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# CYCAD SOCIETY OF SOUTH AFRICA BROODBOOM VERENIGING VAN SUID-AFRIKA

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## On the cover:

*Cycas calcicola*. This population grows near Katherine in the Northern Territory of Australia. The specific epithet is derived from the latin *calcareus*, pertaining to lime, with the suffix *-cola*, a dweller or inhabitant, in reference to the occurrence on limestone outcrops. However, there are other populations nearby growing on sandstone also. See also page 16 for more habitat photographs of this species. Photo: Joe Perner, Kathrine, Northern Territory, Australia.

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## Disclaimer

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Nog 'n jaar het tot 'n einde gesnel, die meeste van die projekte en doelwitte wat die Raad aan die begin van die jaar beplan het is suksesvol afgehandel. Die onderskeie Streekstakke was gedurende die jaar baie aktief met aktiwiteite soos tuin besoeke, plantverkopings ens. Wat vir my opvallend was en baie opgewonde maak is die interaksie tussen die verskillende Streekstakke, ek wil dus ons lede aanmoedig om in te skakel by die aktiwiteite van julle onderskeie Streekstakke.

Gedurende my vakansie by my dogter in Australië het ek die Botaniese tuin in Melbourne besoek en tot my verbassing heelwat Suid Afrikaanse plante waargeneem. Daar is ook 'n hele paar *Encephalartos* plante in die tuin, hoofsaaklik *E. natalensis* en *E. altensteinii*, het ook 'n enkele *E. ferox*, *E. princeps* en *E. longifolius* gesien. Die grootste populasie broodbome in die tuin is natuurlik *Lepidozamia peroffskyana* en *Cycas brunnea* wat natuurlik in Australia voorkom.

Die ampstermyn van die Raadslede vir die tydperk 2010 – 2011 het ook tot 'n einde gekom en nuwe Ampsdraers moet vir die volgende ampstermyn van twee jaar verkies word. In die vorige uitgawe het ons 'n versoek gerug vir nominasies vir die volgende ampte, naamlik; President, Sekretaris-tesourier, Redakteur, Webmeester, Druk en versendings beampte en Media skakelbeampte. Tot en met hede is daar nog geen nominasies ontvang nie, alhoewel al die ampsdraers hulle beskikbaar gestel het vir 'n volgende ampstermyn het Wynand van Eden die Redakteur en Pieter van der Walt die Webmeester laat blyk dat hulle graag die tuig sal wil neerlê indien daar kandidate is wat by hulle wil oorneem. Daar is nog tyd om nominasies in te stuur.

Ek wil graag al die Raadslede bedank vir al julle opofferings en onbaatsigtlike harde werk gedurende die jaar asook die samewerking wat ek van julle ontvang het, dit het nie ongesiens verby gegaan nie, verder het dit nie net my taak vergemaklik nie maar ook bygedra dat die onenigheid wat aan die begin van die jaar geheers het iets van die verlede is.

Almal sou tot en met hede hul kennisgewing vir die hernuwing van lidmaatskap en tesame daarmee die metodes van betaling ontvang het, ek wil julle aanmoedig om betallings voor einde Januarie 2012 te maak en bedank diegene wat alreeds daarop gereageer het. Maak gerus van die Debiet order fasiliteit gebruik, die voordeel hiermee is dat daar nie vergeet kan word om die lidmaatskap fooie te betaal nie.

Ten laaste maar nie die minste nie wens ek en my gesin vir julle 'n geseënde Kersfees en 'n wonderlike 2012 toe. Mag julle broodboom ideale realiseer en mag die harmonie wat tans binne die vereniging heers groei tot nuwe hoogtes.

Dirk van der Walt.

Another year is fast drawing to a close and most of the and aims which the Board planned at the beginning of the year have been successfully completed. A number of Regions were quite active with garden and habitat visits as well as plant sales. What was noticeable and which moved me immensely was the interaction between various Regions and I would thus like to encourage members to take part in the activities arranged by your branches.

During my stay with my daughter in Australia, I visited the botanical gardens in Melbourne and was most surprised to see the number of plants, indigenous to South Africa, growing there. Quite a few *Encephalartos* species were in evidence, mainly *E. natalensis* and *E. altensteinii* although I also saw singular specimens of *E. ferox*, *E. princeps* and *E. longifolius*. Of course numerous native Australian *Lepidozamia peroffskyana* and *Cycas brunnea* were seen too.

The terms of office of current Board members will expire at the end of this year and a new Board has to be elected for the ensuing two years. In the previous issue of ENCEPHALARTOS nominations were called for the following positions – President, Secretary-treasurer, Editor Webmaster, Printing and Despatch Officer and Media Liaison Officer. To date no nominations for the posts have been received, and while all the incumbents have made themselves available again, both Wynand van Eeden, the Editor and Dr Pieter van der Walt, the Webmaster have indicated that they would like to step down if other candidates made themselves available. There is still time to submit nominations.

I would like to take this opportunity to thank all the Board members for the sacrifices they made; all their hard work over the past year as well as the co-operation I received from them. I can assure you that this did not go unnoticed. Not only did this make my task easier, but also contributed to the elimination of the apparent discord which was evident earlier on.

Members should by now have received their membership renewal notices for 2012 and I would like to thank those who have already paid and encourage those who have not yet done so to remit their fees by the end of January at the latest. As the result of requests received, the Society has entered into an agreement with a debit order processing company. Local members taking advantage of this facility will no longer have to remit funds to the Society and it will remain in place until such time as it is cancelled by the member.

Last but not least, I would like to wish one and all a wonderful 2012 and all those who celebrate Xmas – may you have a blessed one; may your cycad ideals be realised and may the harmony which presently exists within the Society reach new heights.

Dirk van der Walt

### NUUS VANUIT DIE LAEVELD STREEK

Die Laeveld streek het die laaste naweek in Oktober saam met sommige Limpopo tak lede 'n tuin besigtigings uitstappie na Tzaneen gedoen.

Al die tuine wat besoek was, en veral die broodbome was asemrowend mooi.

Dan het bewys dat 'n mens nie baie spasie nodig het om 'n besondere broodboom tuin te hê nie.

Llewellyn se tuin in Letsitele. Nou ja wat kan 'n mens sê!!! Groot groen grasperke met al hierdie tamaai fossiel plante. Wat 'n gesig!!!! Hierdie tuin het nie net broodbome nie, maar ook groot besondere inheemse en uitheemse bome.

Die Modjadji woud was weereens 'n bekoring. 'n Mens kan jouself vergeet tussen al die kollosale reuse. Dit bly darem wonderlik om soveel groot plante in hulle natuurlike habitat te sien.

Sondag is ons na Hannacheck se tuin en het ek 'n foto van Heidi geneem by die Transvenosus wat haar pa met haar geboorte geplant het, sowat 39 jaar gelede. Dis nogal verblydend om te sien hoe groot die plant gegroei het.

Die tuin besoeke is altyd baie lekker en mens leer gedurig iets nuuts.

Ina Vermaak



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### NUWE KOMMITTEE VIR DIE LAEVELDSE STREEKTAK

Voorsitter:	Jan Joubert
Seketaresse:	Dalene Ludick
Addisionele lede:	Fanie Vermaak, Chris Brummer
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YEAR PLANNER	2011		28-Feb-2011
Date	Activity	To co-ordinate	Venue
13-Feb-2011	1st Quarterly meeting	Fanie Vermaak/Dirk vd Walt	Place of Fanie & Ina Vermaak
14 & 15-May-2011	Visit gardens in Tzaneen	Dirk vd Walt/Willie Sopp	Tzaneen
18 & 19-June-2011	Visit E. Heenanii in Swaziland	Fanie Vermaak	Barberton
13-Aug-2011	Lowveld Branch plant Sale	Fanie Vermaak	Laeveld Laerskool Nelspruit
11-Sep-2011	2nd Quarterly meeting	Wim Struyf/Chris Brummer	Place of Wim & Martie Struyf
13-Nov-2011	AGM with yearend funtion	Dirk vd Walt/Jan Joubert	Krokedil Lapa Malelane

### SERVAAS COETZEE

(20 Maart 1941 – 1 Oktober 2011)

Vir jare lank het ons verby Windmeulstraat 22 Brack-enfell gery en die broodbome bewonder, maar nooit gestop nie.

15 Maart 2005 staan ek in die ry by Kirstenbosch se jaarlikse verkoping om broodboompies te koop. Ons raak aan die gesels en die persoon agter my sê toe vir my dat as ek broodbome wil koop teen baie billike pryse moet ek na Servaas Coetzee gaan. Natuurlik het ek dadelik sy telefoon nommer gekry en hom die volgende dag gebel.

