Journal of the Cycad Society of South Africa

ENCEPHALARTOS

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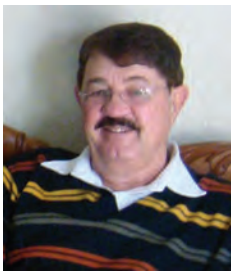
11th International Conference on Cycad Biology

CYCAD SOCIETY OF SOUTH AFRICA
BROODBOOM VERENIGING VAN SUID-AFRIKA

www.cycadsociety.org Contact: cycad@cycadsociety.org

COUNCIL MEMBERS / RAADSLEDE



President
John Kloppers
Cell/Sel:
+27 83 701 3482
E-mail/E-pos: cycad@mweb.co.za

Secretary-treasurer/Sekretaris-tesourier
Frikkie Conradie
Tel: +27 21 981 2628
E-mail/E-pos:
cycad@cycadsociety.org

Editor of ENCEPHALARTOS/
Redakteur van
ENCEPHALARTOS
Wynand van Eeden
E-mail/E-pos: wynand@ananzi.co.za

Webmaster / Webmeester
Pierre Van Heerden
E-mail/E-pos: pvh.lounge@gmail.com

Back copies officer/
Beampte vir vorige uitgawes
Ian Bassingthwaighte
Tel: +27 12 548 1152
E-mail/E-pos: ibass@lantic.net

Media Liaison Officer/ Skakelbeampte
Japie Steenkamp
Cell/Sel: +27 82 895 0233
E-mail/Epos: japie@mitacopy.co.za

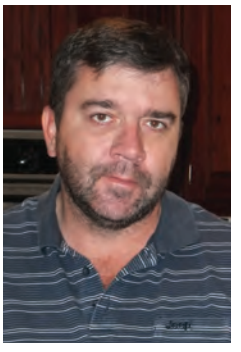
REGIONAL BRANCH REPRESENTATIVES/STREEKTAKVERTEENWOORDIGERS

Western Cape/
Wes-Kaap
Johan Kotze
Cell/Sel:
+27 84 627 9645
E-mail/E-pos:
johankotze2305@gmail.
com

Mpumalanga
Edward Berry
Cell/Sel:
+27 84 770 7486
(after hours)
E-mail/E-pos:
dr@drberry.co.za/
admin@drberry.co.za

KwaZulu-Natal
Paul Mostert
Cell/Sel:
+27 83 233 5045
E-mail/E-pos:
mpaul@telkomsa.net

Central/Sentraal
Tilania du Preez
Cell/Sel:
+27 79 480 4416
E-mail/E-pos:
tilania1@gmail.com



Limpopo
Piet de Bruyn
Cell/Sel:
+27 83 447 5979
E-mail/E-pos:
iti30622@mweb.co.za

Eastern Cape/Oos-Kaap
Vakant / Vacant

INTERNATIONAL CORRESPONDENTS/BUITELANDSE SKAKELBEAMPTES

Australia
Bret Dalziel
Tel: 0400 865 731
E-mail/E-pos: cooroyboy@westnet.com.au

USA and Canada
Willie Tang
E-mail/E-pos: wlmtang@bellsouth.net

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FROM THE COUNCIL / VAN DIE RAAD

VAN DIE PRESIDENT / FROM THE PRESIDENT

It is predicted that in the near future there will not be any more cycads found in habitat. Therefore, it is a shame that collectors do not use their discretion when cross pollenating species as this practise decreases the chance of the continued survival.

Species are mainly identified by the form and colour of the relative cones, both male and female. The tendency of collectors has shifted to the numerous leaf forms found in different localities, but of the same species as it is becoming both increasingly difficult and expensive to obtain pure forms of certain cultivated species. In most South African species different localities of the same species show different leaf forms. The species with the greatest number of leaf forms is *E natalensis.* It will therefore be in collector's best interests to preserve the different localities' leaf forms. Seedlings of cultivated plants from the various localities achieve higher prices than those of hybrids. To give an example, an *E natalensis* from the Jolivet locality will sell at a higher price than the same species but of an unknown locality.

The Cycad Society of South Africa has the honour to organise the 11th International Conference on Cycad Biology, CYCAD 2018. It is progressing well and will take place from the 19th to 24th August, 2018 in White River. The venue will be the Ingwenyama Lodge, Conference and Sports Centre. The website http://www.cycad2018.org has been registered and will soon be online for members and academics to register for the conference and make their payments. Costs of attendance will be stated on the website. The Chairman and organiser of the conference is our Editor, Wynand van Eeden whose email address is wynand@ananzi.co.za. Attendees will have to arrange their own accommodation at Ingwenyama Lodge, Tel (+27) 013 750 7000 or email reservations1@ingwenyama.co.za. When making bookings, mention that you are attending Cycad 2018.

Members who still have not paid membership fees must please do so as soon as possible. Hosting CYCAD 2018 is putting strain on the Society's finances and cash flow situation, although it will not make a loss for us.

Cycad Greetings
John Kloppers
President – Cycad Society of South Africa.

Dit so jammer dat versamelaars kruisbestuiwing tussen spesies maak, sonder om diskresie te gebruik. Die plante in die natuur bestaan omtrent nie meer nie. Dit word voorspel dat daar in die nabye toekoms geen broodbome sal oor wees in die natuur om suiwer spesie bestuiwing te verseker nie. Dit is dus van uiterse belang dat lede sorg dat hulle bestuiwing so vêr moontlik suiwer hou tussen spesies.

Die uitkenning van spesies word hoofsaaklik gedoen deur die vorm en kleur van manlik en vroulike keëls. Die tendens onder versamelaars, het verskuif na verskillende lokaliteite blaarvorms in dieselfde spesies, juis omdat suiwer geteelde plant van sekere spesies uiter skaars geword het. Daar is onder die meeste van die Suid-Afrikaanse spesies verskillende lokaliteite blaarvorms. Die spesies met die meeste blaarvorms is *E. natalensis*. Dit sal dus tot versamelaars se eie voordeel wees om bestuiwing suiwer te hou tussen lokaliteite blaarvorms. Saailinge van suiwer bestuifde lokaliteit spesies, haal heelwat hoër pryse as die van gewone spesies. Om 'n voorbeeld te noem; 'n *E. natalensis*, lokaliteit Jolivet, sal byvoordeel teen 'n baie hoër prys verkoop as 'n gewone *E. natalensis* van 'n onbekende lokaliteit.

Vordering met die organisasie van die 11de Internasionale Konferensie oor Broodboom Biologie vorder fluks. Dit word deur die Broodboomvereniging van Suid-Afrika aangebied van 19 tot 24 Augustus 2018 in Witrivier by die Inwenyama Lodge, Konferensie en Sport fasiliteit. Die webwerf https://www.cycad2018.org wat spesiaal daarvoor geregistreer word, sal eersdaags beskikbaar wees vir lede en akademici om daarop te registreer en ook die nodige betalings te maak. Pryse om by te woon sal ook daarop beskikbaar wees. Die Voorsitter en organiseerder van die konferensie is ons Redakteur van ENCEPHALAROTS, Wynand van Eeden. Kontak hom vir besonderhede by wynand@ananzi.co.za Verblyf moet self gereël word met Ingewenyama Lodge, foon 013 750 7000 of epos reservations1@ingweyama.co.za Meld asseblief dat jy CYCAD 2018 wil bywoon as jy die bespreking maak.

Lede wat nog nie ledegeld betaal het nie word versoek om so gou moontlik te betaal. Reëlings vir CYCAD 2018 plaas baie druk op ons finansies en kontantvloei al maak ons nie 'n verklies met die aanbied van die konferensie nie.

Broodboom groete
John Kloppers
President – Broodboom Vereniging van Suid-Afrika

NUWE SENTRAALTAK BESTUUR

1.	Voorsitter:	Tilania du Preez – tilania1@gmail.com • 079 480 4416
2.	Onder-voorsitter:	Christo Page – twopages@wol.co.za • 082 566 4563
3.	Tak sekretaris:	Gerhard van Deventer – gerhard.van.deventer@gmail.com • 083 377 5035
4.	Tesourier:	John Kloppers – cycad@mweb.co.za • 083 701 3482
5.	Addisionele lede:	Willy Mills – millswc@telkom.co.za • 082 875 8026
		George Moss – gfmoss@mweb.co.za • 082 454 3462
		Eugene Engelbrecht – vcontrol@futurejhb.co.za • 082 881 4804
		Derik Minnaar – derikminnaar1@gmail.com • 082 830 7222
6.	Saad/stuifmeel beampte:	Willy Mills – millswc@telkom.co.za • 082 875 8026
7.	Feeskomitee:	Chris en Christine van Zyl – tinetjie@gmail.com • 083 297 9027
		George Moss – gfmoss@mweb.co.za • 082 454 3462

WESTERN CAPE REGIONAL BRANCH – CALENDER 2018

Date	Venue/Activity	Time
3 March	Company Garden, Cape Town	13:00
6–8 April	Southern Cape Garden Tour, Garden Visit in George, Dr. Rheinach Nursery Visit Gouritzmond	Details to be discussed on 3 March
12 May	Nong Nooch Tropical Garden Visit and Cycad Horticulture Workshop, Talk by Prof Carine Smith	14:00 Venue to be confirmed
9 June	Kirstenbosch Forum, Beetles – Johan, Diseases Phakamani, Talk by research student Tembeka Malwana.	11:00
19–24 August	CYCAD 2018, Conference, Nelspruit	
4 August	West Coast Garden Visit , Darling Dr van Almenkerk and Duckit Orchid Nursery	10:00
15 September	Andre and Sandra du Plessis, Hemel and Aarde Estate, Hermanus	
20 October	Annual Plant Sale	09:00
24 November	AGM and Year end Function	14:00–18:00

MY CYCAD SAFARI TO SOUTH AFRICA

(OCTOBER 4–NOVEMBER 12, 2009)

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

Continued from ENCEPHALARTOS 130

SUNDAY, OCTOBER 18:

Deep in slumber at 4:20 am, I was abruptly awakened by the mind numbing sound of the security alarm reverberating through the walls around me. Andre had informed us earlier that the Taleni Lodge, our living accommodations at Oribi Gorge, was protected by a perimeter security system. Human intruders as well as a multitude of wild animals could set off the sensitive system. It took several minutes for the alarm to be reset and much longer to fall back to sleep. There was no doubt that we were very safe nestled in our beds on this very cold and dreary morning.

Sunday breakfast turned out to be quite an event as Douglas and I were offered homemade Belgian waffles to be prepared on a one hundred fifty year old Belgian waffle iron. I was so fascinated by the antiquity of the waffle recipe and utensils being used that I asked permission to video tape the first few waffles being made. Andre described the various steps involved including using selected salt brine soaked animal fat and the importance of exact timing needed to produce a waffle of perfection. As I immersed myself in the documenting of this historical breakfast, the "heat" in the kitchen was starting to intensify. Nellie was horrified that the first two waffles were blackened and thus inedible. Phrases being used such as "a tradition needing to be upheld" and "if you want it done right, leave it to a woman", quickly prompted me to pack up my camera and quietly slink out of the kitchen. In spite of the early setbacks, the taste of the light and crispy waffles was delectable and I felt privileged to have shared in the experience.

Despite the Range Rover being stuck in mud the evening before, Andre and Nellie were still determined to take us to *Stangeria eriopus* habitat. By mid morning, we proceeded to the northern plateau of the gorge in a luxurious Citron sedan. The roads we traveled were not so steep and the thick patches of grass kept the mud pockets to a minimum.

Stangeria eriopus has the distinction of having the widest distribution of any South African cycad. At one time, this species could be found almost continuously from East London in the south up to Ubombo and in to Swaziland in the north. This species growing in the Oribi Gorge habitat tends to grow on steep slopes extending from the plateau to half way down the cliffs of the gorge. A wide variety of leaf forms of *Stangeria eriopus* had been chronicled throughout this habitat. Plants of *Encephalartos natalensis* and *E. villosus* are found to the southeast of *Stangeria* growing also on the upper cliff faces of the gorge.[18]

Within a few minutes from where we had parked, we encountered the grassland form of *Stangeria* growing on dry, grassy exposed slopes. Each plant had 2–3 short, leathery leaves with slightly overlapping leaflets. Along this expanse of slope, I counted eight individual plants. No cones or newly emerging leaves were spotted in this particular grouping.

