

Journal of the Cycad Society of South Africa

# ENCEPHALARTOS

Tydskrif van die Broodboom Vereniging van Suid-Afrika

No. 130

December 2017

ISSN 1012-9987



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

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# ENCEPHALARTOS

Tydskrif van die Broodboom Vereniging van Suid-Afrika

## ON THE COVER:

*Dioon edule*. Not art nouveau – this is much older.

The inside of a disintegrating female cone. The undeveloped ovules are clearly visible. Like *Macrozamia*, *Lepidozamia*, *Zamia*, *Ceratozamia*, *Bowenia*, *Cycas*, and *Stangeria*, but unlike *Encephalartos*, the ovules do not develop unless pollination took place successfully.

Do not try to pollinate those exposed ovules once the cone has disintegrated – It won't work.

Photo: Piet Vorster

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## FROM THE COUNCIL / VAN DIE RAAD

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### VAN DIE PRESIDENT / FROM THE PRESIDENT

Cycads are amongst the most ancient and primitive of living seed-bearing plants. Their nearest relatives are thought to have been the long extinct seed ferns of the Late Palaeozoic and Mesozoic eras, millions of years ago. The primitive nature of the cycads is one of their many attractions, in a real sense cycads are the “dinosaurs:” of the plant world, unlike dinosaurs, a few cycad genera and species survive today, they can excite the same feeling of wonder as do those amazing extinct animals.

What are often more appealing to the general public, however, in addition to their great antiquity, are the beauty many species display in the wild, in gardens, and in conservatories and, of course, their great value to collector. This small group of superficially palm like plants, confined in nature to limited areas in tropical and subtropical regions but now introduced as ornamental specimens into private and public gardens and conservatories the world over, is noted for its beautiful foliage and brightly coloured cones and seeds.

Cycads are currently threatened globally with extinction. Most of these threats originate from human activities and include destruction of wild populations for agriculture, strip mining, and ornamental plant trade. It is estimated that there will be no wild population of cycads left in a hundred years from now. The onus of conservation thus shifts to the breeders of these ancient plants. Nurseries and private collectors are therefore

responsible to keep each species pure and see to it that cross pollination does not happen. Hybridization should not be encouraged and care should be taken to cover female cones after pollination to minimize the effect of wind and insect pollination. Critically endangered species should be pollinated in their habitat where there is no possibility of cross pollination. This practise will ensure that breeders and collectors obtain pure species. If Nature Conservation doesn't have the manpower or funds to do pollination in the wild, they should appoint trustworthy persons of the Cycad Society to pollinate on their behalf. They can then sell the seed to generate funds for more effective conservation of all endangered fauna and flora species.

Once again I want to remind members that the subscription for 2018 is now payable at R 285.00 for South African members. To publish and post our quarterly *Encephalartos* journal needs a large amount of funds, and our main source of income is our membership fees. I would also encourage members to go out and get your fellow cycad enthusiast to join our society and our cause of conserving our heritage.

May the year 2018 be a very successful and prosperous cycad year for all.

Happy cycading  
John Kloppers

### MEMBERSHIP FEES FOR 2018

All members must please pay their membership fees as soon as possible to ensure that they receive a copy of *ENCEPHALSRTOS*. Members who have not paid by end of January 2018 will not receive a journal for March 2018. Use your surname AND membership number as your reference when pay by EFT. Please take note that debit order payments are no longer in use. ***The Society does not send out invoices of renewal of membership.***

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## FROM THE DESK OF THE SECRETARY-TREASURER

### ELECTION OF OFFICE BEARERS / VERKIESING VAN DIE RAAD

The terms of office of all Council Members expire at the end of December 2017 and nominations are therefore requested for the following positions, to serve for the next two years, namely 2018 and 2019:

- President
- Editor
- Secretary-treasurer
- Webmaster
- Media Liaison Officer.

Kindly ensure that names are submitted to the Secretary-treasurer at [cycad@cycadsociety.org](mailto:cycad@cycadsociety.org) by no later than 10 February 2018.

Present incumbents have, however, indicated that they are prepared to serve for another term. All present incumbents are willing to stand down should other names for these posts be put forward.

Regional Branches are also to elect their representatives, to serve on Council, for the same period.

Frikkie Conradie  
Secretary-treasurer

Die ampstermyn van al die Raadslede verval aan die einde van Desember 2017, nominasies word daarom aangevra vir die volgende poste wat moet dien vir die volgende twee jaar, naamlik 2018 en 2019:

- President
- Redakteur
- Sekretaris-tesourier
- Webmeester
- Media Skakelbeampte.

Maak seker dat name ingedien word by die Sekretaris-tesourier by [cycad@cycadsociety.org](mailto:cycad@cycadsociety.org) en nie later as 10 Februarie 2018 nie.

Die huidige amptenare het almal te kenne gegee dat hulle bereid is om nog 'n termyn te dien. Alle huidige amptenare is egter gewillig om afstand te doen indien daar ander name vir die poste genomineer word.

Streekstakke moet ook 'n verteenwoordiger verkies om op die Raad te dien vir dieselfde periode.

Frikkie Conradie  
Sekretaris-tesourier

## NEW MEMBERS

The Society welcomes the following new members who joined between April and November 2017.

4176L	UYS, H.A.	PO Box 146, Bendor Park
4177W	HEYNS, M.H.G.	Brenton on Sea, Knysna
4178G	SMUTS, A.G.	PO Box 86142, City Deep
4179W	FROST, S.P.	PO Box 491, Bellville
4180K	KEE, A.	PO Box 1367, Linkhills
4181K	SLINGERLAND, S.	Woodgrange-on-Sea, Hibberdene
4182G	FIBIGER, R.G.	Lyttelton Manor X11, Centurion
4183W	WARD, N.J.	Loop Street, Cape Town
4184*	NARCISO, J.M.	Portugal
4185L	DU TOIT, J.C. (Mrs)	PO Box 124, Dendron
4186W	RICHFIELD, M.J.	PO Box 2045, Dennesig
4187G	MULLER, W.	PO Box 12237, Queenswood

## IN MEMORIAM: LOU RANDALL

We are profoundly sorry to report on the passing of Lou Randall, long term member of this Society, who died in Queensland, Australia, in November 2017 after a short illness, at the age of 70. Lou was internationally renowned for his encyclopaedic horticultural knowledge, having been involved in development and management roles with the Huntington Botanic Garden in California, USA, the Wollongong Botanic Garden in New South Wales, and the Mount Coot-tha and Rockhampton Botanical Gardens in Queensland, Australia. His expertise was all-encompassing, but he had a special love for cycads, bromeliads and succulents of all kinds. His impressive personal garden at Caboolture, just north of Brisbane, was known and admired by hundreds of visitors for its astonishing diversity, its careful landscaping and its botanical significance. Lou attended many of the International Cycad Conferences and travelled widely in his plant studies. He was one of the few people – perhaps the only in Australia – who had successfully pollinated *Microcycas calocoma*.

The President, Editor, Committee and members of the Society express their sincere condolences to Lou's wife Tish, his daughters Ellen and Leslie, and his many friends. RIP Lou, you will be sorely missed.



Roy Osborne (left), Lou Randall (centre) and Greg Ginsburg (right), dwarfed by Lou's *Macrozamia macdonnellii* specimens, during a visit to the Randall garden in Caboolture, Queensland, April 2017. Photo by Valerie Neuner.

## IN MEMORIAM: DR. J.A. DE KLERK (1947–2017)

Xander de Kock

Diekie de Klerk died at the end of November 2017 due to heart failure. He leaves his wife, Karin, five children and 4 grandchildren, behind. We want to offer our condolences to the family with the loss of a husband, father and grandfather. He will be missed by all.

Diekie practised as an orthopaedic surgeon since 1980 in Polokwane (Pietersburg) and would have retired at the end of this year.

He acquired his first cycad in 1984 and his passion for cycads and his collection grew into one of the best. He started growing seedlings in 1992 and also began a nursery, Cyckos, in the following years.

I first met Diekie during my third year of studies when he needed pollen of *Encephalartos cupidus*, which I supplied after receiving it from the late Mr Heyns of Pretoria. I moved to Polokwane in 1996 and joined the local cycad community of the Society. Amongst others, Diekie played a leading role in this community.

Diekie will be best remembered for the annual cycad sale, and later auctions, on the rugby field of Pietersburg Primary School. Many of our members competed fiercely to buy some of the scarcer species



at these sales, especially the different forms of *E. nubimontanus*. Diekie published in 2004 the book, *Encephalartos nubimontanus, a distinction between 11 variants*.

Diekie was the Pollen and Seedbank Officer for the Limpopo Province and later for the country from 2000 to 2011. Our members attended several garden and habitat visits and Diekie never missed these occasions to see his beloved cycads and to share his knowledge. Diekie's collection grew over the years into one of the most complete and beautiful, in South Africa.

# A CYCAD PARADISE IN SICILY, SOUTHERN ITALY

Roberto Bruno<sup>1</sup> & Roy Osborne<sup>2</sup>



**Figure 1.** A general view of the garden in Sicily with *Macrozamia* and *Lepidozamia* specimens in the foreground and palms in the rear.

It may surprise some of our readers to know that Italy has some of the oldest and most interesting of the European cycad-oriented botanical gardens. In previous issues of “*Encephalartos*”, we have had articles on the Italian cycad gardens of Naples, Rome, Portici (Osborne 1992, 1994a, 1994b) and Florence (Stainer 1995).

In this issue, we report on an outstanding private cycad garden within the sight of Mount Etna on the Mediterranean island of Sicily. This privately owned garden extends over three acres of landscaped rockeries connected by concrete paths. The cycad collection comprises over 100 specimens, most of which are about 25 years old. *Encephalartos* is the prominent genus in the collection.

