



THE CYCAD GARDEN OF UNISA

B P Barkhuizen

UNIVERSITY OF SOUTH AFRICA
PRETORIA
1975



DIE BROODBOOMTUIN VAN UNISA

B P Barkhuizen



UNIVERSITEIT VAN SUID-AFRIKA
PRETORIA
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ERKENNING

Die volgende kleurplate verskyn in "CYCADS OF SOUTH AFRICA" deur Cynthia Giddy. (Uitgegee deur Purnell and Sons 1974)

Encephalartos cupidus
Encephalartos ngoyanus
Encephalartos laevifolius
Encephalartos paucidentatus
Encephalartos woodii
Encephalartos heenanii
Encephalartos longifolius
Encephalartos princeps.

Toestemming om hierdie kleurplate te gebruik word hiermee erken.

ACKNOWLEDGEMENT

The following colour plates are from "CYCADS OF SOUTH AFRICA" by Cynthia Giddy. (Published by Purnell and Sons 1974)

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Unisa 1975



Foreword

During the Green Heritage Campaign of 1973, the Unisa Campus Planning Committee decided to establish a garden of numerous indigenous plants from the rich flora of South Africa.

With the centenary celebrations of the University of South Africa, the desire for the preservation of this flora came increasingly to the fore. As very few plants are so slow with regard to growth, maturation and distribution, and therefore so valuable and worth preserving as the *Encephalartos* species, the decision was taken to establish a cycad garden.

The cycad garden of Unisa offers the visitor a unique opportunity to study together the twenty-eight cycad species of South Africa, growing amongst other indigenous trees, shrubs and bulbous plants.

With this publication, in which all the labelled plants in the garden are briefly described, together with their characteristics regarding origin, growth and distribution, we want to inform the nature lover of the pleasure he will derive from the cycad garden which will broaden and enrich his knowledge of these plants.

My sincere thanks to members of the Department of General Botany of the University of Pretoria for their advice and assistance in the compilation of this publication, and to the Institute of Botanical Research for the colour plates that they placed at our disposal.

Voorwoord

Die Terreinbeplanningskomitee van Unisa het gedurende die veldtog Groen Erfenis van 1973 besluit om uit die ryk skat van Suid-Afrika se flora – ryk aan skoonheid en verskeidenheid – 'n aantal plante in 'n besondere inheemse tuin te versamel.

Met die Universiteit van Suid-Afrika se eeufeesviering het die gedagte van bewaring vir die nageslag al hoe meer op die voorgrond getree. Aangesien min ander vorms van plantlewe so stadig is ten opsigte van groeikrag, rypwording en distribusie en derhalwe so kosbaar en bewarenswaardig soos die *Encephalartos*-spesies is, is daar besluit om 'n broodboomtuin aan te lê.

Die broodboomtuin van Unisa bied die besoeker 'n unieke geleentheid om die 28 broodboomsoorte van Suid-Afrika bymekaar te sien waar hulle tussen ander inheemse bome, struik en bolplante groei.

Met hierdie publikasie, waarin al die geëtiketteerde plante in die tuin kortliks beskrywe en interessanthede omtrent hul groei, herkoms en verspreiding vermeld word, wil ons die natuurliefhebber in staat stel om die genot wat hy uit die broodboomtuin sal put, te verdiep en homself te verryk met kennis van die plante.

My opregte dank aan lede van die Departement Algemene Plantkunde van die Universiteit van Pretoria vir raad en hulp met die samestelling van hierdie publikasie en die Instituut vir Plantkundige Navorsing vir die beskikbaarstelling van enkele kleurplate.

Contents

Foreword (v)	
Encephalartos 1 ; Common names 1 ; General description 4	
Species with subterranean or partially subterranean stems 6	
Species with aerial stems 10	
Species with revolute leaf margins 10	
Species with narrow green to blue-green leaves 10	
Species with broad dark-green leaves 14	
Species with broad blue-green leaves 20	
Other plants in the cycad garden 24	
Adenia 24	
Aloe <i>boylei</i> 26 ; – <i>cooperi</i> 28 ; – <i>ecklonis</i> 30 ;	
– <i>hlangapies</i> 30 ; – <i>thompsoniae</i> 32 ; – <i>verecunda</i> 34	
Alsophila <i>dregei</i> (Cyathea <i>dregei</i>) 36	
Cussonia <i>paniculata</i> 38 ; – <i>spicata</i> 40	
Dais <i>cotinifolia</i> 42	
Ekebergia <i>capensis</i> 44	
Ensete <i>ventricosum</i> 46	
Erythrina <i>acanthocarpa</i> 48 ; – <i>humeana</i> 48 ;	
– <i>lysistemon</i> 50 ; – <i>zeyheri</i> 52	
Gloriosa <i>superba</i> 54	
Haemanthus (Amaryllidaceae) 54	
Kniphofia 58	
Leonotus <i>leonorus</i> 58	
Nymphaea 60	
Podocarpus 62	
Schyzostylis <i>coccinea</i> 64	
Strelitzia <i>reginae</i> 66 ; – <i>juncea</i> 68	
Veltheimia <i>viridifolia</i> 70	
Virgilila <i>oroboides</i> 70	
Zantedeschia 72	
Index to common names 76	
Index to botanical names 77	

Inhoud

Voorwoord (v)	
Encephalartos 1; Volksname 1; Algemene beskrywing 4	
Soorte met ondergrondse of gedeeltelik ondergrondse stamme 6	
Soorte met bogrondse stamme 10	
Soort met teruggerolde blaarrande 10	
Soorte met smal, groen tot blougroen blare 10	
Soorte met breë, donkergroen blare 14	
Soorte met breë, blougroen blare 20	
Ander plante in die broodboomtuin 24	
Adenia 24	
Aloe <i>boylei</i> 26; – <i>cooperi</i> 28; – <i>ecklonis</i> 30;	
– <i>hlangapies</i> 30; – <i>thompsoniae</i> 32; – <i>verecunda</i> 34	
Alsophila <i>dregei</i> (Cyathea <i>dregei</i>) 36	
Cussonia <i>paniculata</i> 38; – <i>spicata</i> 40	
Dais <i>cotinifolia</i> 42	
Ekebergia <i>capensis</i> 44	
Ensete <i>ventricosum</i> 46	
Erythrina <i>acanthocarpa</i> 48; – <i>humeana</i> 48;	
– <i>lysistemon</i> 50; – <i>zeyheri</i> 52	
Gloriosa <i>superba</i> 54	
Haemanthus (Amaryllidaceae) 54	
Kniphofia 58	
Leonotus <i>leonorus</i> 58	
Nymphaea 60	
Podocarpus 62	
Schizostylis <i>coccinea</i> 64	
Strelitzia <i>reginae</i> 66; – <i>juncea</i> 68	
Veltheimia <i>viridifolia</i> 70	
Virgilia <i>oroboides</i> 70	
Zantedeschia 72	
Bladwyser vir volksname 76	
Bladwyser vir botaniese name 77	

FRONT COVER

VOORBLAD

Encephalartos friderici-guilielmi

Encephalartos

COMMON NAMES

“Broodbome”, cycads, “kafferbroodboom”, “Hottentotsbrood”, “broodpalm”, bread palm, kaffir-bread tree.

The genus **Encephalartos** belongs to the order Cycadales which is divided into three families, namely the Cycadaceae, Stangeriaceae and Zamiaceae.

The three families are represented by ten living genera:

Family Cycadaceae: Only one genus, namely **Cycas**, with twenty species in Polynesia, Malagasy and northern Japan.

Family Stangeriaceae: Only one genus, namely **Stangeria**, with one species found only in South Africa.

Family Zamiaceae: Eight genera, namely: **Lepidozamia** with two species in eastern Australia; **Macrozamia** with fourteen species in the temperate regions of Australia; **Dioon** with five species in Mexico and central America; **Microcycas** with one species in Cuba; **Ceratozamia** with four species in Mexico; **Bowenia** with two species in northern Australia; **Zamia** with some thirty-five species in tropical America and the West Indies; **Encephalartos** with some forty species in tropical and South Africa.

Specimens of the order Cycadales are often described as living fossils because the history of the order goes back as far as 200–300 million years from where they originated in the Carboniferous or the Permian

Encephalartos

VOLKSNAME

Broodbome, “cycads”, kafferbroodboom, Hottentotsbrood, broodpalm, “bread palm”, “kaffir-bread tree”.

Die genus **Encephalartos** behoort aan die orde Cycadales. Dié orde word in drie families verdeel, naamlik die Cycadaceae, Stangeriaceae en Zamiaceae.

Die drie families word deur tien lewende genera verteenwoordig:

Familie Cycadaceae: Slegs een genus, naamlik **Cycas** met twintig soorte in Polinesië, die Malgassiese Republiek en Noord-Japan.

Familie Stangeriaceae: Slegs een genus, naamlik **Stangeria** met een soort wat slegs in Suid-Afrika voorkom.

Familie Zamiaceae: Agt genera kom voor, naamlik: **Lepidozamia** met twee spesies uit Oos-Australië; **Macrozamia** met veertien spesies uit die gematigde streke van Australië; **Dioon** met vyf spesies uit Mexiko en Sentraal-Amerika; **Microcycas** met een spesie uit Kuba; **Ceratozamia** met vier spesies uit Mexiko; **Bowenia** met twee spesies uit Noord-Australië; **Zamia** met ongeveer vyf-en-dertig spesies in tropiese Amerika en die Wes-Indiese Eilande; **Encephalartos** met ongeveer veertig soorte wat in tropiese Afrika en Suid-Afrika voorkom.

Verteenwoordigers van die orde Cycadales word dikwels beskryf as lewende fossiele aangesien die fossielgeskiedenis van die groep so

periods. Fossils of this group have also been found in the Republic of South Africa.

Ecologically the plants seem to be very well adapted and it is maintained that they can reach an age of a thousand years or more.

Within the Republic of South Africa twenty-eight species occur and these are to be found mainly along the east coast from Port Elizabeth in the south to the Wolkberg and Soutpansberg in the north. All twenty-eight species are briefly described.

verteruggaan as 200– 300 miljoen jaar waar hulle in die Karboon- of Permtydperk hul oorsprong gehad het. Fossiele van hierdie groep is ook reeds in die Republiek van Suid-Afrika gevind.

Die plante is blykbaar ekologies baie goed aangepas en dit word beweer dat hulle tot 'n duisend jaar en ouer kan word.

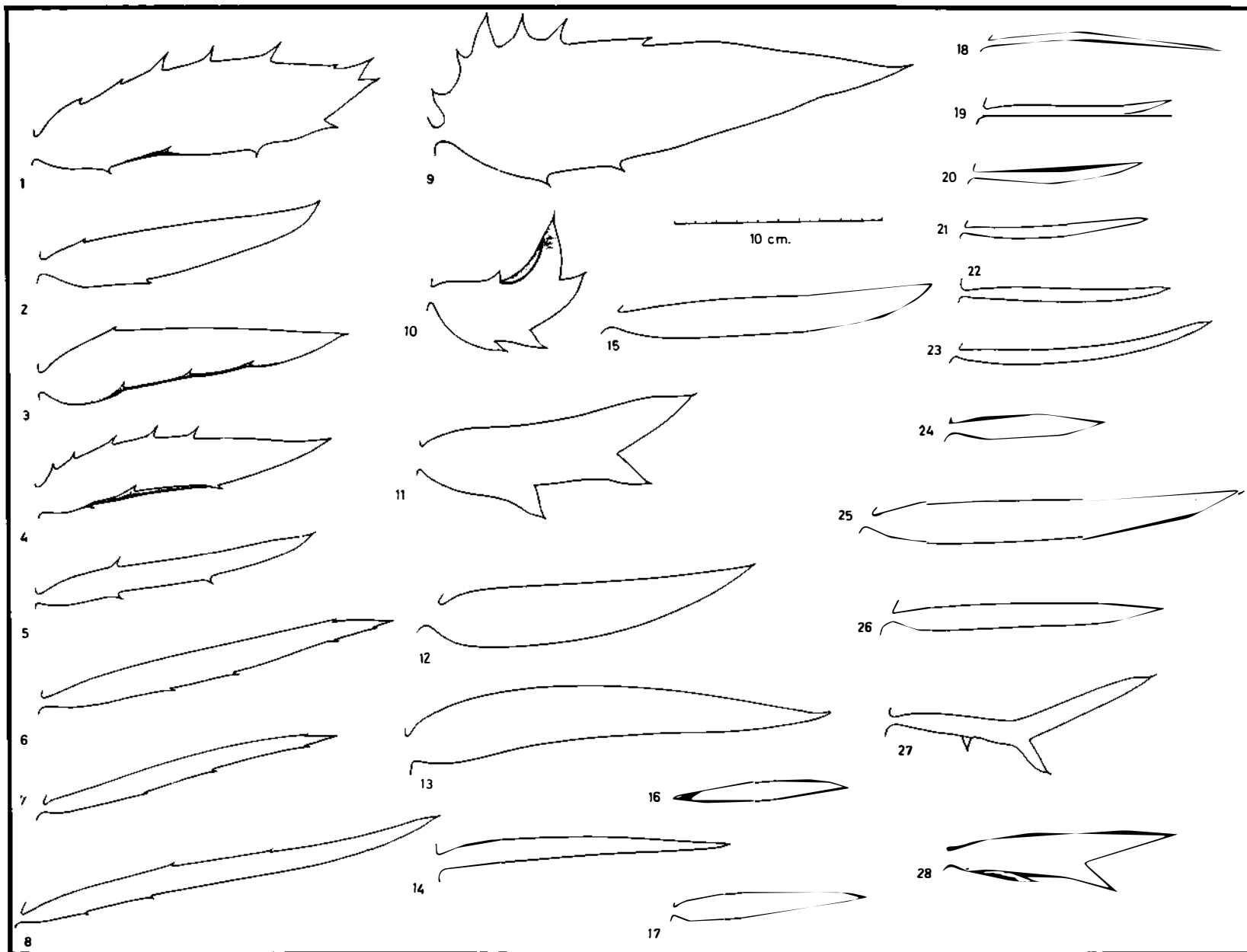
Binne die Republiek van Suid-Afrika word 28 beskrewe soorte aangetref en hulle kom hoofsaaklik langs die ooskus vanaf Port Elizabeth in die suide tot by die Wolkberge en Soutpansberge in die noorde voor. Al 28 soorte word kortliks bespreek.

Fig. 1–28: MEDIAN PINNAE OF THE LEAVES OF THE SOUTH AFRICAN ENCEPHALARTOS SPECIES

- | | |
|----------------------------|----------------------------------|
| 1 <i>E. ferox</i> | 15 <i>E. heenenii</i> |
| 2 <i>E. altensteinii</i> | 16 <i>E. caffer</i> |
| 3 <i>E. natalensis</i> | 17 <i>E. ngoyanus</i> |
| 4 <i>E. transvenosus</i> | 18 <i>E. ghellinckii</i> |
| 5 <i>E. lebomboensis</i> | 19 <i>E. cycadifolius</i> |
| 6 <i>E. villosus</i> | 20 <i>E. humilis</i> |
| 7 <i>E. umbeluziensis</i> | 21 <i>E. lanatus</i> |
| 8 <i>E. cupidus</i> | 22 <i>E. friderici-guilielmi</i> |
| 9 <i>E. woodii</i> | 23 <i>E. laevifolius</i> |
| 10 <i>E. latifrons</i> | 24 <i>E. princeps</i> |
| 11 <i>E. arenarius</i> | 25 <i>E. eugene-maraisii</i> |
| 12 <i>E. longifolius</i> | 26 <i>E. lehmannii</i> |
| 13 <i>E. paucidentatus</i> | 27 <i>E. trispinosus</i> |
| 14 <i>E. inopinus</i> | 28 <i>E. horridus</i> |

Fig. 1–28: MEDIANE PINNAS VAN DIE BLARE VAN DIE SUID-AFRIKAANSE ENCEPHALARTOS-SOORTE

- | | |
|----------------------------|----------------------------------|
| 1 <i>E. ferox</i> | 15 <i>E. heenenii</i> |
| 2 <i>E. altensteinii</i> | 16 <i>E. caffer</i> |
| 3 <i>E. natalensis</i> | 17 <i>E. ngoyanus</i> |
| 4 <i>E. transvenosus</i> | 18 <i>E. ghellinckii</i> |
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| 14 <i>E. inopinus</i> | 28 <i>E. horridus</i> |



GENERAL DESCRIPTION

Male and female plants are found, but in the non-flowering stage it is impossible to differentiate the sexes. They have simple stems, branched above or below the ground, covered with scales and leaf scars. The leaf arrangement is in the form of rosettes and the leaves are pinnately compound.

Male plants bear from one to ten cones at the end of the stem, in the leafrosette. A large number of pollen sacs is found on the underside of the sporophylls of the male cone.

The female cones are borne in the same way as the male cones, but vary in number from one to five. The mature female cones are larger than the male cones of the same species and bear two large seeds on every sporophyll which makes up the cone. The ovules and cones are fully grown before pollination occurs, thus the mere presence of a seed does not necessarily mean viability, as many ovules are never fertilised.

The seed is enclosed in an attractive orange or red fleshy covering which is edible in some species such as *E. transvenosus*, but poisonous in others. In most species the endosperm is poisonous.

When the cone is ripe it bursts open and the seeds are scattered. At this stage the seed is not yet ready to germinate as the embryo in the seed has not reached maturity. If the seed is fertilised it takes up to eight months for the embryo to develop fully before germinating.

To differentiate the various species, use is made of different characteristics which are subsequently discussed briefly.

ALGEMENE BESKRYWING

Manlike en vroulike plante word aangetref, maar in die nie-blommende toestand is dit nie moontlik om tussen die geslagte te onderskei nie. Die stingels is onvertak, vertak, bogronds of ondergronds en is met skubbe en die basisse van afgestorwe blare bedek. Die blare word in rosette gedra en is veervormig saamgestel.

Manlike plante dra een tot tien manlike keëls op die punt van die stingel in die blaarroset. 'n Groot aantal stuifmeelsakkies word aan die onderkant van die sporofille, waaruit die manlike keël opgebou is, gedra.

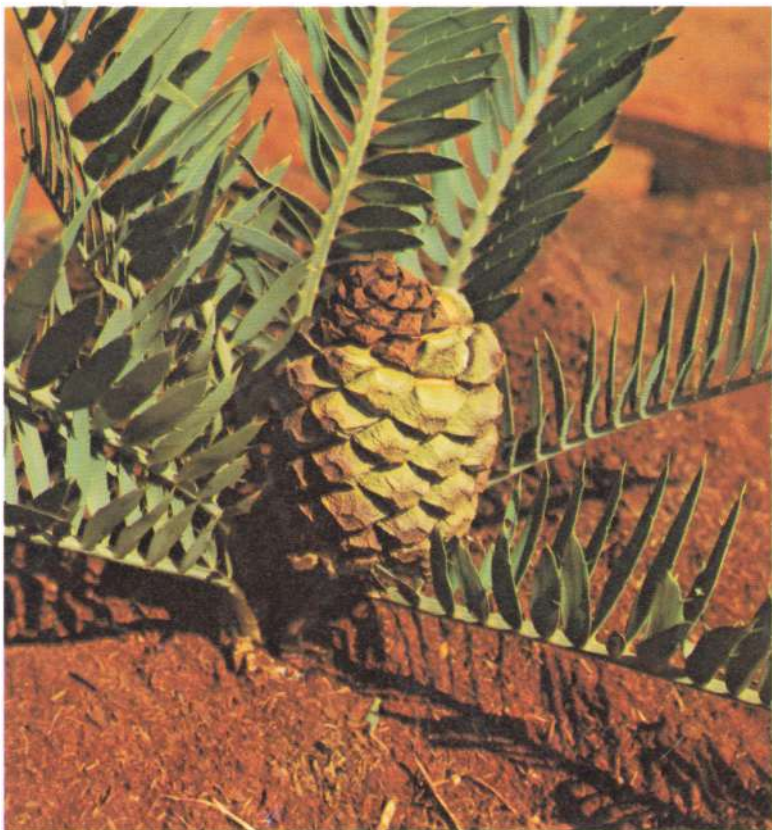
Die vroulike keëls word op dieselfde wyse as die manlike keëls gedra, en varieer van een tot vyf.

Die volwasse vroulike keëls is groter as die manlike keëls van dieselfde soort en op elke sporofil waaruit die keël opgebou is, word twee groot sade gedra. Die saadknoppe en keëls is reeds voor bestuiwing volgroeï met die gevolg dat die aanwesigheid van saad nie noodwendig beteken dat hulle kiemkrachtig is nie omdat baie saadknoppe nooit bevrug word nie.

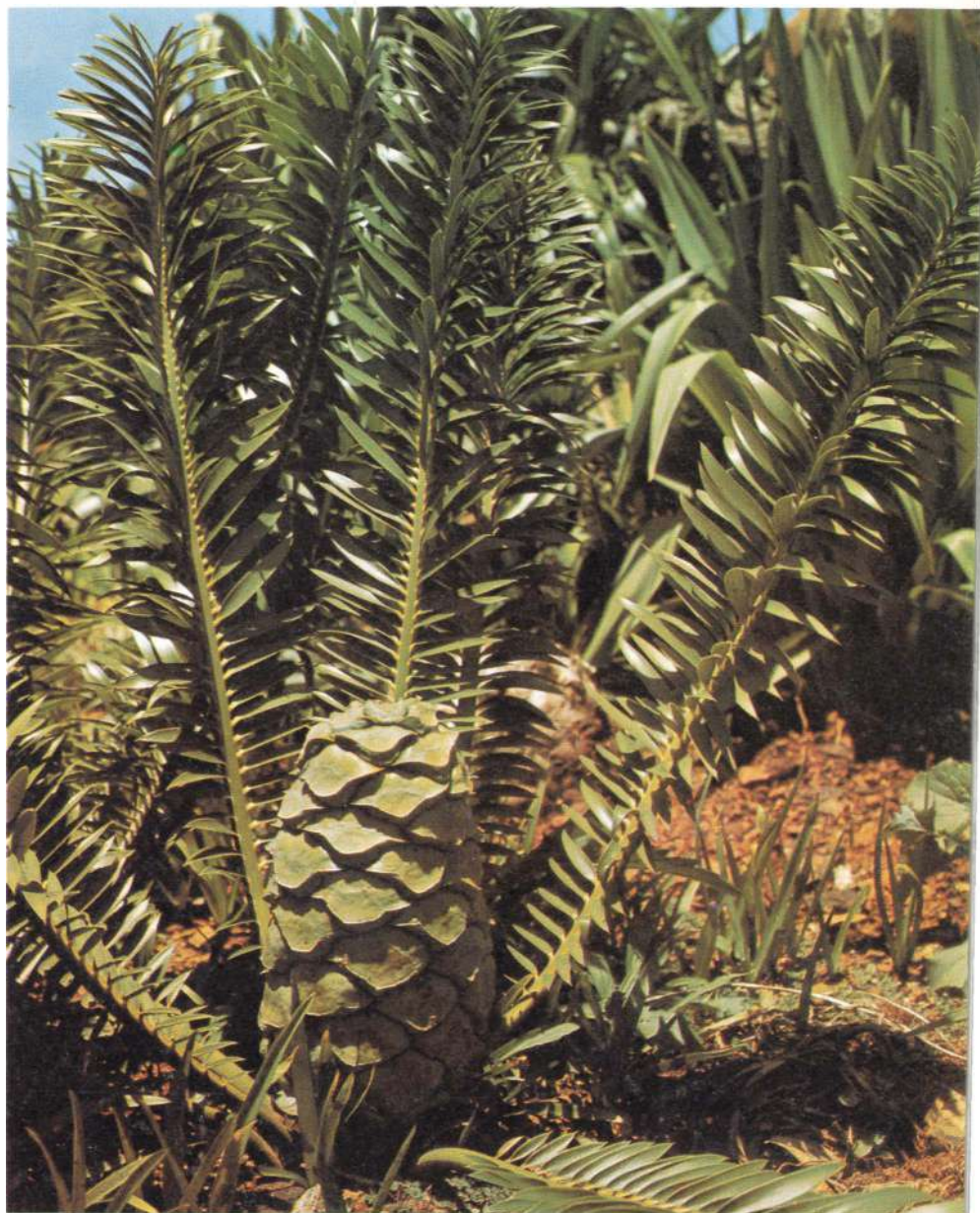
Die saad word deur 'n aantreklike oranje of rooi vlesige gedeelte omgewe wat by party soorte soos *E. transvenosus* eetbaar is, maar by ander soorte giftig is. Die endosperm of kiemwit is by die meeste soorte giftig.