We continued walking down the slope and within a distance of 500 meters (1640 feet) the distinctly different looking forest form of *Stangeria* came into view. The plants were situated in deep shade within a few meters of a running stream. Humidity was high, the soil was very moist and the shiny dark green leaves glistened under the light of the camera flash (Figure 28). Within two minutes time, I photographed three cycads, one with a solitary

Figure 28. Long petiole and leaflets of *Stangeria eriopus* 'forest' form in the Oribi Gorge.

ARTICLES

male cone and the other two possessing a solitary female cone. One of the female cones, close to 18 cm (7 inches) in length, displayed an unusual amount of velvety tomentum. Ten long straight fern–like leaflets with serrations along the entire margin was a characteristic of another *Stangeria* that we photographed as well. It was evident that *Stangeria* plants were thriving in soil rich in organic matter all along the banks of this stream. Andre admitted that this particular cycad locality was aesthetically beautiful and had brought both of them great pleasure over the years. An opportunity to visit frequently and observe the yearly transformations of these beautiful specimens in this natural setting, must bring about a sense of fulfillment that words could never adequately convey.

Andre and Nellie own 860 hectares (2125 acres) of property that encompasses Oribi Gorge, its surrounding cliffs and top lands. The 520 hectares (1285 acres) of Oribi Gorge land is partially conservancy protected and partially zoned farmland. The remaining properties, Fourmans Hill, Taleni, Bongweni and Plaas Smallholding complete their vast ownership of property in the area.[35] Douglas and I were treated to the ultimate in guides when traversing the roads and terrain of Oribi Gorge.

As we drove towards the scenic plateau at the top of Lehrs Falls, we encountered an Oribi Ram, an extremely endangered buck species found only in the Oribi Gorge. This was a remarkable event as over a twenty-year span, neither Nellie nor Andre had ever sighted this game species. As for me, the novelty of spotting even a common Zebra, Kudu or Warthog is a splendiferous experience. And to have the opportunity to observe a very rare animal in habitat, is an indelible moment in one's life to be sure.

Figure 29. Baboon Castle with *Aloe arborescens* in the foreground.

Driving along the plateau of the gorge, the view sites were phenomenal. Towering sandstone cliffs given names such as Baboon Castle, Overhanging Rock, the Sphinx, the Pulpit and the Needle surround the forest along the Umzimkulwana River. These cliffs are believed to be over 365 million years old.[35] Nellie stated that a giant stemmed *Encephalartos natalensis* plant resides on the upper cliff faces of Baboon Castle. I, unfortunately, missed the sighting of this majestic cycad. Just below the edge of the plateau, *Aloe arborescens* were growing out of the crevices of the rock face (Figure. 29). We looked across the gorge and discussed The Wild Gorge Swing that was dangling precariously from one of the ledges. Situated at the top of Lehrs Falls, it is the highest swing in the world. A full body harness is used as you step or jump off the waterfall to swing into the depths of the gorge to a depth of 100 meters or the equivalency of a thirty-three-story building.[34] Unfortunately, a death had occurred on this swing two weeks earlier and it had not been in operation since. It was difficult to imagine the courage that needed to be summoned in order to step off the top of that waterfall.

Our final sightseeing destination was a suspension bridge that crossed a narrow stretch of the gorge. I managed to cross it slowly and stopped midway to marvel at the awesome views on either side of me. Douglas, Nellie and Andre stood on safe ground probably wondering if the bridge would hold me. Fortunately, there were no deaths as a result of risk taking adventures at the gorge that day.

Sunday afternoon I took a long walk along the Taleni Plateau. My goal was to reach the end of the adjoining plateau in order to photograph the Taleni Lodge setting. I had walked no more than ten minutes and Douglas and Andre met me by vehicle. Andre told us that in this vicinity so close to his home, grassland form *Stangeria eriopus* plants were supposed to be growing along the slopes. He and Nellie had never sighted any, however. Douglas and I proceeded to walk up and down the nearby slopes and within minutes, we counted five healthy specimens growing in full sun. The characteristic features of this form, as shown in Figure 30, including shorter, more erect, leathery leaves, varied only slightly within the colony. As with the other grassland locality, no cones or emerging leaves were present. There were no emerging seedlings evident. Nonetheless, this news was going to bring excitement and joy to the "Keeper of the Cycads" in Oribi Gorge. A deep sense of satisfaction took over my entire being as we continued to locate and admire a whole new colony of *Stangerias*.

At the conclusion of my hike, I took one more opportunity to take in the enormity, aura and tranquility

Figure 30. *Stangeria* 'grassland' form in habitat in Oribi Gorge'.

of the gorge. Over the past two days I witnessed natural beauty beyond my imagination. To Andre and Nellie, I am forever grateful for every aspect of this weekend. They overextended themselves in every possible way.

In the early evening Andre sat me down to show me the brochure "The Oribi Gorge Private Eco-Estate" that they had prepared in anticipation of putting up for sale their 860 hectares (2125 acres) of Oribi Gorge property. He believed that, as an American, I might know or come across potential buyers for all or part of his holdings. At a cost of fifty million Rand, one is given the opportunity to own close to 75% of Oribi Gorge outright. Andre, unfortunately, was speaking to the wrong person as that kind of wealth does not surround me in any sort of way. I listened to him carefully but was saddened with every detail. My belief is that no one with that kind of money would make the efforts required to protect all natural aspects of the region as Andre and Nellie had done over the years. Development of the properties might include construction of casinos, hotels, restaurants, holiday resorts, golf courses and hunting lodges. It was difficult for me to imagine the transformation this South African landmark will undergo as the properties are sold and developers move in. The evening ended with me pondering over the fate of the gorge and all that it encompassed.

MONDAY, OCTOBER 19:

Early Monday morning was bustling with activity as the security alarm echoed once again at 3:30 am. Nellie and Andre had to travel to Pinetown, a suburb of Durban, and we necessarily had to depart by 5:00 am. Andre pleaded with us to return within a few weeks time to view *Encephalartos villosus* in habitat in the gorge. Douglas and I both knew, however, that a return trip to the region was not allocated for on this journey. As we drove off and our last view of the gorge disappeared, a wave of despondence came over me. The future of the gorge, as we had experienced it, was now in jeopardy. Crossing paths once again with Andre and Nellie, two people who had done so much for us, would probably never happen. Their kindness towards me will never be forgotten.

Our destination for the day was the Komga region in the Eastern Cape. This locality is *Encephalartos princeps* country. Douglas proceeded to describe landmarks along the Transkei Highway as we proceeded south along the N2. "Over the Kei River" is the translation for Transkei. The Transkei Highway, deemed the most dangerous section of highway in South Africa, spans a distance of 400 km (240 miles). It encompasses the region just south of Kokstad and ends near Toleni. This section of highway is not policed, the road is winding and drivers travel at a high rate of speed. We hadn't been traveling more than an hour on this road, and we witnessed the aftermath of a horrendous accident on the side of the highway. Next to a demolished taxi van, there must have been at least eight tarp covered bodies spread out on the grass. Such a sobering sight always brings the "fragility of life" issue back into perspective.

Located due east of Kokstad, the Weza Forest , also known as the Weza-Ngele Forest, is a large

Mistbelt Forest and attracts birdwatchers worldwide. The endangered Cape Parrot (*Poicephalus robustus robustus*) and a species of dwarf chameleon reside in the canopy of the trees. Over the years, unfortunately, the forest has been exploited for timber and has become fragmented and reduced in size over many decades.[46]

Douglas also pointed out that between the Keneka River and the Mzimvumt River, in the vicinity of Kokstad, is the northernmost extent of *Encephalartos fridericiguilielmi*. This habitat extends hundreds of kilometers south, ending near Cathcart and Tarkastad. The area is expansive but apparently, without some effort being made, the cycads are not readily seen.

Encephalartos altensteinii is another species that has an extensive range in the Eastern Cape. This species is found closer to the coast than *E. friderici-guilielmi* and extends from Embotyi southwards to Kidd's Beach. It can be found as far inland as *E. princeps* habitat.

I found much of the drive along the highway to be quite scenic. Mount Ayliff rose majestically to 1055 meters (3461 feet). Green and blue rondavels, the Afrikaans word for "round house", dotted the landscape of grass covered rolling hills. Grazing cows, sheep and goats would meander out on to the road from time to time. At times, local residents could be seen walking outside of town, often dressed in blue work uniforms, school uniforms or colorful skirts. Several waved to us along the way.

The largest city traversed by the Transkei Highway is Mthatha. This city, previously known as Umtata, is the capital of the Transkei and the birthplace of Nelson Mandela. Banners honoring this fine statesman and promoting a museum in his name, hung from wooden poles up and down the city streets. Serving as a military post for the colonial forces in 1882, the town was founded in 1883 along the banks of the Mthatha River.[28]

Driving through these bustling South African cities and towns truly fascinated me. At times, traffic came to a standstill as vehicles and people blocked the highway. Local black Africans piled up their goods to sell right on the sidewalk. A woman vendor was standing on top of a meter high pile of clothing that she had for sale. Business transactions were occurring all along the main highway. At times, people were buying and selling at a frenetic pace. From our vehicle, I videotaped the downtown marketplace in the town of Idutywa. A great deal of selling and bartering was taking place as vendors hustled their goods to pedestrians as well as occupants of vehicles. Despite the seeming robustness of the free enterprise evident block after block, only 20% of black adults are employed in most of these communities. This is a staggering statistic when one considers the prospects for millions of young Africans who may face unemployment for the greater fraction of their adult lives.

All morning long, Douglas had been faced with a tiring and stressful drive. The next logical stop was at a Wimpy's in East London to sip on a long awaited cappuccino. The wear and tear of long hours in a vehicle always seemed to slip away once a rich, foamy cappuccino touched my lips. Having reached the city of East London, piqued my enthusiasm as well. Positive references with regard to the architecture and scenery surrounding the city had intrigued me for several years. East London, South Africa's only river port, lies on the Indian Ocean coast and is situated between the Buffalo River and the Nahoon River. With a population of over 400,000, East London is the second largest industrial center in the province. The city is also known as a surfing mecca, and its beaches are among the best in the country.[13]

As we drove through this historic city, Douglas noted that the East London Museum is a "must see" attraction when spending any time in the city. He told me that a good friend of his, Marjorie Courtenay Latimer, worked at the museum for a number of years. She is a famous lady as the coelacanth, a member of Coelacanthidae and described as Latimeria chalumnae, was named after her. Coelacanth, a fish with primitive features, was thought to have gone extinct with the dinosaurs 65 million years ago. Its discovery in 1938 by a South African museum curator intrigued the world. There are only two known species of coelacanths: one that lives near the Comoros Islands off the east coast of Africa, and one found in the waters off Sulawesi, Indonesia. Many believe that these species may be directly linked to the early evolution of fish to terrestrial four-legged animals such as amphibians.[10] Marjorie was rather fascinated with cycads, their evolution and the differing forms within a given species. Douglas had cycad discussions with her a number of times over the years. Stories such as these reaffirmed the integral linkage the natural history community shares in accumulating and distributing the latest findings, whether it be prehistoric fish, a newly discovered cycad or any other natural discovery of historical significance.

Our final destination for the day was the farm of Jolene, Grant, and Austin located in the Komga district. We met and stayed with these very special people in 2008 as well. This farm is located on property that is bordered by the Great Kei River to the north and the Kabousie River to the south. Their property encompasses *Encephalartos princeps* as well as *E. altensteinii* habitat. Cycads growing on this property are frequently counted and are regularly patrolled for signs of illegal poaching. Visiting with Jolene that evening around the supper table, reminded me once again of the generous hospitality shown to me by so many South Africans. Wherever we ended up for the evening, we always received a warm reception.