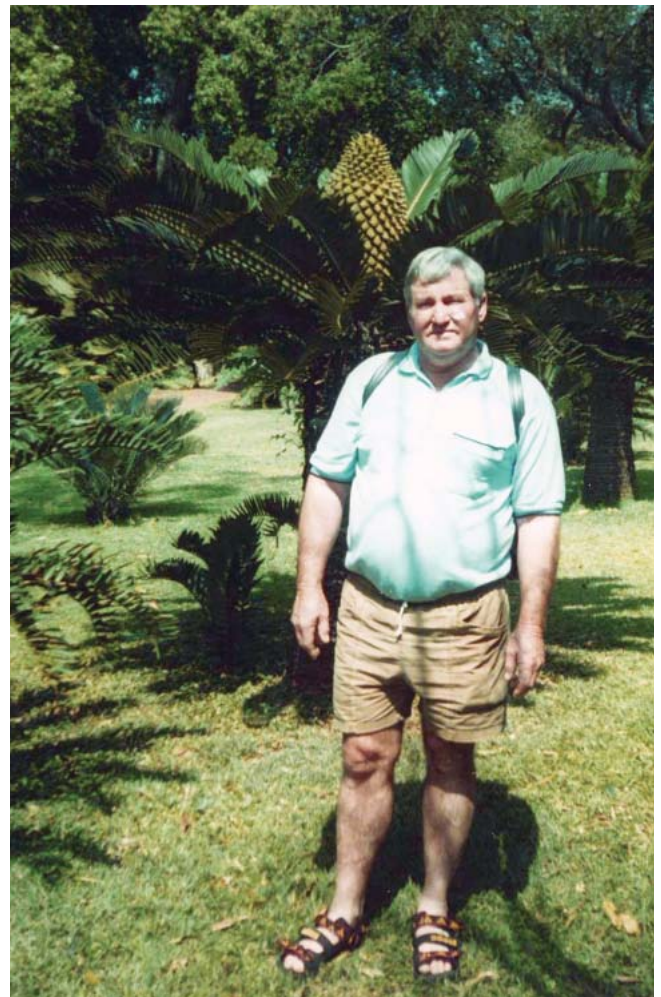
So het ons vriendskap begin. In die tyd het hy sy kennis met my gedeel en so het ek alles geleer wat ek vandag weet. Hy het my geleer van die voorbereiding van die grond, hoe om plante veilig uit te haal en te verplant, wat se soort gifstowwe ek moet gebruik en alles oor bes-tuiwing en die plant van saailinge.

As broodbome in die gedrang was, was Servaas nooit te besig om vir my of enige iemand te help om sy waardevolle hulp en kennis te verleen nie.

Servaas en Marie se huis het altyd oopgestaan vir lekker gesels en 'n koppie koffie. Met sy afsterwe het ek besef daar bestaan vandag duisende broodbome in Suid-Afrika wat nie net deur hom gekweek is nie, maar deur die kennis wat hy gehad het en oorgedra het aan al sy broodboom vriende.

Die broodboom wêreld in S.A. is 'n veel ryker plek omdat Servaas Coetzee daar was. Hy sal altyd onthou word vir dit wat hy vir sy vriende beteken het.

Andy Naudé



Please remember to pay the 2012 fees – South African members may also make use of a Debit Order system – an application appears elsewhere in the journal / Onthou om die 2012 fooie te betaal – Suid Afrikaanse lede kan ook gebruik maak van 'n Debit Order sisteem – 'n aansoek vorm verskyn elders in die joernaal.  
A note to 'overseas' members: unfortunately the 'gremlins' were at work again. The figures '2009' crept into the printing of some of the invoices. We apologise for that.

## A TRIBUTE TO MR SERVAAS DANIEL COETZEE / 'N HULDEBLYK AAN OOM SERVAAS DANIEL COETZEE.

A wellknown resident of Brackenfell and cycad expert, Servaas Coetzee, passed away on Saturday, 1st October at the age of 70 years.

“Uncle Servaas” as he was known, lived for many years in the Cape Town suburb of Brackenfell. A few days before his death he was admitted to the Panorama Mediclinic where he subsequently passed away. I had the privilege of visiting him in hospital shortly before his passing.

He was born on 20 March, 1941 and grew up in Parow, another suburb of Cape Town. He married Marie during 1966 and they lived happily together for 45 years. They raised two sons and a daughter and there are six grand children.

Servaas had two main hobbies, namely fishing and cycads. He was a registered cycad grower and during his lifetime propagated hundreds of seedlings. He did his own pollinating and also bought in seeds of the species he was unable to produce in his garden. He was always available to assist other cycad owners in pollinating their plants and it is suspected that there are few members in the Western Cape who do not own at least one plant grown by Servaas.

He had an encyclopedic knowledge of all aspects relating to cycads which he was always prepared to share with others. His study was known as the “LIEGFABRIEK” (translated as the ‘Fib factory’) and the first time I visited Servaas the nameboard hanging on a wall in the study caught my eye. Many ideas were exchanged; a lot of advice was given and many stories were told between the four walls of the “LIEGFABRIEK”

Today this “LIEGFABRIEK” is quiet and Servaas’ chair is empty. The passing of Oom Servaas is a huge loss to the members of the Western Cape Region of the Cycad Society and his council, advice, jokes and chats as well as his presence will be sorely missed at our meetings.

On behalf of the members of the Western Cape branch, I wish Marie, his children and grand children everything of the best for the future.

We will be reminded of our fond memories of Servaas in the hundreds of cycad seedlings he propagated and he will be missed by all who knew him, especially the cycad fraternity.

Frikkie Conradie  
Chairman – Western Cape Region of the Cycad Society



'n Baie bekende inwoner en broodboomkenner van Brackenfell, Oom Servaas Coetzee, is op Saterdag 01 Oktober 2011 in die ouderdom van 70 jaar oorlede.

Oom Servaas het vir baie jare in Brackenfell gewoon. Hy is 'n paar dae voor sy dood in die Panorama Mediclinic opgeneem waar hy Saterdag 01 Oktober 2011 oorlede is. Ek het die voorreg gehad om hom die dag voor sy dood in die hospital te besoek.

Hy is gebore 20 Maart 1941 en het in Parow grootgeword. Geturende 1966 het hy en sy vrou Marie in die huwelik getree. Vir 45 jaar was hulle baie gelukkig saam. Twee seuns en 'n dogter is uit die huwelik gebore. Hulle het ook ses kleinkinders.

Servaas se twee grootste stokperts was visvang en broodbome. Hy was ook as 'n broodboom kweker geregistreer en het honderde broodboom saailinge van saad gekweek. Hy het sy eie vroulike plante se keëls bestuif en dikwels ook saad aangekoop. Hy het ook gehelp om tuinplante van en vir ander persone te bestuif. Daar is min lede in die Wes-Kaap wat nie 'n broodboom in sy tuin het wat nie deur Oom Servaas gekweek is nie.

Hy het 'n geweldige groot kennis van alle aspekte rakende broodbome gehad. Hierdie kennis het hy graag met almal gedeel. Sy spesiale studeerkamer het as die “LIEGFABRIEK” bekend gestaan. Die eerste keer wat ek vir Oom Servaas besoek het, het die naambord teen die muur waarop uitgerf was “LIEGFABRIEK” my dadelik opgeval. Hier in die “LIEGFABRIEK” is baie idees uitgeruil, baie raad gegee en groot stories vertel.

Vandag is die “LIEGFABRIEK” stil en Servaas se stoel daarin leeg. Vir die Wes-Kaap Tak van die Broodboom Vereniging van Suid-Afrika is Oom Servaas se heengaan 'n groot verlies. Ons sal sy raad, advies, grappies, geselsies en sy teenwoordigheid by ons Tak se aktiwiteite baie mis.

Hiermee wens ek ook om namens al die lede van die Wes-Kaap Tak van die Broodboom Vereniging van Suid-Afrika vir sy vrou Marie, die kinders en kleinkinders net die beste en die mooiste vir die toekoms toe te wens.

Vir ons leef Oom Servaas voort in die mooi herinneringe wat ons van hom het en in al die honderde broodboom saailinge wat hy gekweek het. Oom Servaas sal baie gemis word deur almal wat hom geken het, maar veral onder sy vele broodboom vriende.