Wanneer die keël ryp is, val dit uitmekaar en die saad word vrygestel. In hierdie stadium is die saad nog nie kiemkrachtig nie, aangesien die embrio in die saad nog onvolwasse is. Indien 'n saad bevrug is, neem dit ongeveer agt maande vir die embrio om verder te ontwikkel, waarna die saad normaalweg sal ontkiem.

Om die verskillende soorte van mekaar te onderskei, word van verskillende eienskappe gebruik gemaak, wat vervolgens kortliks bespreek word.



Encephalartos cupidus



Encephalartos caffer

A *Species with subterranean or partially subterranean stems*

Encephalartos caffer

Stem: underground, sparsely branched. **Leaves:** dark green to yellowish-green, 40–90 cm long, straight or slightly concave, petiole 2–5 cm long, sometimes with 1–2 spines. **Pinnae:** as in fig. 16, close together, twisted. **Male cones:** yellowish-green, smooth, 20–30 cm long, 6–11 cm in diameter. **Female cones:** also yellowish-green and smooth, about 30 cm long, 15 cm in diameter. **Seeds:** bright red.

Encephalartos cupidus

Stem: usually underground, up to 75 cm high and 20–30 cm in diameter. **Leaves:** dark green to blue-green, up to 1 m long, tips turned upwards. **Pinnae:** as in fig. 8, turned upwards opposite pairs forming a V. **Male cones:** light green, smooth about 18 cm long, 5 cm in diameter. **Female cones:** light green, smooth 18–20 cm long, about 10 cm in diameter. **Seeds:** apricot-coloured.

Encephalartos ngoyanus

Stem: underground, unbranched, 30 cm long, 20 cm in diameter. **Leaves:** dark green, straight, 0,5–1,25 cm long, petiole 10–30 cm long, rarely with spines. **Pinnae:** as in fig. 17, close together, spreading. **Male cones:** yellow, smooth, 20 to 25 cm long, 4,5 to 6 cm in diameter. **Female cones:** yellow, smooth, about 23 cm long and 12 cm in diameter. **Seeds:** red.

Encephalartos umbeluziensis

Stem: underground, usually unbranched, about 30 cm long, 20–25 cm in diameter. **Leaves:** dark green, straight, 1–2 m

A *Soorte met ondergrondse of gedeeltelik ondergrondse stamme*

Encephalartos caffer

Stam: ondergronds, selde vertak. **Blare:** donkergroen tot geelgroen, 40–90 cm lank, reguit of effens gekrom, blaarsteel 2–5 cm lank, soms met 1–2 stekels. **Pinnas:** soos in fig. 16, dig opmekaar, geswaai. **Manlike keëls:** geelgroen, glad, 20–30 cm lank, 6–11 cm in deursnee. **Vroulike keëls:** ook geelgroen en glad, ongeveer 30 cm lank, 15 cm in deursnee. **Saad:** helderrooi.

Encephalartos cupidus

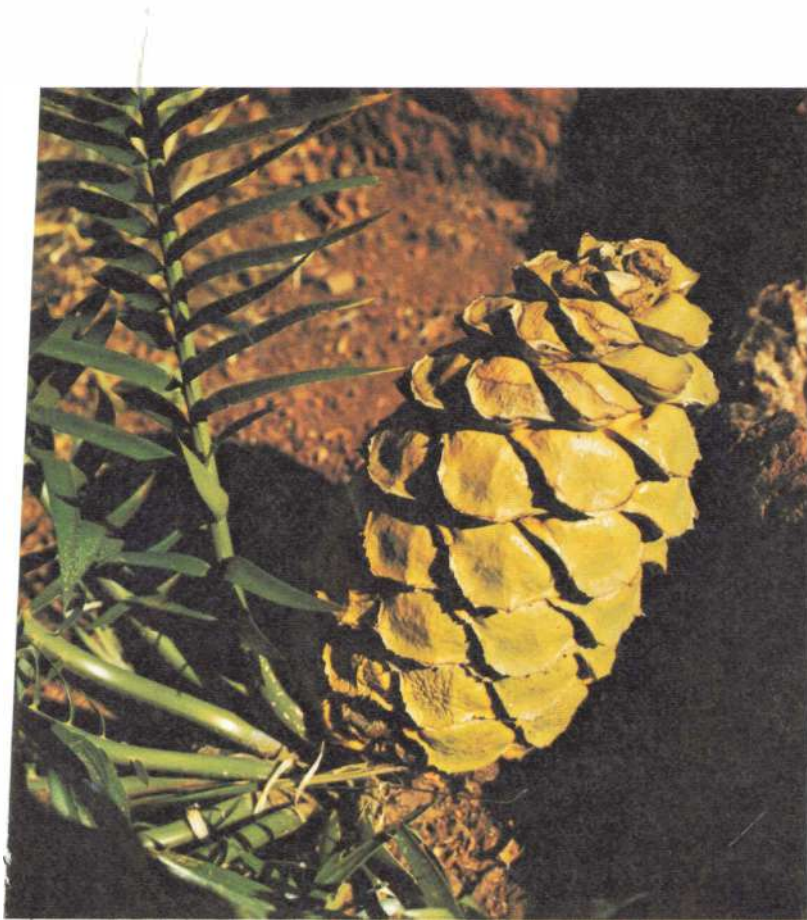
Stam: gewoonlik ondergronds, tot 75 cm hoog en 20–30 cm in deursnee. **Blare:** donkergroen tot blougroen, tot 1 m lank, punte opgebui. **Pinnas:** soos in fig. 8, pare V-vormig ten opsigte van mekaar gerangskik. **Manlike keëls:** liggroen, glad, ongeveer 18 cm lank, 5 cm in deursnee. **Vroulike keëls:** liggroen, glad, 18–20 cm lank, ongeveer 10 cm in deursnee. **Saad:** appelkooskleurig.

Encephalartos ngoyanus

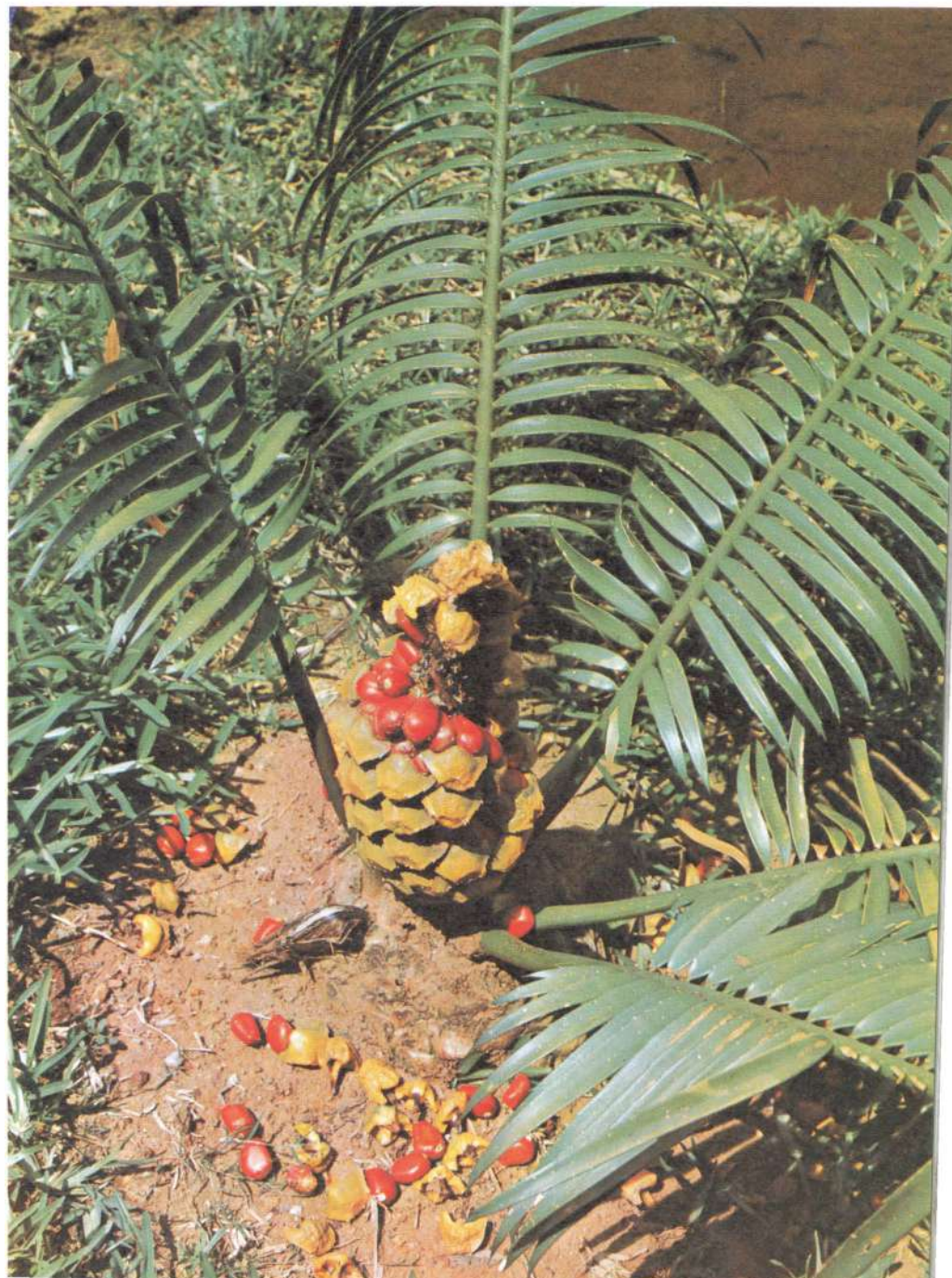
Stam: ondergronds, onvertak, 30 cm lank, 20 cm in deursnee. **Blare:** donkergroen, reguit, 0,5–1,25 cm lank, blaarsteel 10–30 cm lank, selde met stekels. **Pinnas:** soos in fig. 17, dig opmekaar, spreidend. **Manlike keëls:** geel, glad, 20–25 cm lank, 4,5–6 cm in deursnee. **Vroulike keëls:** geel, glad, ongeveer 23 cm lank, 12 cm in deursnee. **Saad:** rooi.

Encephalartos umbeluziensis

Stam: ondergronds, gewoonlik onvertak, ongeveer 30 cm lank, 20–25 cm in deursnee. **Blare:** donkergroen, reguit, 1–2 m lank, blaarsteel 10–30 cm lank met 1–2 stekels. **Pinnas:** soos in



Encephalartos ngoyanus



Encephalartos umbeluziensis

long, petiole 10–30 cm long with 1–2 spines. **Pinnae:** as in fig. 7, spaced. **Male cones:** yellow-green, smooth, about 30 cm long and 6–8 cm in diameter. **Female cones:** yellow-green, smooth, about 30 cm long, 12 cm in diameter. **Seeds:** apricot-brown.

Encephalartos villosus

Stem: subterranean, usually unbranched, unless injured, up to 30 cm long, 20 cm in diameter. **Leaves:** 1,25–2,5 m long, straight or curved downwards, petiole with spines up to base. **Pinnae:** as in fig. 6, spaced, open, bending backwards. **Male cones:** orange-yellow, up to 65 cm long, 12 cm in diameter. **Female cones:** orange-yellow, smooth, 30–40 cm long, 12–13 cm in diameter. **Seeds:** glossy, dark red.

Encephalartos arenarius

Stem: partially subterranean, often branched from the base, up to 1 m tall, 20–30 cm in diameter. **Leaves:** 1–1,5 m long, recurved in upper half, petiole 3–20 cm long, occasionally with a single spine. **Pinnae:** as in fig. 11, dark green, overlapping in upper half. **Male cones:** green, smooth, 34–45 cm long, about 10 cm in diameter. **Female cones:** green to blue-green, smooth, 34–45 cm long, about 25 cm in diameter. **Seeds:** smooth, red.

Encephalartos horridus

Stem: usually branched from base, partly subterranean up to 30 cm long, 20–30 cm in diameter. **Leaves:** bluish-green, recurved in upper third. **Pinnae:** as in fig. 28, in V-disposition. **Male cones:** blackish- or reddish-brown on dark green background, 20–40 cm long, 6–12 cm in diameter. **Female cones:** dark brown on green background, 20–40 cm long, 15–20 cm in diameter. **Seeds:** pale red.

fig. 7, gespasieer. **Manlike keëls:** geelgroen, glad, ongeveer 30 cm lank en 6–8 cm in deursnee. **Vroulike keëls:** geelgroen, glad, ongeveer 30 cm lank, 12 cm in deursnee. **Saad:** appelkooskleurig-bruin.

Encephalartos villosus

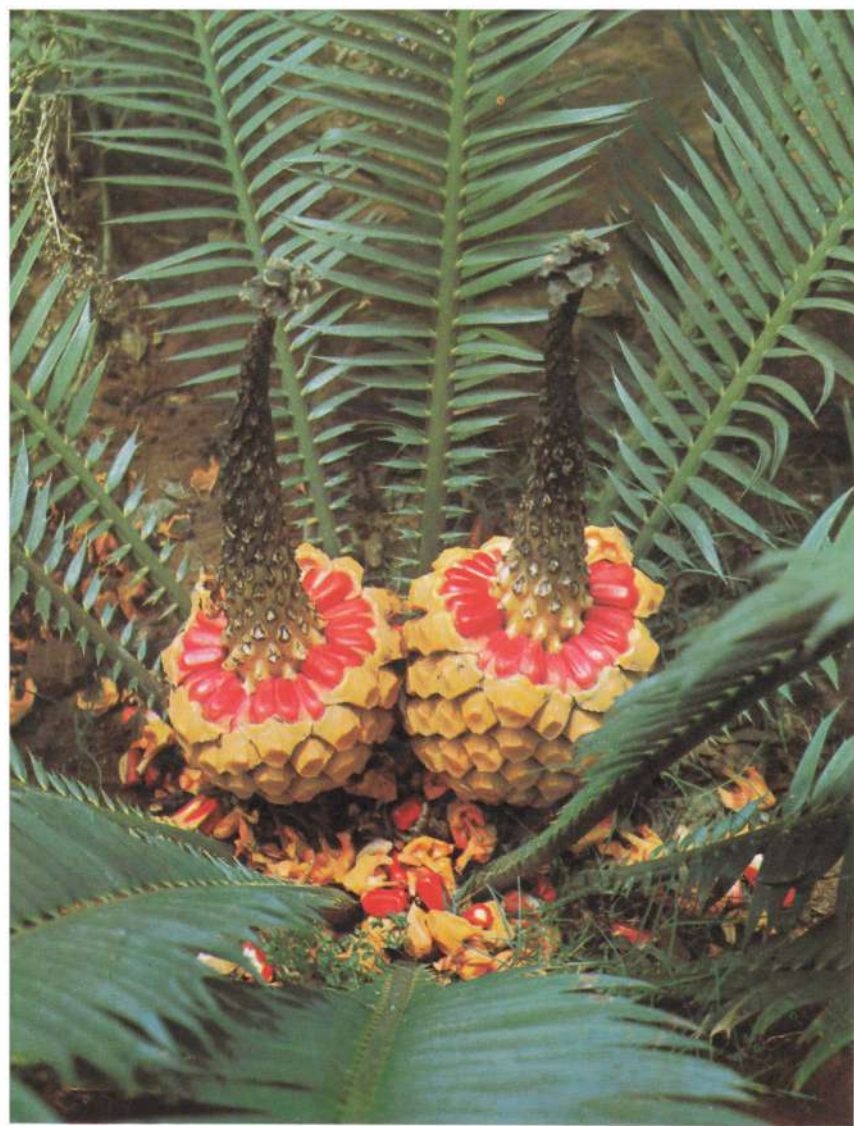
Stam: gewoonlik ondergronds, onvertak – tensy beskadig, tot 30 cm lank, 20 cm in deursnee. **Blare:** 1,25–2,5 m lank, reguit of buig af, blaarsteel met stekels tot by die basis. **Pinnae:** soos in fig. 6, gespasieer, oop en buig af. **Manlike keëls:** oranjegeel, tot 65 cm lank, 12 cm in deursnee. **Vroulike keëls:** oranjegeel, glad, 30–40 cm lank, 12–13 cm in deursnee. **Saad:** blinkerige donkerrooi.

Encephalartos arenarius

Stam: gedeeltelik ondergronds, dikwels by die basis vertak, tot 1 m hoog, 20–30 cm in deursnee. **Blare:** 1–1,5 m lank, boonste helfte teruggebuig, blaarsteel 3–20 cm lank, soms met 'n enkel stekel. **Pinnae:** soos in fig. 11, donkergroen, oorvleuel in boonste helfte. **Manlike keëls:** groen, glad, 34–45 cm lank, ongeveer 10 cm in deursnee. **Vroulike keëls:** groen tot blou-groen, glad, 34–45 cm lank, ongeveer 25 cm in deursnee. **Saad:** glad, rooi.

Encephalartos horridus

Stam: gewoonlik vanaf die basis vertak, gedeeltelik ondergronds, tot 30 cm lank, 20–30 cm in deursnee. **Blare:** blou-groen, boonste derde – teruggebuig. **Pinnae:** soos in fig. 28, V-vormig ten opsigte van mekaar op ragis geplaas. **Manlike keëls:** effens swart tot rooibruin op donkergroen agtergrond, 20–40 cm lank, 6–12 cm in deursnee. **Vroulike keëls:** donkerbruin op groen agtergrond, 20–40 cm lank, 15–20 cm in deursnee. **Saad:** bleekrooi.



Encephalartos villosus



Encephalartos arenarius



Encephalartos horridus

B Species with aerial stems

B1 Species with revolute leaf margins

Encephalartos ghellinckii

Stem: usually branched from base, up to 3 m tall, 30–40 cm in diameter with woolly crown. **Leaves:** yellowish-green, straight or slightly concave and twisted. **Pinnae:** as in fig. 18, dense with revolute margin. **Male cones:** brown, woolly, about 25 cm long, 6–7 cm in diameter. **Female cones:** also brown and woolly, about 22 cm long and 14 cm in diameter. **Seeds:** golden-yellow.

B2 Species with narrow green to blue-green leaves

Encephalartos cycadifolius

Stem: branched, 50–150 cm tall, 25 cm in diameter. **Leaves:** dark-green, straight or slightly twisted, 0,5–1 m long, petiole 10–20 cm long. **Pinnae:** as in fig. 19, with 5–6 prominent veins on under surface. **Male cones:** grey-brown, woolly, 13–22 cm long, 4,7–7 cm in diameter. **Female cones:** grey-brown, woolly, 20–30 cm long, 16–18 cm in diameter. **Seeds:** orange-yellow to amber.

Encephalartos laevifolius

Stem: not branched or suckering at base, 1–3 m tall, 25–35 cm in diameter. **Leaves:** blue-green, straight or twisted in upper half, about 1 m long. **Pinnae:** as in fig. 23, V-shaped in upper half, with 10–12 prominent veins on under surface. **Male cones:** grey-green,

B Soorte met boggrondse stamme

B1 Soort met teruggerolde blaarrande

Encephalartos ghellinckii

Stam: gewoonlik by die basis vertak, tot 3 m hoog, 30–40 cm in deursnee met wollerige kroon. **Blare:** geelgroen, reguit tot effens konkav en gedraai. **Pinnae:** soos in fig. 18, dig opmekaar met teruggerolde rand. **Manlike keëls:** bruin, wollerig, ongeveer 25 cm lank, 6–7 cm in deursnee. **Vroulike keëls:** ook bruin en wollerig, ongeveer 22 cm lank en 14 cm in deursnee. **Saad:** goudgeel.

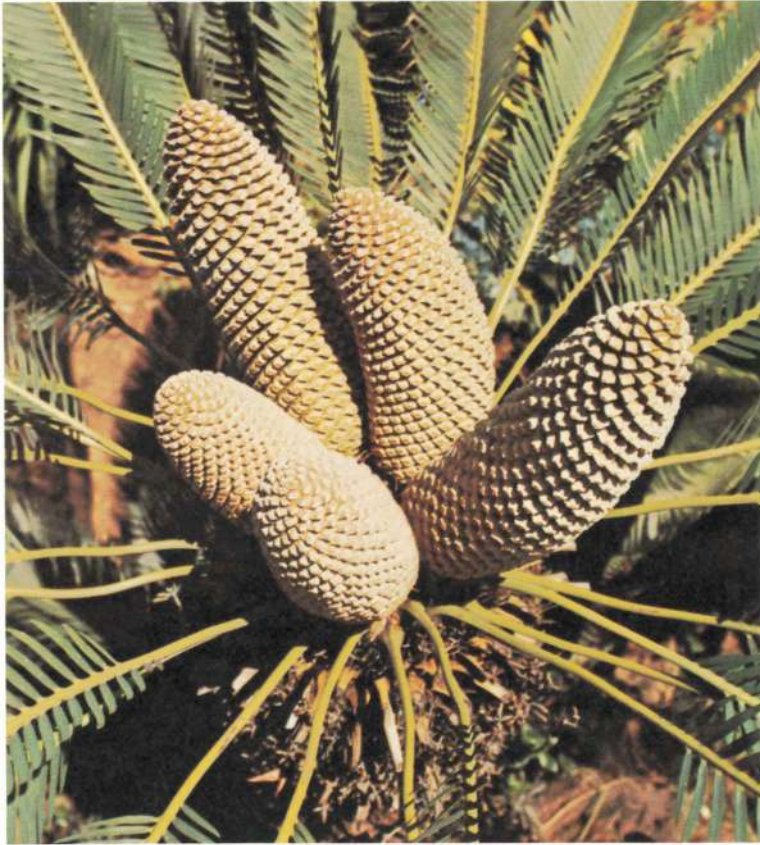
B2 Soorte met smal, groen tot blougroen blare

Encephalartos cycadifolius

Stam: vertak, 50–150 cm lank, 25 cm in deursnee. **Blare:** donkergroen, reguit of geswaai, 0,5–1 m lank, blaarsteel 10–20 cm lank. **Pinnae:** soos in fig. 19, met 5–6 prominente are aan onderkant. **Manlike keëls:** grysbruin, wollerig, 13–22 cm lank, 4,7–7 cm in deursnee. **Vroulike keëls:** grysbruin, wollerig, 20–30 cm lank, 16–18 cm in deursnee. **Saad:** oranjegeel tot amberkleurig.

Encephalartos laevifolius

Stam: onvertak, 1–3 m hoog, 25–35 cm in deursnee. **Blare:** blougroen, reguit of geswaai in boonste helfte, ongeveer 1 m lank. **Pinnae:** soos in fig. 23, V-vormig ten opsigte van mekaar op ragis, met 10–12 pro-



Encephalartos laevifolius

Encephalartos ghellinckii

Encephalartos cycadifolius



woolly, 30–40 cm long, about 10 cm in diameter. **Female cones:** light yellow, almost smooth, 20–30 cm long, 10–13 cm in diameter. **Seeds:** orange-yellow.

Encephalartos frederici-guilielmi

Stem: unbranched or branched at the base, stout, up to 4 m tall with woolly open crown. **Leaves:** straight, bending back from base when old. **Pinnae:** as in fig. 22, silvery or bluish, turning yellow with age, closely spaced and overlapping in upper half. **Male cones:** covered with yellowish-grey wool, about 20–30 cm long, 6–7 cm in diameter. **Female cones:** lemon-yellow at first, changing to a tawny-beige, woolly, 25–30 cm long, 15–17 cm in diameter. **Seeds:** light yellow to orange.

Encephalartos lanatus

Stem: seldomly branched, about 1 m tall and 25 cm in diameter. **Leaves:** 0,6–1 m long, recurved and slightly twisted in upper half, petiole 20–25 cm long. **Pinnae:** as in fig. 21, blue-green to silvery, set in V-formation in upper half. **Male cones:** 25–30 cm long, 4–5 cm in diameter, covered with creamy-grey wool. **Female cones:** about 27 cm long, 9 cm in diameter, pale yellow, woolly. **Seeds:** orange-yellow.

