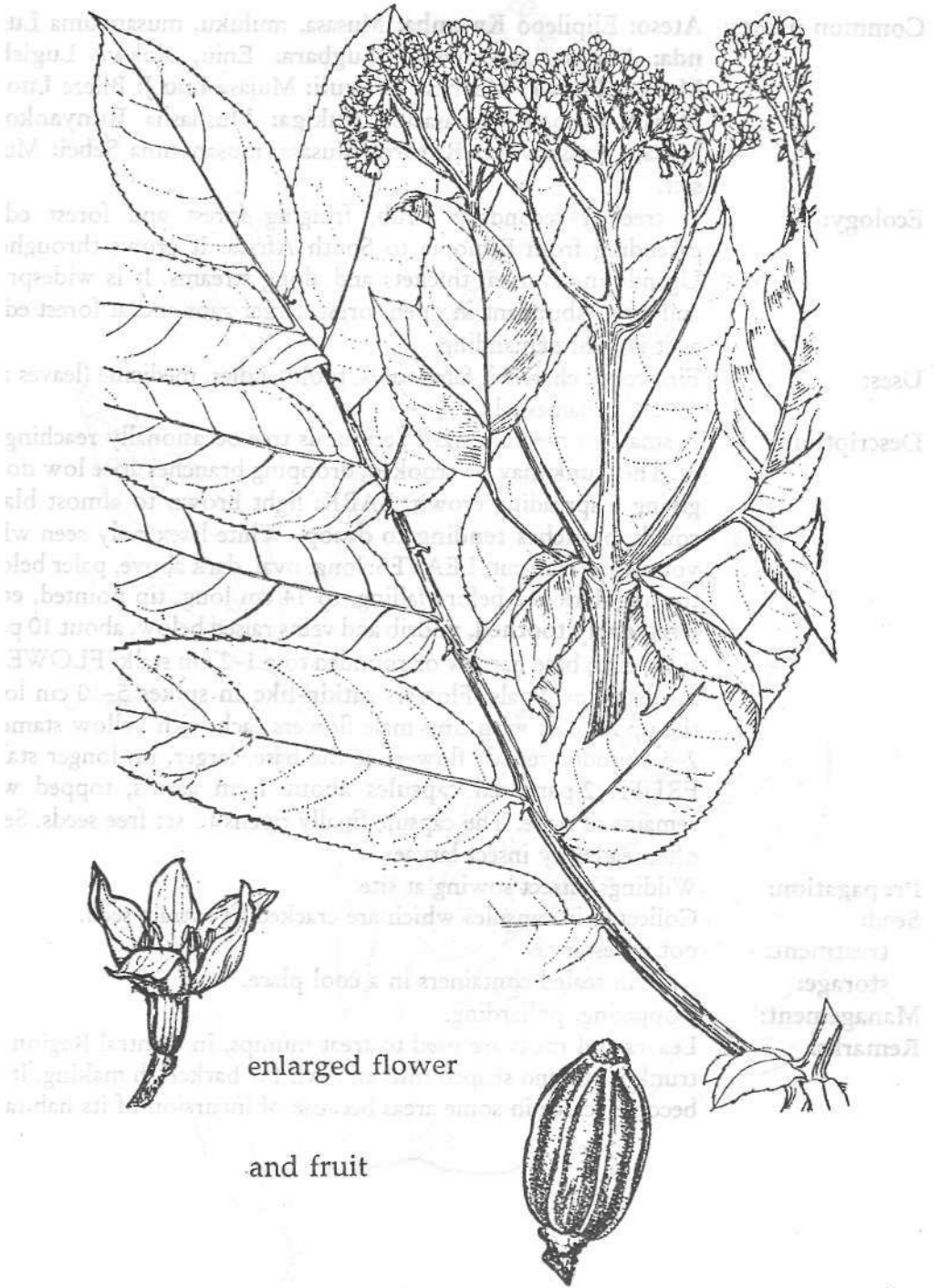
Seed: Collected when mature off older fruiting plants,

treatment: not necessary,

storage: sow as soon as collected.

Management: Fast growing. Coppicing, pruning, trimming.

Remarks: At lower altitudes the species can be planted as a hedge, ornamental or for firewood.



Indigenous

Common names: **Ateso:** Elipilepo **Kwamba:** Musasa, muluku, musanvuma **Luganda:** Musasa, musanvuma **Lugbara:** Eniu, alokwe **Lugishu:** Musasia **Lugwe:** Muchasa **Lunyuli:** Mujasa **Luo J:** Bilere **Luo L:** Musaja **Lusoga:** Mujasajaba **Rukiga:** Mushasha **Runyankore:** Musasa, musanvuma **Rutoro:** Musasa, musanvuma **Sebei:** Mujustet.

Ecology: A tree of secondary scrub, fringing forest and forest edges extending from Ethiopia to South Africa. It grows throughout Uganda in savanna, thickets and along streams. It is widespread and often abundant in open forest, larger gaps and at forest edges as it is light demanding.

Uses: Firewood, charcoal, farm tools, tool handles, medicine (leaves and roots), ornamental.

Description: A small- to medium-sized deciduous tree occasionally reaching 20 m. The trunk may be crooked, drooping branches arise low down giving a spreading crown. **BARK:** light brown to almost black, rough, **branches tending to droop**. White latex only seen when young parts are cut. **LEAVES:** long, oval, dark above, paler below, turning dark red before falling, to 14 cm long, tip pointed, **edge irregularly toothed**, midrib and veins raised below, about 10 pairs side veins; base narrow or rounded to a 1-2 cm stalk. **FLOWERS:** no petals or sepals. Flowers **catkin-like in spikes** 5-10 cm long, the upper part with tiny male flowers each with yellow stamens; 2-5 rounded female flowers at the base, larger, on longer stalks. **FRUIT:** **2-part red capsules about 1 cm** across, topped with remains of style. The capsule finally opens to set free seeds. Seeds often eaten by insect larvae.

Propagation: Wildings, direct sowing at site.

Seed: Collected in capsules which are cracked to extract seed.

treatment: not necessary.

storage: store in sealed containers in a cool place.

Management: Coppicing, pollarding.

Remarks: Leaves and roots are used to treat mumps. In Central Region the trunk is cut and shaped into an anvil for barkcloth making. It has become scarce in some areas because of incursion of its habitat.



Sarcocephalus latifolius (*Nauclea latifolia*)

Rubiaceae

Indigenous

Common names: **Ateso:** Ebolo, ebeliodole, ekomokoi, eomokoi, edoil, eutukidole
Lugwere: Mutma **Luo A:** Munyu **Luo J:** Katama **Luo L:** Ebele
Lusoga: Mutamatama **Madi:** Lago.

Ecology: A small tree of scrub and moist grassland with scattered trees found from the Sudan, Zaire and into West Africa. In Uganda, it occurs in wooded grassland and woodland savannas and is common in North Western, Northern and North Eastern Regions.

Uses: Firewood, charcoal, timber, food (fruit), fodder (fruit).

Description: A shrub or multi-stemmed tree 2-9 m with thick drooping branchlets. **BARK:** grey-brown, **very fibrous**, deeply fissured. **LEAVES:** shiny dark green above, paler below, wide oval 10-21 cm long, the **tip pointed** and **base rounded to a red-purple** leaf stalk to 2 cm. **FLOWERS:** **white-yellow, very fragrant**, in solitary rounded **terminal heads 4-5 cm across**, on a stalk 1-2 cm. Each flower is about 1 cm, the **styles hanging out** of the tubular corolla. **FRUIT:** a compound **oval-round ball 5-8 cm across, red** with sweet edible flesh, the **rough surface covered with 5-sided pits**. Very many **tiny 1 mm seeds** lie in the flesh around the solid core.

Propagation: Wildings, seedlings.

Seed: The seeds are even smaller than those of Eucalyptus or tobacco. When the fruit is ripe and soft, it should be mashed and floated in a pail of water. The seeds will then separate and sink to the bottom after which they can be collected and gradually dried.

treatment: not necessary.

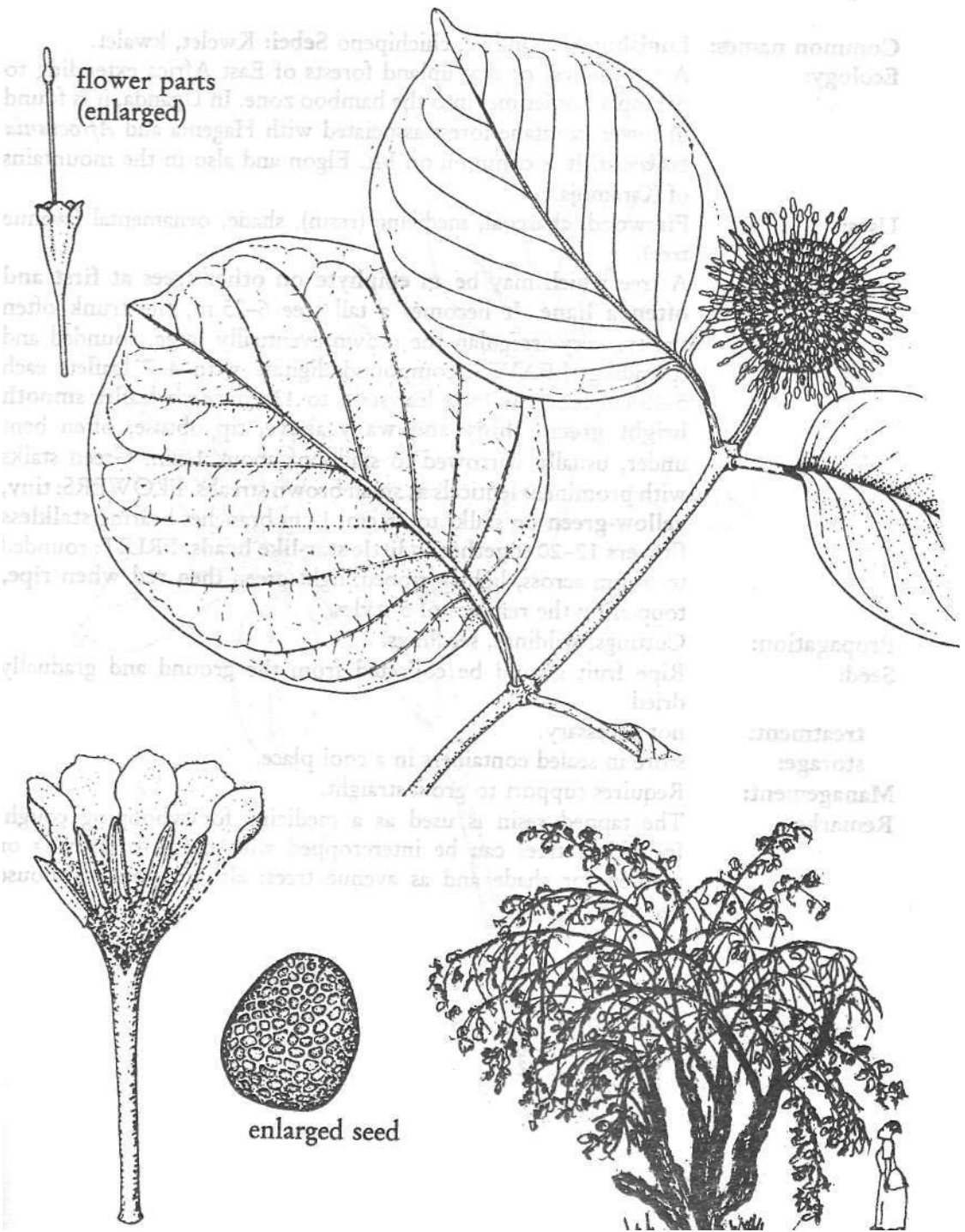
storage: store in sealed containers in a cool place. Plant within 2 months.

Management: Coppicing, lopping, pollarding.

Remarks: Has been widely used in the wild but could be grown as a plantation crop or in orchards to provide fruit for people and fodder for animals. Its distribution is restricted to the northern parts of the country, therefore it may not grow well outside this natural range. In Soroti and Kumi Districts, the fruit are fed to animals.

Sarcocephalus latifolius (*Nauclea latifolia*)

Rubiaceae



Indigenous

Common names: **Lugishu:** Mubondwe, chichipeno **Sebei:** Kwelet, kwalet.

Ecology: A tree of wet or dry upland forests of East Africa extending to Ethiopia, sometimes into the bamboo zone. In Uganda, it is found in lower montane forest associated with *Hagenia* and *Afrocrania volkensii*. It is common on Mt. Elgon and also in the mountains of Karamoja.

Uses: Firewood, charcoal, medicine (resin), shade, ornamental (avenue tree).

Description: A tree which may be an **epiphyte on other trees at first and often a liane**. It becomes a tall tree 6-25 m, the trunk often twisty, very irregular, the crown eventually large, rounded and spreading. **LEAVES:** compound digitate with 4-7 leaflets each 5-15 cm long the long leaf stalk to 13 cm, each leaflet **smooth bright green, shiny and waxy** above, tip obtuse, often bent under, usually narrowed to stalks of about 1 cm. Green stalks with prominent lenticels as small brown streaks. **FLOWERS:** tiny, **yellow-green** on stalks to 25 cm, 1 cm branches bearing **stalkless flowers 12-20 together in little star-like heads**. **FRUIT:** rounded to 5 mm across, lightly ribbed, light green then **red when ripe**, topped by the remains of 5 styles.



Propagation: Cuttings, wildings, seedlings.

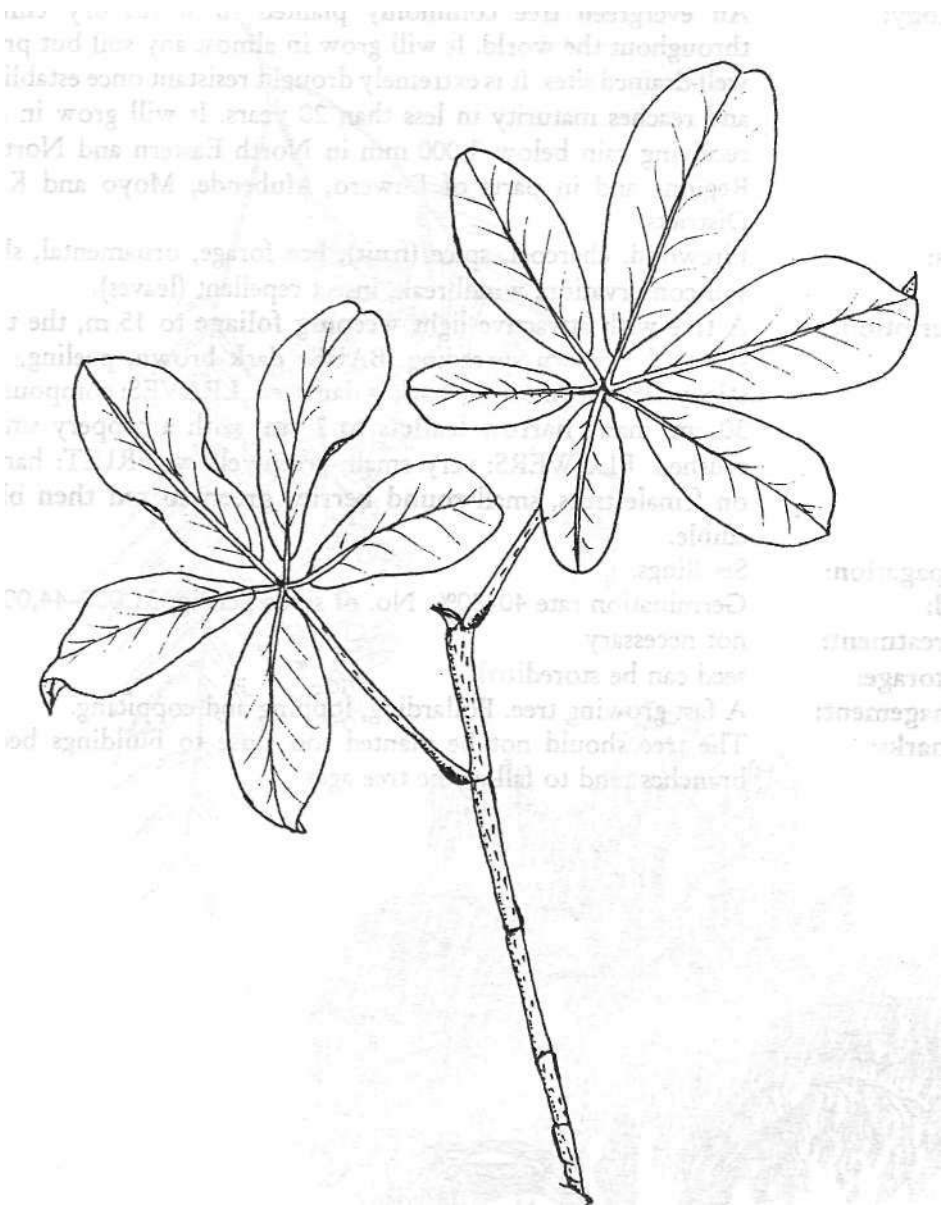
Seed: Ripe fruit should be collected from the ground and gradually dried.

treatment: not necessary.

storage: store in sealed containers in a cool place.

Management: Requires support to grow straight.

Remarks: The tapped resin is used as a medicine for whooping cough. Individual trees can be intercropped with coffee or banana or planted for shade and as avenue trees; also in pots for house decoration.



Schinus molle

Anacardiaceae

Peru, Andes

Common names: **English:** Pepper tree.

Ecology: An evergreen tree commonly planted in warm dry climates throughout the world. It will grow in almost any soil but prefers well-drained sites. It is extremely drought resistant once established and reaches maturity in less than 20 years. It will grow in areas receiving rain below 1,000 mm in North Eastern and Northern Regions and in parts of Luwero, Mubende, Moyo and Kasese Districts.

Uses: Firewood, charcoal, spice (fruit), bee forage, ornamental, shade, soil conservation, windbreak, insect repellent (leaves).

Description: A tree with attractive light **weeping foliage** to 15 m, the trunk short, the crown spreading. **BARK:** dark brown, peeling, very **sticky latex** forms if the bark is damaged. **LEAVES:** compound to 30 cm, many **narrow leaflets to 7 cm**, with a peppery smell if crushed. **FLOWERS:** very small, green-yellow. **FRUIT:** hanging on female trees, small **round berries green to red then black**, edible.

Propagation: Seedlings.

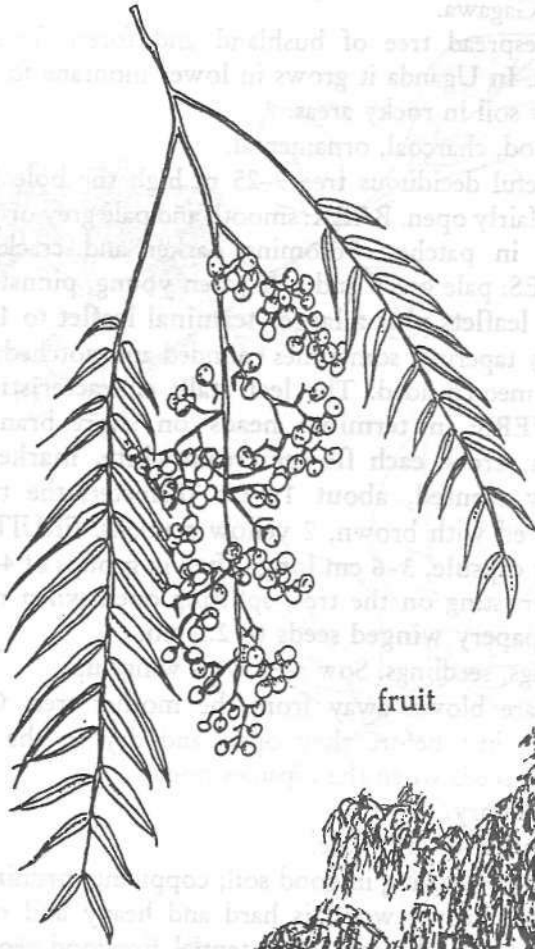
Seed: Germination rate 40-80%. No. of seeds per kg: 31,000-44,000.

treatment: not necessary.

storage: seed can be stored.

Management: A fast-growing tree. Pollarding, lopping and coppicing.

Remarks: The tree should not be planted too close to buildings because branches tend to fall as the tree ages.



fruit



Schrebera arborea (S. macrantha)

Oleaceae

Indigenous

Common names: **Kwamba:** Muhoda **Luganda:** Ndela **Lugwe:** Nawulamu **Rukonjo:** Munalibo.

Ecology: A lowland forest canopy tree from Ivory Coast to Sudan and Zaire. In Uganda it grows in tropical mixed rain forest, rarely on forest edges and in thickets. Found in Budongo and Zoka forests and occasionally in Mengo, Masaka and Bunyoro forests, but not very common.

Uses: Firewood, charcoal, tool handles and shafts.

Description: A deciduous tree, the trunk long and thin, rarely straight, sometimes branched low down, small buttresses sometimes present. Branchlets_ scattered with clear lenticels. **BARK:** smooth, thin, yellow-white or grey-brown, flaking in small patches to show green-cream below. **LEAVES:** **simple and opposite, large oval, 5-17 cm** x 3-10 cm across, rather stiff, on 1-5 cm stalks. **FLOWERS:** terminal or beside leaves, **9-12 flowers together, sweet scented**, each one **cream-white with chocolate-purple hairs on the lobes**, tube over 1 cm. **FRUIT:** a **woody capsule, pear shaped, dark purple-brown, 4-6 cm**, scattered with pale lenticel dots. The **2 thick woody sections split** when ripe on the tree to set free **winged seeds 4 cm long**.

Propagation: Wildings, seedlings. Sow seed with wings up.

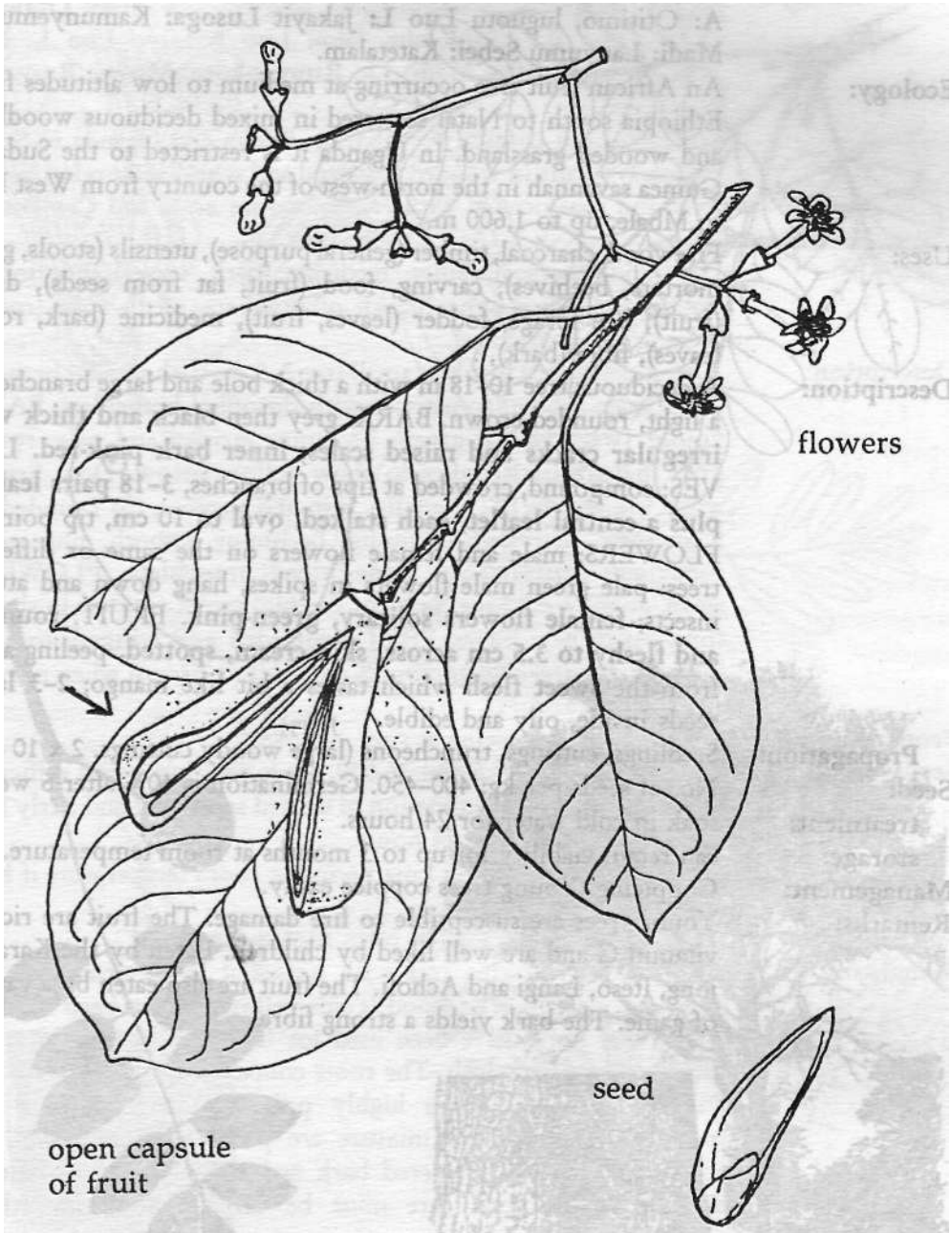
Seed: Winged seeds are blown away from the mother tree. Collect mature capsules from the tree just before opening, dry in the sun and separate seeds from the opened capsules,

treatment: not necessary,

storage: store in a dry cool place.

Management: Coppicing, pollarding.

Remarks: Raise as stands for fuelwood and charcoal or plant trees individually or as an avenue. Can be intercropped with coffee, banana or cocoa. Suitable for planting in Eastern, North Western, Central and Western Regions of Uganda.



Sclerocarya birrea subsp. *caffra* (S. *caffra*)

Anacardiaceae

Indigenous

Common names: **Ateso:** Ejikai, ejikaiskoi, ekajikai, eko **Lugishu:** Kisoromosi **Luo** A: Otitimo, luguotu **Luo** L: Jakayit **Lusoga:** Kamunyemunye **Madi:** Lanyumu **Sebei:** Katetalam.

Ecology: An African fruit tree occurring at medium to low altitudes from Ethiopia south to Natal scattered in mixed deciduous woodland and wooded grassland. In Uganda it is restricted to the Sudano-Guinea savannah in the north-west of the country from West Nile to Mbale, up to 1,600 m.

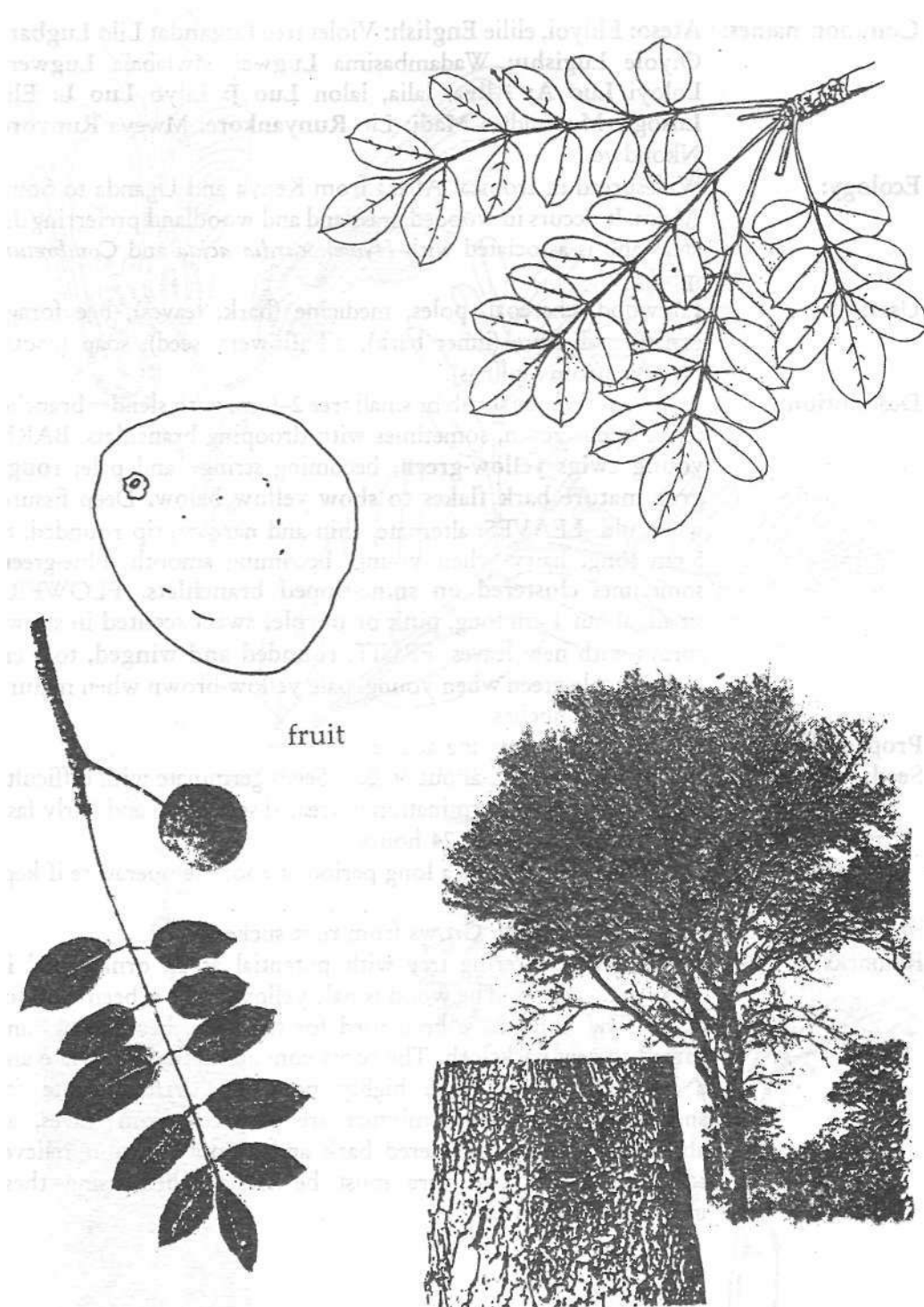
Uses: Firewood, charcoal, timber (general purpose), utensils (stools, grain mortars, beehives), carving, food (fruit, fat from seeds), drink (fruit), bee forage, fodder (leaves, fruit), medicine (bark, roots, leaves), fibre (bark), .

Description: A deciduous tree 10-18 m with a thick bole and large branches to a light, rounded crown. **BARK:** grey then **black and thick with irregular cracks and raised scales; inner bark pink-red.** **LEAVES:** compound, crowded at tips of branches, **3-18 pairs leaflets plus a central leaflet, each stalked, oval to 10 cm**, tip pointed. **FLOWERS:** male and female flowers on the same or different trees: pale green male flowers in spikes, hang down and attract insects; **female flowers solitary, green-pink.** **FRUIT:** **rounded and fleshy to 3.5 cm across, skin cream, spotted**, peeling away from the **sweet flesh** which tastes a bit like mango; **2-3 large seeds inside**, oily and edible.

Propagation: Seedlings, cuttings, truncheons (large woody cuttings, 2 x 10 cm).
Seed: No. of seeds per kg: 400-450. Germination is 40% after 6 weeks, soak in cold water for 24 hours.
treatment:
storage: can retain viability for up to 3 months at room temperature.

Management: Coppicing. Young trees coppice easily.

Remarks: Young trees are susceptible to fire damage. The fruit are rich in vitamin C and are well liked by children. Eaten by the Karamojong, Iteso, Langi and Acholi. The fruit are also eaten by a variety of game. The bark yields a strong fibre.



Indigenous

Common names: **Ateso:** Elilyoi, elilie **English:** Violet tree **Luganda:** Lilo **Lugbara:** Oiyofe **Lugishu:** Wadambasima **Lugwe:** Mwiabala **Lugwere:** Loloyi **Luo A:** Aliya, lalia, lalon **Luo J:** Lilyo **Luo L:** Elila **Lusoga:** Mukondwa **Madi:** Lio **Runyankore:** Mweya **Runyoro:** Nkondwe.

Ecology: Widespread in tropical Africa from Kenya and Uganda to South Africa. It occurs in wooded grassland and woodland preferring dry areas and is associated with *Hymenocardia acida* and *Cbmbretum* spp.

Uses: Firewood, charcoal, poles, medicine (bark, leaves), bee forage, ornamental, fibre (inner bark), oil (flowers, seed), soap (roots), brooms (from saplings).

Description: A semi-deciduous shrub or small tree 2-6 m, with slender branches to an open crown, sometimes with drooping branchlets. **BARK:** young twigs yellow-green, becoming stringy and pale; rough grey mature bark flakes to show yellow below. Deep fissures when old. **LEAVES:** alternate, thin and narrow, tip rounded, to 5 cm long, hairy when young, becoming smooth, blue-green, sometimes clustered on spine-tipped branchlets. **FLOWERS:** small, about 1 cm long, pink or purple, sweet scented in showy-sprays with new leaves. **FRUIT:** rounded and winged, to 4 cm long, purple-green when young, pale yellow-brown when mature, hanging in bunches.

Propagation: Seedlings, direct sowing at site.

Seed: No. of seeds per kg: about 36,000. Seeds germinate with difficulty if not pre-treated. Germination of treated seed good and fairly fast,

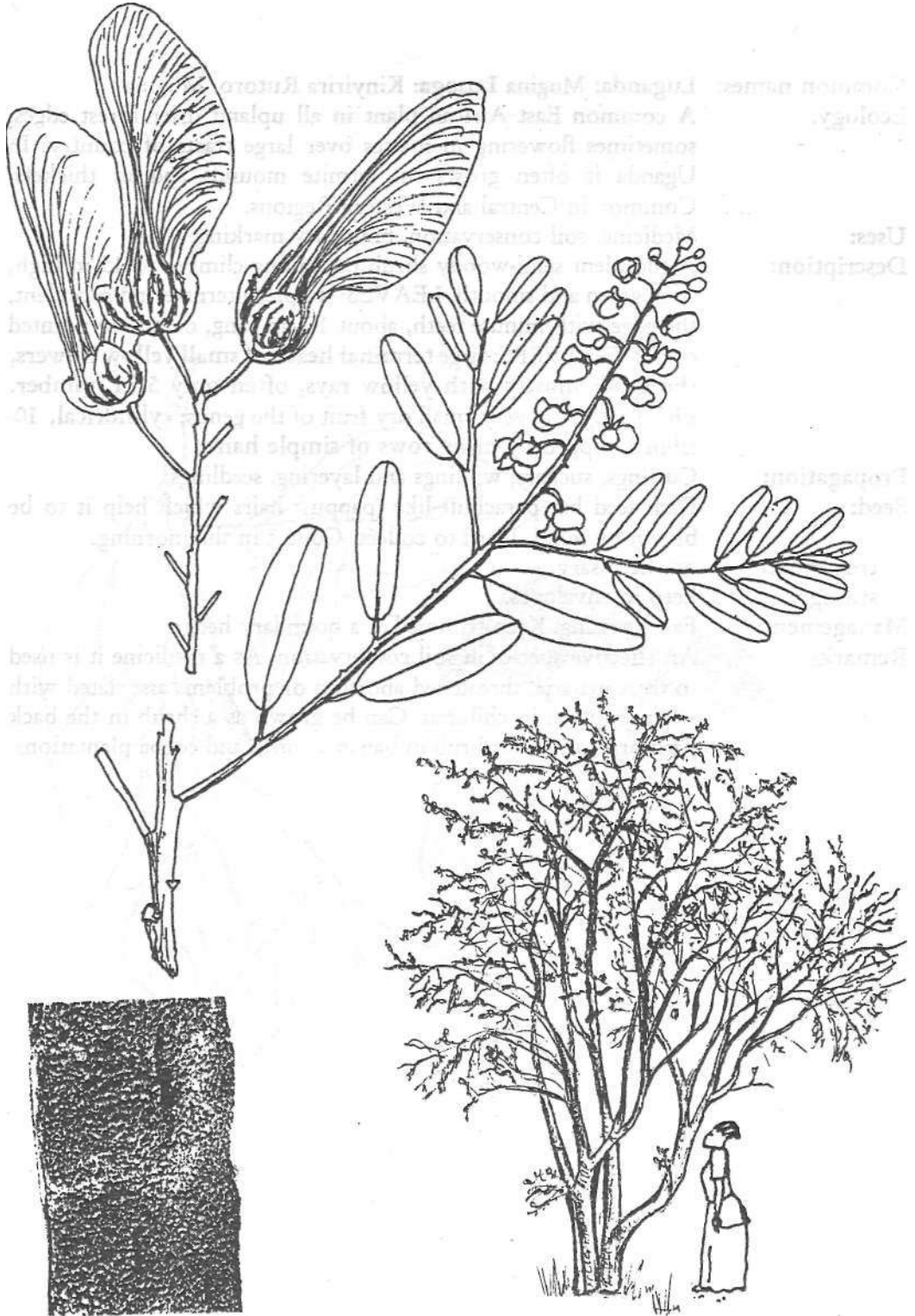
treatment:

storage:

can retain viability for a long period at room temperature if kept dry.

Management: Fairly fast growing. Grows from root suckers.

Remarks: A beautiful flowering tree with potential as an ornamental in parks and gardens. The wood is pale yellow and has been used for bows. The fibres have been used for fish nets, bead strings and thread to sew barkcloth. The roots contain methyl salicylate and a saponin making them highly poisonous. An antidote for snakebite and a cough mixture are prepared from leaves, an abortifacient from powdered bark and a root infusion relieves toothache. But great care must be taken when using these medicinal substances.



Indigenous

Common names: **Luganda:** Mugina **Lusoga:** Kinyirira **Rutoro:** Mugina.

Ecology: A common East African plant in all upland drier forest edges, sometimes flowering in masses over large tracts of country. In Uganda it often grows on termite mounds and in thickets. Common in Central and Western Regions.

Uses: Medicine, soil conservation, boundary marking.

Description: A succulent semi-woody shrub or trailing climber to 15 m high, stem green and smooth. **LEAVES:** simple, alternate and succulent, the edge with minute teeth, about 10 cm long, ovate, tip pointed or not. **FLOWERS:** large **terminal** heads of **small yellow flowers, the heads mostly with yellow rays, often only 5 in number.** **FRUIT:** typical very small dry fruit of the genus; **cylindrical**, 10-ribbed, topped by many **rows of simple** hairs.

Propagation: Cuttings, suckers, wildings and layering, seedlings.

Seed: Each seed has parachute-like (pappus) hairs which help it to be blown by wind. Hard to collect. Collect in the morning.

treatment: not necessary.

storage: keep in envelopes.

Management: Fast growing. Keep trimmed as a boundary hedge.

Remarks: An effective species in soil conservation. As a medicine it is used to treat malaria, threatened abortion or problems associated with teeth eruption in children. Can be grown as a shrub in the back yard or as an undershrub in banana, coffee and cocoa plantations.

Senna didymobotrya (*Cassia didymobotrya*) *Caesalpinaceae*

Indigenous

Common names: **English:** Candle bush, peanut-butter cassia **Luganda:** Mukyula **Luganda, dialect Lusese:** Mmwenyi **Lugishu:** Mubenobeno, kebenobeno **Runyankore:** Mugabagaba **Sebei:** Senetwa.

Ecology: A small bush of forest edges, lowland scrub, woodlands, evergreen thickets, often riparian or in disturbed places in Uganda. It is also cultivated for medicinal purposes.

Uses: Firewood, medicine (leaves, stems, roots), mulch, soil conservation.

Description: An attractive bushy shrub 1-5 m, young stems quite hairy. **LEAVES:** compound on spreading stalks to 30 cm, without glands, characteristic **leafy stipules** at the base **over 2 cm long, heart-shaped and pointed**, 8-18 pairs of oval hairy leaflets to 6 cm long, each with a rounded apex bearing a **clear, stiff, hair-like tip**. Crushed leaflets have peculiar bitter smell. **FLOWERS:** on erect stalks to 30 cm, in dense clusters, conspicuous as thin shiny **brown** sepals overlap and cover the **rounded buds**. Below each bud is a leafy bract. Open flowers at the base of the head have **bright yellow petals over 2 cm long**, the stamens of 3 sizes with straight stalks. **FRUIT:** oblong, **dark-brown** pods, **to 12 cm** by 2 cm across, **flattened** with sections across holding the flat seeds. Pods break open when dry.

Propagation: Wildings, seedlings, direct sowing on site.

Seed: Contained in flat pods; collect and crush.

treatment: not necessary.

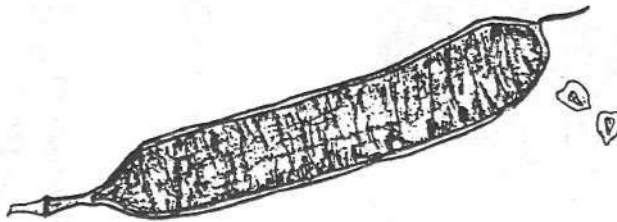
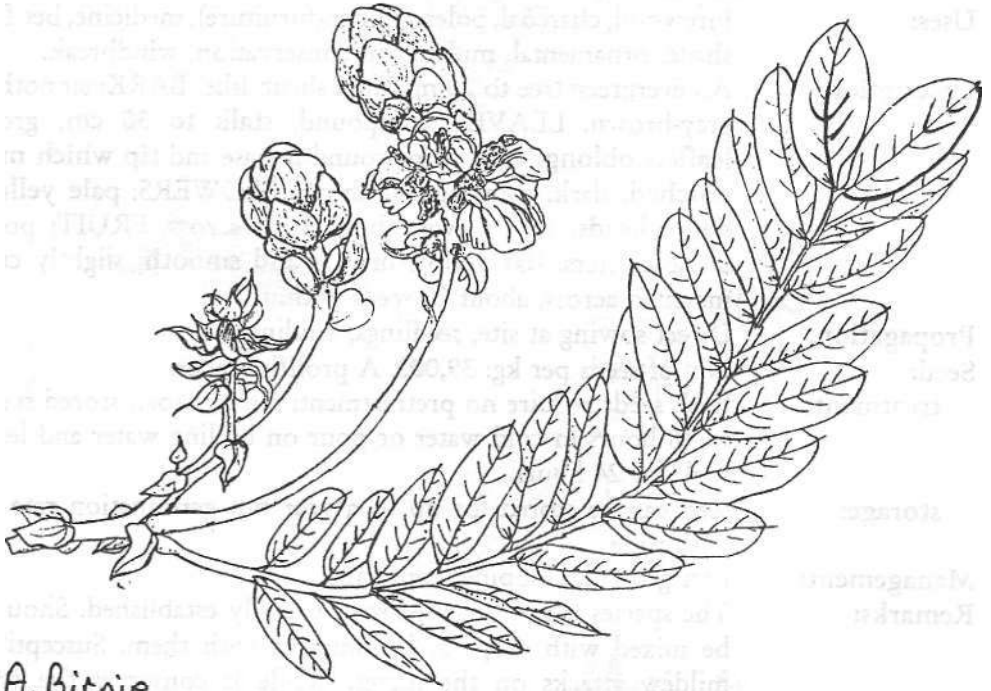
storage: store in sealed containers in a cool place.

Management:

Remarks: The leaves, pods and roots are poisonous, so care should be taken with dosage. The bark contains tannin. The leaves can be used as fish poison. Good to grow as a stand around the home.

Senna didymobotrya (Cassia didymobotrya)

Caesalpinaceae



S.E. Asia

Common names: **English:** Black-wood cassia, ironwood.

Ecology: A small tree cultivated all over the tropics from sub-humid to semi-arid and even arid zones, 0-1,600 m. It prefers a high watertable but will tolerate extended drought and a variety of soils. In Uganda, it is widely planted in dry areas in most parts of the country.

Uses: Firewood, charcoal, poles, timber (furniture), medicine, bee forage, shade, ornamental, mulch, soil conservation, windbreak.

Description: An evergreen tree to 20 m, often shrub like. **BARK:** smooth, pale grey-brown. **LEAVES:** compound, **stalk to 30 cm**, grooved, **leaflets oblong**, 4-16 pairs, round at base and **tip which may be notched**, dark, shiny, green above. **FLOWERS:** **pale yellow in dense heads**, each flower about 3 cm across. **FRUIT:** pods, in dense clusters, **flat yellow-brown and smooth**, slightly curved, indented across, about 20 seeds within.

Propagation: Direct sowing at site, seedlings, wildings.