The Mediterranean climate in Sicily has a short mild winter. Mount Etna, the well-known main geographic feature of the island, offers three advantages to horticulturists: the mountain physically blocks the cool northerly winds; the rich well-drained soil derived from volcanic black lava is rich in magnesium; and the mild but significant underground thermal heat promotes enhanced plant development. These combined effects are such to allow prolific growth of the cycads in this garden, some plants flushing twice annually and most of which cone profusely.



**Figure 2.** *Encephalartos* and *Dioon* specimens in the garden in Sicily.



**Figure 3.** Two fine examples of *Cycas debaoensis*.

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<sup>2</sup>cycad101@bigpond.com



Figure 4. *Lepidozamia peroffskyana* seed cones.



Figure 5. An eastern Australian *Macrozamia*, possibly *M. communis*, *M. mountperriensis* or *M. douglasii*, with seed cones.



Figure 6. A fine specimen of what we believe is *Encephalartos princeps* in the garden.



**Figure 7.** Striking powder-blue foliage of this *Encephalartos* which may be *E. horridus*, *E. trispinosus*, *E. lehmannii* or an intermediate.



**Figure 8.** *Encephalartos ferox* with 6 pollen cones.



Figure 9. *Encephalartos ferox* with 3 seed cones.



Figure 10. *Encephalartos manikensis* with 3 seed cones.

### ACKNOWLEDGEMENTS

We thank the owner of this garden for his kind co-operation and respect his wish to remain anonymous. We also thank members of the facebook group (<https://www.facebook.com/groups/planetcycad>) and other cycad enthusiasts for opinions on the identity of the plants in the photographs.

All photographs are by Roberto Bruno.

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- Osborne, R. 1992. The cycad collection of the Naples Botanical Garden. *Encephalartos* 31: 18-20.
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# TASTE OF TZANEEN FEST AND BOTANICAL GARDEN

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John Kloppers\*

I was privileged to be invited as the President of the Cycad Society of South Africa to open a private cycad botanical garden during the Taste of Tzaneen Fest at the Fairview Hotel and Village in Tzaneen during 2 to 3 November 2017.

The garden comprises of most of our indigenous cycads which are planted in groups of the same species on the large hotel grounds. The whole garden layout was done with the needs of each species as a priority, water usage sunlight and shade was considered with the planting. The cycads were planted in and around a mini golf course and the hotel accommodation. The temperature and humidity of the frost free Tzaneen is ideal for cycads and I can foresee that they will thrive in that area and conditions. The owners of the hotel André and Marinda Thomas are very enthusiastic about cycads and that alone will give these plants a bright future.

The plants were mainly supplied by Cycad Africa of Mr. Steve Trollip over the past years. Quite a few members of the Limpopo Branch attended the opening of the garden and the member's cycad sale at the end of the meeting. According to the organizers the Taste of Tzaneen Show will be an annual event to take place at the Fairview Hotel grounds. This year there were many stalls, a dog show and many performances by different artists. I would recommend a visit to the Fairview garden and the five star Fairview Hotel and Village if you happen to be in that area.



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## VISIT TO A CYCAD RESEARCHER: DR. NATHALIE NAGALINGUM

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William Tang



**Figure 1.** Dr. Nagalingum holds a herbarium specimen of *Cycas calcicola* that she is using in her latest research.

On a recent trip to San Francisco I met Dr. Nathalie Nagalingum. Nathalie recently moved from the Royal Botanic Garden, Sydney in Australia to take a research position at the California Academy of Sciences, where she is continuing her studies on the evolution and diversification of cycads. Nathalie has published groundbreaking genetic analyses that indicate most

cycad species evolved relatively recently, within the last 12 million years, possibly as a result of global aridification and climate change (Nagalingum *et al.* 2011, Condamine *et al.* 2015). She continues to apply the latest techniques in DNA analyses in addressing questions about cycad speciation and conservation. In addition to her cycad research Nathalie studies fossil ferns and holds the McAllister Chair of Botany at the California Academy of Science where she oversees the Academy's botany collection. You can listen to Nathalie speak about cycads and her research in a podcast at this website: <http://www.indefenseofplants.com/podcast/2017/11/19/ep-135-cycads-the-most-endangered-organisms-on-the-planet>



**Figure 2.** Nathalie stands next to a new generation sequencer used to rapidly analyze large sections of DNA.

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- Nagalingum NS, Marshall CR, Quental TB, Rai HS, Little DP, Mathews S. 2011. Recent synchronous radiation of a living fossil. *Science* 334:796–9.

# CYCAD GARDEN FOR VINK'S ARBORETUM

Ferdie Endemann

On 6 September 2017, the Western Cape Regional Branch of the Cycad Society launched its Cycad Garden at Vink's Arboretum. As with all things in life, this project started with a spark. Wynand van Eeden, editor of ENCEPHALARTOS, provided the spark in this case. He made a proposal to the members at the annual AGM of 2015. The membership approved of the idea and tasked the Branch committee to take the necessary steps to effect the proposal. But sparks and proposals don't a cycad garden make. A partnership needed to be formalised between the Society, Vink's Greenbelt Arboretum and The City of Cape Town, as the land used is the property of the city. The parties reached an agreement, spelling out what each party's responsibilities were, without too much difficulty. The Branch Chair, Johan Kotze, oversaw this process. Wynand and Johan then motivated a request to the Board of the Society for funding amounting to R20 000 and the Branch also put R5000 towards the project. A 130 plants were purchased from a private collection that had come up for sale. The species were *Encephalartos altenstenii*, *E. natalensis*, *E. lebomboensis*, *E. ferox*, *E. villosus* and *E. natalensis* x *E. arenarius* hybrids. Members of the public, with unwanted plants, and our members also donated plants. Currently the garden has about 140 plants and more are added when and as they are donated. The Branch is always looking to expanding the garden and plants and financial donations are welcome. If you want to help, contact any of the Western Cape Regional Branch committee members.



**Figure 1.** Part of the group of 140 cycads planted by members of the Western Cape Regional Branch in Vink's Arboretum. Only one plant was lost due to stress and the rest are now settled and adapting to their new permanent home.



**Figure 2.** A little "valley" was created by moving soil and adding huge rocks to the sides to stabilise the slopes. This should improve drainage and provide a happy home to the cycads.

With all the organising complete and payment for the plants done, the time came start serious work on the new cycad garden. Haw & Ingles Civil Engineering kindly donated the personnel and machinery to move huge rocks and a lot of soil to landscape the area a little better and make a valley (see Figures 1 & 2) to improve drainage. Eight 10m<sup>2</sup> truckloads of topsoil was then added to the area.

Then it was time to uproot, move and replant 130 cycads to their new home. This took place over a weekend during the winter of 2016. Our members were generous with their time and money and some helped digging out plants whilst others donated money towards the costs. Some of these are Leslie and Elaine Hobson, Aubrey Cable, Wynand van Eeden and Carine Smith, Johan Kotze, Pieter Niewoudt and Hans Viljoen, to name a few. It took us two days to dig up the plants (luckily they were planted in sand) and two days to plant them at the site. The plants then received a 10cm layer of mulch in the form of wood chips.

The garden was officially opened by Councillor Helen Carstens (Figure 3) and many residents and members attended. Piet Vorster, a past president of our Society, gave a speech on the virtues of cycads after which refreshments were served.

The Western Cape is currently experiencing the worst drought in a hundred years and the plants received no irrigation during the first summer at their new home and only below average rainfall the last winter. At the end of summer, we had only lost one small plant and a large number had made new leaves, ready for the new growing season. Although cycads do well when watered, they can be water wise. If you find yourself in the area, do stop and walk up the arboretum to the cycad garden in Vink's Arboretum on the corner of Jip de Jager and Van Riebeeckshof Road, Bellville. It is a beautiful sight and will be there, hopefully, for many generations to come.

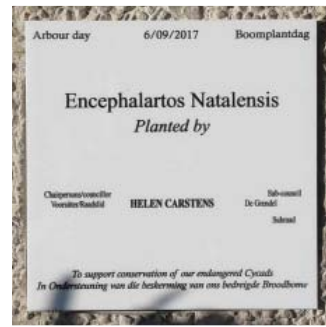


Figure 3. Hannes Bosch looked on while Councillor Me Helen Carstens planted a cycad in Vink's Arboretum.

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# MY CYCAD SAFARI TO SOUTH AFRICA

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(OCTOBER 4–NOVEMBER 12, 2009)

Article by Karen Sternberg with contributions by Douglas Goode  
Photographs by Karen Sternberg and Douglas Goode



**Figure 1.** *Encephalartos middelburgensis* in habitat (“Memorial Cycad”). All photos and illustrations Copyright Karen Sternberg.

A trip such as this is one that I never could have imagined just five years ago. My first international flight occurred fifteen months earlier in 2008. This trip to South Africa was with Paul and was remarkable in its own right. We visited several cycad habitats, met some lovely people and learned quite a bit about the country, its history and heritage and about the natural environment including South African plants and animals. I was sick throughout most of this trip, however, and felt poorly on most days. I visited two medical clinics while in the country and despite a myriad of medications, my health was impaired the entire time. For this very reason and the fact that a whole new world awaited me, I vowed to return to this majestic country a year later.

To view *Encephalartos* species in habitat captured my interest when I first visited Loran Whitelock’s garden back in May 1993. The beautiful, mature *Encephalartos middelburgensis* in his garden sent shivers up my spine. As spectacular as this cycad was to observe in its neatly manicured setting, I longed to view this species as well as others in their natural habitat, a setting in which they had been growing in for hundreds or perhaps thousands of years. Back in 2008 Douglas Goode took us to see a solitary plant of *E. middelburgensis*, as shown in Figure

1, in habitat. This was the very cycad depicted on Nat Grobelaar’s book “Cycads”. The view of the plant was a site to behold as the tallest stem approached 2.5 meters (8 feet). Unfortunately, one of the original three stems had been removed and only two remained. This cycad, deemed the “Memorial Cycad” by a local farmer, had grown on this rocky outcrop for perhaps seven hundred years or more. As I tried to envision the physical and morphological changes that this cycad underwent over hundreds of years, I could see perhaps another ten to twenty years surviving in habitat for this relic of natural splendor. It took a matter of a week in South Africa to realize that “time is of the essence” with regard to viewing cycads in habitat. What one sees at a particular point in time and place, will undoubtedly be altered in the future. With this in mind, I carefully chronicled my cycad expedition in 2009 and this is what I discovered on a daily basis.