Frikkie Conradie  
Voorsitter – Wes-Kaap Streek van die Broodboom Vereniging

## NEW MEMBERS

The Society welcomes the undermentioned new members who joined between August and November, 2011

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3881 G	KIRSTEN, Mnr F B C . . . . .	HATFIELD, 0028
3882 G	KIRSTEN, Mnr J C . . . . .	ASTON MANOR, 1630
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3884 W	SULAIMAN, Mr M S . . . . .	KENWYN, 7780
3885 G	CARSTENS, Mr G C . . . . .	FAIRLANDS, 2030
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3888 M	JOUBERT, Mnr J S . . . . .	DELMAS, 2210
3889 E	LAKE, Mr J R . . . . .	ALEXANDRIA, 6185
3890 M	VORSTER, Mr J J . . . . .	MIDDELBURG, 1050
3891 G	KOK, Mr B J . . . . .	WELOBIE, 1714
3892 E	GERBER, Mnr S P . . . . .	JOUBERTINA, 6410
3893 W	RABIE, Dr P J (Jnr) . . . . .	BREDASDORP, 7280
3894	BIANCHI, Mr P . . . . .	SALIELLES, France
3895 G	LIM AH TOCK, Mr I . . . . .	DIE HOEWES, 0163
3896 G	LOUBSER, Mnr J J A . . . . .	GARSFONTEIN, 0042
3897 G	ROUGH, Mr J A . . . . .	GEZINA, 0031
3898 G	SCHULTZ, Mnr R J . . . . .	CRESTA, 2118
3899	MERWE INVESTMENTS (PTY) LTD . . . . .	PALAPYE, Botswana

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## SENTRAALTAK VAN DIE BROODBOOMVERENIGING VAN SUID-AFRIKA NUUSBRIEF 12/2011

Tydens die vergadering gehou op 19 November 2011 is die volgende lede verkies op die bestuur vir 2012 en 2013.

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### Ons tak se aktiwiteite vir die jaar 2012 sal as volg wees:

- **18 Februarie 2012:** Tuinbesoeke en vergadering by Mooinooi: Tuine van Mnr. Roelof van Wyk en Dr. Dion du Toit. Pak asb. piekniek mandjie, stoele, drinkgoed, eetgery. Bring en braai, vure sal beskikbaar wees. Bring enige soort plante om te verkoop
- **2 tot 8 April 2012:** Ooskaapse toer, slegs 'n beperkte aantal lede sal die toer kan meemaak. Koste ongeveer R6,000.00 per persoon."First come First Serve" slegs 15 sitplekke.
- **9 tot 11 Augustus 2012:** Besoek Ntambeni in die Waterberge om E. Eugene-marais in habitat te sien. Gastehuis besonderhede sal volg.
- **17 November 2012:** Afsluitings vergadering by Exclusive Cycads, Pretoria, gratis braai slegs vir lede, bespreking noodsaaklik afsluitingsdatum vir bersprekings voor Vrydag 2 November. Bring enige soort plante om te verkoop

Groete  
John Kloppers  
Voorsitter

## CYCAS EDENTATA DE LAUB.

Roy Osborne<sup>1</sup> & Anders Lindström<sup>2</sup>

### Introduction

Of all the cycad species, the most confused historically (and very often incorrectly labelled in private and public collections) are *Cycas circinalis*, *C. rumphii* and its close relative *C. edentata*. But recent rigorous work by David de Laubenfels (USA), Anders Lindström (Thailand), Leonie Stanberg and the late Ken Hill (Australia) has resulted in a much better understanding of these and other *Cycas* taxa in the Indo-Pacific region. Although this work is not yet complete, we now have a much better understanding of the features that distinguish these taxa, their relationships and the areas of their distribution.

In this article, we feature *Cycas edentata*, a cycad with a distribution extending over six, seven or eight countries, a cycad widely held in numerous public and private collections, but a species name that is still relatively unknown in the greater cycad community. The species epithet is constructed from the Latin prefix *e-* = without, and *dentata* = toothed, and refers to the relative absence of teeth of the margins of the megasporophyll lamina.

### Discovery

There is great confusion surrounding the first collections and correct identification of plants in the *Cycas rumphii* group from the Indo-Pacific area. Ken Hill (1995) has addressed this with respect to misapplications of the name *Cycas circinalis*, and Anders Lindström (2002) has similarly summarised the position of *C. rumphii* itself.

It is unlikely that we can be certain as to who (in the western world) first “discovered” *Cycas edentata*, but it is certain that this taxon was known and appreciated by indigenous peoples of south-east Asia for many years before the plant was named scientifically. What is now the type specimen was collected in 1957 on Mount Cabucan, Sulu Archipelago, Philippines, by Y. Kondo from the Philippines and G. Edaña from Hawaii as *Cycas circinalis*. This specimen was named the type for *C. edentata* by David de Laubenfels and Frits Adema when they published the species description in 1998, the voucher now at the Netherlands Centre for Biodiversity Naturalis (Section NHN), Leiden University, Leiden (L). Isotype vouchers from this collection are at the Harvard University Herbaria (A) and the British Natural History Museum (BM).

Synonyms for *C. edentata* include many of the early authors’ concepts of *C. circinalis* (such as *C. circinalis* subsp. *riuminiana* var. *curranii* forma *maritima* J. Schust.), many of the early authors’ concepts of *C.*



Figure 1.—: Photo of the type specimen for *Cycas edentata* de Laub., collected in 1957 on Mount Cabucan, Sulu Archipelago, Philippines, by Y. Kondo and G. Edaña (as *Cycas circinalis*), and filed at Leiden University herbarium.

*rumphii*, and the more recent Thai/Vietnamese species *C. litoralis* K.D. Hill (as published in Hill & Yang 1999). The taxon has also been confused with *C. celebica* Miq., a synonym for *C. rumphii* (Lindström 2002), and *C. rumphii* var. *timorensis* Miq., a synonym for *C. glauca*.

Because of the enormously wide distribution of this species, and because of the possibility of intergrades in areas where there are other taxa in the *Rumphiae* subsection (e.g. in Philippines and Indonesia), we chose to gather data and photographs from wild populations of *C. edentata* on the west coast of Sabah, Malaysia, which falls fairly centrally in the cycad’s area of occurrence. We believe that the specimens there are good examples of what one might consider as the genetically “true” species.

<sup>1</sup>19 Calhoun Street, McDowall, Queensland 4053, Australia  
<sup>2</sup>Nong Nooch Tropical Botanical Garden, 34/1 Sukhumvit Highway, Sattahip, Chonburi 20250, Thailand



Figure 2.—: Distribution of *Cycas edentata*: countries of occurrence include Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam and probably Brunei; dots indicate the sites where herbarium specimens have been collected.



Figure 3.—: *Cycas edentata* in littoral scrub on the seashore, Sapi Island, Sabah, Malaysia. Photo: Roy Osborne

### Distribution, habitat and ecology

*Cycas edentata* is widely distributed in tropical maritime south-east Asia, both north and south of the Equator. Countries of occurrence include Indonesia (Bali, Bengkulu, Jawa Barat, Jawa Tengah, Lampung, Riau and Sumatra Utara), Malaysia (Johore, Langkawi Island, Malacca, Pahang, Perak, Sabah, Sarawak and Terengganu), the Philippines (Balabac, Basilan, Cagayan Island, Cebu, Masbate, Mindanao, Mindoro, Negros, Palawan, Panay and Polillo), Singapore (Changi), Thailand (Chumphon, Narathiwat, Phang Nga, Phu Ket, Satun, Trang and Trat), Vietnam (Kien Giang), and probably also Brunei and Cambodia.

The species appears to be confined to coastal shorelines, growing in full sun or partial shade, typically in littoral scrub on beach sand or in the shallow soil pockets of maritime rocky outcrops.

Temperatures are typically balmy-warm with high humidity. Rainfall is high but variable in this very wide distribution and governed by the seasonal monsoons. Typhoon-associated winds are not uncommon throughout the distribution.

The fact that the male cones of this and several related *Cycas* species give off a strong sickly-sweet scent at the time of pollen dehiscence may imply that some insect pollinator is involved. No insect vectors have been reported in the *C. rumphii* group but this is presently under investigation by members of the Cycad Specialist Group (Insect Pollination Section).

Seed dispersal is facilitated by the spongy layer within the sclerotesta that allows the seeds to float in sea water. It may be that crabs contribute to small local seed movements in the littoral zones and it is likely that man has been involved in the past transport of seeds from island to island in the Indo-Pacific region.