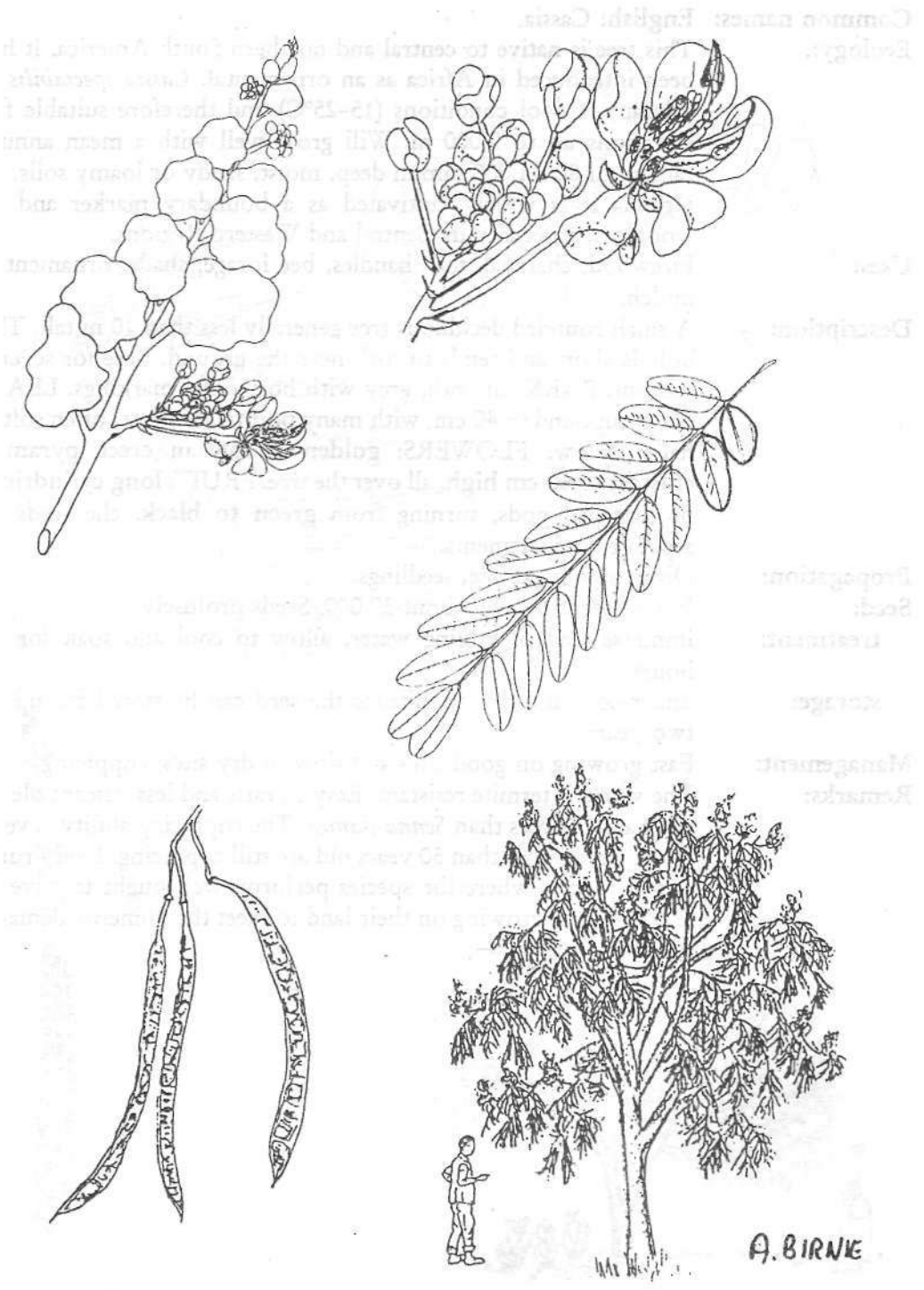
Seed: No. of seeds per kg: 39,000. A prolific seeder.

treatment: fresh seeds require no pretreatment; nick or soak stored seeds up to 48 hours in cold water or pour on boiling water and leave to soak for 24 hours.

storage: seed can be stored for up to a year but germination rate drops with time.

Management: Fast growing; lopping, coppicing.

Remarks: The species is not browsed so it is easily established. Should not be mixed with crops as it competes with them. Susceptible to mildew attacks on the leaves. While it conserves the soil, in Uganda it has proven a greedy feeder.



Senna spectabilis (Cassia spectabilis)

Caesalpinaceae

Tropical America

Common names: **English:** Cassia.

Ecology: This tree is native to central and northern South America. It has been introduced in Africa as an ornamental. *Cassia spectabilis* is tolerant of cool conditions (15-25°C) and therefore suitable for elevations up to 2,000 m. Will grow well with a mean annual rainfall of 800-1,000 mm in deep, moist, sandy or loamy soils. In Uganda it is widely cultivated as a boundary marker and in woodlots, especially in Central and Western Regions.

Uses: Firewood, charcoal, tool handles, bee forage, shade, ornamental, mulch.

Description: A small rounded deciduous tree generally less than 10 m tall. The bole is short and tends to fork near the ground. Bare for several months. **BARK:** smooth, grey with horizontal markings. **LEAVES:** compound to 40 cm, with many **pointed leaflets**, often softly hairy below. **FLOWERS:** **golden yellow** in **erect pyramid clusters to 60 cm high**, all over the tree. **FRUIT:** **long cylindrical** or flattened pods, turning from **green to black**, the seeds in separate compartments.

Propagation: Direct sowing at site, seedlings.

Seed: No. of seeds per kg: about 39,000. Seeds profusely,
treatment: immerse seed in boiling water, allow to cool and soak for 24 hours.

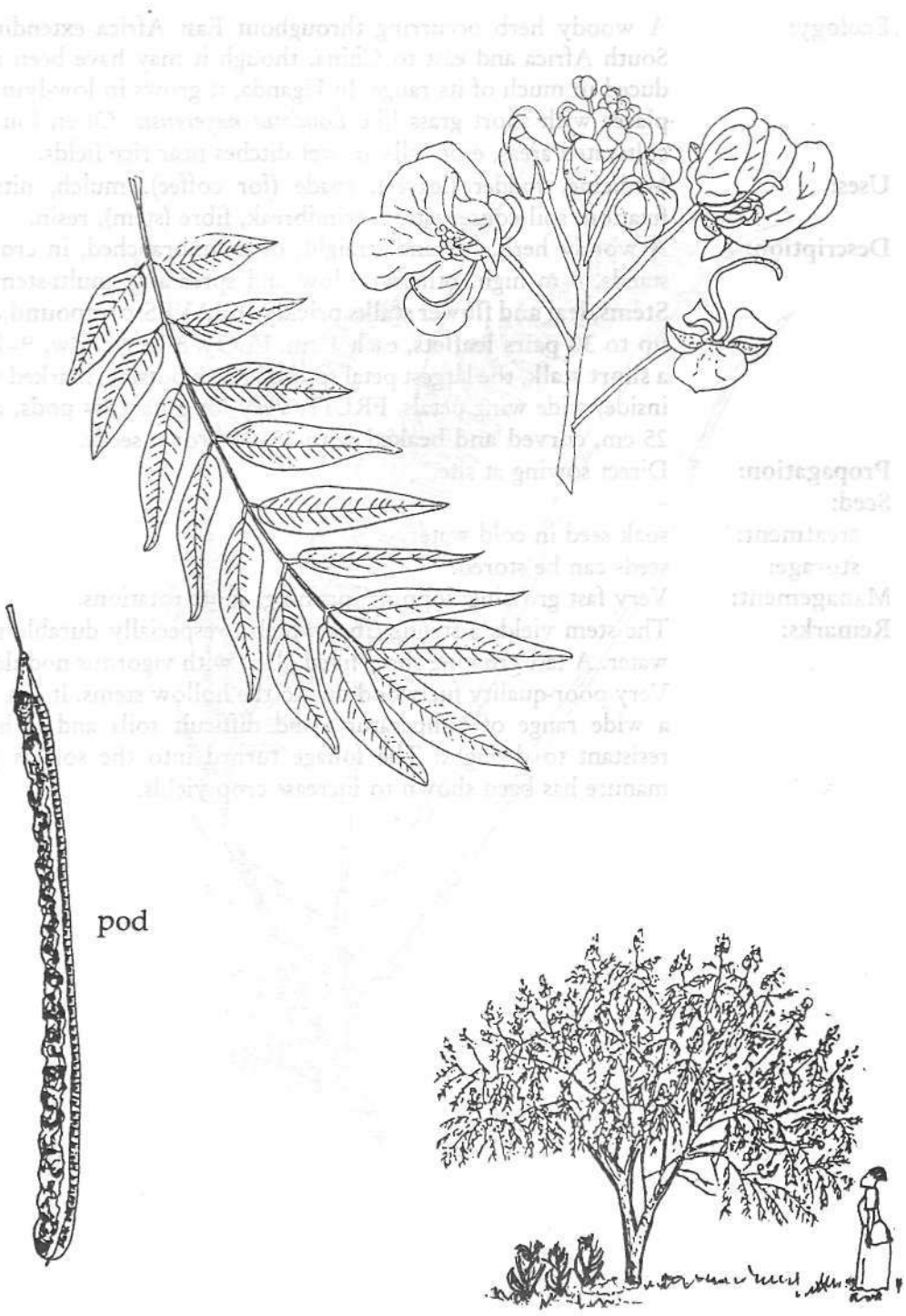
storage: under cool and dry conditions the seed can be stored for up to two years.

Management: Fast growing on good sites and slow in dry sites; coppicing.

Remarks: The wood is termite resistant. Easy to raise and less susceptible to pests and diseases than *Senna siamea*. The coppicing ability is very good. Trees more than 50 years old are still coppicing. Every rural home in areas where the species performs well ought to have at least ten trees growing on their land to meet the domestic demand for fuel.

Senna spectabilis (*Cassia spectabilis*)

Caesalpinaceae

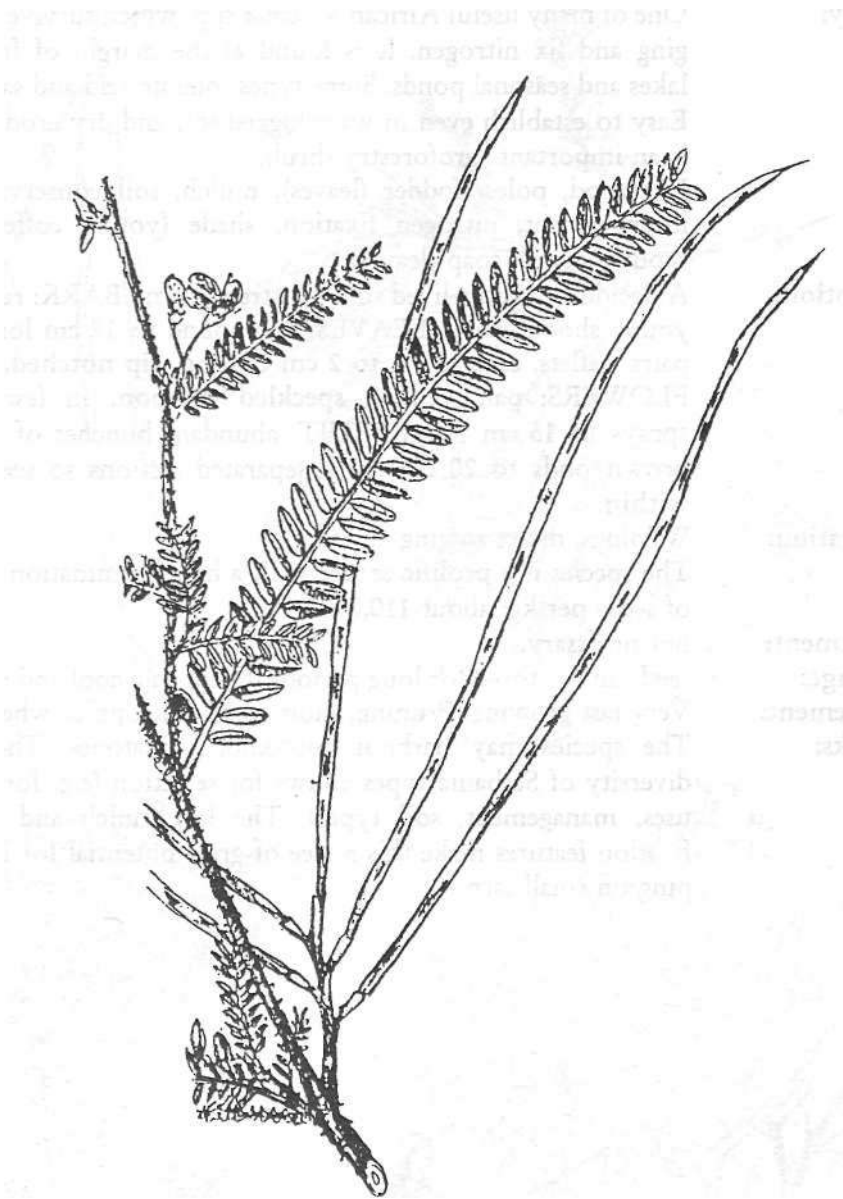


Indigenous

- Ecology:** A woody herb occurring throughout East Africa extending to South Africa and east to China, though it may have been introduced in much of its range. In Uganda, it grows in low-lying wet places with short grass like *Loudetia kagerensis*. Often found in cultivated areas, especially in wet ditches near rice fields.
- Uses:** Medicine, fodder (leaves), shade (for coffee), mulch, nitrogen fixation, soil conservation, windbreak, fibre (stem), resin.
- Description:** A woody herb, tall and straight, often unbranched, in crowded stands, 6 m high, otherwise low and spreading, multi-stemmed. **Stems, leaf and flower stalks prickly.** LEAVES: **compound, with up to 30 pairs leaflets**, each 1 cm. FLOWERS: **yellow, 9-12 on a short stalk**, the largest petal spotted green outside, marked violet inside, wide wing petals. FRUIT: **very long narrow pods**, about 25 cm, **curved and beaked** with 35-40 brown seeds.
- Propagation:** Direct sowing at site.
- Seed:
- treatment:** soak seed in cold water.
- storage:** seeds can be stored.
- Management:** Very fast growing; lopping, pruning, short rotations.
- Remarks:** The stem yields a strong fibre which is especially durable under water. A fast-growing short-lived plant with vigorous nodulation. Very poor-quality fuelwood due to the hollow stems. It can stand a wide range of temperatures and difficult soils and is highly resistant to drought. The foliage turned into the soil as green manure has been shown to increase crop yields.

Sesbania bispinosa (*S. aculeata*)

Papilionaceae



Indigenous

Common names: **English:** River bean, sesbania **Luganda:** Muzimbandeya, mubimba
Rukiga: Munyuganyege.

Ecology: One of many useful African *Sesbania* spp. which survive waterlogging and fix nitrogen. It is found at the margin of fresh-water lakes and seasonal ponds. Some types tolerate acid and saline soils. Easy to establish even in waterlogged soil and dry eroded soil. It is an important agroforestry shrub.

Uses: Firewood, poles, fodder (leaves), mulch, soil conservation and improvement, nitrogen fixation, shade (young coffee), fibres (young stems), soap (leaves).

Description: A deciduous, short-lived shrub or tree to 8 m. **BARK:** red-brown, young shoots hairy. **LEAVES:** compound to 12 cm long, 10-25 pairs leaflets, each leaflet to 2 **cm oblong, tip notched, narrow.** **FLOWERS:** pale **yellow, speckled maroon,** in few-flowered **sprays to 15 cm long.** **FRUIT:** abundant bunches of thin **pale brown pods to 20 cm,** with separated sections so **seeds rattle within.**

Propagation: Wildings, direct sowing at site.

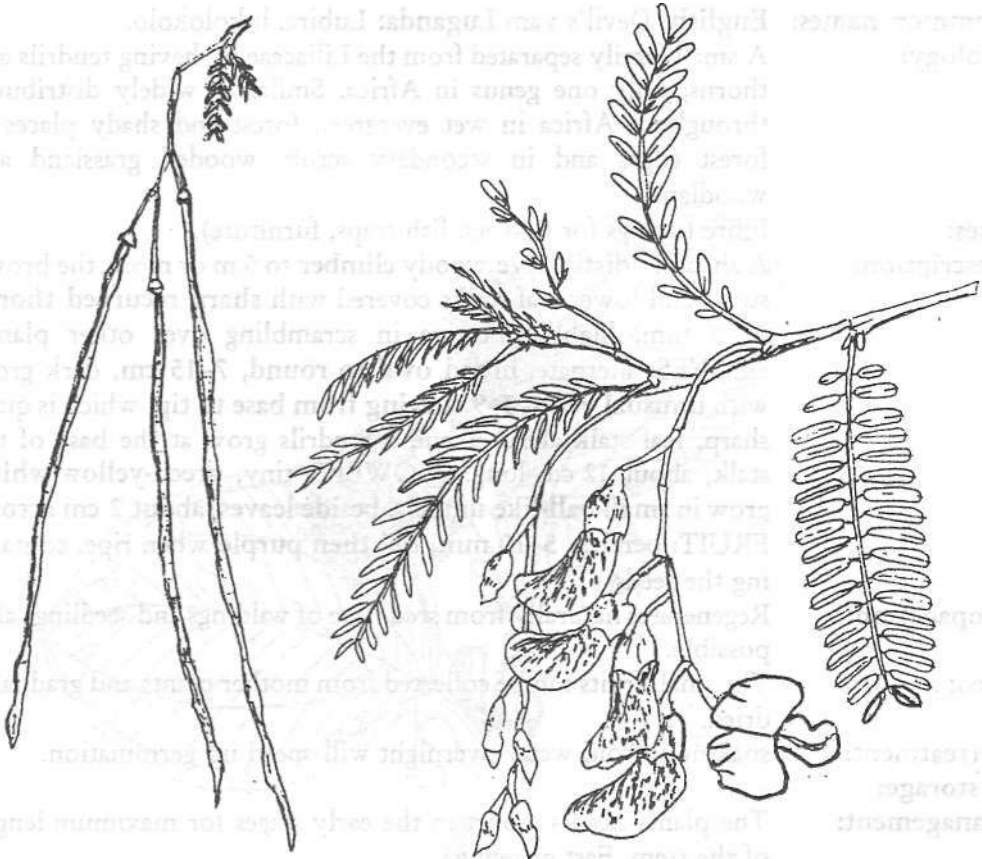
Seed: The species is a prolific seeder with a high germination rate. No. of seeds per kg: about 110,000.

treatment: not necessary.

storage: seed can be stored for long periods if kept in a cool and dry place.

Management: Very fast growing. Pruning, short rotation; coppice when young.

Remarks: The species may harbour root-knot nematodes. The genetic diversity of *Sesbania* types allows for selection (e.g. for different uses, management, soil types). The leaf mulch and nitrogen-fixation features make this a tree of great potential for intercropping on small farms.



+*«&• M-

Indigenous

Common names: **English:** Devil's yam **Luganda:** Lubira, lukolokolo.

Ecology: A small family separated from the Liliaceae by having tendrils and thorns; only one genus in Africa. Smilax is widely distributed throughout Africa in wet evergreen forest and shady places at forest edges and in secondary scrub, wooded grassland and woodland.

Uses: Fibre (strings for baskets, fish traps, furniture).

Description: A shrub or **distinctive woody climber** to 5 m or more, the brown stems and lower leaf stalks covered with **sharp recurved thorns** to 3 mm, highly effective in scrambling over other plants. **LEAVES:** alternate, **broad oval to round, 7-15 cm**, dark green with **unusual veins, 3-9 curving from base to tip**, which is quite sharp, leaf stalk about 1 cm; 2 tendrils grow at the base of the stalk, about 12 cm long. **FLOWERS:** tiny, **green-yellow-white**, grow in **small ball-like umbels, beside leaves, about 2 cm across**. **FRUIT: berries, 5-10 mm, red then purple** when ripe, containing the seeds.

Propagation: Regenerates naturally from seed. Use of wildings and seedlings also possible.

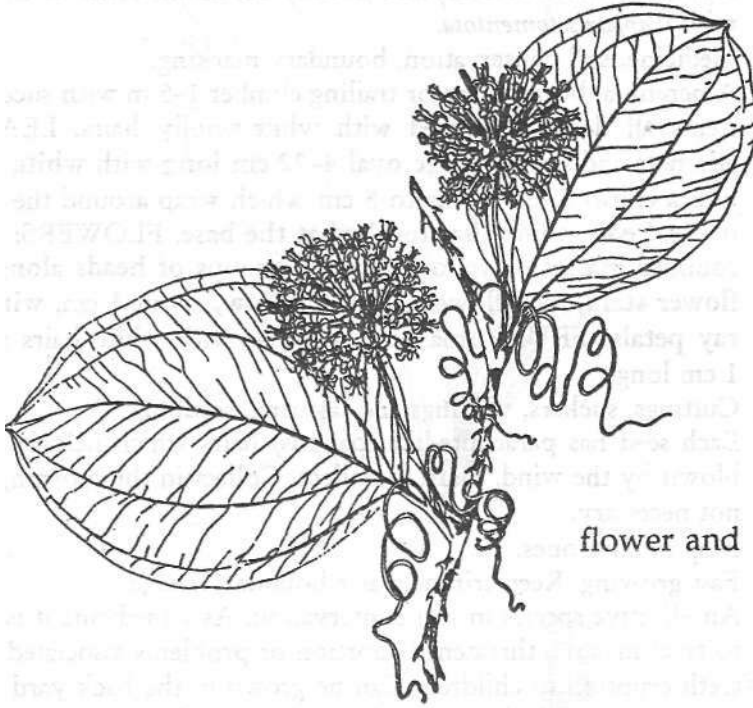
Seed: The small fruits can be collected from mother plants and gradually dried,

treatment: soaking in cold water overnight will speed up germination.

storage:

Management: The plants need support in the early stages for maximum length of the stem. Fast growing.

Remarks: The plants are very spiny and moving around where they are plentiful is difficult. It is recorded as reaching the upper tree canopy and is regarded as an obnoxious weed in some areas. The roots are also fibrous.



flower and

fruit head



Indigenous

Common names: **Luganda:** Kivuvu.

Ecology: A large scrambling herb which grows in savannah under shade from other trees, in thickets and in forest edges, 800-2,000 m. Distributed in Central Africa, Uganda, Kenya, Tanzania, Zambia, Zaire, Rwanda and Burundi. Locally common, often in thickets with *Capparis tomentosa*.

Uses: Medicine, soil conservation, boundary marking.

Description: A perennial bushy plant or trailing climber 1-5 m with succulent stems all densely covered with white-woolly hairs. **LEAVES:** alternate and simple, **large oval 4-22 cm long** with **white hairs like a cobweb, on stalks to 5 cm** which wrap around the stem, the **leaf edge somewhat toothed at the base**. **FLOWERS:** dense rounded **masses of yellow flowers, groups of heads along the flower stalk**, each flower tubular, **yellow**, about **1 cm, without ray petals**. **FRUIT:** small dry achenes, with white hairs about 1 cm long.

Propagation: Cuttings, suckers, wildings and layering, seedlings.

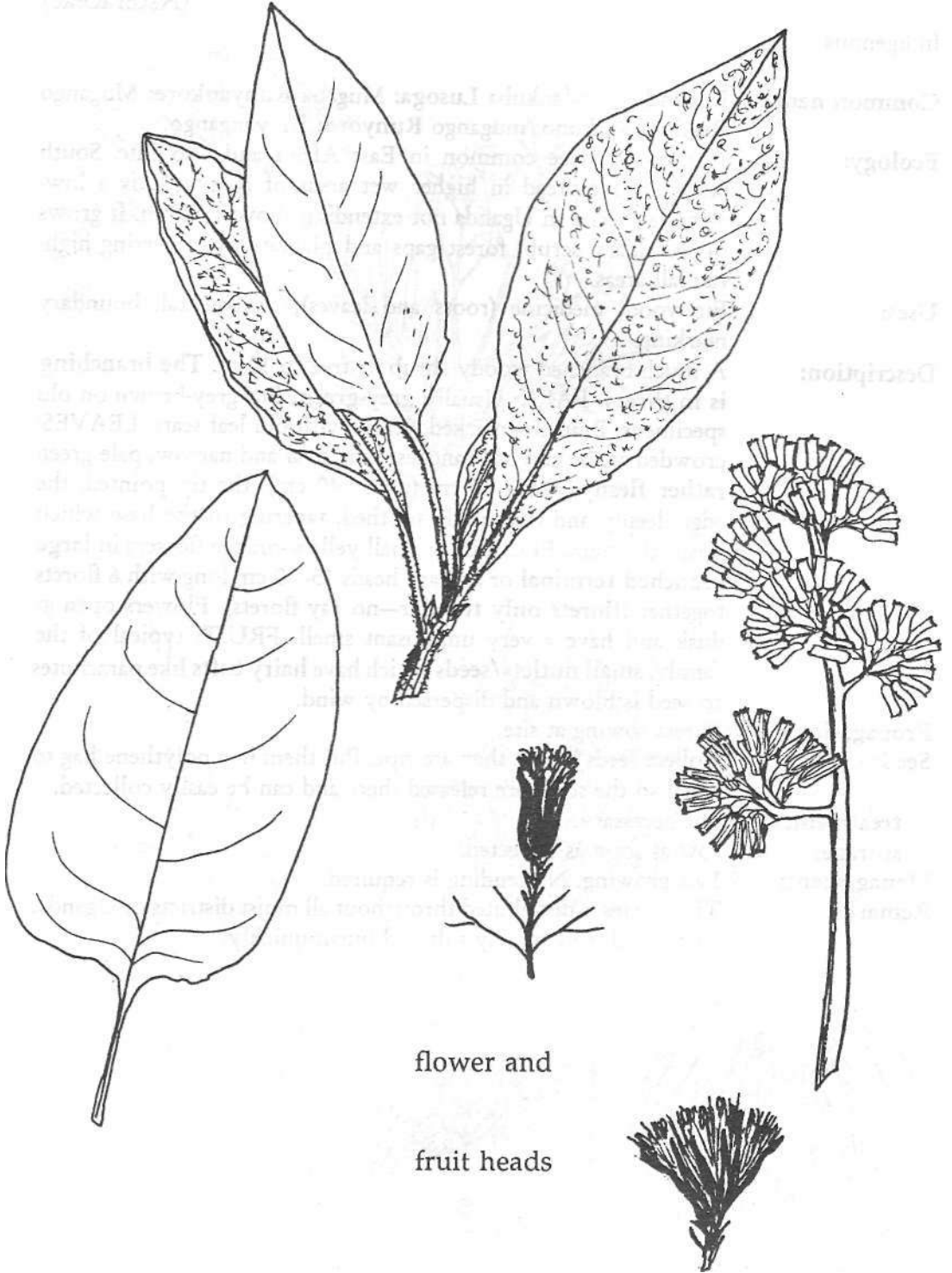
Seed: Each seed has parachute-like (pappus) hairs which help it to be blown by the wind. Hard to collect. Collect in the morning.

treatment: not necessary.

storage: keep in envelopes.

Management: Fast growing. Keep trimmed as a boundary hedge.

Remarks: An effective species in soil conservation. As a medicine it is used to treat malaria, threatened abortion or problems associated with teeth eruption in children. Can be grown in the back yard or as an under shrub in banana, coffee and cocoa plantations.



Solanecio mannii (Crassocephalum mannii)

Compositae

(Asteraceae)

Indigenous

Common names: **Luganda:** Kiralankuba **Lusoga:** Mugaba **Runyankore:** Mugango **Rukiga:** Mukono, mugango **Runyoro:** Kinyangango.

Ecology: A shrub or tree common in East Africa and also into South Africa. Widespread in higher wet areas of Kenya. It is a low-altitude species in Uganda not extending above 1,500 m. It grows in secondary scrub, forest gaps and plantations preferring high-rainfall areas.

Uses: Firewood, medicine (roots and leaves), ornamental, boundary marking.

Description: A much-branched woody shrub or tree to 12 m. **The branching is in threes.** BARK: Usually **grey-green**, but grey-brown on old specimens. Branches marked clearly with old leaf scars. LEAVES: crowded at the end of branches, long oval and narrow, pale green **rather fleshy**, about 15 cm (up to 40 cm), the tip pointed, the edge deeply and irregularly toothed, tapering to the base which clasps the stem. FLOWERS: small yellow-orange flowers in **large branched terminal** or axillary heads 15-80 cm long with 6 florets together (**florets only tubular—no** ray florets). Flowers open at dusk and have a very unpleasant smell. FRUIT: typical of the family, **small nutlets/seeds** which have **hairy tufts** like parachutes to seed is blown and dispersed by wind.

Propagation: Direct sowing at site.

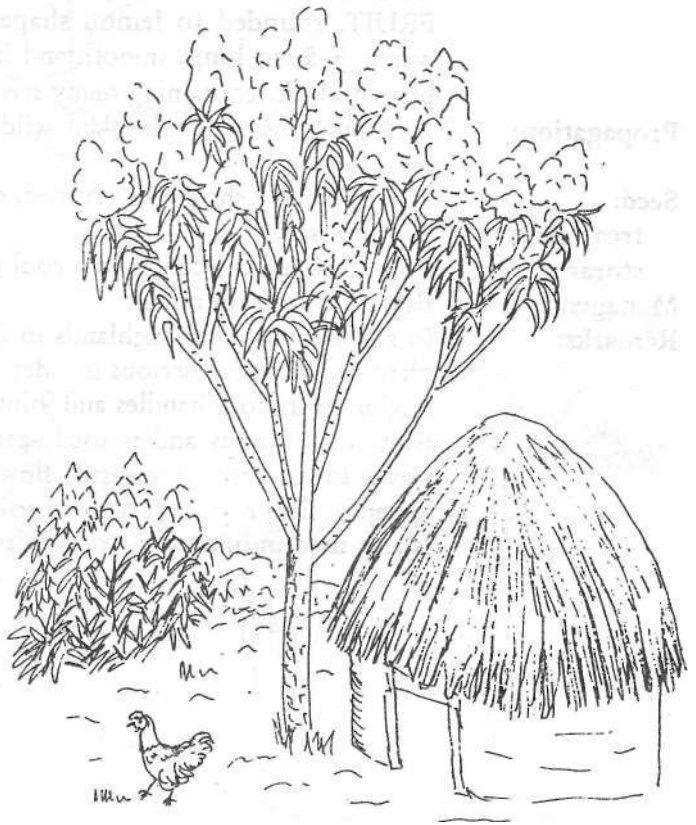
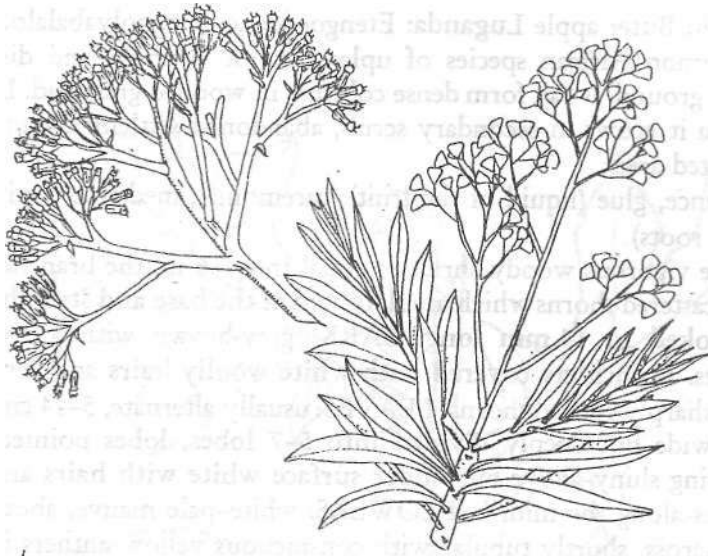
Seed: Collect seeds before they are ripe. Put them in a polythene bag to ripen so the seeds are released there and can be easily collected, not necessary,

treatment:

.storage: sow as soon as collected.

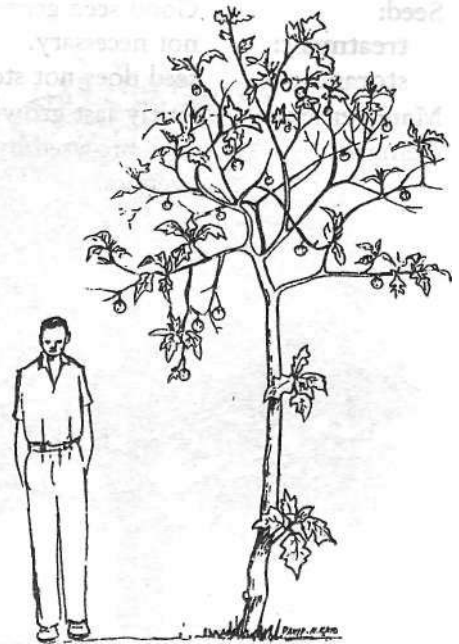
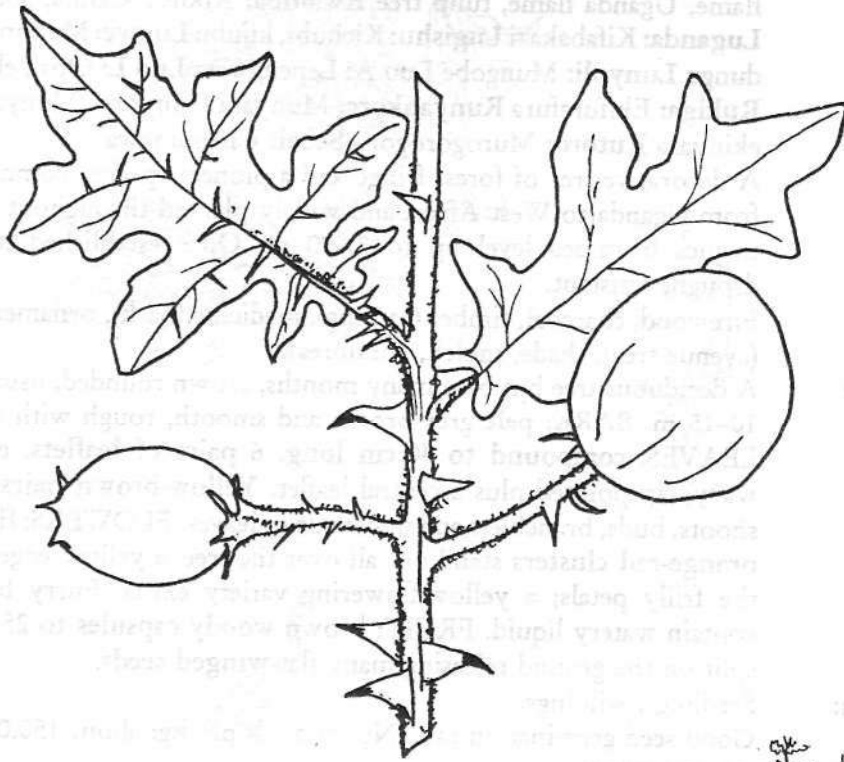
Management: Fast growing. No tending is required.

Remarks: The species is distributed throughout all moist districts of Uganda. The wood is extremely soft and burns quickly.



Indigenous

- Common names:** **English:** Bitter apple **Luganda:** Etengoeddene, ettengolyabalalo.
- Ecology:** A common African species of upland forest clearings and disturbed ground. It can form dense colonies in wooded grassland. In Uganda it grows in secondary scrub, abandoned settlements and cultivated areas.
- Uses:** Live fence, glue (liquid of the fruit), ceremonial, medicine (fruit, leaves, roots).
- Description:** A large vigorous woody shrub or small tree 1-6 m, the branches with scattered thorns which are **flattened at the base and straight or hooked to 14 mm long**. **BARK:** grey-brown with a few prickles. **Branchlets covered with white woolly hairs** and very many sharply curved thorns. **LEAVES:** usually alternate, 5-14 cm, quite wide but **deeply divided into 5-7 lobes**, lobes pointed, becoming shiny above but **under surface white with hairs** and prickles along the midrib. **FLOWERS:** white-pale mauve, about 2 cm across, shortly tubular with conspicuous yellow anthers in the throat, 5 petal lobes oblong, several flowers together beside leaves on thin stalks. Calyx and stalks white hairy and spiny. **FRUIT: rounded to lemon shaped with a pointed tip**, often warty, 3-5 cm long, smooth and fleshy, **orange-yellow, drying brown-black**, containing many seeds in sticky pulp.
- Propagation:** It is much easier to transplant wildings than to raise seedlings in nurseries.
- Seed:** The ripe berry should be crushed, dried and the seeds separated.
- treatment:** not necessary.
- storage:** store in sealed containers in a cool place.
- Management:** Fast growing; trimming.
- Remarks:** In some areas of the highlands in the south-west of Uganda this plant has become a serious invader. The liquid of the fruit is used as glue to fix tool handles and joints in musical instruments. The fruit is poisonous and is used against tapeworm, the roots and leaves for excessive menstrual flow and the roots alone to treat epilepsy. The root bark is used to treat inflammation. The plant is also used in initiation ceremonies for young girls.



Spathodea campanulata (S. nilotica)

Bignoniaceae

East, Central and West Africa

Common names: **Ateso:** Etukubai **English:** Flame of the forest, Nandi flame, Nile flame, Uganda flame, tulip tree Kwamba: Kikusi, kigima, abadu **Luganda:** Kifabakazi **Lugishu:** Kichubi, kijubu **Lugwe:** Mudungudungu **Lunyuli:** Mungobe **Luo A:** Lepengwata **Luo L:** Opal, elwa **Rukiga:** Ekifurafura **Runyankore:** Munyara **Runyoro:** Munyara, ekinyara **Rutoro:** Murogorogoro **Sebei:** Chemungwa.

Ecology: A decorative tree of forest fringe and a pioneer species, common from Uganda to West Africa and widely planted throughout the tropics from sea level up to 2,000 m. Once established it is drought resistant.

Uses: Firewood, charcoal, timber (carving), medicine (bark), ornamental (avenue tree), shade, mulch, windbreak.

Description: A deciduous tree but bare many months, crown rounded, usually 10-15 m. **BARK:** pale grey-brown and smooth, rough with age. **LEAVES:** **compound to 40 cm long, 6 pairs of** leaflets, each wavy, tip pointed plus a central leaflet. Yellow-brown hairs on shoots, buds, branchlets and underside of leaves. **FLOWERS:** **fiery orange-red clusters** stand out all over the tree, a yellow edge on the frilly petals; a yellow-flowering variety exists. Furry buds contain watery liquid. **FRUIT:** brown woody capsules to 25 cm split on the ground releasing many flat winged seeds.

Propagation: Seedlings, wildings.

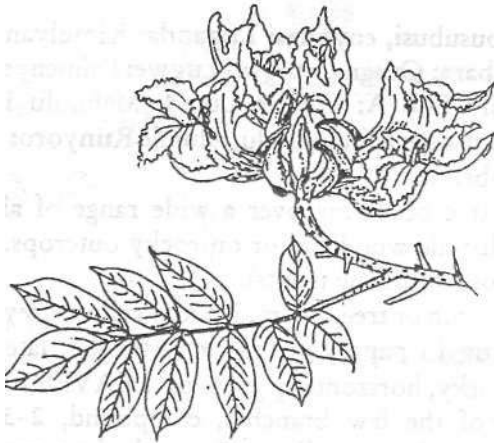
Seed: Good seed germination rate. No. of seeds per kg: about 150,000.

treatment: not necessary.

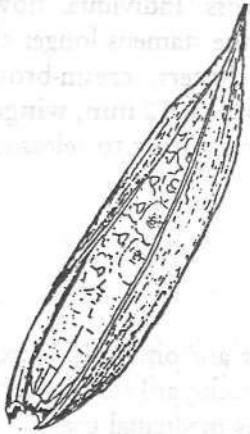
storage: seed does not store well; it should be sown fresh.

Management: Fairly fast growing. Pollarding.

Remarks: Not browsed by domestic animals. A popular decorative tree for avenues.



dry fruit



seed



A. Birnie

Indigenous

Common names: **Ateso:** Egwapet, ebusubusi, enyongai **Luganda:** Kimulyangimbe, kinulangombe **Lugbara:** Otugna, otugwo **Lugwe:** Esimenyenabusi **Lunyuli:** Lwefubulo **Luo A:** Olwiro **Luo J:** Mafululu **Luo L:** Elwilwi, ebusubus **Lusoga:** Kibudubudu, ndujule **Runyoro:** Muhotora **Sebei:** Mokyobelyo.

Ecology: A small savannah tree occurring over a wide range of altitude, especially in low-altitude woodland or on rocky outcrops.

Uses: Firewood, farm tools, medicine (roots).

Description: A small deciduous shrub or tree, 2-7 m. **BARK:** yellow-grey-green, rather **waxy, peeling in papery strips** or rectangles, later grey-brown, thick and corky, horizontally grooved. **LEAVES:** crowded towards the ends of the few branches, compound, **2-3 pairs leaflets plus one**, spaced on a stalk to 10 cm, the base **expanded around the stem**. Each leaflet ovate, to 5 cm, sometimes stalked, the edge clearly toothed, each **tooth bearing a fine hairy point**. **FLOWERS:** small, green-white, in rounded compound clusters at the end of stout twigs, quite showy as they appear before the leaves; 3-7 long stalks arise together and each bears a crown of small heads (umbels) about 8 cm across. Individual flowers on stalks 5 mm long may be male only, the stamens longer than the 5 petals. **FRUIT:** in large untidy clusters, cream-brown and **papery**, each fruit **flat and heart-shaped to 12 mm, winged each side** with 3 ribs. Fruit dry on the tree splitting to release seed.

Propagation: Wildings, cuttings.

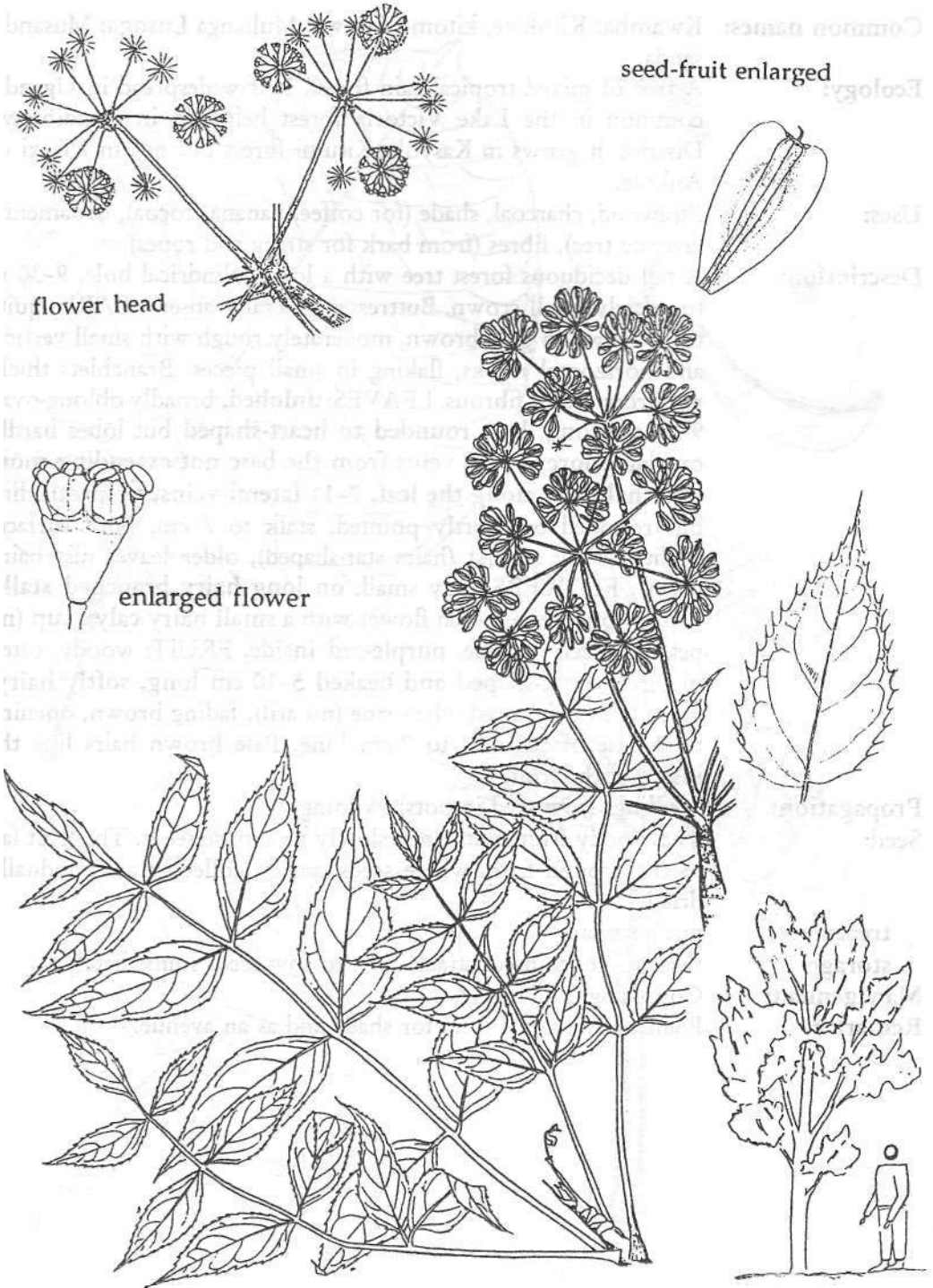
Seed: Seeds are difficult to collect.

treatment:

storage:

Management: Fast growing; coppicing, pollarding.

Remarks: The wood is soft and brittle. Stems are pithy. Intercrop with banana, coffee or cocoa, or grow as a back-yard shrub. Commonly conserved in gardens in Uganda for its medicinal use.



Indigenous

Common names: **Kwamba:** Kitokwe, kitomo **Lugwe:** Muhanga **Lusoga:** Musanda-sanda.

Ecology: A tree of mixed tropical rain forest. It is widespread in Uganda; common in the Lake Victoria forest belt and in Bundibugyo District. It grows in Kasyoha-Kitumi forest but not in Kigezi or Ankole.

Uses: Firewood, charcoal, shade (for coffee, banana, cocoa), ornamental (avenue tree), fibres (from bark for string and ropes).