## TUESDAY, OCTOBER 6:

The thirty-four hour flight/layover schedule left me tired and greatly overjoyed to finally land at Durban International Airport. The temperature was unusually warm on this spring South African morning and the

visibility was crystal clear. Greeting Douglas Goode at the airport gave me this incredible sense of relief that the first 11,000 mile flight was behind me. There were cycads to be seen and Douglas wasted no time in taking me to a private cycad garden located in a suburb west of Durban. I had literally not slept in two days but certain sights in this garden were unmatched by anything that I saw in the five weeks to follow (Figure 2). There was a stand of 7-8 *Encephalartos laevifolius* “Kaapsehoop” planted in a row, ranging in height from 1-3 meters (3-9 feet). Several of the specimens were in cone (Figure 3) as well as an *E. latifrons* and *E. heenanii*. The largest *E. hirsutus* that I saw was at least 1.5 meters (5 feet) tall. In this garden I saw forms of *E. natalensis* and *E. ferox* with spectacular leaf form and color that I never had seen before. I inquired as to the status of *E. natalensis* “high flats” in habitat. This habitat, west of Durban on the way to Ladysmith, had been primarily been wiped out by locals and the cycads had been traded. Surrounding the pool were mature specimens of *E. inopinus*, *E. cupidus*, *E. dyerianus* and several forms of *E. nubimontanus*. My inquisitive nature brought about a few silent moments and a slight sense of uneasiness throughout the tour. I was a tired American tourist, however, and my directness seemed to be quickly forgiven. After seeing so many majestic cycads in a single garden, I left with some trepidation at what we would see in the weeks ahead.

### WEDNESDAY, OCTOBER 7:

We headed north on the N2 leaving the Durban area by 6:30 am to avoid commuter traffic and to maximize daylight for the five-hour trip to *Encephalartos aemulans* country. The North Coast route was scenic as the Indian Ocean glistened and sparkled and the sun shone brightly on this warm October morning. As Douglas drove the many hours, he described the areas we passed through often interjecting humorous quips and stories along the way. My first photograph site was a scan to the west of the Nyoni Forest, the habitat of *Encephalartos ngoyanus*. These cycads are currently protected and there are 20-30 plants remaining. Continuing north along the N2 stands of Eucalyptus and sugar cane increased in number as the highway veered northwest away from the coastline. *Acacia xanthophloea*, commonly known as the “Fever Tree”, was frequently spotted along the highway as well. The bright yellow bark, characteristic of this species of *Acacia*, was often blamed for malaria outbreaks in the area.

We were within an hour of *Encephalartos aemulans* habitat and to the west was a small habitat of *E. natalensis* near Nongoma. This form has tidy and very pretty leaflets. Pockets of *E. natalensis* can be found up and down the east coast of South Africa. The extent of the *E. natalensis* range was once as far north as Vryheid and as far south as Bizana, a seven-hour drive or more.

It was close to mid afternoon when we reached the region of Louwsburg, home to an isolated population of *Encephalartos aemulans*, which was originally thought to be a variety of *E. natalensis* with very wooly cones.



Figure 2. *Encephalartos heenanii* in a garden.



Figure 3. *Encephalartos laevifolius* in a garden with three male cones.



Figure 4. A cycad “forest” - *Encephalartos aemulans* habitat.

Douglas spoke to the farmer and owner of the habitat and we were soon on our way. As we walked close to a half hour across grazing grass, I felt extremely privileged to be given access to this farmer’s property. He allows very few people on to his land as his cycads have been stolen from him over the years. Douglas had set up these arrangements months earlier for me and to him and the farmer, I am deeply grateful. My excitement reached new levels as we topped the second hill and lo and behold, there in the valley on a south-facing slope was a small forest of *Encephalartos aemulans* (Figure 4). At the base of a steep sandstone rock-face there was a concentration of several hundred cycads. Due to encroaching trees and native shrubs, many of the cycads could no longer be seen in the valley. Leaf characteristics were outlined in Figure 5. We visited 4-5 *E. aemulans* plants along the cliff face and several of the plants had leaves that were totally burnt and bare. We spotted one or two cones but very few seeds were evident. Larger plants in the distance may have been reproducing more actively. We were not able to hike down in to the valley due to the impenetrable thick foliage. Fires have been suppressed over the years and thus thinning of biomass around the cycads was not occurring. Fire suppression in many of these cycad habitats is a very serious problem. We witnessed the results of this a year earlier in the habitats of species such as *E. arenarius*, *E. transvenosus*, and *E. princeps*. The cycads can no longer compete with fast growing natives as well as plants introduced in to the areas more than a hundred years ago. Left unabated, the *E. aemulans* habitat as well as numerous others throughout South Africa will become threatened in the years to come. We stayed no more than an hour but the sights of the afternoon left a lasting imprint. The gracious farmer welcomed me to his country and wished us an adventurous trip. As we headed east to Jozini, I knew that the adventure had truly just begun.

#### THURSDAY, OCTOBER 8:

My sleep was poor the night before partly because of adjusting to a ten-hour time difference but mostly due to the prospect of seeing four different cycads in habitat in one day! As we headed south from Jozini, Douglas described the area and its significance to the future of cycad collecting in South Africa. Noted landmarks of the region are the Lebombo Mountains which extend along the border of Swaziland and South Africa. The northern range of these mountains extend in to Mozambique. The southern tip of these mountains is called Ubombo, the habitat of *Encephalartos aplanatus*, *E. senticosus*, *E. ngoyanus* and *Stangeria eriopus*. Just north of Jozini is the Pongolapoort Dam, a popular fishing resort. This dam was built in the early 1960’s, a time when thousands of *E. senticosus* plants proliferated and thrived in the area. In 1963, “Operation Wildflower” took place to make way for construction of the dam. Douglas described the event as a “frenzy of cycad collectors” parked as far away as 4 km (0.6 mile) to pick out and take away as many *E. senticosus* plants as possible. Stems were floated along river ways and ultimately, thousands of cycads were taken out and permits were issued for all of them. This single event escalated the interest in cycads in all of South Africa and through time, accelerated the demise of cycads in habitat.

It had been nine years since Douglas visited the Ubombo region to photograph cycads for his book “Cycads of Africa Volume I”. Needless to say, the area had changed greatly over time and the Zulu natives had developed and fenced off much of the cycad habitat. As Douglas inquired at the local police station, I admired three very attractive, recently confiscated cycads just outside the headquarters. As shown in Figure 6, one was a specimen of the “Kosi Bay” form of *Encephalartos*



**Figure 5.** Erect, dark glossy-green leaves of *Encephalartos aemulans*.

*ferox* with its thick, leathery, spiky and sharp long leaves, which is touted to have the widest leaflets of all cycads. A relatively new species, *E. curachii* (Figure 7) was also planted in front of the Ubombo Police Station. This species is noted for its smaller stature, narrower leaflets and spines all the way down the petiole. An *E. senticosus* plant was thriving as well. I must admit that this level of interest and excitement outside of a police station was a first for me. The enticement was high to look further for other species of cycads.

After an hour or more of searching, we reached the end of the road and parked near the dwellings of the Zulu Chief, the ruler of this Zulu region. Interestingly enough, the wife of the chief recognized Douglas right away from his visit nine years earlier. They exchanged a few words and we were soon greeted by Peter, her thirty year old son. Peter grazed their cattle daily and recognized the cycads in Douglas' book as species growing in the area. We hiked up and down the hills for an hour and a half but only one species, *Encephalartos senticosus*, was to



**Figure 6.** Closeup of confiscated plant of 'Kosi Bay' form of *Encephalartos ferox*.



**Figure 7.** Confiscated plant of *Encephalartos curachii* (prickles on upper and lower margins of leaves/toothed to base of petiole).

be spotted, videoed and photographed (Figure 8). The dry grass had grown tall thus making *Stangeria eriopus* plants very difficult to see. Douglas was especially frustrated at not seeing any *E. aplanatus* plants. My biggest concerns were keeping up with Peter and not falling along the way. Time was limited but we tried to see as much of the area as we could. Once back on top of the hill, we met the Zulu Chief, his wife (whom we had met earlier) and their second son. I paid Peter for his efforts and proceeded to hand out Ghirardelli chocolates to the family. Without explanation, the wife snatched the chocolates from my hand, started giggling and headed off behind one of the corrugated metal huts. I called out to her, in English of course, to come back over and share the chocolates with the whole family. By then, the entire Zulu family was laughing at me: my voice and gestures. Despite my efforts, the excited, laughing Zulu wife would not return with the chocolates. Peter clearly stated that she would never share them with the rest of the family. I took a photo of the Zulu Chief and his son. As departing comments and expressions of appreciations were made, I handed the Zulu Chief one of our colorful “Living Cycads” pens. He was enthralled with it, clutching it and staring at it as we drove away. It is difficult for me to describe how I felt at this moment. An indescribable connection was made between two people of vastly different cultures. We will never meet again but the memory of this encounter will last a lifetime.

Late afternoon was quickly upon us but we still managed to visit a farmer in the Piet Retief area and

his family. He had been growing cycads in his garden for thirty- six years and his specimens and variety were remarkable. I took photos and visited with these very special people. I will always cherish their grace and good will. We soon drove to the town of Piet Retief and another amazing day had come to a close.

### FRIDAY, OCTOBER 9:

Our destination for the day was the Barberton area, the habitat of *Encephalartos paucidentatus* and *E. heenanii*. We were now in the province of Mpumalanga and as we headed northeast, native vegetation on either side of us soon gave way to a continuous sea of pine plantations and stands of Eucalyptus trees. The Barberton area has the largest number of pine plantations in the world with the exception of Canada. The bleached pulp from these pines are of the best quality in the world. Over the past forty years these forests have been growing and thriving in the region and have wiped out vast square miles of native vegetation, including cycads.