TUESDAY, OCTOBER 20:

As I sat on the veranda overlooking the lodge garden, the weather was already warming up in *Encephalartos princeps* country. Today was destined to be a superb day. Cycad viewing and photography for Douglas and I was

Figure 31. Porcupine damage evident on *Encephalartos princeps* plant in the Eastern Cape.

top priority on Jolene and Austin's itinerary. Breakfast and coffee was livened up with a cycad related story narrated by Jolene, our effervescent storyteller. Close to twenty years ago, Jolene and Grant were driving through a popular South African town when a traffic policeman turned on his flashers and summoned them to pull over and stop. Grant, puzzled and yet very concerned, spotted the officer in his rear view mirror. Slowly, he pulled over the vehicle to the curb, as did the officer. Grant mulled over the various traffic situations they encountered in town trying to figure out why he might be cited. The officer quickly approached their vehicle and he knew their names immediately. He had been looking tirelessly for *Encephalartos princeps* plants for several years, already, and he wanted Jolene and Grant to give him a few for his garden. The three of them spoke for quite awhile but the issue of traffic related issues never came up. Jolene suggested that he come to their farm and perhaps they could arrange a trade of a few smaller plants. The trade never materialized and when Jolene and Grant have occasional chance encounters with the officer, he still asks them "Where are my *E. princeps* plants?" Entertaining and amusing cycad stories are what this cycad enthusiast thrives on. They are infrequent, though cherished, as it lightens up the darker side of cycad collecting.

Growing amongst the doleritic cliffs and rocky outcrops along the valleys of the Great Kei River, *Encephalartos princeps* is a magnificent looking cycad in habitat. This species is found amongst thick, low bushes and grass. Other plants of note in the region are *Aloe ferox*, *Portulacaria afra*, *Euphorbia tetragona* and *Euphorbia triangularis*.[18] In both 2008 and 2009, we were unable to view *E. princeps* in the vicinity of Stutterheim, a town east of Komga. In this region, *E. princeps* overlaps with *E. friderici-guilielmi*, *E. caffer* and *E. trispinosus*. I was informed in 2008 that plants of *E. caffer* in this region are no longer a viable population due to illegal collecting. The small stature of this species as well as easy access to most of the localities, enhanced the vulnerability of this particular cycad. Fortunately, pockets of *E. caffer* habitat still do exist in the country.

Jolene, Austin, Douglas and I piled in to their Toyota Land Cruiser and our cycad adventure had begun. The terrain quickly became steep and rocky. Austin negotiated each rock and turn perfectly as he had traversed these trails countless times before. On more than one occasion we had to get out of the vehicle and remove a newly placed rock from our path. Austin told us that baboons often relocate rocks and place them as a deterrent in the road. In a very short amount of time it became quite evident that baboons were an animal/pest that he clearly detested. The damage and destruction caused by these animals was extensive. Cycad cones are regularly damaged and carried off by baboons. Removal often occurs prior to maturation of the seeds. To prepare me for any future encounters with baboons, Austin offered me some valuable advice. He stated that if you are wearing a belt and happen to meet up with a baboon, take off the belt and sway it in front of the animal. Baboons have a morbid fear of snakes and the movement of a hanging belt will frighten a baboon

Figure 32. *Encephalartos altensteinii* growing on cliff face that overlooks the Kabousie River.

and cause it to run off. Austin's wealth of knowledge pertaining to African animals, natural phenomena, and the history of the area impressed me thoroughly. I could have listened to his stories for hours at a time.

Porcupines pose a far greater threat to cycads. Cycads, in habitat, suffer the wrath of porcupines daily. We witnessed severe porcupine damage to cycad stems and crowns in the few hours that we were traversing their property (Figure 31). In much the same way as a beaver gnaws on a wooden log, a porcupine chews on the stem of a cycad. Pachycaulous is the term used to describe cycad stems as they are fleshy, the pith and cortex are well developed and there is very little secondary wood. As a cycad stem thickens and grows, there is a successive development of cambia.[48] Porcupine damage was so severe on trunks of three *Encephalartos princeps* plants that we examined, sections of pith and cortex were exposed. Without intervention, these cycads would undoubtedly perish in the elements. Multiple attempts to rescue severely damaged cycads have been made by the family over the years. Jolene indicated that an ailing cycad, protected from the future wrath of porcupines, does have a good chance of surviving. To all landowners who place such great importance on the cycads growing on their property, my respect and deep sense of gratitude toward you is unending.

Our first stop was along the banks of the Kabousie River. The clarity of the river was remarkable. Austin told us that this river is one of the cleanest in the Eastern Cape. This river provides the drinking water for the farms in the area. As we looked across the river, growing along a rock precipice, was a solitary and stately *Encephalartos altensteinii* plant (Figure 32). This cycad looked extremely healthy with its dark green leaves glistening in the sun. When found this far inland, the plants are widely spaced apart. We never spotted another *E. altensteinii* plant for the rest of the day.

Jolene enthusiastically described the abundance of rock paintings in the area. I took video and photographed a series of paintings that illustrated the life and culture of the bush people several hundred years ago. The paintings had been meticulously preserved from the elements. We were informed that very few people had visited this site. The property had been in Grant's family for generations and the family regarded these paintings as priceless treasures. It was an honor to be given access to artwork of such historical significance.

As we headed up a steep section of trail, we looked to the south and counted dozens of *Encephalartos princeps* growing amongst the rocky outcrops and cliffs. The rock that these cycads are growing in, a weathered dark to light, pinkish to reddish band of rock was classified as dolerite many years ago. The term "dolerite" is an English term and is related to basalt. "Diabase" is the equivalent U.S. and German term and is a dark colored, fine-grained igneous rock. It was interesting to note that the vast majority of *E. princeps* plants were thriving above the cliff faces. Very few cycads were growing below the cliff. Also, sixty percent of the plants were located on the eastern slopes as they flourished on the slopes exposed

Figure 33. *Encephalartos princeps* with *Portulacaria afra* in habitat.

to full morning sun (Figure 34). Using binoculars, we counted between fifty-five and sixty *E. princeps* plants. This was a glorious sight to behold.

In the early afternoon we returned to the farm and I was introduced to the most delicious fish that I had ever tasted. Austin informed me that it was deep fried breem fish. He had caught it in a local lake a few days earlier. The perfect seasoning and texture of this fish still has me salivating and desiring one more piece of this delectable fish.

After brunch, we toured around their garden and photographed their exceptional array of plants. Jolene had created an extensive aloe garden with intentions of growing every possible aloe species that she could. Their garden is part of an annual "Eastern Cape Garden Tour" and brings in plant enthusiasts from all over the country. The climate is ideal here for growing so many South African cycad species, aloes, euphorbias and a myriad of succulents.

Late afternoon came quickly and Austin, with his two young children, took Douglas and I out to the southern portion of their property. In close proximity to the Great Kei River, we walked amongst incredible colonies of *Encephalartos princeps* plants. As shown in Figure 33, tall stems, some three to four meters (ten to thirteen feet) in length, were growing out of rock outcroppings, some erect and others procumbent. Looking at these massive stands of cycads growing in their natural habitat overwhelmed me. My desire to "stop time" and preserve, forever, the beauty of this particular landscape on earth, weighed heavily in the depths of my conscience. Fixated on the vision in front of me, several minutes passed before I was able to place myself back in the reality of the moment. It was difficult to walk away and rejoin the group. I found myself longing to visit this habitat often and to explore the varied *E. princeps* populations growing throughout this extensive area.

A braai, the Afrikaans term for "roast or barbecue", was prepared for Douglas and me that evening. Bushbuck steaks and warthog sausages were the main fare for dinner. We shared the evening with Austin's family as well which was most enjoyable. The topic of "selling the farm" did come up during dessert, however. Economic pressures were forcing the family to consider selling part or all of their properties. Their assets included the lodge, farmhouse and more than 4000 acres of *Encephalartos princeps* country. Their asking price was fifteen million rand. As I had felt several days earlier, a deep sense of loss came over me. This property had been in the same family for generations and great care had been taken in protecting irreplaceable natural relics. It was highly unlikely that new buyers would protect the cycads as this family had done. As we headed back towards the lodge, Douglas and I discussed the future of the property and the plants. We vowed, from this day forward, to participate in the South African lottery two days a week. If either of us were to win, we would be back to make the purchase of a lifetime. Knowing that there was even a small potential to protect these remaining habitats, lulled me in to a deep and prolonged sleep.

WEDNESDAY, OCTOBER 21:

A burning desire to traverse and explore the continent of Africa began when I was just eight years old. All of the students in my third grade class were asked to closely study the world map and describe in detail a part of the world that we would like to visit one day. My knowledge of cycads was non-existent at that age but my fascination with the differing cultures, the beauty of the varied landscapes, and the sheer fact that so much of the continent was still undeveloped intrigued me. Forty years later this early predilection reached new levels as I stepped on to African soil for the first time. At the conclusion of this particular trip, nine weeks of my existence will have been spent in South Africa. There are still so many countries to visit, people to meet and cycads to see. Time and opportunities are limited, however. Douglas clearly stated that for him, traveling up in to the DRC (Democratic Republic of Congo) at the age of one hundred was not going to happen. An idealistic travel itinerary may have been conceived all of those years ago, but my life and future goals have become richer as a result of my infatuation with Africa.

A new day was dawning and we were anxious to embark on another cycad adventure. For a short time, the long farewell hugs and parting words with Jolene, Grant and Austin left me in a somber mood. I knew that it would be a very long time before we would meet again. If they were to sell their property and move far away, a reunion in the future would most likely never happen. Often times, those whom we meet and are the most endearing, are often those who drift in, make their impact, and disappear from our lives forever. The privilege of meeting such individuals would occur several times over before the culmination of our pilgrimage throughout this vast country.

Our cycad habitat destination for the day was a mountainous region northeast of Cathcart. This is the southernmost habitat of *Encephalartos friderici-guilielmi*. This area of the Eastern Cape is known for having very cold winters with frost or snow being typical. Summer temperatures are hot. The range of annual rainfall is between 375 and 500 mm (15 and 20 inches). Cathcart is situated on the N6, just north of Stutterheim and is on the route to Queenstown. This town is named after Sir George Cathcart, the governor of the Cape of Good Hope (1852–1853).[6]

We were just outside of Cathcart when Douglas detailed a distressing series of events involving *Encephalartos friderici-guilielmi* plants. The timeframe was around 1968–1970. It was during this time that road construction near Cathcart was slated to begin. There were at least sixty large *E. friderici-guilielmi* plants growing not too far from the proposed roadway site. It was also determined that this location was to become a stone quarry and thus all of these irreplaceable plants were to be removed. The cycads were dug out and left to die in the open veld. Bruce Bursey, a good friend of Douglas', attempted to rescue the dying cycads and was almost prosecuted for doing so. To stave off any future removal of these "national treasures", the roads

Figure 34. An expansive view of *Encephalartos princeps* habitat, Eastern Cape.

Figure 35. *Encephalartos friderici-guilielmi* growing in habitat near Cathcart.

department fenced in these desiccating, doomed ancient cycads. Some of the plants may have been at least one thousand years old. One evening, around midnight, the farmer who owned the land that the cycads had been growing on, sneaked past the fence and removed three of the dying plants. He planted them in his garden. Thirty years later, Douglas visited the farmer and all three *E. friderici-guilielmi* plants were thriving under his care. The remaining multitude of fenced off cycads perished under the blistering sun. I stared at Douglas in silence as this mind-numbing story unfolded. The tragedy of a loss of such magnitude is incomprehensible. I was deep in thought as we drove past the location where the annihilation of so many cycads had occurred.

Our intended *Encephalartos friderici-guilielmi* tour for the day was a habitat that Douglas visited a year earlier when he happened to meet farmer Bill, the owner of the land that the cycads were growing on. The farmer was receptive to showing Douglas the cycads and the habitat was described to me as being "rather exceptional". A call was made to the farmer and we learned that, unfortunately, farmer Bill had passed away seven months earlier. This news clearly dampened the spirits as Douglas had thought very highly of the farmer. Now that we were within close proximity to the farm and after having driven for three hours, we decided to stop at the farmhouse anyway. When it came to seeing another precious cycad in native soil, our conviction was unequivocal.