Encephalartos humilis

Dwarf plants. **Stem:** 35–50 cm tall, 13–18 cm in diameter, branched from base. **Leaves:** recurved, slightly twisted, 0,3–0,5 m long, petiole 5–15 cm long. **Pinnae:** as in fig. 20, green-grey to silvery, V-shaped in upper half. **Male cones:** greyish-brown, woolly, 15–20 cm long, 4–5 cm in diameter. **Female cones:** grey, woolly, about 27 cm long, and 9 cm in diameter. **Seeds:** orange-yellow.

minente are aan onderkant. **Manlike keëls:** vaalgroen, wollerig, 30–40 cm lank, ongeveer 10 cm in deursnee. **Vroulike keëls:** liggeel, feitlik glad, 20–30 cm lank, 10–13 cm in deursnee. **Saad:** oranjegeel.

Encephalartos frederici-guilielmi

Stam: onvertak of vertak by basis, stewig, tot 4 m hoog met wollerige oop kroon. **Blare:** reguit, ou blare buig by basis terug. **Pinnae:** soos in fig. 22, silwer- tot blou-groen, word later gelerig, dig opmekaar en oorvleuel in boonste helfte. **Manlike keëls:** 20–30 cm lank, 6–7 cm in deursnee, bedek met grysgeel wol. **Vroulike keëls:** suurlemoengeel, later lig-vaalbruin, wollerig, 25–30 cm lank, 15–17 cm in deursnee. **Saad:** liggeel tot oranje.

Encephalartos lanatus

Stam: selde vertak, ongeveer 1 m lank en 25 cm in deursnee. **Blare:** 0,6–1 m lank, teruggebuig en punte effens geswaai, blaarsteel 20–25 cm lank. **Pinnae:** soos in fig. 21, blougroen tot silwergrys, V-vormig gerangskik in boonste helfte. **Manlike keëls:** 25–30 cm lank, 4–5 cm in deursnee, bedek met grysgeel wol. **Vroulike keëls:** ongeveer 27 cm lank, 9 cm in deursnee, liggeel, wollerig. **Saad:** oranjegeel.

Encephalartos humilis

Dwergplante. **Stam:** 35–50 cm lank, 13–18 cm in deursnee, vertak by basis. **Blare:** teruggebuig, effens geswaai, 0,3–0,5 m lank, blaarsteel 5–15 cm lank. **Pinnae:** soos in fig. 20, groen- tot silwergrys, V-vormig gerangskik in boonste helfte. **Manlike keëls:** grysbruin, wollerig, 15–20 cm lank, 4–5 cm in deursnee. **Vroulike keëls:** grys, wollerig, ongeveer 27 cm lank en 9 cm in deursnee. **Saad:** oranjegeel.



Encephalartos humilis



Encephalartos lanatus



Encephalartos friderici-guilielmi

B3 Species with broad, dark green leaves

Encephalartos latifrons

Stem: unbranched or branched from base, 2,5–3 m tall. **Leaves:** 1–1,5 m long, recurved in upper half, petiole 10–20 cm long with a few spines. **Pinnae:** as in fig. 10, dark green, distinctly overlapping in upper half, V-shaped. **Male cones:** dark green with slight bloom, 30–50 cm long, 8–17 cm in diameter. **Female cones:** blue-green, about 60 cm long, 25 cm in diameter. **Seeds:** red.

Encephalartos ferox

Stem: usually unbranched, 1–2 m tall, up to 30 cm in diameter. **Leaves:** straight to slightly curved, 1–2 m long, petiole 20–30 cm long with a few spines. **Pinnae:** as in fig. 1, dark green. **Male cones:** scarlet, up to 40 cm long, 7–10 cm in diameter. **Female cones:** scarlet, 25–50 cm long, 20–40 cm in diameter. **Seeds:** red.

Encephalartos lebomboensis

Stem: usually unbranched, up to 4 m tall, about 30 cm in diameter. **Leaves:** straight, 1–2 m long, petiole 3–10 cm long with spines. **Pinnae:** as in fig. 5, dark green. **Male cones:** orange-yellow, about 45 cm long, 13 cm in diameter. **Female cones:** orange-red, 50–80 cm long, 20–30 cm in diameter. **Seeds:** bright red.

Encephalartos paucidentatus

Stem: usually unbranched, up to 6 m tall, 40–70 cm in diameter. **Leaves:** straight to slightly curved, 1–2 m long, petiole 20–40 cm long. **Pinnae:** as in fig. 13,

B3 Soorte met breë, donkergroen blare

Encephalartos latifrons

Stam: onvertak of by basis vertak, 2,5–3 m hoog. **Blare:** 1–1,5 m lank, teruggebuig in boonste helfte, blaarsteel, 10–20 cm lank met enkele stekels. **Pinnae:** soos in fig. 10, donkergroen, oorvleuel opvallend in boonste helfte, V-vormig gerangskik. **Manlike keëls:** donkergroen met effense wasbedekking, 30–50 cm lank, 8–17 cm in deursnee. **Vroulike keëls:** blougroen, ongeveer 60 cm lank, 25 cm in deursnee. **Saad:** rooi.

Encephalartos ferox

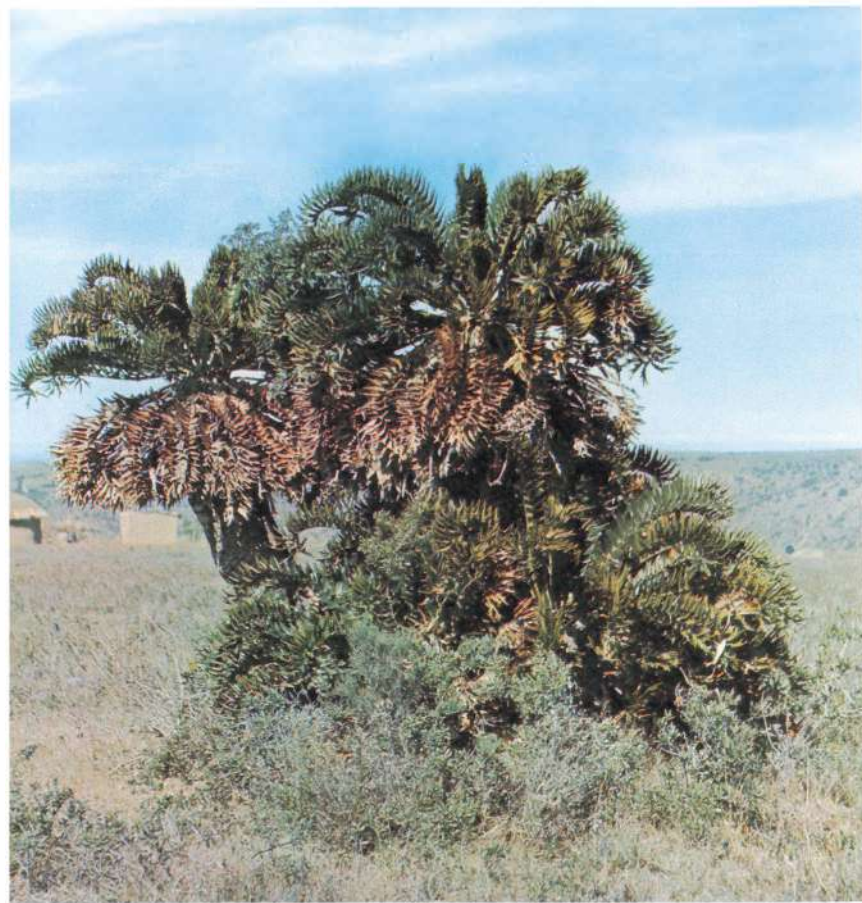
Stam: gewoonlik onvertak, 1–2 m lank, tot 30 cm in deursnee. **Blare:** reguit tot effens gekrom, 1–2 m lank, blaarsteel 20–30 cm lank met 'n paar stekels. **Pinnae:** soos in fig. 1, donkergroen. **Manlike keëls:** helderrooi, tot 40 cm lank, 7–10 cm in deursnee. **Vroulike keëls:** helderrooi, 25–50 cm lank, 20–40 cm in deursnee. **Saad:** rooi.

Encephalartos lebomboensis

Stam: gewoonlik onvertak, tot 4 m lank, ongeveer 30 cm in deursnee. **Blare:** reguit, 1–2 m lank, blaarsteel 3–10 cm lank met stekels. **Pinnae:** soos in fig. 5, donkergroen. **Manlike keëls:** oranjegeel, ongeveer 45 cm lank, 13 cm in deursnee. **Vroulike keëls:** oranjerooi, 50–80 cm lank, 20–30 cm in deursnee. **Saad:** helderrooi.

Encephalartos paucidentatus

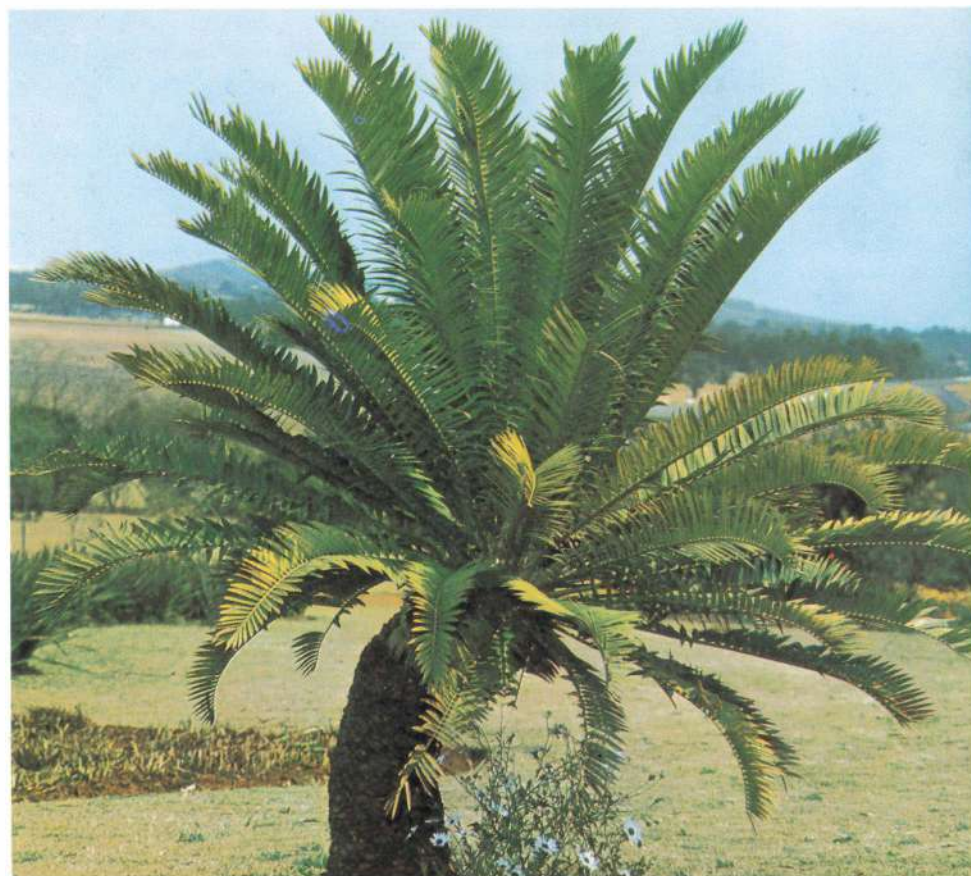
Stam: gewoonlik onvertak, tot 6 m lank, 40–70 cm in deursnee. **Blare:** reguit tot effens gekrom, 1–2 m lank, blaarsteel 20–40 cm lank. **Pinnae:** soos in fig. 13, wyd gespaseer met ongeveer 30 opvallende are aan onderkant. **Manlike keëls:** goudbruin, ongeveer 60 cm lank,



Encephalartos latifrons



Encephalartos ferox



Encephalartos lebomboensis

widely spaced, with about 30 conspicuous veins on lower surface. **Male cones:** golden-brown, about 60 cm long, 15 cm in diameter. **Female cones:** golden-brown, 60–70 cm long, up to 30 cm in diameter. **Seeds:** red.

Encephalartos woodii

Stem: unbranched or branched from base, 3–4 m tall, 40–60 cm in diameter. **Leaves:** 1,8–2,5 m long, curved, petiole 10–20 cm long, with broad spines. **Pinnae:** as in fig. 9, spaced on rachis, dark green. **Male cones:** orange-yellow, about 60 cm long, 15 cm in diameter. **Female cones:** not seen.

Encephalartos transvenosus

Stem: occasionally branched, up to 13 m tall, 40–50 cm in diameter. **Leaves:** straight to slightly curved 1–2,5 m long, petiole 3–5 cm long, hairy with spines. **Pinnae:** as in fig. 4, dark green, spreading on lower half to slightly recurved. **Male cones:** velvety, golden-brown, 30–40 cm long, 13–15 cm in diameter. **Female cones:** golden-brown, 50–80 cm long, 20–30 cm in diameter. **Seeds:** red.

Encephalartos altensteinii

Stem: sometimes branched, 3–7 m tall, 25–35 cm in diameter. **Leaves:** 1–3 m long, straight to slightly curved, petiole 10–30 cm long. **Pinnae:** as in fig. 2, dark green, spreading to slightly V-shaped. **Male cones:** about 50 cm long, 12 cm in diameter, yellow-green, velvety. **Female cones:** 40–55 cm long, 20–28 cm in diameter, yellow-green, velvety. **Seeds:** bright shiny red.

15 cm in deursnee. **Vroulike keëls:** goudbruin, 60–70 cm lank, tot 30 cm in deursnee. **Saad:** rooi.

Encephalartos woodii

Stam: onvertak of vertak by basis, 3–4 m hoog, 40–60 cm in deursnee. **Blare:** 1,8–2,5 m lank, gekrom, blaarsteel 10–20 cm lank met breë stekels. **Pinnas:** soos in fig. 9, gespasieer, donkergroen. **Manlike keëls:** oranjegeel, ongeveer 60 cm lank, 15 cm in deursnee. **Vroulike keëls:** onbekend.

Encephalartos transvenosus

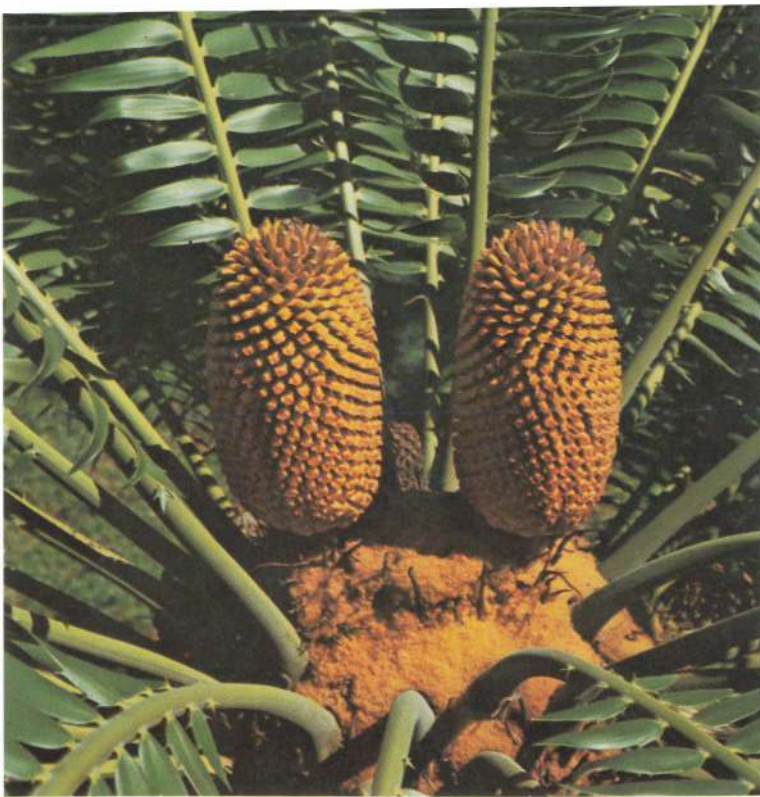
Stam: selde vertak, tot 13 m hoog, 40–50 cm in deursnee. **Blare:** reguit tot effens gekrom, 1–2,5 m lank, blaarsteel 3–5 cm lank, harig met stekels. **Pinnas:** soos in fig. 4, donkergroen, spreidend op onderste helfte tot effens teruggebuig. **Manlike keëls:** fluweelagtig, goudbruin, 30–40 cm lank, 13–15 cm in deursnee. **Vroulike keëls:** oranjegeel, 50–80 cm lank, 20–30 cm in deursnee. **Saad:** rooi.

Encephalartos altensteinii

Stam: soms vertak, 3–7 m hoog, 25–35 cm in deursnee. **Blare:** 1–3 m lank, reguit tot effens gekrom, blaarsteel 10–30 cm lank. **Pinnas:** soos in fig. 2, donkergroen, spreidend tot effens V-vormig gerangskik. **Manlike keëls:** ongeveer 50 cm lank, 12 cm in deursnee, geelgroen, fluweelagtig. **Vroulike keëls:** 40–55 cm lank, 20–28 cm in deursnee, geelgroen, fluweelagtig. **Saad:** helder-blink-rooi.

Encephalartos natalensis

Stam: selde vertak, 3–5 m lank, 25–40 cm in deursnee. **Blare:** reguit, 1,3–3,2 m lank, effens gekrom, blaarsteel



Encephalartos paucidentatus



Encephalartos woodii



Encephalartos transvenosus

Encephalartos natalensis

Stem: occasionally branched, 3–5 m tall, 25–40 cm in diameter. **Leaves:** straight, slightly curved, 1,3–3,2 m long, petiole 10–26 cm long, hairy with a few spines. **Pinnae:** as in fig. 3, spreading at base, V-shaped on upper half of rachis. **Male cones:** yellow-green, velvety, about 45 cm long, 9–10 cm in diameter. **Female cones:** yellow-green, about 50 cm long, 25 cm in diameter. **Seeds:** bright orange-red.

Encephalartos longifolius

Stem: unbranched or branched from base, 3–4 m tall, 30–40 cm in diameter. **Leaves:** 1–1,75 m long, straight to slightly curved in upper half, petiole 15–35 cm long, hairy. **Pinnae:** as in fig. 12, dark green, V-shaped. **Male cones:** grey-brown, 40–60 cm long, 14–20 cm in diameter. **Female cones:** green-brown, about 60 cm long, 40 cm in diameter. **Seeds:** bright red.

Encephalartos heenenii

Stem: branched, 2–3 m tall, 25–35 cm in diameter. **Leaves:** 1–1,3 m long, straight, slightly concave in upper half, petiole about 20 cm long. **Pinnae:** as in fig. 15, grey-green to dark green, overlapping in upper half, V-shaped. **Male cones:** rust-brown, woolly, 27–30 cm long, 15–17 cm in diameter. **Female cones:** rust-brown, woolly, 5–6 cm long, about 4 cm in diameter. **Seeds:** red.

10–26 cm lank, harig met enkele stekels. **Pinnae:** soos in fig. 3, spreidend by die basis, V-vormig gerangskik in boonste helfte van ragis. **Manlike keëls:** geelgroen, fluweelagtig, ongeveer 45 cm lank, 9–10 cm in deursnee. **Vroulike keëls:** geelgroen, ongeveer 50 cm lank, 25 cm in deursnee. **Saad:** helder-oranjerooi.

Encephalartos longifolius

Stam: onvertak of by basis vertak, 3–4 m hoog, 30–40 cm in deursnee. **Blare:** 1–1,75 m lank, reguit tot effens gekrom in boonste helfte, blaarsteel 15–35 cm lank, harig. **Pinnae:** soos in fig. 12, donkergroen, V-vormig gerangskik. **Manlike keëls:** grysbruin, 40–60 cm lank, 14–20 cm in deursnee. **Vroulike keëls:** groenbruin, ongeveer 60 cm lank, 40 cm in deursnee. **Saad:** helder-rooi.

Encephalartos heenenii

Stam: vertak, 2–3 m lank, 25–35 cm in deursnee. **Blare:** 1–1,3 m lank, reguit, effens konkaaf gekrom in boonste helfte, blaarsteel ongeveer 20 cm lank. **Pinnae:** soos in fig. 15, grys-groen tot donkergroen, oorvleuel in boonste helfte, V-vormig gerangskik. **Manlike keëls:** roesbruin, wollerig, 27–30 cm lank, 15–17 cm in deursnee. **Vroulike keëls:** wollerig, roesbruin, 5–6 cm lank en ongeveer 4 cm in deursnee. **Saad:** rooi.



Encephalartos altensteinii



Encephalartos natalensis



Encephalartos heenenii

B4 Species with broad blue-green leaves

Encephalartos inopinus

Stem: branched, 3 m tall, 17–23 cm in diameter.
Leaves: 0,8–1,5 m long, straight to slightly recurved, petiole 10–20 cm long. **Pinnae:** as in fig. 14, blue-green, spaced, bent slightly backwards. **Male cones:** silvery green, 8–10 cm long, 4–4,5 cm in diameter. **Female cones:** silvery green, about 31 cm long, and 15 cm in diameter. **Seeds:** apricot-coloured.

Encephalartos princeps

Stem: often branched, 3–4 m tall, 30 cm in diameter.
Leaves: straight, 1–1,3 m long, petiole 15–20 cm long, hairy. **Pinnae:** as in fig. 24, blue-green, V-shaped, overlapping in upper half. **Male cones:** dull green, 16–26 cm long, 8–10 cm in diameter. **Female cones:** dull green, about 30 cm long and 20 cm in diameter. **Seeds:** red.

Encephalartos eugene-maraisii

Stem: unbranched or branched from base, 2,5–4 m tall, 30–45 cm in diameter. **Leaves:** 0,7–1,8 m long, straight or tips bending upwards, petiole 16–20 cm long, hairy, sometimes with one spine. **Pinnae:** as in fig. 25, blue-green, V-shaped. **Male cones:** blue-green with brown velvety hair, 22–42 cm long, 6–8 cm in diameter. **Female cones:** 30–50 cm long, 16–20 cm in diameter, blue-green with brown velvety hair. **Seeds:** amber.

Encephalartos lehmannii

Stem: unbranched or branched, up to 1,5 m tall, 25–45 cm in diameter. **Leaves:** recurved in upper

B4 Soorte met breë, blougroen blare

Encephalartos inopinus

Stam: vertak, 3 m lank, 17–23 cm in deursnee. **Blare:** 0,8–1,5 m lank, reguit tot effens gekrom, blaarsteel 10–20 cm lank. **Pinnae:** soos in fig. 14, blougroen, gespasieer, effens teruggebuig. **Manlike keëls:** silwergröen, 8–10 cm lank, 4–4,5 cm in deursnee. **Vroulike keëls:** silwergröen, ongeveer 31 cm lank, en 15 cm in deursnee. **Saad:** appelkooskleurig.