Description: A tall deciduous forest tree with a long cylindrical bole, 9-30 m to a fairly small crown. Buttresses generally absent. **BARK:** quite thin, brown to grey-brown, moderately rough with small vertical and horizontal marks, flaking in small pieces. Branchlets thick, red-brown, very fibrous. **LEAVES:** **unlobed**, broadly oblong-oval, 9-18 **cm long, base rounded to heart-shaped** but lobes hardly overlap, **more than 3 veins from the base not extending more than half way along the leaf, 7-11 lateral veins**, tip protruding but rounded or shortly pointed, stalk to 7 cm, both surfaces slightly hairy at first (hairs star-shaped), older leaves just hairy below. **FLOWERS:** very small, **on long hairy branched stalks** beside upper leaves, each flower with a small hairy calyx **cup** (no petals), green **outside**, purple-red inside. **FRUIT:** woody, often in threes, **boat-shaped and beaked** 5-10 cm long, softly **hairy**, green then bright red when ripe (no aril), fading brown, opening to release black seeds to 2 cm long. Pale brown hairs line the inside of the fruit.

Propagation: Seedlings (sow seed in pots), wildings.

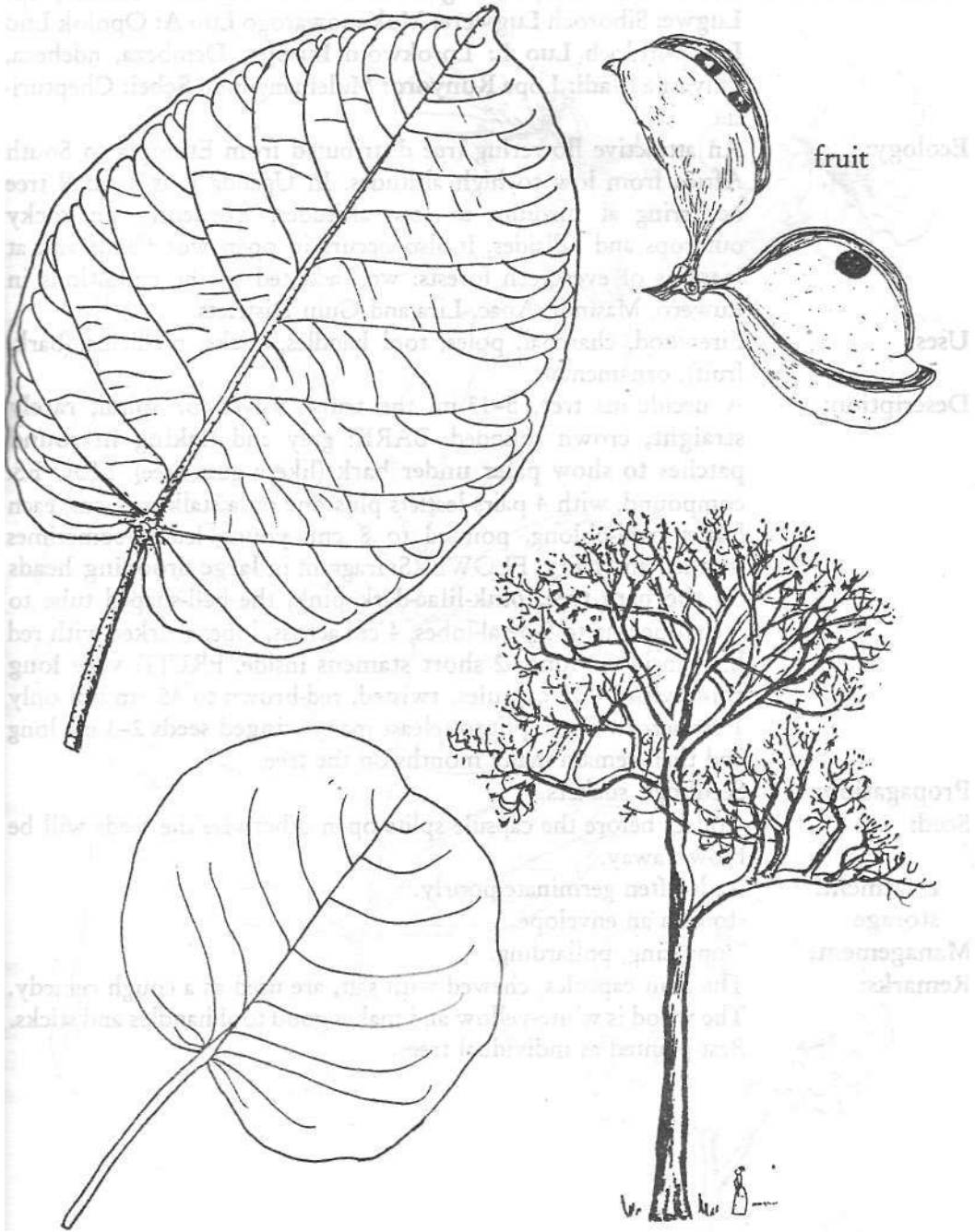
Seed: The woody fruit splits open slowly to expose seeds. The fruit fall to the ground from where seeds can be collected and gradually dried.

treatment: not necessary.

storage: susceptible to insect attack. Best to sow seeds immediately.

Management: Coppicing, pollarding.

Remarks: Plant as individual trees for shade and as an avenue.



Indigenous

Common names: **Ateso:** Enyiti, enyitet **Luganda:** Namera **Lugbara:** Lokobe, lepi **Lugwe:** Siboroch **Lugwere:** Mukonowarogo **Luo A:** Opolok **Luo J:** Oporoloch **Luo L:** Lorokwoin **Lusoga:** Dembeza, ndebeza, kinyasila **Madi:** Lope **Runyoro:** Mulemangundu **Sebei:** Chepturtia.

Ecology: An attractive flowering tree distributed from Ethiopia to South Africa from low to high altitudes. In Uganda it is a small tree occurring at medium to low altitudes, frequently on rocky outcrops and hillsides. It also occurs in open woodlands and at margins of evergreen forests: well adapted to the conditions in Luwero, Masindi, Apac, Lira and Gulu Districts.

Uses: Firewood, charcoal, poles, tool handles, sticks, medicine (bark, fruit), ornamental.

Description: A deciduous tree, 5-13 m, the trunk waved or spiral, **rarely straight**, crown rounded. **BARK:** grey and **flaking in round patches to show paler under bark** (like a gum tree). **LEAVES:** compound, with 4 pairs leaflets plus one on a stalk to 7 cm, each leaflet oval-oblong, pointed to 8 cm, young leaves sometimes toothed and hairy. **FLOWERS:** fragrant in **large drooping heads on the bare tree, pink-lilac-dark pink**, the bell-shaped tube to 3 cm opening to 5-petal lobes, 4 cm across, lobes marked with red lines inside, **2 long, 2 short stamens** inside. **FRUIT:** **very long thin cylindrical capsules**, twisted, red-brown to 45 cm but only 1 cm across. They split to release many **winged seeds** 2-3 cm long and then remain many months on the tree.

Propagation: Seedlings, suckers.

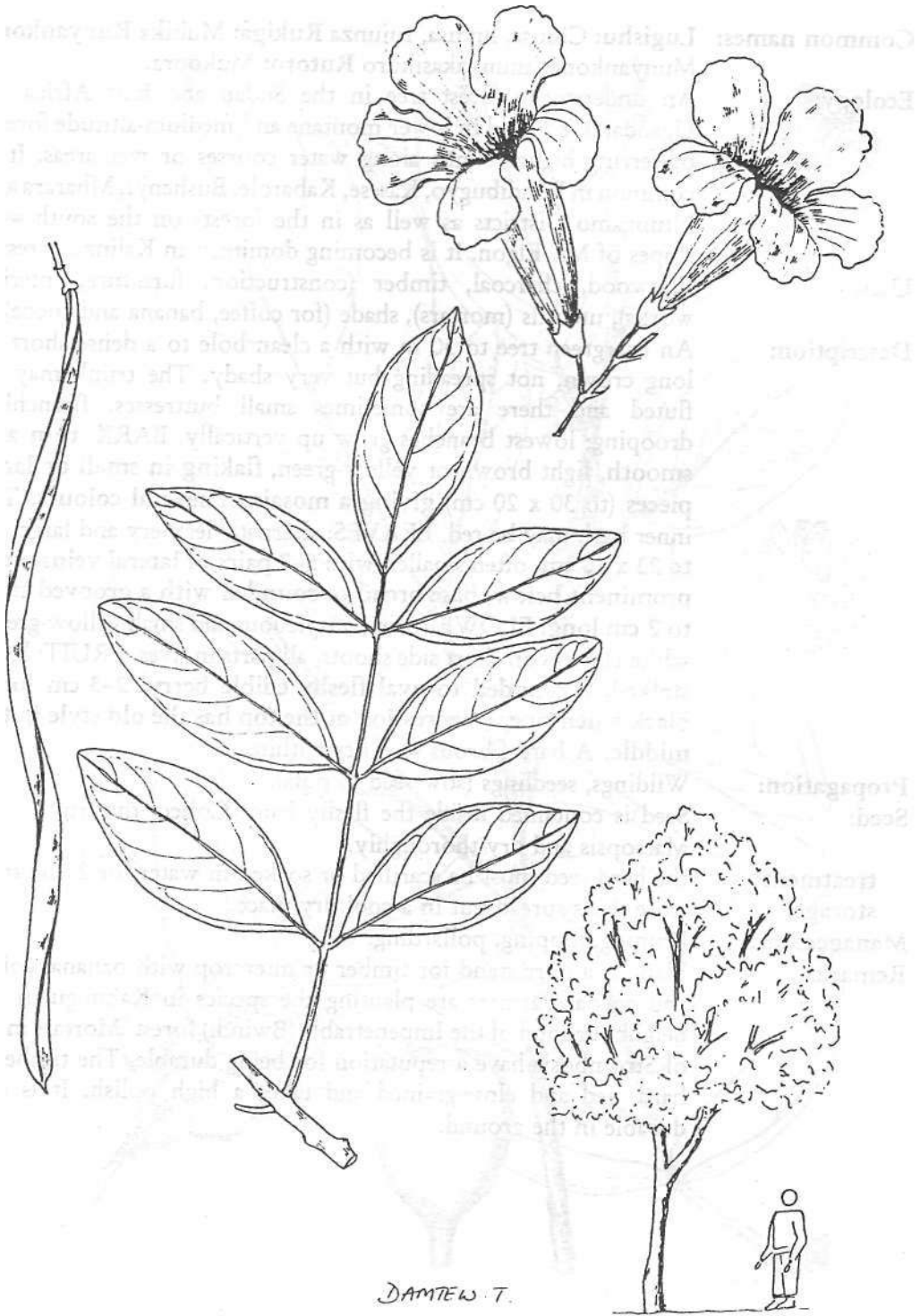
Seed: Collect before the capsule splits open otherwise the seeds will be blown away.

treatment: seeds often germinate poorly.

storage store in an envelope.

Management: Coppicing, pollarding.

Remarks: The fruit capsules, chewed with salt, are used as a cough remedy. The wood is white-yellow and makes good tool handles and sticks. Best planted as individual trees.



Indigenous

- Common names:** **Lugishu:** Chiusa, luyusa, ruiunza **Rukiga:** Muhika **Runyankore:** Munyankono, munyakasikuro **Rutoro:** Mukoora.
- Ecology:** An understorey forest tree in the Sudan and East Africa. In Uganda, it is found in lower montane and medium-altitude forests preferring higher banks along water courses or wet areas. It is common in Bundibugyo, Kasese, Kabarole, Bushenyi, Mbarara and Ntungamo Districts as well as in the forests on the south-west slopes of Mt. Elgon. It is becoming dominant in Kalinzu forest.
- Uses:** Firewood, charcoal, timber (construction, furniture, interior works), utensils (mortars), shade (for coffee, banana and cocoa).
- Description:** An evergreen tree to 30 m with a clean bole to a dense short or long crown, not spreading but very shady. The trunk may be fluted and there are sometimes small buttresses. Branchlets drooping; lowest branches grow up vertically. **BARK: thin and smooth**, light brown or yellow-green, **flaking in small or large pieces (to 30 x 20 cm) giving a mosaic of several colours.** The inner bark may be red. **LEAVES:** alternate, leathery and large, up to 23 x 10 cm, often smaller, with **5-7 pairs of lateral veins, very prominent below, base broad to rounded with a grooved stalk to 2 cm long.** **FLOWERS:** in conspicuous and small yellow-green-white clusters on short side shoots, all parts in fives. **FRUIT:** long, stalked, a rounded to oval fleshy edible berry, 2-3 cm long, **black when ripe, a depression at the top has the old style in the middle.** A hard fibrous seed lies within.
- Propagation:** Wildings, seedlings (sow seed in pots).
- Seed:** Seed is contained inside the fleshy fruit. Collect the fruit as for *Maesopsis* and dry thoroughly.
- treatment:** the hard seed must be scarified or soaked in water for 24 hours,
- storage:** store seeds spread out in a cool dry place.
- Management:** Pruning, lopping, pollarding.
- Remarks:** Plant as a pure stand for timber or intercrop with banana, coffee and cocoa. Farmers are planting the species in Kanungu in the neighbourhood of the Impenetrable (Bwindi) forest. Mortars made of *Strombosia* have a reputation for being durable. The timber is hard, red and close-grained and takes a high polish. It is not durable in the ground.



Strychnos innocua

Loganiaceae

Indigenous

Common names: **Ateso:** Ekwalakwala, eturukukuti **Lugbara:** Longoro **Luo:** Akwalakwala **Luo A:** Koko **Luo J:** Kikwala **Lusoga:** Muswaki **Madi:** Unde **Runyoro, dialect Bugungu:** Masaga **Sebei:** Mkukwa.

Ecology: A tree growing in lowlands from Kenya to Malawi and South Africa, from coastal bushland and *Brachystegia* woodlands up to 1,400 m. In Uganda this shrubby tree occurs in open woodland and on rocky bills.

Uses: Firewood, charcoal, local tools, food (fruit pulp), shade.

Description: A shrub or small straight-stemmed tree, usually 3-6 m, **without spines**. Branches are often twisted and branchlets hang down. **BARK:** pale grey, smooth. Branchlets powdery grey-green to yellow-brown. **LEAVES:** in opposite pairs, widely spaced apart, tough, **dull blue-green**, with **3-5 main veins** and **clear net veining, both sides similar**, oblong but **wider at the rounded tip**, 4-10 cm long. **FLOWERS:** 8 mm long, green-cream, **2-4 in stalked clusters beside leaves, calyx shorter than petals**, a ring of **white hairs in the throat**. **FRUIT:** round, with a thick woody shell, about 5-7 cm across, blue-green ripening **yellow-orange**, containing **many seeds** in pulp.

Propagation: Seedlings (sow seed in pots), direct sowing on site.

Seed: Crack the fruit to remove the seeds which are embedded in the yellow pulp.

treatment: not necessary.

storage sow as soon as collected.

Management: Pruning, lopping, pollarding.

Remarks: It makes excellent firewood that burns even when not dry.

Strychnos mitis

Loganiaceae

Indigenous

Common names: **Kwamba:** Wukebu, wulebu **Luganda:** Mukusakusa **Lugishu:** Akomya **Rutoro:** Mugangara.

Ecology: A forest tree common in tropical rain forest throughout East Africa, also in the Sudan and Zimbabwe. In Uganda, it is common in riverine forest in drier part of the country preferring shallow soils on murram. It is abundant on upper slopes in Kibale and Mabira forests and at the base of Mts. Kadam and Moroto.

Uses: Firewood, charcoal, timber (heavy construction, rail sleepers), poles, shade (for coffee and cocoa), ornamental (avenue tree).

Description: An evergreen forest tree 24 m or more high, the trunk usually crooked, with low branches and a spreading crown, trunks appearing twisted (like gum trees). The dense leafy crown resembles that of *Cynometra*. The base may be thick and fluted but there are no buttresses. (No spines.) **BARK:** grey-brown, **very thin and smooth**, slightly flaking with age, underbark often green. **LEAVES:** opposite, stiff, shiny above, **long oval 4-11 cm long, tip usually pointed, a short stalk**. All *Strychnos* have 3 veins from the base but the lateral pair in this species is faint, **the pair above are much clearer, about 1 cm from the base**. **FLOWERS:** white-cream, **small and hairy, in dense heads, only 1.25 cm**, usually terminal but also beside leaves. **FRUIT:** yellow-orange, rounded to oval, 1-2 cm diameter; eaten by baboons.

Propagation: Regenerates naturally from seed in profuse numbers. Wildings, direct sowing on site, seedlings.

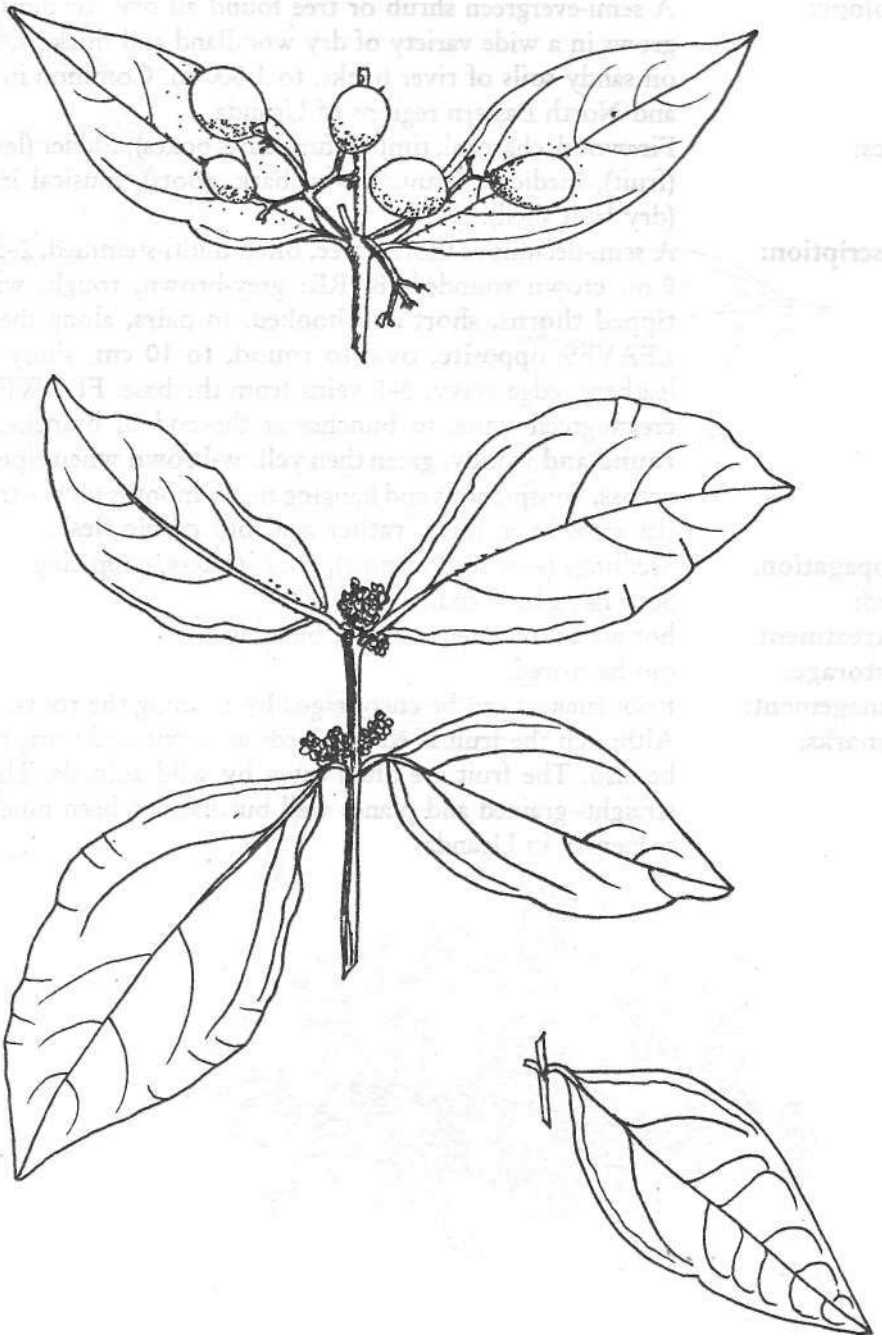
Seed: Fruit are produced all year round. These are collected, seeds extracted and thoroughly dried.

treatment: seeds should be soaked in water overnight before sowing,

storage: store in sealed containers in a cool place.

Management: Pollarding and coppicing. •

Remarks: In Ajumani County in Moyo District farmers should be encouraged to collect seed from Zoka forest and establish fuel plantations to meet their fuel needs. The species can also do well as a shade tree or in avenues. The timber is hard and difficult to work but used for building and heavy construction.



Strychnos spinosa

Loganiaceae

Indigenous

Common names: **Ateso:** Etutukurut **English:** Kaffir orange **Lugishu:** Shiunwa **Luo**
L: Akwalakwala lyeche **Madi:** Lombo.

Ecology: A semi-evergreen shrub or tree found all over tropical Africa. It grows in a wide variety of dry woodland and thickets, frequently on sandy soils of river banks, to 1,500 m. Common in Northern and North Eastern regions of Uganda.

Uses: Firewood, charcoal, timber (furniture, boxes), fodder (leaves), food (fruit), medicine (fruit, leaves, bark, roots), musical instruments (dry fruit shell).

Description: A semi-deciduous thorny tree, often multi-stemmed, 2-5 m, up to 9 m, crown rounded. **BARK:** grey-brown, rough, with **black-tipped thorns, short and hooked, in pairs**, along the branches. **LEAVES:** **opposite, oval to round, to 10 cm**, shiny green and leathery, edge wavy, 3-5 veins from the base. **FLOWERS:** small, cream-green-white, in bunches at the end of branches. **FRUIT:** **round and woody**, green then **yellow-brown** when ripe, to 12 **cm across**, conspicuous and hanging many months on the tree, 10-100 flat seeds lie in **juicy, rather acid but edible flesh**.

Propagation: Seedlings (sow seed in pots), root suckers, coppicing.

Seed: Seed has a hard coat,

treatment: hot-water treatment or light burning,

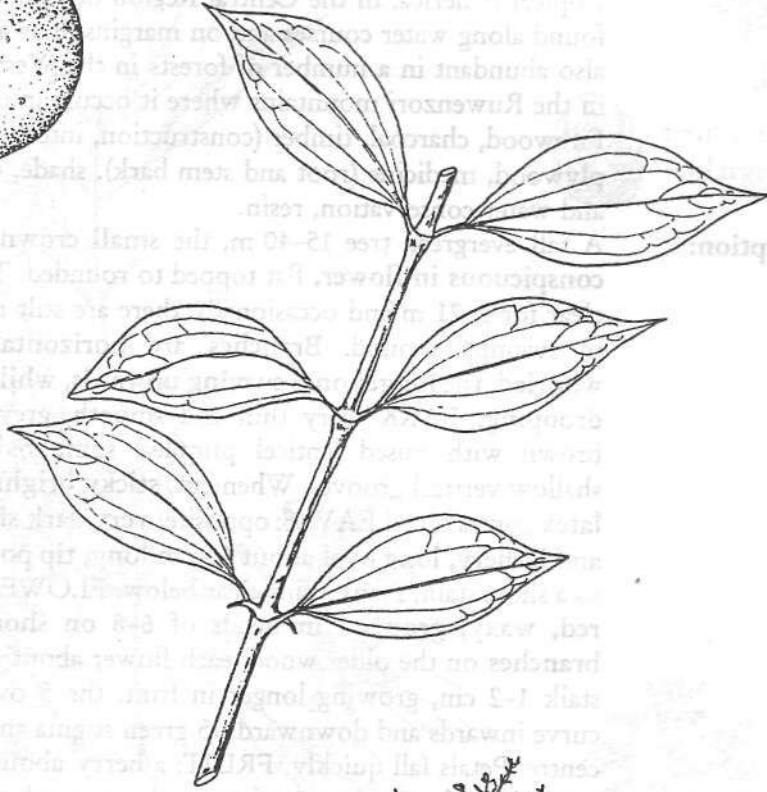
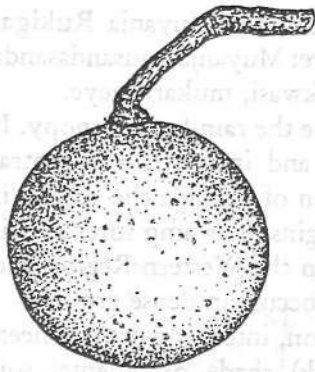
storage: can be stored.

Management: Root suckers can be encouraged by pruning the roots.

Remarks: Although the fruit is edible, seeds are toxic and unripe fruit may be also. The fruit are often eaten by wild animals. The wood is straight- grained and planes well but has not been much used for carpentry in Uganda.

Strychnos spinosa

Loganiaceae



Indigenous

Common names: **Luganda:** Musaali **Luganda, dialect Buddu:** Muyanja **Rukiga:** Musisi **Rukonjo:** Munimba **Runyankore:** Muyanja, musandasanda **Rutoro:** Munywankwai, munyenye, nkwasi, mukarangeye.

Ecology: A very conspicuous tree emerging above the rain-forest canopy. It occurs from Sierra Leone to Zambia and in south and central tropical America. In the Central Region of Uganda the species is found along water courses and on margins of swamp forests. It is also abundant in a number of forests in the Western Region and in the Ruwenzori mountains where it occurs in dense groups.

Uses: Firewood, charcoal, timber (construction, interior work), veneer, plywood, medicine (root and stem bark), shade, ornamental, soil and water conservation, resin.

Description: A tall evergreen tree 15-40 m, the **small crown emergent and conspicuous in flower**, flat topped to rounded. The bole may be clear for 5-21 m and occasionally there are stilt roots at the base in swampy ground. **Branches are horizontal, slender and whorled, the longer ones curving upwards, while branchlets are drooping.** **BARK:** very thin and smooth, grey-yellow to pale brown with raised lenticel pimples, some reddish streaks or shallow vertical grooves. When cut, **sticky bright orange-yellow latex** comes out. **LEAVES:** opposite, **very dark shiny green, stiff and lathery, long oval about 12 cm long, tip pointed**, narrowed to a short stalk, many veins clear below. **FLOWERS:** **bright deep red, waxy, grouped in heads of 6-8 on short upright side branches** on the older wood, each flower about 1 cm across on a stalk 1-2 cm, growing longer in fruit, the 5 overlapping petals curve inwards and downwards, 5 green stigma and stamens in the centre. Petals fall quickly. **FRUIT:** a **berry about 2.5 cm across, topped by the persistent stigmas**, green or red, to 4 cm long; **1-2 brown seeds are oval and flat**, about 2 x 1 cm.

Propagation: Direct sowing on site, wildings, seedlings (sow seed in pots). Seedlings quickly develop a long tap root so root pruning is essential. Not easy to grow.

Seed: Collect from the ground.

treatment: immerse in hot water, allow to cool and soak overnight,

storage: loses viability quickly.

Management Lopping, pollarding.

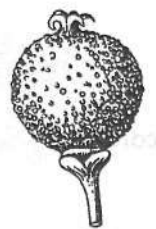
Remarks: The timber is similar to European oak in strength and general appearance and easy to work. The bark is used to treat cough in children. Could be grown as a pure stand to protect water sources, swamps and river banks.

Common names: English: Waterberry tree; Luganda: Kambwira; Luga: Kambwira; Lugbara: Anjo; Karamojong: Ciba; Anzoko: wambwira; Lugwa: Mambuli; Luo: Kambwira; Mbari: Kambwira; Karamojong: Runyankoro; Karamojong: Kambwira; Karamojong: Kambwira.

A tree found beside fresh water in the forest of Central Africa and southern Sudan. It grows to a height of 10-15 m. The bark is smooth and grey. The leaves are alternate, ovate, 5-10 cm long, 2-4 cm wide, with a prominent midrib and secondary veins. The flowers are small, tubular, and arranged in dense, terminal panicles. The fruit is a globose, fleshy berry, 1-2 cm in diameter, with a persistent calyx at the base. The seed is large and contains a single, large, rounded seed.

Description: A medium-sized evergreen tree 8-15 m high. The crown is dense and rounded. The bark is smooth and grey. The leaves are alternate, ovate, 5-10 cm long, 2-4 cm wide, with a prominent midrib and secondary veins. The flowers are small, tubular, and arranged in dense, terminal panicles. The fruit is a globose, fleshy berry, 1-2 cm in diameter, with a persistent calyx at the base. The seed is large and contains a single, large, rounded seed.

Propagation: Seeds. No. of seeds: 100-200. The seeds are large and contain a single, large, rounded seed. The tree is propagated by seed.



fruit and seed (enlarged)



flower (enlarged)



Indigenous

Common names: **English:** Water-berry tree **Luganda:** Kanzironziro **Luganda, dialect Buddu:** Muziti **Lugbara:** Anigo, kuzu **Lugishu:** Chiemo, sizanzass, wandiviri **Lugwe:** Mutuli **Luo:** Kano **Rukiga:** Mufumba, mugote, mukondo **Runyankore:** Munyabarika, musimangwa **Sebei:** Lemaiyua, reberwo.

Ecology: A tree found beside fresh water and in swamps in East and Central Africa and south to Natal. Occurs in lowland forests as well as at medium to higher altitudes, always near water, along water courses, in riverine thickets and forests.

Uses: Firewood, charcoal, timber (construction, furniture), beams, rafters, food (fruit), bee forage, medicine (leaves, bark, roots), dye (bark).

Description: A medium-sized evergreen tree 8-15 m high, sometimes a flowering shrub, the crown compact and rounded from a short thick trunk, sometimes buttressed. **BARK:** dark brown, rough and fissured, breaking into small squares; **branchlets square, edges winged.** **LEAVES:** very many near the ends or branches, **clasp ing the stem** in opposite pairs, the **next leaf pair at right angles, leathery**, blue-green, **oblong to circular to 8 cm, leaf base heart shaped** (*cordatum*). **FLOWERS:** dense, branched **clusters to 10 cm across, pink-white with conspicuous stamens**, abundant nectar. **FRUIT:** fleshy **oval to 1.5 cm long, purple** when ripe, edible but acid, 1 seed.

Propagation Seedlings (sow seed in pots), wildings, direct sowing at site.

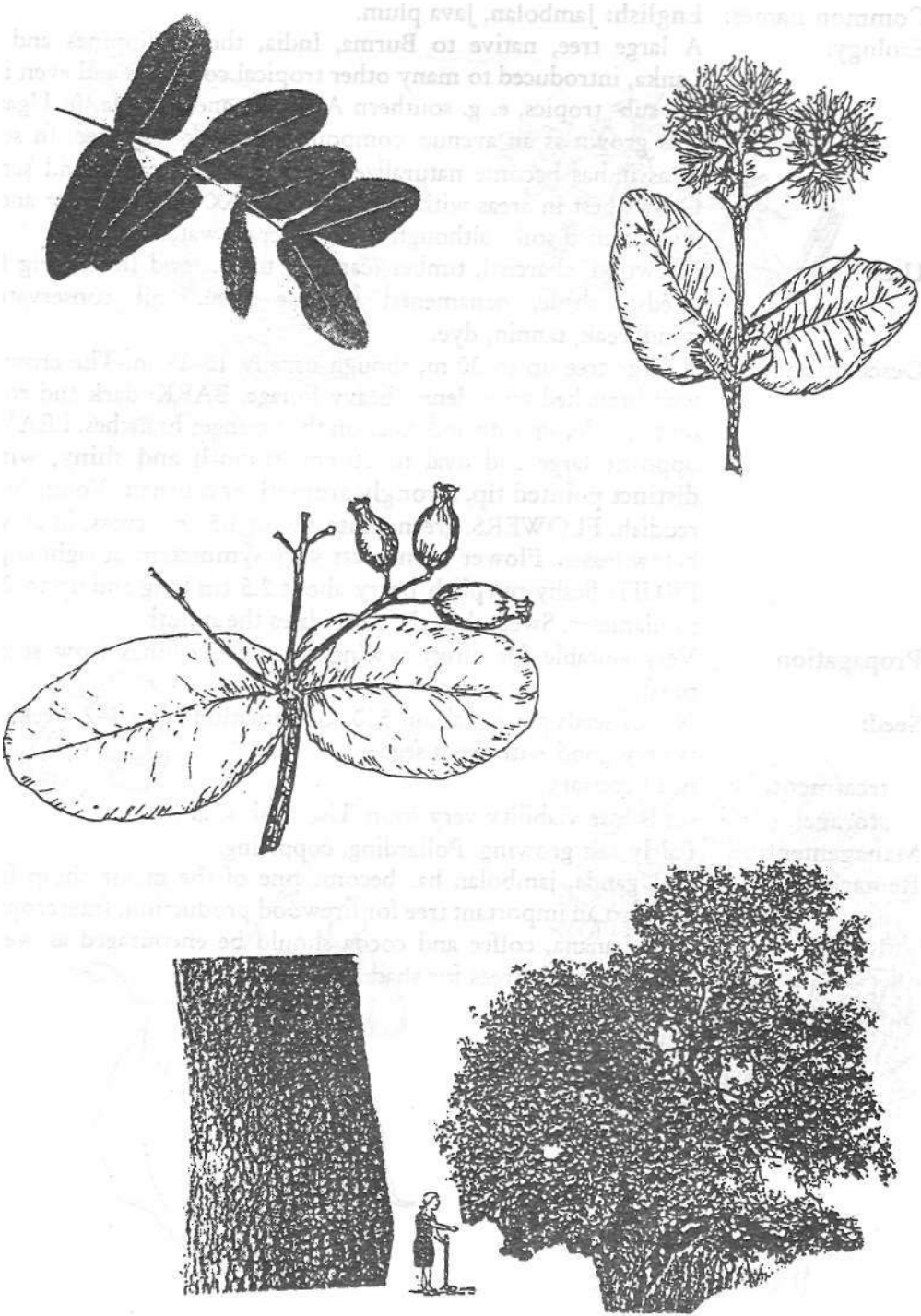
Seed: No. of seeds per kg: 400-450. Germination is very good and uniform, 90% after 25 days.

treatment: not necessary.

storage: can retain viability only for a day. The seed should not be dried in the sun.

Management: Fairly fast growing, pollarding.

Remarks: The wood, which is not well known in Uganda, is medium hard and heavy and works well but should be water seasoned. Has been used almost exclusively for firewood and charcoal in Kabale and Kapchorwa Districts.



Syzygium cuminii (S. jambolanum)

Myrtaceae

Asia

Common names: English: Jambolan, Java plum.

Ecology: A large tree, native to Burma, India, the Philippines and Sri Lanka, introduced to many other tropical countries and even into the sub-tropics, e. g. southern Australia and Florida. In Uganda it is grown as an avenue, compound or back-yard tree. In some areas it has become naturalized in secondary forests and scrub. Grows best in areas with rainfall over 1,000 mm annually and in well-drained soils, although it can tolerate waterlogging.

Uses: Firewood, charcoal, timber (canoes), tools, food (fruit), pig feed (seeds), shade, ornamental (avenue tree), soil conservation, windbreak, tannin, dye.

Description: A large tree up to 30 m, though usually 15-18 m. The crown is well branched with dense, heavy foliage. **BARK:** dark and rough on the bole, smooth and paler on the younger branches. **LEAVES:** opposite large and oval to 20 cm, **smooth and shiny**, with a **distinct pointed tip, strongly aromatic if crushed**. Young leaves reddish. **FLOWERS:** green-white, about 1.5 cm across, in clusters below leaves. **Flower branchlets very symmetric**, at right angles. **FRUIT:** fleshy **purplish berry** about 2.5 cm long and up to 2 cm in diameter. Sweet, but the juice dries the mouth.

Propagation Very suitable for direct sowing on site, seedlings (sow seed in pots).

Seed: No. of seeds per kg: about 500. Germination takes 1-2 weeks and is very good with fresh seeds.

treatment: not necessary.

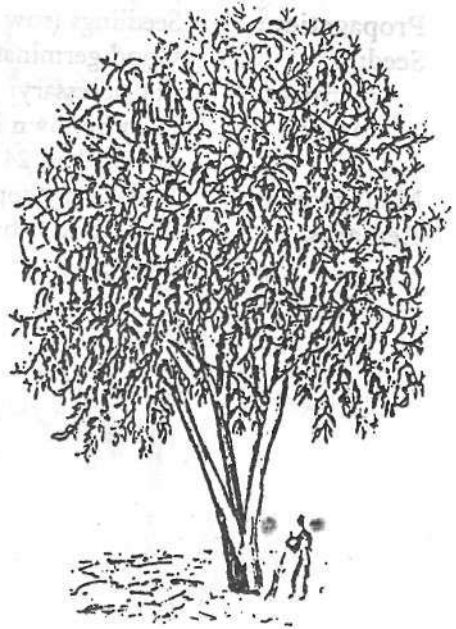
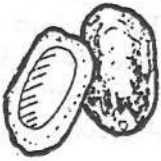
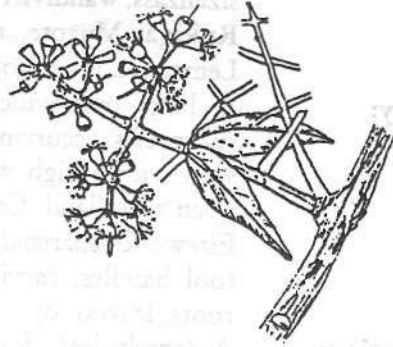
storage: seeds lose viability very soon. Use fresh seeds.

Management: Fairly fast growing. Pollarding, coppicing.

Remarks: In Uganda, jambolan has become one of the major cheap fruits and also an important tree for firewood production. Intercropping with banana, coffee and cocoa should be encouraged as well as planting single trees for shade and other uses.

Syzygium cuminii (S. jamboianum)

Myrtaceae



Syzygium gumeense

Myrtaceae

Indigenous

Common names: **English:** Waterberry **Luganda:** Kalunginsavu **Luganda, dialect Buddu:** Muziti **Lugbara:** Anigo, amigo, kuzu **Lugishu:** Chiemo, sizanzass, wandiviri **Lugwe:** Mutuli **Luo:** Kano **Madi:** Ozu, ologua **Rukiga:** Mugote, mufumba **Runyankore:** Musimangwa **Sebei:** Lemaiyua, reberwo.

Ecology: A large tree widely distributed in Africa. There are several subspecies occurring from sea level to 2,100 m. It prefers moist soils with a high watertable beside rivers, but will also grow in open woodland. Common in the Impenetrable (Bwindi) forest.

Uses: Firewood, charcoal, poles, timber (furniture, general construction, tool handles, carving), food (fruit), bee forage, medicine (bark, roots, leaves), dyes, tannin (bark).

Description: A densely leafy forest tree, usually 10-15 m but up to 25 m, the trunk broad and fluted and the crown rounded and heavy, the branchlets drooping, the stems thick and angular. **BARK:** smooth when young, black and rough with age, flaking, producing a red watery sap if cut. **LEAVES:** young leaves purple-red, but mature leaves dark green, **opposite, shiny and smooth on both surfaces, the tip long but rounded, on a short grooved stalk.** The leaves are variable in shape. **FLOWERS:** white, showy stamens, in dense branched heads 10 cm across, the **honey-sweet smell** attracting many insects; **stalks angular, square.** **FRUIT:** oval to 3 cm, purple-black and shiny, one-seeded, in big bunches of 20-30.

Propagation: Seedlings (sow seed in pots), wildings, direct sowing on site.

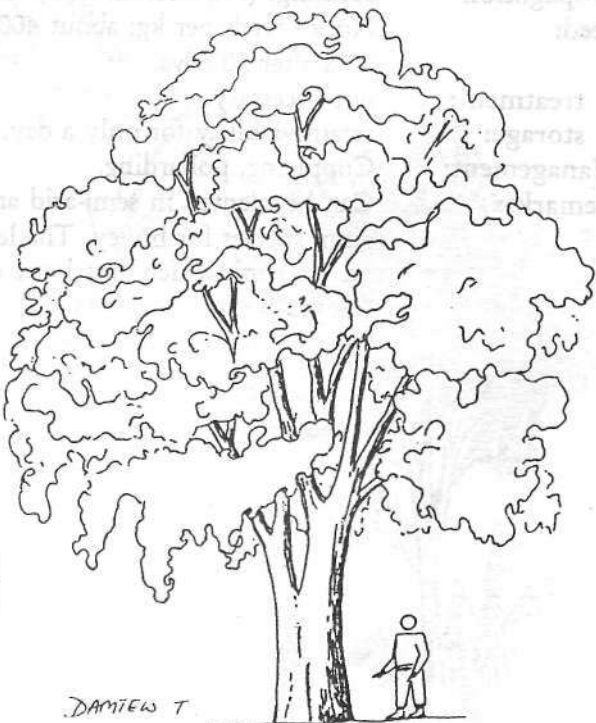
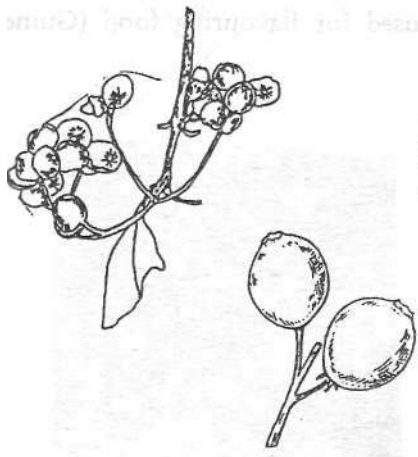
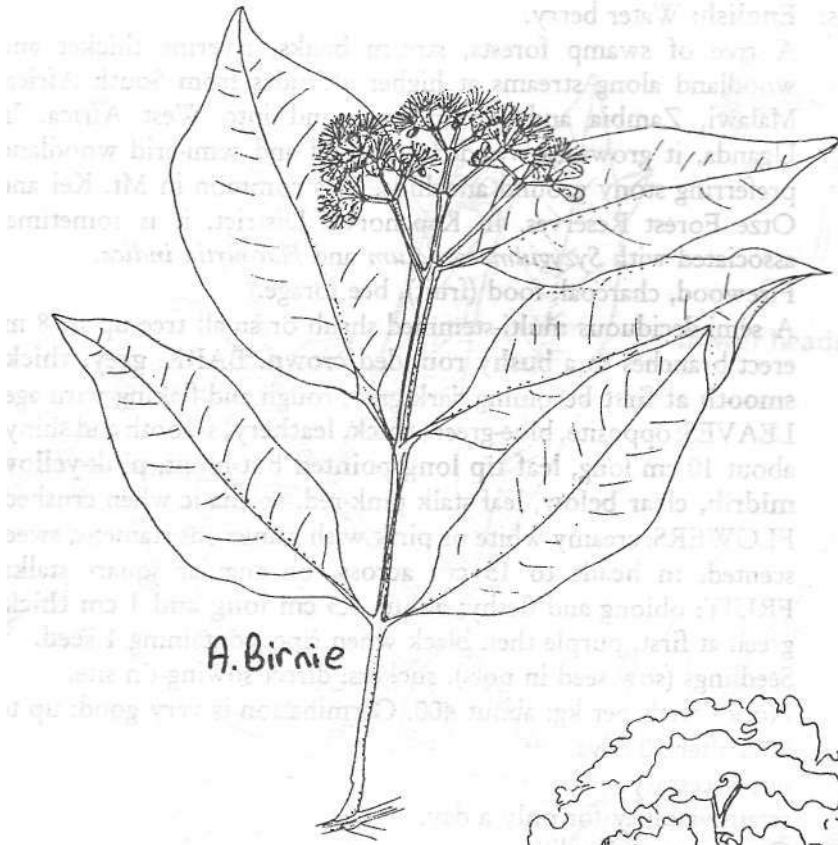
Seed: Good germination. No. of seeds per kg: 2,400-3,700.

treatment: not necessary.

storage: must be sown immediately the fruit is picked. Seeds may be spoilt in less than 24 hours.

Management: Pollarding, coppicing.

Remarks: The wood is brown, hard and strong. It is easily worked but liable to split.



Syzygium owariense

Myrtaceae

Indigenous

Common names: **English:** Water berry.

Ecology: A tree of swamp forests, stream banks, riverine thicket and woodland along streams at higher altitudes from South Africa, Malawi, Zambia and Mozambique and into West Africa. In Uganda, it grows in wooded grassland and semi-arid woodland preferring stony ground and hills. It is common in Mt. Kei and Otze Forest Reserves. In Kapchorwa District, it is sometimes associated with *Syzygium cordatum* and *Flacourtia indica*.

Uses: Firewood, charcoal, food (fruit), bee forage.

Description: A semi-deciduous multi-stemmed shrub or small tree up to 8 m, erect branches to a **bushy rounded crown**. **BARK:** grey, **thick, smooth at first** becoming dark grey, rough and flaking with age. **LEAVES:** opposite, blue-green, **thick, leathery**, smooth and shiny, about 10 cm long, **leaf tip long pointed** but blunt, **pink-yellow midrib, clear below**, leaf stalk pink-red, aromatic when crushed. **FLOWERS:** creamy white or **pink** with numerous stamens, sweet scented, **in heads to 15 cm across**, on angular square stalks. **FRUIT:** oblong and fleshy, **about 1.5 cm long and 1 cm thick**, green at first, purple then black when ripe, containing **1 seed**.

Propagation Seedlings (sow seed in pots), suckers; direct sowing on site.