Lily, farmer Bill's widow, met us along the dirt road to her home. Her proper etiquette and refined demeanor led me to believe that she was an educated woman. This was confirmed as she described her many years of teaching Environmental Sciences at the local college. We conversed on several topics, including cycads, and our desire to see the *Encephalartos friderici-guilielmi* plants was well received. Lily handed us the keys to a myriad of gates and, without further adieu, we were in the territory of age-old cycads.

E. friderici-guilielmi was one of the earlier Encephalartos species to be researched in South Africa. In the late 1700s, a Belgian set forth an expedition in to the Eastern Cape to describe the *Encephalartos* in the area. For a number of years, *E. friderici-guilielmi* was confused with *E. cycadifolius*. Final separation of the two

Figure 36. A massive clump of (possibly) *Euphorbia truncata*, *Aloe broomii* and *Encephalartos friderici-guilielmi* in habitat.

Figure 37. Emerging new leaves on *Encephalartos friderici-guilielmi* and *Cussonia* sp.

species resulted in *E. friderici-guilielmi* being named after the King of Prussia and botany advocate, Friedrich Wilhelm III (1770–1840). The closest relatives to this species are *E. cycadifolius* and *E. ghellinckii*, although no overlapping of habitats has ever been found.[14]

As we walked east from the dirt road and began our ascent up the side of the mountain, we soon encountered our first *Encephalartos friderici-guilielmi* growing on an exposed slope (Figure 37). The stem must have been 2 m (7 feet) tall and new cream-colored leaves were emerging at an angle above the crown. The blackened stem also showed remnants of old, dead rachises burned away. This imposing cycad loomed over the low-lying native brush surrounding it. Over the next two hours, we would witness these sights of natural grandeur repeatedly as we scaled the mountain slopes.

Most of the cycads appeared to be wedged between large sandstone boulders and were growing under harsh conditions. Dry dead grass surrounded many of the stems and the evidence of small seedlings was rare (Figure 35). One of the male plants that we photographed had four emerging cones covered with golden-brown wool. As shown in Figure 38, a large female plant was proudly displaying four cones. At least two of the female plants that we examined had hundreds of seeds packed firmly between the stem and the boulders.

Figure 38. Four maturing female cones of *Encephalartos friderici-guilielmi.*

Many of the trunks were solitary but several of the cycads were growing in groups. Smaller plants surrounded snake-like reclining stems that draped over the massive boulders. *Aloe broomii*, several species of *Cussonia* and a massive clump, at least three meters (10 feet) in all directions, of possibly *Euphorbia truncata* as shown in Figure 36, were growing amongst the cycads. We witnessed as many as 80–90 mature cycads. A warm afternoon immersed in this surreal setting brought a deep sense of quiescence. There was a strong desire to linger. A lowered sun in the sky, however, prompted us to return to the farmhouse.

The farmhouse was one hundred fifty years old. The structure had previously been a "halfway" train station and served as a place to stay for the Boer War troops. The Boer Wars, or South African Wars of 1880–1881 and 1899–1902, were fought between the British and the descendants of the Dutch settlers (Boers) in Africa. The Boer War ended with the signing of the Treaty of Vereeniging in May 1902. This treaty brought to an end the Boer republics, Transvaal and Orange Free State. The British, however, granted the Boers income for restocking and repairing farmlands and self-government was granted in 1907.[40] Standing on the porch of this once bustling train station, it was difficult to imagine what life must have been like during these war-torn years.

Lily awaited us with afternoon tea and scrumptious cookies. The social ills of South Africa were elaborated on as I listened intently. As the subject material became more intense and serious, Douglas tried to lighten the mood by interjecting humorous side comments. As it became increasingly more difficult to suppress my amusement, I was forced to excuse myself with a polite dismissal from the living room more than once. Lily expressed concern and was puzzled by my inability to remain in the room. Douglas only worsened the predicament as he continued to utter dry, high-spirited quips. I tried to attribute my giddiness to a "severe case of cycad fever."

We gave a heartfelt hug to Lily and thanked her profusely for the awesome opportunity she had given us to view such magnificent cycads on her property. She welcomed us to return in the near future. As we headed south to Fort Beaufort for the evening, the heckling and laughter continued. This truly had been a day to rejoice.

THURSDAY, OCTOBER 22:

The roosters were up early outside our hotel in Fort Beaufort. By 5:30 am, a myriad of barnyard sounds were clearly audible outside the hotel window. Not a single animal could be seen, but they definitely had my attention! At this point of the trip, my internal clock had been reset but the number of hours I actually slept each night was minimal. The unpredictability of each day and allure of new destinations necessarily limited my desire to rest. Fortunately, a lack of sleep never set me back in our daily activities.

Fort Beaufort is an Eastern Cape town in the Amatole District and has a populace of close to 80,000 people. The town, established in 1837, lies at the confluence of the Kat and Brak Rivers between the Keiskamma and Great Fish Rivers. As we walked through the core of the downtown district, it became evident that this settlement had undergone significant changes over the years. Fort Beaufort started out as a mission station in 1816. The Royal Warwickshire Regiment constructed a blockhouse three miles from the mission station as a military frontier post and stronghold against raids by the Xhosa in 1822. A fort was constructed at the site of the original blockhouse after the 6th Xhosa War (1834–1835). A military hospital, guardhouses, infantry barracks, and officers' quarters were also built at this time. The inland Martello tower, small and circular in Napoleonic era design, was completed by the British in 1846. Fort Beaufort was named by the British to honor the Duke of Beaufort. Anti-British forces unsuccessfully attacked the town during the 8th Xhosa War (1850–53).[17] I reflected on the historical significance of this town as we drove west towards the Paardepoort Mountains, habitat of *Encephalartos longifolius* and *E. lehmannii*.

On this trip as well as on our 2008 tour, the scenery from our vehicle over hundreds of kilometers across the Eastern Cape captivated me. The mountains, rolling hills, densely foliated flatlands, rivers, lakes and vast openness placed me in a hypnotic state from time to time. Large expanses of land, uninhabited by people, appeal to my inner being. The allure of hiking where very few have gone before was always at the back of my mind as the miles ticked away. The drive on this beautiful afternoon from Fort Beaufort to Kirkwood was no exception.

The sighting of a cycad from a main road or highway occurred only once or twice during this entire trip. Over the years, visible and readily accessible cycads were obviously the first to be removed. On a rare occasion, cycads hanging precariously off a rocky cliff could be viewed as we traversed the South African highway system.

A plant flourishing as far as the eye could see was *Opuntia ficus-indica*, commonly known as the prickly pear. Looking particularly out of place to me, this species originated in Mexico and has established itself extensively throughout the Western and Eastern Cape. Other non-native species of note are several species of *Acacia*, *Eucalyptus*, *Lantana camara*, *Hakea*, *Pinus* and *Jacaranda mimosifolia*. The densest growth occurs along banks and riverbeds.[49] Jolene and Grant, living in *E. princeps* habitat, described the *Lantana camara* plants as posing a grave threat to the future of *E. princeps*. *Lantana*, an invasive alien plant, flourishes in the Eastern Cape and is overwhelming the cycads at an alarming rate. The root/shoot systems grow rapidly and successfully compete for an already highly stressed water supply. Attempts to eradicate the *Lantana* have proved to be extremely costly and primarily ineffective. This widespread threat to native South African habitats

has been researched extensively over the past twenty years. With twenty million hectares (forty-nine million acres) of affected land, South Africa has the largest invasion of alien plants of any country in the world. The estimated cost to effectively eradicate this very serious problem is 34 billion rand.[9]

As we drove in to the town of Kirkwood, a locality south of the Rietberg Mountains, Douglas commented that this region is the citrus capital of the Eastern Cape. Approximately 120 square kilometers (46 square miles) of citrus orchards comprised of oranges, lemons, grapefruit and others, contribute significantly to the economy of this thriving community. Situated on the banks of the Sundays River, Kirkwood is 100 meters (328 feet) above sea level and is about 80 km (50 miles) from the Indian Ocean. As documented by the South African Weather Bureau, Kirkwood, in the year 1928, attained the unique distinction of having the highest temperature (50.3˚C or 122.5 F) ever recorded in the history of South Africa.[23] Fortunately, the weather was temperate as we ambled through shops in the bustling business district of town.

It was mid-afternoon when we reached the farmhouse of Thomas, a dear friend to Douglas. Thomas, a sheep farmer, owns 1500 acres of property in the Paardepoort Mountains. The panoramic view of the mountains from his ranch was stunning. Witnessing the beauty of this area first hand, I now understood where Douglas had found his inspiration in so many of his paintings and drawings for his needlework artistry over the years. As I scanned the mountains to the north, the weariness of the long drive quickly dissipated. We were in the midst of the habitat of *Encephalartos longifolius* and *E. lehmannii*. A surge of enthusiasm overtook me and with no further delay, I departed on a late afternoon hike.

The ranch is located approximately two kilometers (one mile) south of a major gorge that divides the surrounding mountain. I was informed that the first cycads to be seen would be located on either side of this gorge. As I continued walking up the alluvial slope towards the base of the mountains, vegetation increased in both size and diversity. The typical savannah with dry grass and thinly scattered shrubs pervaded the landscape early on in the hike. My pace was brisk as I was determined to photograph a cycad before nightfall set in. I found myself reflecting on the strength of my desires to view another cycad specimen in habitat. What motivation drove me to travel thousands of miles via airplane, car and by foot to witness a cycad in habitat? Simply speaking, the longevity in existence of these ancient plants profoundly intrigues me. There are cycad fossil records that date the cycad era to 280 million years ago or the early Permian period. Speculation exists over perhaps even older cycad fossils that date to the late Carboniferous period or 300–325 million years ago.[11] There are few living entities that exist today with an ancestral history of such antiquity. If one were able to travel back in time to track the lineage of cycads throughout the world, just imagine what stories one could tell. Cycad distribution was established in the supercontinent Pangea before Laurasia and Gondwana separated. While cycads were evolving and acclimating to differing climates, growing conditions, and ongoing threats, the evolution of higher order plants and animals, including dinosaurs, was occurring. Civilizations have come and gone, catastrophic events have altered the face of the planet and yet the unending state of change has never dampened the resolute desire of a cycad to survive. Human interference, however, will end the permanence of cycads in habitat. This tragic reality has brought about an intense fervor in me to disseminate all the pertinent information that comes available to me. If it comes down to the last cycad standing in habitat, any expenditure of effort should be made to protect it. Once this relic is gone, a significant part of natural history will be lost forever.

Dusk was quickly approaching when I photographed a solitary *Encephalartos longifolius* near the top of the cliff face. Concerned about the waning daylight and the prospect of leopards patrolling the canyon, I turned around and met up with Douglas on the way back. Thomas prepared a delicious chicken supper for us. Arrangements were discussed for Friday's big hike. The day had been full so I welcomed an early bedtime. Sleep evaded me however, as I pondered the sights that lie ahead and listened to the intermittent howling of 38 penned hunting dogs. Hours earlier I had tried to befriend one or two of them. If I were viewed as an intruder, however, the killer instinct in these animals would have made short work of me.

FRIDAY, OCTOBER 23:

Our bright and early departure to the gorge had my adrenaline rushing as I anticipated a day of steep hiking throughout the Paardepoort mountainous terrain. Thomas dropped us off at the base of the gorge with a cooler full of cold drinks and warm egg sandwiches. By 7 am, Thomas had work to tend to so Douglas and I started our long ascent. Our destination locality was a scenic defile winding through the Klein Winterhoek Mountains. *Encephalartos longifolius* and *E. lehmannii* had been documented as occurring in close proximity to each other in this particular habitat.[18] Thirty minutes in to the hike, the most delectable egg sandwich had already been consumed. As we sat near a cold stream of water in the cool shadow of the mountains, we never would have anticipated just three hours later the stark, dry conditions we would be facing.

Our hike up the east slope was relatively steep but not difficult to negotiate. The first cycad sighting was the solitary *Encephalartos longifolius* that I had spotted the night before. Access to this particular plant was difficult due to the over abundance of *Opuntia ficus-indica* growing all along the cliff face (Figure 39). *Aloe speciosa* was also thriving on the east face. We continued on in search of more accessible cycads.