Encephalartos princeps

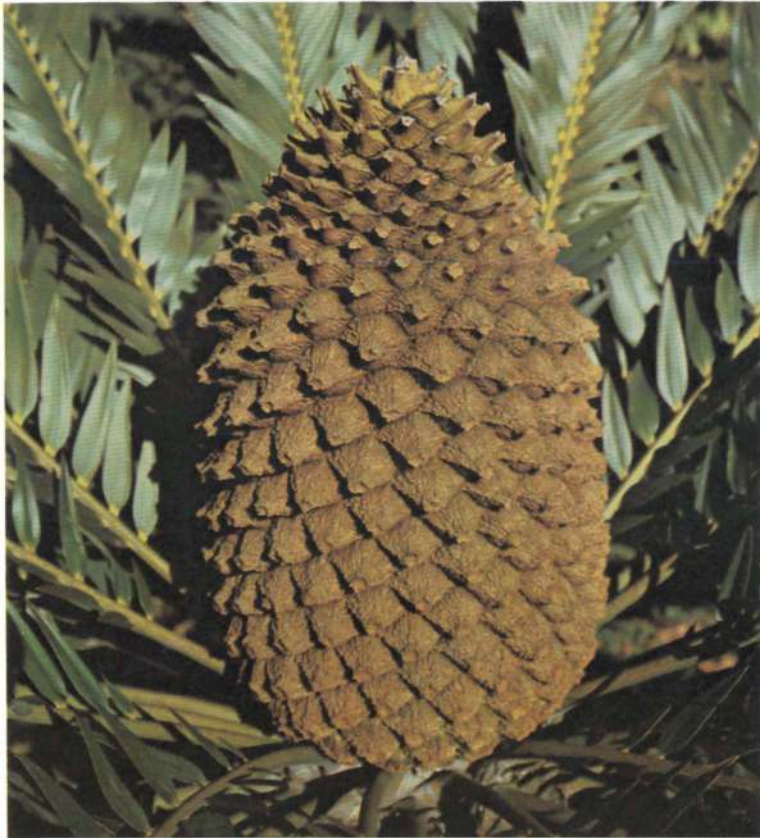
Stam: dikwels vertak, 3–4 m lank, 30 cm in deursnee. **Blare:** reguit, 1–1,3 m lank, blaarsteel 15–20 cm lank, harig. **Pinnae:** soos in fig. 24, blougroen, V-vormig gerangskik, oorvleuel in boonste helfte. **Manlike keëls:** vuilgröen, 16–26 cm lank, 8–10 cm in deursnee. **Vroulike keëls:** vuilgröen, ongeveer 30 cm lank en 20 cm in deursnee. **Saad:** rooi.

Encephalartos eugene-maraisii

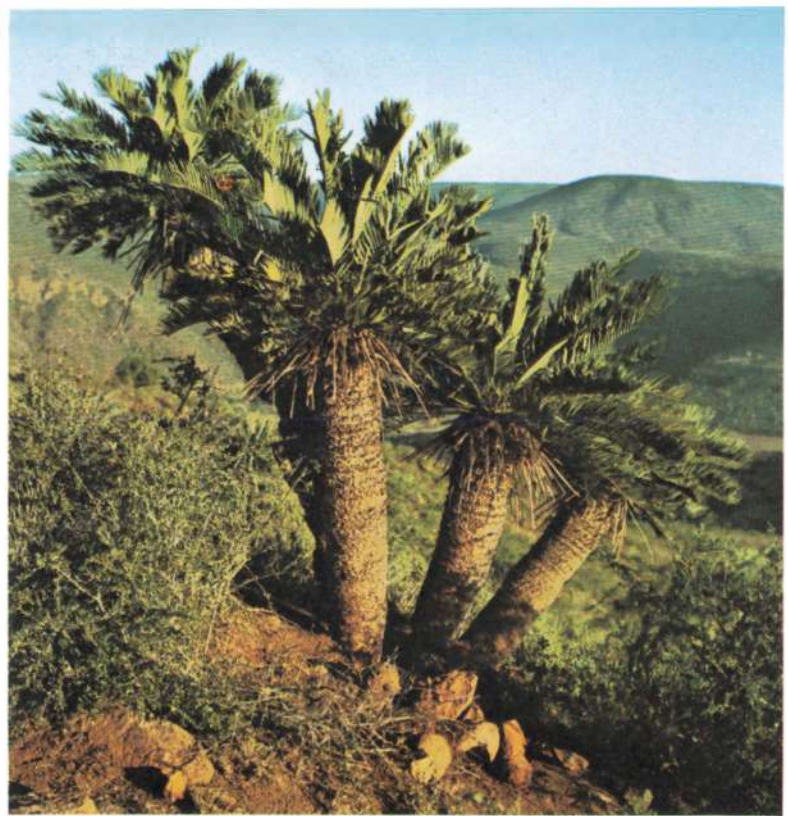
Stam: onvertak of by basis vertak, 2,5–4 m hoog, 30–45 cm in deursnee. **Blare:** 0,7–1,8 m lank, reguit of punte buig op, blaarsteel 16–20 cm lank, harig, soms met een stekel. **Pinnae:** soos in fig. 25, blougroen, V-vormig gerangskik. **Manlike keëls:** blougroen met bruin fluweelagtige hare, 22–42 cm lank, 6–8 cm in deursnee. **Vroulike keëls:** 30–50 cm lank, 16–20 cm in deursnee, blougroen met bruin, fluweelagtige hare. **Saad:** amberkleurig.

Encephalartos lehmannii

Stam: onvertak of vertak, tot 1,5 m hoog, 25–45 cm in deursnee. **Blare:** teruggebuig in boonste helfte, 1–1,5 m



Encephalartos longifolius



Encephalartos princeps



Encephalartos inopinus

half, 1–1,5 m long. **Pinnae:** as in fig. 26, blue-green, V-shaped. **Male cones:** dark brown, 25–35 cm long, 8–10 cm in diameter. **Female cones:** with dark brown velvety hair on blue-green background, 45–50 cm long, about 24 cm in diameter. **Seeds:** bright red and large.

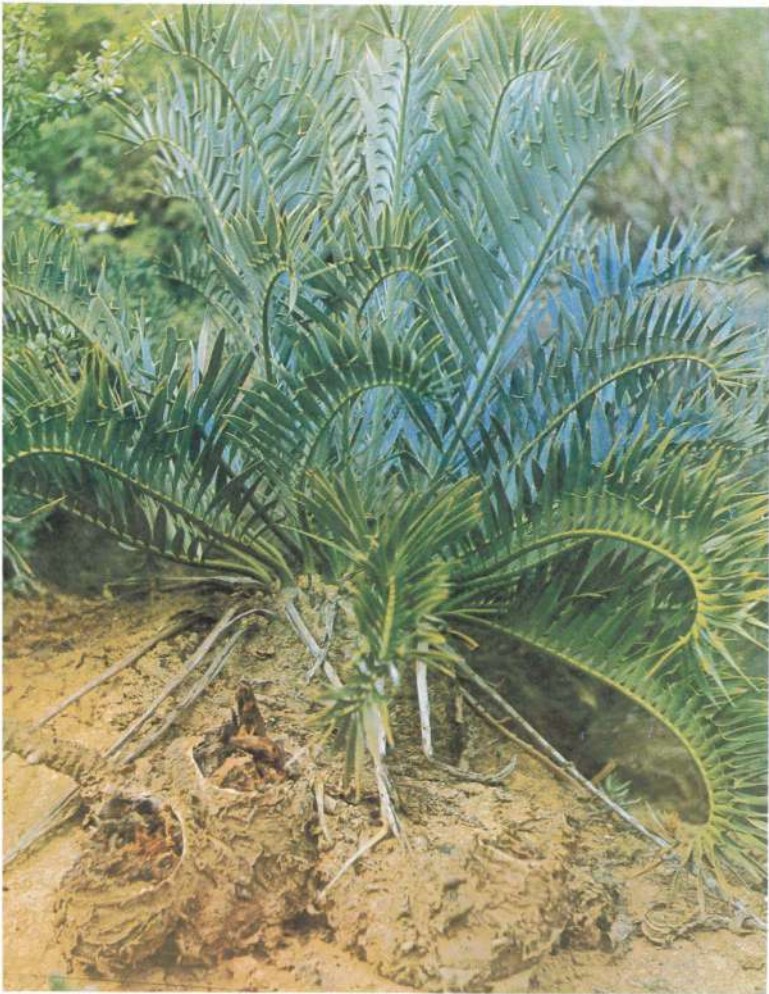
Encephalartos trispinosus

Stem: often branched, up to 1 m tall, 25–30 cm in diameter. **Leaves:** recurved in upper half, 0,75–1,25 m long, petiole 15–22 cm long. **Pinnae:** as in fig. 27, blue-green, V-shaped, overlapping in upper half of rachis. **Male cones:** bright yellow, 25–35 cm long, 6,5–7,5 cm in diameter. **Female cones:** bright yellow, 40–50 cm long, 16–18 cm in diameter. **Seeds:** orange.

lank. **Pinnae:** soos in fig. 26, blougroen, V-vormig gerangskik. **Manlike keëls:** donkerbruin, 25–35 cm lank, 8–10 cm in deursnee. **Vroulike keëls:** met donkerbruin fluweelagtige hare op blougroen agtergrond, 45–50 cm lank, ongeveer 24 cm in deursnee. **Saad:** helderrooi en groot.

Encephalartos trispinosus

Stam: dikwels vertak, tot 1 m lank, 25–30 cm in deursnee. **Blare:** teruggebui in boonste helfte, 0,75–1,25 m lank, blaarsteel 15–22 cm lank. **Pinnae:** soos in fig. 27, blougroen, V-vormig gerangskik, oorvleuel in boonste helfte van ragis. **Manlike keëls:** heldergeel, 25–35 cm lank, 6,5–7,5 cm in deursnee. **Vroulike keëls:** heldergeel, 40–50 cm lank, 16–18 cm in deursnee. **Saad:** oranje.



Encephalartos trispinosus

Encephalartos eugene-maraisii

Encephalartos lehmannii



OTHER PLANTS IN THE CYCAD GARDEN

Adenia

COMMON NAMES

A. digitata is known as “bobbejaangif” and “kafferwaatlemoen”.

This genus consists of very interesting plants with lumpy, massive, green, yellow-green to glaucous trunks with thick branches out of which grow thin, winding shoots with tendrils. The leaves of most species are palmately compound with three to six lobes. The plants are monoecious, that is, either male or female. The male plants bear masses of green to yellow-green flowers full of pollen. The female plants have fewer flowers, but bear bright orange fruit which is highly decorative. No wonder, therefore, that there is such a demand for these plants for rockeries.

Adenia belongs to the family Passifloraceae, to which the well-known granadilla belongs. The fruit looks attractive, and children are sometimes tempted to eat it. The fruit, however, contains hydrocyanic acid and is deadly poisonous. In some species the poison is localised while in others the whole plant is poisonous. Thus, the leaves of *A. glauca* are poisonous while the thickened trunk is not, but in *A. digitata*, the whole plant, that is trunk, leaves and fruit, is poisonous.

ANDER PLANTE IN DIE BROODBOOMTUIN

Adenia

VOLKSNAME

A. digitata word bobbejaangif en kafferwaatlemoen genoem.

Hierdie genus bestaan uit baie interessante plante met meesal bulterige, massiewe, groen, geelgroen tot grys groen stamme met dik vertakkings waaruit dun slingerige stingels met hegrankies groei. Die blare van die meeste soorte is handvormig saamgestel met drie tot sewe lobbe. Die plante is eenslagtig, dit wil sê manlik en vroulike plante kom voor. Die manlike plante dra massas groen tot geelgroen blomme met baie stuifmeel. Die vroulike plante dra minder blomme as die manlikes, maar dra die helder oranjekleurige vrugte wat hoogs dekoratief is. Geen wonder nie dus dat daar heelwat aanvraag vir hierdie plante vir aanplanting in rotstuine is.

Omdat **Adenia** lid is van die familie Passifloraceae waartoe die bekende grenadilla ook behoort en waarskynlik ook omdat die vrugte so aantreklik vertoon, gebeur dit soms dat kinders van die vrugte eet. Die vrugte bevat egter hidrosiaansuur en is dodelik giftig. By sekere spesies kom die gif net in sekere dele van die plant voor terwyl daar soorte is waarvan alle dele giftig is. So is die blare van *A. glauca* giftig terwyl die verdikte stam nie giftig is nie, maar by *A. digitata* is die hele plant giftig, dit wil sê stam, blare en vrugte.



Adenia glauca

Aloe boylei

COMMON NAMES

“Grasaalwyn”, grass-aloe.

Aloe boylei is found in Natal, Southern and Eastern Transkei and Swaziland.

Boyle collected this aloe in 1891. At the same time it was found by Allison in the Tugela basin. It belongs to the Leptoaloe group.

It grows in open grassland and on grassy slopes in the summer rainfall regions.

Aloe boylei is rosette-shaped with a compact or short stem. It usually grows in groups of ten or more. It sheds all its leaves in the winter.

The green leaves are broad near the base, deeply channelled on the upper surface, and with white spots on the lower surface near the base. Small spines are present on leaf margins.

Flowering time is during December and January and the height of the plant is about 56 cm.

The inflorescence is simple with often up to three inflorescences simultaneously appearing from a leaf rosette. The racemes are corymbose-capitate and the flowers are salmon-coloured.

A. boylei thrives in well-drained soil where it is not exposed to the hot rays of the midday sun.

Aloe boylei

VOLKSNAME

Grasaalwyn, “grass-aloe”.

Aloe boylei kom voor in Natal, Suid- en Oos-Transkei en Swaziland.

Boyle het hierdie aalwynsoort in 1891 versamel. Dieselfde tyd het Allison dit egter ook in die Tugelavallei versamel. Dit behoort aan die groep Leptoaloe.

Dit groei in oop grasland en teen grashellings in die somerreënvalgebied.

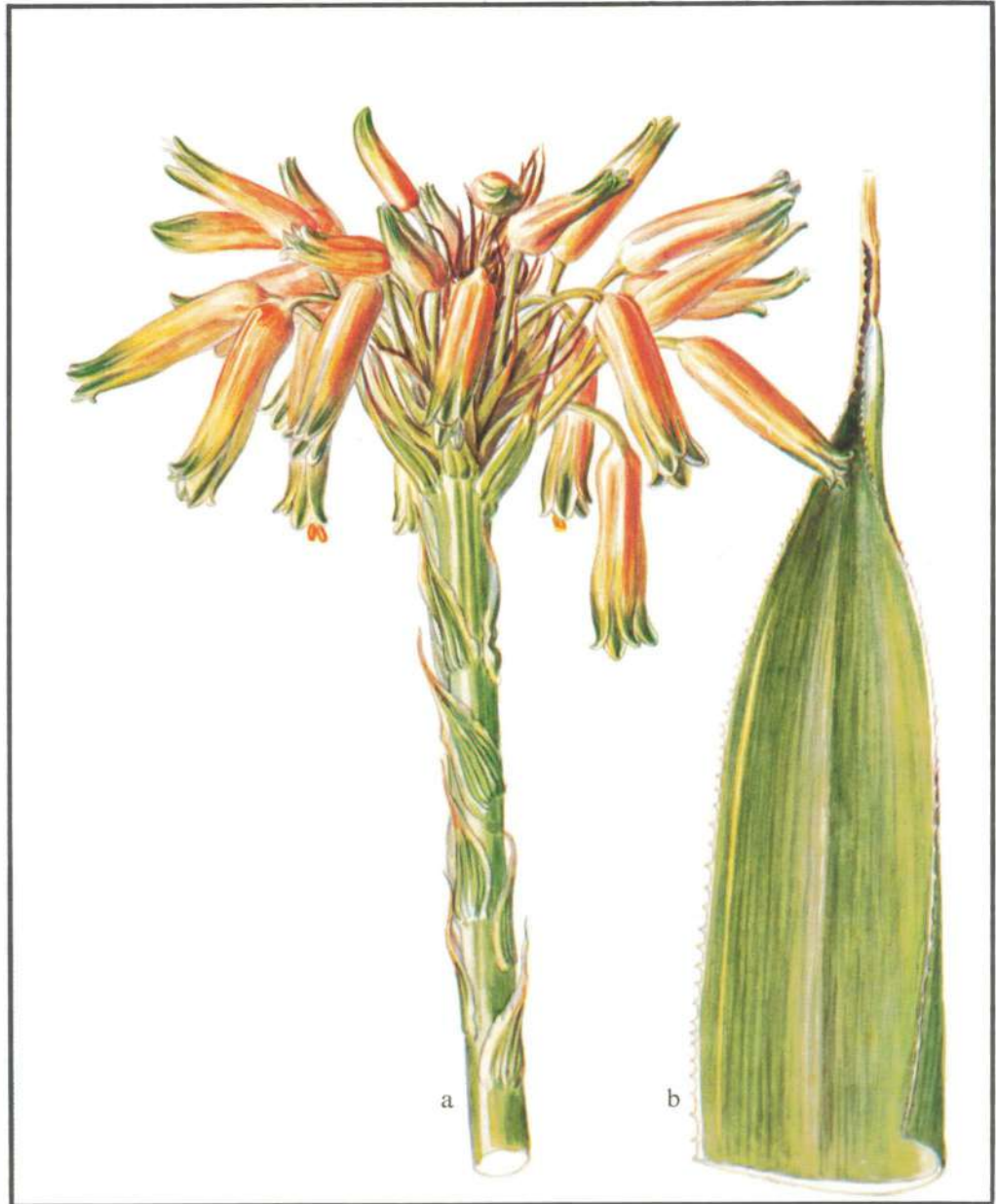
Aloe boylei is rosetvormig met 'n gedronge of korterige stam. Gewoonlik groei dit in groepies van tien of meer. Dit verloor al sy blare in die winter.

Die groen blare is breed naby die basis, diep gegeut aan die bokant met wit vlekke aan die onderkant naby die basis. Die blaarrande het klein stekeltjies.

Die blomtyd is gedurende Desember en Januarie en die grootte van die plant is ongeveer 56 cm.

Die bloeiwyses is onvertak. Dikwels kom tot drie bloeiwyses tegelyk uit 'n blaarroset voor. Die blomtrosse is tuiendraend speldekopvormig en die blomme het 'n salmkleur.

Wanneer ***A. boylei*** in goed gedreineerde grond op 'n plek geplant word waar dit nie aan die warm middagson blootgestel is nie, aard dit besonder goed.



Aloe boylei

- a. inflorescence
bloeiwyse
- b. part of leaf
gedeelte van blaar

Aloe cooperi

COMMON NAMES

“Grasaalwyn”, grass-aloe

This is also one of the deciduous aloes although it does not shed its leaves in warmer regions. The leaves are always distichous, deeply concave on the upper surface with a marked keel underneath.

This so-called grass aloe is found in the Eastern Transvaal, Natal, Swaziland and South-eastern Transvaal. It grows mainly in summer rainfall areas. The plants vary in size according to the rainfall, thus in the coastal regions they are very large.

The height of the plant is about 70 cm. In cold areas they reach a maximum height of 50 cm.

Aloe cooperi is rosette-shaped with a compact or short stem. The leaves are green or yellowish-green and the upper surface of the leaf is usually unspotted.

Flowering time is from January to February.

The inflorescence is unbranched and the colour of the leaves varies from a greenish-cream to apricot, salmon and deep peach-red.

This species, first collected by Burchel in 1814 and then by Cooper in 1862, grows well under various climatic conditions.

Aloe cooperi

VOLKSNAME

Grasaalwyn, “grass-aloe”.

Dit is ook een van die bladwisselende aalwynsoorte, alhoewel dit sy blare in warmer dele behou. Die blare staan altyd in twee rye en dit is diep konkaf aan die bokant met ’n skerp kiel aan die onderkant.

Hierdie sogenaamde grasaalwyn kom in Oos-Transvaal, Natal, Swaziland en Suidoos-Transvaal voor. Dit groei hoofsaaklik in gebiede wat hoofsaaklik somerreëns kry. Die plante wissel in grootte na gelang van die reënval. In die kusgebiede word baie groot plante aangetref.

Die grootte van die plante is ongeveer 70 cm. In kouer dele bereik dit ’n grootte van hoogstens 50 cm.

Aloe cooperi is rosetvormig met ’n gedronge of kort stam. Die kleur van die blare is groen of gelerig-groen en die boonste blaaroppervlak is meesal ongevelek.

Die blomtydperk is van Januarie tot in Februarie.

Die bloeiwyse is onvertak en blomkleure wissel van ’n groenerige roomkleur tot appelkoos, salm en ’n diep-perskerrooi.

Hierdie soort wat in 1814 deur Burchel en later in 1862 weer deur Cooper versamel is, aard goed in ’n verskeidenheid klimaatsomstandighede.

Aloe cooperi

- a. leaf
blaar
- b. inflorescence
bloeiwyse



Aloe ecklonis

COMMON NAMES

“Grasaalwyn”, grass-aloe.

This species of aloe belongs to the summer flowering group which is graminifolius. It is widespread in the Republic of South Africa, for example in the Eastern Transvaal, Eastern Cape, the Orange Free State and Natal, and also in Swaziland and Lesotho.

It grows mainly on alpine, grassland slopes to an altitude of about 2 133 m.

The plants are rosette-like with compact or short stems growing to a height of some 20 cm. The colour of the leaves is usually a dull green, and they are sometimes spotted.

The flowering season is from November to December. The racemes are very compact and capitate. The flower colours are yellow, orange or brick-red.

This aloe species can be considered deciduous, for during the cold winter months the plants are dormant and leafless. They flourish in wet, loamy soil.

Aloe hlangapies

COMMON NAMES

“Grasaalwyn”, grass-aloe.

This particular Leptoaloe is very similar to *A. ecklonis*. The leaves of *A. hlangapies* are, however, distichous.

Distribution is limited to Northern Natal and the South-eastern

Aloe ecklonis

VOLKSNAME

Grasaalwyn, “grass-aloe”.

Hierdie aalwynsoort behoort ook tot die somerblommende groep met grasagtige blare. Dit kom baie wydverspreid in die Republiek van Suid-Afrika voor, byvoorbeeld in Oos-Transvaal, Oos-Kaapland, die Oranje-Vrystaat, Natal, Swaziland en Lesotho.

Dit groei hoofsaaklik in hoogliggende grasveld teen hellings op 'n hoogte van tot ongeveer 2 133 m bo seespieël.

Die plante is rosetvormig met 'n gedronge of korterige stam. Dit bereik 'n hoogte van ongeveer 20 cm. Die kleur van die blare is gewoonlik dofgroen. Soms kom daar enkele vlekke op die blare voor.

Die blomtyd is van November tot Desember. Die blomstros is diggedronge en speldekopvormig. Die kleur van die blomme wissel van geel, oranjegeel tot baksteenrooi.

Hierdie aalwynsoort kan as bladwisselend beskou word. Gedurende die koue wintermaande is die plante sluimerend en blaarloos. Dit floreer in nat, kleierige grond.

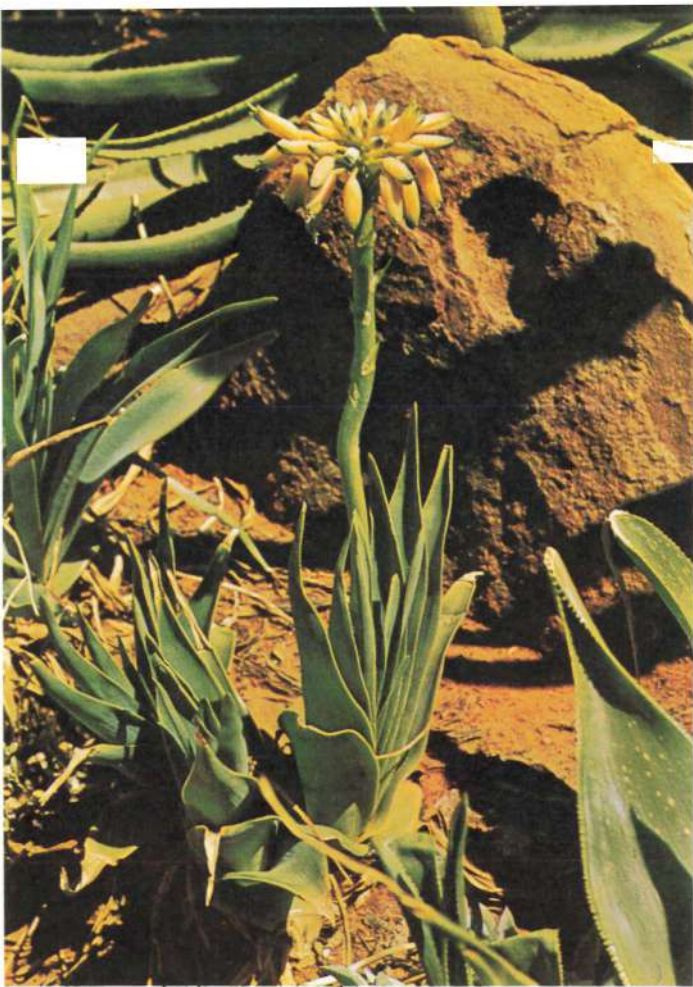
Aloe hlangapies

VOLKSNAME

Grasaalwyn, “grass-aloe”.