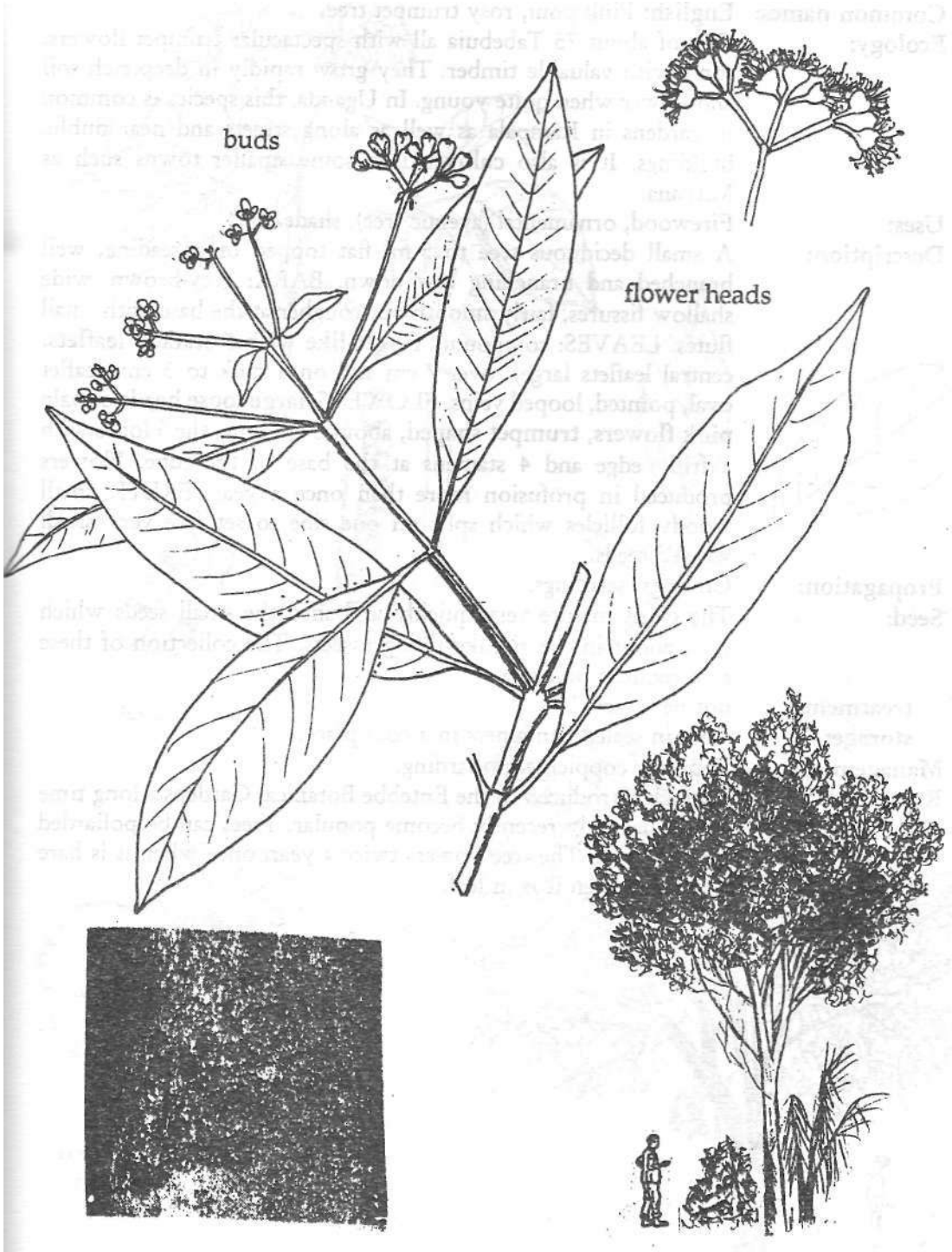
Seed: No. of seeds per kg: about 400. Germination is very good: up to 90% after 30 days,

treatment: not necessary.

storage: retain viability for only a day.

Management: Coppicing, pollarding.

Remarks: Can be planted in semi-arid areas. It is said to be the best *Syzygium* species for honey. The leaves and fruit contain the essential oil eugenol which has been used for flavouring food (Guinea "cloves").



Tabebuia pentaphylla (T. rosea)

Bignoniaceae

Tropical America

Common names: **English:** Pink poui, rosy trumpet tree.

Ecology: One of about 75 *Tabebuia* all with spectacular trumpet flowers, some with valuable timber. They grow rapidly in deep rich soil and flower when quite young. In Uganda, this species is common in gardens in Kampala as well as along streets and near public buildings. It is also cultivated in some smaller towns such as Mityana.

Uses: Firewood, ornamental (avenue tree), shade.

Description: A small deciduous tree to 5 m, flat topped or spreading, well branched and branching low down. **BARK:** grey-brown, wide shallow fissures, fairly smooth but rougher at the base with small flutes. **LEAVES:** compound, **finger-like with 5 stalked leaflets**, central leaflets larger, over 7 cm and on a stalk to 3 cm, leaflet oval, pointed, looped veins. **FLOWERS:** **large loose heads of pale pink flowers, trumpet shaped**, about 6 cm long, the 5 lobes with a frilly edge and 4 stamens at the base of the tube. Flowers produced in profusion more than once a year. **FRUIT:** small woody follicles which split on one side to set free very small winged seeds.

Propagation: Cuttings, seedlings.

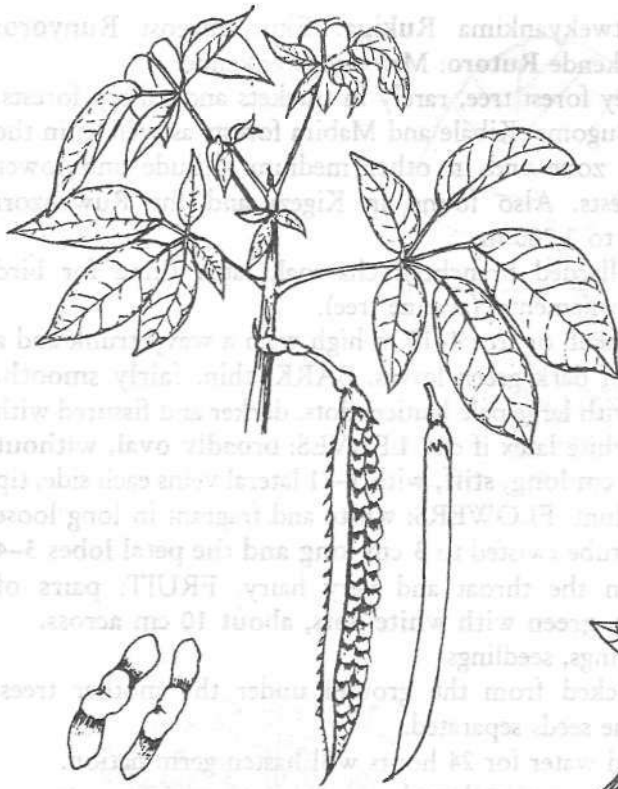
Seed: The fruits mature very quickly and shed the small seeds which float about in the air like flying insects. The collection of these seed requires patience.

treatment: not necessary.

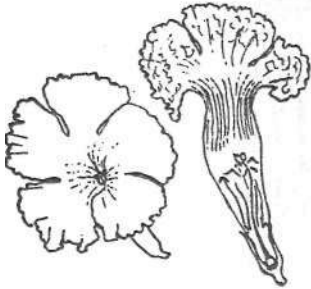
storage: store in sealed containers in a cool place.

Management: Lopping, coppicing, pollarding.

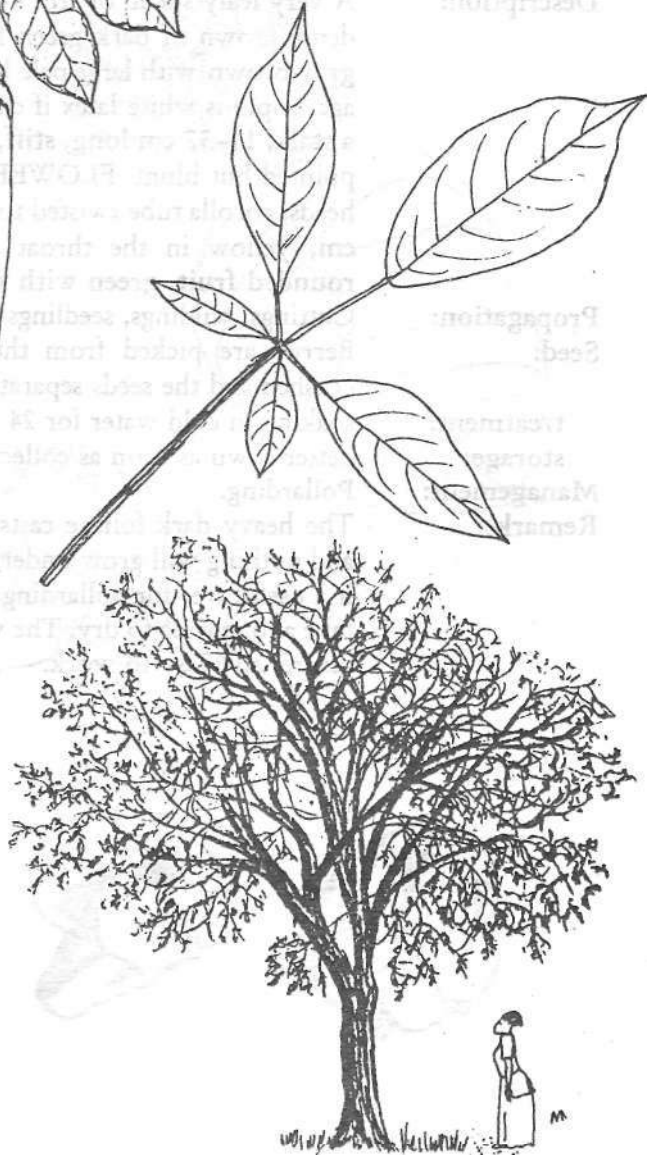
Remarks: Though introduced to the Entebbe Botanical Gardens a long time ago, it has only recently become popular. Trees can be pollarded for firewood. The tree flowers twice a year; once when it is bare and once when it is in leaf.



seed



section of flower
with stamens



Indigenous

Common names: **Luganda:** Kitwekyankima **Rukiga:** Ekinyamagosi **Runyoro:** Mwongogwenkende **Rutoro:** Mwongogwenkende.

Ecology: An understorey forest tree, rarely in thickets and gallery forests. Common in Bugoma, Kibale and Mabira forests as well as in the Lake Victoria zone and in other medium altitude and lower mountain forests. Also found in Kigezi and the Ruwenzori Mountains up to 2,200 m.

Uses: Firewood (pollarded branches), charcoal, latex (lime for bird traps), shade, ornamental (avenue tree).

Description: A very leafy shrub or tree 4-10 m high with a wavy trunk and a dense crown of dark green leaves. **BARK:** thin, **fairly smooth, grey-brown** with large pale lenticel dots, darker and fissured with age, copious white latex if cut. **LEAVES:** **broadly oval, without a stalk, 11-32 cm long, stiff**, with 9-21 lateral veins each side, tip pointed but blunt. **FLOWERS:** **white** and fragrant in long loose heads, corolla tube twisted **to 3 cm long and the petal lobes 3-4 cm**, yellow in the throat and very hairy. **FRUIT:** **pairs of rounded fruit, green with white dots, about 10 cm across.**

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Propagation: Cuttings, wildings, seedlings.

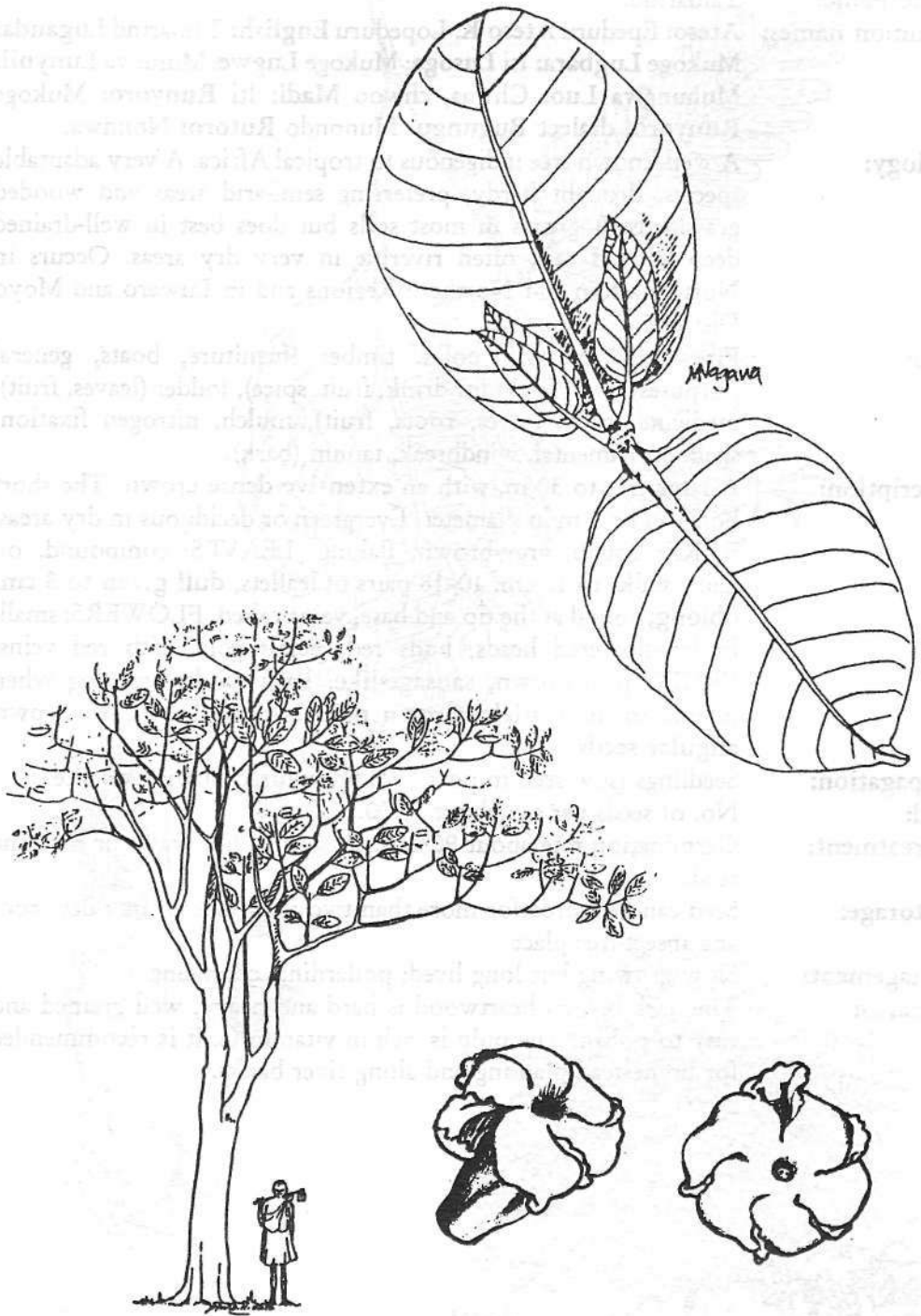
Seed: Berries are picked from the ground under the mother trees, crushed and the seeds separated.

treatment: soaking in cold water for 24 hours will hasten germination.

storage: better sown as soon as collected.

Management: Pollarding.

Remarks: The heavy dark foliage casts a very dense shade round the year and nothing will grow underneath it. The heavy branching makes it a useful tree for pollarding for firewood, although the branches take a long time to dry. The wood is soft and white, brown in the centre, and easy to work.



Indigenous

Trade name: Tamarind.

Common names: **Ateso:** Epeduru **Ateso K:** Lopeduru **English:** Tamarind **Luganda:** Mukoge **Lugbara:** Iti **Lusoga:** Mukoge **Lugwe:** Muhuwa **Lunyuli:** Muhungwa **Luo:** Chwaa, chwoo **Madi:** Iti **Runyoro:** Mukoge **Runyoro, dialect Bugungu:** Munondo **Rutoro:** Nondwa.

Ecology: A well-known tree indigenous to tropical Africa. A very adaptable species, drought hardy, preferring semi-arid areas and wooded grasslands. It grows in most soils but does best in well-drained deep alluvial soil; often riverine in very dry areas. Occurs in North Eastern and Northern Regions and in Luwero and Moyo Districts.

Uses: Firewood, charcoal, poles, timber (furniture, boats, general purposes), food (pulp for drink, fruit, spice), fodder (leaves, fruit), medicine (bark, leaves, roots, fruit), mulch, nitrogen fixation, shade, ornamental, windbreak, tannin (bark).

Description: A large tree to 30 m, with an **extensive dense crown**. The short bole can be 1 m in diameter. Evergreen or deciduous in dry areas. **BARK:** rough, grey-brown, flaking. **LEAVES:** compound, on hairy stalks to 15 cm, 10-18 pairs of leaflets, **dull green to 3 cm, oblong**, round at the tip and base, veins raised. **FLOWERS:** small, in few-flowered heads, buds red, petals gold with red veins. **FRUIT:** pale brown, **sausage-like**, hairy pods, cracking when mature to show sticky **brown pulp around 1-10 dark brown angular seeds**.

Propagation: Seedlings (sow seed in pots), wildings; direct sowing on site.

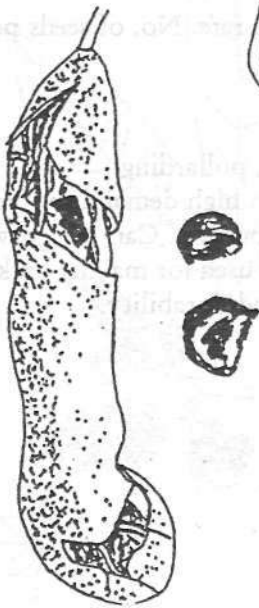
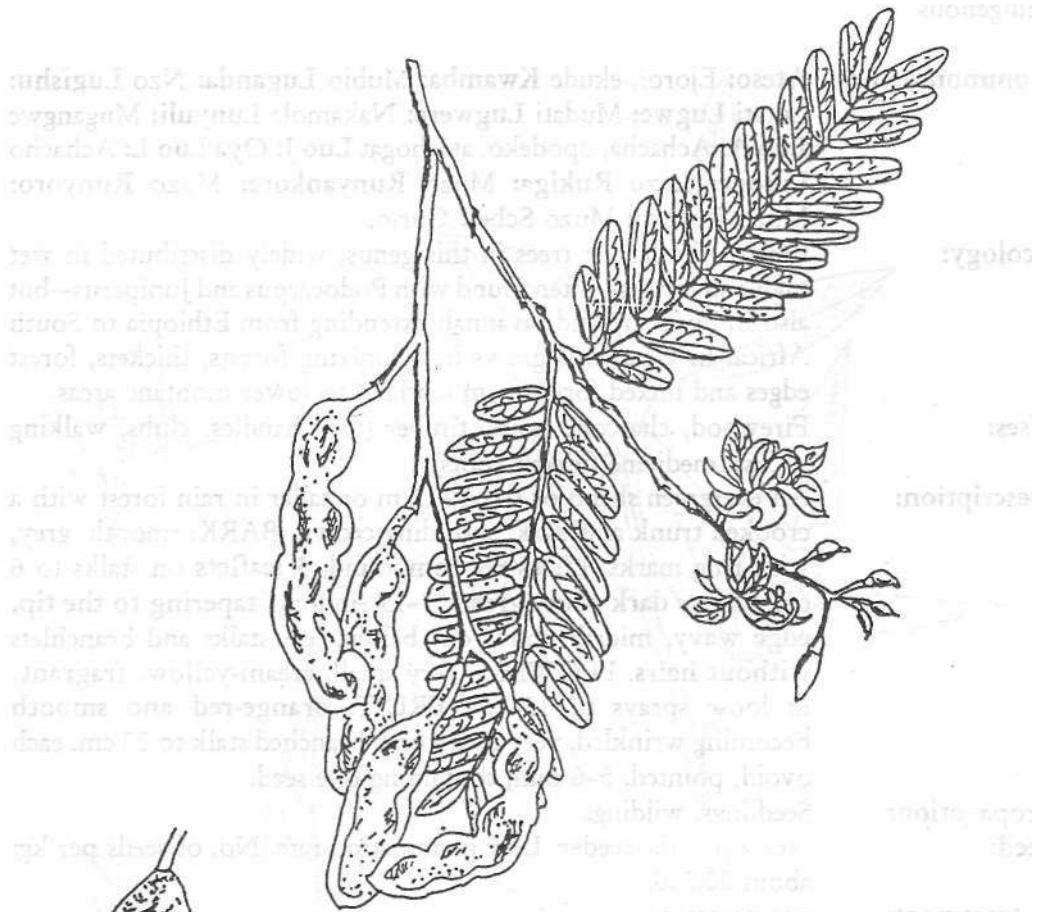
Seed: No. of seeds per kg: about 1,400.

treatment: Germination rate about 90%. Soak seed in hot water or nick the seed.

storage: Seed can be stored for more than two years if kept in a dry, cool and insect-free place.

Management: Slow growing but long lived; pollarding, coppicing.

Remarks: The dark brown heartwood is hard and heavy, well grained and easy to polish. The pulp is rich in vitamin C. It is recommended for homestead planting and along river banks.



A. Birnie

Teclea nobilis

Rutaceae

Indigenous

Common names: **Ateso:** Ejoroi, ekude **Kwamba:** Mubio **Luganda:** Nzo **Lugishu:** Lutati **Lugwe:** Mudati **Lugwere:** Nakamole **Lunyuli:** Mugangwe **Luo A:** Achacha, opodeko, atachogat **Luo J:** Oya **Luo L:** Achacho **Lusoga:** Luzu **Rukiga:** Muzo **Runyankore:** Muzo **Runyoro:** Muzo **Rutoro:** Muzo **Sebei:** Gurio.

Ecology: One of the largest trees in this genus, widely distributed in wet highland forests—often found with Podocarpus and Juniperus—but also in bushland and savannah extending from Ethiopia to South Africa. In Uganda it grows in colonizing forests, thickets, forest edges and mixed forest from lowland to lower montane areas.

Uses: Firewood, charcoal, poles, timber (tool handles, clubs, walking sticks), medicine (leaves, roots).

Description: An evergreen shrub or tree 2-12 m or taller in rain forest with a crooked trunk and dark, spreading crown. **BARK:** smooth, grey, with ring marks. **LEAVES:** compound, **3 leaflets** on stalks to 6 cm, leaflets **dark shiny green**, 5-15 cm long, **tapering to the tip, edge wavy**, midrib stands out below, leaf stalks and branchlets **without hairs**. **FLOWERS:** very small, **cream-yellow, fragrant**, in loose sprays to 12 cm. **FRUIT:** **orange-red and smooth** becoming wrinkled, very many on a branched stalk to 20 cm, each ovoid, pointed, 5-6 mm, containing one seed.

Propagation: Seedlings, wildings.

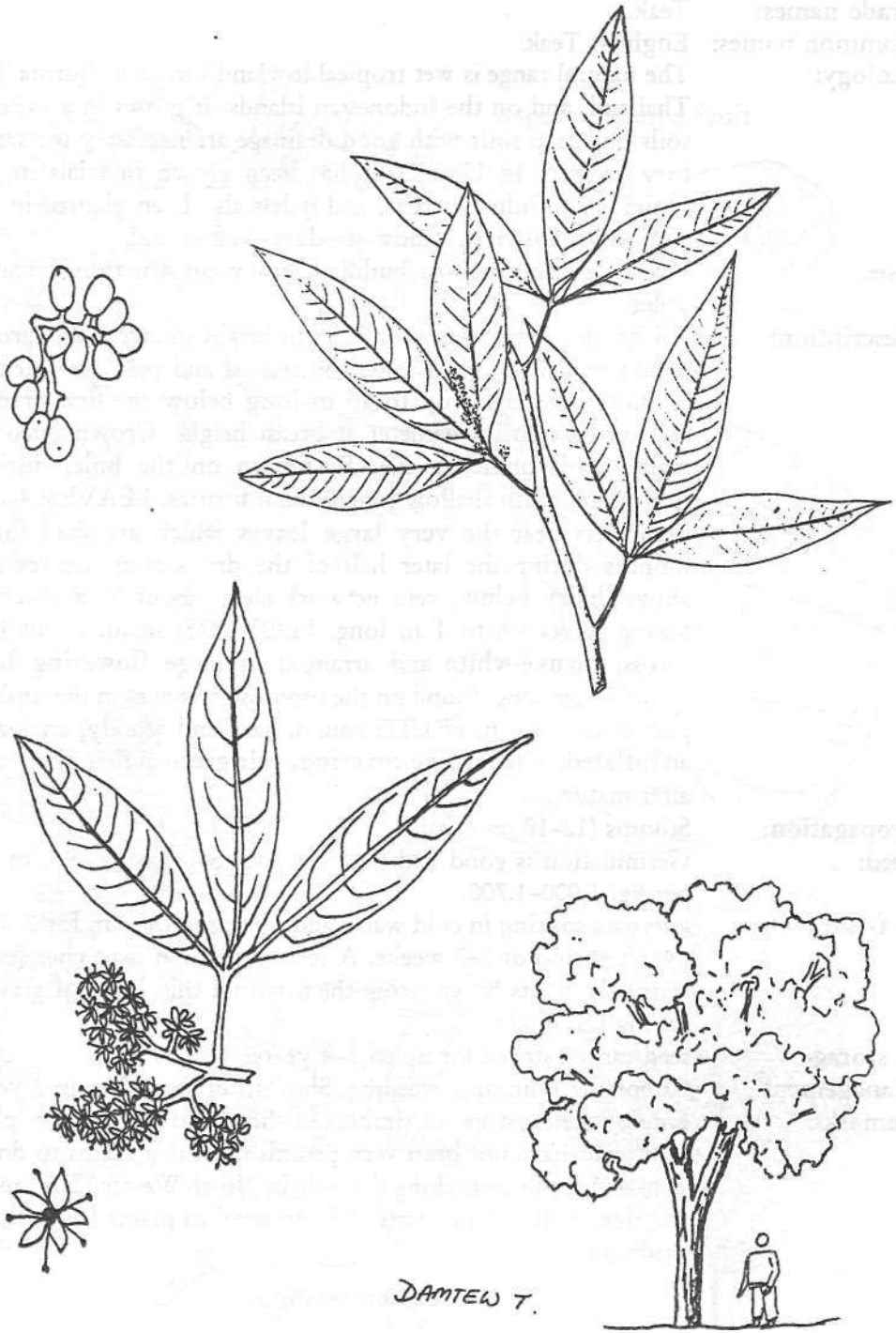
Seed: Not a prolific seeder. Low germination rate. No. of seeds per kg: about 20,000.

treatment: not necessary.

storage: store dried fruits in a cool dry place.

Management: Moderate to slow growing. Coppicing, pollarding.

Remarks: The wood is tough and pale and due to high demand the tree has been overexploited throughout the country. Can be grown in stands for timber and fuel. The wood is used for making barkcloth mallets and is valued for its strength and durability.



Tectona grandis

Verbenaceae

S.E. Asia

Trade names: Teak.

Common names: **English:** Teak.

Ecology: The natural range is wet tropical lowland forests of Burma, India, Thailand, and on the Indonesian islands. It grows in a variety of soils but deep soils with good drainage are necessary for satisfactory growth. In Uganda, it has been grown in trials in Jinja, Hoima and Gulu Districts, and it has also been planted in Arua and Moyo Districts. It now produces viable seed.

Uses: Firewood, timber (boat building, heavy construction, furniture), poles.

Description: A large deciduous tree over 30 m in height in favourable growing conditions. The bole is often buttressed and may be fluted to a considerable height, up to **15 m long below** the first branches, and up to 1 m in diameter at breast height. Crown open with many small branches. **BARK:** brown on the bole, distinctly fibrous and with shallow longitudinal fissures. **LEAVES:** 4-sided, branchlets bear the **very large leaves** which are shed for 3-4 months during the later half of the dry season. Leaves shiny above, **hairy below**, vein network clear, about 30 x 20 cm but young leaves up to 1 m long. **FLOWERS:** small, about 8 mm across, **mauve-white** and arranged in large **flowering heads**, about 45 cm long, found on the topmost branches in the unshaded part of the crown. **FRUIT:** round, hard and woody, enclosed in an **inflated, bladder-like** covering, pale green at first, then brown after maturity.

Propagation: Stumps (12-18 months).

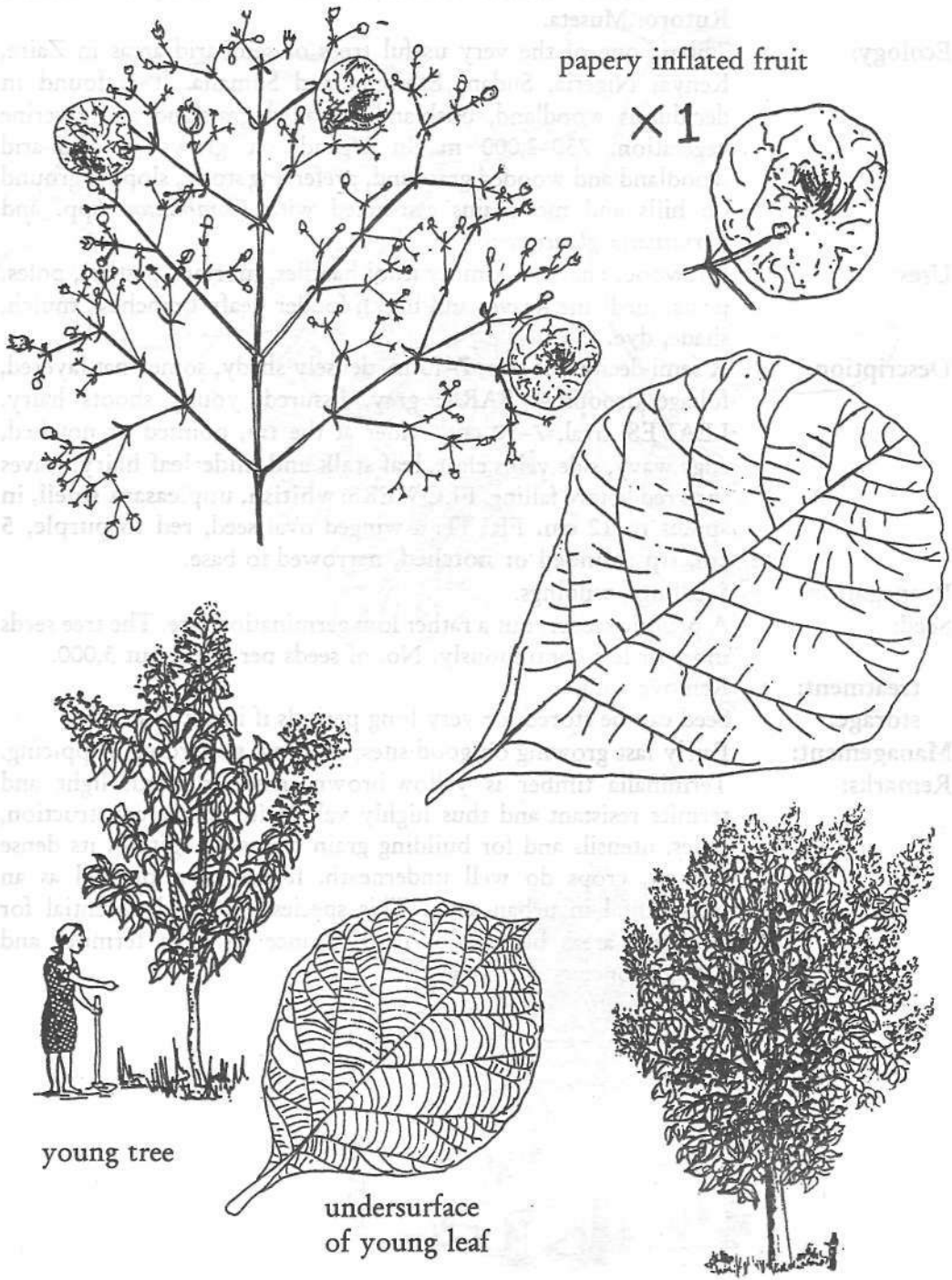
Seed: Germination is good and uniform after 5-6 weeks. No. of seeds per kg: 1,000-1,700.

treatment: alternate soaking in cold water and drying in the sun for 2-3 days over a period of 2-3 weeks. A second method is to char (or half burn) the fruits by covering them with a thin layer of grass and setting this alight.

storage: seed can be stored for up to 3-4 years.

Management: Coppicing, thinning, weeding. Shoots can reach 3 m in 2 years.

Remarks: One of the most useful timbers in the world. In Uganda, plantation trials have not been very promising, but it seems to do well in low-altitude areas along the Nile in North Western Region. The tree does well in most parts of Uganda when planted as individual shade trees.



papery inflated fruit

x1

young tree

undersurface of young leaf

Indigenous

Common names: **Ateso T:** Epiyei **Kwamba:** Museta **Lugbara:** Alobogo **Luo A:** Kilere **Madi:** Malere **Rukonjo:** Musongi **Runyoro:** Museta **Rutoro:** Museta.

Ecology: This is one of the very useful trees of semi-arid areas in Zaire, Kenya, Nigeria, Sudan, Ethiopia and Somalia. It is found in deciduous woodland, bushland, wooded grassland and riverine vegetation, 730-2,000 m. In Uganda, it grows in semi-arid woodland and wooded grassland, preferring stony, sloping ground on hills and mountains associated with *Combretum* spp. and *Terminalia glaucescens*.

Uses: Firewood, charcoal, timber (tool handles, mortars, pestles), poles, posts, medicine (leaves and bark), fodder (leafy branches), mulch, shade, dye.

Description: A semi-deciduous tree, 7-13 m, densely shady, somewhat layered, foliage drooping. **BARK:** grey, fissured, young shoots hairy. **LEAVES:** oval, 7-10 cm, wider at the tip, pointed or notched, edge wavy, side veins clear, **leaf stalk and underleaf hairy**, leaves turn red before falling. **FLOWERS:** whitish, unpleasant smell, in spikes to 12 cm. **FRUIT:** a winged oval seed, red to purple, 5 cm, tip rounded or notched, narrowed to base.

Propagation: Seedlings, wildings.

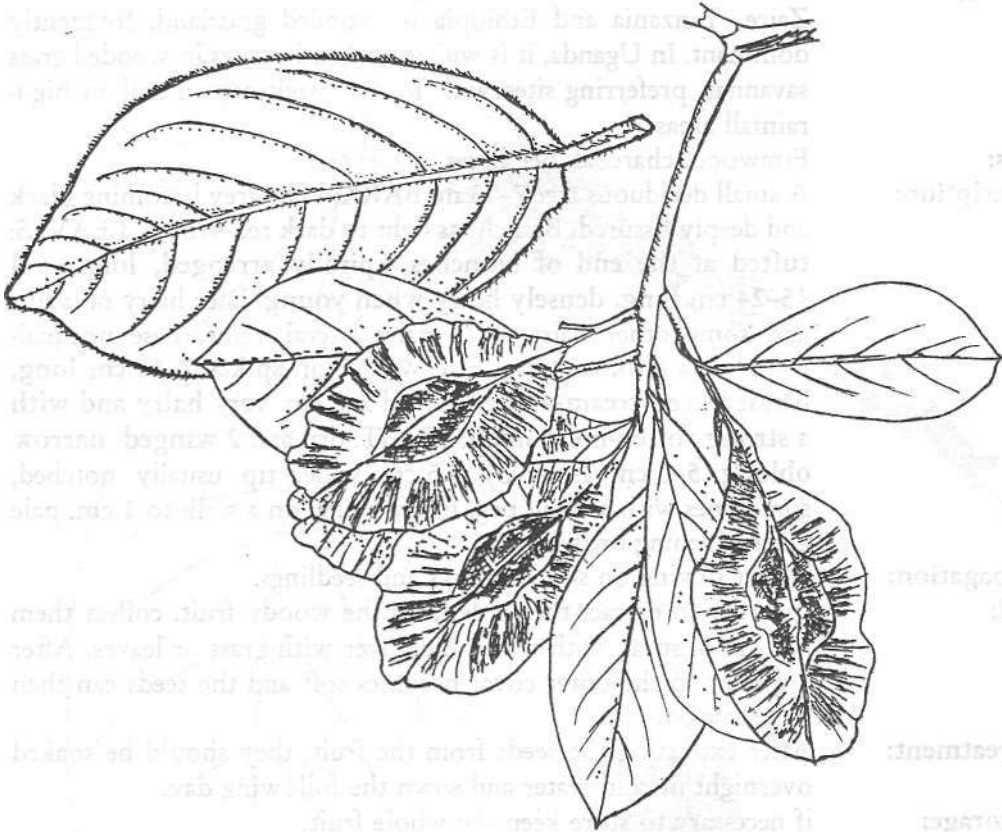
Seed: A prolific seeder, but a rather low germination rate. The tree seeds more or less continuously. No. of seeds per kg: about 3,000.

treatment: Remove wings.

storage: Seed can be stored for very long periods if insect free.

Management: Fairly fast growing on good sites; lopping, pollarding, coppicing.

Remarks: Terminalia timber is yellow-brown, medium hard, light and termite resistant and thus highly valued for house construction, poles, utensils and for building grain stores. In spite of its dense canopy, crops do well underneath. It has been planted as an ornamental in urban areas. This species has good potential for semi-arid areas because of its resistance to both termites and drought once established.



Indigenous

Common names: **Luganda:** Muyati.

Ecology: A small savannah tree extending from West Africa to the Sudan, Zaire, Tanzania and Ethiopia in wooded grassland, frequently dominant. In Uganda, it is widespread and occurs in wooded grass savannah preferring sites with loamy black cotton soil in high-rainfall areas.

Uses: Firewood, charcoal, bee hives.

Description: A small deciduous tree 7-13 m. **BARK:** light grey becoming black and deeply fissured. Branchlets light to dark red-brown. **LEAVES:** **tufted at the end of branches, spirally arranged, long oval 15-24 cm long, densely hairy when young**, later hairy on veins and some other hairs, 9-16 pairs lateral veins, base unequal-rounded, a stalk to 4 cm. **FLOWERS:** on **spikes 7-16 cm long**, beside leaves, **cream-white**, stalked 2-3 cm, **very hairy and with a strong rotten-meat smell**. **FRUIT:** dry and **2 winged, narrow oblong 5-8 cm long** by 3.5 cm wide, tip usually notched, sometimes with a small peg, finely hairy, on a stalk to 1 cm, pale green ripening brown.

Propagation: Direct sowing on site, wildings and seedlings.

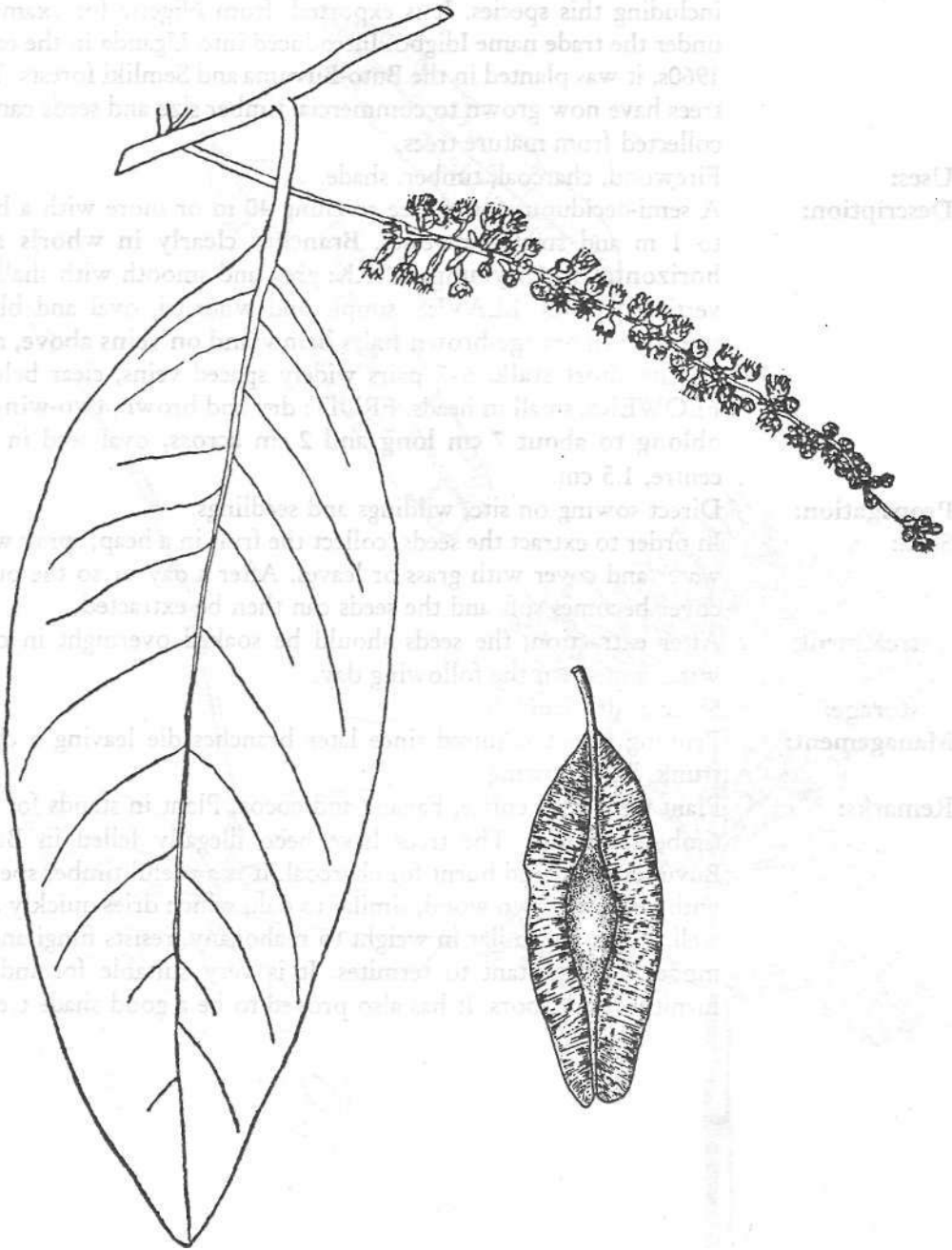
Seed: In order to extract the seeds from the woody fruit, collect them in a heap, spray with water and cover with grass or leaves. After a day or so the outer cover becomes soft and the seeds can then be extracted.

treatment: After extracting the seeds from the fruit, they should be soaked overnight in cold water and sown the following day.

storage: if necessary to store keep the whole fruit.

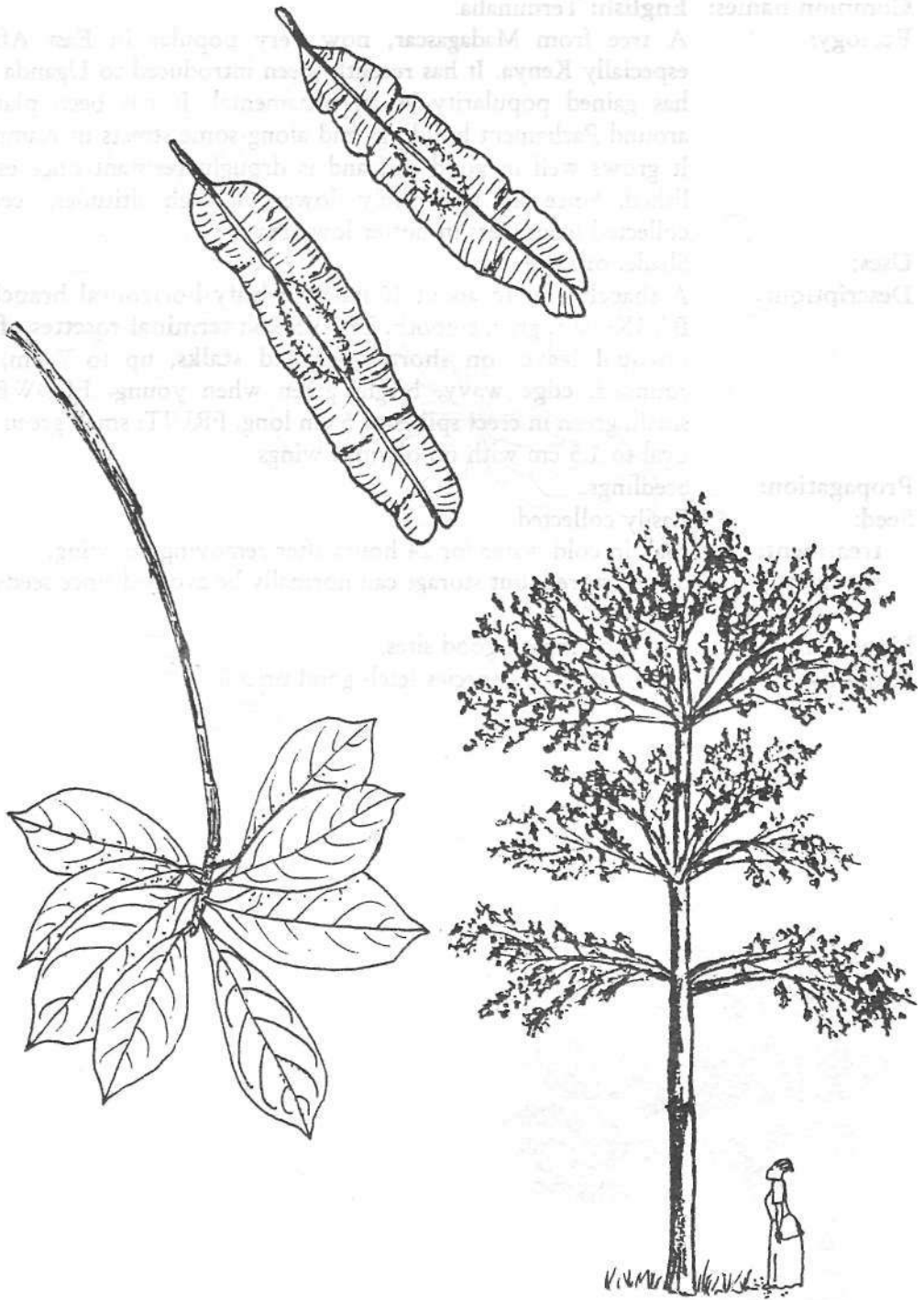
Management: Fast growing; coppicing.