As we continued to climb ever higher, I found myself looking south to Thomas' farmstead off in the distance.

Figure 39. *Encephalartos longifolius* growing amongst *Opuntia ficus-indica* and *Aloe speciosa*.

Our first close encounter with a cycad for the day turned out to be an *Encephalartos lehmannii x E. longifolius* hybrid. Physical characteristics of this hybrid more closely resembled *E. lehmannii* (Figure 40). Stem height was at least 1.5 m (5 feet) tall. The leaves were blue green and lacked the neat umbrella-shaped canopy leaf spread often found in *E. longifolius.* Several suckers were growing out of the base of the plant. A ring-like pattern, created by old leaf bases, was evident the entire length of the stem. It was fascinating to witness a natural hybrid thriving in the native terrain that it was designed to flourish in.

Despite the abundance of thick thorn scrub, *Aloe* and *Euphorbia* species, this habitat of sandstone hills and mountain slopes exhibited signs of austere growing conditions (Figure 41). This habitat is semi-arid with an annual rainfall of 350 mm (14 inches).[18] Small cycad seedlings were sparse in number and only a few surrounded the mother plants. Within a two-hour time frame, we encountered six different *Encephalartos longifolius* plants. We witnessed double-stemmed plants, a tall majestic plant at least 3 m (10 feet) in height as shown in Figure 42, porcupine- damaged stems and coning plants. We photographed an unusual event where the top third of the female cone had undeveloped, immature cone scales (Figure 43). An occurrence occasionally seen in *E. longifolius*, this was an indication that the cone may produce apical leaves. Douglas had not observed such a high proportion of immature scales on this species before. Enthusiasm

Figure 40. *Encephalartos lehmannii* x *E. longifolius* with emphasis on *Encephalartos lehmannii* features.

Figure 41. Author standing next to splendid *Encephalartos longifolius* plants in Paardepoort Mountains.

Figure 42. Douglas leaning against a towering Paardepoort *Encephalartos longifolius* plant.

levels peaked as we witnessed this atypical and remarkable anomaly of nature.

As the heat of the sun intensified, the temperature soared and reached 40˚C (104 F) by noon. Our consumption of water increased due to the dry intense heat. By 1:00 pm, we finished the last drops of liquid in our backpack. We sought the shade of a tree or bush as often as possible as we were both feeling the effects of this unpredicted heat wave. Our pace slowed as we headed up the west slope.

We had been hiking close to six hours and had counted fifteen cycads up to this point. Most were large mature plants with an occasional younger plant growing nearby. No seeds were evident under any of the cycads that we viewed. We were now hiking along the southern slope and were captivated by the sight of a triple-stemmed *E. longifolius x E. lehmannii.* The expressed traits of this particular hybrid emphasized *E. longifolius* features (Figure 44). The leaf coloration tended toward a dark olive green with certain leaves exhibiting shades of blue throughout the entire leaflet. Blunt-tipped leaflets and thick non-ringed stems also were indicators of *E. longifolius* lineage.[18]

Our final cycad sightings of the day were three resplendent *Encephalartos lehmannii* plants (Figure 45). Two of the three cycads had sustained porcupine damage. As a result, branching had occurred from the base of the stem. On two of the three plants the main stems were procumbent. I found myself mesmerized by the beauty of these natural treasures. A deep sense of

Figure 43. *E. longifolius* female cone with undeveloped, immature cone scales.

Figure 44. *Encephalartos longifolius* x *E. lehmannii* with emphasis on *E. longifolius* features.

Figure 45. *Encephalartos lehmannii* growing in the Paardepoort Mountains.

gratitude overcame me once again as I reflected on the effort that had been made to bring me to this pivotal point in my trip. Remarkable opportunities such as these in life are extremely rare.

As we headed down the south slope back towards the gorge, Douglas' statement "I see the cooler and it is 1 km (0.6 mile) away." resounded clearly against the canyon walls. It was closing in on 3 pm and we had run out of water almost 2 hours earlier. Our pace quickened at the thought of a long, cold drink. Once at the cooler and under the shade of a gigantic willow tree, our thirst seemed unquenchable. Up until this point in my life, I found the taste of beer unpleasant and often repulsive. Douglas offered me a sip of his "Castle" beer. Never had I savored a taste of a cold alcoholic beverage as much as this. Problems arose briefly when he dared to ask for the bottle back. Reluctantly, I returned my hiking partner's drink and, as a deeply satisfied look came over his face, watched it disappear. The concept of a cold bottle of beer took on a new perspective for me that day.

Thomas picked us up as we were heading back down the dirt road to his farm. As a successful sheep farmer, he spoke in depth about the animals that he raised and sold. He stopped along the way to show us the Dorper breed rams and ewes. This breed is referred to as a South African mutton breed and is the second largest breed in the country. This particular breed has a characteristic black head with a white body.[47] His flock of sheep were nurtured and well maintained. If I were a sheep or a devout cycad enthusiast, I couldn't think of a nicer place on this planet to call home.

After hiking for seven hours under very hot conditions, my only desire was to sit and sip a cold drink at the farmhouse. Ten minutes in to a relaxing visit with Thomas, a neighboring farmer and his friend stopped by to see Thomas. Douglas and I were introduced to the men and a discussion on "broodboom" (Afrikaans term for cycad) ensued. My interactions and comprehension was limited as the neighbor only spoke Afrikaans. Douglas translated parts of the conversation for my benefit. The farmer was describing how over the last three months, 360 mature *Encephalartos lehmannii* plants had been poached off of his land. He described the thefts as occurring at night with teams of men serving as diggers, lookout operators and transporters. With my interpreter, I asked him how he knew the details of the atrocities that were occurring on his property. He explained that a few of his employees had witnessed the thefts and perhaps participated in the removal of some of the cycads. These workers had theoretically been laid off and investigations were being made in to possible suspects. The neighbor appeared upset when I asked him how events like this could go on for three months going unnoticed. His reasoning was that his acreage was large and it was difficult to keep track of remote areas on his property. As the conversation in Afrikaans continued on, I found myself slumping in the chair and mentally drifting off. With news such as this, no wonder one walks seven hours and spots eighteen cycads in one day. With staggering numbers of plants being removed at such an alarming rate, we were extremely fortunate to see what we did see. If we had spoken the same language, I so wanted to express the dire need to protect the remaining cycads on his property. As I have discovered through time, however, very few, including owners of these irreplaceable plants, share the passion or concern over the plight of these cycads. Their perspective is quite different from mine when it comes down to the end of a long era of cycads in habitat. Very few seem to comprehend the finality of it all.

Dinner included kudu sausage and sheep steaks. Neither settled well with me as I continued to dwell on the negative news presented to me hours earlier. A strong desire to immediately start up an investigation welled up in me. I considered the prospect of setting up stakeouts, speaking to employees with the use of a translator, and speaking to cycad nurseries and garden owners in the Eastern Cape area. As I lay there in bed that evening, I so desperately wanted to turn back time such that those 360 *Encephalartos lehmannii* were once again growing undisturbed in their native soil. As the minutes and hours of the evening ticked by, thoughts of

Figure. 46. Rock Monitor lizard (*Varanus albigularis*) crossing the road.

erasing the acts of destruction of so many cycads thriving in their rightful place on earth of the past hundred years or more, appealed to my inner being. Another few hours of sleep time were dedicated towards trying to figure out how to make all of this happen. Needless to say, I slept very little that night.

SATURDAY, OCTOBER 24:

A cloudless, warm morning was upon us and the desire to view a new habitat was compelling. Douglas had spoken with Thomas regarding potential landowners that would allow us to photograph *Encephalartos horridus* on their property. There was a farmer located an hour south-east of Paardepoort who stated that he had *E. horridus* on his land and who was willing to take us to see them. With our curiosity now piqued, another day of intrigue had begun.

We were traveling east on a main dirt road when we encountered a Rock Monitor lizard (*Varanus albigularis*), as shown in Figure 46, slowly ambling across the roadway. Douglas was very surprised to see this protected species in such an exposed location. According to Douglas, despite many years of travel throughout the veld, sightings of this reptile species were rare. This Rock Monitor was at least 100 cm (39 inches) long with a tan/black body and yellow underbelly. The brown and black-banded tail comprised at least one third of the total body length. This reptile hibernates in winter and feeds on birds, eggs, reptiles, small mammals, insects and millipedes.[38] Within thirty minutes of this first sighting, an improbable second encounter with a different Rock Monitor occurred. When one takes the time to stop and observe nature's wonders, the array of marvels is endless.

Our initial meeting with farmer Dave was awkward and tense. He had a difficult time communicating with me but warmed up to Douglas once our drive in to cycad country commenced. For the most part, I remained silent and admired the thickly vegetated rocky terrain for the extent of the excursion. After traveling fifteen minutes along the main dirt road through his property, he stopped his vehicle and pointed northward to the mouth of a natural cave located at least half way up the side of the mountain. With no hesitation, Douglas and I declared in perfect harmony, "*Encephalartos lehmannii*". There near the opening of this large cave, was a beautiful multi-

Figure 47. Two *Encephalartos horridus* plants in habitat near Uitenhage.

stemmed *E. lehmannii.* It was quite a distance from where we were standing, but the stately blue leaved cycad growing out of the sandstone brought a smile to my face. There were no other cycads in sight in all directions except for this one visually alluring specimen. Douglas proceeded to show farmer Dave photos of *E. horridus* in his "Cycads of Africa – Volume 1" book. According to the farmer, this majestic *E. lehmannii* was the cycad to see on his property. As far as he knew, there were no plants that looked like *E. horridus* on his farm. Douglas visited a short time with farmer Dave. We expressed our appreciation for his time and effort and proceeded to drive southeast towards the town of Uitenhage. The morning began with an interesting detour but our zest for high adventure continued unabated. The day was young and we sensed that a sighting of *E. horridus* was still in our midst.

Douglas phoned Thomas and another potential landowner was contacted regarding us coming to visit and view cycads on his property. This farmer/lodge owner was located 20 km (12 miles) outside of Uitenhage. Farmer Karl was to meet us at his lodge where a wedding and banquet was being held. His farm was on the other side of a game reserve, which meant there was a multitude of gates to pass through. As Douglas drove the vehicle, I took on the task as "keeper of the gates". Attendees of the wedding utilized my services as well. As I stood there smiling in my brown khaki shirt, I took pleasure in knowing that a festive marriage ceremony was bringing people together on this beautiful South African afternoon.

We met farmer Karl as planned. He mounted his motorbike and we followed him back down the dirt road in our vehicle. Less than fifteen minutes later, we had reached our destination. We walked a short distance and there growing amongst the *Euphorbia* scrub, Aloe striata and quartzite outcrops was a young *Encephalartos horridus.* It was a solitary plant and appeared to me to be a remnant of what once was an abundant population of *E. horridus* plants. In the vicinity of this cycad, we walked around for ten minutes or more and I counted twelve distinct plants (Figure 47). Most of the plants were single-crowned with caudexes no larger than 15 cm (6 inches). There was no evidence of coning activity. Several of the cycads were surrounded by an impenetrable forest of *Euphorbia coerulescens*, a prickly succulent shrub. Stresses induced by a prolonged drought in the region contributed to the general decline in appearance of the habitat.