Hierdie besondere Leptoaloe stem baie met *A. ecklonis* ooreen. Die blare van *A. hlangapies* staan egter hoofsaaklik in twee rye.

Die verspreidingsarea is hoofsaaklik tot Noord-Natal en Suidoos-



Aloe hlangapies

Aloe ecklonis

- a. inflorescence
bloeiwyse
- b. leaf
blaar



Transvaal where they grow in moist, low-lying, grassy areas, solitary or in groups.

This species reaches a height of 28–30 cm.

The plants are rosette-like with compact or short stems which branch out virtually at ground level.

The flowering season is from November to December.

The inflorescence consists of a simple cluster of tightly packed, apricot-coloured flowers.

Hlangapies is the Zulu name which literally means “the gathering of the wolves”.

Aloe thompsoniae

COMMON NAMES

“Grasaalwyn”, grass-aloe.

Aloe thompsoniae is a small, very decorative species of grass-aloe which grows in the North-eastern Transvaal. It usually grows on the mountain tops, at altitudes of about 1 812 m, which lie in the eastern mist belt.

The leaf rosettes consist of bright green, spreading, recurved, deeply channelled leaves which taper to a point.

This small aloe flowers during December and January and reaches a maximum height of 20 cm.

One to three inflorescences appear simultaneously from a leaf rosette. The bright orange-red flowers are very showy.

This attractive species prefers wet conditions and it grows best in shady or semi-shady areas of the garden.

Transvaal beperk waar dit op klam, laagliggende en grasryke plekke alleen of in groepies voorkom.

Hierdie spesie bereik 'n hoogte van ongeveer 28–30 cm.

Die plante is rosetvormig met gedronge of korterige stamme wat feitlik op grondhoogte vertak.

Die blomtydperk strek van November tot Desember.

Die bloeiwyse bestaan uit 'n onvertakte blomtros met diggepakte, helder appelkooskleurige blomme.

Hlangapies is 'n Zoeloenaam wat letterlik vertaal “die vergadering van die wolwe” beteken.

Aloe thompsoniae

VOLKSNAME

Grasaalwyn, “grass-aloe”.

Aloe thompsoniae is 'n baie dekoratiewe klein grasaalwynsoort wat in Noordoos-Transvaal voorkom. Dit groei hoofsaaklik op die bergtoppe op hoogtes van ongeveer 1 825 m. Die bergtoppe waar hierdie spesie groei, is baie dikwels in miswolke gehul.

Die blaarrosette bestaan uit heldergroen, spreierende, teruggekromde, diep gegroefde blare wat in 'n spits punt eindig.

Hierdie aalwyntjie blom gedurende Desember tot Januarie en bereik 'n maksimum hoogte van ongeveer 20 cm.

Een tot drie bloeiwyses kom gelyktydig uit 'n blaarroset. Die helder-oranjerooi blomme is baie opsigtelik.

Hierdie aantrekklike spesie hou van nat toestande en dit aard die beste in skadu- of halfskaduplekke in die tuin.



Aloe thompsoniae

Aloe verecunda

COMMON NAMES

“Grasaalwyn” grass-aloe.

This species of aloe shows a similarity to *A. cooperi* but differs in that it is much smaller and does not have a marked keel underneath the leaf.

A. verecunda grows along the rocky ridges of the Witwatersrand and in the Magaliesberg range. The rainfall in the natural habitat of this species varies from 500 to 750 mm.

The plant reaches a height of about 25–30 cm.

It has a short stem, is solitary or grows in scattered groups. The stem branches at ground level. This species is also deciduous. The dull green or bluish-green leaves are distichous.

The flowering season is from November to March.

The inflorescence consists of a dense capitate raceme and flower colour varies from deep pink to blood-red.

The name *verecunda* means “modest” or “pure”.

This species flourishes in fertile, well-drained soil.

Sometimes natural hybrids of *A. verecunda* and *A. transvaalensis* are found.

Aloe verecunda

VOLKSNAME

Grasaalwyn, “grass-aloe”.

Hierdie aalwynsoort vertoon ’n ooreenkoms met *A. cooperi*, maar verskil van laasgenoemde daarin dat dit veel kleiner is en ook nie die skerp kiel onderaan die blaar het nie.

A. verecunda groei teen klipperige rante in die Witwatersrandgebied en in die Magaliesbergreeks. Die reënval in hierdie spesie se natuurlike groeiplek wissel van 500 tot 750 mm.

Die grootte van die plant is ongeveer 25–30 cm.

Dit het korterige stamme, staan alleen of kom in verspreide groepe voor. Die stam vertak op grondhoogte. Hierdie spesie is ook bladwisselend. Die dof- of blouerige groen blare is in twee rye gerangskik.

Die blomtyd is vanaf November tot Maart.

Die bloeiwyse bestaan uit ’n diggepakte speldekopvormige blomtros met dieppienk tot bloedrooi blomme.

Die naam *verecunda* beteken “beskeie” of “suiwer”.

In vrugbare en goed gedreineerde grond aard hierdie grasaalwynsoort gewoonlik baie goed.

Soms word natuurlike kruisings van *A. verecunda* en *A. transvaalensis* aangetref.

Aloe verecunda

- a. flower dissected
blom gedissekteer
- b. inflorescence
bloeiwyse
- c. part of leaf
gedeelte van blaar



***Alsophila dregei* (Cyathea dregei)**

COMMON NAMES

“Boomvaring”, common tree-fern, eastern tree-fern and tree-fern.

This beautiful tree-fern, with a palmlike appearance and a crown of large bipinnately compound leaves, is found from Knysna in the south, throughout the Eastern Cape, Natal, Eastern Transvaal and Central Transvaal up to tropical Africa. It grows mainly in grassland at an altitude above 305 m.

Although the plants can reach a height of 5,5 m, they vary in height between 1,8 and 3,7 m. The leaves are usually 0,9 to 1,8 m in length, but leaves of up to 3 m have been measured. The upper leaf surface is dark green whereas the lower leaf surface is a lighter green; the midrib and the petiole are brownish in colour and covered with hairs.

The trunk, which can reach a circumference of 45 cm, consists of the central stem covered with old leaf bases and a thick mat of short, black, fibrous roots. The old leaf bases and the thick mat of roots probably protect the plants against veld fires.

Young plants transplant easily but Sim is of the opinion that mature plants survive for only one year after they have been transplanted.

The genus **Alsophila** is represented in the Republic of South Africa by two species, **A. dregei** (= **Cyathea dregei**) and **A. capensis** (= **Hemitelia capensis**). In contrast to **A. dregei**, **A. capensis** is found only in the humid forests of the Cape Peninsula, Knysna, Natal, Transvaal and the Rhodesian Chimanimani and Malawian Mlanje mountains.

The specific epithet *dregei* honours the German collector and botanist, C. F. Drège, who travelled in Southern Africa between 1826 and 1834.

***Alsophila dregei* (Cyathea dregei)**

VOLKSNAME

Boomvaring, “common tree-fern”, “eastern tree-fern” en “tree-fern”.

Hierdie pragtige boomvaring met ’n palmagtige voorkoms en ’n kroon van groot dubbelveervormig saamgestelde blare kom van Knysna in die suide deur die oostelike Kaapprovinsie, Natal, Oos-Transvaal, Sentraal-Transvaal tot in tropiese Afrika voor. Dit word meesal in grasveld hoër as 305 m bo seespieël aangetref.

Alhoewel plante tot 5,5 m hoog kan word, wissel die hoogte meesal tussen 1,8 tot 3,7 m. Die blare is meesal van 0,9 tot 1,8 m lank, maar blare van tot 3 m lank is ook al gemeet. Die blare se boonste oppervlak is donkergroen terwyl dit liggroen onder is. Die hoofaar (ragis) en blaarsteel is bruinerig en met hare bedek.

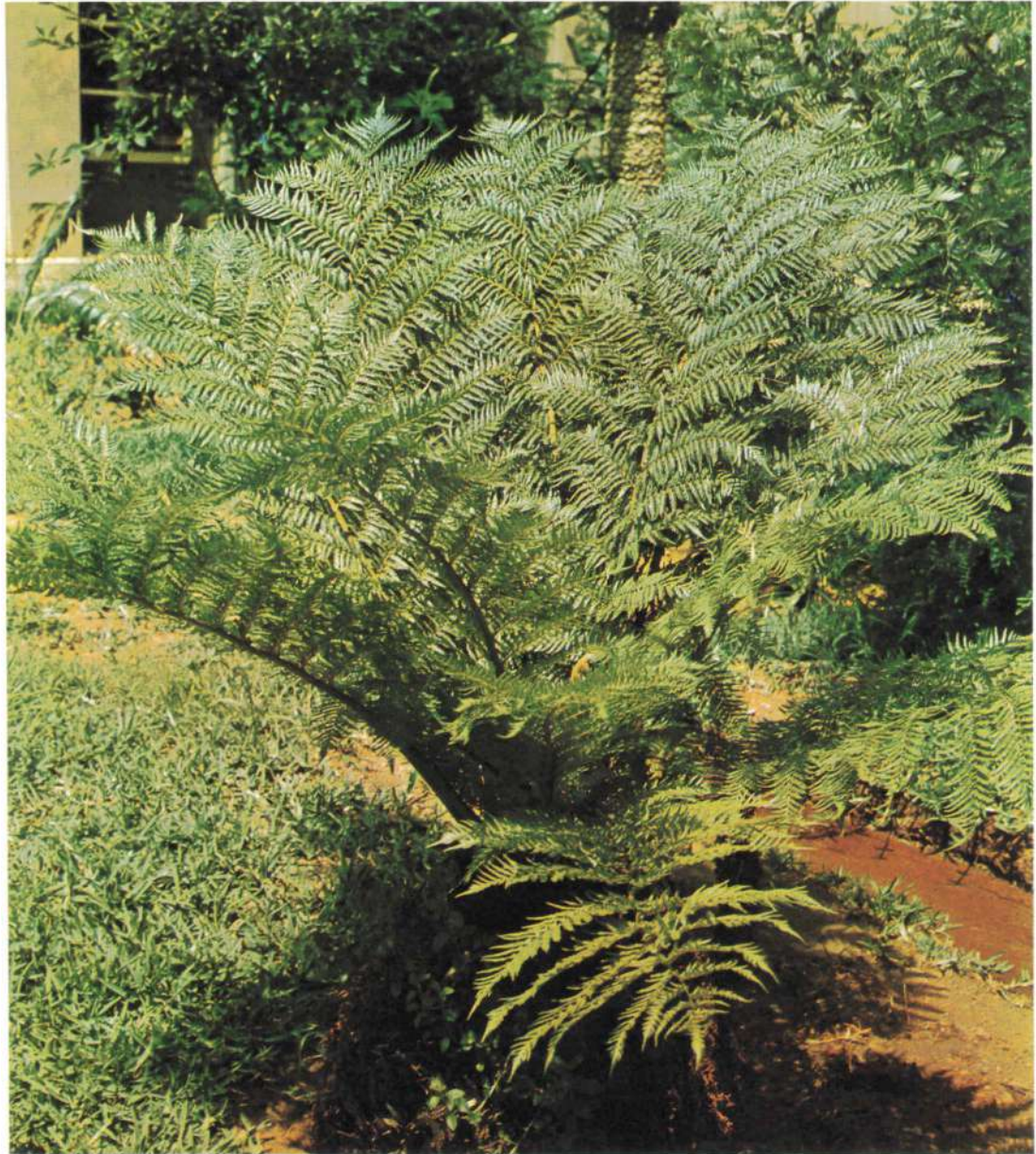
Die stam wat tot 45 cm dik word, bestaan uit ’n sentrale, werklike stam omgewe deur ou blaarbasisse en ’n digte mat van swart, kort, veselagtige wortels. Die ou blaarbasisse en digte mat van wortels beskerm waarskynlik die plante teen veldbrande.

Jong plante verplant maklik, maar Sim is van mening dat volwasse plante slegs een jaar lank na verplanting leef.

Die genus **Alsophila** word in die Republiek van Suid-Afrika deur twee spesies, **A. dregei** (= **Cyathea dregei**) en **A. capensis** (= **Hemitelia capensis**), verteenwoordig. In teenstelling met **A. dregei** word **A. capensis** slegs in die vogtige woude van die Kaapse Skiereiland, Knysna, Natal, Transvaal en die Rhodesiese Chimanimani- en die Malawiese Mlanjeberge aangetref.

Die spesifieke epiteton *dregei* vereer die Duitse versamelaar en plantkundige C. F. Drège wat tussen die jare 1826 en 1834 in Suider-Afrika gereis het.

Alsophila dregei
(= *Cyathea dregei*)



Cussonia paniculata

COMMON NAMES

“Hoëveldse kiepersol”, “sambreelboom”, “kiepersol” and “ounooiensboom”.

Cussonia paniculata is probably the best known and most attractive of the “kiepersol” (umbrella-tree) species. They are found at high altitudes in the Eastern Cape, Natal, Transvaal, Orange Free State, the Transkei, Swaziland, Rhodesia and Mocambique.

In contrast to *C. spicata*, which grows very tall (up to 15 m), this plant grows only to 3–4,5 m and the main trunk branches out at the top. The whole trunk is covered with rough, thick, brown cork forming a block pattern.

Foliage is found at the extremity of the branches in the form of an umbrella. Leaf scars are clearly visible and leaves have long petioles, some 0,6 m in length and glaucous in appearance. The leaves, palmately compound and characteristic of most umbrella trees, have seven to thirteen leaflets (pinnae), usually deeply constricted. A conspicuous swollen leafbase with two stipules is common.

Small, green, sessile flowers appear in plumes at the growing points of the branches. The name *paniculata* refers to this inflorescence. The fruit, containing two seeds, is fleshy and purple when ripe and a delicacy for birds. The whole panicle, together with the branch tip, dries and eventually falls off. This leads to the appearance of lateral branches below the original growing point.

This tree is now common in gardens not only because of its beauty, but also because it grows easily from seed and is not damaged by frost.

Cussonia paniculata

VOLKSNAME

Hoëveldse kiepersol, sambreelboom, kiepersol, ounooiensboom.

Cussonia paniculata is seker die bekendste en aanskoulikste van die kiepersolsoorte. Die plante kom voor in die hoogliggende dele van Oos-Kaapland, Natal, Transvaal, Oranje-Vrystaat, Transkei, Swazi-land, Rhodesië en Mosambiek.

In teenstelling met *C. spicata* wat baie hoog word (tot 15 m), word hierdie plant van 3–4,5 m hoog en die vertakking van die hoofstam vind bolangs plaas. Die hele stam is in ’n blokkiespatroon met growwe, dik, bruin kurk bedek.

Die loof kom op die punte van takke voor om die tipiese sambreelvorm daaraan te verleen en blaarmede is duidelik waarneembaar. Blare is lank gesteeld, word tot 9,6 m lank en is blougroen van kleur. Soos kenmerkend vir die meeste kiepersolbome is die blare handvormig saamgestel met sewe tot dertien blaartjies (pinnae) wat gewoonlik diep ingesnoer is. By plante van Oos-Kaapland en spesifiek dié van Meiringspoort is die blaartjies egter gaafrandig, dit wil sê, nie ingesnoer nie. ’n Opvallend geswolle blaarvoet met twee steunblare is deurgaans aanwesig.

Klein groen, sittende blommetjies kom in pluime voor wat uit die groeipunte van die takke ontwikkel. Die naam *paniculata* verwys dan ook na hierdie bloeiwyse. Die vruggies wat twee sade bevat, is vlesig en pers wanneer hulle ryp is en word gretig deur voëls gevreet. Die hele pluim tesame met die punt van die tak verdroog aan die boom en val uiteindelik af. Dit lei daartoe dat vertakking plaasvind deurdat sytakke ’n ent onderkant die oorspronklike groeipunt uitloop.

Tans word die boom algemeen in tuine geplant omdat dit nie alleen pragtig vertoon nie, maar ook omdat dit maklik deur saad vermeerder en nie rypgevoelig is nie.



Cussonia paniculata

Cussonia spicata

COMMON NAMES

“Laeveldse kiepersol”, “kiepersol”, “nooiensboom”, “oumeidboud”, “waaiboom” and “weiboom”.

This species is the most wide-spread of all indigenous **Cussonia** species and is found in all four provinces of the Republic of South Africa, Botswana and tropical Africa.

The size of the trees and the shape of the leaves vary considerably. In the open veld the trees do not reach a great height, approximately 4,5 m but in the forests heights of up to 15 m are reached. Most of the plants have several trunks, as branching can occur under as well as above the ground. Some, however, have one trunk only. Clusters of dark green or glaucous leaves borne at the branch terminals are characteristic of these plants.

In contrast to **C. paniculata** the five to nine leaflets (pinnae) of the palmately divided leaf are sub-divided into lobes running up the rachis.

Small, yellow-green flowers appear on spikes arranged in umbels. The name *spicata*, meaning “spike”, refers to this inflorescence. It is interesting to note that the inflorescence develops over a period of two years. In the first year a group of five to fourteen lateral branches are formed at the growing point. These lateral branches, about 30 cm long, shed their leaves and young spikes, which appear the following season in the form of an umbel with five to ten spikes, develop.

The fruits, when ripe, are fleshy and purple, but are so infested with insect parasites that very few ever reach maturity.

This ornamental tree is very popular in gardens but in contrast to **C. paniculata**, it is not frost-resistant.

Cussonia spicata

VOLKSNAME

Laeveldse kiepersol, kiepersol, nooiensboom, oumeidboud, waaiboom en weiboom.

Hierdie soort geniet die wydste verspreiding van al die inheemse **Cussonia**-soorte en kom voor in al vier die provinsies van die Republiek van Suid-Afrika, Botswana en tropiese Afrika.

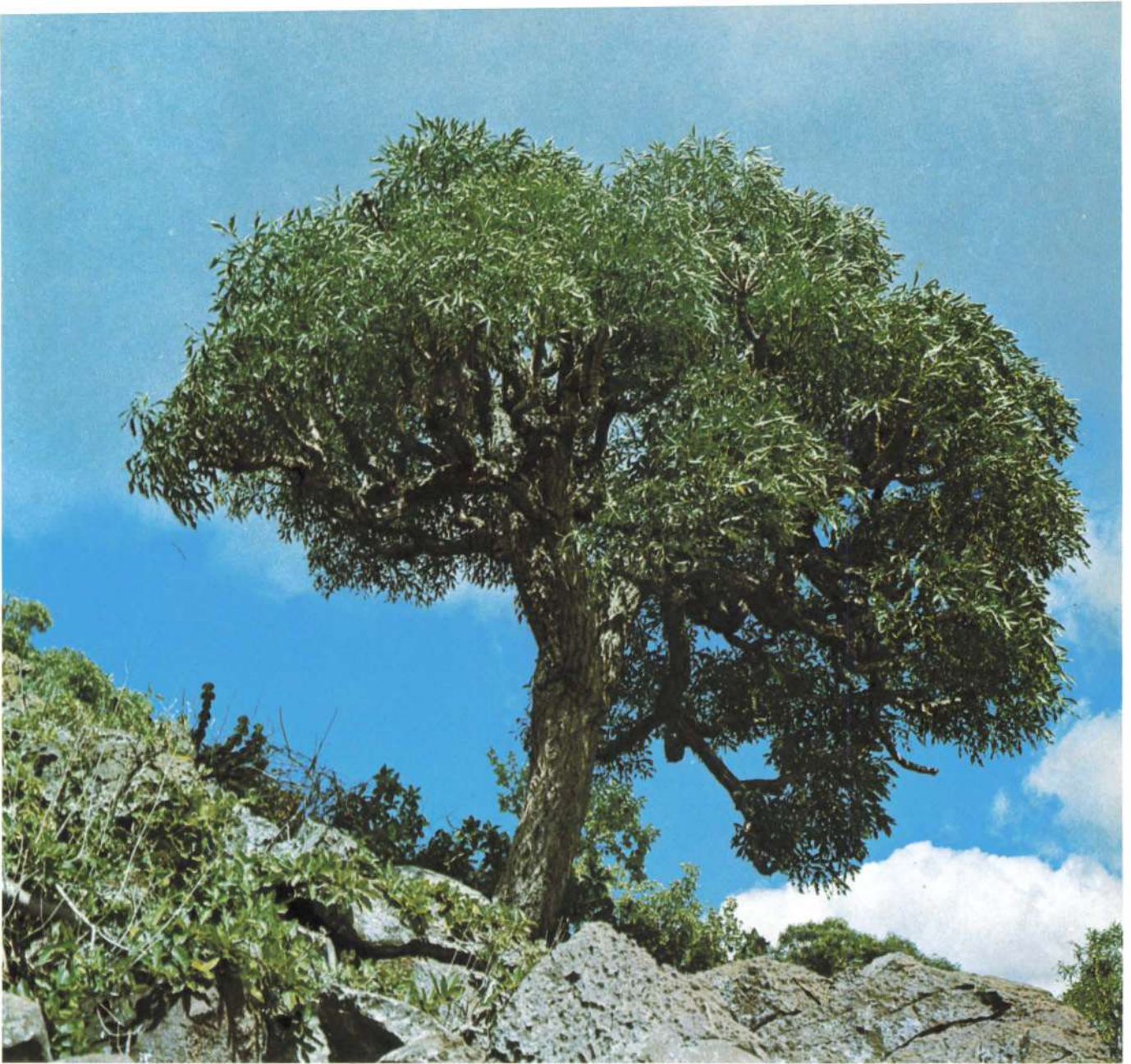
Die grootte van die plante asook die uitbeelding van die blare varieer aansienlik. In die oop veld word die bome nie baie hoog nie, ongeveer 4,5 m maar in woude kan hoogtes van tot 15 m bereik word. Die meeste plante is meerstammig as gevolg van vertakking wat reeds in die grond kan plaasvind of ook hoër op, terwyl ander plante eenstammig mag wees. Kenmerkend egter is altyd die tros donkergroen of grysgroen blare wat op die punte van takke voorkom.

In teenstelling met **C. paniculata** is die vyf tot nege blaartjies (pinnae) van die handvormig verdeelde blaar onderverdeel in lobbe wat tot teenaan die ragis strek.

Klein geelgroen blommetjies kom op are voor wat in skerms gerangskik is. Die naam *spicata*, wat aar beteken, verwys dan ook na hierdie bloeiwyse. Interessant is die feit dat die bloeiwyses oor 'n periode van twee jaar ontwikkel. Die eerste jaar word 'n groep van vyf tot veertien sytakke deur die groeipunt gevorm. Hierdie sytakke wat ongeveer 30 cm lank word, verloor dan hul blare en jong are word aangelê wat dan die daaropvolgende seisoen hul verskyning maak in die vorm van 'n skerm met vyf tot tien are.

Die vruggies is vlesig en pers wanneer hulle ryp is, maar word so deur insekte geparasiteer dat baie min van hulle ooit volwassenheid bereik.

Ook hierdie sierlike boom word graag deur tuiniers in tuine aangeplant, maar is, in teenstelling met **C. paniculata**, rypgevoelig.



Cussonia spicata



Left:
part of stem to show bark

Links:
gedeelte van stam om bas te
toon



Right:
inflorescence

Regs:
bloeiwyse

Dais *cotinifolia*

COMMON NAMES

“Kannabas”, “gonnabas”, “speldekussing”, “basboom”.

This very popular garden shrub is found in the eastern parts of the Republic from the Buffalo River northwards through the Transkei, Lesotho, Natal and Zululand, to the North-eastern Transvaal. It is generally found on forest margins, along wooded hillsides and in rocky ravines.

The genus **Dais**, belonging to the family Thymelaeaceae, has two species, one from Malagasy and **Dais** *cotinifolia* in the Republic of South Africa. Although the plants were first described by Linnaeus in 1764, David van Royen, professor of Botany at Leyden University, suggested the name **Dais** to Linnaeus. To Van Royen the inflorescence appeared like a torch ready to be lit. The leaves of **D. cotinifolia** seemed to Linnaeus very much like those of the genus **Cotinus**, hence the epithet *cotinifolia*.