Remarks: Produces excellent charcoal. The timber is yellow-brown, hard, durable and tough and works well.



West Africa

- Ecology:** Many Terminalia are important West African timber trees, including this species. It is exported, from Nigeria for example, under the trade name Idigbo. Introduced into Uganda in the early 1960s, it was planted in the Buto-Buvuma and Semliki forests. The trees have now grown to commercial timber size and seeds can be collected from mature trees.
- Uses:** Firewood, charcoal, timber, shade.
- Description:** A semi-deciduous forest tree reaching 40 m or more with a bole to 1 m and small buttresses. **Branches clearly in whorls and horizontal when young.** BARK: grey and smooth with shallow vertical fissures. LEAVES: simple and whorled, oval and blunt tipped with **orange-brown hairs below and on veins above, also on the short stalk**, 6-7 pairs widely spaced veins, clear below. FLOWERS: small in heads. FRUIT: dry and brown, **two-winged oblong to about 7 cm long and 2 cm across**, oval seed in the centre, 1.5 cm.
- Propagation:** Direct sowing on site, wildings and seedlings.
- Seed:** In order to extract the seeds, collect the fruit in a heap, spray with water and cover with grass or leaves. After a day or so the outer cover becomes soft and the seeds can then be extracted.
- treatment:** After extraction, the seeds should be soaked overnight in cold water and sown the following day.
- storage:** Store as dry fruit.
- Management:** Pruning is not required since later branches die leaving a clean trunk. Fast growing.
- Remarks:** Plant trees with coffee, banana and cocoa. Plant in stands for the timber and fuel. The trees have been illegally felled in Buto-Buvuma forest and burnt for charcoal. It is a useful timber species with yellow-brown wood, similar to oak, which dries quickly and well. It can be similar in weight to mahogany, resists fungi and is moderately resistant to termites. It is very suitable for indoor furniture and floors. It has also proved to be a good shade tree.



Madagascar

Common names: **English:** Terminalia.

Ecology: A tree from Madagascar, now very popular in East Africa, especially Kenya. It has recently been introduced to Uganda and has gained popularity as an ornamental. It has been planted around Parliament buildings and along some streets in Kampala. It grows well in good soil and is drought resistant once established. Since the tree rarely flowers at high altitudes, seed is collected from trees in hotter low areas.

Uses: Shade, ornamental.

Description: A shapely tree to about 10 m, with **leafy horizontal branches**. **BARK:** pale, grey, smooth. **LEAVES:** in **terminal rosettes of 4-9 unequal leaves on short thickened stalks**, up to 7 cm, **tip rounded, edge wavy**, bright green when young. **FLOWERS:** small, green in erect spikes to 5 cm long. **FRUIT:** small green and oval to 1.5 cm with no obvious wings.

Propagation: Seedlings.

Seed: Easily collected.

treatment: soak in cold water for 24 hours after removing the wing,

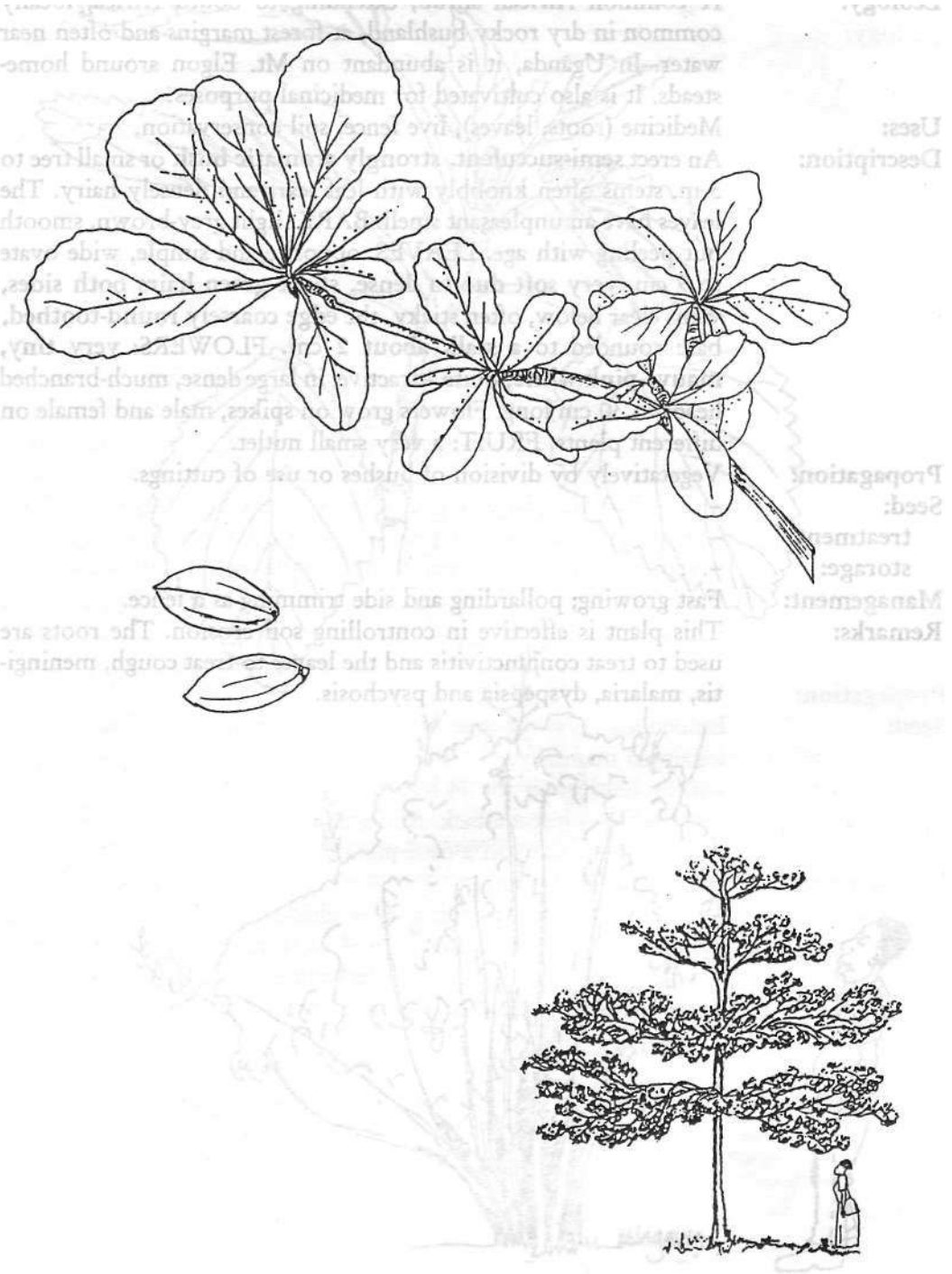
storage: can be stored, but storage can normally be avoided since seeds are plenty.

Management: Fast growing on good sites.

Remarks: Seedlings of this species fetch good prices.

Terminalia mantaly

Combretaceae



Indigenous

Common names: **Luganda:** Kyewamala.

Ecology: A common African shrub, extending to South Africa; locally common in dry rocky bushland, at forest margins and often near water. In Uganda, it is abundant on Mt. Elgon around homesteads. It is also cultivated for medicinal purposes.

Uses: Medicine (roots, leaves), live fence, soil conservation.

Description: An erect **semi-succulent, strongly aromatic bush** or small tree to 3 m, stems often knobably with leaf scars and densely hairy. The leaves have an unpleasant smell. **BARK:** light grey-brown, smooth but peeling with age. **LEAVES:** opposite and simple, wide ovate to 9 cm, **very soft due to dense, short green hairs both sides**, veins clear below, often sticky, the **edge coarsely round-toothed**, base rounded to a **stalk about 2 cm**. **FLOWERS:** **very tiny, mauve-pink-white**, quite attractive, in large dense, much-branched heads to 30 cm long. Flowers grow on spikes, male and female on different plants. **FRUIT:** a very small nutlet.

Propagation: Vegetatively by division of bushes or use of cuttings.

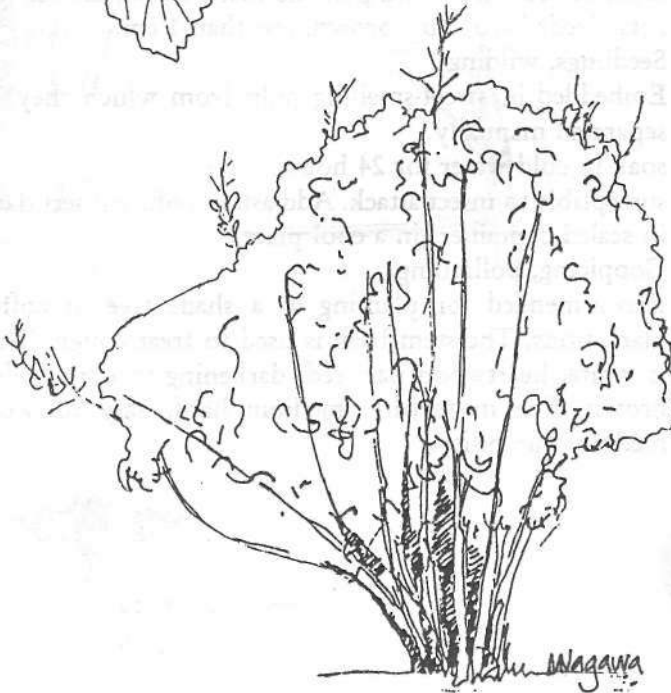
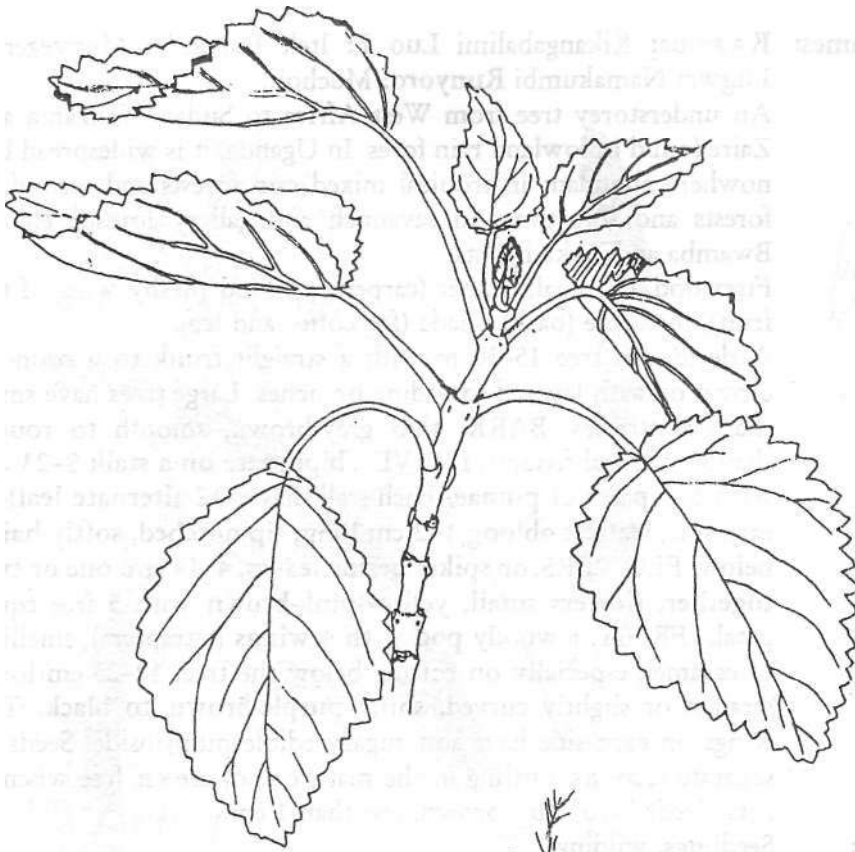
Seed:

treatment:

storage:

Management: Fast growing; pollarding and side trimming as a fence.

Remarks: This plant is effective in controlling soil erosion. The roots are used to treat conjunctivitis and the leaves to treat cough, meningitis, malaria, dyspepsia and psychosis.



Tetrapleura tetraptera

Mimosaceae

Indigenous

Common names: **Kwamba:** Kikangabalimi **Luo L:** Itek **Luganda:** Munyegenye **Lugwe:** Namakumbi **Runyoro:** Mucholi.

Ecology: An understory tree from West Africa to Sudan, Tanzania and Zaire found in lowland rain fores. In Uganda, it is widespread but nowhere abundant in tropical mixed rain forests and secondary forests and sometimes in savannah and gallery forests, e.g. in Bwamba and Zoka forests.

Uses: Firewood, charcoal, timber (carpentry), food (fleshy wing of the fruit), medicine (bark), shade (for coffee and tea).

Description: A deciduous tree 15-30 m with a straight trunk to a rounded crown or with layered spreading branches. Large trees have small sharp buttresses. **BARK:** thin grey-brown, smooth to rough, shallow vertical fissures. **LEAVES:** **bipinnate on a stalk 8-23 cm with 5-7 pairs of pinnae.** Each stalk has 6-12 **alternate leaflets** each side, **leaflets oblong 1-2 cm long, tip notched, softly hairy below.** **FLOWERS:** on **spikes beside leaves, 4-14 cm, one or two together, flowers small, yellow-pink-brown** with 5 free equal petals. **FRUIT:** a **woody pod with 4 wings** (tetraptera), smelling of caramel, especially on rotting below the tree, 12-23 cm long, straight or slightly curved, **shiny purple-brown to black.** The wings on each side have soft sugary edible pulp inside. Seeds in separate sections, rattling in the mature pod, are set free when it rots. Seeds hard, dark brown, less than 1 cm.

Propagation: Seedlings, wildings.

Seed: Embedded in sweet-smelling pulp from which they have to be separated manually.

treatment: soak in cold water for 24 hours.

storage: susceptible to insect attack. Add ash to reduce insect damage. Store in sealed containers in a cool place.

Management: Coppicing, pollarding.

Remarks: Recommended for planting as a shade tree in coffee and tea plantations. The stem bark is used to treat cough. The sapwood is white; heartwood pale red, darkening to dark yellow, red or brown, fine in texture, medium hard, easy to work and of medium durability.

Theobroma cacao

Tiliaceae

South America

Common names: **English:** Cocoa.

Ecology: A small understorey tree from the rain forest of northern South America where several species grow in the deep rich soils. Cacao is a local name and *theobroma* means "food of the gods" for the beans have been used and highly valued from ancient times. Today, the crop is a major export from West Africa and grows best in a narrow belt north and south of the equator. In Uganda, it grows in Bundibugyo District under *Maesopsis eminii* and in Mukono District with banana and coffee or in forest on farmers' land. It needs to be protected from both sunlight and strong wind.

Uses: Food (cocoa from the beans), drink.

Description: An evergreen tree to 15 m if unpruned but in cultivation kept to 6 m or less. It has characteristic branching of two types bearing different leaf arrangements. At 90-150 cm above the ground the terminal bud stops growth and a "fan" of 3-5 branches grows out. Suckers below this are not used. The first leaf "fan" dies down and is replaced by a new one. **LEAVES: large, simple, 17-30 cm, often smaller, hang down, red-brown when young, wider towards the pointed tip.** **FLOWERS:** on short shoots like "cushions" on the trunk and woody branches; small and yellow-white about 1 cm across. The ovary has 5 sections which contain 2 rows of ovules. **FRUIT:** the ovary develops into a **ribbed pod 15-20 cm long** with rows of beans, green at first like a cucumber. The fleshy pulp around 20-50 oval seeds is white at first, ripening red-brown. The thin **fruit shell becomes shiny red-purple-brown.**

Propagation: Seedlings (sow seed in pots), cuttings, direct sowing on site (guard against being eaten by rodents). First raise cuttings in a nursery.

Seed: Collect pods from healthy trees, crack open, then dry the seeds, not necessary.

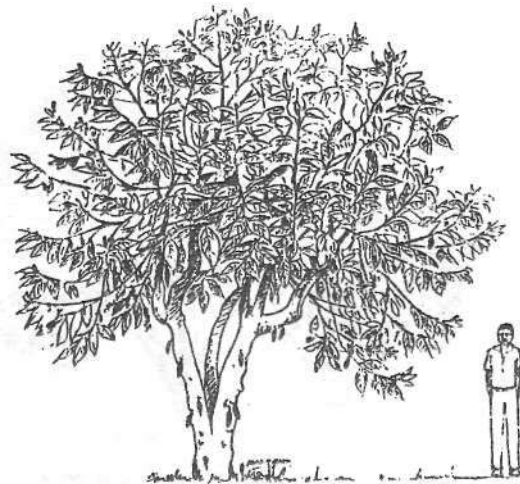
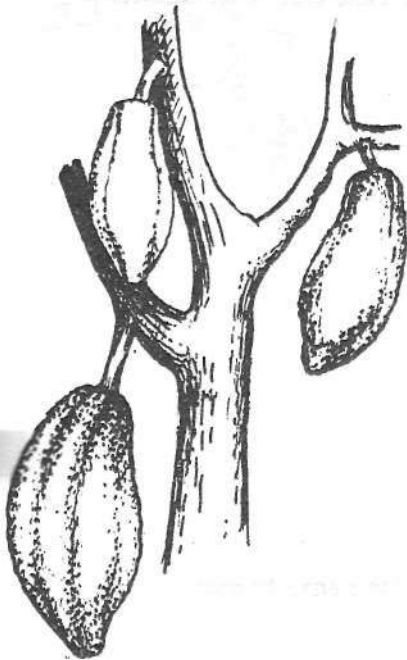
treatment:

storage:

store for not more than 3 months spread out on a cement floor to prevent damage by rodents. Add ash to reduce insect damage.

Management: Grows best in neutral to acid well-drained soils. The long taproot will not grow down into shallow or rocky soils. Prepare deep holes and space plants 3 m apart. Pruning. Seedlings need shade.

Remarks: There are several varieties, some bearing fruit in 3-5 years. The pulp in the pods is edible when ripe. Chocolate and cocoa are made from the beans. Seeds are allowed to ferment for 6 days when the bitter pulp decays away. The washed and dried beans are exported. In processing, the outer shells are removed and the seeds roasted. They contain over 50% cocoa butter and half of this is removed in manufacturing cocoa powder. Cocoa has a high food value and also contains an alkaloid stimulant—theobromine. It could be grown successfully in a number of areas in Uganda.



Thevetia peruviana

Apocynaceae

West Indies and Central America

Common names: **English:** Lucky nut, yellow oleander.

Ecology: A bush or small tree, it is widely planted in the tropics as an attractive hedge or ornamental bush. It tolerates most soils but prefers sandy ones. Commonly used as a hedge in many areas of Uganda.

Uses: Building poles, tool handles, shade, ornamental, soil conservation, live fence.

Description: A multi-stemmed shrub or shady tree to 4 m. **LEAVES:** shiny, **narrow, in spirals** around the stem, about 10 cm long. **FLOWERS:** **yellow, white or salmon, in narrow trumpets, petals twisted in bud**, to 6 cm long, the green base extending to the trumpet edge. **FRUIT:** fleshy, 4-angled to rounded, about 3 cm across, stalked with a flat triangular nut inside.

Propagation Seedlings, cuttings.

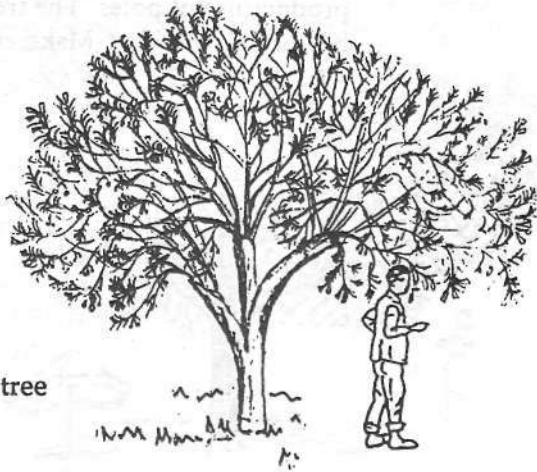
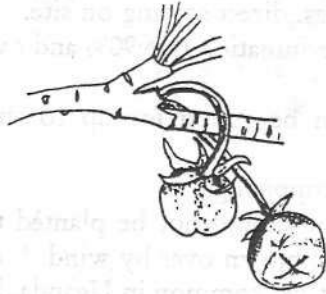
Seed: No. of seeds per kg: about 300. Good germination rate of about 80%.

treatment: not necessary.

storage: seeds can be stored for up to 3 months.

Management: Fast growing; prune about a month before the rains to induce flowering.

Remarks: Every part of the plant is extremely poisonous and it is not touched as fodder even by goats. Take care with children.



pollarded ornamental tree

Tipuana tipu (Machaerium tipu)

Papilionaceae

Bolivia, Brazil

Common names: **English:** Pride of Bolivia, tipu tree.

Ecology: An attractive flowering tree whose natural range is Brazil and the mountain forests of Bolivia. Now widely planted from the Mediterranean to the tropics. It is drought resistant, tolerating a wide variety of soils including black-cotton. In Uganda, it will grow at altitudes from 1,200 to 2,200 m.

Uses: Firewood, charcoal, timber, poles, bee forage, shade, ornamental, nitrogen fixation.

Description: A large, spreading, semi-deciduous shade tree to 20 m, **but** occasionally to 30 m, with a light spreading crown. **BARK:** red-brown trunk, fissured and flaking with age, bark on the branches grey and cracked, sap from cut branches red and sticky. **LEAVES:** compound, **alternate leaflets** light green, each narrowly **oblong to 5 cm, tip round**, often notched, on a short stalk. **FLOWERS:** very many in long, **loose sprays**, each with **wavy yellow- orange petals**. **FRUIT:** unusual for legume family, the only genus with **single-seeded, flat-winged fruit**, yellow-green at first, looking like blossoms, later grey-brown, fibrous, staying on the tree for a long time.

Propagation Seedlings (sow seed in pots), wildings, direct sowing on site.

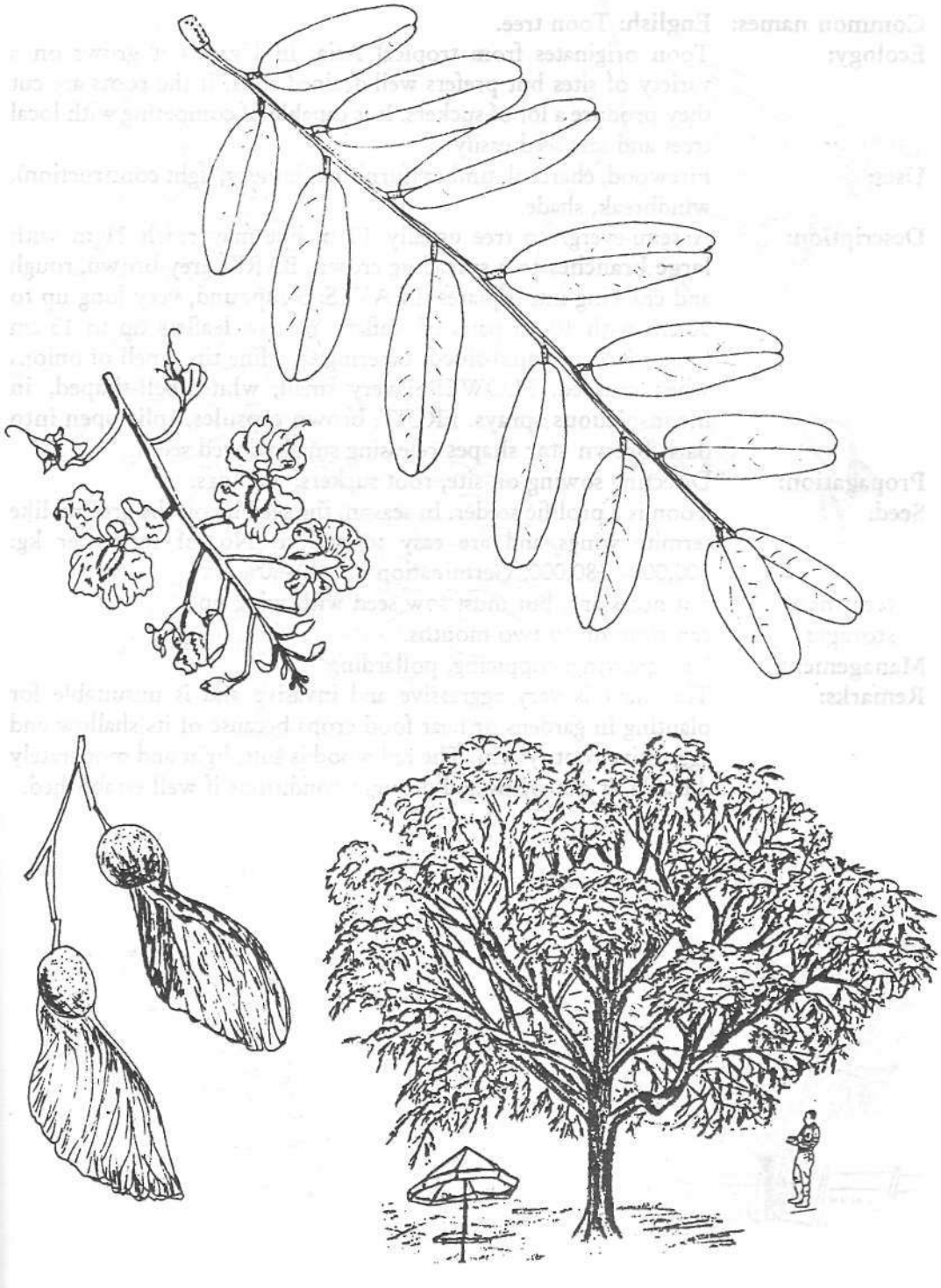
Seed: No. of seeds per kg: 1,600-2,700. Germination rate 90% and over.

treatment: remove wings.

storage: at room temperature the seeds can be stored for up to three months.

Management: Fast growing; pollarding, lopping, coppicing.

Remarks: The tree is shallow rooted and so it should not be planted too close to buildings as it is likely to be blown over by wind. It can produce useful poles. The tree is not yet common in Uganda, but has been planted at Makerere University campus where it seeds well.



Toona ciliata

Meliaceae

Tropical Asia, Southern China, Himalayas

Common names: **English:** Toon tree.

Ecology: Toon originates from tropical Asia. In Uganda it grows on a variety of sites but prefers well-drained soils. If the roots are cut they produce a lot of suckers. It is capable of competing with local trees and sets seed easily.

Uses: Firewood, charcoal, timber (furniture, joinery, light construction), windbreak, shade.

Description: A semi-evergreen tree usually 10 m but may reach 21 m with **large branches** to a spreading crown. **BARK:** grey-brown, rough and cracking into squares. **LEAVES:** compound, very long up to 90 cm with 10-14 pairs of leaflets, narrow leaflets up to 15 cm long, **often unequal-sided**, tapering to a fine tip, smell of onions when crushed. **FLOWERS:** very small, white, **bell-shaped, in inconspicuous sprays**. **FRUIT:** **brown capsules, split open into dark brown star shapes** releasing small winged seeds.

Propagation: Directing sowing on site, root suckers, wildings.

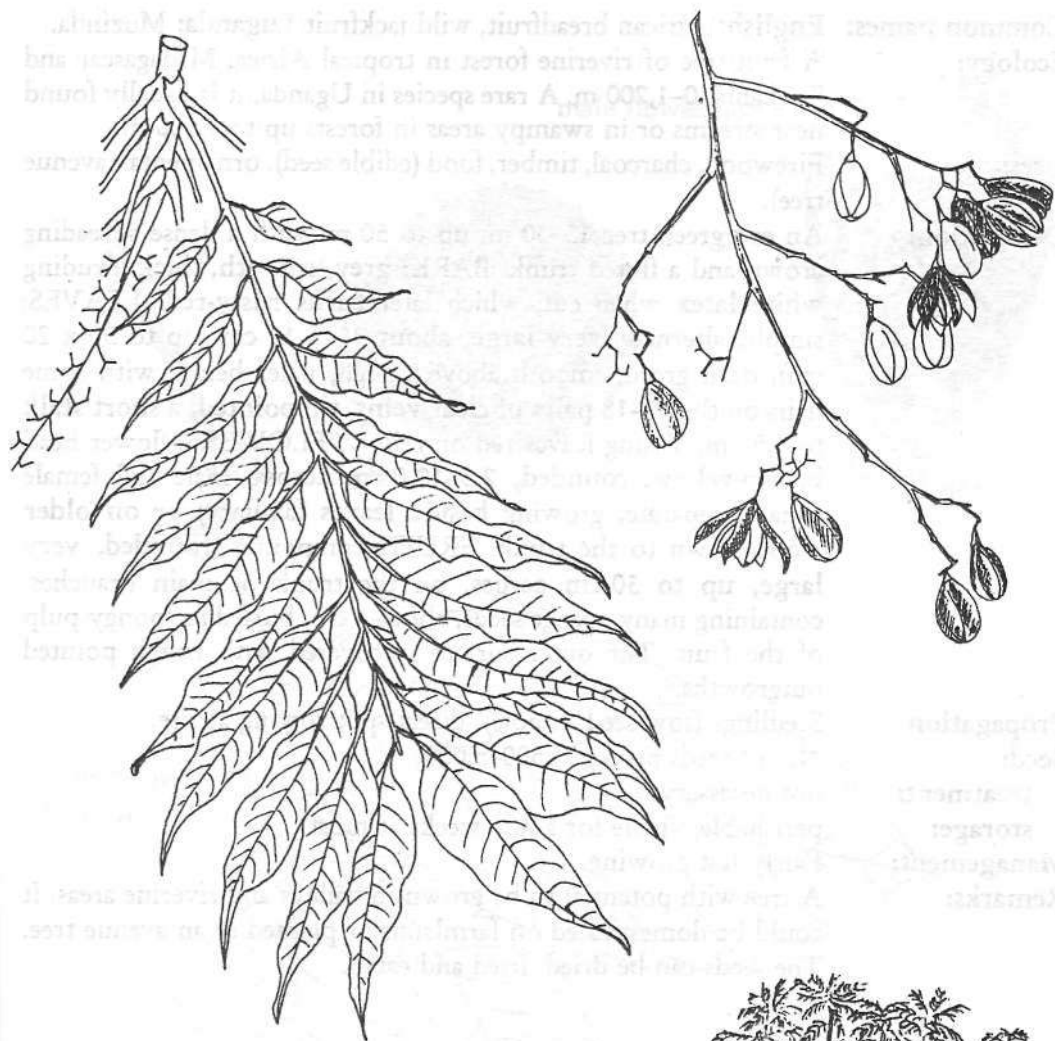
Seed: Toon is a prolific seeder. In season, the seed lie on the ground like termite wings and are easy to collect. No. of seeds per kg: 300,000- 380,000. Germination rate 40-60%.

treatment: not necessary, but must sow seed with wing up.

storage: can store up to two months.

Management: Fast growing; coppicing, pollarding.

Remarks: The plant is very aggressive and invasive and is unsuitable for planting in gardens or near food crops because of its shallow and aggressive root system. The red wood is soft, light and moderately durable. It can withstand drought conditions if well established.



Indigenous

Common names: **English:** African breadfruit, wild jackfruit **Luganda:** Muzinda.

Ecology: A fruit tree of riverine forest in tropical Africa, Madagascar and Tanzania, 0-1,200 m. A rare species in Uganda, it is usually found near streams or in swampy areas in forests up to 1,500 m.

Uses: Firewood, charcoal, timber, food (edible seed), ornamental (avenue tree).

Description: An evergreen tree 15-30 m, up to 50 m, with a dense spreading crown and a fluted trunk. **BARK:** **grey, smooth**, thick, exuding **white latex** when cut, which later **turns rusty-red**. **LEAVES:** simple, alternate, **very large, about 30 x 14 cm** (up to 50 x 20 cm), dark green, smooth above, tough, paler below with some hairs on the **10-18 pairs of clear veins, tip pointed, a short stalk** to 1.5 cm. Young leaves red or yellow. **FLOWERS:** flower head brown-yellow, **rounded, 2.5-10.0 cm across**, male and female usually separate, growing **beside leaves** (axillary) or **on older wood** down to the trunk. **FRUIT:** compound, **rounded, very large, up to 30 cm across**, on the trunk or main branches, containing many orange seeds, about 1 cm, buried in spongy pulp of the fruit. The outer surface is covered with rough pointed outgrowths.

Propagation Seedlings (sow seed in pots), direct spot sowing at site.

Seed: No. of seeds per kg: 4,500-5,000.

treatment: not necessary.

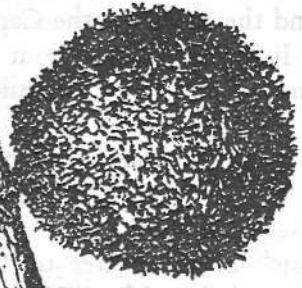
storage: perishable; viable for a few weeks at most.

Management: Fairly fast growing.

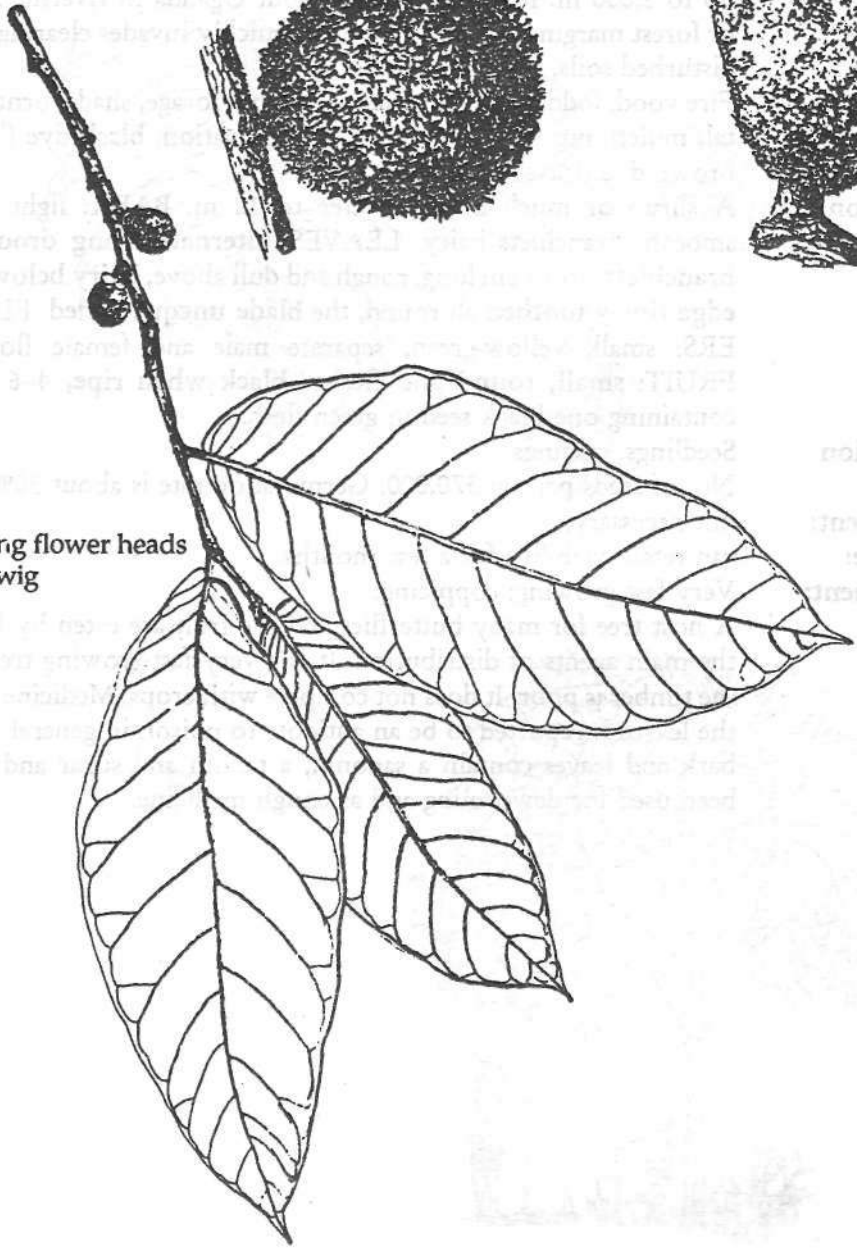
Remarks: A tree with potential to be grown in valleys and riverine areas. It could be domesticated on farmlands or planted as an avenue tree. The seeds can be dried, fried and eaten.

Indigenous
Common names: *Kwarba*; *Bakiga*; *I nganda*; *Kwan*; *I ngwa*; *Lauza*;
Yala; *Mugiyangole*; *I no*; *A*; *Ogobungu*; *I no*; *Yala*;
Rukia; *Mubogokwe*; *ngwanjin*;
Kuton; *Mutan*; *Kaba*; *trifida*.

male flower heads



young flower heads on twig



Propagation:
Seed
treatment:
storage:
Management:
Remarks:

Indigenous

Common names: **Ateso:** Erere **Kwamba:** Bukingi **Luganda:** Kasisa **Lugwe:** Lusubasubi **Lunyuli:** Mugiryanjole **Luo A:** Opobo-bunga **Luo J:** Yaki-yaki **Lusoga:** Nkulidho **Rukiga:** Mubengabakwe, mugwampira **Rukonjo:** Muhera **Rutoro:** Mutete, kasisa, mwitha.

Ecology: A small, short-lived tree, widely distributed in Asia and Africa from Senegal and the Sudan to the Cape in higher-rainfall areas, up to 2,000 m. It is found throughout Uganda in riverine forest or forest margins as a pioneer which quickly invades clearings and disturbed soils.

Uses: Firewood, fodder (leaves, pods, seeds), bee forage, shade, ornamental, mulch, nitrogen fixation, soil conservation, black dye (bark), brown dye (leaves), oil (seed).

Description: A shrub or much branched tree to 12 m. **BARK:** light grey, smooth, branchlets hairy. **LEAVES:** **alternate along drooping branchlets**, to 14 cm long, rough and dull above, **hairy below**, the **edge finely toothed** all round, the **blade unequal sided**. **FLOWERS:** small, yellow-green, separate male and female flowers. **FRUIT:** **small, round and fleshy, black when ripe, 4-6 mm**, containing one black seed in green flesh.

Propagation Seedlings, cuttings.

Seed: No. of seeds per kg: 370,000. Germination rate is about 30%.

treatment: not necessary.

storage: can retain viability for a few months.

Management: Very fast growing; coppicing.

Remarks: A host tree for many butterflies and the fruit are eaten by birds, the main agents of distribution. It is a very fast-growing tree but the timber is poor. It does not compete with crops. Medicine from the leaves is reported to be an antidote to poison in general. Both bark and leaves contain a saponin, a tannin and sugar and have been used for deworming and as cough medicine.

Indigenous

Common names: **Luganda:** Sekoba.

Ecology: This species occurs in mid-altitude rain forest in West Africa and from Uganda to South Africa, 1,000-2,200 m. Absent from the central Guinea-Congolian rain forests, it is widely distributed in Uganda and common in Kibale forest.

Uses: Firewood, charcoal, timber (construction, furniture), shade.

Description: A very large evergreen tree to 30 m, with a straight trunk dividing into large branches and a rounded crown. Buttresses absent or small. **BARK:** fairly thin and **smooth brown** with clear breathing pores (lenticels); when **cut the bark edges are red and white**. **LEAVES:** compound with 4-6 pairs leaflets plus one on a stalk, to 10 cm, each leaflet about 12 cm long, **always wider towards the pointed tip**, often rounded at the base. The **7-12 pairs veins below are widely spaced** with a few hairs. Leaves **dry dark brown**. **FLOWERS:** few in branched sprays to 6 cm, each large flower with 5 cream-white **hairy petals** over 2 cm long, the **10 hairy stamens joined in a ring** around the central style. **FRUIT:** a rounded capsule to 3 cm across, pink to dull yellow-brown and hairy, **without a neck to the fruit stalk**, splitting into sections when dry to set free **large black seeds** which are **almost covered by a soft red aril**.

Propagation: Seedlings (sow seed in pots), wildings.

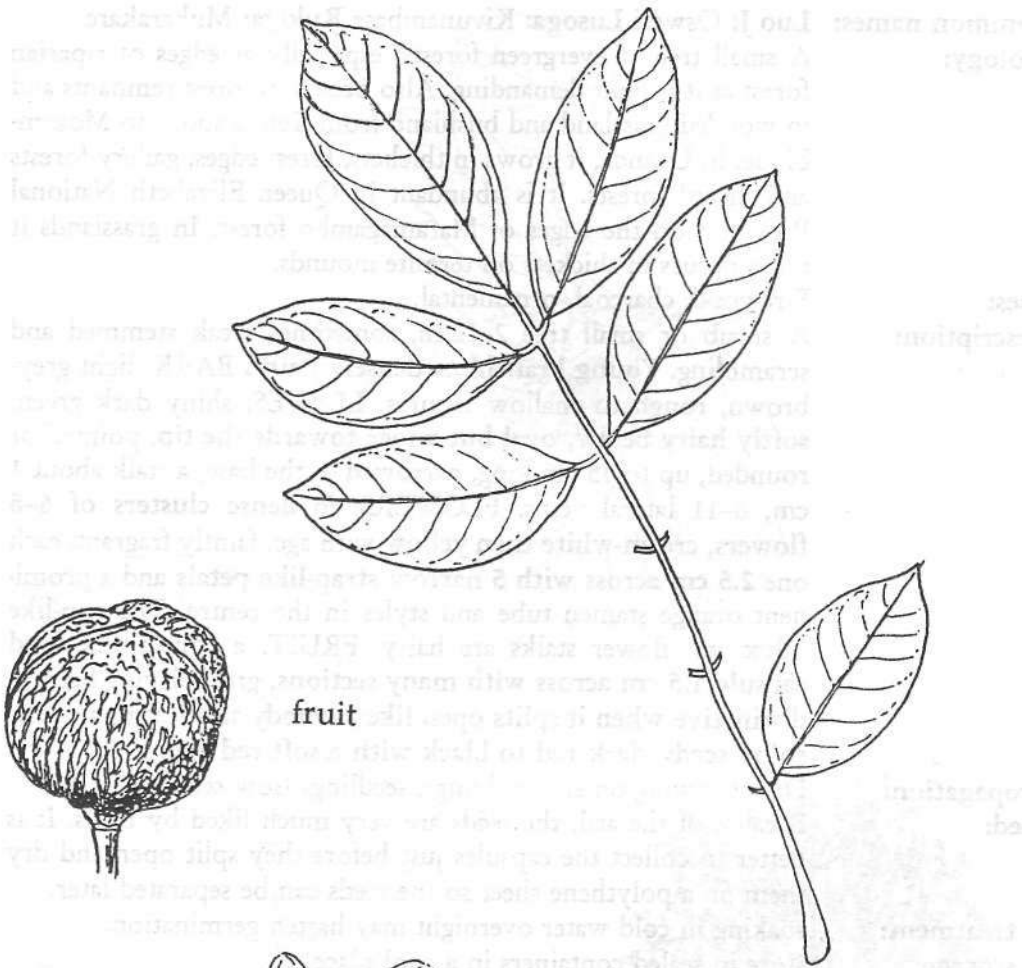
Seed: Contained in a capsule which splits open.

treatment: not necessary.

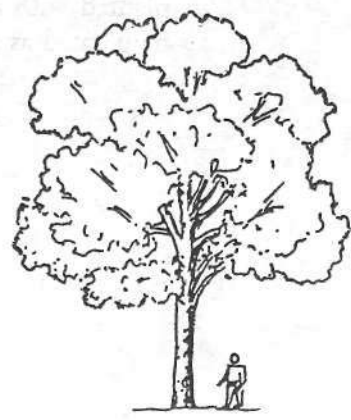
storage: sow immediately after collection.

Management: Coppicing, pollarding.

Remarks: The timber is susceptible to borer attack, but the pink wood is easily worked and polishes well. It has been used for carving. The timber is similar to mahogany.



DAMTEW T.



Indigenous

Common names: Luo J: Osweri **Lusoga:** Kivunambasa **Rukiga:** Mukarakare.

Ecology: A small tree of evergreen forests, especially at edges of riparian forest as it is light demanding. Also occurs in forest remnants and in wooded grassland and bushland from Kenya south to Mozambique. In Uganda, it grows in thickets, forest edges, gallery forests and mixed forests. It is abundant in Queen Elizabeth National Park and on the edges of Maramagambo forest. In grasslands it often occurs in thickets on termite mounds.

Uses: Firewood, charcoal, ornamental.

Description: A shrub or small tree 2-12 m, sometimes weak stemmed and scrambling. **Young branchlets densely hairy.** BARK: light grey-brown, rough to shallow fissures. LEAVES: shiny dark green, **softly hairy below, oval but wider towards the tip**, pointed or rounded, up to 15 cm long, narrowed to the base, a stalk about 1 cm 6-11 lateral veins. FLOWERS: in **dense clusters of 6-8 flowers, cream-white then yellow** with age, faintly fragrant, each one **2.5 cm across with 5 narrow strap-like petals** and a prominent orange stamen tube and styles in the centre. The cup-like calyx and flower stalks are hairy. FRUIT: a **round flattened capsule 1.5 cm across with many sections**, green drying brown, **distinctive when it splits open like a woody star** setting free the **shiny seeds, dark red to black with a soft red aril.**

Propagation: Direct sowing on site, wildings, seedlings (sow seed in pots).