Wild stands of *Cycas edentata* seem to be relatively unaffected by predatory insect larvae. In Kota Kinabalu, Sabah, foliage of *C. revoluta* specimens in street plantings has been decimated by moth larvae while nearby plantings of *C. edentata* are undamaged (Osborne, pers. obs.). In contrast cultivated *C. edentata* plants in the Philippines and Indonesia are being decimated by the cycad *Aulacaspis* scale (CAS), and this has extended into wild populations at least in Indonesia (Lindström et al. 2008).

### Description, vegetative structures

(Modified from Lindström et al. 2008, 2009)

Mature *Cycas edentata* plants have an arborescent **stem**, up to 10 m tall and 15–30 cm in diameter, usually unbranched except as a result of damage. **Leaves** are bright green to dark green and highly glossy above, pale green below, 1.3–2.5 m long, straight to slightly arching,



Figure 4.—: A small group of male and female *Cycas edentata* on Sapi Island, Sabah, Malaysia, thought to be the same stand from which Davidson collected a herbarium specimen in 1970. Photo: Roy Osborne.



Figure 5.—: Leaf detail, *Cycas edentata*, from a plant on Sapi Island. Leaves on this specimen were 240 cm long (petiole 80 cm, rachis 160 cm), with leaflets 32 cm long by 15 mm wide. Photo: Roy Osborne.

not keeled (pinna-to-pinna angle  $180^\circ$ ), with an initial tomentum that is shed as the leaf expands. The **petiole** is 30–90 cm long (20–50% of leaf length) and spinescent for 5–100% of its length. The **rachis** bears 100–240 **leaflets** that are falcate, flat in section, with slightly recurved margins, acute apex, with a prominent midrib that is flat or raised above and raised below, the leaflets inserted in a subopposite arrangement at  $45\text{--}80^\circ$  to the rachis, the rachis consistently terminated by paired leaflets and with basal leaflets reducing abruptly to spines. **Median leaflets** are 22–37 cm long, 11–19 mm wide, narrowed to 5–8 mm at the base and decurrent for 5–13 mm, and set 12–35 mm apart on the rachis. **Cataphylls** are narrowly triangular, 4–7 cm long, soft and tomentose initially becoming harder and glabrous later.

#### Description, reproductive structures (Modified from Lindström et al. 2008, 2009)

**Pollen cones** of *Cycas edentata* are narrowly ovoid or fusiform, 35–60 cm long by 11–17 cm in diameter, orange, held erect on a much reduced peduncle and with a strong sickly-sweet scent at the time of pollen dehiscence (Osborne pers. obs.). **Microsporophylls** have a firm lamina, level to slightly deflexed, not dorsiventrally thickened, 35–44 mm long, 12–23 mm wide, the fertile zone 30–35 mm long, the sterile apex 5–6 mm long, the apical spine prominent, sharply upturned and 9–24 mm long.

**Megasporophylls** of *Cycas edentata* are 24–50 cm long, white-, yellow- or brown- tomentose, the tomen-



Figure 6.—: Leaf detail, *Cycas edentata*, from a plant thought to be of Vietnamese origin and now in cultivation in Brisbane, Australia. Photo: Roy Osborne.



Figure 8.—: Male cone detail, *Cycas edentata*, from a plant on Sapi Island, Sabah, Malaysia. Photo: Roy Osborne.



Figure 7.—: Stem apex detail, *Cycas edentata*, from a plant on Manukan Island, Sabah, Malaysia, showing a spinescent petiole and narrowly triangular pilose cataphylls. Photo: Roy Osborne.



Figure 9.—: *Cycas edentata* megasporophyll with seeds, from a plant on Sapi Island. The non-dentate lamina of the sporophyll is diagnostic for the species. These seeds were 50 mm long and displaced a 65 cm<sup>3</sup> volume. Photo: Roy Osborne.

tum persistent, the lamina lanceolate, 40–120 mm long, 20–40 mm wide, with lateral spines short, indistinct or absent, with an apical spine 14–40 mm long, 4–12 mm wide at the base, each megasporophyll bearing 2–8 ovules. **Seeds** are flattened-ovoid, 45–66 mm long, 35–50 mm wide, with sarcotesta dark glossy green ultimately becoming orange-brown at shedding, the sarcotesta 3–5 mm thick, the sclerotesta smooth and containing a well-developed brown spongy layer; the seeds held for as long as 2 years before being shed (Osborne pers. obs.).



Figure 10.—: *Cycas edentata* seed crop on a plant on Sapi Island. Female plants at this site held two successive years of megasporophylls/seeds simultaneously. Photo: Roy Osborne.

### Distinguishing features

There are differences of opinion with respect to the classification of groups within the genus *Cycas*. De Laubenfels & Adema (1998) proposed 4 subgenera and placed their newly-described *C. edentata* within their subgenus *Truncata* on the basis of non-pectinate megasporophylls, and truncate apices of the microsporophylls that are abruptly bent upwards. Their subgenus *Truncata* comprises *C. celebica* (no longer recognised on the current World List), *C. edentata*, *C. rumphii*, *C. schumanniana*, *C. scratchleyana* and *C. silvestris* (the lattermost species subsequently removed, de Laubenfels pers. comm.).

In contrast, Ken Hill proposed four (1994) or five (2004) sections within the genus. In his classification, *C. edentata* falls within his section *Cycas* on account of its non-pectinate megasporophyll and then within a subsection *Rumphiae* because of the spongy flotation layer within the sclerotesta. In his 1994 paper, this subsection included *C. apoa*, *C. bougainvilleana*, *C. micronésica*, *C. rumphii*, *C. scratchleyana* and *C. seemannii*. In 2004 he revised this to comprise *C. bougainvilleana*, *C. edentata*, *C. glauca*, *C. micronésica*, *C. rumphii*, *C. seemannii*, *C. sundaica*, *C. thoursii* and *C. zeylanica* (although Lindström et al. (2009) point out that *C. glauca* lacks a spongy layer and should not be included in the *Rumphiae* subsection).

Lindström et al. (2009) agree that the non-pectinate megasporophylls, the very glossy leaves and the large



Figure 11.—: *Cycas edentata* seed cut longitudinally to show the spongy layer that allows the seeds to float in sea water. Photo: Roy Osborne.