Despite our enthusiasm for photographing and filming the plants, the farmer must have sensed our trepidation. Farmer Karl proceeded to describe another haunting cycad tale. According to the farmer, a plethora of 300 or more mature *Encephalartos horridus* plants flourished in this area just four or five years ago (Figure 48). Many were multi-stemmed specimens with a height of 70 cm (27 inches) or taller. Coning cycads were abundant here not that long ago. Over the past several years, the farmer had spent more than a year away from his property as he embarked on a new career in Port Elizabeth. Apparently, over this extended period of the farmer's absence, one of his employees was directing

Figure 48. Euphorbia scrub, *Aloe striata* and quartzite outcrops – typical of *E. horridus* habitat.

poachers to the *E. horridus* plants and was receiving 50R ($7 US) per plant. The worker confessed all of these activities to the farmer but, despite prolonged investigations and lengthy court appearances, neither the employee nor the poachers were ever prosecuted for their crimes. Farmer Karl was responsible for all court and transportation costs. It was evident that cycad ownership had become a substantial burden in this man's life. He no longer wanted responsibility for the remainder of cycads on his property. It was as if he truly looked forward to the day when these plants of ultimate beauty and magnificence were just a memory. For reasons such as this, the remarkable virtue of these relics necessitates far more protection than any given individual can provide. A property owner may own the land that a historically significant plant has flourished on for hundreds, perhaps thousands of years. The rights to these specimens should be a totally different matter, however. As is evident in the decimation of so many habitats over the years, only a select few will take extraordinary measures to guarantee these cycads remain protected at all costs. In a relatively short number of years, these selfless individuals will pass away or become incapacitated in one form or another. Property is then sold or redistributed and the fate of the cycad is jeopardized once again. Solutions may be complex but are necessary to safeguard what is left of these habitats. Trained and committed personnel working at designated natural cycad heritage sites, forty or fifty years ago, would have prevented a substantial number of thefts over the years. As a part of this dedicated project, controlled collection and propagation of seed could have brought necessary income back in to the organization. If propagated close to half a century ago, these cycads would now be majestic, mature and coning plants. Those species in habitat would still need protection, but the offspring of these specimens would have made their way in to botanical and private gardens in a controlled and systematic manner. Accurate identification of species would be the norm, not the exception. The market would be less driven by greedy, profit driven individuals and consortiums. In retrospect, however, none of these propositions were initiated and one is left to contemplate the near certain demise of the majority of cycads in habitat over the next twenty years or so.

Karl had commitments to attend to back at the lodge so he bid us farewell and motor-biked off back down the road. Douglas proceeded to walk to our vehicle and I continued on southward perusing the landscape for additional *Encephalartos horridus* plants. In total, I counted twenty-six *E. horridus* for the day. In time and if left to prosper in this locality, mature, multi-stemmed cycads could enrich the landscape once again.

Mid-afternoon was upon us when we drove in to the town of Uitenhage. This Eastern Cape town is populated with 275,185 inhabitants. The town is best known for the Volkswagen factory located there, which is the biggest car factory on the African continent. The founder of Uitenhage was District Magistrate Jacob Glen Cuyler in 1804. The town was named in honor of the Cape's Commissioner-General Jacob Abraham Uitenhage de Mist by the Dutch Cape Colony governor, Jan Willem Janssens. In 1877, Uitenhage became a municipality.[1,15]

Driving through town was stressful due in part to the fast-paced drivers in control of an inordinate number of classier, high-powered cars. Navigating the streets resembled the fast paced challenges one faces in a typical car racing video game. We intentionally cut the tour short and selfishly indulged in a late afternoon Wimpy's cappuccino. While in Uitenhage, we didn't visit the largest car factory in Africa, but I did wander through one of the largest and busiest grocery stores that I've ever set foot in. These words, uttered from one who lives in the metropolis of Southern California, say quite a bit with regard to the enormity of certain South African establishments.

The sun was setting over the Paardepoort Mountains when we returned to the ranch for one last evening. A persistent headache that plagued me a good part of the day, seemed to worsen by the hour. The stress of travel and the negative aspects of the past two days must have been contributing factors. To make matters worse, the first South African dinner that I became responsible for and hoped to serve to Thomas' family, was a near total failure. Due to inexperience operating foreign appliances, the noodle dish suffered greatly as it overflowed on to the stovetop below. Fortunately, the market-prepared chicken was a sensation with the youngest members of the household. I lamented the fact that this was our last evening with this generous and loving family. Such kindhearted and gracious people would always hold a special place in my heart.

SUNDAY, OCTOBER 25:

We spent our last morning in this resplendent habitat walking to the other end of the gorge. Douglas joined me and the discussion of cycads and their variations came up once again. Living so far away from the origin of Encephalartos species, the descriptions and naming of "forms" of this genus by growers in the U.S. has always fascinated me. Although there may be definitive genetic variation within a given species, the tendency to name a form and classify it as "different" from the standard form was not as common a practice amongst South African growers in the trade and collectors. I inquired about the ubiquitous "Kirkwood" form of *Encephalartos lehmannii*. Douglas stated that *E. lehmannii* growing in the vicinity of the town of Kirkwood exhibited characteristics that were within the normal range of *E. lehmannii* in habitat. He also stated that there is a "Kirkwood" form of *E. horridus.* The variation is not significant in this particular form as well. The "Kirkwood" *E. longifolius* closely resembles the "Paardepoort" *E. longifolius*. I inquired about the "Joubertina" form of *E. longifolius.* This locality is found along the coast not too far from Uitenhage. This form of *E. longifolius* is noted for bluer leaf coloration. Douglas stated that back in the 1950s, Robert Dyer hypothesized that the colonies of E. trispinosus were in fact hybrids of *E. horridus* and *E. lehmannii*. Time flew by quickly as

Figure 49. Resplendent *Encephalartos lehmannii* growing in a collection.

cycad enlightenment filled my brain with a new series of questions. The middle of the day was drawing near, however, and departure was imminent.

Travel time to Kirkwood was less than two hours. We attempted to check in to the Geelhoutboom B & B but were told to return at 4 pm. We had stayed at this B & B in 2008 and were extremely impressed with the accommodations.

Douglas had earlier made arrangements for us to visit a cycad nursery/garden in town. Lonnie and Claire graciously allowed me to photograph their stunning cycad collection. Many of these cycads had been in the family for over thirty years. The plants were meticulously grown and were thriving in all areas of the yard (Figure 49). I photographed coning *Encephalartos lehmannii, E. horridus* and *E. longifolius* plants. I was photographed standing under an ovoid *E. longifolius* olive green cone. The cone was at least 45 cm (18 inches) in height and 28 cm (11 inches) in diameter. Several rare plants were larger than any I had ever seen in botanic gardens. A walk amongst their cycads was a breathtaking experience (Figure 50). We toured the nursery as well. In the nursery there were at least twenty flourishing *E. latifrons* seedlings that caught my eye. Despite the temptations, I could only look and not buy. A stroll amongst this cycad collection highlighted once again the allure and magnificence of the *Encephalartos* genus. As one might discover in analyzing certain natural art forms, cycads of this genus can rouse remarkable passion in those who spend even a few minutes studying them.

After a relaxing cup of tea and visit with Lonnie and Claire, we extended our best wishes and drove back in to town. We checked in to the B & B and visited for a short time with Beverly, the caretaker. She was extremely friendly and talkative. Dinner at a restaurant outside of town far exceeded the meal that I had attempted to make the night before. As this day drew to a close, I reflected on the fact that time was passing by so quickly now. It had been nearly three weeks since the onset of this incredible cycad tour. An attempt to view only one more cycad species in the Eastern Cape habitat was scheduled to occur. Within two days, we would be heading north once again. I loved this region of South Africa. If given many months to explore, I could see myself hiking daily throughout this province in hopes of

Figure 50. Beautiful specimen of *Encephalartos latifrons* in a garden.

cataloging those cycads that remain in habitat. I believe that to some extent, these recurring and ambitious daydreams, allow me to cope with negative and difficult issues beyond my control.

MONDAY, OCTOBER 26:

Rain clouds and drizzle was the weather I was confronted with as I embarked on an early Monday morning walk through the town of Kirkwood. The neighborhood streets were bustling with uniformed children walking to school and adults walking to work. Vehicle traffic was light compared to the number of pedestrians. Transporting oneself by foot is such a foreign concept in so many communities in the U.S. Automobile dependency is still the exception and not the norm in cities and towns throughout the world.

Along the main street through town, a decent crowd of Kirkwood residents had gathered in front of a community center. An African tribal language was primarily being spoken and a lively, engaging banter captivated even those who did not understand a single word being uttered. My enthusiasm captured a man's attention and he gestured me to join in the debate. Knowing that I had very few words of wisdom to offer, I nodded my head in appreciation and continued on my way. A potential tour of *Encephalartos caffer* country was on the tour docket and was one that I simply did not want to miss.

After breakfast and an animated conversation with Beverly, we drove east towards Grahamstown. Douglas had arranged for us to meet a cattle farmer on his property located 20 km (12 miles) outside of the town limits. By mid morning we arrived at the farmhouse but the farmer was still fifty minutes away in Alexandria. Although we were keeping the cattle rancher from his farming duties, farmer Collin was apologetic when he greeted us. Collin remembered Douglas from past visits. Photographs for "Cycads of Africa Volume I" were taken in 1999 of this particular *Encephalartos caffer* habitat. We were soon summoned to the farmer's heavy-duty truck as ominous rain clouds moved in.

The climate in the Grahamstown area has temperature variations from as low as -3°C (27F) on a winter night to 38°C (100F) on a hot summer day. Rainfall is primarily in the summer and normally starts in November and ends in March.[19] This year much of the Eastern Cape had experienced little to no rainfall. A chance of some early season precipitation was welcome to many that I spoke to.

Our drive was primarily through flat, open grass covered fields and we passed through several gates. Our first stop required us to step over a low fence and walk amongst low native bushes, *euphorbias* and African bulbs. The outside temperature appeared to be dropping and the rain intensified. Farmer Collin lent me his large windbreaker jacket and I greatly appreciated the added protection from the elements. We walked only a few minutes and I was shown an *Encephalartos caffer* that was totally surrounded by grey-black lichen-covered rocks. The plant was healthy with adult bright green leaves no longer than 60 cm (24 inches) (Figure 51).

Figure 51.'Seven Fountains-Grahamstown' form of *Encephalartos caffer* in habitat.

Figure 52. Overlooking gorge where 'Grahamstown' *Encephalartos longifolius* and *E. caffer* grows.

The neat non-plumose leaflets were characteristic of the Seven Fountains-Grahamstown form of *E. caffer*. No cones, offsets or seedlings were evident. I walked around for several minutes in the vicinity of this plant and no other cycads were sighted. We proceeded to leave the area with very few words exchanged. I wondered if this was the lone cycad that I would view that day. To see a solitary cycad growing in a vast, densely vegetated area is a weird, strangely odd experience. It was as if the cycad was planted there and otherwise did not belong in that location. Soaking wet and concerned at what I had just seen, we climbed back in to the vehicle and continued driving south.

We parked and walked a short distance to the edge of an expansive and impressive gorge as shown in Figure 52. The cliffs were covered with tall, lush native trees and shrubs, massive *Aloe ferox* plants and on the eastern slope an occasional dark green leaved *Encephalartos longifolius*. The plants were too far away to clearly distinguish differences but Douglas stated that this was the Grahamstown form of *E. longifolius*. Due to the dense foliage and steep slope, these plants were not accessible by any means. It was comforting to view these cycads in the distance with the sheer drop to the river below. Douglas pointed out that *E. caffer* plants were also growing along the eastern slope and along the banks of the river.

Farmer Collin continued driving along the top of the gorge until we reached a tall barbed wire fence. Fortunately, we all managed to slip through the fence and proceeded down a very steep, grassy slope. We walked fifteen minutes up and down this slope and I counted at least twenty-five *Encephalartos caffer* plants. The farther we proceeded down the slope, the steeper it became. Dense *Acacia* trees were heavily shading the cycads growing on the lower portion of the slope. The length of the leaves on these *E. caffer* plants was close to 90 cm (35 inches). These cycads took on a totally different look and presence than those plants growing in full sun or partial shade. They were gangly and light-starved with the leaflets lacking their tight, neat appearance. I was impressed with how many *E. caffer* plants were growing under these stressed conditions. Despite the freezing rain and slippery conditions, my enthusiasm and excitement levels were never dampened. Many of the cycads were mature and we admired a coning female plant as we were heading back up the slope (Figure 53). Separation between the light yellow green scales was occurring and hints of yellow orange sarcotesta were peeking out between the scales. We figured that disintegration of the cone was one to two months away. A sense of gratification is overwhelming when one is fortunate enough to experience a sight such as this magnificent cone thriving in habitat. Douglas and I beamed with contentment as we photographed this truly "paintable" cycad in all of its glory.