Seed: Because of the aril, the seeds are very much liked by birds. It is better to collect the capsules just before they split open and dry them on a polythene sheet so the seeds can be separated later, soaking in cold water overnight may hasten germination, store in sealed containers in a cool place.

treatment:

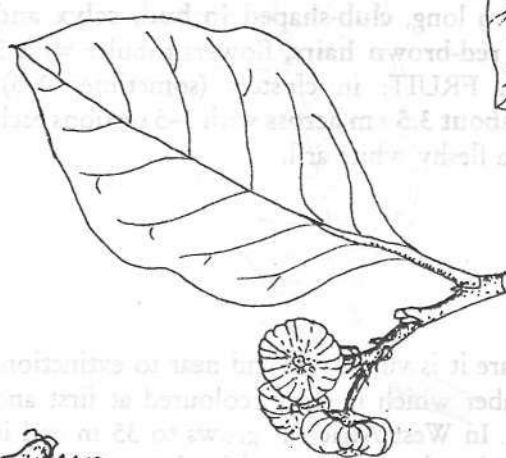
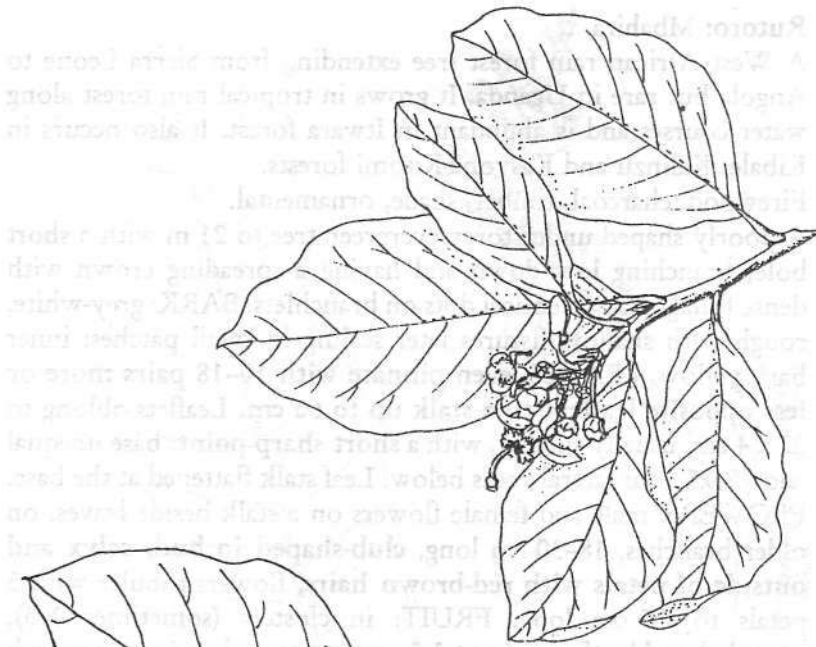
storage:

Management: Fast growing; coppicing, pollarding.

Remarks: Grows well as a pure stand but since it is deciduous should be planted with an evergreen species if shade is required. It can also be planted as an ornamental around houses.

Turraea robusta

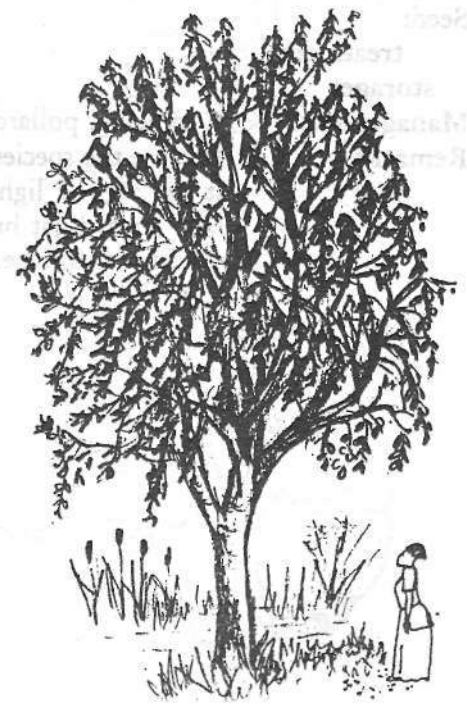
Meliaceae



seeds



empty
star-shaped
capsule



Indigenous

Common names: **Rutoro:** Mbahira.

Ecology: A West African rain forest tree extending from Sierra Leone to Angola but rare in Uganda. It grows in tropical rain forest along water courses and is abundant in Itwara forest. It also occurs in Kibale, Kalinzu and Kasyoha-Kitomi forests.

Uses: Firewood, charcoal, timber, shade, ornamental.

Description: A poorly shaped understory evergreen tree to 21 m with a short bole, branching low down and having a spreading crown with dense foliage. Clear lenticel dots on branchlets. **BARK:** grey-white, rough with shallow fissures later scaling in small patches; inner bark yellow. **LEAVES:** **even pinnate with 10-18 pairs more or less opposite leaflets on a stalk up to 60 cm.** Leaflets oblong to 22 x 4 cm, usually smaller, with a **short sharp point**, base unequal and 15-25 clear lateral veins below. Leafstalk flattened at the base. **FLOWERS:** male and female flowers on a stalk beside leaves, on older branches, 18-30 cm long, **club-shaped in bud, calyx and outside of petals with red-brown hairs**, flowers tubular with 5 petals to 2.5 cm long. **FRUIT:** in clusters (sometimes 2-3), **rounded and leathery about 3.5 cm across** with 3-5 sections each containing a seed with a fleshy white aril.

Propagation: Wildings, seedlings.

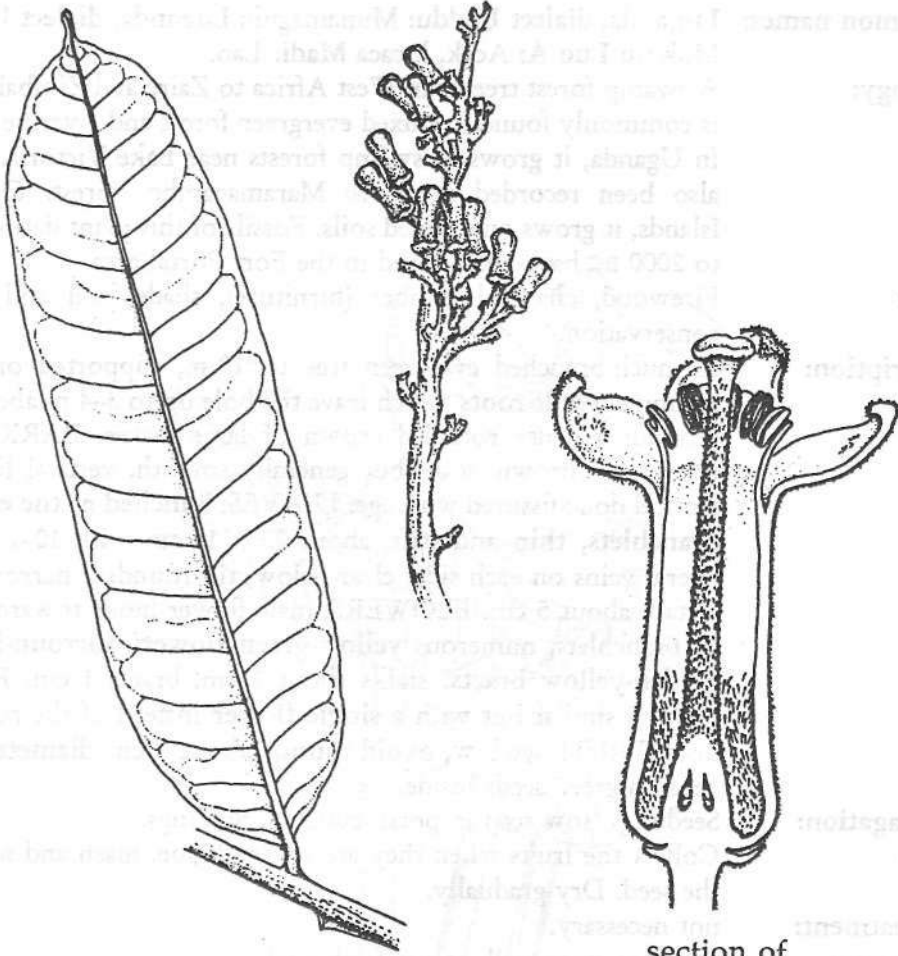
Seed:

treatment:

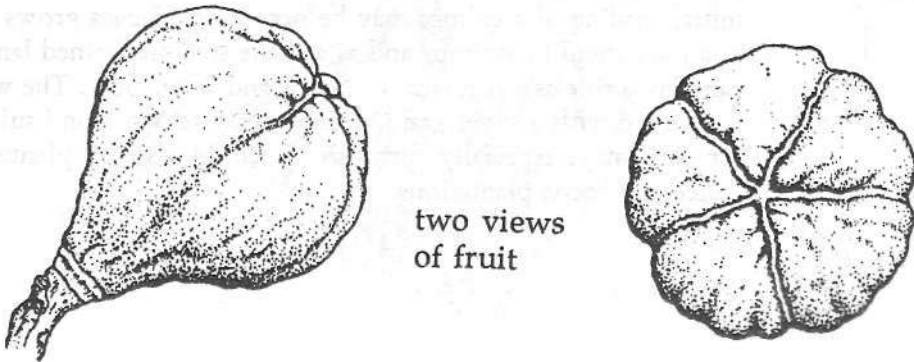
storage:

Management: Coppicing, pollarding.

Remarks: Because the species is rare it is vulnerable and near to extinction. It has a good light timber which is cream coloured at first and later turns light brown. In West Africa, it grows to 35 m and is used for furniture. Bringing the tree into cultivation would help to save it.



section of
male flower




two views
of fruit

Indigenous

Common names: **Luganda, dialect Buddu:** Munamagulu **Luganda, dialect Lusese:** Mukusu **Luo A:** Acak, locaca **Madi:** Lao.

Ecology: A swamp forest tree from West Africa to Zaire and Zimbabwe. It is commonly found in mixed evergreen forest and riverine forest. In Uganda, it grows in swamp forests near Lake Victoria. It has also been recorded in South Maramagambo Forest. On Sese Islands, it grows on drained soils. Fossils of this plant dating back to 2000 BC have been found in the Fort Portal area.

Uses: Firewood, charcoal, timber (furniture), shade, soil and water conservation.

Description:  A much-branched evergreen tree to 18 m, supported on very prominent **stilt roots** which leave the bole up to 3-4 m above the ground; a dense rounded crown of large leaves. **BARK:** light brown-red-brown, scaly but generally smooth, vertical lines of lenticel dots, fissured with age. **LEAVES:** **bunched at the ends of branchlets, thin and stiff**, about 25 x 15 cm with 10-20 main lateral veins on each side, clear below, tip rounded, narrowed to a stalk about 5 cm. **FLOWERS:** male flower heads towards ends of branchlets, numerous **yellow-green flowers surrounded by golden-yellow bracts**, stalks about 1 cm, bracts 1 cm. **Female flowers** similar but with a **single flower** instead of the rounded head. **FRUIT:** **yellow, ovoid-round, about 2 cm diameter, 2-4** smooth green seeds inside.

Propagation: Seedlings (sow seed in pots), cuttings, wildings.

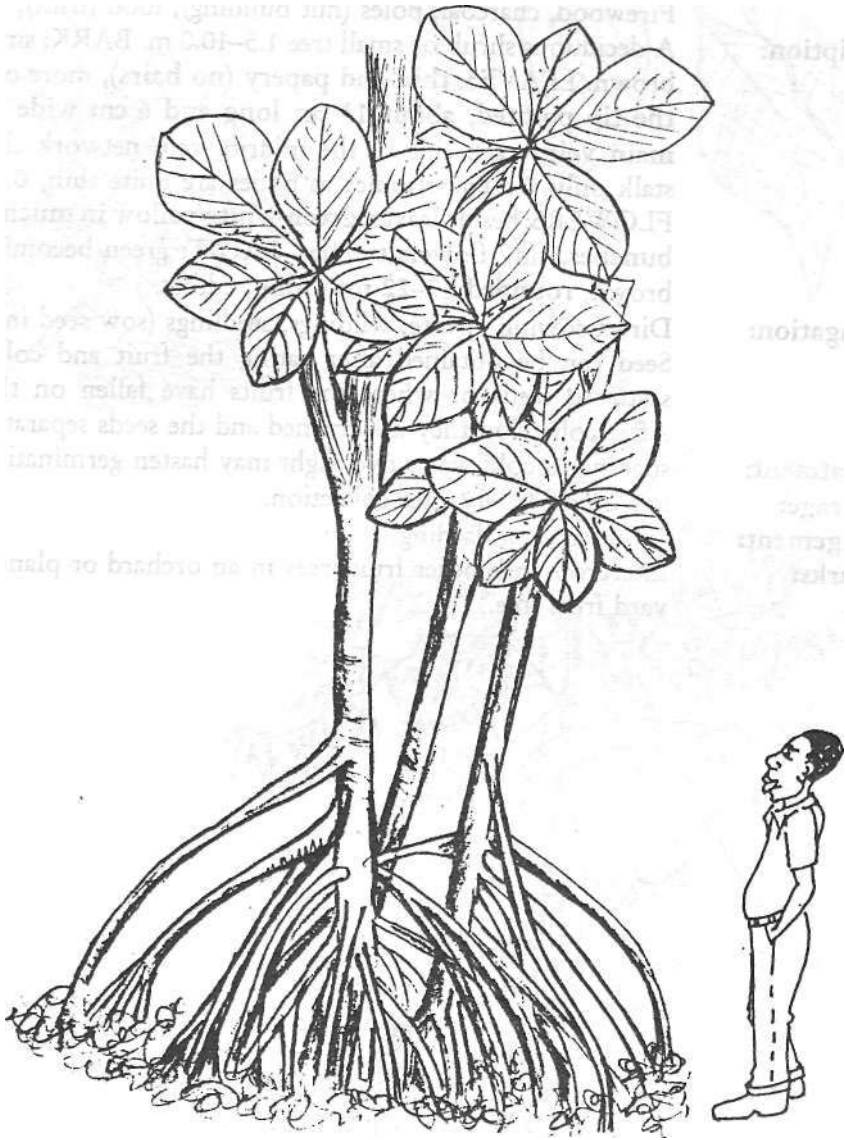
Seed: Collect the fruits when they are soft and ripe, mash and separate the seed. Dry gradually.

treatment: not necessary.

storage: does not store well, so use fresh seed.

Management: Coppicing, pollarding.

Remarks: This species regenerates naturally in the shade of other trees so initial shading of seedlings may be necessary. Uapaca grows well as a pure stand in swamps and as a shade tree on drained land so can play a role as a regulator of floods and water flow. The wood is pale red with a silver grain, durable, easy to work and suitable for carpentry, especially furniture. It could also be planted in coffee and cocoa plantations.



Vangueria apiculata

Rubiaceae

Indigenous

Common names: **Ateso:** Emalere **Luganda:** Mutugundo **Lugishu:** Shikomosi, kidangerere **Luo A:** Adengoye **Luo L:** Amalera **Lusoga:** Lutegankofu **Rukonjo:** Kasogo.

Ecology: A widespread species in evergreen forest, near water or in bushland, often on termite mounds and rocky outcrops, from Ethiopia to Zimbabwe. In Uganda it is widely distributed in secondary scrub, in open forest and in cultivated areas.

Uses: Firewood, charcoal, poles (hut building), food (fruit), utensils.

Description: A deciduous shrub or small tree 1.5-10.0 m. **BARK:** smooth grey-brown. **LEAVES:** **thin and papery (no hairs)**, more or less oval, **the tip pointed, about 13 cm long and 6 cm wide with 7-11 main veins** each side of the midrib, vein network clear below, stalk only 0.7 cm, stipules at nodes are quite thin, 0.8 cm long. **FLOWERS:** beside leaves, **green-white-yellow in much-branched bunches**, tiny flowers tubular. **FRUIT:** green becoming yellow-brown, **rounded 17-22 mm long**, edible.

Propagation: Direct sowing on site, wildings, seedlings (sow seed in pots).

Seed: Seed can be obtained after eating the fruit and collecting the scattered seeds or where the fruits have fallen on the ground. After collection they are crushed and the seeds separated, soaking in cold water overnight may hasten germination, sow immediately after collection.

treatment:

storage:

Management: Coppicing, pollarding.

Remarks: Intercrop with other fruit trees in an orchard or plant as a backyard fruit tree.



Indigenous

Common names: Lugishu: Shikomosi **Luo J:** Adezo.

Ecology: A common African wild fruit tree which grows in dry fringing forest, woodland, bushland and grassland with scattered trees throughout East Africa and also West, Central and Southern Africa, India and western Australia, 0-2,130 m..

Uses: Firewood, charcoal, timber (building), utensils, food (fruit), medicine (roots and bark).

Description: Usually multi-stemmed and deciduous, the tree may reach 15 m. **BARK:** pale to dark grey, fairly smooth or ridged. **LEAVES:** **large limp, glossy green, broadly oval to 20 cm**, usually smaller, opposite, the margin wavy, veins clear below; older leaves are almost hairless. **Leafy stipules on the young shoots.** **FLOWERS:** small, few in **hairy stalked heads, petals green-yellow.** **FRUIT:** rounded green to 5 cm across often in **bunches of 5-6 brown and edible when ripe containing a few hard seeds.** Each seed 1.5 cm long.

Propagation: Direct sowing at site, wildings, seedlings (sow seed in pots).

Seed: Seed can be obtained after eating the fruit and collecting the scattered seeds or where the fruits have fallen on the ground. After collection they are crushed and the seeds separated.

treatment: soaking in cold water overnight may hasten germination.

storage:

Management: Coppicing, pollarding.

Remarks: Cultivated for its fruit in tropical regions from Trinidad to Singapore. Trees are left when land is cleared for cultivation as the fruits have commercial value. The fruits are much liked by children in Uganda.



Vernonia amygdalina

Compositae

(Asteraceae)

Indigenous

Common names: **Luganda:** Mululuza **Lugbara:** Omululisi **Lugishu:** Muuluza, chichilusa, luluza **Luo A:** Labori **Luo L:** Okelo-okelo **Madi:** Kayakaya **Runyankore:** Mubirizi **Runyarwanda:** Mubirizi **Runyoro:** Kibirizi.

Ecology: A woody shrub of both East and West Africa growing in sub-humid wooded savannah or wetter highlands. In Uganda it grows in secondary scrub, forest edges, thickets and invades cultivated areas.

Uses: Firewood, food (leaves as vegetable), medicine (roots, bark, leaves), ornamental, mulch, soil conservation and improvement, live fence, toothbrushes (stems), stakes.

Description: A single-stemmed shrub to 3 m, sometimes a tree to 10 m with a wide bole. **BARK:** pale grey, rather rough, flaking later, branches brittle. **LEAVES:** ovate, up to 20 x 5 cm, usually 10 cm long, **tapering at both ends**, dark green above, **soft pale hairs below**, edge may be widely toothed. **FLOWERS:** white-green, each only 6 mm across, in dense branching **flattened heads to 30 cm across**, sweet scented in the evening. **FRUIT:** tiny seeds with stiff white hairs.

Propagation: Wildings, direct sowing on site. Thin after germination.

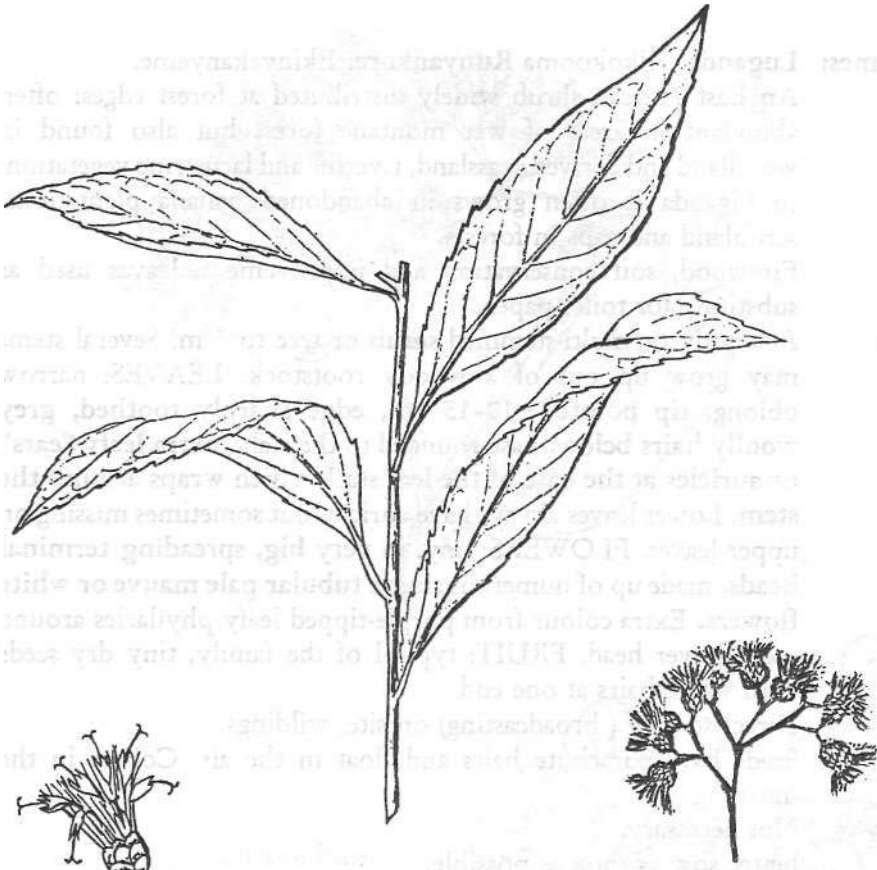
Seed: Seeds have parachute hairs and float in the air. Collect in the morning.

treatment: Not necessary.

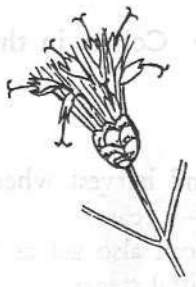
storage: better sow as soon as possible.

Management: Medium to fast growing; coppicing.

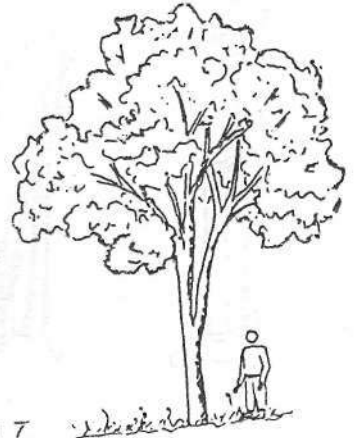
Remarks: The wood resists termite attack making the branches useful for fences, support for earthworks and stakes. The dried stems are light but strong. A useful tree for reclaiming degraded soils.



flower heads



seed



DAMTEW T.

Indigenous

Common names: **Luganda:** Kikokooma **Runyankore:** Ekinyekanyeme.

Ecology: An East African shrub widely distributed at forest edges; often abundant in areas of wet montane forest but also found in woodland and derived grassland, riverine and lacustrine vegetation. In Uganda it often grows in abandoned banana plantations, scrubland and gaps in forests.

Uses: Firewood, soil conservation and improvement, leaves used as substitute for toilet paper.

Description: A woody or multi-stemmed shrub or tree to 4 m. Several stems may grow up out of a woody rootstock. **LEAVES:** narrow oblong, **tip pointed, 10-15 cm, edge sharply toothed, grey woolly hairs below**, base rounded to the stalk, **extra leafy "ears" or auricles at the base of the leaf stalk which wraps around the stem.** Lower leaves always have auricles but sometimes missing on upper leaves. **FLOWERS:** tiny, in **very big, spreading terminal heads**, made up of numerous **single tubular pale mauve or white flowers.** Extra colour from purple-tipped leafy phyllaries around each flower head. **FRUIT:** typical of the family, tiny dry seeds with white hairs at one end.

Propagation: Direct sowing (broadcasting) on site, wildings.

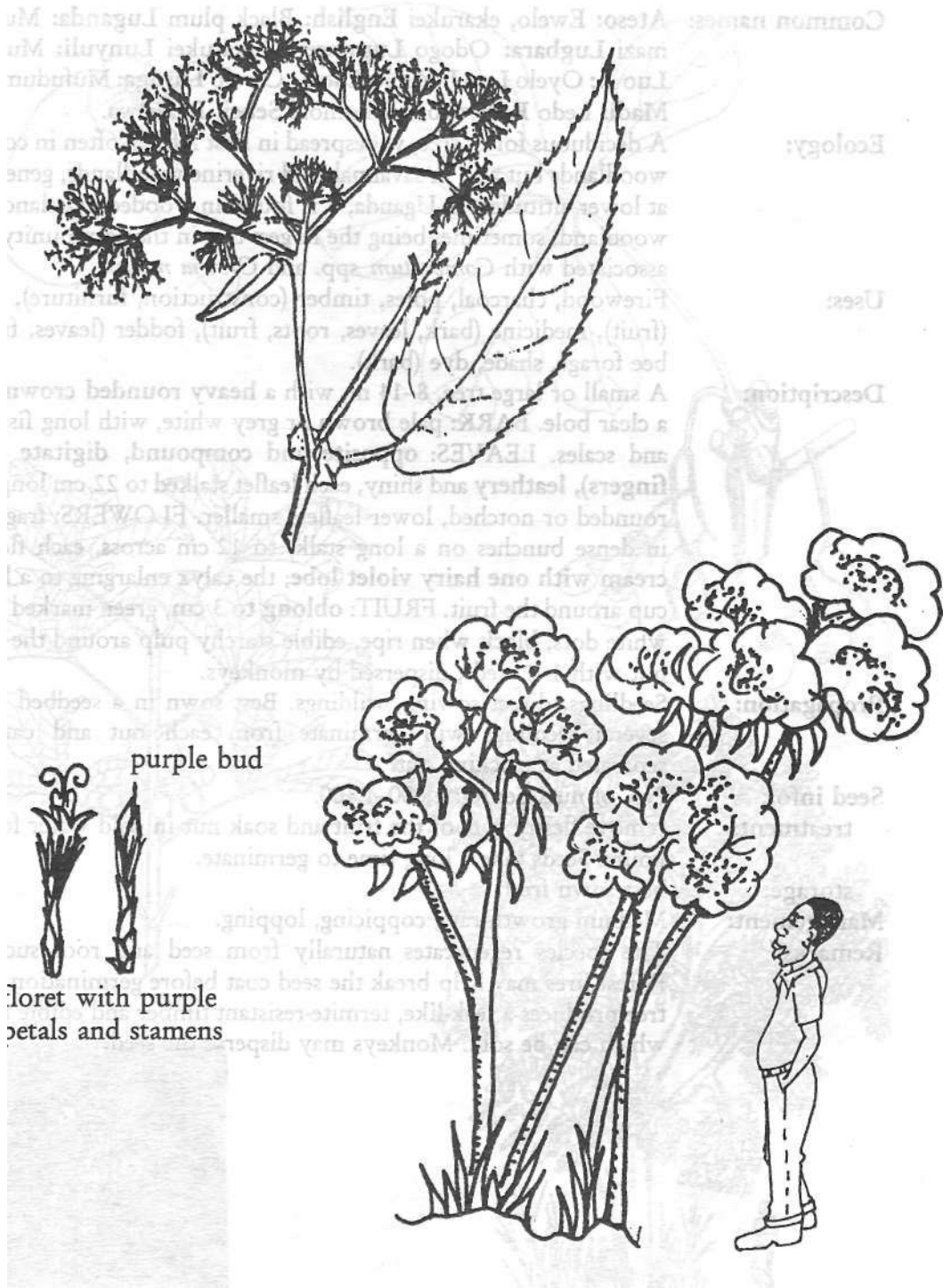
Seed: Seeds have parachute hairs and float in the air. Collect in the morning.

treatment: Not necessary.

storage: better sow as soon as possible.

Management: Once sown let the shrub grow into a bush and harvest when ready. Fast growing; will provide woodfuel in 3-5 years.

Remarks: Useful in reclaiming degraded soils. The bush can also act as a nurse tree for others that require shade in the initial stages.



flower head with purple petals and stamens

purple bud

Indigenous

Common names: **Ateso:** Ewelo, ekarukei **English:** Black plum **Luganda:** Munyamazi **Lugbara:** Odogo **Lugwere:** Mukarukei **Lunyuli:** Mufudu **Luo A:** Oyelo **Luo J:** Yuelo **Luo L:** Owelo **Lusoga:** Mufudumbwa **Madi:** Ledo **Runyoro:** Muhomozi **Sebei:** Bulgelwa.

Ecology: A deciduous forest tree, widespread in East Africa, often in coastal woodlands but also in savannah and riverine woodlands, generally at lower altitudes. In Uganda, it is found in wooded grassland and woodland, sometimes being the largest tree in the community and associated with *Combretum* spp. and *Grewia mollis*.

Uses: Firewood, charcoal, poles, timber (construction, furniture), food (fruit), medicine (bark, leaves, roots, fruit), fodder (leaves, fruit), bee forage, shade, dye (bark).

Description: A small or large tree, 8-14 m, with a **heavy rounded crown** and a clear bole. **BARK:** pale brown or grey white, with long fissures and scales. **LEAVES:** **opposite and compound, digitate (like fingers), leathery** and shiny, each leaflet stalked to 22 cm long, tip rounded or notched, lower leaflets smaller. **FLOWERS:** fragrant, in dense bunches on a long stalk, to 12 cm across, each flower **cream with one hairy violet lobe;** the calyx enlarging to a hairy cup around the fruit. **FRUIT:** **oblong to 3 cm**, green marked with white dots, **black** when ripe, edible starchy pulp around the hard nut with 1-4 seeds, dispersed by monkeys.

Propagation: Seedlings, direct sowing, wildings. Best sown in a seedbed since several seedlings will germinate from each nut and can be separated at pricking out.

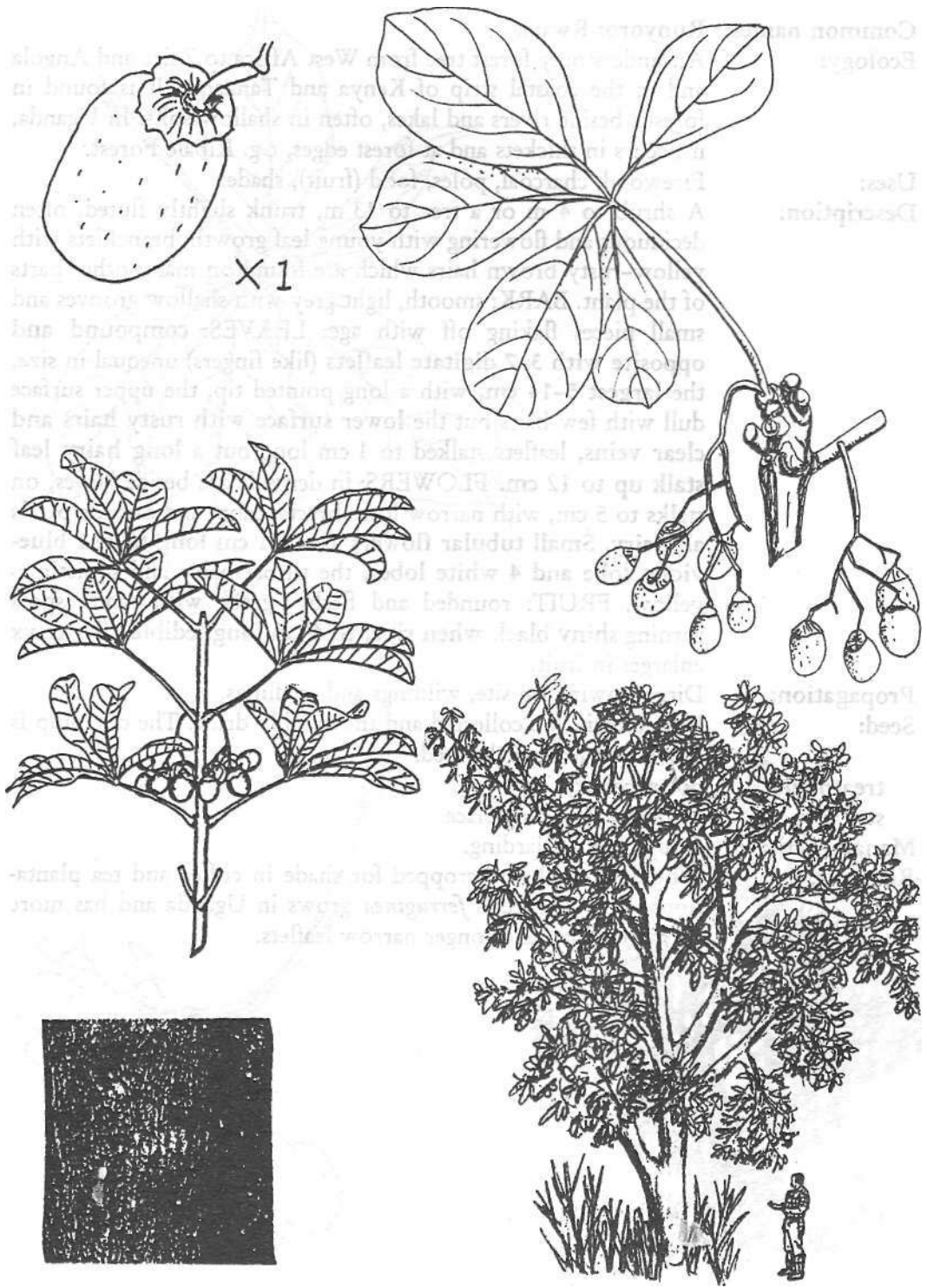
Seed info.: No. of nuts per kg: 1,000-1,100.

treatment: remove fleshy part of the fruit and soak nut in cold water for 24 hours. Seeds take a long time to germinate.

storage: best sown fresh.

Management: Medium growth rate; coppicing, lopping.

Remarks: The species regenerates naturally from seed and root suckers. Forest fires may help break the seed coat before germination. The tree produces a teak-like, termite-resistant timber and edible fruits which can be sold. Monkeys may disperse the seed..



Indigenous

Common names: Runyoro: Rwata.

Ecology: An understory forest tree from West Africa to Zaire and Angola and in the coastal strip of Kenya and Tanzania. It is found in forests, beside rivers and lakes, often in shallow soils. In Uganda, it occurs in thickets and at forest edges, e.g. Kibale Forest.

Uses: Firewood, charcoal, poles, food (fruit), shade.

Description: A shrub to 4 m or a tree to 13 m, trunk slightly fluted, often deciduous and flowering with young leaf growth; branchlets with yellow-rusty brown hairs which are found on many other parts of the plant. **BARK:** smooth, light grey with shallow grooves and small pieces flaking off with age. **LEAVES: compound and opposite with 3-7 digitate leaflets** (like fingers) unequal in size, the **largest 5-14 cm**, with a long pointed tip, the upper surface dull with few hairs but the **lower surface with rusty hairs and clear veins**, leaflets stalked to 1 cm long but a **long hairy leaf stalk up to 12 cm**. **FLOWERS:** in dense heads beside leaves, on stalks to 5 cm, with narrow leafy bracts, calyx and outside petals **all hairy. Small tubular flowers about 1 cm long have 1 blue-violet lobe and 4 white lobes**, the throat hairy and sometimes yellow. **FRUIT:** rounded and fleshy, green with white spots turning **shiny black when ripe, to 4 cm long, edible**. The calyx enlarges in fruit.

Propagation: Direct sowing on site, wildings and seedlings.

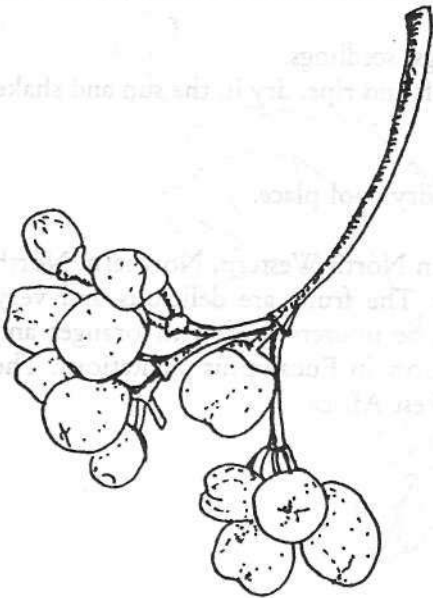
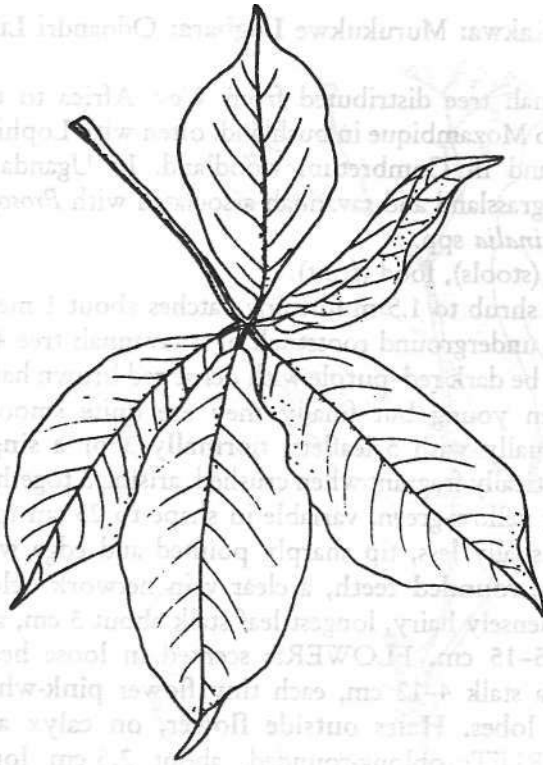
Seed: Whole fruits are collected and thoroughly dried. The dry pulp is shaken off leaving the seed,

treatment: not necessary,

storage: store in a dry cool place.

Management: Coppicing, pollarding.

Remarks: Would do well intercropped for shade in coffee and tea plantations. The subspecies *ferruginea* grows in Uganda and has more spreading hairs and longer narrow leaflets.



Indigenous

Common names: **Ateso:** Ekarukei **Kakwa:** Murukukwe **Lugbara:** Odoandri **Luo:** Oyelo gwok.

Ecology: A shrubby savannah tree distributed from West Africa to the Sudan and south to Mozambique in bushland, often with *Lophira*, *Butyrospermum* and in *Combretum* woodland. In Uganda it grows in wooded grassland and savannah associated with *Prosopis africana* and *Terminalia* spp.

Uses: Firewood, timber (stools), food (fruit).

Description: A woody herb or shrub to 1.5 m forming patches about 1 metre wide from a large underground rootstock or a savannah tree 4-7 m. The stems may be dark red-purple with dense red-brown hairs, even woolly when young but finally they are quite smooth. **LEAVES:** (not usually with 5 leaflets) **normally 3 or a single leaflet**, characteristically fragrant when crushed, arising 3 together, fairly stiff, drying yellow-green, variable in shape to 25 cm long and 1 cm wide, usually less, tip sharply pointed and edge with **shallow but large rounded teeth**, a clear vein network below which is usually densely hairy, longest leaf stalk about 3 cm, and **main leaf stalk 5-15 cm**. **FLOWERS:** scented in loose heads beside leaves on a stalk 4-12 cm, each tiny flower **pink-white with violet-blue lobes**. **Hairs outside flower, on calyx and flower stalks**. **FRUIT:** oblong-rounded, about **2.5 cm long**, 1-2 cm across, shiny green with white spots **ripening black, containing 3 seeds, calyx cup enlarged and toothed**, about 1 cm across.

Propagation: Direct sowing on site; wildings, seedlings.

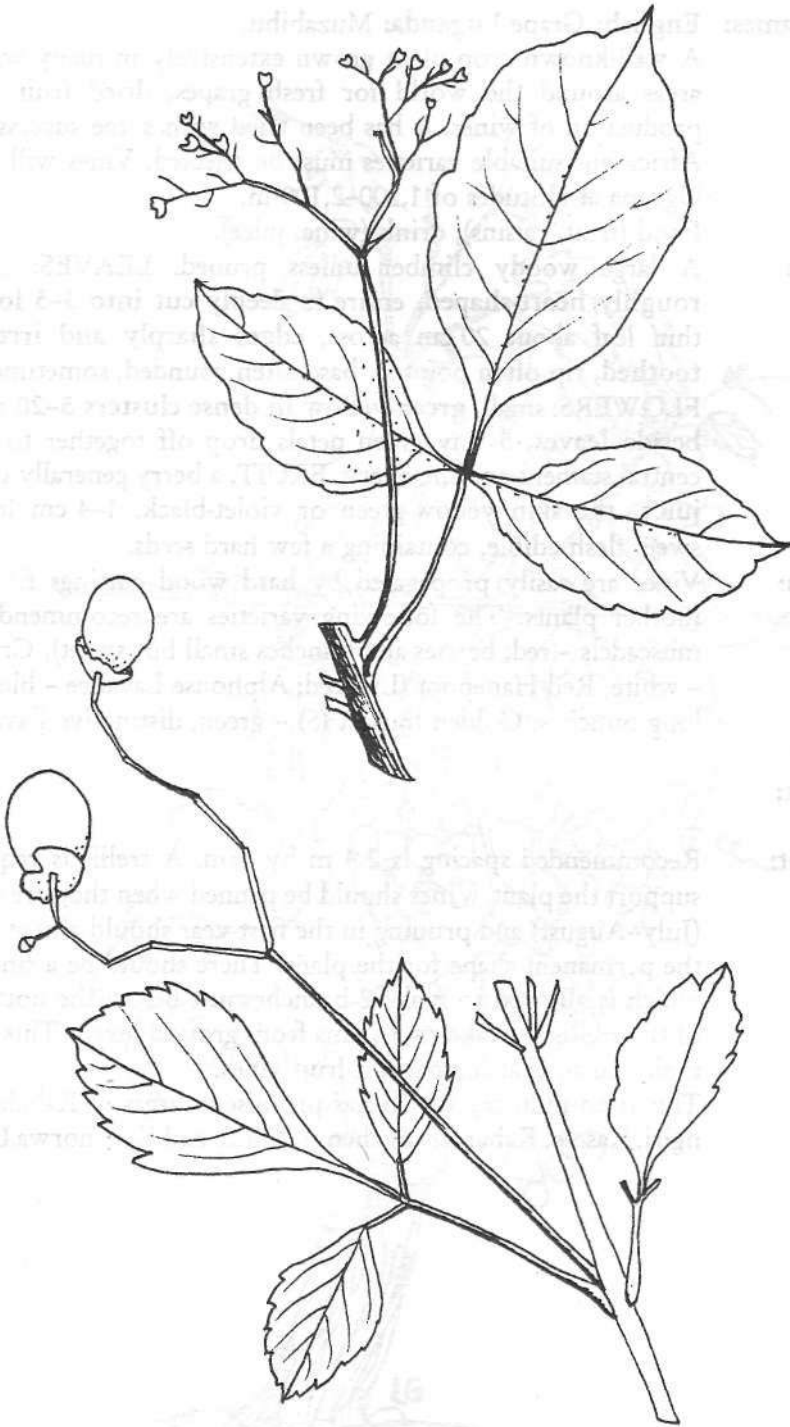
Seed: Collect fruit when they are soft and ripe, dry in the sun and shake off the dry pulp.

treatment: not necessary.

storage: dried fruit can be stored in a dry cool place.

Management: Coppicing, pollarding.

Remarks: The species grows well only in North Western, Northern, North Eastern and Eastern Regions. The fruits are delicious and very much liked. These trees can be intercropped with oranges and mangoes and they can even grow in Eucalyptus plantations. The bark is used medicinally in West Africa.



Western India, Mediterranean

Common names: **English:** Grape **Luganda:** Muzabibu.

Ecology: A well-known crop plant grown extensively in many warm dry areas around the world for fresh grapes, dried fruit and the production of wines. It has been tried with some success in East Africa but suitable varieties must be selected. Vines will grow in Uganda at altitudes of 1,200-2,100 m.

Uses: Food (fruit, raisins), drink (wine, juice).

Description: A large woody climber unless pruned. **LEAVES:** alternate, **roughly heart-shaped**, entire to **deeply cut into 3-5 lobes**, the thin leaf about 20 cm across, **edges sharply and irregularly toothed**, tip often pointed, base often rounded, sometimes hairy. **FLOWERS:** small, **green-yellow in dense clusters 5-20 cm long beside leaves**, 5 tiny green petals drop off together to show 5 central stamens and the ovary. **FRUIT:** a berry generally **oval and juicy**, the skin yellow-green or violet-black, 1-4 cm long, the sweet flesh edible, containing a few hard seeds.

Propagation: Vines are easily propagated by hard wood cuttings from good mother plants. The following varieties are recommended: Red muscadels - red, berries and bunches small but sweet); Crystal (L) - white; Red Hanepoot (L) - red; Alphonse Lavallee - black, very long bunches; Golden muscat (S) - green, distinctive flavour.