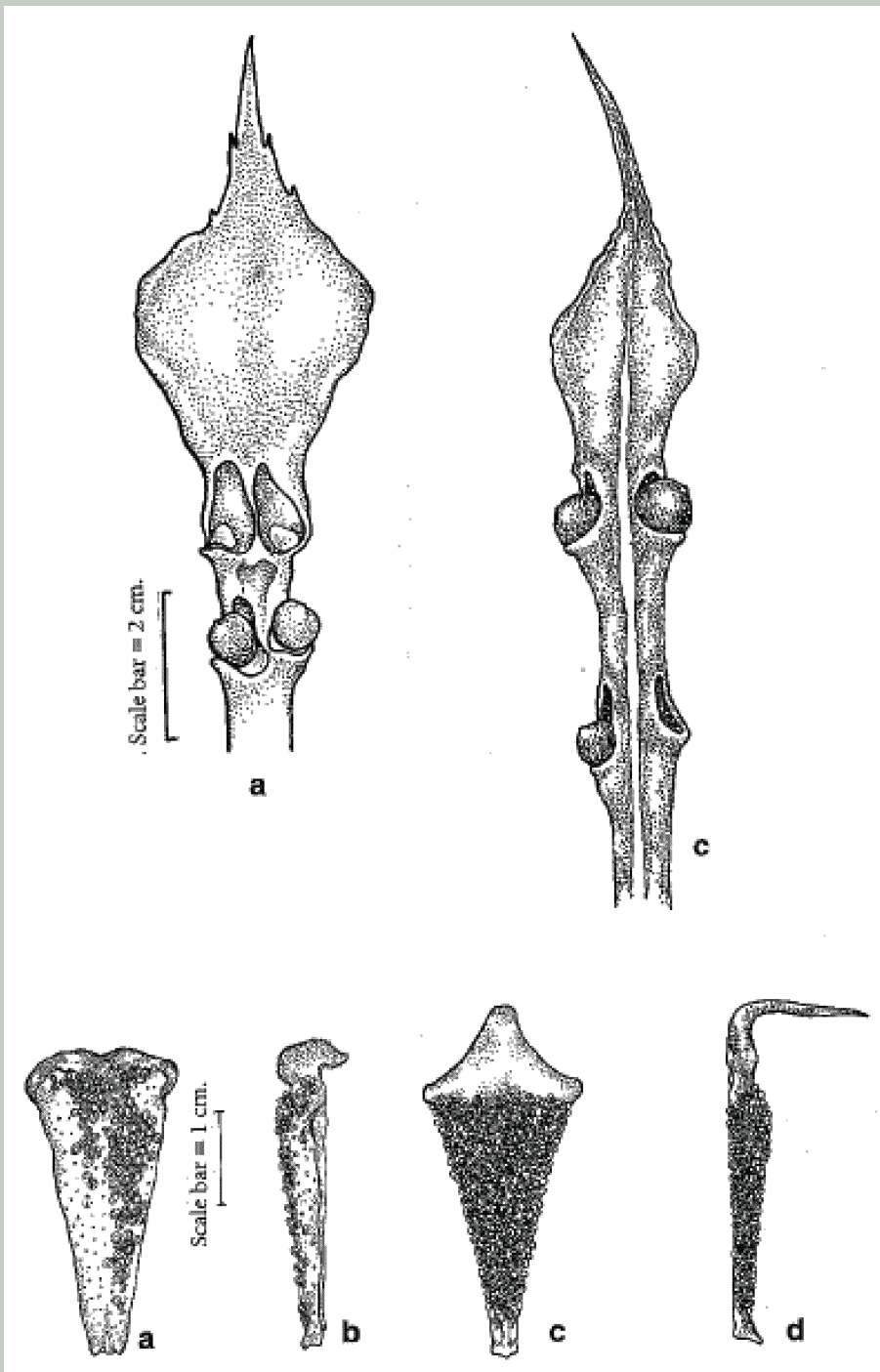


Figure 12.—: Drawings illustrating the differences in megasporophylls (above) and microsporophylls (below) between *Cycas rumphii* (a,b) and *C. edentata* (c,d). From drawings by N. Oram in Lindström et al. (2009), published by permission of Royal Botanical Gardens Sydney.

seeds with the internal spongy tissue are features that place *C. edentata* unmistakably in the *C. rumphii* group. They maintain further that, within that group, *C. edentata* is distinguished by the distinct, long, stout spines that terminate the microsporophylls. This character is also shared by *C. thouarsii* from the Indian Ocean land areas but that species has narrower leaflets that are distinctly glaucous when developing. *Cycas zeylanica* from Sri Lanka and the Andaman Islands has longer, narrower and more attenuate megasporophylls, more widely-spaced leaflets, and more abundant, longer and distinctly pungent cataphylls with a more rufous tomentum. De Laubenfels (2007) also suggests that a lack of wings on the seed is useful in distinguishing *C. edentata* from *C. rumphii*. (These seed wings are also absent in *C. zeylanica* and *C. thouarsii* but present in *C. bougainvilleana*, *C. micronesica* and *C. seemannii*.) The two-year seed maturation time may also be significant in the diagnosis of this species. (All *Rumphiae* subsection species may

require up to two years for the seeds to ripen on the plant, but *C. micronesica*, *C. seemannii* and *C. thouarsii* seeds need another one to two years to have the embryo fully mature and ready to germinate. In contrast, seeds of *C. edentata* are more-or-less ready to germinate as soon as they fall off the mother plant.)

The ongoing DNA analysis of cycad taxa will undoubtedly assist with a more rigorous and quantifiable assessment of intrageneric relationships in these plants.

### Ethnobotany

Being a prominent and widespread plant in the Indo-Pacific flora, *Cycas edentata* is known by a large and diverse number of ethnic names, including *goh* (Bajau language), *kwale pahang* (woods on sea shore, Bahasa Malay), *prong thale* (sea cycad, Thai), *sauang* or *sawang* (Ilocano), *bayit* (preferred to *bait* or *vait*) and *pitogo* (pre-



Figure 13.—: Young *Cycas edentata* plants used horticulturally on Manukan Island. Photo: Roy Osborne.

ferred to *potago*, *patubo*, *pitugo* or *bitogo*) (Tagalog), *paku laut* (Bahasa Malay), *potugu* (Dusunkadazan), *tugu* (Dusun Tatana), and *oliva* (preferred to *oliba*, *uliba* or *uliva*, Spanish derivation) (Bonta and Osborne, 2007; Lindström et al. 2009; Osborne pers. obs.). Understandably, these names probably also refer to other cycads in the same general areas.

Older reference to the ethnobotanical uses of cycads in the areas of occurrence of *C. edentata* include a number of medical and foodstuff applications, but most of these now seem to be fading into obscurity. In the Philippines, roasted and powdered cycad seeds, possibly including those of *C. edentata*, were mixed as a paste in coconut oil, or suspended in clay, and used for to treat wounds, boils and itching (Quisumbing 1951), while the leaves were boiled as a vegetable or used in curries (Foxworthy 1911). On the Malay peninsula, cycad seeds, probably of *C. edentata*, were used in the treatment of asthma (Burkill 1935), while in Sabah Malaysia, the young foliage is used as a vegetable (Osborne pers. obs.). Indonesian cycads that may be either *C. edentata* or *C. rumphii* have several applications recorded: grated seeds were used in the treatment of yaws and skin ulcerations, the stem may be chewed with betel to produce a poultice that reduced swelling, sap from leaves supposedly prevented vomiting and relieved colic, and boiled seeds were used as an emetic (Heyne 1950). Also in Indonesia, the dried thinly-sliced seeds of either *C. edentata* or *C. rumphii* were used as a conserve or jam (Heyne 1950) while sliced fresh seeds, steeped in seawater for a few



Figure 14.—: The author with a specimen of *Cycas edentata* planted in the Manukan Island resort grounds by Malaysian Prime Minister Dr Mahathir bin Mohamad on an official visit to Tunku Abdul Rahman National Park on 3 April 1994. Photo: Angela Osborne.



Figure 15.—: *Cycas edentata* on Phu Quoc Island, Kien Giang Province, Vietnam. One of many large plants relocated from the nearby beach habitat areas to hotel precincts and private homes on the island. Photo: Jeremy Spath.

days, dried and pulverised, were steamed, mixed with brown sugar and grated coconut to produce a dessert called *kooyaboo* (Ochse & van den Brink 1931).

### Conservation status

Once abundant and widespread in coastal sites, *Cycas edentata* is experiencing severe pressure from human population increase and consequent development. The species is very close to extinction in Thailand with three remaining localities all having limited numbers of plants. Several small populations in Thailand were eradicated by debris that was swept in from the tsunami of 2004. In Malaysia and Vietnam numerous plants have been taken from habitat and used in landscaping of business precincts, hotels and resorts, private homes and public areas. In the Philippines there are still several populations but almost all have suffered severe depletion by agricultural development and ornamental plant collecting. In addition, it is possible that infestations of the cycad *Aulacaspis* scale (CAS) can pose a serious threat to wild cycad populations throughout their distribution (Lindström et al. 2008). Although presently considered **near threatened** (NT, IUCN 2011), taking into account distribution range, widely scattered populations, we believe that the current threats justify an upgrade to **vulnerable** (VU) and Lindström has recommended this status change to the IUCN Plants Committee.

### Cultivation

*Cycas edentata* is readily cultivated from seeds or from offsets. It is suited to tropical and warm subtropical regions, where it is common as an ornamental in public

and private gardens. It grows well in full sun or partial shade and prefers a well-drained soil. It cannot tolerate frosts. Although not being the fastest growing species in the *Rumphiae* subsection, *C. edentata* is fast growing in comparison with non-*Rumphiae* species. Plants will cone with only a short stem at a young age. Due to the large amount of sap contained within the stem, this species is sensitive to being moved at a large size unless necessary precautions are made to even the out the pressure when lifted. Large plants that has been moved or damaged by typhoons or hurricanes often show profusely high branching that adds to the plant's landscape potential. This species often produces suckers, not only at the base but often along the stem; these suckers can be easily removed and propagated.

### Acknowledgments

We thank Richard Chung, David de Laubenfels, Jutta Poetz, Lou Randall, Jeremy Spath, John Sugau and Leonie Stanberg for their kind assistance during the preparation of this article.

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Figure 1.—: *Cycas calcicola* in habitat growing on limestone. Photo: Joe Perner



Figure2.—: *Cycas calcicola* in habitat. Note the bright green new leaves produced just before the rain season starts. Once they have hardened off, they become light grey. Photo: Joe Perner



Figure 3.—: *Cycas basaltica* in habitat, Western Australia. Photo: Allan Tait



Figure 4.—: *Cycas basaltica* in habitat, Western Australia. Photo: Allan Tait



Figure 5.—: *Cycas basaltica* in habitat, Western Australia. Photo: Allan Tait



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## GROW CYCADS BY DONALDSON & WINTER

The Society has obtained a stock of the booklet 'Grow Cycads', written by Dr. John Donaldson and John Winter, and published by the South African National Biodiversity Institute (SANBI) under their Kirstenbosch Gardening series. Dr. Donaldson is well-known amongst cycadologists, either as the author of articles appearing in *ENCEPHALARTOS* or as a source of reference used by other authors.