Figure 53. Maturing female cone of *Encephalartos caffer*.

The rain continued to worsen as we headed back to the farmhouse. Farmer Collin invited us in to his home for tea and to warm our bodies a bit. Douglas gave him one of his books and an *Encephalartos hirsutus* print. We had been visiting only a short time when the farmer asked me directly "Did you really travel all that way to see a plant?" I noted his expression and he truly was grappling with the concept of an individual traveling half way around the world to view and photograph a small, leafy organism. He politely stated that he was a "cattle man" and shared few other interests. In all my exuberance, I told him that viewing these amazing cycads in habitat was my primary reason for making the long journey. I also shared with him my deep appreciation for all that he is doing to protect the cycads on his property. He seemed to acknowledge my respect and high regard for the cycads and his efforts to protect them. We then proceeded to leave as we had already taken up several hours of his time. As we drove off and headed towards Grahamstown, I thanked Douglas for arranging this unforgettable experience for me. He once again had come through for me and enriched another day of mine in his magnificent homeland.

The town of Grahamstown is steeped in history and has played an integral role in the development and advancement of the Eastern Cape Province. Grahamstown was founded in 1812 as part of an effort to secure the eastern frontier of British influence against the Xhosa. The Eastern Cape Province was one of the first regions to be settled in South Africa. In 1820, Grahamstown was one of the earliest English settlements. Historically significant attractions are prominent throughout the town. The 1820 Settler's National Monument is a popular tourist destination. The monument was built to honor the Settler's whose impact on the country was significant due to their campaign for Press Freedom and the need for democratic government. Grocott's Mail, the oldest surviving independent newspaper in South Africa, was founded in 1870 in Grahahamstown.[20]

We drove past Rhodes University, a notable and very well known college in South Africa. Rhodes University College was established in Grahamstown in 1904. In 1951 it became a fully-fledged University and presently provides world-class tertiary education to over 6,000 students. Douglas mentioned that there are two large festivals that take place annually in Grahamstown: the National Arts Festival in June/July and SciFest Africa in March/April. The National Arts Festival is the largest Arts festival in Africa and SciFest Africa, the national Science festival, draws more than 50,000 people.[20]

Driving along a major boulevard through town, I noticed cycads growing along the center divider. It was time to photograph some of the town sights so we parked and I ventured off on a small tour of my own. As I walked along the central median photographing *Encephalartos altensteinii* plants, cars were whizzing by on either side of me. The cycads had been planted there a number of years ago and looked surprisingly healthy despite being relentlessly subjected to vehicle exhaust fumes. Several of the stems were at least 2 m (7 feet) tall. Each specimen displayed a full, lush crown of mid-green gently recurving leaves. A lady photographing plants in the middle of a busy street must have been quite a sight to both pedestrians and passengers alike.

The 'City of Saints' is one of several nicknames associated with Grahamstown due to the more than forty religious buildings located within the town limits. I continued walking south to the Cathedral of St. Michael and St. George. This church is touted as having, at 176 feet tall, the highest steeple in South Africa. Construction on the cathedral started in 1824 but was not completed until 1952.[20] The resonating beauty of the cathedral's eight bells, the first and heaviest in Africa, can only be heard on a Sunday. We missed the tolling of the bells, but I still admired the two 3 m (10 feet) tall *Encephalartos altensteinii* plants in the courtyard of the cathedral (Figure 54). These divine cycads radiated an ethereal beauty not often seen in public gardens and truly enhanced the appearance of this pietistic edifice.

Our time was short in this fascinating town but we still took a few minutes to enjoy a savory cappuccino.

Figure 54. Stately *Encephalartos altensteinii* planted in courtyard of the Cathedral of St. Michael and St. George.

I mentioned the beautiful *Encephalartos altensteinii* planted outside the cathedral. Douglas told me that three *Encephalartos latifrons* were planted in the same garden more than thirty years ago. Within a ten-year time frame, all three cycads had been stolen from the courtyard. Even when planted in the holiest of ground, an undaunted cycad thief never hesitates to plunder and pillage a rare cycad.

Our drive northeast to King William's Town was treacherous. The outside temperature dropped to 14C (57F) and the blustery, cold wind made driving difficult. As we drove through the hills to the coast, Douglas commented that the Fish River Valley was once home to thousands of *Encephalartos trispinosus* plants. In recent years vast regions of native *E. trispinosus* habitat have been plowed under and been replaced by pineapple plantations. Douglas stated that "a vision of cycads covering the hillsides and stretching far off towards the horizon" was truly a sight to behold. As Douglas focused intently on getting us to our destination for the evening safely, I found myself lamenting over another cycad habitat that disappeared without a trace. The irony of the situation is that these CITES I plants are theoretically protected under the laws enforced by government agencies and Nature Conservation. Property owners, however, consider growing pineapples to be far too lucrative to recognize the need to preserve this habitat of prehistoric specimens. The cycads often times cannot be moved, traded or sold because of the need to preserve them in their habitat. Agricultural subsidies and financial backing pave the way for land clearing and, ultimately, the decimation of thousands of cycads. The scope and extent of "true protection" can only reach so far. A few hundred plants may be salvaged but the natural lifecycle and optimal existence of these cycads will be lost forever. Why aren't pineapples being raised on the thousands of acres of open land that has been overrun by *Acacia* trees and *Opuntia ficus-indica?* Growing conditions may not be optimal as on the hilltops of Fish River Valley. In the interest of protecting these last remaining habitats on earth, however, wouldn't it have been worth it?

As the evening was coming to a close and I settled in for the night at the Reflections B & B, I began reflecting back on all that I had seen on this rainy Monday. A mental image of crystal clear details of cycad cones lulled me in to a long, peaceful sleep.

TUESDAY, OCTOBER 27:

Very few days in life are filled with the diversity, intrigue and excitement that I had experienced over the past three weeks in South Africa. These days seemed to ride like a fast paced roller coaster. This ride was one that I never wanted to end.

King William's Town is situated along the banks of the Buffalo River and at the foot of the Amatola Mountains. The population of the town is 100,000 and is a 40-minute drive from the Indian Ocean port of East London. The town, named after King William IV, was founded by Sir Benjamin d'Urban in May 1835.[21] The town was declared a royal borough of British Kaffraria in 1861 and has a large industrial base producing textiles, soap, candles and sweets. A popular destination in town is the Amathole Museum where "Huberta", one of the most famous animals in South African history, is preserved. Huberta was a hippopotamus that traveled over a three-year period a distance of 1600 km (1000 miles). She left her waterhole in the St. Lucia Estuary in Zululand in November 1928 and arrived a celebrity in East London in March 1931. Huberta was then declared by the Natal Provincial Council to be Royal Game. This declaration served as an official proclamation of protection. A month later Huberta was shot and killed by hunters.[22] After reading about the saga of Huberta, the plight of cycads once again came to mind. Official proclamations of protection do little if actual "protection" is not enforced. Perhaps Huberta was killed because of her high profile existence and notoriety. Cycads were often left alone until they became desirable and valuable to so many collectors.

Our final destination in the Eastern Cape was a private garden located in King William's Town. We had visited this garden in 2008 and had been duly impressed. The owner had been collecting cycads for at least 25 years and had incorporated large aloes and other African succulents to bring balance to his garden. Growing in this garden were mature specimens of many *Encephalartos* species. The stem of one *Encephalartos inopinus* was procumbent and measured at least 2 m (7 feet). Boulders had been strategically placed to support the atypically wide stem. An abundance of suckering was occurring on *E.dolomiticus* (Figure 55), *E. lehmannii, E. latifrons, E. inopinus, E. trispinosus, E. horridus* and *E. nubimontanus*. Several species were in varying stages of cone development including *E. arenarius* (Figure 56), *E. lehmannii, E. horridus, E. natalensis*, *E. altensteinii*, *E. trispinosus* and *E. middelburgensis*. I spoke to the owner about his pollination regime and method of propagating cycads from seed. All questions were quickly put to rest as he walked me over to his vast growing area and there in front of me were literally hundreds of cycad hybrids growing in plastic bags. His method of generating new cycads is to bring together a male and female cone from whatever species is receptive at the time. He may selectively attempt to grow a "pure" species but primarily is interested in creating as many *Encephalartos* combinations as humanly possible. His creations are not labeled so that enhances the mystery to what he is actually growing in his nursery. The belief of this grower is that hybridization occurs throughout nature and that through experimentation, a cycad of ultimate beauty and uniqueness could be obtained. His passion for hybridization was applied to his aloe collection as well. Time passed by quickly as I listened to the perspective of an Eastern Cape grower and his view of the future of cycads in his country. His belief was that as long as he was propagating new cycads, there would be no shortage for future generations. I admired his tenacity and desire to propagate his plants. My main concern was the potential cycad identification quagmire

Figure 55. Impressive plant of *Encephalartos dolomiticus* growing in a garden.

facing collectors years from now as so many hybrid cycads make their way on to the open market. Despite my reservations, my appreciation for this man's time and insight was more than evident and he invited Douglas and I to visit him any time that we were in town.

The Eastern Cape portion of our trip had now officially ended and I volunteered to drive us northeast towards the town of Kokstad. The entire two and a half hour drive was filled with stress, tension and riddled with obstacles. Early on in the drive I was confronted with speed bumps on a major highway. The concept was unfamiliar to me but Douglas pointed out that the evenly spaced bumps in the road were laid down on dangerous sections of roadway. Having driven on the right hand side of the road my entire adult life, driving on the left hand side and keeping the vehicle centered in the lane was my biggest challenge. Vehicles parked along the left embankment, large numbers of people, groups of cattle or goats and vendors peddling their wares impeded my progress and created anxiety for Douglas. At one point I was even accused of "virtually trading paint" with a vehicle parked just off the roadway. By the time we reached the outskirts of Kokstad I was exhausted, sweating profusely and elated to step out of the driver's seat. Douglas had to catch his breath as well and welcomed the opportunity to end our journey for the day.

Figure 56. Female cone and plant of *Encephalartos arenarius* in a collection.

Kokstad is a town in the southernmost section of KwaZulu-Natal Province. The town is named after the Griqua chief Adam Kok III who settled in the area in 1863. "Stad" is the Dutch and Afrikaans word for city. Kokstad is built on the outer slopes of the Drakensberg. At a height of 2,224 meters (7297 feet), Mount Currie rises up north of the town. The region is a center for cheese and dairy products. The population of Kokstad is 45,000 and is the fastest growing town in KwaZulu-Natal.[50]

We didn't realize the popularity of Kokstad until we started to investigate potential accommodations for the evening. Apparently, government officials were in town for the week and all B & B vacancies were filled. Even the high priced accommodations at R1200 per person were reserved for the entire week. Douglas was dismayed and we were forced to continue driving northeast. Twenty minutes out of town we stopped at the Rocky Ridge Lodge. Good fortune was upon us and we finally had a place to stay. Prior to dinner I took a walk in the vicinity of the lodge. As I stretched my legs and took in the cool, crisp air, a lightning and thunder show surrounded me on three sides. Brilliant displays of light, deep cracking noises and rumblings reverberated across the north, south and east sky. With each passing minute the storms appeared to be migrating towards a central meeting point. Never had I witnessed such a powerful series of storms all in one location. As I approached the lodge perimeter, I was soaked from the intense rain and the thunder and lightning exploded with amazing ferocity. Later in the evening I was lulled to sleep by the pulsating raindrops flowing down the shake roof on to the ground below.