Seed:

treatment:

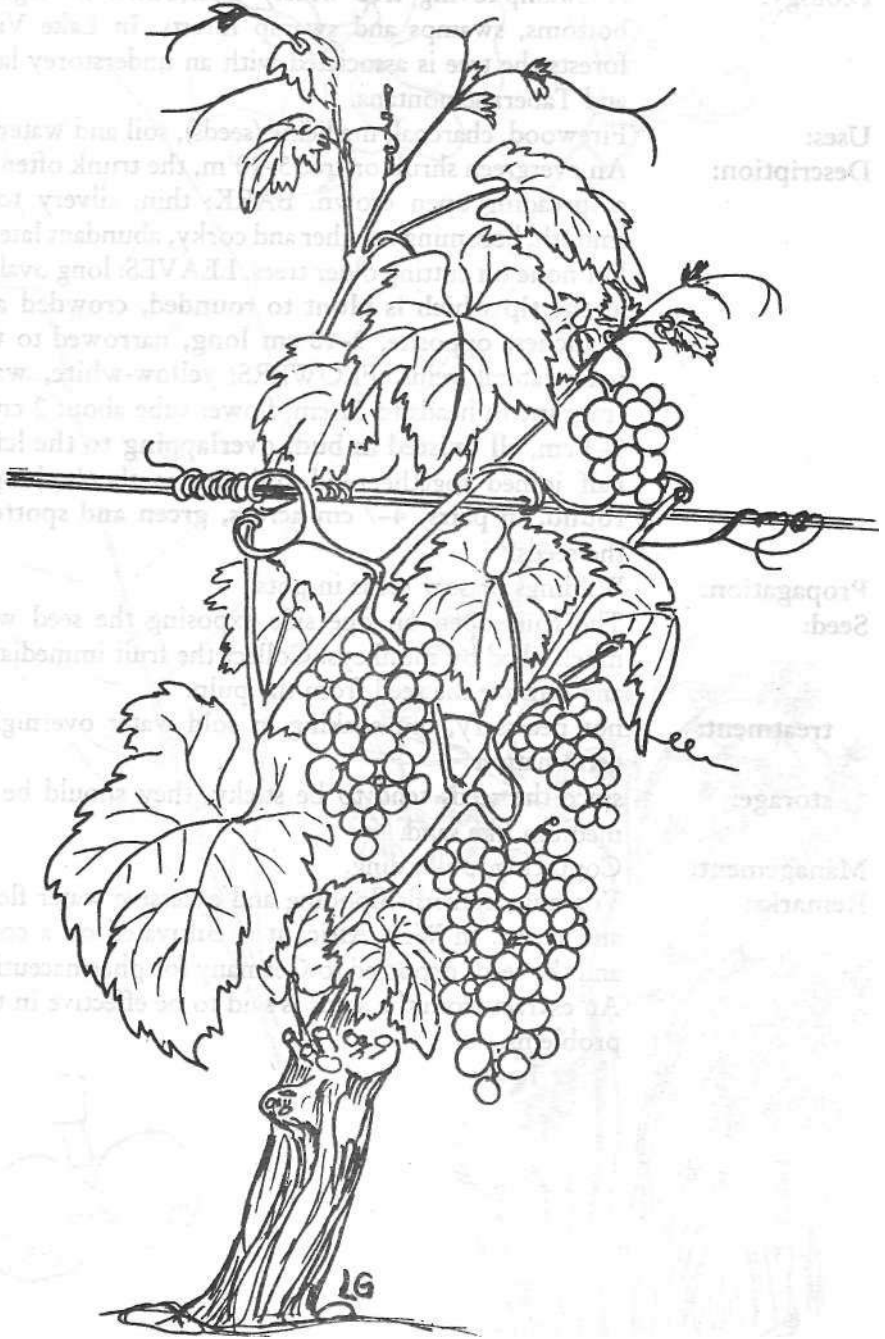
storage:

Management:

Recommended spacing is 2.4 m by 3 m. A trellis is required to support the plant. Vines should be pruned when they are dormant (July-August) and pruning in the first year should aim at forming the permanent shape for the plant. There should be a single stem which is allowed to make 2 branches just below the bottom line of the trellis (or take two stems from ground level). This practice is similar to that for passion fruit vines.

Remarks:

This is an industry which has promise in areas of Kabale, Rukungiri, Kasese, Kabarole, Bushenyi, Mbale and Kapchorwa Districts.



Indigenous

Common names: **Luganda:** Musanvuma, munywamazzi **Luo:** Adhiang **Runyan-kore:** Entoma.

Ecology: A swamp-loving tree widely distributed in Uganda in valley bottoms, swamps and swamp forests. In Lake Victoria swamp forests the tree is associated with an understory layer of *Raphia* and *Tabernaemontana*.

Uses: Firewood, charcoal, medicine (seeds), soil and water conservation.

Description: An evergreen shrub or tree 5-10 m, the trunk often crooked with a spreading open crown. **BARK:** thin, silvery to pale brown, smooth, becoming rougher and corky, abundant latex when young but none on cutting older trees. **LEAVES:** long oval, shiny, **wider at the tip which is blunt to rounded, crowded at the ends of branches**, opposite, **9-10 cm long**, narrowed to the base, 6-14 main lateral veins. **FLOWERS:** **yellow-white, waxy and very fragrant** in heads to 21 cm, flower tube about 2 cm with 5 lobes 2-3 cm, **all twisted in bud, overlapping to the left**, the 5 sepals half joined together and splitting as the bud opens. **FRUIT:** round, **in pairs, 4-7 cm across, green and spotted**, containing the seeds.

Propagation: Wildings or sow seeds in pots.

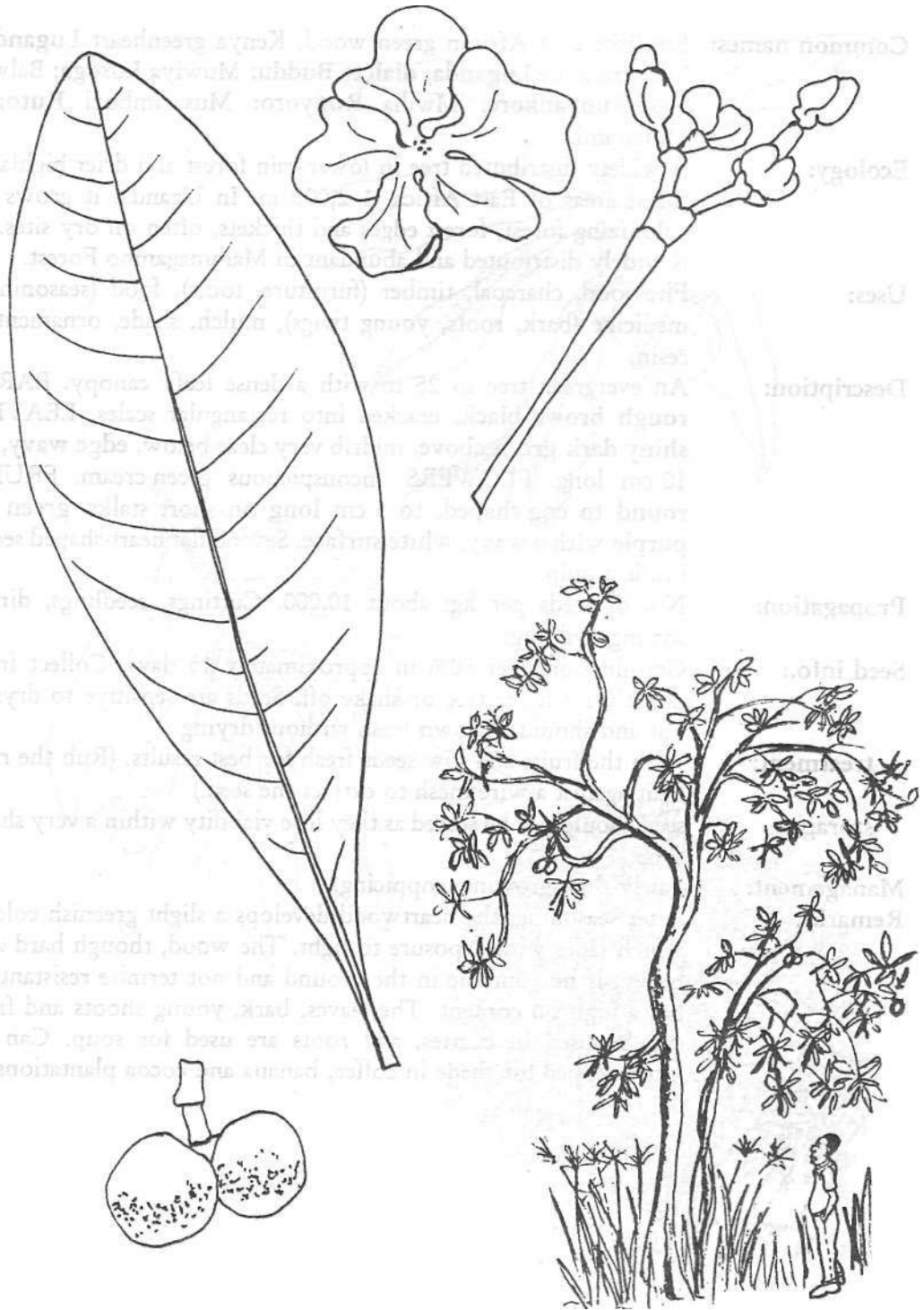
Seed: The fruit open on one side exposing the seed which are very much liked by monkeys. Collect the fruit immediately they open and remove the seed from the pulp. ^

treatment: not necessary, but soaking in cold water overnight may hasten germination.

storage: since the seeds tend to be sticky, they should be stored with a medium like sand.

Management: Coppicing, pollarding.

Remarks: Voacanga controls flooding and excessive water flows in swamps and rivers. In West Africa it is cultivated on a commercial scale and the seeds exported to Germany for pharmaceutical processing. An extract from the seeds is said to be effective in treating cardiac problems.



Indigenous

Common names: English: East African green wood, Kenya greenheart **Luganda:** Mukuzanume Luganda, dialect Buddu: Muwiya **Lusoga:** Balwegira Runyankore: Mwiha **Runyoro:** Musizambuzi **Rutoro:** Muharami,

Ecology: A widely distributed tree in lower rain forest and drier highland forest areas of East Africa, 1-2,000 m. In Uganda, it grows in colonizing forest, forest edges and thickets, often on dry sites. It is widely distributed and abundant in Maramagambo Forest.

Uses: Firewood, charcoal, timber (furniture, tools), food (seasoning), medicine (bark, roots, young twigs), mulch, shade, ornamental, resin.

Description: An evergreen tree to 25 m with a dense leafy canopy. **BARK:** rough brown-black, cracked into rectangular scales. **LEAVES:** shiny dark green above, midrib very clear below, **edge wavy**, to 10 cm long. **FLOWERS:** inconspicuous green-cream. **FRUIT:** round to egg-shaped, **to 5 cm long** on short stalks, **green to purple** with a waxy, white surface. Several flat heart-shaped seeds inside a pulp.

Propagation: No. of seeds per kg: about 10,000. Cuttings, seedlings, direct sowing, wildings.

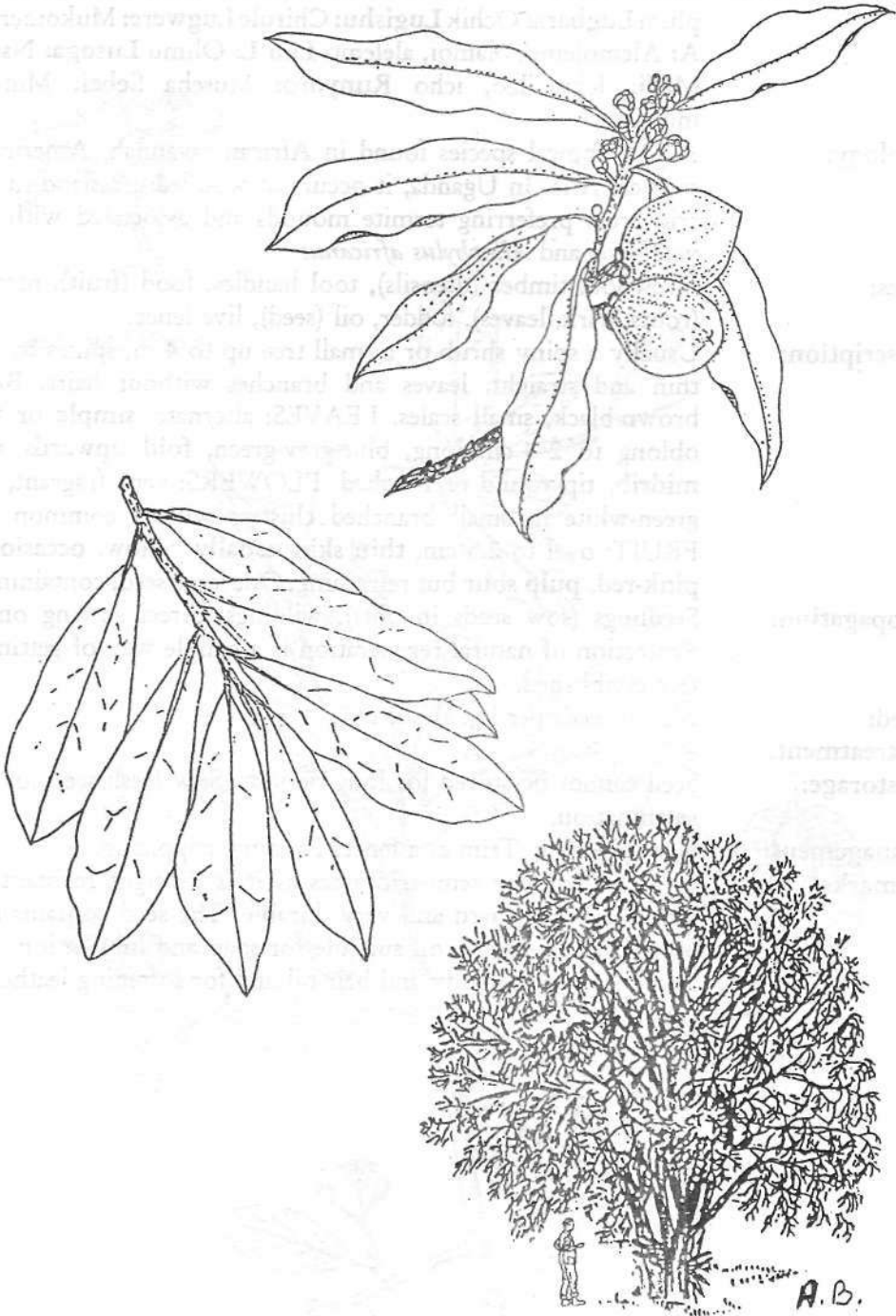
Seed info.: Germination over 80% in approximately 15 days. Collect fruit directly from the tree or shake off. Seeds are sensitive to drying out and should be sown fresh without drying.

treatment: wash the fruits and sow seeds fresh for best results. (Rub the ripe fruit against a wire mesh to extract the seed.)

storage: seed should not be stored as they lose viability within a very short time.

Management: Fairly slow growing; coppicing.

Remarks: After seasoning, the heartwood develops a slight greenish colour which fades with exposure to light. The wood, though hard and heavy, is not durable in the ground and not termite resistant. It has a high oil content. The leaves, bark, young shoots and fruit can be used in curries, and roots are used for soup. Can be intercropped for shade in coffee, banana and cocoa plantations.



Indigenous

Common names: **Ateso:** Elamai **Ateso K:** Alamai **Luganda:** Museka **English:** Wild plum **Lugbara:** Ochik **Lugishu:** Chirule **Lugwere:** Mukomeri **Luo A:** Alemolemo, olamoi, alelemo **Luo L:** Olimu **Lusoga:** Nsimwa **Madi:** Ichu ilzo, icho **Runyoro:** Museha **Sebei:** Mutoiwa, muteiwa.

Ecology: A pan-tropical species found in African savannah, America and tropical Asia. In Uganda, it occurs in wooded grassland in semi-arid areas preferring termite mounds and associated with *Rhus natalensis* and *Allophylus africanus*.

Uses: Firewood, timber (utensils), tool handles, food (fruit), medicine (roots, bark, leaves), fodder, oil (seed), live fence.

Description: Usually a spiny shrub or a small tree up to 4 m, spines to 1 cm, thin and straight; leaves and branches without hairs. **BARK:** brown-black, small scales. **LEAVES:** alternate, **simple or tufts**, oblong to 2-4 cm long, blue-grey-green, **fold upwards along midrib**, tip round or notched. **FLOWERS:** very fragrant, small green-white in small branched clusters with a common stalk. **FRUIT:** oval to 2.5 cm, **thin skin usually yellow, occasionally pink-red, pulp sour** but refreshing, One large seed, containing oil.

Propagation: Seedlings (sow seeds in pots), wildings, direct sowing on site. Protection of natural regeneration is a simple way of getting the tree established.

Seed: No. of seeds per kg: about 660.

treatment:

storage:

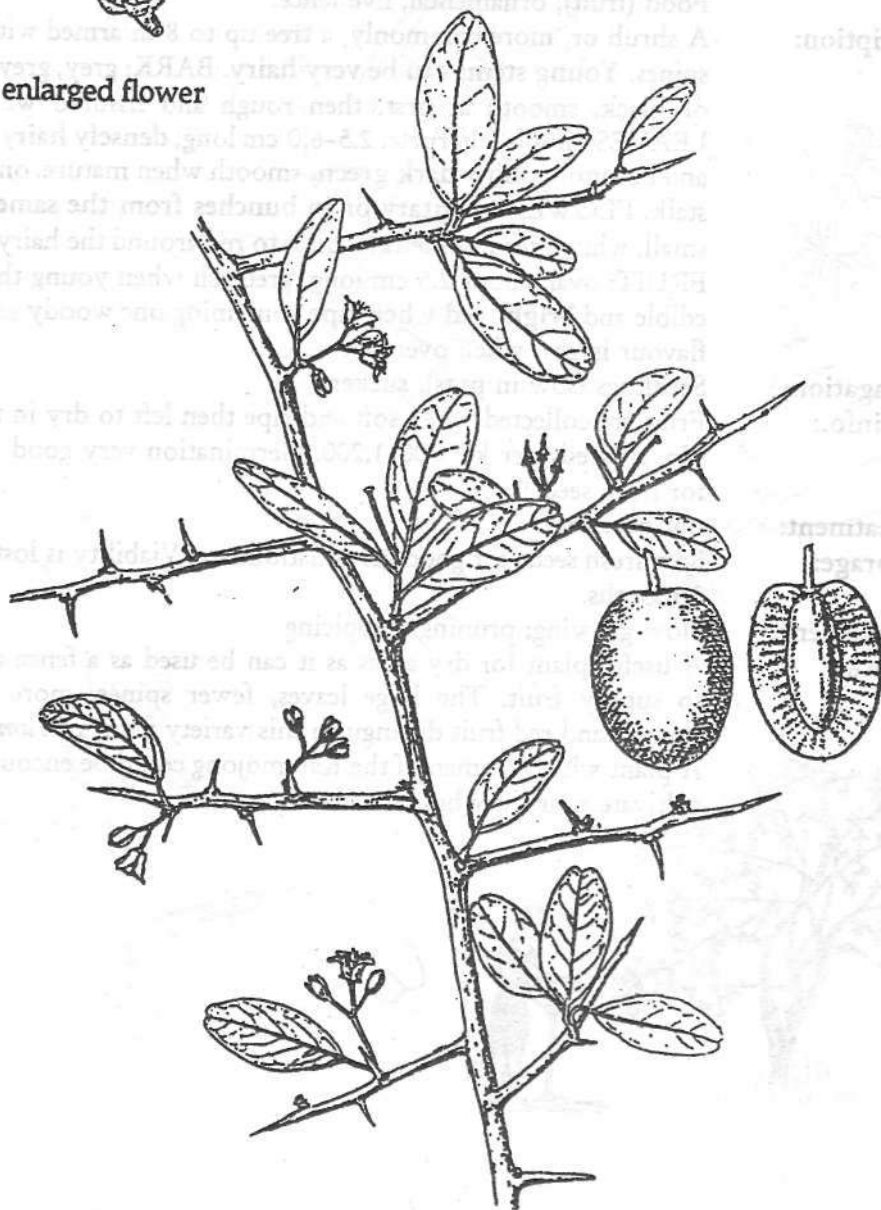
Seed cannot be stored for long periods. Sow fresh seed for good germination.

Management: Slow growing. Trim as a fence. Pruning, coppicing.

Remarks: A useful tree for semi-arid areas as it is drought resistant. The wood is heavy, hard and very durable. The seed contains up to 60% of a non-drying oil suitable for soap and lubrication. It has also been used as body and hair oil and for softening leather.



enlarged flower



Indigenous

Common names:

Ecology:

This small tree grows in woodlands and wooded grasslands, especially on rocky hillsides and termite mounds, 5-2,000 m. It is found in Kenya, Tanzania, Malawi, Mozambique and southwards to South Africa. In Uganda it grows in dry scrub or bush associated with *Acacia hockii* and around termite mounds. It is found in the scrub of Lake Mburo National Park and in North Eastern Region.

Uses:

Food (fruit), ornamental, live fence.

Description:

A shrub or, more commonly, a tree up to 8 m armed with small spines. **Young stems can be very hairy.** BARK: grey, grey-brown or black, smooth at first, then rough and fissured when old. LEAVES: simple, alternate, 2.5-6.0 cm long, **densely hairy at first** and becoming **shiny dark green**, smooth when mature, on a short stalk. FLOWERS: **solitary or in bunches from the same point**, small, white-green, sometimes pink to red around the hairy throat. FRUIT: oval, about 2.5 cm long, greenish when young then soft, edible and **bright red when ripe** containing one woody seed. The flavour is best when over-ripe.

Propagation:

Seedlings (sow in pots), suckers.

Seed info.:

Fruit are collected when soft and ripe then left to dry in the sun. No. of seeds per kg: 700-1,200. Germination very good and fast for fresh seed.

treatment:

not necessary.

storage:

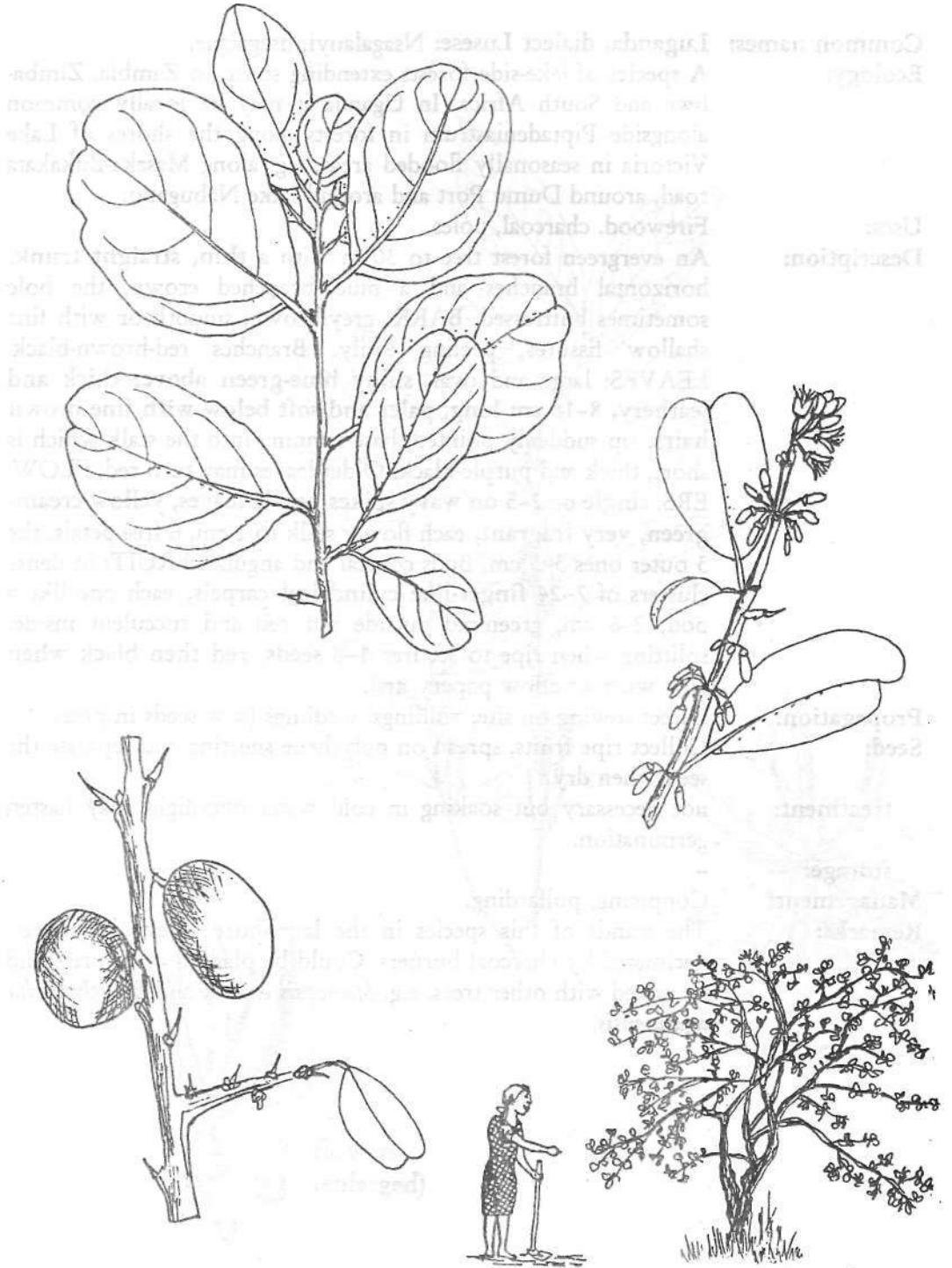
Sow fresh seeds for good germination rate. Viability is lost within 3 months.

Management:

Slow growing; pruning, coppicing.

Remarks:

A useful plant for dry areas as it can be used as a fence and also to supply fruit. The large leaves, fewer spines, more solitary flowers and red fruit distinguish this variety from var. *americana*. A plant which women of the Karamojong could be encouraged to cultivate near their homesteads.



Xylopia eminii (X. aethiopica)

Annonaceae

Indigenous

Common names: **Luganda, dialect Lusese:** Nsagalanyi, nsagalane.

Ecology: A species of lake-side forests extending south to Zambia, Zimbabwe and South Africa. In Uganda it may be locally common alongside *Piptadeniastrum* in forests along the shores of Lake Victoria in seasonally flooded areas, e.g. along Masaka-Bukakata road, around Dumu Port and around Lake Nabugabo.

Uses: Firewood, charcoal, poles.

Description: An evergreen forest tree to 30 m with a **thin, straight trunk**, horizontal branches and a much-branched crown, the bole sometimes buttressed. **BARK:** grey-brown, smooth or with fine shallow fissures, peeling easily. Branches red-brown-black. **LEAVES:** large and oval, **shiny blue-green above, thick and leathery, 8-16 cm long, paler and soft below with fine brown hairs**, tip suddenly pointed, base running into the stalk which is short, thick and purple-black. Older leaves may turn red. **FLOWERS:** **single or 2-5 on wavy spikes beside leaves, yellow-cream-green, very fragrant**, each flower stalk to 1 cm, 6 free petals, the 3 outer ones 3-5 cm. Buds conical and angular. **FRUIT:** in dense clusters of **7-24 finger-like cylindrical carpels**, each one like a pod, 2-6 cm, green-red outside but red and succulent inside, splitting when ripe to set free **1-8 seeds, red then black when ripe with a yellow papery aril**.

Propagation: Direct sowing on site; wildings, seedlings (sow seeds in pots).

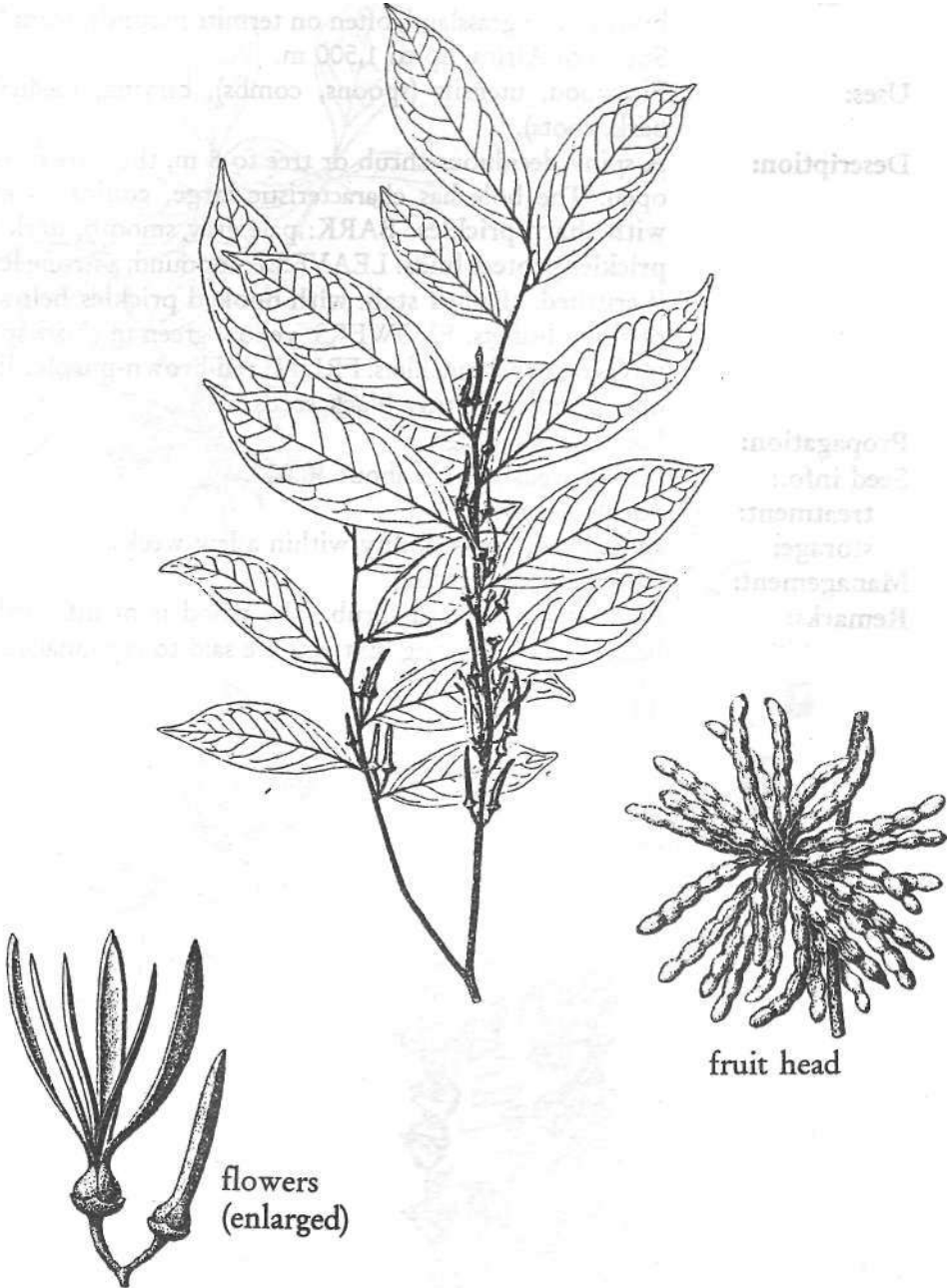
Seed: Collect ripe fruits, spread on polythene sheeting and separate the seed when dry.

treatment: not necessary but soaking in cold water overnight may hasten germination.

storage:

Management: Coppicing, pollarding.

Remarks: The stands of this species in the lake-shore forests have been decimated by charcoal burners. Could be planted as a pure stand or mixed with other trees, e.g. *Maesopsis eminii* and *Beilschmiedia ugandensis*.



Zanthoxylum chalybeum

Rutaceae

Indigenous

Common names: Ateso: Eusuk Luganda: Ntaleyedungu Lugwere: Musuku Luo A: Kichuk, roki.

Ecology: A deciduous tree of medium to low altitudes in dry woodland, bushland or grassland, often on termite mounds, from Ethiopia to Southern Africa, up to 1,500 m.

Uses: Firewood, utensils (spoons, combs), carving, medicine (leaves, bark, roots).

Description: A spiny deciduous shrub or tree to 8 m, the crown rounded but open. The bole has characteristic large, conical woody knobs with sharp prickles. **BARK:** pale grey, smooth, dark scales and prickles protect buds. **LEAVES:** compound, a strong lemon **smell** if crushed, the leaf **stalk with** hooked prickles below, 6-9 pairs of shiny leaflets. **FLOWERS:** yellow-green in short sprays below leaves on new branchlets. **FRUIT:** red-brown-purple, like berries, open to release shiny **black seeds**.

Propagation: Seedlings, wildings.

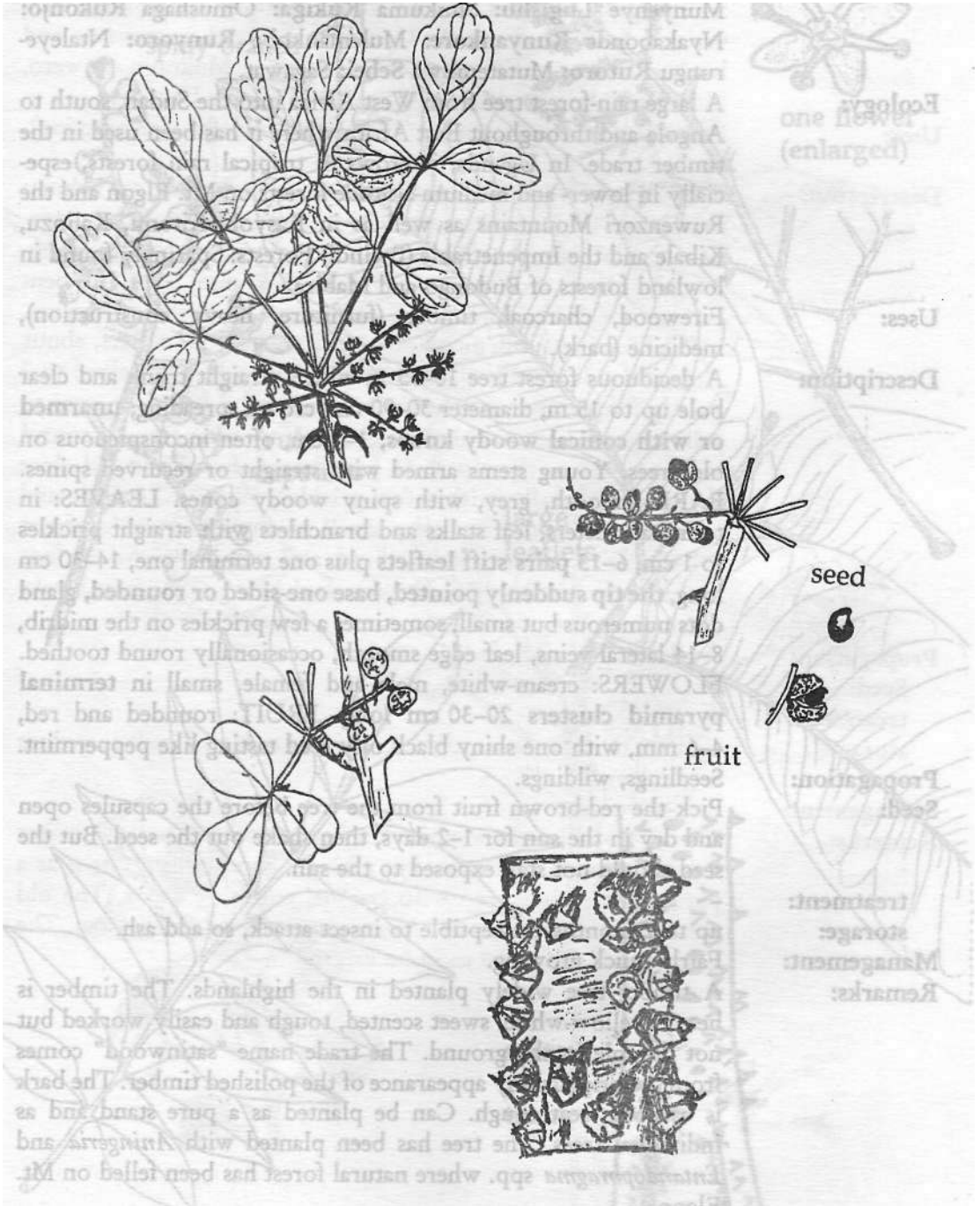
Seed info.: No. of seeds per kg: about 30,000.

treatment: not necessary.

storage: short lived; lose viability within a few weeks.

Management: Coppicing, pollarding.

Remarks: Plant as a back-yard shrub. The wood is of little value but has been used for carving. Extracts are said to cure malaria.



Ecology
and
(pedagogy)

Uses:
Description:

seed

fruit

Propagation:
Seed:

treatment:
storage:
Management:
Remarks:

Zanthoxylum gillettii (Fagara macrophylla)

Rutaceae

Indigenous

Trade name: Olon, munyenye.

Common names: **English:** East African satinwood **Kwamba:** Kitututie **Luganda:** Munyenye **Lugishu:** Shukuma **Rukiga:** Omushaga **Rukonjo:** Nyakabonde **Runyankore:** Mulemankobe **Runyoro:** Ntaleye-rungu **Rutoro:** Mutatembwa **Sebei:** Sagawat.

Ecology: A large rain-forest tree from West Africa into the Sudan, south to Angola and throughout East Africa where it has been used in the timber trade. In Uganda, it grows in tropical rain forests, especially in lower- and medium-altitude forests on Mt. Elgon and the Ruwenzori Mountains as well as in Kasyoha-Kitomi, Kalinzu, Kibale and the Impenetrable (Bwindi) Forests. Sparingly found in lowland forests of Budongo and Mabira.

Uses: Firewood, charcoal, timber (furniture, heavy construction), medicine (bark).

Description: A deciduous forest tree 10-35 m with a straight trunk and clear bole up to 15 m, diameter 30-90 cm, crown spreading; **unarmed or with conical woody knobs**, 1-3 cm, often inconspicuous on old trees. Young stems armed with straight or recurved spines. **BARK:** smooth, grey, with spiny woody cones. **LEAVES:** in terminal clusters, leaf stalks and branchlets with straight prickles to 1 cm, **6-13 pairs stiff leaflets** plus one terminal one, 14-30 cm long, **the tip suddenly pointed, base one-sided or rounded**, gland dots numerous but small, sometimes a few prickles on the midrib, 8-14 lateral veins, leaf edge smooth, occasionally round toothed. **FLOWERS:** cream-white, male and female, small in **terminal pyramid clusters 20-30 cm long**. **FRUIT:** rounded and red, 4-6 mm, with one shiny black oily **seed** tasting like peppermint. **Propagation:** Seedlings, wildings.

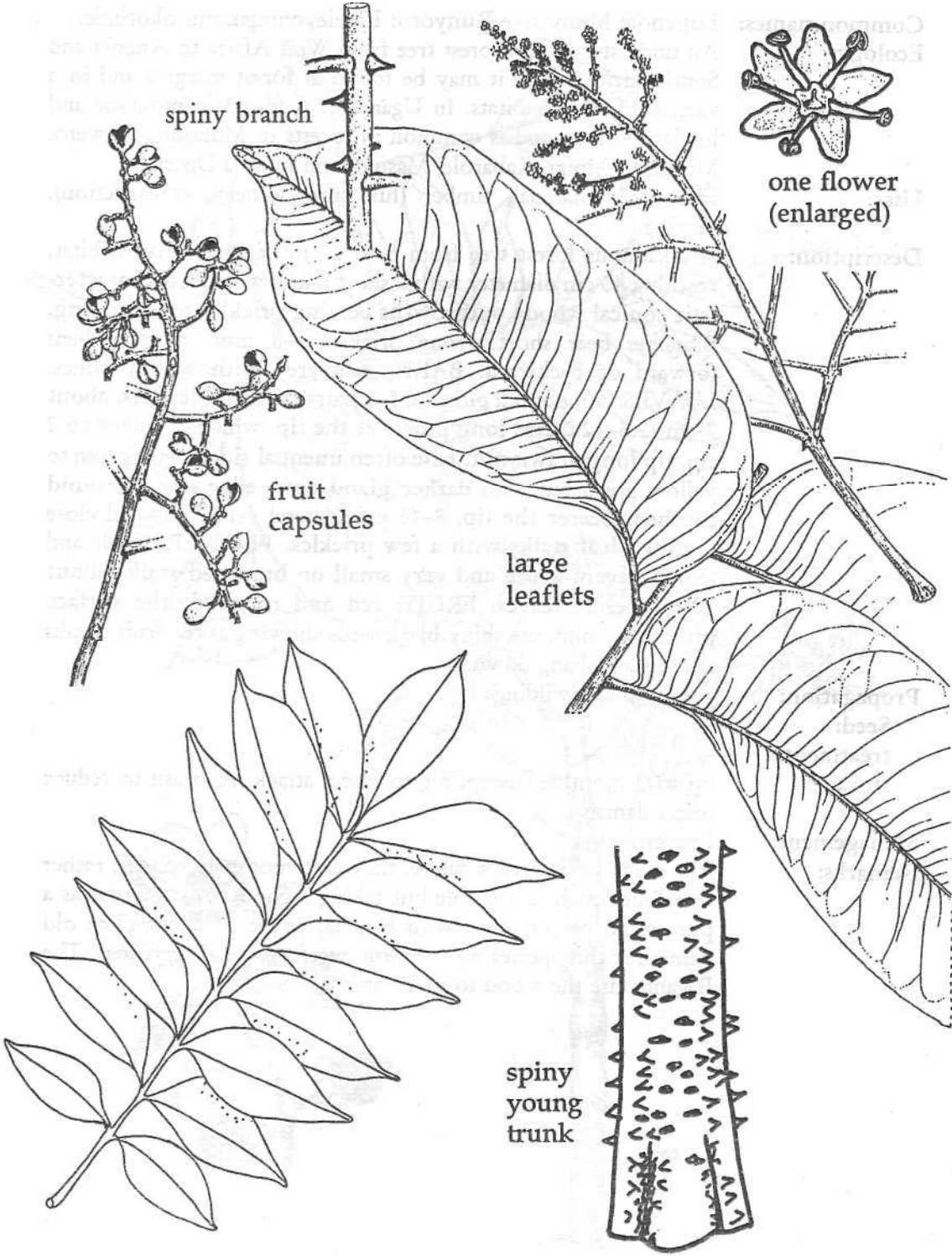
Seed: Pick the red-brown fruit from the tree before the capsules open and dry in the sun for 1-2 days, then shake out the seed. But the seed should not stay exposed to the sun.

treatment:

storage: up to 2 months. Susceptible to insect attack, so add ash.

Management: Fairly quick growing.

Remarks: A timber tree widely planted in the highlands. The timber is heavy, yellow-white, sweet scented, tough and easily worked but not durable in the ground. The trade name "satinwood" comes from the bright shiny appearance of the polished timber. The bark is used to treat cough. Can be planted as a pure stand and as individual trees. The tree has been planted with *Aningeria* and *Entandophragma* spp. where natural forest has been felled on Mt. Elgon.



Indigenous

Common names: **Luganda:** Munyenye **Runyoro:** Entaleyerungu, musokotinde.

Ecology: An understory rain forest tree from West Africa to Angola and South Africa where it may be found at forest margins and in a variety of drier habitats. In Uganda it is found in montane and lowland forests and is common in forests in Mukonjo, Luwero, Mubende, Mpigi, Kabarole, Masindi and Hoima Districts.

Uses: Firewood, charcoal, timber (furniture, joinery, construction), carving.

Description: A deciduous forest tree from 5 to 20 m depending on habitat; reaching 40 cm diameter with a short trunk which has **characteristic conical** woody **outgrowths bearing** prickles to **6 cm** long. Branches bear short strong prickles 3-8 mm, straight, bent forward or backward. **BARK:** pale grey with woody cones. **LEAVES:** compound, pinnate, **4-8 pairs stiff** oval leaflets, about **7 cm (2.5-12.0 cm) long plus 1 at the tip**, which is stalked to 2 cm, **tip long drawn out, base often unequal** sided, dark green to yellow green but with darker gland dots, edge fine to round **toothed, nearer the tip**, 8-16 pairs lateral veins, line and close together, **leaf stalks with a few** prickles. **FLOWERS:** male and female, cream-white **and very** small on branched stalks about 30 cm beside leaves. **FRUIT:** red and rounded, the surface pitted, 5-7 mm, the shiny black seeds showing as the fruit breaks open; stalks hang down.

Propagation: Seedlings and wildings.

Seed:

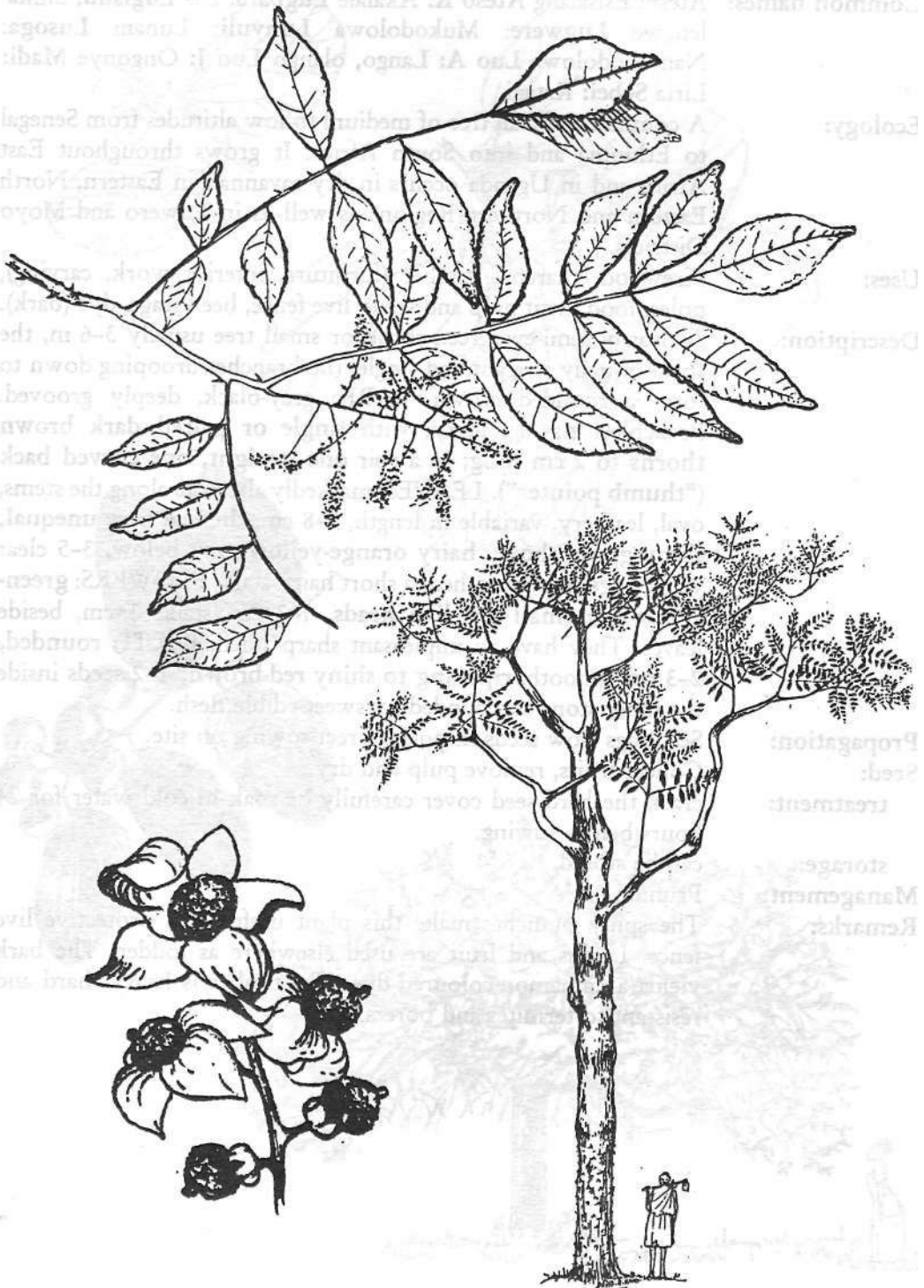
treatment:

storage:

up to 2 months. Susceptible to insect attack. Add ash to reduce insect damage.