The booklet is A5 in size, consists of 36 pages, is printed in colour and addresses various matters under the following headings:

- Propagation from seed
- Vegetative propagation
- Cultivation
- Container plants
- Pests and diseases
- Landscaping with cycads
- Cycads and the law

What is of interest is the table listing the distribution, availability, features, and growing conditions for South African cycads, setting out their water and sunlight preferences, whether they are frost-hardy, their overall leaf colour and availability/scarcity. The booklet is written in layman terms and is ideal for the novice/beginner.

It sells for R60.00, excluding postage, from the SANBI bookshops. However, due to a discount passed on to the Society, we are able to provide it to members at the cost of **R60.00** inclusive of postage to South African addresses. It is available from the secretary/treasurer whose contact details appear elsewhere in this issue.

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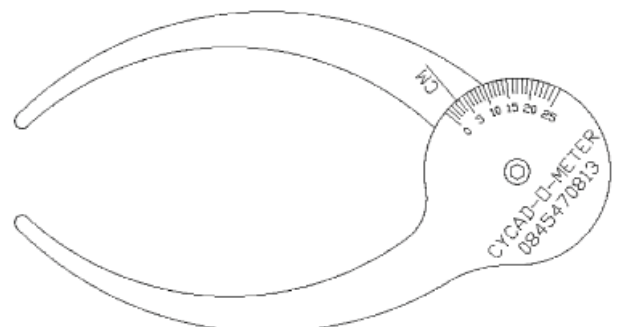
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## GROW CLIVIAS BY GRAHAM DUNCAN

The Society has obtained the latest edition of Grow Clivias, also published by SANBI, under their Kirstenbosch Gardening Series, written by Graham Duncan.

This edition is a vast improvement over the previous one in that it has been expanded from 47 pages to 192 pages. It is also A5 in size, printed in colour and addresses, amongst others, the following:

A brief history • General information • Taxonomy • Hybrid, variegated & novelty clivias • Cultivation • Propagation • Pests and diseases

Apart from being a co-ordinator of the Kirstenbosch Gardening Series, Graham Duncan is a specialist horticulturist at Kirstenbosch Botanical Garden where he curates the collection of indigenous South African bulbs, and the displays inside the Kay Bergh Bulb House of the Botanical society Conservatory.

He has co-authored two major publications on indigenous bulbs, Spring and Winter Flowering Bulbs of the Cape with Barbara Jeppe, and Bulbous Plants of Southern Africa with Prof. Niel du Plessis.

The book is available at the cost of R140.00, postage included, to South African addresses.

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## SAAD

Piet Vorster (Stellenbosch) het interessante saad.  
E-pos: [pjvors@gmail.com](mailto:pjvors@gmail.com)

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## WINSKOPIES

- 2-jaar oue saailinge van *E.transvenosus* en *E.villosus* te koop vir R15 stuk.
- 5-jaar oue saailinge van bogenoemde spesies te koop vir R40 stuk of vir R30 stuk indien 10 of meer van een soort gekoop word.
- 2-blaar saailinge van *E.eugene-maraisii* en *E.nubimontanus* te koop vir R200 stuk.
- 3-jaar oue *Ceratozamia hildae* saailinge te koop vir R30 stuk.
- Verskeie ander soorte saailinge te koop vir R30 en R40 stuk.

Telefoon: 012-808 0995

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## PREVIOUS COPIES OF ENCEPHALARTOS.

I am looking for the following back issues of ENCEPHALARTOS.

Numbers – 1-26, 28, 29, 31-33, 35, 37, 41-43, 45, 49, 53, 55, 58, 69.

Could any members having extra copies, or be willing to part with these, please contact me for payment, postage and collection.

David Thomas - [dthomas@lantic.net](mailto:dthomas@lantic.net) - 082 430 8938.

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## DEON'S CYCADS

SPECIALISING IN ENCEPHALARTOS HORRIDUS (PLENTY FEMALE SUCKERS AND OCCASIONAL ADULT FEMALES AVAILABLE )

Adult Cycads ,Suckers and Seedlings of the following species for sale: *Encephalartos Altansteinii*, *Arenarius*, *Ferox*, *Frederici-Guilielmi*, *Horridus*, *Lebomboensis*, *Lehmannii*, *Longifolius* (Blue and Green), *Natalensis*, *Princeps*, *Transvenosus*, *Trispinosus* (Grey and Green) *Umbeluziensis* and *Villosus*.

*Eugene -Maraisii* seedlings (available Feb 2012)

Buying of Cycads. TOPS registered Nursery. Assisting with Permit applications. Maintenance. Trimming & removing of leaves. Treatment against beetles and scale. Identification. Cycads for Landscaping. Transporting Cycads countrywide. Pollination in Eastern Cape. Pollin of Eastern Cape species available. Valuations .

Phone Deon Haumann(Port Elizabeth )  
041 / 3711789 All Hours or 0828708232  
Email :[deonhaumann@telkomsa.net](mailto:deonhaumann@telkomsa.net)

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## PALMS

Learn about palms—join the SOUTH AFRICAN PALM SOCIETY, receiving its journal, enjoying the opportunity of acquiring seed of rare palms from the seedbank and meeting other palm enthusiasts. For membership or other enquiries, contact:

### The Secretary

South African Palm Society, P.O. Box 48309, Hercules 0030  
Tel/Fax: 012 376 2733

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## SEEDS FOR SALE

*E. Natalensis* x *E. Woodii* (pollen from Kirstenbosch) seeds for sale - R10 each.

Minimum order 10 seeds. Postage R20 inside South Africa. Seeds(2011) have been sink tested and will be retested before posting.

Nick Johnston 0824569712  
021 7943152 home  
1 Summit Close  
Constantia



# CYCAD SOCIETY OF SOUTH AFRICA

www.cycadsociety.org

## NEW MEMBERSHIP APPLICATION – MEMBERSHIP RENEWAL 2012

I/We \_\_\_\_\_

Title, initials and surname, and name by which person is known or name of institution in  
BLOCK LETTERS

Membership number of existing member  
for membership renewal

Of postal address \_\_\_\_\_

Post Code \_\_\_\_\_

E-mail \_\_\_\_\_

Tel \_\_\_\_\_

Fax \_\_\_\_\_

hereby apply for membership of the **Cycad Society of South Africa** and declare that I/we fully endorse the aims of the Society as listed below:

1. To encourage the cultivation and propagation of cycads.
2. To disseminate information on cycads by various means, inter alia through the regular publication of a magazine.
3. To arrange the legal exchange of plants, seedlings, seed, and pollen of different cycad species between members.
4. To encourage scientific research on cycads.
5. To promote all aspects of cycad conservation.
6. To foster and maintain links with organizations having similar aims on an international basis.

- Membership fee for 2012\*

In addition to the membership fee I/We would like to make the following donations

- Cycad Society research fund
- General donation

**Total** (Membership fee and other donations)

YES

NO

By ticking YES I/We hereby give permission to the Society to publish my/our contact and address details in the member list of the society to other members.

Signature \_\_\_\_\_

Date \_\_\_\_\_

### \*MEMBERSHIP FEES FOR 2012:

Local members (residents of South Africa)	<b>R 200</b>			
Southern African members (Namibia, Swaziland, Zimbabwe, etc.) <i>Air mail delivery</i>	<b>R 320</b>	Southern African members (Namibia, Swaziland, Zimbabwe, etc.) <i>Surface mail delivery</i>	<b>R 280</b>	Foreign members <i>Air mail delivery</i>
				<b>R 340</b>
				<b>US\$ 52</b>
				<b>AU\$ 52</b>
				<b>€ 36</b>
				<b>£ 32</b>
				Foreign members <i>Surface mail delivery</i>
				<b>R 300</b>
				<b>US\$ 46</b>
				<b>AU\$ 46</b>
				<b>€ 34</b>
				<b>£ 28</b>

Local members must send their dues together with this form to Ian Bassingthwaighe, and all cheques and postal orders are to be made out to: *Cycad Society of South Africa*. American and Australian members must send their dues in American or Australian dollars respectively together with this form to the appropriate address listed below. Foreign Members of other countries may send their dues together with this form either in South African Rand by international money order or SWIFT, in favour of the *Cycad Society of South Africa*, and not by a personal cheque, to Ian Bassingthwaighe; or in American dollar to Willie Tang; or in Australian dollar to Paul Kennedy.