D. cotinifolia is a small, fast growing tree which, within four years can reach a height of 4 m. In the warmer parts it is evergreen, but will lose its leaves in colder areas. The leaves are simple and opposite in arrangement. They are dark green, sometimes with a bluish tint on the upper surface, while the midrib and primary veins are light yellow. Although the individual pink flowers are relatively small, they appear in capituliform inflorescences at the branch terminals. In late spring the trees flower profusely for about three weeks and make a beautiful show, especially as a border, in any garden.

The plants are fairly drought-resistant, but thrive best in full sunlight and under humid conditions.

D. cotinifolia has a particularly strong bark used by the Blacks in Natal for twine and rope.

Dais *cotinifolia*

VOLKSNAME

Kannabas, gonnabas, speldekussing, basboom.

Hierdie baie populêre tuinstruik word in die oostelike dele van die Republiek vanaf die Buffelsrivier noordwerts deur die Transkei, Lesotho, Natal en Zoeloeland tot in Noordoos-Transvaal aangetref. Dit kom algemeen op die rand van woude en teen beboste hellings asook in klipperige klowe voor.

Die genus **Dais** wat aan die familie Thymelaeaceae behoort, bestaan uit twee spesies, een van die Malgassiese Republiek en **Dais** *cotinifolia* van die Republiek van Suid-Afrika. Hoewel die plante die eerste keer deur Linnaeus in 1764 beskryf is, het David van Royen, professor in plantkunde te Leyden, die naam **Dais** aan Linnaeus voorgestel. Vir Van Royen het die bloeiwyse gelyk soos 'n fakkel wat gereed is om aangesteek te word. Die blare van **D. cotinifolia** het vir Linnaeus baie soos dié van die genus **Cotinus** gelyk en vandaar die spesifieke epiteton *cotinifolia*.

D. cotinifolia is 'n vinnig groeiende klein boompie wat binne vier jaar 'n hoogte van 4 m kan bereik. In die warmer dele is dit immer-groen, maar verloor sy blare in die kouer dele. Die blare is enkelvoudig en word teenoorstaande gedra. Die blare is donkergroen met somtyds 'n blouerige skynsel aan die bokant, terwyl die hoof- en syare liggeel van kleur is. Hoewel die individuele pienk blommetjies relatief klein is, kom hulle in hofievormige bloeiwyses voor wat eindstandig op die takke gedra word. Die boompies blom oorvloediglik ongeveer drie weke lank in die laat lente wanneer dit 'n mooi vertoning in enige tuin en veral in 'n randakker gee.

Die plante is redelik droogtebestand, maar aard die beste in volle sonlig en onder vogtige toestande.

D. cotinifolia het 'n besonder sterk bas en word deur die Bantoe in Natal as lyn of tou gebruik.



Dais cotinifolia

Ekebergia capensis

COMMON NAMES

“Essenhout”, “esseboom”, “rooi-esse(n)boom”, Cape ash, dog plum.

Ekebergia capensis is a semi-deciduous tree of medium height (8–14 m), but under favourable conditions it can reach a height of some 21 m. It is common in the forests of the Cape Province and in Swaziland and the Transvaal. It is also found to the north through central and tropical East Africa up to the Sudan and Ethiopia.

Ekebergia is represented in the Republic of South Africa by two, possibly three, species.

The genus is described by Andrew Sparrman under the name of **Ekebergia capensis**. It is named after Captain Ekeberg who made it possible for Sparrman to visit the Cape and of whom Sparrman wrote “ . . . by his zeal for natural history and the great pains he has been at in promoting it, is highly deserving of this distinction”.

When isolated, this tree is able to spread its strong branches and therefore makes an ideal shade tree. The large pinnately compound leaves vary in size. They are from 10–36 cm long and 8 to 18 cm broad. The rachis between the leaflets is sometimes winged. The leaves are dark green, glossy on top and of a slightly lighter green hue underneath. The flowers are inconspicuous but fragrant. The dark red, round fruit are up to 1 cm in diameter and are more fleshy at the coast than inland. The fruit has an onion flavour which is well-liked by birds.

In those areas where heavy frost is absent, the Cape ash is valued for its shade. The tree thrives best in deep, sandy soil and can be grown from seed or propagated by means of cuttings.

The straw-coloured or light brownish-pink wood is used for furniture, plywood, panel wood, frame-wood and boats. The bark has been used for tanning, while the Blacks use the roots for medicine.

Ekebergia capensis

VOLKSNAME

Essenhout, esseboom, rooi-esse(n)boom, “Cape ash”, “dog plum”.

Ekebergia capensis is ‘n semi-bladwisselende boom van gemiddelde grootte (8-14 m), maar onder gunstige toestande kan dit tot 21 m hoog word. Dit kom algemeen in die woude van die Kaapprovinsie en tot in Swaziland en Transvaal voor. Dit kom ook noordwaarts deur Sentraal- en oostelike tropiese Afrika tot in Soedan en Ethiopië voor.

Ekebergia word in die Republiek van Suid-Afrika deur twee, moontlik drie, spesies verteenwoordig.

Die genus is deur Andrew Sparrman beskryf aan die hand van **Ekebergia capensis**. Dit is vernoem na kaptein Ekeberg wat dit vir Sparrman moontlik gemaak het om die Kaap te besoek en van wie Sparrman skryf “ . . . by his zeal for natural history and the great pains he has been at in promoting it, is highly deserving of this distinction”.

Wanneer dit alleen staan, is dit ‘n spreidende boom met sterk sytakke en gevolglik ‘n ideale skaduboom. Die groot veervormige, saamgestelde blare wissel in grootte. Die blare is van 10–36 cm lank en 8–18 cm breed. Die ragis tussen die blaartjies is soms gevleueeld. Die blare is donkergroen van kleur en glansend van bo en effens ligter groen van onder. Die blomme is klein en onopvallend, maar welriekend. Die donkerrooi ronde vrugte met ‘n deursnee van tot 1 cm is vlesiger aan die kus as in die binneland. Die vrugte het ‘n uiesmaak en word gretig deur voëls gevreet.

In die dele waar daar nie swaar ryp voorkom nie, is die essenhout ‘n baie waardevolle skaduboom. Dit aard die beste in diep en sanderige grond. Dit kan van saad gekweek of deur middel van stamsteggies vermeerder word.

Die strooikleurige of ligbruinerige pienk hout kan gebruik word vir meubels, fineerhout, paneelhout en lyshout asook vir skuie. Die bas is al gebruik in leerlooierij terwyl die Bantoe die wortels vir medisyne gebruik.



Ekebergia capensis



Left:
part of stem to show bark

Links:
gedeelte van stam om bas te
toon



Right:
branch with flowers

Regs:
takkie met blomme
toon

Ensete ventricosum

COMMON NAMES

“Wildepiesang”, “piesangboom”, banana palm, wild banana.

Ensete ventricosum is found along streams in the mountain ravines of Northern and Eastern Transvaal. It is also found in Angola, Rhodesia and Mozambique.

This African genus of some twenty-five species is a monocotyledon and belongs to the Musaceae family.

The generic name is taken from an Ethiopian common name for the plant which was described by the traveller, Bruce (Palmer and Pitman, 1972). The specific epithet *ventricosum* means “with a swelling” and refers to the swollen (thickened) base of the stem.

Although the plant is herblike in appearance it can be regarded as a tree. It reaches a height of up to 12,1 m and has very large, bright green, smooth, leathery leaves with striking, bright red midribs. The leaves can be 5,1 m long and 0,9 m broad. Like the raffia palm, this plant flowers only once and then dies. The life span of the plant is about eight years.

The cream-coloured flowers are protected, in groups, by red-brown bracts and the terminal inflorescence can be 1,8 m in length.

Ensete ventricosum

VOLKSNAME

Wildepiesang, piesangboom, “banana palm”, “wild banana”.

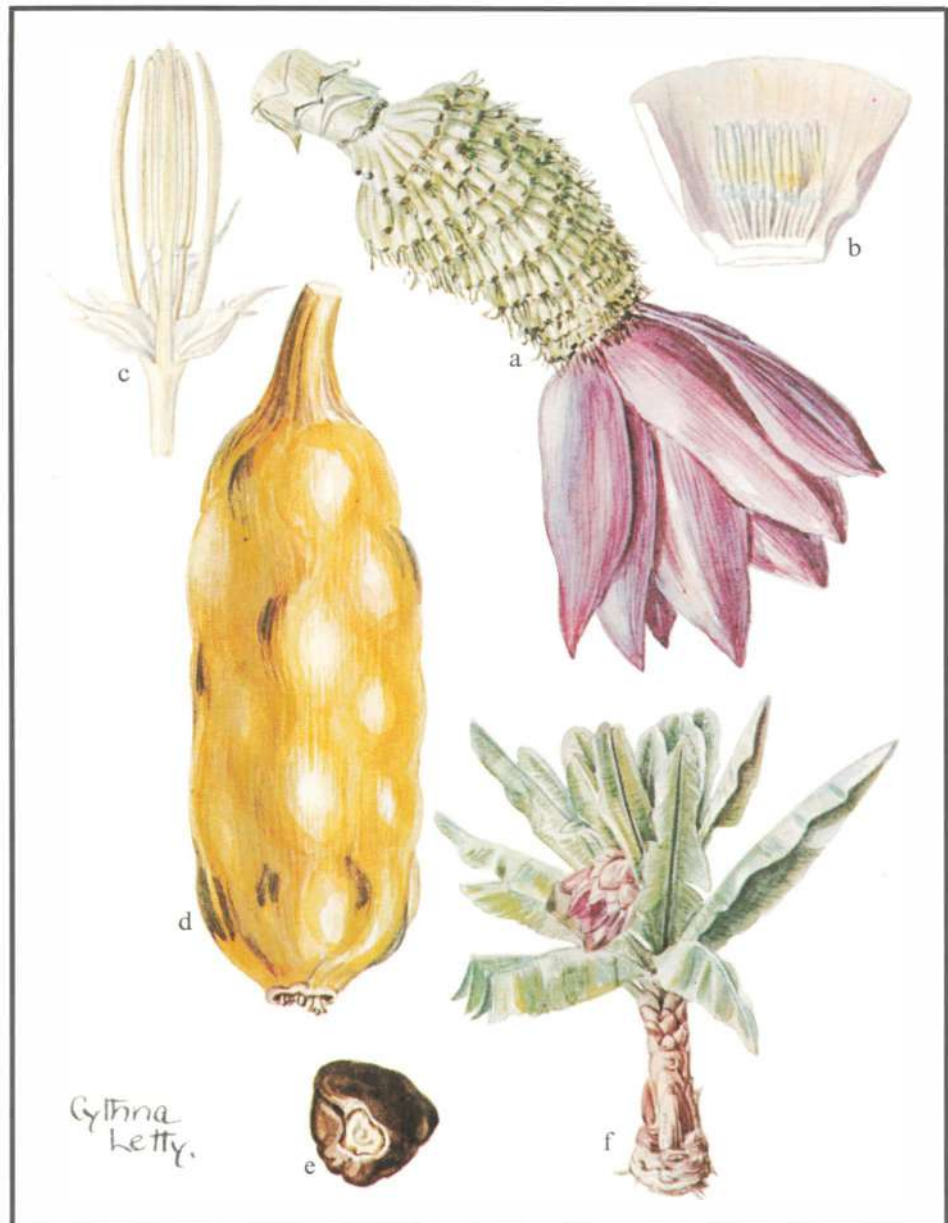
Ensete ventricosum word langs waterstrome in die bergklowe van Noord- en Oos-Transvaal aangetref. Dit kom ook in Angola, Rhodesië en Mosambiek voor.

Hierdie Afrika-genus van ongeveer 25 spesies behoort tot die Monocotyledoneae (eensaadlobbiges) en wel die familie Musaceae.

Die generiese naam is ontleen aan 'n Ethiopiese volksnaam vir die plantsoort en is deur die reisiger Bruce beskryf (Palmer & Pitman, 1972). Die spesifieke byvoegsel *ventricosum* beteken “met 'n opswelling” en verwys na die opgeswelde (verdikte) basis van die stam.

Hoewel die plant kruidagtig is, kan dit nogtans as 'n boom beskou word. Dit bereik hoogtes van tot 12,1 m en dra baie groot heldergroen, gladde, leeragtige blare met 'n opvallende, helderrooi hoofaar. Die blare is tot 5,1 m lank en 0,9 m breed. Soos in die geval van die rafiapalm blom die plant slegs een keer waarna dit afsterf. Die lewensduur van die soort is ongeveer agt jaar.

Die roomkleurige blomme word in groepe deur rooibruin skutblare beskerm en die terminale bloeiwyse is tot 1,8 m lank.



Ensete ventricosum

- a. bunch of young bananas
tros jong piesangs
- b. part of bract with young flowers
gedeelte van skutblaar met jong blomme
- c. flower from transitional area from male to female
blom van oorgangstreek van manlik tot vroulik
- d. fruit
vrug
- e. seed
saad
- f. adult plant
volwasse plant

Erythrina acanthocarpa

COMMON NAMES

“Tamboekiedoring”, “tamboekiewortel” and tambukithorn.

The distribution of ***Erythrina acanthocarpa*** is confined to the Queenstown district in the Eastern Cape. As the name implies (*acanthos* = spine, and *carpus* = fruit) there are spines or thorns on the fruit, which is a pod. On account of the pod this species is placed in the order Leguminales (pod plants), and because of the flower-form it is placed in the family Papilionaceae.

Erythrina acanthocarpa is a shrub, 1–2 m in height and inclined to form thickets. It has a fleshy underground tuber which, when dry, resembles a cork-like mass. The leaves are tri-foliate and the petiole, some 2 cm long, is covered with curved spines.

The flowers are borne in clusters of ten to twenty dark red flowers with their tips coloured in beautiful green. The filaments are also red, but the anthers are green. The pea-shaped seed is dark red with a black collar around the hilum.

In Pretoria the plants flower from September to November and make a beautiful show.

Erythrina humeana

COMMON NAMES

“Dwergkafferboom”, “Natalse Kafferboom”, “kleinkafferboom” small kaffir boom.

Erythrina humeana is distributed over a wide area from the Eastern Transvaal, through Swaziland, Natal and the Transkei to the Eastern Cape.

Erythrina acanthocarpa

VOLKSNAME

Tamboekiedoring, tamboekiewortel en “tambukithorn”.

Erythrina acanthocarpa se verspreidingsgebied is tot die distrik van Queenstown in Oos-Kaapland beperk.

Soos die naam aandui (*acanthos* = stekel, en *carpus* = vrug), kom daar stekels of dorings op die vrug, wat ’n peul is, voor. Op grond van die peul resorteer dié soort onder die orde Leguminales (peul-plante), en op grond van die uitbeelding van die blom onder die familie Papilionaceae.

Erythrina acanthocarpa is ’n struik van 1–2 m hoog wat geneig is om boskasies te vorm. Dit besit ’n vlesige, ondergrondse knol wat in die droë toestand ’n ligte, kurkagtige massa verteenwoordig. Die blare is drieledig saamgestel en die blaarstele van ongeveer 2 cm lank dra ook gekromde stekels.

Die bloeiwyse is ’n okselstandige tros met 10–20 donkerrooi blomme waarvan die punte pragtig groen gekleur is. Die helmtrade is ook rooi maar die helmknoppe is groen. Die ertjevormige saad is donkerrooi met ’n swart kraag om die hilum (aanhegting).

In Pretoria blom die plante vanaf September tot November en vertoon pragtig.

Erythrina humeana

VOLKSNAME

Dwergkafferboom, Natalse kafferboom, kleinkafferboom, “small kaffir boom”.

Erythrina humeana geniet ’n wye verspreiding en kom van Oos-Transvaal deur Swaziland, Natal en die Transkei tot in Oos-Kaapland voor.



Erythrina acanthocarpa



Erythrina humeana

This shrub or small tree reaches a height of 4 m. On the branches and leaves are curved thorns, as on other "kafferboom" species. The leaves are tri-foliate with a middle triangular leaf 5–13 cm long and up to 12 cm broad.

Erythrina humeana blooms in summer and the flower clusters are borne on long, upright stems at the branch terminals, making a beautiful show. The flowers are dark red, drooping and bent slightly backwards.

Erythrina lysistemon

COMMON NAMES

"Transvaalse kafferboom" and "kanniedood".

E. lysistemon grows under drier conditions than the closely related **E. caffra** and is found from the Bashee River mouth, northwards through Natal, Swaziland, to the Eastern, Central and Northern Transvaal. It is also found in Botswana, Angola, Zambia, Rhodesia and Moçambique.

The name **Erythrina** is derived from the Greek *erythros* (=red), referring to the colour of the flowers and seeds. The specific epithet *lysistemon* is derived from the Greek word meaning "free stamen" and refers to the single stamen which stands apart from the split staminal column.

This small to medium upright, thorny, deciduous tree, with a small crown, is usually 3 to 8 m in height. The bright green leaves often appear in clusters at the branch terminals. The leaves are often attacked by wasps, resulting in the formation of galls which give the tree the appearance of being diseased. During late winter and spring, before the new leaves appear, two to four long-stemmed clusters of orange-red to bright red flowers are normally borne just behind the growing point of the younger branches. The folded vexillum (large

Hierdie struik of klein boompie word tot 4 m hoog. Op die takke en blare kom, soos by die ander kafferboomsoorte, gekromde dorings voor. Die blare is drieledig saamgestel met die middelste, drie-hoekige blaar ongeveer 5–13 cm lank en tot 12 cm breed.

Erythrina humeana blom in die somer en die trosse blomme wat op lang, regop stele aan die takpunte gedra word, vertoon pragtig. Die blomme is donkerrooi, hangend en buig effens terug.

Erythrina lysistemon

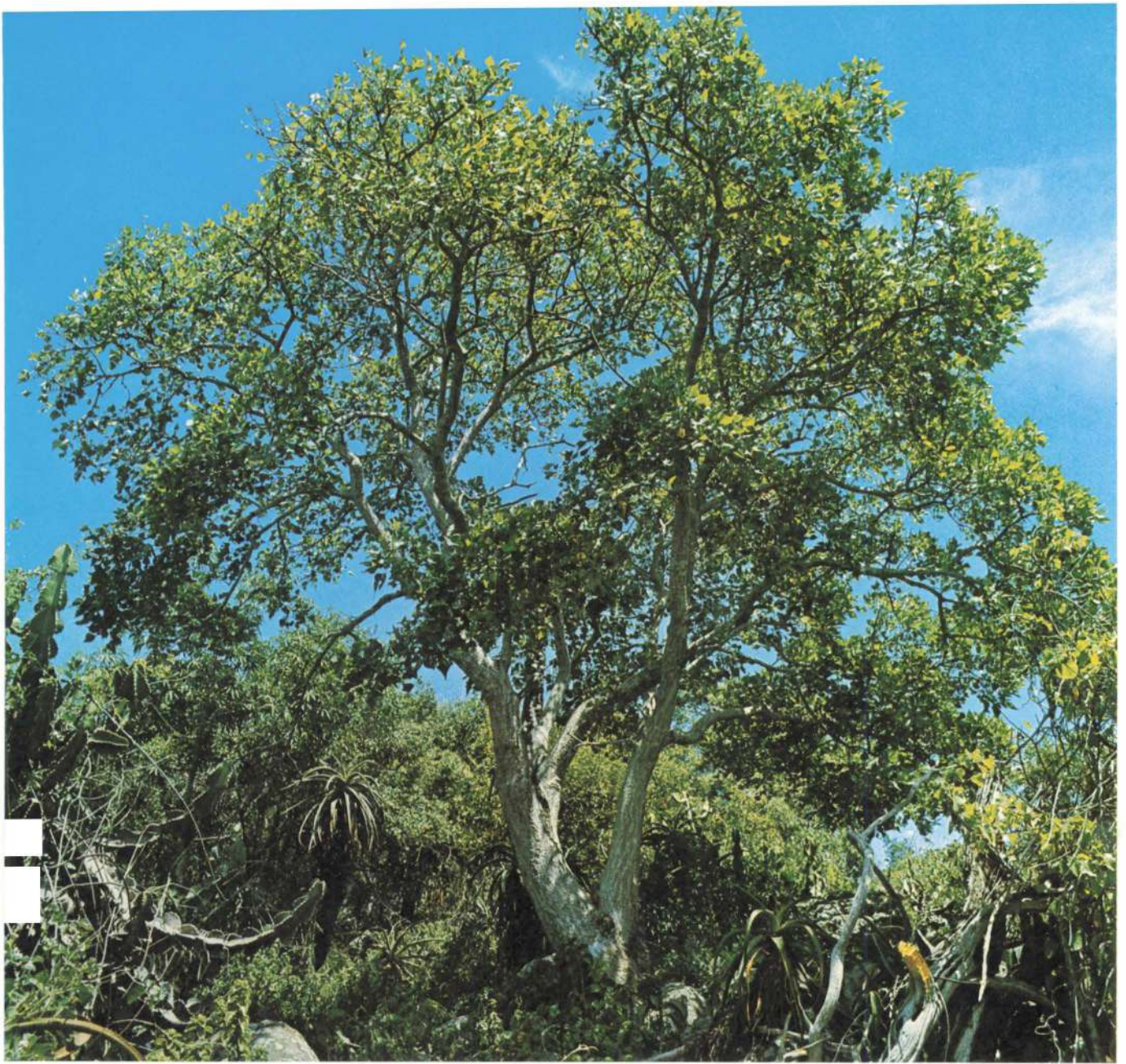
VOLKSNAME

Transvaalse kafferboom en kanniedood.

Erythrina lysistemon kom onder droër toestande as die naverwante **E. caffra** voor en word vanaf die Basheeriviermond noordwaarts deur Natal, Swaziland, tot in Oos-, Sentraal- en Noord-Transvaal aange-tref. Dit kom ook in Botswana, Angola, Zambië, Rhodesië en Mosambiek voor.

Die naam **Erythrina** kom van die Grieks *erythros* (= rooi) wat na die kleur van die blomme en sade verwys. Die spesifieke epiteton *lysistemon* is afgelei van die Griekse woord wat beteken "vry meel-draad" en verwys na die enkele meeldraad wat los staan van die gesplete meeldraadbuis.

Die klein tot middelslag, regop, doringrige, bladwisselende boom met 'n smal kroon is meesal van 3–8 m hoog. Die heldergroen blare word dikwels saamgedronge aan die uiteindes van die takke gedra. Die blare word dikwels deur wespe aangeval en is gevolglik met galle oortrek wat die boom siek laat vertoon. Gedurende die laat winter en die lente, meesal voordat die nuwe blare ontplooi, word gewoonlik van twee tot vier lang gesteelde trosse oranje- of rooi tot helderrooi blomtrasse kort agter die groeipunte van die jonger takke



Erythrina lysistemon



Left:
part of stem to show bark

Links:
gedeelte van stam om bas te
toon

Right:
pods

Regs:
peule



petal) of the flower encloses the stamens. In the case of *E. caffra* the vexillum is folded back so that the stamens are exposed.

The long, black ripe pods are constricted between the seeds, giving the appearance of a string of beads. When the pods dehisce, the red seeds – “lucky beans” – are scattered.

Although *Erythrina lysistemon* is not frost-resistant, it can withstand light frost if planted in a sunny spot on the north or west side of the house and if covered during the first few winters. The seed germinates easily, but the plants can also be propagated by cuttings. The trees grow fast, flower early, and are drought-resistant.

Erythrina zeyheri

COMMON NAMES

“Ploegbreker”, “kurkwortel”, “neerrukker”.

Erythrina zeyheri is found over a wide area in Natal, Orange Free State, Transvaal and Lesotho.

Of the South African *Erythrina* species this is the smallest. It has fleshy, perennial, underground tubers which can be branched. At the beginning of the season, annual aerial shoots of 0,5 to 1 m long appear bearing flower clusters and large tri-foliate leaves. There are hooked thorns on the leaves and the terminal leaflet (the one at the end) can reach more than 30 cm in length and breadth.

Each plant bears a number of inflorescences, each of which can consist of up to thirty-five flowers. The flowers droop, are blood-red, measure up to 6 cm in length and bend slightly backwards. The pods are constricted and contain large red seeds of about 1 cm in diameter.

gedra. Die toegevoede vlag (groter kroonblaar) van die blom omsluit die meeldrade. In die geval van *E. caffra* is die vlag teruggevou en die meeldrade word blootgestel.