As we neared the Swaziland border at one point, Douglas pointed to westerly hills in the distance and stated that this was once *Encephalartos relictus* habitat. This species, extinct from habitat for decades, is thought to be a relic of an *E. heenanii* form with extremely thick, golden wool. Plants of this species still exist in very limited numbers in select gardens throughout South Africa. In addition, Havilock, a region just inside of



**Figure 8.** *Encephalartos senticosus* in habitat (Ubombo).

Swaziland, once had large stands of *E. laevifolius* but virtually all them have been removed.

We stopped in Barberton for a short time and the look of the area captivated me. Barberton is one of the oldest towns in South Africa and the climate there is excellent all year long. The town established and grew during the gold rush era and many Europeans came and settled there. Older homes and businesses line the base of the mountains while the main part of the town has expanded out away from the mountains.

As we headed northeast up a mountain road, the expanse of pine plantations was staggering. Within forty-five minutes, we parked along the side of the road and put on our hiking boots. It had been ten years since Douglas was in this area to photograph *Encephalartos paucidentatus* for his book. At that time he recalled spotting at least ten mature cycads growing on a rocky southeast-facing slope in full sun. Initially, the hike was hampered due to a heavy mist rolling through the area. The beautiful indigenous forest that we were determined to climb through, was shrouded in thick fog. Fortunately, there was a clearing of the weather and we proceeded down the slope in to the forest below as shown in Figure 9. Needless to say, this was not an easy hike due to the steep terrain, the wet and muddy forest floor and thorny vines, notorious for tearing in to the skin. With camera bags impeding my progress and a tendency to slide up and down every slope, the search continued in to the afternoon. Not a single *E. paucidentatus* plant could be spotted while on the forest floor and agitations rose. Another serious issue was a lack of landmarks that would allow us to climb out above the forest from whence we had come before. Douglas was diligent,

however, and we did finally climb above the forest canopy. This slightly different route allowed us to look across and above the forest foliage on to the cliff face where the *E. paucidentatus* plants should have been. We used the telephoto lens from the video camera and Douglas spotted a dead *E. paucidentatus* plant lying next to the mouth of a cave. All of the other stems had been removed. In ten years' time a colony of 10-15 magnificent huge old cycads had been removed from this rather inaccessible site. We stood in eerie silence for several minutes as we struggled to grasp the magnitude of the situation. Douglas was deeply disturbed at the loss of plants but I may have been even more surprised to see this species gone from the area. *E. paucidentatus* is a relatively abundant plant in cycad gardens in the U.S. Seeds often come available from owners of mature coning *E. paucidentatus* plants. I never would have imagined that such effort would be taken to remove these remaining cycads from such a remote locality. A resigned silence took over the remainder of the hike. Once back at the vehicle I looked at Douglas and thanked him for giving me this opportunity to see for myself: whatever the outcome. There would be disappointments and I was prepared to face them. We drove back to Barberton and found the sun-silhouetted hills in the distance mesmerizing.

#### SATURDAY, OCTOBER 10:

It took only a few days of traveling with Douglas Goode to realize that his intelligence and wit drew us in to conversations with total strangers wherever we went. In Jozini, there was the B & B owner who was captivated by Douglas' artwork in his "Cycads of Africa" book. She wanted him to evaluate her cycad garden at



Figure 9. Previous habitat of *Encephalartos paucidentatus*.

Ghost Mountain the next time he visited the area. At the Piet Retief B & B, a gentleman totally engrossed in the history of military maritime activities during wartime, invited Douglas to speak at one of his symposiums. Needless to say, the Barberton B & B was no exception. The host at the Chill Inn would have kept us there all morning if it hadn't been for the need to pack up and head to *Encephalartos heenanii* country. I was nervous and excited as this species of cycad was one that I had dreamed of seeing for a number of years now. So few of this species are seen in gardens in the U.S. The photo of *E. heenanii* in habitat on the cover of Loran Whitelock's "The Cycads" displays a plant of ultimate beauty and grace. This species is truly in a class by itself.

As we were leaving Barberton, I noticed the Sugar Bush Protea growing in abundance in the mountains above the town. This species of plant is favored by the local Sunbirds. We drove east approximately 20 km (12 miles) and were parked at the Ida Doyer Nature Reserve by late morning. More than thirty years ago, this reserve was home to 50 or more *Encephalartos heenanii* plants. A survey done in 1985 indicated that the total population of *E. heenanii* in the mountainous regions between Barberton and the Swaziland border yielded close to 300 plants, including seedlings. Our goal on this day was to hike three or more hours in to a valley of the reserve and then up a steep east-facing grassy slope in hopes of seeing the three to four remaining *E. heenanii* plants. This habitat had been photographed by Douglas nine years earlier. At the time, these cycads had transponders in them to discourage further poaching of these plants. Also, back in 2000, a Nature Conservation guard station was set up on the only road in to see the cycads. Once we had climbed above the valley floor, my anticipation and energy levels were high. Not even the frantically barking baboons were going to dissuade us from making the pilgrimage up the side of the mountain. Douglas pointed out that baboons are territorial and

this troop did not like the fact that we were hiking on their trail. We even heard them making loud noises from across the valley. These animals did keep their distance from us, however.

After more than two hours of climbing, we reached the location and altitude (1,300-1,600 m/4265 –5249 feet) of where the cycads should have been (Figure 10). We combed the area including hiking to the top and along the sides of adjoining canyons in desperate search for some evidence of cycad growing activity. There was none evident and the entire cliff face was devoid of *Encephalartos heenanii* plants. As Douglas scurried off to explore the area one more time, I took a deep breath and closed my eyes. With the solitude and tranquil ambience of the beauty of nature surrounding me, I tried to visualize what this area must have looked like teeming with *E. heenanii* plants. For the first time in my life, I found myself lamenting over my age. I never would have thought that I would ever complain about not being older, but at this moment, thoughts of visiting this area thirty years earlier, overcame me. It would have been impossible for me to take a trip such as this when I was eighteen years old. However, if I were twenty to thirty years older now, that trip back in the 1970s or 1980s would have been possible. I too longed to have been part of the fortunate few who witnessed the utter magnificence of these plants in their natural habitat. I was shaken back to reality as I heard Douglas' voice above me state "The plants are gone". An overwhelming sense of sadness took over my entire mind and body. My need to cry long and hard was deep there on the steep slopes of the Ida Doyer Reserve. I held back my emotions, however, and we tramped back down the trail. As we looked back across the valley from which we had come, we spotted the abandoned guard station there in the distance as shown in Figure 11. At some point, there were no more cycads to protect so every one packed up and closed the operation down. Both



Figure 10. Ida Doyer Reserve – previous *Encephalartos heenanii* habitat.



**Figure 11.** Abandoned guard house and residences which protected previous *Encephalartos heenanii* habitat.

of us pondered the time frame in which all of this must have occurred. Some time between 2000 and 2009, the remaining *E. heenanii* plants were removed from this reserve and the guards were transferred to other locations. No longer would the region of the Ida Doyer Reserve be synonymous with *E. heenanii* habitat.

The remainder of the hike was uneventful and we were tired and hungry when we returned to our vehicle. We headed northwest and arrived in Kaapsehoop an hour later. The temperature dropped rapidly as we climbed up in to the Kaapsehoop Mountains. A heavy mist blew in during the late afternoon and hikers were in abundance at the local businesses and restaurants. This area is one of the more famous hiking locations in all of South Africa. I, personally, was done hiking for the day and welcomed a potentially restful evening ahead.

### **SUNDAY, OCTOBER 11:**

This was only our sixth day of travel in to cycad habitats and yet what was already etched in my mind was that the sense of time and space between colonies of cycads was distinct and vast. It is fascinating to me that one must often drive half a day or more to see one or more cycads in habitat. Yet, along the way, thousands of aloes, euphorbias, native and non-native trees and bush and Blue Gum Pines and eucalyptus can be spotted from your vehicle for seemingly endless miles in all directions. If it is a cycad in habitat that one wishes to view, time and patience must be in abundance.

Our destination for the morning was the area of Waterval Boven (“Above the waterfall”), approximately 30 km (19 miles) west of Kaapsehoop. This mountainous district is the habitat of *Encephalartos humilis*, the smallest of all the *Encephalartos* species. Douglas had already expressed concern over the number of colonies

of this species growing in the area. The past two days of our expedition justifiably escalated our reservations over actually seeing cycads on this beautiful Sunday in October.

We soon found ourselves traveling along a dirt road, one that Douglas had traversed nine years earlier. We stopped in front of a Zulu farm that was entirely fenced in and set back from the road. Douglas stood by the gate as a young man, Tim, slowly walked to greet him. Douglas showed him his book of cycads and within minutes, we were driving on to their farm. I found myself impressed once again of the Zulu people who so readily allowed us on to their property and seemed eager to visit with us. The father and Tim’s brother, Mike, greeted us and spoke to Douglas in their native language. As they exchanged a few words, I found myself staring at the four to five emaciated dogs lying next to the thatch hut. These animals were breathing very slowly and appeared lifeless and nearing death. Their furless coat covered a skeletal frame and their eyes were sunken and vacant. Their dire condition seemed to go unnoticed, however. This struck me as another example of how little the average American knows about true poverty and the ongoing struggle by millions to feed their families as well as their animals. We too often don’t stop and think about how difficult daily life is for so many on this planet. This thought reinforced my gratitude towards this Zulu family for sharing their time and energy in taking us on their farm and allowing us to explore and appreciate the natural habitat surrounding them.