The appropriate addresses are:

- **Ian Bassingthwaighe:** P.O. Box 176, 0159 Montana Park (Pretoria), South Africa.
- **Paul Kennedy:** 21 Sierra Road, Engadine, NSW 2233, Australia.
- **Willie Tang:** 65 Corydon Dr., Miami Springs, Florida, 33166, U.S.A.

Payments in South African Rand can be made at:

<b>Bank</b>	Standard Bank	<b>Branch</b>	Hatfield	<b>Branch code</b>	01-15-45	<b>Account number</b>	011943300
<b>SWIFT</b>	SBZAZAJJ						

**Reference of payment:** Name of member and membership number.

**Proof of payment must be sent to:** Fax: +27 086678 9807 (fax to e-mail)

**e-mail:** [cycad@cycadsociety.org](mailto:cycad@cycadsociety.org)

New members receive all issues of *ENCEPHALARTOS* magazine for the year in which they join provided that issues are still in stock.



# BROODBOOM VERENIGING VAN SUID-AFRIKA

www.cycadsociety.org

## NUWE LIDMAATSKAP AANSOEK - LIDMAATSKAPHERNUWING 2012

Ek/Ons \_\_\_\_\_

Titel, voorletters en van, asook noemnaam van persoon of naam van inrigting in BLOKLETTERS \_\_\_\_\_

Lidmaatskapnommer van bestaande lid  
vir lidmaatskaphernuwing \_\_\_\_\_

van posadres \_\_\_\_\_

Poskode \_\_\_\_\_

E-pos \_\_\_\_\_

Tel \_\_\_\_\_

Fax \_\_\_\_\_

doen hiermee aansoek om lidmaatskap van die **Broodboom Vereniging van Suid-Afrika** en verklaar dat ek/ons die doelstellings van die Vereniging soos dit hieronder gelys is, heelhartig onderskryf:

1. Om die kweek en vermeerdering van broodbome aan te moedig.
2. Om inligting oor broodbome op verskillende wyses te versprei, onder andere deur die gereelde publiserings van 'n tydskrif.
3. Om die wettige uitruil van plante, saailinge, saad en stuifmeel van broodbome tussen lede te reël.
4. Om wetenskaplike navorsing oor broodbome aan te moedig.
5. Om alle aspekte van die bewaring van broodbome te bevorder.
6. Om bande met organisasies wat soortgelyke doelstellings het op 'n internasionale basis te smee en te handhaaf.

• Ledegeld vir 2012\*

Addisioneel tot die ledegeld wil ek/ons ook graag die volgende bydraes maak:

- Broodboomvereniging Navorsingsfonds
- Algemene donasie

**Totaal (Ledegeld en donasies ingesluit)**

J A

N E E

Deur JA te selekteer, gee ek/ons toestemming aan die Vereniging om my/ons kontak en adres besonderhede op die Vereniging se ledelys aan ander lede te publiseer.

Handtekening \_\_\_\_\_

Datum \_\_\_\_\_

### \*LEDEGELD VIR 2012

Plaaslike lede (inwoners van Suid-Afrika) <b>R 200</b>			
Suid-Afrika lede (Namibië, Swaziland, Zimbabwe, ens) <b>R 320</b> <i>Lugposaflewering</i>	Suid-Afrika lede (Namibië, Swaziland, Zimbabwe, ens) <b>R 280</b> <i>Landposversending</i>	Oorsese lede <i>Lugposaflewering</i> <b>R 340</b> <b>US\$ 52</b> <b>AU\$ 52</b> <b>€ 36</b> <b>£ 32</b>	Oorsese lede <i>Landposversending</i> <b>R 300</b> <b>US\$ 46</b> <b>AU\$ 46</b> <b>€ 34</b> <b>£ 28</b>

Lede ontvang 'n kwartaalike kopie van die vereniging se tydskrif *ENCEPHALARTOS*. Plaaslike lede moet hulle ledegeld en die voltooide vorm stuur aan Ian Bassingthwaighte en alle tjeks of poswissels moet uitgemaak word aan die "Broodboomvereniging van Suid-Afrika".

**Ian Bassingthwaighte, Posbus 176, 0159 Montanapark, Pretoria, Suid-Afrika.**

Betaling in Suid-Afrikaanse Rand kan ook gemaak word by:

<b>Bank</b> Standard Bank	<b>Tak</b> Hatfield	<b>Takkode</b> 01-15-45	<b>Rekeningnommer</b> 011943300
<b>SWIFT</b> SBZAZAJJ			

**Betalingverwysing:** Lidnaam en lidnommer.

**Bewys van betaling asook aansoekvorms moet gestuur word aan:** Faks: +27 086678 9807 (faks na e-pos)

**e-pos:** [cycad@cycadsociety.org](mailto:cycad@cycadsociety.org)

Nuwe lede ontvang 'n eksemplaar van al die uitgawes van *ENCEPHALARTOS* vir die jaar waarin hulle aansluit op die veronderstelling dat daar voorraad is.



# CYCAD SOCIETY OF SOUTH AFRICA

[www.cycadsociety.org](http://www.cycadsociety.org)

Posbus 176  
0159 Montanapark  
Pretoria, Suid Afrika

P.O.Box 176  
0159 Montana Park  
Pretoria, South Africa

Tel/Faks: +27 12 548 1152  
E-pos: cycad@cycadsociety.org

Tel/Fax: +27 12 548 1152  
Email: cycad@cycadsociety.org

## DEBIT ORDER FORM

PERSONAL DETAILS OF CLIENT					
Surname / Company Name:					
Full names / Trading Name:					
ID number / Registration Number:					
Physical Address:					
Postal Address:					
Contact details:	HOME	WORK	MOBILE	e-MAIL	FAX
Client reference number:					
BANK DETAILS OF CLIENT					
Name of Account Holder:					
Account Type:	CHEQUE	TRANSMISSION	SAVINGS	OTHER	
Name of Bank:					
Account Number:					
Branch Name:					
Branch Code:					
Credit Card type:	MASTER			VISA	
Last 3 digits of credit card:					

COLLECTION INSTRUCTION - please tick the applicable						
Annual Deductions	<input checked="" type="checkbox"/>	complete only date of 1st deduction	d	d	m	m
Annual escalation thereof	See no. 7 below		y	y		

I/We, the client or the duly authorised representative thereof ("the CLIENT"), hereby authorise the entity mentioned below ("Cycad Society of SA"), STRATCOL LTD and/or its agents, to collect by means of electronic debit from the above account in the name of the CLIENT at the same or any other bank, all or any monies due by the CLIENT to Cycad Society of SA, as principal debtor or for any other reason, and to pay same to Cycad Society of SA. The authority so given is restricted to the amount mentioned above and may be deducted on any mentioned 7 working days hereafter.

I accept the following to be applicable hereto:

- This authorisation may only be withdrawn with 30 (thirty) days written notice to Cycad Society of SA at its physical address.
- I and/or the CLIENT, individually and collectively hold harmless Cycad Society of SA, STRATCOL LTD and/or its agents against any claim of any nature arising from the electronic debit or transfer or from any other cause following this authorisation and irrespective whether such authorisation had been withdrawn or not;
- In the event of the relevant account not having sufficient cleared funds to meet any debit, I am aware that a unpaid fee will be debited against the CLIENTS account by its bank and an additional unpaid fee of R50 will be charged by Cycad Society of SA relating to the return of the debit. I accept the responsibility to ensure sufficient cleared and available funds to the minimum of the limit above (or as amended from time to time).
- Any reference to the entities above includes a reference to any successor in title or in appointment;
- This authorisation is not an amendment to any specific arrangement regarding payment of accounts and serves merely as an arrangement as the method of payment, in part or in full and any account with Cycad Society of SA will only to be credited once actual payment is received by the Cycad Society of SA, and
- Should any dispute arise about Cycad Society of SA's right to collect any amount in terms hereof, the CLIENT shall have the onus to instruct his bank to refuse or return any debit as unpaid.
- Annual fee to be advised in *Encephalartos* prior to the annual collection date.