Die lang, swarterige, ryp peule is tussen die sade ingesnoer en lyk soos ’n string krale. Wanneer die peule oopbars, word die rooi sade – “lucky beans” – vrygestel.

Hoewel *Erythrina lysistemon* rypgevoelig is, kan dit ’n mate van ryp oorleef as dit op ’n sonnige plek aan die noorde- of westekant van die huis geplant en die eerste paar winters beskut word. Die saad ontkiem maklik, maar die plante kan ook deur middel van steggies vermeerder word. Die bome groei vinnig, blom gou en is teen droogtes bestand.

Erythrina zeyheri

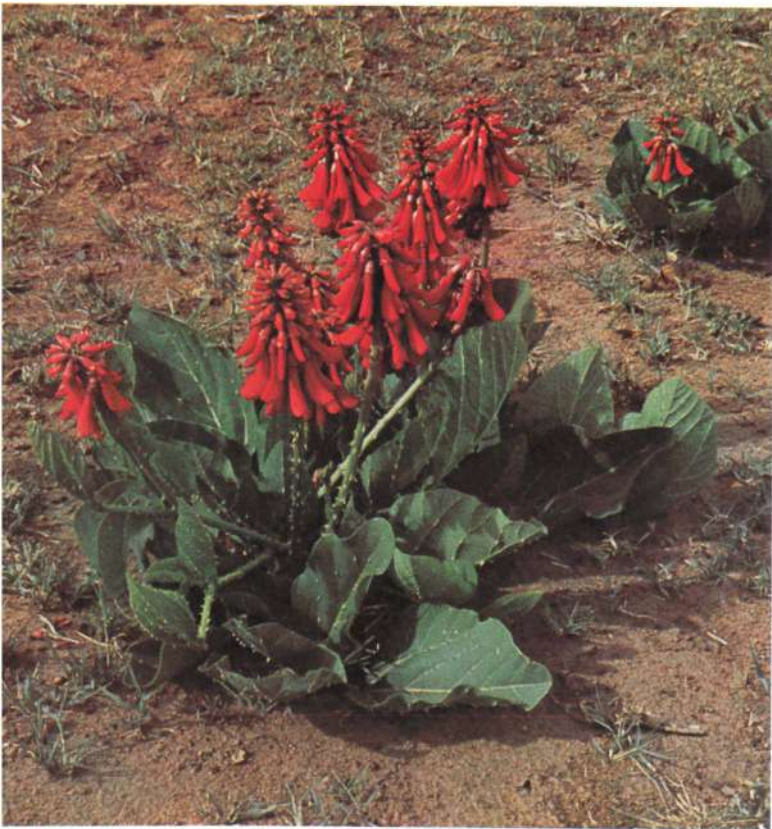
VOLKSNAME

Ploegbreker, kurkwortel, neerrukker.

Erythrina zeyheri geniet ’n wye verspreiding en kom in Natal, Oranje-Vrystaat, Transvaal en Lesotho voor.

Van die Suid-Afrikaanse *Erythrina*-soorte is hierdie die kleinste soort. Dit besit ’n vlesige, meerjarige, ondergrondse knol wat vertak kan wees. Hieruit groei daar aan die begin van die seisoen eenjarige, bogrondse stingels van 0,5–1 m lank waarop trosvormige bloeiwyses en groot, drieledig saamgestelde blare gedra word. Op die blare kom haakdorings voor en die terminale blaartjie (die een aan die punt) kan tot meer as 30 cm lank en breed word.

’n Hele aantal bloeiwyses kom per plant voor en elke bloeiwyse kan tot 35 blomme dra. Die blomme is bloedrooi, afhangend, tot 6 cm lank en buig effens terug. Die peule is ingesnoer en bevat groot rooi sade van ongeveer 1 cm in deursnee.



Erythrina zeyheri



Erythrina caffra

Gloriosa superba

COMMON NAMES

“Geelboslelie”, “rooiboslelie”, “vlamlelie”, climbing lily, Turk’s cap.

Gloriosa superba belongs to the Liliaceae family and is found in hot areas with a tropical climate.

In the Transvaal it grows in the northern and eastern areas and is also found along the north and south coast of Natal.

This plant thrives in shady or semi-shady places amongst other vegetation. The thin, long tendrils at the tips of the leaves cling to other plants.

The colour of the flowers varies from light yellow to golden-brown and flaming red. Sometimes there is a touch of green in the centre of the flower.

In India and Sri Lanka (Ceylon) the flowers are used at religious ceremonies and the rootstock supposedly hastens birth-pains.

The root-stock must be planted fairly deep. They do best in sandy, well-drained soil.

Haemanthus (Amaryllidaceae)

COMMON NAMES

The one common name “mieligifbol” creates the impression that this plant is poisonous. This is not so. Other common names for this species are: “seeroogblom” (pollen is thought to cause sore eyes), “stoofborsel”, “kopseerblom”, “gifwortel” and “kaffer-almanak”.

Gloriosa superba

VOLKSNAME

Geelboslelie, rooiboslelie, vlamlelie, “climbing lily”, “Turk’s cap”.

Gloriosa superba behoort aan die familie Liliaceae en word in baie warm gebiede met ’n tropiese klimaat aangetref.

In die Transvaal is dit uit die noordelike en oostelike streke vermeld, terwyl dit aan die suid- en noordkus van Natal ook algemeen voorkom.

Hierdie plantsoort aard baie goed in skadu- of halfskaduplekke tussen ander gewasse. Die dun, lang hegrankies aan die punte van die blare klou aan ander plante vas.

Die kleur van die blomme wissel van liggeel tot goudgeel en vuur-rooi. Soms is daar ’n bietjie groen in die blomsenter.

In Indië en Sri Lanka (Ceylon) word die blomme vir godsdienstige doeleindes aangewend, terwyl die knolle (tuber) help om geboortepyne te versnel.

Die knolle moet redelik diep geplant word. Dit aard ook die beste in sanderige grond wat goed en vinnig dreineer.

Haemanthus (Amaryllidaceae)

VOLKSNAME

Weens die een volksnaam, naamlik mieligifbol, dink ’n mens soms dat hierdie plantsoort giftig is. Dit is egter geensins die geval nie. Ander volksname vir hierdie soort is seeroogblom (stuifmeel sou dan seer oë veroorsaak), stoofborsel, kopseerblom, gifwortel en kaffer-almanak.



Gloriosa superba

The Amaryllidaceae is a world-wide family consisting of some seven hundred species in seventy genera. The generic name **Haemanthus** is derived from *aima*, meaning blood, and *anthos*, meaning flower.

The genus **Haemanthus** can easily be identified by the large inflorescence of compact brushlike flowers. The large bracts of **H. magnificus**, for example, can be seen from a distance. The flowers are borne on a thick, fleshy stem some 18 cm in length.

Of the ninety known species, forty-five are found in the Republic of South Africa. Nearly all the species are found in Africa.

The only species grown in the cycad garden of Unisa is **H. magnificus**.

This species deserves its distinctive name. In the early spring (September to October), after the first rains, it is a beautiful sight, growing in shady areas under bushes. The Unisa plants come from Kameeldrif-Zeekegat along the Pienaars River, Pretoria.

Once the beautiful, blood-red, brushlike flowers fade, round, blood-red berries, lovelier even than the flowers, appear.

These plants prefer dry winters, with plenty of water in summer. They grow in well-drained, light soil.

Die familie Amaryllidaceae is wêreldwyd versprei en bestaan uit ongeveer sewehonderd soorte wat in sewentig geslagte ingedeel is. Die geranoom **Haemanthus** is afgelei van *aima* wat bloed en *anthos* wat blom beteken.

Die genus **Haemanthus** kan maklik uitgeken word aan die groot bloeiknoppe met die styf gepakte, borselagtige blommetjies. Die groot skutblare van **H. magnificus**, byvoorbeeld, kan van ver af gesien word. Die blomme word aan dik, vlesige stingels gedra wat tot 18 cm lank word.

Van die negentig soorte wat bekend is, word 45 in die Republiek van Suid-Afrika aangetref. Bykans al die soorte word op die vasteland van Afrika aangetref.

H. magnificus is die enigste spesie wat in die broodboomtuin van Unisa aangeplant is.

Hierdie spesie verdien sy besondere naam, want in die vroeë lente (September tot Oktober), ná die eerste reën, vertoon dit pragtig waar dit onder bosse in halfskadu groei. Eksemplare by Unisa kom van Kameeldrif-Zeekegat aan die Pienaarsrivier, Pretoria.

Nadat die pragtige bloedrooi, borselagtige blomme verdwyn het, verskyn ronde bloedrooi bessies wat nog aantrekliker as die blomme is.

Hierdie plantsoort hou van droë winters en volop water in die somer. Dit groei in grond wat nie baie swaar is nie en wat vinnig dreineer.

Haemanthus magnificus

- a. flower
blom
- b. part of leaf
gedeelte van blaar
- c. inflorescence
bloeiwyse
- d. leaf sheath
blaarskede



Kniphofia

COMMON NAMES

“Vuurpyl”, “soldaat”, “vuurlelie” and red-hot poker.

This attractive genus of the lily family is named after J. H. Kniphof, a professor of medicine at Erfurt, who took a keen interest in Botany.

With the exception of one species, which grows in Malagasy, the genus, **Kniphofia**, is limited to Africa. There are about fifty species in the Republic of South Africa, of which twelve are found in the Transvaal.

Cythna Letty regards **K. praecox** as one of the most beautiful species of the group.

Although this plant is fairly drought-resistant it will produce lovelier and larger flowers if well watered before flowering time.

The plants growing in the Unisa garden were collected in Northern Natal by the author. They were located near Utrecht in swamps and marshes fairly high up in the mountains. The flowers of this variety, **K. porphyrantha**, are bi-coloured. The other species growing in our Unisa garden was found in wet marshy areas in Natal. The plant is smaller and the flowers, dirty white in colour with protruding yellow stamens, are also smaller. The plant has been identified as **K. albescens**.

Leonotis leonurus

COMMON NAMES

“Wildedagga”, “duiwelstabak (-twak)”, “koppiesdagga”, “rooi-dagga”.

This attractive ornamental shrub belongs to the family Labiateae (sage). It grows to a height of 3 m and blooms from April to June, but

Kniphofia

VOLKSNAME

Vuurpyl, soldaat, vuurlelie en “red-hot poker”.

Hierdie pragtige geslag wat aan die leliefamilie behoort, is na J. H. Kniphof, ’n Erfurtse professor in die medisyne wat ’n besondere belangstelling vir die plantkunde gehad het, vernoem.

Behalwe een soort wat in die Malgassiese Republiek voorkom, is die geslag **Kniphofia** tot die vasteland van Afrika beperk. Daar kom ongeveer vyftig soorte in die Republiek van Suid-Afrika voor, waarvan uit Transvaal alleen twaalf bekend is.

Cythna Letty sonder **K. praecox** uit as een van die mooistes onder die groep.

Hoewel hierdie plante redelik droogtebestand is, sal dit mooier en groter blomme dra as hulle goed nat gehou word voordat die blomtyd aanbreek.

Die plante wat in hierdie tuin groei, is in Noord-Natal deur die skrywer versamel. Dit is naby Utrecht baie hoog in die berge in vleie en in moerasagtige plekke gevind. Hierdie variëteit, **K. porphyrantha**, se blomme is tweekleurig. Die ander soort wat in die tuin van Unisa groei, is in nat, vleiagtige plekke in Natal gevind. Die plant is kleiner, en die blommetjies is ook kleiner en vuilwit van kleur met geel stuifmeeldrade wat ver uitstaande is. Dit is as **K. albescens** geïdentifiseer.

Leonotis leonurus

VOLKSNAME

Wildedagga, duiwelstabak (-twak), koppiesdagga, rooidagga.

Hierdie aantreklike sierstruik behoort aan die familie Labiateae (saliefamilie). Dit word tot 3 m hoog en blom van April tot Junie maar



Kniphofia albescens

- a. young inflorescence
jong bloeiwyse
- b. leaf
blaar
- c. inflorescence with open flowers
bloeiwyse met oop blomme

also during other months, depending on rainfall. In autumn, the orange flowers make a beautiful show.

According to Watt and Breyer-Brandwijk (*The medicinal and poisonous plants of Southern Africa*, 1932), Whites and Bantus make use of the leaves and roots of the plant for various medicinal purposes, treating, amongst others, colds, gallstones and bronchial asthma.

Nymphaea

COMMON NAMES

“Waterlelie”, “blouwaterlelie”, “paddapreekstoel”, and water lily. They are, however, not related to the true lilies.

The genus is named after Nympha, the Greek goddess of nature. They are herbs with perennial root-stocks which can grow horizontally or vertically. The leaves have long petioles, and the large spherical or oval, entire or crenate leaf blades float on the surface of the water. The leaves of some species are 30–60 cm in diameter. Flowers, from 2–30 cm in diameter, are of different colours and shades – white, yellow, blue and red. After pollination the flowers are drawn under the water as the stems bend or shrink by spiralling. The seeds develop and ripen under the water. When the seeds are freed they float on the water by means of an air bladder formed by the arillus.

Nymphaea are easily propagated in the spring or summer by means of root-stocks. They require rich, loamy soil of about 0,3 m in depth which should be replaced every second year.

There are some forty known species with many variations and a number of hybrids.

N. lotus is a species with creamy-white flowers which is found in the Transvaal and Natal.

N. capensis has blue flowers and can be recognised by its dentate leaves. **N. caerulea** also has blue flowers, but the leaves are crenate.

dikwels ook, afhangende van reën, tydens ander maande. Die oranje-keurige blomme vertoon pragtig in die herfstuin.

Volgens Watt en Breyer-Brandwijk (*The medicinal and poisonous plants of Southern Africa*, 1932) word die wortels en die blare van die plant deur sowel die Bantoes as Blankes vir uiteenlopende medisinale doeleindes aangewend. Dit word onder meer gebruik as medisyne teen verkoues, galstene en bronchiale asma.

Nymphaea

VOLKSNAME

Waterlelie, blouwaterlelie, paddapreekstoel en “water lily”. Dit is egter geensins aan die egte lelies verwant nie.

Die genus is na Nympha, die Griekse godin van die natuur, vernoem. Hulle is kruid met meerjarige wortelstokke wat of horisontaal- of vertikaalgroeiend kan wees. Die blare het lang blaarsele en die groot ronde of ovaal, gaafrandige of gekartelde blaarskywe is drywend op die oppervlakte van die water. Die blare kan by sekere soorte van 30–60 cm in deursnee wees. Blomme wat van 2–30 cm in deursnee kan wees, se kleur wissel van wit, geel, blou tot rooi in alle skakerings. Ná bestuiwing word die blomme onder die water ingetrek deurdat die blomsele ombuig of spiraalsgewys inkrimp. Die saad ontwikkel en word onder die water ryp. As die sade vrykom, dryf hulle op die water met behulp van ’n lugblasie wat deur die arillus gevorm word.

Nymphaea word betreklik maklik in die lente of somer met wortelstokke voortgeplant. Dit vereis ’n ryk leemgrond van ongeveer 0,3 m dik wat elke tweede jaar vervang word.

Daar is ongeveer veertig soorte bekend met baie variasies en ook heelwat kultivars.

N. lotus is ’n soort met roomwit blomme en kom in Transvaal en Natal voor. **N. capensis** het blou blomme en kan aan die getande blare herken word. **N. caerulea** het ook blou blomme, maar die blare is gaafrandig.



Leonotis leonorus

Podocarpus

COMMON NAMES

“Geelhoutboom”, **Podocarpus falcatus** is known as “bastergeelhout”, “kalander”, “Outeniekwalandsegeelhout”, bastard-yellow-wood, common yellow-wood and smooth-barked yellow-wood, while *latifolius* is called “opregtegeelhoutboom” and “regtegeelhoutboom.”

The genus **Podocarpus** consists of large trees or shrubs, limited mainly to the southern hemisphere. The name **Podocarpus**, derived from the Greek *podos* (a foot) and *karpos* (a fruit), refers to the stemmed seed which in some species is borne on a fleshy podocarp or base.

The genus belongs to the naked seed plants or Gymnospermae, to which also belong the cycads (**Encephalartos**), cedars (**Widdringtonia**) and pines (**Pinus**, which are not indigenous to Southern Africa). **Podocarpus** includes some of the largest forest trees in Southern Africa. They are common throughout the coastal and inland forests from the Cape Peninsula to the Northern Transvaal.

Yellow-wood was commonly used in the last century for furniture, flooring, beams, rafters, rungs, railway sleepers, hub-bands and even for ship's masts. Four species are found in the Republic of South Africa, namely, **P. elongatus** (Breë River yellow-wood), **P. falcatus** (Outeniqua yellow-wood), **P. henkelii** (Natal yellow-wood) and **P. latifolius** (true yellow-wood). Of these only the last three species are grown in the cycad garden of Unisa.

The trees are dioecious. Pollen is produced in male cones from August to October. Young female cones are wind pollinated and appear during July and August. The immature ovules are dark green in colour.

The three trees in the Unisa garden can be identified by the shape of the mature female cones. The cones of **P. falcatus** are sessile and are borne on short vegetative branches. They are almost spherical in

Podocarpus

VOLKSNAME

Geelhoutboom. **Podocarpus falcatus** staan as bastergeelhout, kalander, Outeniekwalandsegeelhout, “bastard yellow-wood”, “common yellow-wood” en “smooth-barked yellow-wood” bekend terwyl **P. latifolius** opregtegeelhoutboom en regtegeelhoutboom genoem word.

Die genus **Podocarpus** bestaan uit groot bome of struik wat hoofsaaklik tot die suidelike halfsfeer beperk is. Die naam **Podocarpus**, afgelei van die Grieks *podos* (‘n voet) en *karpos* (‘n vrug), het betrekking op die gesteelde saad wat in sommige spesies op ‘n vlesige en selfs helderleurige podokarpium of voet gedra word.

Die genus behoort tot die naaktsadige plante of Gymnospermae, waartoe ook onder meer die broodbome (**Encephalartos**), sederbome (**Widdringtonia**) en denne (**Pinus**, wat nie inheems in Suid-Afrika is nie) behoort. **Podocarpus** sluit van die grootste woudbome van Suid-Afrika in. Dit word wydverspreid in die kus- en binnelandse woude van die Kaapse Skiereiland tot in Noord-Transvaal aangetref.

Geelhout is in die vorige eeu algemeen gebruik, onder meer vir meubels, vloerplanke, balke, dakspare, houtspore, spoorwegdwarslêers, naafbande vir waens en selfs vir skeepsmaste. Vier soorte kom in die Republiek van Suid-Afrika voor, naamlik **P. elongatus** (Breëriviergeelhout), **P. falcatus** (Outeniekwageelhout), **P. henkelii** (Natale geelhout) en **P. latifolius** (egte geelhout) waarvan laasgenoemde drie soorte in die broodboomtuin van Unisa aangeplant is.

Die bome is tweehuisig. Stuifmeel word in manlike keëls gedurende Augustus-Oktober geproduseer. Jong vroulike keëls word gedurende Julie en Augustus gevorm en windbestuiwing vind plaas. Die onvolwasse saadknoppe is donkergroen van kleur.

Die drie bome in hierdie tuin kan volgens die uitbeelding van die volwasse vroulike keëls geïdentifiseer word. Die keëls van **P. falcatus**



Nymphaea capensis

shape, light yellow or light brown in colour and from 15–25 mm in diameter. The mature female cones of *P. henkelii* are nearly as large as those of *P. falcatus*, but are dark green in colour and are borne on a relatively short base which is never fleshy or brightly coloured. The female cones of *P. latifolius* are somewhat smaller than the other two species, from 7–10 mm in length, and are borne on a fleshy, bright red or purple base.

The trees can also be identified by their leaves. The leaves of *P. henkelii* are the longest and those of *P. falcatus* the shortest of the three species. The leaves of *P. henkelii* droop, while those of the other species are upright. The petiole of *P. falcatus* is twisted through an angle of 90 degrees. The leaf ends of all three species taper to a sharp point.

In the case of *P. falcatus* the leaf tapers from the middle, whereas in *P. henkelii* tapering commences from about the top third of the leaf and in *P. latifolius* from the top tenth.

Schizostylis coccinea

COMMON NAMES

“Kafferlelie” and kaffir lily.

S. coccinea is found by the side of streams. It grows in the eastern Cape, Orange Free State, Swaziland, Transvaal and Natal. Near Utrecht it grows in clayey, pitch-black soil.

The name of the plant is derived from “schizo” and refers to the divided style (*schizo* = to divide, and *stylos* = style). *Coccinus* means blood-red.

This member of the Iris family (Iridaceae) has, like all the members of this family, a corm which is flat in appearance with new, small corms

word op 'n kort vegetatiewe takkie sonder 'n voet gedra, is ongeveer rond, liggeel of ligbruin van kleur en kan van 15–25 mm in deursnee word. Die volwasse vroulike keëls van *P. henkelii* is ongeveer so groot soos dié van *P. falcatus*, maar is donkergroen van kleur en word op 'n relatief klein voet gedra wat nooit vlesig of helderkleurig is nie. Die vroulike keëls van *P. latifolius* is heelwat kleiner as dié van die ander twee soorte, naamlik 7–10 mm lank, en word op 'n vlesige helderrooi of perskleurige voet gedra.

Die bome kan ook volgens hul blare van mekaar onderskei word. Die blare van *P. henkelii* is die langste en dié van *P. falcatus* die kortste van die drie soorte. Dié van *P. henkelii* is afhangend, terwyl dié van die ander spesies regopstaande is. Die blaarsteel van *P. falcatus* is gedraaid met 'n hoek van 90°. Die blaarpunte van al drie soorte loop geleidelik in 'n skerp punt uit.

By *P. falcatus* loop die blaarpunt spits van ongeveer die middel van die blaar, by *P. henkelii* van ongeveer die boonste een derde van die blaar en by *P. latifolius* vernou die blaar baie vinnig of rond af in die boonste een tiende.

Schizostylis coccinea

VOLKSNAME

Kafferlelie en “kaffir lily”.

S. coccinea groei langs waterstroompies. Dit kom onder meer in Oos-Kaapland, Oranje-Vrystaat, Swaziland, Transvaal en Natal voor. Naby Utrecht groei dit in pikswart kleigrond.

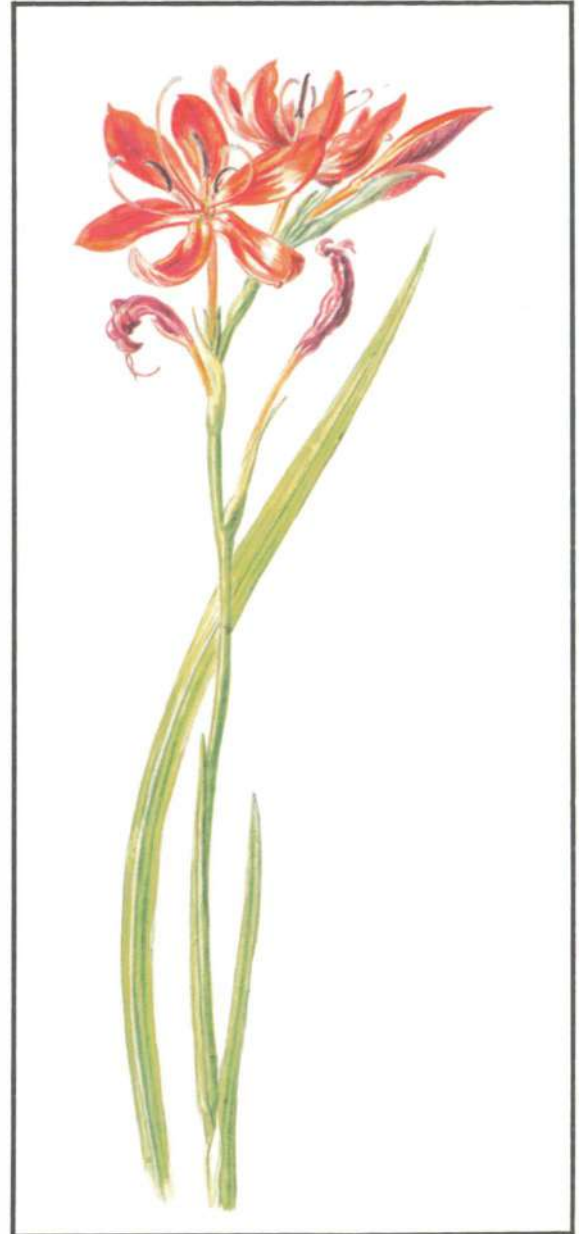
Die naam van die plant is afgelei van “schizo” en verwys na die verdeelde styl (*schizo* = om op te deel, en *stylos* = styl). *Coccinus* beteken bloedrooi.