As we passed the chicken coops and cow pens, Douglas and I expressed our enthusiasm for seeing at least one *Encephalartos humilis* on an east or northeast slope amongst the rocks and grass. Mike and Tim walked quickly and I struggled to keep up the pace. The

path was well trodden as their cattle grazed this area frequently. To the south was a gorge and the Eland's River flowed freely through the gorge. Fifteen minutes in to the hike Douglas spotted the first *E. humilis* plant. My uncontained excitement amused the Zulu brothers. It had been three days since our last cycad sighting. We were determined to find and photograph as many cycads as possible. After more than an hour of hiking, the four of us spotted close to one hundred *E. humilis* plants. We saw new flushes of leaves (Figure 12), coning male and female plants (Figure 13), suckering plants with up to six stems, old leaves on blackened stems, and porcupine, baboon and termite damaged plants. Some of the specimens were more than one hundred years old. Mike and Tim were pleased to show us every possible cycad that they could find. The best looking plants were nestled amongst one or more rocks with multiple stems growing in very little soil. Other species of plants that complimented the landscape were *Aloe marlothii*, cussonias and several species of Euphorbias. In one location we found two uprooted *E. humilis* stems. One stem was attempting to throw a cone although it was lying in the pathway. We replanted both cycads in hopes of them re-rooting and continuing their life cycle once again. Needless to say, the time raced along and we were heading back to the farm before I fully comprehended all of the magnificence that I had just witnessed. Back at their home, the mother and father came outside and we expressed our appreciation and handed out money, food and a few gifts. I attempted to feed the dogs a banana but they abstained from eating it. Fortunately, they loved the Trader Joe's pretzels that I had in the camera bag. Two of the dogs even stood up in an attempt to snatch a piece of pretzel. After the

last piece of food was consumed, we said goodbye and encouraged the family to cherish and protect the cycads. Our Zulu friends smiled and nodded and welcomed us back any time. Our cycad expedition on this day had indeed been a successful one.

We returned to Kaapsehoop and I took a walk along the "Wild Horses Trail". In the Kaapsehoop Mountains there are more than sixty wild horses that are allowed to run and graze freely. I saw five or more horses grazing along the trail. The fascinating multi layered rock outcroppings, stands of *Aloe arborescens* amongst the rocks as shown in Figure 14, the 3-4 meter (10-13 feet) tree ferns and heavy mist rolling in made for a captivating and thought provoking sight-seeing tour. This area was truly beautiful and I longed to return one day. That evening at dinner, I met a South African lady and expressed my appreciation for the natural beauty of the area. She spoke loudly, was intoxicated and was rather disappointed that as an American, I did not live in New York City. This was supposedly her favorite place on earth. Despite her inability to acknowledge California or any other part of the U.S. for that matter, the conversation was lively and the evening went quickly. With the activities of the day over, the 7C (45F) temperature outside, heavy rain and howling winds still did not stop this tired traveler from falling fast asleep. This had been a day of resounding brilliance and lasting images.

#### MONDAY, OCTOBER 12:

My time spent in South Africa had been less than a week. I already found this lifestyle of waking up each morning with yet another cycad species to explore, highly



Figure 12. Newly emerging leaves of an *Encephalartos humilis* in habitat.



**Figure 13.** Female cone and new leaves on a multi-stemmed *Encephalartos humilis*.

addictive. The constancy of work and daily chores were nonexistent, at least for the time being. This passage of time in my life would move swiftly and I was determined to recollect the details for years to come.

Our cycad destination for the day was Starvation Creek, habitat of *Encephalartos laevifolius* "Kaapsehoop". Douglas first needed to obtain permission to view the plants so we stopped at the Starvation Creek Forestry/Conservation Center. Apprehension was evident on

Douglas' face as he headed towards the main office. Due to decimation of the cycad habitat in that area over the years, authorities were very hesitant to approve access to a cycad enthusiast. I photographed one of the *E. laevifolius* plants outside of the office in case we saw no other cycads that day. The despondent look on Douglas' face as he returned to the vehicle, told me that viewing *E. laevifolius* in habitat was highly unlikely. The forester told him that nine cycads had been taken out the week before and there were no *E. laevifolius* plants left



**Figure 14.** Rock formation and *Aloe arborescens* along Kaapsehoop hiking trails.



**Figure 15.** Closeup of *Encephalartos laevifolius* in habitat (fossilization of crown is occurring due to buildup of pine sap).

at Starvation Creek. I found my conscience once again retreating in to deep thoughts. It was unimaginable to me that *E. laevifolius* had been growing in this region for perhaps millions of years, and I missed seeing as many as nine by only a week? This must be a cover up of information as this story was very difficult to digest. It would have been easier to hear that “No one can be trusted and thus you will not be allowed in.” At least that statement rang true in so many cases involving cycads.

As we proceeded to pack the vehicle and leave, I saw a man walking briskly towards us. It was the forester and he summoned us to follow him in our vehicle. Douglas seemed impressed and I could not believe the turn of events. We drove for fifteen minutes on a dirt road through portions of the Berlin Pine Plantation. As we continued driving, Douglas pointed out that the pines in this area had naturally reseeded. We drove off of the road a short distance, parked, and walked briefly in to the naturalized pine forest. The trees were young but were already at least seven meters tall. Within minutes, there in front of me growing was a solitary *Encephalartos laevifolius* plant with one offset (Figure 15). The plant was light starved and the leaves on the main stem were droopy. The two to three leaves on the offset appeared to be much healthier looking. The caudex was fossilizing as a result of sap dripping on to it from the pine trees. Douglas stated that this plant would die eventually as growth is hindered from the sap and lack of light. Tall pine trees totally surrounded this plant. Pine plantations in this area stretched for kilometers in all directions. The image of this cycad in such a setting was surreal. As I stood there taking in such a sad sight, a deep sense of appreciation took over me. The forester, who accompanied us, did not work for the Conservation Department. He worked in forestry and was aware of only one other person who had seen this cycad. He took great pleasure in showing this lonely relic to us. We proposed the concept of removing a small section of pines surrounding the *E. laevifolius* plant in order to give it a chance at survival. He expressed concern over exposing and bringing attention to the location. This was a dilemma with no promising solutions. The future of this cycad was in jeopardy regardless of any efforts made to save it.

Photographs and video were taken and it was time to depart. We shook hands with the forester and I thanked



**Figure 16.** Author posing with dinosaur and *Encephalartos transvenosus* at Sudwala Caves Dinosaur Park.

him profusely. The kindness shown towards us by this stranger will be etched in my memory for a lifetime.

Our final destination for the day was Kampersrus, a three-hour drive north from Kaapsehoop. With my cycad interests always in mind, Douglas took me to the Sudwala Caves, the oldest known caves in the world. These caverns lie in the Drakensberg escarpment which separates the Highveld from the lowlands of Mpumalanga.<sup>41</sup> We didn't have time to tour the caves but we did visit the Dinosaur Park down the road from the cave. Douglas had worked with the man who designed the park and crafted the dinosaurs. It had been a number of years since Douglas witnessed the unveiling of this tourist attraction to the general public. As shown in Figure 16, cycads were an integral part of the landscaping and images of a "Jurassic Park" came to mind. Any cycad enthusiast would be impressed with the beauty and diversity of cycad plantings.

We continued northward and stopped for a short time in Hoedspruit. This was one of the larger towns in the area and shopping was a necessity at one week in to the trip. The evening was spent at Kampersrus, located just north of the mountain at Mariepskop. We were now in the Northern Province and the temperature had climbed at least 10C (18F). We had been on top of this mountain in 2008 and were given the opportunity to climb down a steep grassy slope to view the location where an *Encephalartos laevifolius* "Mariepskop" with eleven stems had been thriving two years earlier (Figure 17). All that remained was a small piece of blackened stem, a few dead leaf base tissues and broken off bits of root tissue. I could dedicate several pages alone to the sad saga of the demise of this cycad, perhaps five thousand years old or more. This subject will have to be addressed at another place and time, however. My 2009 trip still had weeks to go and other species to explore. We had driven already over a thousand kilometers and my fervor for new explorations was growing with each passing day.



**Figure 17.** Painting of *Encephalartos laevifolius* 'Mariepskop' in habitat (courtesy of Chantal Hickman).

## TUESDAY, OCTOBER 13:

As described by Douglas months earlier, today was a "big ticket" day not only because of the species that we were going to view, and by the sheer fact that without months of planning and work, visiting *Encephalartos dyerianus* in habitat would be out of the question. Douglas spent more than three months, via letters and phone calls, securing us an appointment with a Nature Conservation officer to photograph *E. dyerianus* in the Lillie Flora Nature Reserve. Douglas was deeply involved with the formal description (co-authored with John Lavranos) and naming of *E. dyerianus*. Despite resistance by fellow cycad botanists, they were able to formally name this species after Robert Allen Dyer, a South African botanist and taxonomist. In the late 1950s and 60s, Dyer was instrumental in escalating awareness of the wealth of botanical diversity of the *Encephalartos* species in South Africa. Naming this divine cycad species after him constituted a formal postmortem tribute to a man who had made numerous contributions in the field of botany.

On this bright and hot Tuesday morning, we waited at the wrong gate outside of the Seletti Game Reserve for fifteen minutes or more. Fortunately, we found our way and met William, a twenty-year veteran of the Nature Conservation Department a few minutes after 10 am. He was reserved and quiet but visited in Afrikaans with Douglas as we traversed the steep terrain of the Nature Reserve. I stood in the bed of the four-wheel drive Toyota and was amazed at what sliding, rocky slopes this vehicle could conquer. It took us at least twenty minutes to reach the base of *Encephalartos dyerianus* habitat. The entire reserve is ten hectares (25 acres) in area and is totally fenced in. We hiked the final quarter mile to a flat open area. Here before us was the command center and living headquarters of those who patrolled this cycad reserve twenty-four hours a day. Four to five tents (Figure 18) were set up and the smell of drying meat permeated the air. It is a rugged existence with water, food and supplies having to be brought in long distances via vehicles and by foot. Five Nature Conservation employees are on patrol here for seven days. Another group of officers patrol the following week. Employment is cyclic here and no officer spends more than two weeks a month on top of the hill. Not a single cycad had been seen up to this point, and yet I was already extremely impressed.