DATE: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

**STRATCOL REF:**

0	0	0	0
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# CYCAD SOCIETY OF SOUTH AFRICA

[www.cycadsociety.org](http://www.cycadsociety.org)

Posbus 176  
0159 Montanapark  
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Email: [cycad@cycadsociety.org](mailto:cycad@cycadsociety.org)

## DEBIETORDERVORM

PERSOONLIKE BESONDERHEDE VAN KLIËNT									
Van / Besigheid naam:									
Volle name / Trading Name:									
ID nommer / Registrasie nommer:									
Fisiese Adres:									
Pos Adres:									
Kontak nommers:	HUIS	WERK	SELFOON	e-POS	FAKS				
Kliëntverwysings nommer:									
BANKBESONDERHEDE VAN KLIËNT									
Naam van rekeninghouer:									
Rekening tipe:	TJEK	TRANSAKSIE	SPAAR	ANDER					
Naam van Bank:									
Rekening Nommer:									
Taknaam:									
Takkode:									
Kredietkaart:	MASTER				VISA				
Laaste 3 syfers van Kredietkaart:									

TREKKINGS INSTRUKSIE - merk as van toepassing												
Jaarlikse Aftrekkings	<input checked="" type="checkbox"/>	Ivooltooi alleenlik datum van 1ste aftrekking					d	d	m	m	j	j
Verhoogings	<input type="checkbox"/>	Sien nr. 7 onderaan										

Ek/Ons, die kliënt of behoorlike gemagtigde verteenwoordiger daarvan ("die kliënt"), gee hiermee goedkeuring aan die entiteit hieronder genoem **Broodboom Vereniging van SA**, STRATCOL BPK en/of sy agente, om d.m.v. 'n Elektroniese Debietorder van die bogenoemde rekening te vorder, en om genoemde gelde oor te betaal aan **Broodboom Vereniging van SA**. Die goedkeuring gegee is beperk tot enige maksimum bedrag en trekkingsdatum gestel of binne 7 dae daarna.

Ek aanvaar die volgende om van toepassing te wees hiertoe:

- Hierdie goedkeuring mag net teruggetrek word met 30 (dertig) dae skriftelike kennis aan die gebruiker by sy/haar fisiese adres;
- Ek en/of die KLIËNT, afsonderlik en/of gesamentlik, vrywaar **Broodboom Vereniging van SA** en STRATCOL BPK en/of sy agente teen enige eise van enige aard wat kan ontstaan a.g.v. die elektroniese debiet of oordragte d.m.v. hierdie goedkeuring hetsy reeds teruggetrek of nie;
- In die geval waar die relevante rekening nie genoegsame beskikbare fondse het om enige debiet te dek nie, is ek bewus dat 'n addisionele fooi van **R50** gehel sal word teen die KLIËNT se rekening deur **Broodboom Vereniging van SA** vir hierdie terugsending, asook 'n onbetaalde fooi deur die KLIËNT se eie bank. Ek aanvaar die verantwoordelikheid om genoegsame en beskikbare fondse gelykstaande aan die minimum bedrag soos hierbo genoem, te verseker (of soos aangepas van tyd tot tyd)
- Enige verwysing na die entiteite soos hierbo genoem sluit in 'n verwysing na enige opvolger in titel of in aanstelling;
- Hierdie goedkeuring is nie 'n verwysing van 'n spesifieke betalingsooreenkoms van rekeninge nie en dit dien slegs as 'n ooreenkoms vir die manier van betaling, gedeeltelik of ten volle en enige rekening met die gebruiker sal net gekrediteer word wanneer die werklike betaling deur **Broodboom Vereniging van SA** ontvang is;
- Sou enige dispuut ontstaan insake **Broodboom Vereniging van SA** se regte om gelde te vorder in terme hiervan, is die onnus op die KLIËNT om sy bank die instruksie te gee om enige debiete terug te stuur as onbetaald.
- Jaarlikse fooi sal aangekondig word in *Encephalartos* alvorens die jaarlikse kolleksie datum.

DATUM: \_\_\_\_\_

HANDTEKENING: \_\_\_\_\_

**STRATCOL VERW.**

0 0 0 0

# Encephalartos

## INSTRUCTIONS TO AUTHORS

Contributions may be written in English or Afrikaans. Manuscripts must be typed. Short communications and letters to the editor may either be typed or in legible handwriting. All pages of a manuscript must be numbered consecutively. Photographs should be of excellent quality with clear details and adequate contrast. Authors are welcome to send illustrations in electronic format with the following requirements:

- Scan at 300 dpi.
- Save as jpeg, using maximum file size (i.e. minimum compression).
- Send by e-mail to [wynand@ananzi.co.za](mailto:wynand@ananzi.co.za) and mark 'For Encephalartos'.

The tables and figures/photographs of a manuscript should be numbered and all tables should have a heading. All figures and photographs should have a legend. All figures/photographs should bear written on the reverse the name of the author, figure number and the top of the figure or photograph.

Formal descriptions of new cycad taxa and new name combinations may be published in *ENCEPHALARTOS*. Authors are however, advised to rather publish such articles in the journal *Novon* which has been established especially for such articles. Articles on potential new cycad taxa, without formally describing them as new taxa, may also be published in *ENCEPHALARTOS*. To avoid any possible confusion of names of such taxa in future, they should be designated for example by terms such as Species A or Species 99. Do not ascribe provisional names to potential new cycad taxa.

### Contributions should reach the editor not later than:

March issue	: First week of January
June issue	: First week of April
September issue	: First week of July
December issue	: Last week of September

One copy of the *ENCEPHALARTOS* issue in which a contribution appears, will be supplied gratis to all non-member authors.

**Note:** If applicable, all figures and photographs will be reduced or enlarged to fit over either one, two or three columns when printed.

### Tariffs for advertising in Encephalartos:

Page size	Black and white	Colour
Quarter page	R175	R250
Half page	R350	R500
Full page	R700	R1000

Members: up to quarter page free of charge—black and white only.

To advertise in *ENCEPHALARTOS*, contact the Secretary Treasurer and/or Editor.

## VOORSKRIFTE AAN OUTEURS

Bydraes kan in Afrikaans of Engels geskryf word. Manuskripte moet getik wees. Kort mededelings en briewe aan die redakteur mag getik of in duidelik leesbare handskrif wees. Nommer alle bladsye van 'n manuskrip opeenvolgend. Foto's moet van goeie gehalte wees, voldoende kontras besit en besonderhede duidelik toon. Skrywers is welkom om illustrasies in elektroniese formaat te stuur, met die volgende vereistes:

- Skandeer teen 300 dpi.
- Stoor as jpeg, maksimum lêergrootte (d.w.s. minimum kompressie).
- Stuur per e-pos na [wynand@ananzi.co.za](mailto:wynand@ananzi.co.za) en merk 'Vir Encephalartos'.

Die tabelle en figure/foto's van 'n manuskrip moet genommer wees en elke tabel moet 'n opskrif hê. Alle figure en foto's moet 'n onderskrif hê. Agter op elke figuur/foto moet die naam van die outeur en die nommer van die figuur/foto geskryf word en die bopunt van die figuur of foto moet aangedui word.

Alhoewel die formele beskrywing van nuwe broodboom taksons en nuwe naamkombinasies in *ENCEPHALARTOS* opgeneem kan word, word daar aanbeveel dat sodanige artikels eerder in die tydskrif *Novon*, wat spesiaal vir sodanige artikels in die lewe geroep is, gepubliseer word. Artikels oor potensiële nuwe broodboomtaksons kan ook opgeneem word in *ENCEPHALARTOS* sonder dat die artikels die nuwe takson formeel beskryf. Om latere moontlike naamsverwarring van sodanige taksons tot die minimum te beperk, moet die potensiële nuwe takson in die artikel deur terme soos byvoorbeeld Spesie A of Spesie 99 aangedui word.

### Bydraes moet die redakteur voor of op die volgende datums bereik:

Maart-uitgawe	: Eerste week van Januarie
Junie-uitgawe	: Eerste week van April
September-uitgawe	: Eerste week van Julie
Desember-uitgawe	: Eerste week van September

Een eksemplaar van die *ENCEPHALARTOS* uitgawe waarin 'n bydrae verskyn, sal gratis aan alle nie-lid outeurs voorsien word.

**Note:** Waar van toepassing, sal alle finaal gedrukte figure en foto's verklein of vergroot word om oor óf een, twee óf drie kolomme te pas.

### Tariewe om in Encephalartos te adverteer:

Bladsy grootte	Swart en wit	Kleur
Kwart blad	R175	R250
Half blad	R350	R500
Vol blad	R700	R1000

Lede: tot 'n maksimum van 'n kwartblad gratis—slegs swart en wit.

Om in *ENCEPHALARTOS* te adverteer, kontak die Sekretaris-tesourier en/of Redakteur.