Hierdie lid van die Irisfamilie (Iridaceae) het, soos alle soorte van hierdie familie, 'n knol. Die knolle is plat in voorkoms en nuwe



Podocarpus latifolius

Schizostylis coccinea



growing on top of the old ones. In the case of **Watsonias** (of the same family) the piled-up, flat corms are particularly noticeable.

Schizostylis coccinea increase profusely each year and prefer to grow in semi-shade. Flowering time is from January to March when from six to eight blood-red, star-shaped flowers appear on a single peduncle. The peduncle can be as long as 50–60 cm.

Strelitzia reginae

COMMON NAMES

“Kraanvoëlblom”, “geelpiesang”, “voëls”, “wildepiesang”, bird-of-paradise flower, crane flower, little-man-in-the-boat and wild banana.

S. reginae is found from Patensie in the south, along the east coast to Zululand, with its largest concentration in the vicinity of Ecce Pass and Plato’s Vale near Grahamstown.

The beautiful and world renowned plant species is a monocotyledon and a member of the Musaceae family, to which the banana also belongs.

The genus **Strelitzia** is endemic to Southern Africa and is represented by five species. Three of the species, **S. alba**, **S. nicolai** and **S. caudata** have well developed stems, while the other two **S. reginae** and **S. juncea** are stemless, with leaves appearing out of the ground.

S. reginae and **S. juncea** have beautiful, bright orange flowers with blue centres, while the species with stems have white flowers with blue centres. In the case of **S. reginae** the leaves have weak to well developed laminae which are undulated near the leaf margins, while a lamina may be absent in the case of **S. juncea**, and, if present, it is relatively small and smooth (flat) along the leaf margin.

knolletjies kom bo-op die oues uit. By **Watsonias** (ook van dieselfde familie) kan die opeengestapelde, platterige knolle veral mooi waargeneem word.

Schizostylis coccinea vermeerder jaarliks baie vinnig en dit verkies halfskaduplekke. Dit blom vanaf Januarie tot Maart. Daar kom van ses tot agt bloedrooi, stervormige blomme aan ‘n enkele bloeisteel voor. Die bloestele bereik soms ‘n hoogte van 50–60 cm.

Strelitzia reginae

VOLKSNAME

Kraanvoëlblom, geelpiesang, voëls, wildepiesang, “bird-of-paradise flower”, “crane flower”, “little-man-in-the boat” en “wild banana”.

S. reginae kom vanaf Patensie in die suide langs die ooskus tot in Zoeloeland voor met die digste konsentrasies in die omgewing van Ecce-pas en Plato’s Vale naby Grahamstad.

Hierdie pragtige en wêreldbekende plantsoort behoort tot die Monocotyledoneae (eensaadlobbiges) en ressorteer onder die familie Musaceae waartoe die piesang ook behoort.

Die genus **Strelitzia** is endemies in Suidelike Afrika en word deur vyf spesies verteenwoordig. Drie van die spesies – **S. alba**, **S. nicolai** en **S. caudata** – het ‘n goed ontwikkelde stam, terwyl die ander twee – **S. reginae** en **S. juncea** – stamloos is met grondstandige blare.

S. reginae en **S. juncea** het beide pragtige helderoranje blomme met ‘n blou sentrale gedeelte terwyl die soorte met ‘n stam wit blomme met ‘n blou sentrum dra. In die geval van **S. reginae** het die blare ‘n swak tot goed ontwikkelde blaarskyf wat golwend naby die blaarrand is terwyl ‘n blaarskyf meesal ontbreek by **S. juncea**. Indien dit egter teenwoordig is, is dit relatief klein en glad (plat) naby die blaarrand.

Strelitzia reginae



Although *S. reginae* grows well under virtually any conditions, it appears to prefer cool, humid conditions and sandy soil rich in humus. The seed does not germinate easily but the plant can be propagated vegetatively. At first it grows very slowly but, after the plants are well established, they increase rapidly to form clumps of more than 1 m in diameter and 142–300 cm in height.

The older plants flower profusely and each inflorescence consists of a number of flowers which, in the early stages, are sheathed by a green to red-brown bract or spathe. The papilionaceous flowers unfold consecutively over a period of a few weeks.

Together with the bright orange and blue flowers, the fruit with their black and orange seeds, are also very decorative and are used in dry flower arrangements.

Strelitzia juncea

COMMON NAMES

“Kraanvoëlblom” and wild banana, “wildepiesang”

Strelitzia juncea in its natural habitat is confined to the Uitenhage district.

It is one of the stemless **Strelitzia** species and is distinguished from the other stemless species, namely *S. reginae*, by the shape of the leaf. The leaf consists of straight, long leaf stalks with aborted leaf blades at the ends. This gives the plant a juncaceous appearance, hence its name. In young plants the leaf blades are better developed but still very much smaller than those of *S. reginae*.

The flowers are similar to and cannot be distinguished from those of *S. reginae*.

This species is very decorative and is especially beautiful in rockeries among aloes. They usually flower from July to September and again in April.

Hoewel *S. reginae* goed onder feitlik alle toestande groei, verkies dit waarskynlik koeler, vogtiger toestande en 'n humusryke, sanderige grond. Die sade is traag om te ontkiem, maar dit kan ook vegetatief vermeerder word. Dit groei aanvanklik baie stadig, maar nadat die plante goed gevestig is, vermeerder dit baie vinnig en vorm bosse van tot meer as een meter in deursnee en 142 tot 300 cm hoog.

Die ouer plante blom oorvloedig en elke bloeiwyse bestaan uit 'n aantal blomme wat in die jong toestand deur 'n groen tot rooibruin skutblaar of bloeiskede omsluit word. Die vlinderagtige blomme ontplooi opeenvolgend oor 'n periode van 'n paar weke.

Naas die helderoranje en blou blomme is die vrugte met hulle swart en oranje sade ook baie dekoratief en word in droë blomrangskikings gebruik.

Strelitzia juncea

VOLKSNAME

Kraanvoëlblom en “Wild Banana”, wildepiesang

Strelitzia juncea word in sy natuurlike staat slegs in die omgewing van Uitenhage aangetref.

Dit is een van die stamlose **Strelitzia**-soorte en word van die ander stamlose soort, naamlik *S. reginae*, onderskei op grond van die vorm van die blaar. Die blare bestaan uit lang, reguit blaarstele wat aan die punt geaborteerde blaarskywe bevat. Die plante vertoon dus biesieagtig en vandaar ook die naam. By jong plante is die blaarskyf beter ontwikkel, maar nog steeds baie kleiner as dié van *S. reginae*.

Die blomme lyk net soos dié van *S. reginae* en kan nie daarvan onderskei word nie.

Hierdie soort is baie dekoratief en vertoon veral mooi tussen aalwyne op rotstuine. Hulle blom gewoonlik vanaf Julie tot September en ook weer in April.

Strelitzia juncea



Veltheimia viridifolia

COMMON NAME

“Sandui”.

These shade-loving, bulbous plants, belonging to the Liliaceae, are found along the east coast from Port Elizabeth to Natal. The underground bulb may grow to 12 cm in diameter. The dark green leaves, with crenated margins, reach a length of 30 cm and die off during the summer months. During the early autumn (the beginning of March) the plants sprout again and young leaves appear.

In Pretoria the new inflorescence appears in April and by May the plants are usually in full bloom.

The inflorescence is a compact raceme, the speckled stem of which can be 20–30 cm long. The pink, slightly speckled, tube-like flowers are from 2–3 cm in length. They open from the bottom and, under favourable conditions, will continue to flower for two months.

Veltheimias have been grown for more than 200 years in Europe, where they are very popular. Another species, **V. capensis** (L.) DC, which grows in direct sunlight and is found in the North-western Cape, is also very popular.

Virgilia oroboides

COMMON NAMES

“Keurboom”, “keurhout”, “wildekeur”, “amaquasboom” and snowdrop tree.

The generic name comes from the poet, Virgil, while the epithet, *oroboides*, is indicative of a relationship with the genus **Orobis** (with pea-shaped flowers). **Orobis** is now included in the genus **Lathyrus**.

Veltheimia viridifolia

VOLKSNAAM

Sandui

Hierdie skaduliewende bolplante wat aan die Liliaceae behoort, word langs die ooskus van Port Elizabeth af tot in Natal aangetref. Die ondergrondse bol kan tot 12 cm in deursnee word. Die donkergroen blare met gekartelde rande word tot 30 cm lank en sterf gedurende die somermaande af. Gedurende die vroeë herfs (begin Maart) loop die plante weer uit en maak jong blare hul verskyning.

In Pretoria verskyn die jong bloeiwyses ongeveer in April, en in Mei is die plante gewoonlik vol in die blom.

Die bloeiwyse is ’n kompakte tros waarvan die gespikkelde steel 20–30 cm lank kan word. Die pienk, effens gespikkelde, buisvormige blom is 2–3 cm lank, gaan van onder af oop en onder gunstige toestande kan die blomperiode oor ’n tydperk van tot twee maande strek.

Veltheimias word reeds langer as tweehonderd jaar in Europa, waar hulle baie gewild is, gekweek. ’n Ander spesie wat in die oop son groei en in Noordwes-Kaapland voorkom, naamlik **V. capensis** (L.) DC, is ook baie gewild.

Virgilia oroboides

VOLKSNAME

Keurboom, keurhout, wildekeur, amaquasboom en “snowdrop tree”.

Die generiese naam is ontleen aan die digter Virgilius terwyl die spesifieke byvoegsel *oroboides* op ’n verwantskap met die genus **Orobis** (met ertjievormige blom) dui. **Orobis** is tans in die genus **Lathyrus** opgeneem.



Veltheimia veridifolia

This small Cape family with one or possibly two or three species, has an unusual distribution. Although successfully grown in gardens throughout the country, their normal habitat is a narrow coastal strip from Van Staden's Pass to the Cape Peninsula. They grow in abundance around Knysna and George.

The "keurboom"'s fruit is a pod which places it in the order Leguminales, while the pea-shaped flowers place it in the family Papilionaceae.

The tree is seldom higher than 9 m. The trees, when in flower, are covered with off-white to deep pink pea-shaped flowers borne in clusters arising from the axils of the leaves at the terminals of young branches. The flowers have an unusually sweet smell and are heavily laden with nectar with the result that they are visited by countless birds and insects.

The evergreen "keurboom", which is not resistant to heavy frost, is a beautiful garden plant and thrives in humid conditions and in full sunlight or partial shade. The seed germinates easily and the young trees grow unusually fast to a height of some 8 m within six years. The trees have a short lifespan and seldom live more than twelve to twenty years. They have a shallow, spreading root system and should preferably be planted alone or with bulbs and/or annuals.

The wood of the "keurboom" is light and soft and is used for yokes, rafters, trusses and firewood.

Zantedeschia

COMMON NAMES

"Aronskelk", "varkoor", "varkblom" and arum lily.

The genus **Zantedeschia** is one of the 100 genera of the large Araceae family. In Africa, ten species of this genus have been identified. They

Hierdie klein Kaapse geslag met een of moontlik twee of drie spesies het 'n uitsonderlike verspreiding. Hoewel dit suksesvol in tuine feitlik dwarsdeur die land groei, word dit natuurlik in 'n smal strook langs die kus van Vanstadenspas af tot in die Kaapse Skiereiland aangetref. Dit is veral volop in die Knysna-George-omgewing.

Die keurboom se vrug is 'n peul wat dit in die orde Leguminales plaas terwyl die ertjievormige blomme dit in die familie Papilionaceae plaas.

Die bome word selde hoër as 9 m. Wanneer dit in blom is, is die bome oortrek met byna wit tot diep pienk ertjievormige blomme wat in trosse in die oksels van die blare aan die punte van die jong takke gedra word. Die blomme het 'n besonder soet geur en is swaar belaaï met nectar met die gevolg dat voëls en insekte bome wat blom, druk besoek.

Die immergroen keurboom wat nie strawwe ryp kan weerstaan nie, is 'n pragtige tuinplant en aard die beste onder vogtiger toestande en in volle sonlig of gedeeltelike skaduwee. Die saad is besonder kiemkragtigen die jong boompies groei besonder vinnig om 'n hoogte van tot 8 m binne ses jaar te bereik. Die bome het 'n kort lewensduur en word selde ouer as twaalf tot twintig jaar. Die bome het 'n oppervlakkig uitgespreide wortelstelsel en moet verkieslik alleen of saam met bol- en/of eenjarige plante geplant word.

Die hout van die keurboom is lig en sag en word vir jukke, dakspare, kappe en brandhout gebruik.

Zantedeschia

VOLKSNAME

Aronskelk, varkoor, varkblom en "arum lily".

Die genus **Zantedeschia** is een van die honderd genera van die groot familie Araceae. In Afrika kom daar tien spesies van hierdie genus



Virgilia oroboides

can be successfully grown almost anywhere in the Republic of South Africa and require very rich soil and plentiful water.

Zantedeschia plants are perennial herbs grown chiefly for their beautiful white, yellow or pink flowers, but sometimes also for their highly decorative speckled leaves.

Every so-called “flower” is actually a single inflorescence consisting of numerous male and female flowers compactly arranged on a spadix in the centre of a coloured spathe.

The two species commonly found in Pretoria gardens are **Z. aethiopica** (white) and **Z. pentlandii** (yellow). It is believed that the Blacks eat the tubers of the white-flowered species but not those of the yellow and pink.

The white arum lily flowers during winter (July to August), and the yellow one in summer (December to January).

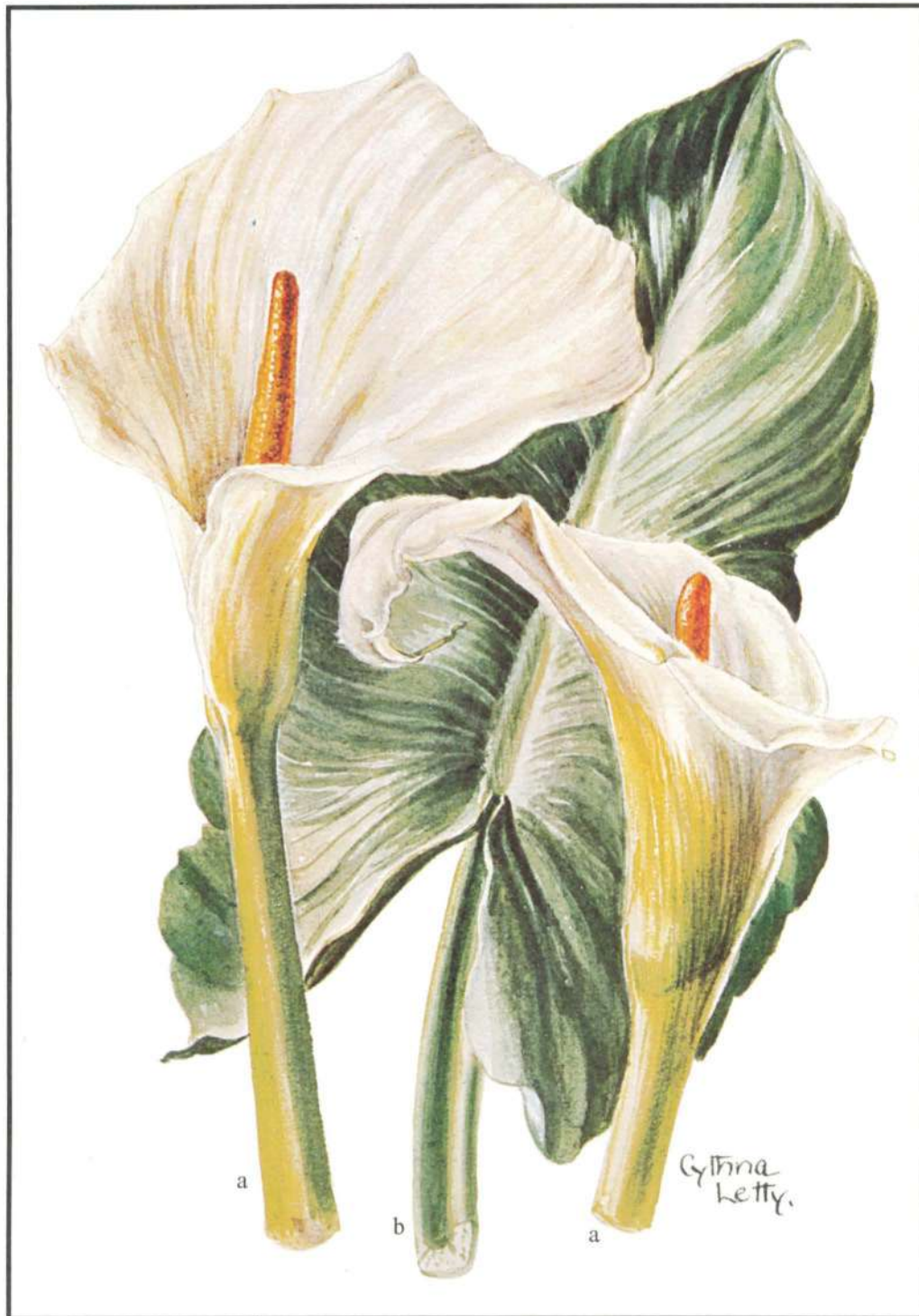
voor. Dit kan in die Republiek van Suid-Afrika feitlik orals met sukses gekweek word. Hulle vereis baie ryk grond en baie water.

Zantedeschia-plante is meerjarige kruide wat hoofsaaklik gekweek word ter wille van hul pragtige wit, geel of pienk blomme, maar soms word van hulle ook aangeplant weens hul hoogs dekoratiewe, gespikkelde blare.

Elke sogenaamde “blom” is eintlik ’n enkele bloeiwyse wat uit talle manlike en vroulike blomme bestaan wat styf saamgepak is op ’n bloeikolf wat in die middel van die gekleurde skede (spathe) staan.

Die twee soorte wat meesal in Pretoriase tuine aangetref word, is **A. aethiopica** (wit), **Z. pentlandii** (geel). Na bewering eet die Bantoe die knolle van die witblommiges, maar nie dié van anderkleuriges nie.

Die wit varkore blom gedurende die winter (Julie tot Augustus) en die geles gedurende die somer (Desember tot Januarie).



Zantedeschia aethiopica

a. inflorescence
bloeiwyse

b. leaf
blaar

Index to common names

Bladwyser vir volksname

Amaquasboom 70
 Aronskelk 72
 Arum Lily 72
 Banana Palm 46
 Basboom 42
 Bastard-Yellow-Wood 62
 Bastergeelhout 62
 Bird-of-Paradise Flower 66
 Blouwaterlelie 60
 Bobbejaangif 24
 Boomvaring 36
 Bread Palm 1
 Broodpalm 1
 Cape Ash 44
 Climbing Lily 54
 Common Tree-Fern 36
 Common Yellow-Wood 62
 Crane Flower 66
 Cycads 1
 Dog Plum 44
 Duiwelstabak (-twak) 58
 Dwergkafferboom 48
 Eastern Tree-Fern 36
 Esseboom 44
 Essenhout 44
 Geelboslelie 54
 Geelhoutboom 62
 Geelpiesang 66
 Gifwortel 54

Gonnabas 42
 Grasaalwyn 26, 30, 32
 Grass-Aloe 26, 30, 32
 Hoëveldse Kiepersol 38
 Hottentotsbrood 1
 Kaffer Almanak 54
 Kafferbroodboom 1
 Kafferlelie 64
 Kafferwaatlemoen 24
 Kaffir-Bread Tree 1
 Kaffir Lily 64
 Kalander 62
 Kannabas 42
 Kanniedood 50
 Keurboom 70, 72
 Keurhout 70
 Kiepersol 38
 Kleinkafferboom 48
 Koppiesdagga 58
 Kopseerblom 54
 Kraanvoëlblom 66, 68
 Kurkwortel 52
 Laeveldse Kiepersol 40
 Little-Man-In-The-Boat 66
 Mieliegifbol 54
 Natalse Kafferboom 48
 Neerrukker 52
 Nooiensboom 40
 Opregtegeelhoutboom 62

Oumeidboud 40
 Ounooiensboom 38
 Outeniekwalandsgeelhout 62
 Paddaspreekstoel 60
 Ploegbreker 52
 Red-Hot Poker 58
 Regtegeelhoutboom 62
 Rooiboslelie 54
 Rooidagga 58
 Rooi-esse(n)boom 44
 Sambreelboom 38
 Sandui 70
 Seeroogblom 54
 Small Kaffir Boom 48
 Smooth-Barked
 Yellow-Wood 62
 Snowdrop Tree 70
 Soldaat 58
 Speldekussing 42
 Stoofborsel 54

Tamboekiedoring 48
 Tamboekiewortel 48
 Tambukithorn 48
 Transvaalse Kafferboom 50
 Tree-Fern 36
 Turk's Cap 54
 Varkblom 72
 Varkoor 72
 Vlamlelie 54
 Voëls 66
 Vuurlelie 58
 Vuurpyl 58
 Waaiboom 40
 Waterlelie 60
 Water Lily 60
 Weiboom 40
 Wild Banana 46, 66, 68
 Wildedagga 58
 Wildekeur 70
 Wildepiesang 46, 66, 68

Index to botanical names

Bladwyser vir botaniese name

- Adenia* **24**
 digitata **24**
 glauca **24**
Alsophila capensis **36**
 dregei **36**
Aloe boylei **26**
 cooperi **28**
 ecklonis **30**
 hlangapies **30**
 thompsoniae **32**
 verecunda **34**
Amaryllidaceae **54**
Bowenia **1**
Ceratozamia **1**
Cussonia paniculata **38**
 spicata **38**
Cyathea dregei **36**
Cycadaceae **1**
Cycadales **1**
Cycas **1**
Dais cotinifolia **42**
Dioon **1**
Ekebergia capensis **44**
Encephalartos **1, 62**
 altensteinni **2, 16**
 arenarius **2, 8**
 caffer **2, 6**
 cupidus **2, 6**
 cycadifolius **2, 10**
 eugene-maraisii **2, 20**
 ferox **2, 14**
 friderici-guilielmi **2, 12**
 ghellinckii **2, 10**
 heenenii **2, 18**
 horridus **2, 8**
 humilis **2, 12**
 inopinus **2, 20**
 laevifolius **2, 10**
 lanatus **2, 12**
 latifrons **2, 14**
 lebomboensis **2, 14**
 lehmannii **2, 20**
 longifolius **2, 18**
 natalensis **2, 18**
 ngoyanus **2, 6**
 paucidentatus **2, 14**
 princeps **2, 20**
 transvenosus **2, 16**
 trispinosus **2, 22**
 umbeluziensis **2, 6**
 villosus **2, 8**
 woodii **2, 16**
Ensete ventricosum **46**
Erythrina acanthocarpa **48**
 caffra **50**
 humeana **48**
 lysistemon **50**
 zeyheri **52**
Gloriosa superba **54**
Haemanthus **56**
 magnificus **56**
Iridaceae **64**
Kniphofia **58**
 albescens **58**
 porphyrantha **58**
 praecox **58**
Leonotis leonurus **58**
Nymphaea **60**
 caerulea **60**
 capensis **60**
 lotus **60**
Pinus **62**
Podocarpus **62**
 elongatus **62**
 falcatus **62**
 henkelii **62**
 latifolius **64**
Schizostylis coccinea **64**
Strelitzia alba **66**
 caudata **66**
 juncea **66, 68**
 nicolai **66**
 reginae **66**
Veltheimia capensis **70**
 viridifolia **70**
Virgilia oroboides **70**
Watsonia **66**
Widdringtonia **62**
Zantedeschia **72**
 aethiopica **74**
 pentlandii **74**

Notes

Notas