We were asked to sign a Nature Conservation registry underneath the shade of the tent overhang. It was close to 11 am and we were already feeling the effects of the dry, hot air. Temperatures would reach at least 38C (100F) today and water was a necessity for all that chose to hike. One of the guards informed me that I was the first American to sign their log and to officially register at the Lillie Reserve. Needless to say, this affected me greatly and enhanced my desire to share these experiences with cycad enthusiasts all over the world. Visitors to this protected and remote location are quite limited in number. This golden opportunity



**Figure 18.** Illustration of camp on top of hill where *Encephalartos dyerianus* grows (Lillie Flora Nature Reserve).

was soon to be eternalized through breathtaking photos, video recordings and words jotted down in my journal.

Douglas and I were summoned to proceed on the *Encephalartos dyerianus* tour with William and surprisingly enough, four of the Nature Conservation guards as shown in Figure 19. The woman who stayed behind was the “mama” of the camp and took care of all domestic chores. She never patrolled the reserve. One of the guards was armed with an AR-16 automatic rifle. It was fully loaded and was carried on patrol at all times. Perhaps due to being a bit nervous in proximity of such a powerful weapon, I joked with the guard about the odds of an accidental shooting occurring. Fortunately, he understood very little English and could dismiss the

idiocy of the blonde joker at the back of the pack. My laugh and excited comments did capture the attention of Elvis, our animated English-speaking guide, however. As we walked amongst majestic *E. dyerianus* plants, Elvis asked about life in America, Obama as president, and relayed vivid details of life in Johannesburg, especially with regard to the heinous crimes that occur there. I enjoyed his company immensely despite my strong desire to spend several minutes admiring the details of every cycad that we came across. The plants with procumbent stems growing out between large granite outcroppings were especially impressive (Figure 20). Some of the taller specimens were 3-4 meters (10-13 feet) tall and all but a few were thriving in these dry, searing conditions. Rainfall had been scarce in the Lowveld and the plants



**Figure 19.** True protectors of *Encephalartos dyerianus* in habitat.



**Figure 20.** A procumbent stem growing out between large granite outcrops.

were growing under drought conditions. Suckering was common amongst the mature plants but we saw no evidence of coning. Several of the guards did comment that they had seen cones in the past and an abundance of seed from time to time. We encouraged the group to collect the seed and grow them as part of a Nature Conservation project. The opportunity to raise money, with such a wealth of endangered seedlings, seemed appropriate for their organization. Unfortunately, interest was low in taking on such an endeavor.

Time passed quickly as we chatted, and took in the magnificence of the region (Figure 21). White markers had been placed in the holes where *Encephalartos dyerianus* plants had been removed by poachers in the past. This allowed the guards to take inventory of the cycads remaining in habitat. The current calculation of *E. dyerianus* in habitat was 136 plants. I was informed that not all offsets or reestablishing plants were counted. New growth was emerging in several of the marked holes where removal of the stem had not been complete. The tenacity to survive under the harshest of conditions is evident in so many of the *Encephalartos* species.

As we neared the end of this incredible tour, we stood atop a large granite boulder overlooking the expansive Lowveld below. Douglas gained the attention of all of the guards by comparing a garden grown cycad to Elvis' stomach. Smiles and laughter were shared amongst the entire group as they made the correlation between his round belly bulge and the fattening of an over fertilized and over watered mature cycad. Despite few words being spoken, a moment of vivid imagery was shared by all of us.

We said goodbye to the ladies at the campsite and proceeded back down the steep rocks with the four male guards and William. We had promised them chocolates, bananas and *Encephalartos hirsutus* prints, gifts they were anxious to receive. They also needed to retrieve

water and supplies down below at the pump site. While standing in the bed of the truck with the four guards, I couldn't keep my eyes off of the AR-16 rifle pointed right at my feet. The terrain was extremely bumpy, we were all shifting from side to side, and I appeared to be the only one transfixed on that weapon. My uneasiness was also amplified by the fact that the guards' first shots at a poacher were always to be directed at the feet and lower extremities. Fortunately, no weapons were discharged and we arrived safely at the truck. All of the men deeply appreciated our gifts and food. They understood the impact that the past two hours had made on Douglas



**Figure 21.** Author sitting beside a majestic *Encephalartos dyerianus* plant.

and I. They encouraged us to bring more visitors in the future. William escorted us to the gate and we thanked him profusely. He had given us the opportunity to fulfill my desire to visit this elusive cycad habitat. This expedition far surpassed any of my expectations.

As we drove west to the farm at Letsitele, I couldn't help but ponder the future of this species in habitat. How long would government funding continue for such an expensive Nature Conservation project? As budgets tighten, what priority will preserving these cycads be given? As soon as the guards disappear, so will the cycads. It appeared to me to be an unsustainable operation over the long term. Silently, I chastised myself over my negativity. The day had been perfect and I was already lamenting about the future of the plants that I had just seen. Douglas reassured me that protection of the Lillie Flora Nature Reserve was of utmost priority to Nature Conservation. This was evident by the professionalism of those we dealt with. I put my doubts to rest for the evening and enjoyed the tranquility and beauty of my surroundings. Elizabeth and those who had met me the year before, welcomed me with open arms. These people and other South Africans whom I was still destined to encounter, would always be held in highest regard. I will always be the privileged one to have been given the opportunity to meet such fine people.

### WEDNESDAY, OCTOBER 14:

We had spent only two days in the Northern Province and it was time to head south once again. The goal for the day was to drive from Letsitele to Durban, a distance of 920 km (572 miles). As we viewed the northernmost cliffs of the Drakensberg Mountains (Figure 22) for the last time on this trip, I noticed wide bands of white bird guano along several of the cliff faces. Douglas pointed out that vultures had colonized along these precipices. The meaning of the dutch word 'Drakensberg' is "mountains of the dragon". The mountain range was

formed by erosion of Southern Africa's central plateau. The upper reaches are remains of lava flows that some believe originated from the most violent volcanic eruption in the Earth's history. This eruption occurred during the time of the breakup of Gondwanaland about 220 million years ago. The Northern Drakensberg is the highest part and possibly the most impressive of the Drakensberg mountain range rising to over 3,000 meters (9843 feet). These mountains were termed uKhahlamba, or 'Barrier of Spears', by the Zulu people. This is in reference to the semi-circular border between KwaZulu-Natal and the inland mountain kingdom of Lesotho that these breathtaking mountains create. The basalt peaks divide the rains and snows over an expansive area. Some of the water flows westwards over the alpine plateau of Lesotho towards the Atlantic Ocean, and some flows down the vertical slopes into KwaZulu-Natal, towards the warm Indian Ocean. The Northern Drakensberg is the source of the Tugela River, the largest river in the Province. Tugela Falls, the second highest waterfall in the world, plunges 950 meters (3117 feet) over the edge of the Mont-aux-Sources Plateau.<sup>32</sup> Given several more weeks to travel, I could easily see myself hiking all along the Drakensberg Mountains. The exhilaration and beauty of the region must be breathtaking.

For the first time in more than a week, there were no cycad tours for the day. As the miles ticked away and the landscape changed throughout the day, I still found myself pondering over the species that I could have seen given an abundance of time. The Northern Province is (or was) home to some of the rarest *Encephalartos* species on earth. *Encephalartos nubimontanus*, extensive in form and range, is one species that can no longer be viewed in habitat. As shown in Figure 23, we toured the habitat of *E. transvenosus* at the Modjadji Nature Reserve in 2008 and these cycads were a vision of splendor. *Encephalartos* species that can still be potentially seen in habitat in the Northern Province are *E. "Soutpansberg" transvenosus*, *E. hirsutus*, *E. inopinus*, *E. dolomiticus*, *E. cupidus* and



Figure 22. Northern extent of Drakensberg Mountains (Limpopo Province).



**Figure 23.** Towering *Encephalartos transvenosus* plants at Modjadji Cycad Reserve.

*E. laevifolius* 'Mariëpskop'. Access to these habitats is now rather difficult and would take a great deal of effort to see. With determination, however, I would like to return to South Africa and explore these localities further. As I noted earlier in my writings, "time is of the essence" for most *Encephalartos* species in habitat. In twenty years or less, very few plants, including many of the more abundant species, will be left standing in their native setting. Mature cycads will have to be visited in botanic or private gardens. This reality is one that must be grappled with by cycad conservationists each and every day. Time is ticking and the millions of years that cycads existed on earth as part of a natural evolutionary plan, is coming to an end. This is the unending and depressing side of cycads that I never can escape from.

The long drive south to Durban was lengthened due to a recommended detour around the town of Belfast. Apparently, residents of the area were unhappy with the local government and rioting and unrest had ensued. Vehicles driving through the area were being pummeled with bricks and rocks. Douglas and I thought it best to avoid unnecessary violence and destruction to his truck. There was still so much to see and miles to be driven. We didn't want all of that to end in Belfast.

We finally arrived in Durban twelve hours later. We caught up to the rain and cold the further south we traveled. Temperatures in Durban, in October, are

typically mild and warm. October 2009 was one of the coldest spring months that the city had encountered in years. Sweaters and coats were necessary every evening that we were there. Once adjusted to the 15C (27F) difference from the night before, I settled down to a deep and restful sleep.

#### THURSDAY, OCTOBER 15:

Having finally adjusted to the time difference, I still found myself arising very early each morning. Sleep became secondary in importance as I anticipated the excitement of discovering and learning something new each day. Port Edward, a small resort town situated on the south coast of KwaZulu-Natal and located near the Eastern Cape Province border, was our destination for the day. We left Hillcrest, a suburb of Durban, by late morning.