Management: Fast growing.

Remarks: The sapwood is yellow-white, the heartwood pale yellow, rather light but tough, perishable but taking a good polish. Grow as a pure stand or intercrop with banana, coffee or cocoa. The old names for this species were *Fagara angolensis* or *F. leprieurii*. The Baganda use the wood to make drums.



Indigenous

Common names: Ateso: Esisalang **Ateso K:** Akalale **Lugbara:** Ela **Lugishu:** Shikalengwe **Lugwere:** Mukodolowa **Lunyuli:** Lunani **Lusoga:** Namukodolowa **Luo A:** Lango, olango **Luo J:** Ongonye **Madi:** Liria **Sebei:** Katagi.

Ecology: A common African tree of medium to low altitudes from Senegal to Ethiopia and into South Africa. It grows throughout East Africa and in Uganda occurs in dry savannah in Eastern, North Eastern and Northern Regions as well as in Luwero and Moyo Districts.

Uses: Firewood, charcoal, timber (furniture, interior work, carving), poles, food (fruit pulp and seed), live fence, bee forage, dye (bark).

Description: A thorny semi-evergreen shrub or small tree usually 3-6 m, the trunk usually straight and single, the branches drooping down to form a rounded crown. **BARK:** grey-black, deeply grooved. Branchlets zig-zag, hairy, with **single or paired dark brown thorns to 2 cm long; in a pair one straight, one curved back ("thumb pointer")**. **LEAVES:** markedly alternate along the stems, oval, leathery, variable in length, 5-8 cm, **the leaf base unequal, shiny green above, hairy orange-yellow-grey below**, 3-5 clear veins, edge finely toothed, a short hairy stalk. **FLOWERS:** green-yellow, in small star-like heads, 1-2 cm, stalks 1 cm, beside leaves. They have an unpleasant sharp smell. **FRUIT:** rounded, 2-3 cm, smooth, ripening to shiny red-brown, 1-2 seeds inside the inner stone surrounded by sweet edible flesh.

Propagation: Seedlings (sow seeds in pots), direct sowing on site.

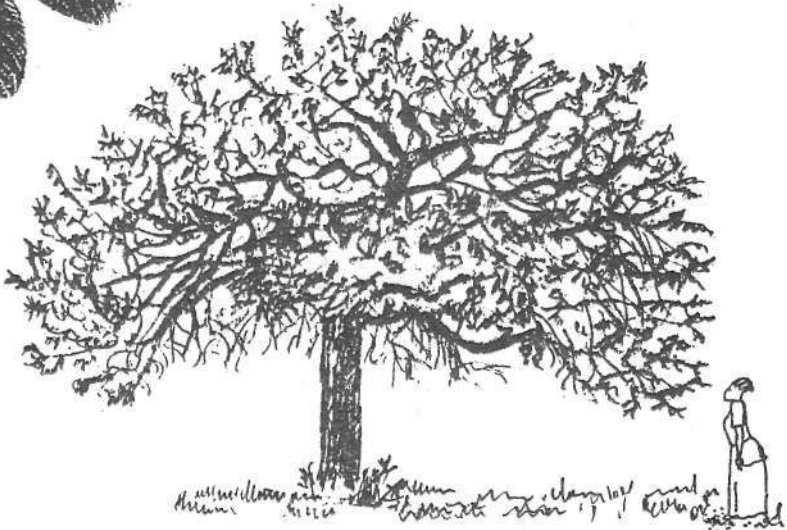
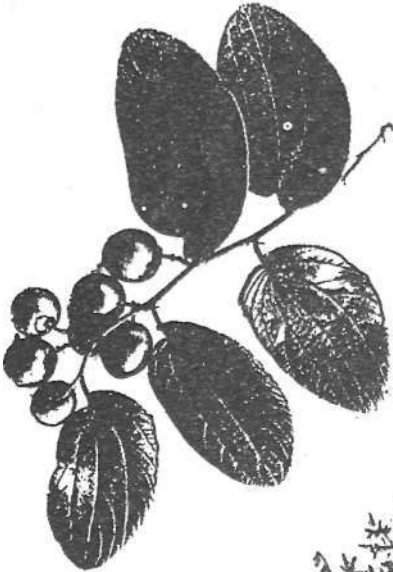
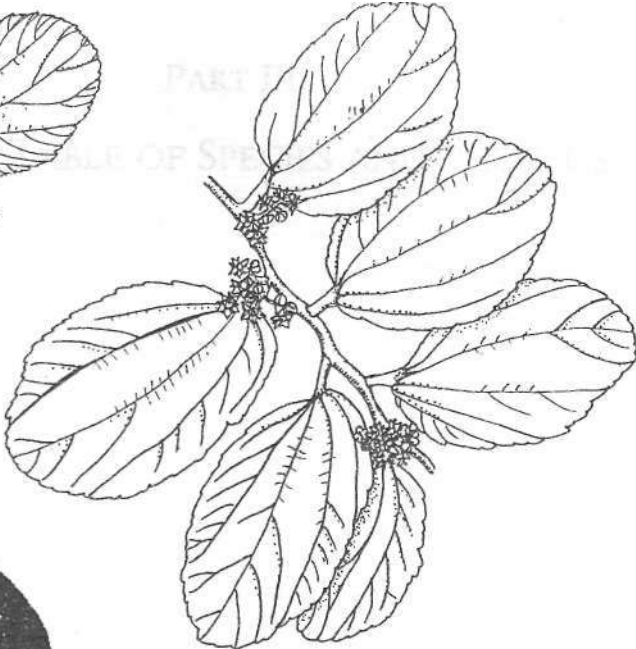
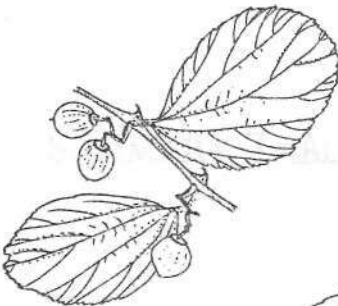
Seed: Collect fruits, remove pulp and dry.

treatment: crack the hard seed cover carefully or soak in cold water for 24 hours before sowing,

storage: can be stored.

Management: Pruning.

Remarks: The spiny branches make this plant useful as a protective live fence. Leaves and fruit are used elsewhere as fodder. The bark yields a cinnamon-coloured dye. The timber is heavy, hard and resistant to termites and borers.



PARTIII

SUMMARY TABLE OF SPECIES AND THEIR USES

| | Wood | | | | | | | | | | Food | | | | | Fodder | Environmental | | | | Other Uses | | | | | | | | | | | | | | | | | |
|-------------------------------------|----------|----------|--------------------|-------------|----------------------|----------|------------------|--------------------|---------------------|-------------------|---------------|--------------------|-----------|------------------------|--------------|------------------|---------------|----------|--------|------------|------------|------------------------|-------|-------------------|-------------------|-----------|------------------------|-------------------------|----------------------------|--------------|---------------------|----------------------------|--------------------------|-------------------------------|-------------------------|--|--|--|
| | Firewood | Charcoal | Timber / Furniture | Poles/Posts | Flooring / Panelling | Beehives | Veneer / Plywood | Tools/Tool handles | Carvings / Utensils | Pulp / Fibreboard | Boat building | Fruit / Food / Nut | Vegetable | Seasoning / Flavouring | Drink / Soup | Oil / Edible gum | Jam / Syrup | Medicine | Fodder | Bee forage | Shade | Ornamental/Avenue tree | Mulch | Nitrogen fixation | Soil conservation | Windbreak | Fibre / Weaving / Rope | Thatch / Roofing / Mats | Resin / Gum / Glue / Latex | Tannin / Dye | Toxin / Insecticide | Cosmetic / Soap / Perfume. | Live fence / Dry fencing | Ceremonial / Boundary marking | Toothbrushes / Stuffing | | | |
| <i>Albizia glaberrima</i> | x | x | x | | | | | | | | | | | | | | | x | | x | | | x | | | | | | | | | | | | | | | |
| <i>Albizia grandibracteata</i> | x | x | x | | | | x | | | | | | | | | | x | | x | | x | x | x | | | | | | | | | | | | | | | |
| <i>Albizia gummifera</i> | x | x | x | | | x | | x | | | | | | | | | x | | x | | x | x | x | x | | | | | | | | | | | | | | |
| <i>Albizia lebbeck</i> | x | x | x | x | x | | | | | | | | | | | | x | x | x | x | x | x | x | x | | | | x | | | x | | | | | | | |
| <i>Albizia saman</i> | x | x | x | | | | x | x | | | x | | | | | | | x | | x | x | x | x | | | | | | x | | | | | | | | | |
| <i>Albizia versicolor</i> | x | x | x | | | x | x | x | | x | | | | | | | x | | | | | | | x | | | | | | | | | x | | | | | |
| <i>Albizia zygia</i> | x | x | x | x | | | | | | | | | | | | | | | | | x | x | x | | | | | | | | | | | | | | | |
| <i>Aleurites moluccana</i> | x | | | | | | | | | | x | | | | | | | | | | x | x | | | | | | | | | | | | | x | | | |
| <i>Allophylus abyssinicus</i> | x | x | x | | | | x | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | | |
| <i>Alstomia boonei</i> | x | | x | | | | x | x | | | | | | | | | x | | | | x | | | | | | | | | | | | | | | | | |
| <i>Anacardium occidentale</i> | x | x | | x | | | | | | | x | | | x | | x | x | | | | x | x | | | x | x | | x | | | | x | | | | | | |
| <i>Aningeria adolfi-friedericii</i> | x | x | x | | x | | | | | | x | | | | x | | | | | | x | | | | | | | | | | | | | | | | | |
| <i>Aningeria altissima</i> | x | x | x | | x | | | | | | | | | | | | | | | | x | x | | | | | | | | | | | | | | | | |
| <i>Annona senegalensis</i> | | | | | | | | | | | x | | | | | | x | x | | | | | | | | | | | | | | | | x | | | | |
| <i>Annona muricata</i> | | | | | | | | | | | x | | | x | | x | | | | | | | | | | | | | | | | | | | | | | |
| <i>Annona squamosa</i> | x | | | | | | | | | | x | | | | | | | | | | x | x | | | | x | | | | | | | | | | | | |
| <i>Antiaris toxicaria</i> | x | | | | | x | | | | | | | | | | | | x | | | | x | | | | x | | | | | | | | | | | | |

| | Wood | | | | | | | | | | | Food | | | | | Fodder | | Environmental | | | | | Other Uses | | | | | | | | | | | | | |
|---------------------------------|----------|----------|--------------------|-------------|----------------------|----------|------------------|--------------------|---------------------|-------------------|---------------|--------------------|-----------|------------------------|--------------|------------------|-------------|----------|---------------|------------|-------|------------------------|-------|-------------------|-------------------|-----------|------------------------|-------------------------|----------------------------|--------------|---------------------|----------------------------|--------------------------|-------------------------------|-------------------------|---|--|
| | Firewood | Charcoal | Timber / Furniture | Poles/Posts | Flooring / Panelling | Beehives | Veneer / Plywood | Tools/Tool handles | Carvings / Utensils | Pulp / Fibreboard | Boat building | Fruit / Food / Nut | Vegetable | Seasoning / Flavouring | Drink / Soup | Oil / Edible gum | Jam / Syrup | Medicine | Fodder | Bee forage | Shade | Ornamental/Avenue tree | Match | Nitrogen fixation | Soil conservation | Windbreak | Fibre / Weaving / Rope | Thatch / Roofing / Mats | Resin / Gum / Ghee / Latex | Tannin / Dye | Toxin / Insecticide | Cosmetic / Soap / Perfume. | Live fence / Dry fencing | Ceremonial / Boundary marking | Toothbrushes / Stuffing | | |
| <i>Araucaria cunninghamii</i> | | | x | | | | | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | |
| <i>Artocarpus heterophyllus</i> | x | x | x | | | | | | | | x | | | | | | x | x | | x | | | | | | | | x | | | | | | | | | |
| <i>Arundinaria alpina</i> | | | | x | | | x | x | | | | x | | | | | | | | | x | | x | | x | | | | | | | | x | | | | |
| <i>Averrhoa carambola</i> | | | | | | | | | | | x | | x | | | | | | | | | | | | | | | | | | | x | | | | | |
| <i>Azadirachta indica</i> | x | x | x | x | | | | | | | | | | | | | x | x | x | x | x | | | x | x | | | | | | x | x | | | | | |
| <i>Baikiaea insignis</i> | x | x | x | | | | | | | | | | | | | | | | | | x | x | | | | | | | | | | | | | | | |
| <i>Balanites aegyptiaca</i> | x | x | x | x | | | x | x | | | x | x | | | | | x | | | | x | | x | | x | | x | | x | x | x | | | | | | |
| <i>Balanites orbicularis</i> | x | x | | x | | | x | | | | x | | | | | | | x | | | x | | | x | | | | | | | x | x | | | | | |
| <i>Bauhinia variegata</i> | x | | | | | | x | | | | x | | | | | | | x | | | x | x | | x | | | | | x | | | | | | | | |
| <i>Beilschmiedia ugandensis</i> | x | x | x | | | | | | | x | x | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Bersama abyssinica</i> | x | x | x | | | x | | x | | | | | | | | | x | | | | x | x | | | | | | | | | | | | | | | |
| <i>Blighia unijugata</i> | x | x | x | x | x | | | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | |
| <i>Bombax buonopozensis</i> | | | | | | | | | | | | | | | | | | | | | | x | | | | | x | | | | | | | | | x | |
| <i>Borassus aethiopum</i> | x | x | x | x | | x | x | | | | x | | x | | | | x | x | | | | | | | | | x | x | | | | | x | | | | |
| <i>Bridelia micrantha</i> | x | x | x | x | | | x | | | | x | | | | | | x | x | | | x | x | | | | | | | | | | | | | | | |
| <i>Butyrospermum paradoxum</i> | x | x | x | | | | | | | | x | | | | x | | | | x | | x | x | | | | | | | | | | | x | | | | |
| <i>Caesalpinia decapetala</i> | | | | | | | | | | | | | | | | | x | | x | | x | x | | | | | | x | | | | | | x | | | |

| Species | Wood | | | | | | | | | | Food | | | | | | Fodder | | Environmental | | | | | Other Uses | | | | | | | | | | | | | | |
|--------------------------------|----------|----------|--------------------|-------------|----------------------|----------|------------------|--------------------|---------------------|-------------------|---------------|--------------------|-----------|------------------------|--------------|------------------|-------------|----------|---------------|------------|-------|------------------------|-------|-------------------|-------------------|-----------|------------------------|-------------------------|----------------------------|--------------|---------------------|----------------------------|--------------------------|-------------------------------|-------------------------|--|--|--|
| | Firewood | Charcoal | Timber / Furniture | Poles/Posts | Flooring / Panelling | Beehives | Veneer / Plywood | Tools/Tool handles | Carvings / Utensils | Pulp / Fibreboard | Boat building | Fruit / Food / Nut | Vegetable | Seasoning / Flavouring | Drink / Soup | Oil / Edible gum | Jam / Syrup | Medicine | Fodder | Bee forage | Shade | Ornamental/Avenue tree | Mulch | Nitrogen fixation | Soil conservation | Windbreak | Fibre / Weaving / Rope | Thatch / Roofing / Mats | Resin / Gum / Glue / Latex | Tannin / Dye | Toxin / Insecticide | Cosmetic / Soap / Perfume. | Live fence / Dry fencing | Ceremonial / Boundary marking | Toothbrushes / Stuffing | | | |
| <i>Cajanus cajan</i> | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Calliandra calothyrsus</i> | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Callistemon citrinus</i> | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Calodendrum capense</i> | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Cannella sinensis</i> | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Canarium schweinfurthii</i> | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Carapa procera</i> | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Carica papaya</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Carissa edulis</i> | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Casuarina equisetifolia</i> | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Casuarina glauca</i> | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Catha edulis</i> | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Cedrella odorata</i> | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Ceiba pentandra</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Celtis africana</i> | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Celtis durandii</i> | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Celtis mildbraedii</i> | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| | Wood | | | | | | | | | | Food | | | | | Fodder | | Environmental | | | | | Other Uses | | | | | | | | | | | | | | | |
|--------------------------------|----------|----------|--------------------|-------------|----------------------|----------|------------------|--------------------|---------------------|-------------------|---------------|--------------------|-----------|------------------------|--------------|------------------|-------------|---------------|--------|------------|-------|------------------------|------------|-------------------|-------------------|-----------|------------------------|-------------------------|----------------------------|--------------|---------------------|----------------------------|--------------------------|-------------------------------|-------------------------|---|---|--|
| | Firewood | Charcoal | Timber / Furniture | Poles/Posts | Flooring / Panelling | Beehives | Veneer / Plywood | Tools/Tool handles | Carvings / Utensils | Pulp / Fibreboard | Boat building | Fruit / Food / Nut | Vegetable | Seasoning / Flavouring | Drink / Soup | Oil / Edible gum | Jam / Syrup | Medicine | Fodder | Bee forage | Shade | Ornamental/Avenue tree | Mulch | Nitrogen fixation | Soil conservation | Windbreak | Fibre / Weaving / Rope | Thatch / Roofing / Mats | Resin / Gum / Glue / Latex | Tannin / Dye | Toxin / Insecticide | Cosmetic / Soap / Perfume. | Live fence / Dry fencing | Ceremonial / Boundary marking | Toothbrushes / Stuffing | | | |
| <i>Croton megalocarpus</i> | x | x | x | x | | | | | | | | | | | | x | | | x | x | x | | | | | | | | | | | | x | x | | | | |
| <i>Croton sylvaticus</i> | x | x | x | x | | | | | | | | | | | | | | | | | x | x | | | | | | | | | | | | | | | | |
| <i>Cupressus lusitanica</i> | x | | x | x | | | | | | | | | | | | | | | | | x | x | | | | x | | | | | | | | | x | | | |
| <i>Cynometra alexandri</i> | x | x | x | x | | | x | | | | | | | | | | | | | x | | x | | | x | | | | | | | | | | | | | |
| <i>Cyphomandra betacea</i> | | | | | | | | | | | x | x | | | | x | | | | | | | | | x | | | | | | | | | | | | | |
| <i>Dalbergia melanoxylon</i> | x | x | x | | | | | x | | | | | | | | x | x | x | | | | | x | x | | | | | | | | | | | | | | |
| <i>Daniellia oliveri</i> | | | x | | | | | | | x | | | | | | | | | | x | | x | | | x | x | | | x | | | | | | | | | |
| <i>Datura suaveolens</i> | | | | | | | | | | | | | | | | | | | | x | | x | | | x | | | | | | | | | | x | x | | |
| <i>Delonix regia</i> | x | | | | | | | | | | | | | | | x | | | | x | | x | x | | | | | | | | | | | | | | | |
| <i>Dichrostachys cinerea</i> | x | x | | x | | | x | | | | | | | | | x | x | x | | | | | | x | x | | x | | | | | | | | x | | | |
| <i>Diospyros abyssinica</i> | x | x | x | | | | x | x | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | |
| <i>Diospyros mespiliformis</i> | x | x | x | | | | | x | | | x | | | | | x | | | | x | | x | x | | | | | | | | | | | | | | | |
| <i>Discopodium penninervum</i> | x | | | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | x | | |
| <i>Dodonaea angustifolia</i> | x | x | | x | | | x | | | | | | | | | x | | | | | x | | | | x | x | | | | | | | | | x | | x | |
| <i>Dombeya bagshawei</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Dombeya kirkii</i> | x | x | x | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Dombeya torrida</i> | x | x | x | x | | | x | x | | | | | | | | x | | | | x | | | | | x | | x | | x | | | | | | | | | |

SUMMARY TABLE OF SPECIES AND THEIR USES

| | Wood | | | | | | | | | | Food | | | | Fodder | Environmental | | | | Other Uses | | | | | | | | | | | | | | | | | |
|------------------------------------|----------|----------|--------------------|-------------|----------------------|----------|------------------|--------------------|---------------------|-------------------|---------------|--------------------|-----------|------------------------|--------------|------------------|-------------|----------|--------|------------|-------|------------------------|-------|-------------------|-------------------|-----------|------------------------|-------------------------|----------------------------|--------------|---------------------|----------------------------|--------------------------|-------------------------------|-------------------------|---|---|
| | Firewood | Charcoal | Timber / Furniture | Poles/Posts | Flooring / Panelling | Beehives | Veneer / Plywood | Tools/Tool handles | Carvings / Utensils | Pulp / Fibreboard | Boat building | Fruit / Food / Nut | Vegetable | Seasoning / Flavouring | Drink / Soup | Oil / Edible gum | Jam / Syrup | Medicine | Fodder | Bee forage | Shade | Ornamental/Avenue tree | Mulch | Nitrogen fixation | Soil conservation | Windbreak | Fibre / Weaving / Rope | Thatch / Roofing / Mats | Resin / Gum / Glue / Latex | Tannin / Dye | Toxin / Insecticide | Cosmetic / Soap / Perfume. | Live fence / Dry fencing | Ceremonial / Boundary marking | Toothbrushes / Stuffing | | |
| <i>Dovyalis abyssinica</i> | | | | | | | | | | | x | | | | | | x | | x | | | | | | | | | | | | | | | x | | | |
| <i>Dovyalis caffra</i> | | | | | | | | | | | x | | | | | x | | | x | | x | | | | | | | | | | | | | | x | | |
| <i>Dovyalis macrocalyx</i> | | | | | | | | | | | x | | | | | | | | | | | x | | | | | | | | | | | | | | | |
| <i>Dracaena fragrans</i> | | | | | | | | | | | | | | | | | x | | | | x | | | | | | | | | | | | | | x | x | |
| <i>Dracaena steudneri</i> | | | x | x | | | | | | | | | | | | | x | | | | x | | | | | | | | | | | | | | | x | |
| <i>Ehretia cymosa</i> | x | x | | | | | | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | |
| <i>Ekebergia capensis</i> | x | x | x | x | | | | x | | | | | | | | | x | | | x | x | x | | | x | x | | | | | | | | | | | |
| <i>Elaeis guineensis</i> | | | | | | | | | | | | | | x | x | | x | | | | | x | | | | | | | | | | | | | | | |
| <i>Encephalartos hildebrandtii</i> | | | | | | | | | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | x |
| <i>Ensete ventricosum</i> | | | | | | | | | | | | | | | | | | x | | | | x | | | | | x | x | | | | | | | | | |
| <i>Entada abyssinica</i> | x | | | | | | | | | | | | | | | | x | | | | x | x | | x | | | | | | | | | | | | | |
| <i>Entandrophragma angolense</i> | x | x | x | | | | x | | | | | | | | | | | | | | x | x | | | | | | | | | | | | | | | |
| <i>Entandrophragma cylindricum</i> | x | x | x | | | | x | | | | | | | | | | | | | | x | x | | | | | | | | | | | | | | | |
| <i>Entandrophragma excelsum</i> | x | x | x | | | | x | | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | |
| <i>Entandrophragma utile</i> | x | x | x | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Eriobotrya japonica</i> | x | | | x | | | | x | | | x | | | | | x | | | | x | x | x | | | | x | | | | | | | | | | | |
| <i>Erythrina abyssinica</i> | x | | | | | x | | x | | | | | | | | | x | | | x | x | x | | | | | | | | | | | | | | x | x |

| | Wood | | | | | | | | Food | | | | Fodder | Environmental | | | | Other Uses | | | | | | | | | | | | | | | | | | | |
|-----------------------------|----------|----------|--------------------|-------------|----------------------|----------|------------------|--------------------|---------------------|-------------------|---------------|--------------------|-----------|------------------------|--------------|------------------|-------------|------------|--------|------------|-------|------------------------|-------|-------------------|-------------------|-----------|------------------------|-------------------------|----------------------------|--------------|---------------------|---------------------------|--------------------------|-------------------------------|-------------------------|--|--|
| | Firewood | Charcoal | Timber / Furniture | Poles/Posts | Flooring / Panelling | Beehives | Veneer / Plywood | Tools/Tool handles | Carvings / Utensils | Pulp / Fibreboard | Boat building | Fruit / Food / Nut | Vegetable | Seasoning / Flavouring | Drink / Soup | Oil / Edible gum | Jam / Syrup | Medicine | Fodder | Bee forage | Shade | Ornamental/Avenue tree | Mulch | Nitrogen fixation | Soil conservation | Windbreak | Fibre / Weaving / Rope | Thatch / Roofing / Mats | Resin / Gum / Glue / Latex | Tannin / Dye | Toxin / Insecticide | Cosmetic / Soap / Perfume | Live fence / Dry fencing | Ceremonial / Boundary marking | Toothbrushes / Stuffing | | |
| <i>Ficus mucoso</i> | x | | x | | | | | | x | | | | | | | | | | | | x | | | | | | | | | | | | | | | | |
| <i>Ficus natalensis</i> | | | | | | | | | | | | | | | | | | x | | | x | | | | | x | | | | | | | | x | | | |
| <i>Ficus ovata</i> | | | | x | | | | | | | | | | | | | | | | | x | | | x | | | | | | | | | x | x | | | |
| <i>Ficus platyphylla</i> | x | x | | | | | | | | | x | | | | | | | | | | x | | | | | | | | | | | | | | | | |
| <i>Ficus sur</i> | | | x | | | | | | x | | x | | | | | | | | | | x | | | | | | | | | | | | | | x | | |
| <i>Ficus sycomorus</i> | x | x | | | | x | | x | | | x | | | | | | x | | | | x | x | x | | x | | | | | | | | | | | | |
| <i>Ficus vallis-choudae</i> | x | | | | | | | | | | x | | | | | | | | | | | | | x | | | | | | | | | | | | | |
| <i>Ficus vasta</i> | x | | x | | | | | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Flacourtia indica</i> | x | x | x | | | | | x | | | x | | | | | | x | x | | | | | | | | | | | | | | | | | x | | |
| <i>Funtumia africana</i> | x | x | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Funtumia elastica</i> | x | x | | | | | | | | | | | | | | | | | | | x | x | | | | | | | x | | | | | | | | |
| <i>Garcinia buchananii</i> | x | x | x | | | | | | | | x | | | x | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Gliricidia sepium</i> | x | x | | x | | | | | | | | | | | | | | | x | x | x | x | x | x | x | | | | | | | | | | x | | |
| <i>Gmelina arborea</i> | x | x | x | x | | | | | | | | | | | | | | | | x | x | x | | | | x | | | | | | | | | | | |
| <i>Grevillea robusta</i> | x | x | x | x | | | | | | | | | | | | | | | x | x | x | x | | | x | x | | | | | | | | | | | |
| <i>Grewia bicolor</i> | x | x | x | | | | | x | x | | | | | | | | | x | x | | | | | | | | | | | | | | | | | | |
| <i>Grewia mollis</i> | x | x | x | | | | | x | | | | | | | | | | | | | | | | | | x | | | | | | | | | | | |

| | Wood | | | | | | | | | | Food | | | | | Fodder | | Environmental | | | | Other Uses | | | | | | | | | | | | | | | | | | |
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| <i>Guarea cedrata</i> | x | x | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Hagenia abyssinica</i> | x | x | x | x | | | | | | | | | | | | | x | | | | x | x | | | | | | | | | | | | | | | | | | |
| <i>Halea rubrostipulata</i> | x | x | x | | | | | | | x | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | |
| <i>Halea stipulosa</i> | x | x | x | | | | | | | | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | |
| <i>Haringana madagascariensis</i> | x | x | x | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Holoptelea grandis</i> | x | x | x | | x | | x | | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | | | |
| <i>Ilex mitis</i> | x | x | x | | | | | x | | | | | | | | | x | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Isoberlinia doka</i> | x | x | | | | | | | | | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | |
| <i>Jacaranda mimosifolia</i> | x | x | x | x | | | | x | x | | | | | | | | | | x | | x | x | | | x | | | | | | | | | | | | | | | |
| <i>Jatropha curcas</i> | | | | | | | | | | | | | | | | | x | | | | x | | | | | | | | | | | | | | | | | | | |
| <i>Jatropha multifida</i> | | | | | | | | | | | | | | | | | x | | | | | x | | | | | | | | | | | | | | | | | | |
| <i>Juniperus procera</i> | x | x | x | x | x | | | | | | | | | | | | x | | | | x | x | | | x | | | | | | | | | | | | | | | |
| <i>Khaya anthotheca</i> | x | x | x | | | | x | | | | | | | | | | | | | | x | x | | | | | | | | | | | | | | | | | | |
| <i>Khaya grandifoliola</i> | x | x | x | | x | | x | | | | | | | | | | | | | | | x | x | | x | | | | | | | | | | | | | | | |
| <i>Khaya senegalensis</i> | x | x | x | | | | | | | | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | |
| <i>Kigelia africana</i> | x | | x | | | | | | | x | | | x | x | | | x | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Lannea barteri</i> | x | x | | | | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | Wood | | | | | | Food | | | | Fodder | Environmental | | | | Other Uses | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------------|----------|----------|--------------------|-------------|----------------------|----------|------------------|--------------------|---------------------|-------------------|---------------|--------------------|-----------|------------------------|--------------|------------------|-------------|----------|--------|------------|-------|------------------------|-------|-------------------|-------------------|-----------|------------------------|-------------------------|----------------------------|--------------|---------------------|----------------------------|--------------------------|-------------------------------|-------------------------|--|--|--|
| | Firewood | Charcoal | Timber / Furniture | Poles/Posts | Flooring / Panelling | Beehives | Veneer / Plywood | Tools/Tool handles | Carvings / Utensils | Pulp / Fibreboard | Boat building | Fruit / Food / Nut | Vegetable | Seasoning / Flavouring | Drink / Soup | Oil / Edible gum | Jam / Syrup | Medicine | Fodder | Bee forage | Shade | Ornamental/Avenue tree | Mulch | Nitrogen fixation | Soil conservation | Windbreak | Fibre / Weaving / Rope | Thatch / Roofing / Mats | Resin / Gum / Gibe / Latex | Tannin / Dye | Toxin / Insecticide | Cosmetic / Soap / Perfume. | Live fence / Dry fencing | Ceremonial / Boundary marking | Toothbrushes / Stuffing | | | |
| <i>Mildbraediendron excelsum</i> | x | x | x | | x | | | | | | | | | | | | | | | | x | x | | x | | | | | | | | | | | | | | |
| <i>Milicia excelsa</i> | x | x | x | | | | | | | | | | | | | | | | | | x | x | x | x | | | | | | | | | | | | | | |
| <i>Millettia dura</i> | x | x | | x | | | x | | | | | | | | | | | x | | | x | x | x | x | | | | | | | | | | | | | | |
| <i>Mimosa scabrella</i> | x | | x | x | | | | | | | | | | | | | | | | | x | x | x | x | x | | | | | | | | | | | | | |
| <i>Mimusops bagshawei</i> | x | x | x | | | | x | x | | | | | | | | | | x | | | x | | | | | | | | | | | | | | | | | |
| <i>Mimusops kummel</i> | x | x | x | | | | x | x | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Monodora myristica</i> | x | x | | | | | | | | | x | | | | | | | | | | | x | | | | | | | | | | | | | | | | |
| <i>Morinda lucida</i> | x | x | x | | | | | | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | |
| <i>Moringa oleifera</i> | | | | | | | | | | | x | x | x | | | x | x | x | x | | | | | | x | x | | | | | | | x | x | x | | | |
| <i>Morus alba</i> | x | | | | | | | | | | x | | | | | | | | x | x | x | x | | x | x | | | | | | | | | x | | | | |
| <i>Morus mesozygia</i> | x | x | x | | x | | | | | | | | | | | | | | | | | x | x | | | | | | | | | | | | | | | |
| <i>Musa paradisiaca</i> | | | | | | | | | | | x | | | x | | x | x | x | x | | | | | | | | x | x | | | | | | | | | | |
| <i>Musa sapientum</i> | | | | | | | | | | | x | | | x | | | | | x | x | | | | | | | x | x | | | | | | | | | | |
| <i>Musanga crepidioides</i> | x | | x | | | | | | | x | | | | x | | | | | | | | x | x | | | | | | | | | | | | | | | |
| <i>Myrianthus holstii</i> | x | x | | | | | | | | | x | | | | | | | | | | | | x | x | | | | | | | | | | | | | | |
| <i>Myrica salicifolia</i> | x | x | x | | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | | | | | |
| <i>Nauclea diderrichii</i> | | | x | x | | | | | | | | | | | | | | | | | | x | x | | | | | | | | | | | | | | | |

| | Wood | | | | | | | | | | Food | | | | | Fodder | | Environmental | | | | | Other Uses | | | | | | | | | | | | | | | |
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| | Firewood | Charcoal | Timber / Furniture | Poles/Posts | Flooring / Panelling | Beehives | Veneer / Plywood | Tools/Tool handles | Carvings / Utensils | Pulp / Fibreboard | Boat building | Fruit / Food / Nut | Vegetable | Seasoning / Flavouing | Drink / Soup | Oil / Edible gum | Jam / Syrup | Medicine | Fodder | Bee forage | Shade | Ornamental/Avenue tree | Mulch | Nitrogen fixation | Soil conservation | Windbreak | Fibre / Weaving / Rope | Thatch / Roofing / Mats | Resin / Gum / Glue / Latex | Tannin / Dye | Toxin / Insecticide | Cosmetic / Soap / Perfume | Live fence / Dry fencing | Ceremonial / Boundary marking | Toothbrushes / Stuffing | | | |
| <i>Neoboutonia macrocalyx</i> | x | | | | | | | x | | | | | | | | | | | | | | | | x | | | | | | | | | | | | | | |
| <i>Newtonia buchananii</i> | x | x | | | | | | | | x | | | | | | | | x | | x | x | x | | | | | | | | | | | | | | | | |
| <i>Nuxia congesta</i> | x | x | | | | | | | | | | | | | | | x | | x | | | | | | | | | | | | | | | | | | | |
| <i>Ocotea usambarensis</i> | x | x | x | x | x | | x | | | | | | | | | | x | | | | | | | | | | | | | | | | | | | | | |
| <i>Olea europaea ssp. africana</i> | x | x | x | x | x | | x | x | | | x | | | | | | x | | x | | x | | | | | x | | | | | | | | | | x | | |
| <i>Olea capensis ssp. hochstetteri</i> | x | x | x | | x | | x | | | | | | | | | | x | | | | | | | | | | | | | | | | | | | | | |
| <i>Olea capensis ssp. welwitschii</i> | x | x | x | | | | x | | | | | | | | | | x | | | | | | | | | | | | | | | | | | | | | |
| <i>Olimia usambarensis</i> | x | x | | | | | | | | | | | | | | | x | | | | x | | | | | | | | | | | | | | | | | |
| <i>Oxytenanthera abyssinica</i> | | | | x | | | x | x | | | | | | | | | | x | | | | | | | x | | | | | | | | | | | x | | |
| <i>Ozoroa reticulata</i> | x | x | x | x | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Pachystela brevipes</i> | x | x | x | x | | | | | | | x | | | | | | | | | | x | | x | | | | | | | | | | | | | | | |
| <i>Parinari curatellifolia</i> | x | x | | x | | | | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Parkia filicoides</i> | x | x | | | | | | | | | x | | | | | | | x | | | x | x | | | | | | | | | | | | | | | | |
| <i>Parkinsonia aculeata</i> | x | x | | | | | | | | | | | | | | | | x | x | x | x | x | | | x | x | | | | | | | | | | x | | |
| <i>Passiflora edulis</i> | | | | | | | | | | | x | | x | x | | x | | x | x | | | | | | | | | | | | | | | | | | | |
| <i>Passiflora quadrangularis</i> | | | | | | | | | | | x | x | x | x | | x | | | | | | | | | | | | | | | | | | | | | | |
| <i>Peddiea fischeri</i> | x | x | | | | | | | | | | | | | | | | | | | | | | | | | x | | | | | | | | | | | |

| | Wood | | | | | | | | | | Food | | | | | Fodder | Environmental | | | | | Other Uses | | | | | | | | | | | | | | | | | |
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| | Firewood | Charcoal | Timber / Furniture | Poles/Posts | Flooring / Panelling | Beehives | Veneer / Plywood | Tools/Tool handles | Carvings / Utensils | Pulp / Fibreboard | Boat building | Fruit / Food / Nut | Vegetable | Seasoning / Flavouring | Drink / Soup | Oil / Edible gum | Jam / Syrup | Medicine | Fodder | Bee forage | Shade | Ornamental/Avenue tree | Mulch | Nitrogen fixation | Soil conservation | Windbreak | Fibre / Weaving / Rope | Thatch / Roofing / Mats | Resin / Gum / Glue / Latex | Tannin / Dye | Toxin / Insecticide | Cosmetic / Soap / Perfume | Live fence / Dry fencing | Ceremonial / Boundary marking | Toothbrushes / Stuffing | | | | |
| <i>Psidium guajava</i> | x | x | | x | | | x | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Pterygota mildbraedii</i> | x | x | x | | | | | x | | | | | | | | | | | | x | x | | | | | | | | | | | | | | | | | | |
| <i>Punica granatum</i> | | | | | | | | | | | x | | | | | | | | | | | x | | | | | | | | | | | x | | | | | | |
| <i>Pycnanthus angolensis</i> | | | | | | | | | | | | | | | | | | | | | x | x | | | | | | | | | | x | | | | | | | |
| <i>Rapanea melanophloeos</i> | x | x | x | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Raphia farinifera</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | x | x | | | | | | | | | | | |
| <i>Rauvolfia caffra</i> | x | | x | | | x | | x | | | | | | | | x | | | | | x | x | | | | | | | | | | | | | | | | | |
| <i>Rauvolfia vomitoria</i> | x | | | | | | | | | | | | | | | x | | | | | x | x | | | | | | | | | | | | | | | | | |
| <i>Ricinodendron heudelotii</i> | | | | | | | | x | | | x | | | x | | | | | | | | | | | | | | | | | | | | x | | | | | |
| <i>Ricinus communis</i> | | | | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | | | x | | | | |
| <i>Roystonea regia</i> | | | | | | | | | | | | | | | | | | x | | | | x | | | | | | x | | | | | | | | | | | |
| <i>Rothmannia urcelliformis</i> | x | x | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Sambucus africana</i> | x | | | | | | | | | | x | | | | | | | | | | | | x | | | | | | | | | | | | | | x | | |
| <i>Sapium ellipticum</i> | x | x | | | | | x | | | | | | | | | x | | | | | | x | | | | | | | | | | | | | | | | | |
| <i>Sarcocephalus latifolius</i> | x | x | x | | | | | x | | | x | | | | | | | x | | | | | | | | | | | | | | | | | | | | | |
| <i>Schefflera volkensii</i> | x | x | | | | | | | | | | | | | | | x | | | | x | x | | | | | | | | | | | | | | | | | |
| <i>Schinus molle</i> | x | x | | | | | | | | | | x | | | | | | | x | x | x | | | | x | x | | | | | | | | | | | | | |

| | Wood | | | | | | | | | | Food | | | | | Fodder | | Environmental | | | | | Other Uses | | | | | | | | | | | | | | | |
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| | Firewood | Charcoal | Timber / Furniture | Poles/Posts | Flooring / Panelling | Beehives | Veneer / Plywood | Tools/Tool handles | Carvings / Utensils | Pulp / Fibreboard | Boat building | Fruit / Food / Nut | Vegetable | Seasoning / Flavouring | Drink / Soup | Oil / Edible gum | Jam / Syrup | Medicine | Fodder | Bee forage | Shade | Ornamental/Avenue tree | Mulch | Nitrogen fixation | Soil conservation | Windbreak | Fibre / Weaving / Rope | Thatch / Roofing / Mats | Resin / Gum / Glue / Latex | Tannin / Dye | Toxin / Insecticide | Cosmetic / Soap / Perfume. | Live fence / Dry fencing | Ceremonial / Boundary marking | Toothbrushes / Stuffing | | | |
| <i>Schrebera alata</i> | x | x | | | | | | | | | | | | | | | | | | | x | | | | | | | | | | | | | | | | | |
| <i>Schrebera arborea</i> | x | x | | | | | x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Sclerocarya birrea</i> | x | x | x | | | x | | x | | | x | | | x | x | | x | x | x | | | | | | | x | | | | | | | | | | | | |
| <i>Securidaca longipedunculata</i> | x | x | | x | | | | | | | | | | | | | x | | x | | x | | | | | x | | | | | | | | | | | | |
| <i>Senecio hadiensis</i> | | | | | | | | | | | | | | | | | x | | | | | | | x | | | | | | | | | | | | x | | |
| <i>Senna didymobotrya</i> | x | | | | | | | | | | | | | | | | x | | | | | x | x | | | | | | | | | | | | | | | |
| <i>Senna siamea</i> | x | x | x | x | | | | | | | | | | | | | x | | x | x | x | x | x | x | x | x | x | x | | | | | | | | | | |
| <i>Senna spectabilis</i> | x | x | | | | | x | | | | | | | | | | | | x | x | x | x | | | | | | | | | | | | | | | | |
| <i>Sesbania bispinosa</i> | | | | | | | | | | | | | | | | | x | x | | x | x | x | x | x | x | x | x | x | | | | | | | | | | |
| <i>Sesbania sesban</i> | x | | | x | | | | | | | | | | | | | | x | | x | x | x | x | x | x | x | x | | | | | | | | | | | |
| <i>Smilax anceps</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | x | | | | | | | | | | | |
| <i>Solanecio cydonifolius</i> | | | | | | | | | | | | | | | | | x | | | | | | | x | | | | | | | | | | | | | x | |
| <i>Solanecio mannii</i> | x | | | | | | | | | | | | | | | | x | | | x | x | | | | | | | | | | | | | | | x | x | |
| <i>Solanum aculeastrum</i> | | | | | | | | | | | | | | | | | x | | | | x | | | | | | | x | | | | | | | | | | |
| <i>Spathodea campanulata</i> | x | x | x | | | | | x | | | | | | | | | x | | | x | x | x | | x | | | | | | | | | | | | | | |
| <i>Steganotaenia araliacea</i> | x | | | | | | x | | | | | | | | | | x | | | | | | | | | | | | | | | | | | | | | |
| <i>Sterculia dawei</i> | x | x | | | | | | | | | | | | | | | | | | | x | x | | | | | x | | | | | | | | | | | |

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The Swedish International Development Cooperation Agency (Sida) has supported rural development programmes in countries in Eastern Africa since the 1960s. It recognises that conservation of soil, water and vegetation must form the basis for sustainable utilisation of land and increased production of food, fuel and wood.

In January 1998, Sida inaugurated the Regional Land Management Unit (RELMA) based in Nairobi. RELMA is the successor of the Regional Soil Conservation Unit (RSCU), which had been facilitating soil conservation and agroforestry programmes in the region since 1982. RELMA's mandate is *to contribute towards improved livelihoods and enhanced food security among small-scale land users in the region*, and the geographical area covered remains the same as previously, namely, Eritrea, Ethiopia, Kenya, Tanzania, Uganda and Zambia. RELMA's objective is to increase technical know-how and institutional competence in the land-management field both in Sida-supported programmes and in those carried out under the auspices of other organisations.

RELMA organises training courses, workshops and study tours, gives technical advice, facilitates exchange of expertise, and initiates pilot activities for the development of new knowledge, techniques and approaches to practical land management.

In order to publicise the experiences gained from its activities in the region, RELMA publishes and distributes various reports, training materials and a series of technical handbooks.

About this book:

This handbook documents the useful tree and shrub species of the region and provides information to subject-matter specialist, extension workers, institutions and farmers on species that have production and conservation potential for small-scale farmers in the region. It is the fourth in a series covering three other countries namely Kenya, Ethiopia and Tanzania. Eritrean version was produced much later.

The present book contains more species than the earlier ones given the fact that Uganda is extremely rich in tropical species and that there is growing interest in the Ugandan rain-forest ecosystems with a need to conserve the bio-diversity.

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RELMA

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