Coastlines and their corresponding communities have fascinated me since I was six years old. Swimming in either a swimming pool, oceans or lakes have always been an important part of my life. When I see an expanse of water, I want to swim in it. The roaring coastline at Margate, the most popular resort area along the East Coast of South Africa, was no exception (Figure 24). The Indian Ocean along this southeastern section of the South African coast, is referred to as the "Wild Coast" due to the untamable waves, strong currents, windswept cliffs and deserted white beaches. The Wild Coast is one of South Africa's most remote stretches of shoreline. It extends from East London in the Eastern Cape all the way north to Port Edward. As I stared dreamily at the roaring waves, Douglas reminded me of the sharks, the riptides and underwater rocks that even a seasoned swimmer may be unable to negotiate. Needless to say, I left Margate with only slightly moistened toes.

As we headed southward, I inquired as to how far we were from the lowland dwarf form of *Encephalartos ghellinckii*. This is the form that is most often seen in U.S. gardens. The robust montane form is not commonly seen outside of habitat as it occurs at altitudes between 1,100 (3609 feet) and 1,800 meters (5906 feet) in the KwaZulu-Natal Drakensberg. The lowland form occurs at lower altitudes in the foothills of the Drakensberg and can be found in the vicinity of the Umkomaas River. This form has a wide distribution, growing as far south as the KwaZulu-Natal border and in the north of the Eastern Cape. The significant distinction between the two forms is that the montane form produces copious amounts of golden-brown wool at coning and when new leaves occur. In contrast, the lowland form crown produces compact gray bracts that are covered by soft, fine hairs. The lowland form cones tend to be smaller in all respects. The leaves of the montane form are compact and tidy with revolute margins while the lowland leaves have an open, untidy appearance with a slight twisting towards the apex of the leaf. The lowland form of *E. ghellinckii* overlaps in habitat with the most southerly form of *E. natalensis* "Bizana" and *Stangeria eriopus*.<sup>18</sup>



**Figure 24.** The roaring coastline at Margate (Indian Ocean).

By late afternoon, we arrived at a resort in Port Edward where the Trollip Family was staying. This trip was a carefully planned surprise and as a result, they were truly shocked to see me. Steve insisted on driving us around Port Edward. He drove us across the bridge that crosses the Umtamvuna River. He and Douglas pointed out that the north end of the bridge is in the KwaZulu-Natal Province and the south end of the bridge is in the Eastern Cape (Transkei) Province. This was significant as back in the mid 1970s through the late 1980s, trading of cycads such as dug up *Encephalartos natalensis* and lowland *E. ghellinckii*, was routinely done at the south end of the bridge. Arrests by Nature Conservation could be made for either selling or buying poached cycads in the KwaZulu-Natal Province, however, their jurisdiction did not extend in to the Eastern Cape Province. As a result, cycad dealings went on for years just south of the Umtamvuna River.

We enjoyed a delicious dinner and engaging conversations with the Trollips in to the evening. The B & B in Port Edward was an incredible bargain as there were four bedrooms to choose from for only 150 Rand per person. Late in to the evening, a spectacular electric storm lit up the dark and rainy sky. Thoughts of “Nature at its best” ran through my head, as I slowly drifted off to sleep.

### **FRIDAY, OCTOBER 16:**

The rain tapered off by early morning and a few of us took a lovely boardwalk excursion down to the Indian Ocean. The sky was still overcast and the waves were rougher and more turbulent than the day before. I photographed the infamous Umtamvuna River Bridge as the view was spectacular from my perspective. At a distance of 10 km (6 miles) west from where I was standing, began the west boundary of the Umtamvuna Nature Reserve, famous for its magnificent views of the deep Umtamvuna River Gorge. This reserve is known for rare and endemic trees and plant species as well as a colony of the endangered Cape Vulture.<sup>5</sup> Back in

the 1960s, the Umtamvuna River Gorge was home to 30-40 *Encephalartos laevifolius* “Umtamvuna” plants. As the plants were discovered and described, increasing numbers of cycads disappeared from this region. The age of some of these plants was touted to be 2,000 years or older. Leaf and cone characteristics are nearly identical to the “Tugela Ferry” form of *E. laevifolius*. The leaves are light green in coloration and are long and feathery. An outpost of Nature Conservation resided on a plateau at the top of the gorge. Due to increasing pressures to protect the remaining cycads in the gorge, a decision was made in 1989 to remove the remaining two clumps with three to four stems each from the gorge. These ancient plants were taken by helicopter to the top of the gorge, a distance of 1 km (0.6 mile). The cycads were planted on top of the plateau and were constantly subjected to 25-30 mph hot and dry westerly winds. Within 6-10 months, they all perished. If they had been planted behind rock outcroppings located not too far from the outpost, the cycads would have at least been protected from the prevailing winds. Here was just one more tragic cycad story that I had to ponder over as we headed due north to the Oribi Gorge Nature Reserve.

Douglas and I soon found ourselves detouring northwest as the Trollips wanted us to examine and photograph twelve *Encephalartos natalensis* ‘Oribi Gorge’ plants. These cycads, between two and three meters (seven to 10 feet) tall, were located on a farm that was being expropriated. The farmer and his family were being forced to sell the farm to the government and he believed that the cycads would not be cared for under the new owners. These plants had been removed from habitat thirty to forty years ago and were thriving on his property. Speaking to the farmer’s wife about the unfortunate turn of events in their lives, found me questioning the reasons and frequency in which land repossessions were occurring throughout South Africa. Our brief conversation led me to believe that reclamation of private land owned by white farmers was on the rise and as a result, so was the disruption of more lives and livelihoods.

Steve took us to lunch at the Lake Eland Game Reserve. The restaurant offered a hamburger with a 3/4 lb beef patty topped with a fried egg and cheese. Douglas and I remarked at the prospect of some patrons ending up in “cholesterol heaven”. No one in the present company seemed amused. At times, it is best to keep certain comments to oneself, I suppose.

By mid afternoon it was time to depart from the Trollips. Douglas had prearranged this weekend with Andre and Nellie, private owners of at least 50% of Oribi Gorge Nature Reserve. KwaZulu-Natal Parks Board owns the majority of the remaining land within the reserve including the main road and a myriad of hiking trails that can be traversed within and along the gorge. Carved out by the Umzimkulwana River, high sandstone cliffs dominate this 24 km (15 mile) long gorge (Figure 25). The deepest point of the gorge is over 400 meters (1312 feet). The reserve encompasses forests, rivers, rapids and ravines. A wide variety of birdlife including five species of kingfisher and seven species of eagle inhabit the reserve as well as leopards, troops of baboons and various small antelope.<sup>30</sup> Three species of cycads, *Encephalartos natalensis* ‘Oribi Gorge’, *E. villosus* and *Stangeria eriopus* exist in habitat within the reserve. Despite the increasingly hostile and dreary weather, the next two days were destined to be an unforgettable weekend.

We shared Friday evening with Andre and Nellie in their beautiful home situated on top of a rock overlooking the gorge. They are both originally from Belgium, having immigrated to South Africa more than forty years ago. Largely successful in their shoe molding enterprise, they began purchasing private land within the gorge fifteen years ago. They consider the gorge “their sanctuary” and the beauty of the region offers them vitality and an escape from the stresses of every day life. Andre told me repeatedly that he is the “keeper of the cycads” and as long as he is part owner of the gorge, no one will remove cycads from his property. One only had to spend a few minutes with Andre to realize that conservation

of these plant treasures within the gorge, would always be a top priority for him. As I started to wind down for the evening, I found these thoughts and the warmth of kindness exhibited by our hosts, gave me a deep sense of comfort and reassurance.

#### SATURDAY, OCTOBER 17:

It rained on and off throughout the night and into the morning. As it turned out, the soaked, muddy dirt roads played a big part in determining the course of events for this day. Andre informed us that the viewing of cycads within the gorge would have to be delayed until the weather improved. After a light breakfast, Nellie drove us in their exposed cab four-wheel drive vehicle to a Bushman’s Cave located on their property. The protection offered by the large cave as well as an abundance of fresh water, was strong evidence that this shelter had been inhabited long ago. Unfortunately, all petroglyphs had been removed from the cave more than fifteen years ago. Andre was convinced that the petroglyphs had been removed for museum display purposes as the rock had been drilled into and sections of rock had been cleanly removed. It was disheartening to see the desecration of this historically significant site.

Nellie drove us along the top of the gorge for several kilometers until we reached an overlook that looked down on to the KwaZulu-Natal Parks Board portion of the gorge. As the vehicle started to slow, I spotted two cycads planted on either side of a gravestone. My curiosity had piqued as we proceeded to walk towards the plants. Lo and behold, there on top of Oribi Gorge in South Africa were two carefully placed *Cycas revoluta* plants! The woman buried there had been a previous property owner as well as an avid cycad enthusiast. She had shared a deep appreciation for the species of cycads that existed in the gorge. Her relatives that buried her, however, only knew that she loved cycads. They were unaware of her favored species, or genus for that matter, so they purchased whatever cycads they could find and planted



Figure 25. View overlooking a mist enshrouded Oribi Gorge Nature Reserve.



**Figure 26.** *Encephalartos natalensis* 'Oribi Gorge' at "Cycad School".

them next to her. I smiled at the thought and commented on how healthy the cycads looked. Leave it to the tried and true *Cycas revoluta*, no matter what continent it is growing on, it is one beautiful looking cycad.

We returned to the house for a few hours. I relished at the prospect of warming up as I had become rather chilled while riding in the exposed cab. Warm coffee and a delicious lunch brought warmth to my extremities and prompted a resurgence of energy. For over an hour I walked along the edge of the gorge taking in the breathtaking views. Sunlight peering through the dark clouds created a splendiferous background as the gorge, shrouded in mist, disappeared beyond the sandstone cliffs. These were the moments in my life that I would reminisce about and cherish for my lifetime.

As a person expands one's horizons and meets more people, the more interesting life becomes. With less than two weeks in to this trip, I had already met several individuals who had made cycad conservation, primarily by preserving their habitat, a major priority in their life. I hold the deepest regard for these individuals. It is not always easy to make the right decision by doing whatever is necessary to protect the remaining cycads in habitat. Their unending dedication to this cause must never be forgotten.

The differences that one shares with others can make for unexpected adventures as well. Hunting is an extremely popular sport in South Africa. The love of this sport is shared by a number of locals and foreigners who travel thousands of miles to hunt a wild animal. This was one subject that I strongly contested and discussions went only so far regarding it. Another differing mindset was the concept that a four-wheel drive vehicle can be taken anywhere you want it to go. When possible, I have always prided myself by walking or hiking to a

destination, not driving to it. I also do not own a four-wheel drive vehicle so I truly do not know their capabilities or limitations. This Saturday afternoon, 20 km (12 miles) in to the gorge, we learned the limitation of these vehicles.

Andre announced in the early afternoon that it was time to see *Encephalartos natalensis* 'Oribi Gorge' in habitat. Nellie was going to drive the enclosed cab Range Rover as it would protect us from the cold, damp air. The drive was slow and treacherous due to the slippery roads and deep mud pockets. We also had to stop and open/close four different gates that were used to contain the wild animals within the gorge. Along the way, we picked up three of their workers. Andre wanted them to continue clearing brush away from the *E. natalensis* plants. We approached a steep stretch of downhill and I encouraged Nellie to park the vehicle and we could then walk the rest of the way. Arguing ensued amongst the owners and before we could comprehend what was happening, the vehicle had slid off the road into a muddy ditch. The road was so steep and slippery that it was difficult to traverse by foot. Douglas and I stumbled our way to a flat spot in the road. We looked back up at the abandoned Range Rover. It would take days of dry weather for that vehicle to regain enough traction such that it could be safely returned to flat ground. Resigned in thought that it was going to be a long evening, we proceeded further in to the gorge. We both chuckled at the thought that "as long as there is a cycad at the destination, the rest of the journey can be negotiated later".

The seven of us traversed a narrow river way and headed up toward the thicket of forest where the cycads grew. Having taken off my shoes prior to walking through the water, my progress was especially slow. Douglas had referred to me several times as "the bush woman in pink", but when it came to my bare feet, tender and



**Figure 27.** Female cone of *Encephalartos natalensis* 'Oribi Gorge'.

pampered came to mind. Fortunately, the thrill of seeing *Encephalartos natalensis* 'Oribi Gorge' growing amongst the bushes erased most of the pain away (Figure 26). We witnessed coning male and female plants (Figure 27), stems 2-3 meters (7-10 feet) tall and characteristic medium to dark green leaves with 2-3 teeth on both margins. Douglas estimated that there are between 400 and 800 *E. natalensis* plants growing in the gorge. In this area designated the "cycad school", I encountered 15 *E. natalensis* plants. Given more time to explore the area, we could have photographed 50-60 cycads. Unfortunately, we still had to confront that nagging issue of how to get back out of the gorge.

The climb back up the mucky steep road was treacherous and tiring. It was now 4:30 in the afternoon and the light of day was fading fast. The clouds were darkening and rain appeared to be in our midst. Andre and Nellie, both in their mid seventies, had passed Douglas and I twenty minutes earlier. They summoned us up the trail a bit further. There in front of me, stood the largest tractor that I had ever seen. The tire height was at least 2 meters (7 feet) tall! Andre explained the vehicle situation, the tractor option being the only feasible one. All seven of us would have our positions on the tractor with Andre being the designated driver. Andre directed Nellie and I to the "ladies seats", a small steel platform on either side of the driver. I was positioned close to the floor pedals and a piece of heat resistant glass protected me from the heat of the engine. Douglas climbed on top of the front bucket as did the husband and wife duo, employees of Andre. The third employee sat on a steel bar that was being towed by the tractor. I recalled mumbling a few words when the driver announced that it was "time to

head back to the barn." The only problem was that "the barn" was 20 km (12 miles) away.

Within fifteen minutes of the tractor ride, my mood was already darkening. In the beginning of the trip, Douglas looked back from his bucket seat from time to time with a reassuring smile. Thirty minutes in to the trip he stopped looking back altogether, a result I'm sure, of the grim expression on my face. My dour mood only worsened as tree and bush branches smacked me in the face and body, the rain and wind began to intensify and the air temperature continued to drop. The two shirts and sweater that I was wearing were soaked before we reached the second gate. Nellie was the gatekeeper and she smiled at me every time she walked past me to open the gate. She commented that I looked "cold and wet" but her demeanor was as pleasant as can be. She had even given Andre her sweater to keep him warm while he was driving. "What is wrong with me?" I kept thinking to myself. Here I am thirty years younger, fit and strong (supposedly) and all I could focus on was how miserable I was. Feelings of distress intensified as we made it on to the tar road. Sitting in the "ladies seat" gave me the added pleasure of extra doses of moisture as the massive tractor tires splashed up water from the road. Bone chilling cold ran through my body as the speed of the tractor accelerated. Each kilometer seemed to last an eternity.

Intense physical stress coupled with the resulting mental torture, has fascinated me ever since I ran my first marathon in 1994. As feelings of fatigue and stress set in, the mind runs rampant in thoughts. Although this tractor adventure was not physically demanding, the lowering of body temperature was leading me to thoughts of desperation. Assuming I fell off the tractor, my primary concern revolved around steering clear of the massive tires. I conjured up scenarios of how best to jump away from the vehicle to avoid being crushed. Later in the ride, I began to hypothesize as to whether a tire that size would even crush me or would just roll over me. As visibility worsened, Andre had Douglas and the couple lay inside the bucket and it was lowered below the height of the headlights. I soon found myself resenting the "bucket crowd" as I was convinced that collective body heat was keeping all of them warm. Sugar cane whipping them in the face and the bucket repeatedly bouncing on the hard dirt road could not pacify my animosity.

Two hours later, my hands frozen in position around the steel bar, we parked the tractor and the torture had ended. A long, hot and steamy shower slowly brought me back to life. During my long process of recovery, Nellie had prepared a nice dinner and warm beverages for all of us. The words "a strong constitution" kept running through my head as I tried to compare how I dealt with the evening's turn of events and Nellie's response to it. Andre admitted that he was rather concerned over my well being as I didn't smile once on the tractor seat. Amusement and relief filled my thoughts as I settled in to a warm bed at last.

Continued in ENCEPHALARTOS 131



# CYCAD SOCIETY OF SOUTH AFRICA

www.cycadsociety.org

## MEMBERSHIP FORM 2018

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 2018\*

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 2018:

Local members (residents of South Africa)	R 285			
Southern African members (Namibia, Swaziland, Zimbabwe, etc.) <i>Air mail delivery</i>	R 400	Southern African members (Namibia, Swaziland, Zimbabwe, etc.) <i>Surface mail delivery</i>	R 370	Foreign members <i>Air mail delivery</i>
				R 440 US\$ 60 AU\$ 62 € 44 £ 38
				Foreign members <i>Surface mail delivery</i>
				R 395 US\$ 55 AU\$ 55 € 42 £ 34

- **South African members** must send their dues together with this form to **Frikkie Conradie**, 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 dollar** respectively, together with this form, to the appropriate address listed below. (**American members** to **Willie Tang**; or **Australian members** to **Bret Dalziel**). Members wanting to pay using Paypal must contact the Secretary-treasurer by e-mail.

The appropriate addresses are:

- **Frikkie Conradie** : Van Riebeeck Street 14, Protea Hights, Brackenfell 7560, South Africa.
- **Bret Dalziel** : Tel: 0400 865 731 or e-mail: [gooroyboy@westnet.com.au](mailto:gooroyboy@westnet.com.au)
- **Willie Tang** : 13320 SW 28 St., Davie, Florida 33330, U.S.A.

Payments in South African Rand can be made at:

Bank	Standard Bank	Branch	Montana	Branch code	01-59-45	Account number	011943300
SWIFT	SBZAJJ						

**NB: Reference of payment:** Name of member and membership number. **Proof of payment must be sent to:**  
e-mail: [cycad@cycadsociety.org](mailto:cycad@cycadsociety.org) (Fax No 086 218 6565).

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



# BROODBOOM VERENIGING VAN SUID-AFRIKA

www.cycadsociety.org

## LIDMAATSKAPVORM 2018

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 gereëldde 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 2018\***

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

- Broodboomvereniging Navorsingsfonds
- Algemene donasie

**Totaal (Ledegeld en donasies ingesluit)**

JA	NEE
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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 2018

Plaaslike lede (inwoners van Suid-Afrika)	R 285			
Suid-Afrika lede (Namibië, Swaziland, Zimbabwe, ens) Lugposaflewering	R 400	Suid-Afrika lede (Namibië, Swaziland, Zimbabwe, ens) Landposversending	R 370	Oorsese lede Lugposaflewering
				R 440 US\$ 60 AU\$ 62 € 44 £ 38
				Oorsese lede Landposversending
				R 395 US\$ 55 AU\$ 55 € 42 £ 34

Lede ontvang 'n kwartaalike kopie van die vereniging se tydskrif *ENCEPHALARTOS*. Plaaslike lede moet hulle ledegeld en die voltooide vorm stuur aan Frikkie Conradie en alle tjeks of poswissels moet uitgemaak word aan die "Broodboomvereniging van Suid-Afrika". Waar moontlik moet plaaslike lede verkieslik betaling per "EFT" maak.

Frikkie Conradie, Van Riebeeckstraat 14, Protea Hoogte, Brackenfell 7650, Suid-Afrika.

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

Bank	Standard Bank	Tak	Montana	Takkode	01-59-45	Rekeningnommer	011943300
SWIFT	SBZAJJ						

NB: Betalingverwysing: Lidnaam en lidnommer.

Bewys van betaling asook aansoekvorms moet gestuur word aan:

e-pos: [cycad@cycadsociety.org](mailto:cycad@cycadsociety.org) (Faks Nr. 086 218 6565).

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

## 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.

**Nota:** 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.