WEDNESDAY, OCTOBER 28:

It was 5:00 am and a new day was about to begin. Prior to breakfast, we took a stroll down a long, muddy dirt road. The fate of cycads once again became the topic of the hour. For a number of years the ultimate destination of large privately owned cycad collections has concerned me. I have met a number of highly regarded cycad collectors who have dedicated a great deal of time and effort to maintain accurate records with regard to the lineage of each plant. Identification and verification of certain forms of cycads are of utmost importance to the grower. The majority of cycads will outlive their owners, however, and may be passed on to a family member, friend, society, or a botanical garden. They may be dispersed at an estate sale. Very often labels or other identification data are lost or misplaced. Even if verification of species names is maintained, the new owner may not bother to pollinate their cycads meticulously, take care of the plants properly or may not even want them at all. Maintaining the collection becomes a burden and plants are sold off piecemeal. Collections donated to a botanical garden may not always receive optimal care either. Years ago I volunteered at a botanical garden that placed far more importance on rose maintenance and herb plantings than it did on caring for their valuable cycads. Some of these existed in disintegrating pots with soil mix flowing through the cracks. One beautiful *Encephalartos arenarius* specimen had half of its leaves cut off by an inexperienced helper because they extended over a garden pathway.

Another consideration relates to widespread artificial cycad propagation. My belief is that as many seedlings as possible should be grown by those who are willing to take care of them. While tropical cycads flourish in warm, humid conditions and often times the blue or narrow-leaved *Encephalartos* prosper in drier, more austere conditions, a seedling can adapt more readily to a climate different than its native one. With the depletion of so many habitats, the call to raise cycads from seed is more urgent than ever. These new plants will grow with a character reflective of their environment under cultivation, and may look quite different from a wild plant of the species. The ability of a cycad taken from habitat to maintain its character in a new environment is another matter altogether.

A serious issue that Douglas brought to my attention early on in the trip is the fact that, through time, cycads plucked out of habitat and planted in gardens will take on a new look and form. Habitat-grown cycads may survive in varying climates but will not retain the true characteristics of the species. Enhanced feeding and watering regimes may cause new stem growth to thicken, which would make it easy to see the point where the plant was introduced to cultivation. Plants may grow taller and sucker abnormally. Leaf configuration and coloration may be altered due to lighting conditions, differing components in the soil and competition by community plantings. A lack of stimulation by annual fires can set back the growth and adversely affect the ability of a cycad to reproduce. Natural pollinators no longer exist for these cycads in gardens. Coning may cease if a plant is removed to a significantly different climate.

Conversations with various collectors that possess habitat-grown cycads led me to believe that many do not regularly pollinate their highly valued cycads. Some may believe that an abundance of rare seed could come available and devalue the species or that information could leak out regarding the extent of their collection. Many inheritors of these cycads will, in all likelihood, look at the plants as a commodity to be auctioned off or sold. In another hundred years or so that carefully described and cataloged cycad from habitat may truly exist only in text or photographs. A bleak undertone pervaded the conversation as our saunter through the countryside came to an end.

Early on it was clearly stated that there was no driving for me on this day. The streetcar racing of the "Transkei 500" that took place yesterday was all that Douglas wanted to contend with for the time being. As we headed northeast toward the suburbs of Durban, I reflected on the fact that our Eastern Cape trip had come full circle. The days of anticipating the next cycad to explore in habitat were quickly coming to an end. We had plans to tour cycads in the Durban area. There were

other sights and cities to see, and gardens to visit. We would also assemble an art display for a large cycad event. Our final venture into the unknown would be a hike in the Southern Drakensberg to attempt to photograph the Highland form of *Encephalartos ghellinckii*. Anticipation was great as this was one species very rarely seen in cultivation. This plant grows in a challenging high-altitude environment where it endures snow, ice, and wind-driven grass fires. Departure for this titillating adventure was just two days away. I may not have been counting down the minutes but I anxiously anticipated the dawning of a new day.

THURSDAY, OCTOBER 29:

The Port of Durban is the busiest port in South Africa and Durban is the third largest city. The Greater Durban area has a population of almost 3.5 million, and is the biggest city on the east coast of the African continent.[12]

The first known inhabitants of the Durban area arrived from the north around 100,000 years ago. These calculations were determined by carbon dating of rock art found in caves in the Drakensberg. In three days time caves of this region would be photographed by Douglas and I. There was no written history of the area until Portuguese explorer Vasco da Gama documented his sighting during the Christmas season in 1497. In search of a route from Europe to India, he decided to name the area "Natal" which means Christmas in Portuguese.[44]

In 1824 the modern city of Durban was established when a party of 25 men under British Lieutenant F. G. Farewell arrived from the Cape Colony and settled near today's Farewell Square. An adventurer named Henry Francis Fynn accompanied Farewell to the region. Zulu King Shaka befriended Fynn after being treated by him for a stab wound he sustained in battle. Shaka granted Fynn a "30-mile strip of coast a hundred miles in depth" as a token of his appreciation. On June 23, 1835 it was decided to build a capital town on Fynn's territory and name it "d'Urban" after Sir Benjamin d'Urban, then governor of the Cape Colony.[29]

Immigrants from Europe and the Cape Colony settled in the Durban area. The sugar cane industry started up in the 1860s. In order to accommodate the need for toilers to work on the sugar cane plantations, the British brought thousands of indentured laborers from India on twenty five-year contracts. As a result of this large-scale importation of Indians, Durban has the largest Asian community in South Africa, and the African continent.[12]

The metropolitan area is topographically hilly with the exception of the central business district and the harbor. Elevations are significantly higher in the western suburbs of Hillcrest and Kloof. Botha's Hill is located on the highest point at 850 m (2789 feet).[12]

The climate of Durban is classified as mild subtropical with warm wet summers and mild moist to dry winters, which are frost-free. A variance in altitude brings colder temperatures in the winter to the western suburbs. The annual rainfall for the region is 1,009 mm (39.7 inches).[12]

Our cycad destination for the day was the Krantzkloof Nature Reserve. 'Kloof' is the Afrikaans term for 'gorge'. The area is named after the deep ravine formed by the Molweni stream (stream of high cliffs). The spectacular views are in part due to the convergence of two river gorges, the Molweni and Nqutu.[25] The Kloof Gorge is part of the 4.47 square kilometer (1.7 sq mile) reserve. The Krantzkloof Nature Reserve is situated in Kloof, a suburb of Durban, and is surrounded by Hillcrest and Pinetown. The reserve was established in 1950 and includes an undisturbed expanse of coastal forest and grasslands.[24]

A wide variety of wildlife inhabit the reserve including zebra, bushbuck, blue, red and grey duiker, vervet monkey, rock hyrax, slender mongoose, white-tailed mongoose, egyptian mongoose, banded mongoose, water monitor and genet. Over 200 species of birds have been sighted within the reserve.[24] Although populations of certain species are abundant in the reserve, land development and suburbia has reduced the natural habitat size to marginal levels. A vast number of plant and animal species found here are rare or endangered. The *Brachystelma natalense* is a plant believed to be extinct except for the last small population existing in the reserve.[25] As is the case with so many native cycads, the isolation and shrinking of so many habitats brings in to question the long-term viability of small, disjointed populations.

Encephalartos natalensis and *Stangeria eriopus* exist as sympatric species in the reserve. A number of grassland form *Stangerias* were thriving on grass-covered embankments literally meters from statuesque *E. natalensis* plants. The largest stems of *E. natalensis* that I photographed were 2.5 m (8 feet) tall (Figure 57). None of the cycads were actively in cone but a small number of *E. natalensis* seeds were dispersed at the base of one mother plant. Seedlings of neither species could be found in the areas where we walked. I counted twelve *Stangeria*s and nine *E. natalensis* plants over a relatively small area. The cycads were healthy and flourishing despite the tall, thick patches of grass and encroachment of riverine bush.

We walked along the top of the gorge for close to a mile and the natural beauty surrounding us was profound as shown in Figure 58. Our pathway took us past unprotected, narrow ledges and sudden drop-offs. For those afflicted with acrophobia, this hike would not be a pleasant one. As I looked over the edge, *Aloe arborescens* were growing out of sheer cliff face crevices. The east-facing cliffs overlooking the Kloof Gorge are also *Encephalartos natalensis* habitat. Without high-powered binoculars, however, the cycads were very difficult to spot amongst the dark green foliage. Douglas commented that close to ten years ago he photographed a type specimen of *E. natalensis* located five km (three miles) north of the reserve. This massive, old multi-

Figure 57. *Encephalartos natalensis* growing in the Krantzkloof Nature Reserve.

stemmed plant was difficult to photograph because it was surrounded by thick bush on a steep, rocky slope.[18] As was the case with the cycads in the reserve, the undergrowth had not been cleared out for a number of years due to suppression of bush fires. I marveled at the solitude surrounding us on this particular hike. Several million people are living within twenty miles (thirty-two km) of this refuge and yet, throughout our entire trek, not a single soul did we encounter. Surrounded by the suburbs of Durban, this sanctuary from the hectic, modern-day lifestyle is accessible to so many but frequented by very few.

Late in the afternoon we visited with Vincent, Douglas' oldest son, his wife Elizabeth and their children. Vincent and Elizabeth designed the dust jacket for "Cycads of Africa Volume I". I was given a tour of their scenic property and cycad garden in Waterfall, a suburb of Durban. Douglas also introduced me to Catherine, his youngest daughter. In the span of my short visit with Vincent and his family, sharing a coffee with Catherine and spending several evenings with Chantal, Douglas' oldest daughter, Nod and their children, the artistic abilities of the entire Goode family soon became evident. On several occasions I viewed drawings and paintings of family members and their work was exquisite. The grandchildren had also inherited the talent and shared their work with me. To be a guest amongst such fine people truly was an honor for me. I was welcomed into their homes and treated as if they had known me for years. With two weeks left on South African soil and as time drew nearer to say goodbye, I knew that I would miss all of them deeply. The entire Goode family had offered me the utmost in hospitality and for this, I am indebted.

FRIDAY, OCTOBER 30:

Douglas Goode's book "Cycads of Africa" was my earliest exposure to the work of this incredibly talented artist. We ordered his book in spring 1995 from a bookseller in South Africa. It took more than a month to arrive but when it did, I stared in amazement at the preciseness and detail captured in each cycad painting. The eloquently drawn habitat serves as the perfect showcase to highlight his artistic wizardry. These paintings instilled in me a burning desire to view the plants in full glory in their endemic country. Never would I have imagined that I would be given the opportunity to meet this iconic figure of the cycad world thirteen years later.

Steve Trollip introduced us to Douglas Goode in July 2008 in Hoedspruit, a town in the Limpopo Province. There tends to be a mystique associated with people that have only been admired from a distance. Although Douglas' appearance matched his likeness as seen in

Figure 58. Overlooking Kloof Gorge in Krantzkloof Nature Reserve.

his publications, I must admit at first that it appeared as if we had met the wrong man. Initially, Douglas had very little positive to relay with respect to cycads and the personal impact that they had made in his life. After speaking with him at length, however, I understood his perspective and likened it to my own. His passion and enthusiasm for cycads has never waned but their future in habitat has been drastically altered since he saw his first cycad, an *Encephalartos horridus*, in 1962. The distressing stories are seemingly endless and this has weighed on his mind over the years. It is a privilege to know this unassuming, humble and quick-witted man who possesses an ingenious sense of artistry that has achieved great stature. Douglas will continue to be admired and praised by countless generations.

Our first tour of the day was at the Durban Natural Science Museum. Douglas worked fourteen years as the Principal Technician for this museum. It had been several years since his retirement and I wanted to photograph some of the displays that he had been responsible for. I was impressed with the number of visitors walking through the corridors. The museum does not charge an entrance fee and brings in 295,000 visitors a year. We met several of his former colleagues and they were thrilled to see him. Douglas was presented with a museum anniversary book that included a history of the staff. One of the employees discussed the potential relocation of the museum within the next three to four years.

We proceeded to drive to Durban Botanical Gardens. This site, located on the eastern slopes of the Berea ridge, initially began as experimental growing grounds for tropical crops. The gardens are now known for their diverse collection of plants including an impressive variety of South African Cycad species. The cycads are considered their "crown jewels" and have been collected over a span of 140 years.[4] Paul and I took an extensive series of photographs of this collection back in 2008. Durban Botanical Gardens is home to the original specimen of *Encephalartos woodii*. This highly desired cycad, and at least four other imposing *E. woodi* plants,

Figure 59. Imposing *Encephalartos woodii* plant at Durban Botanical Gardens (photo by Paul Sternberg).

stood majestically in a park-like setting within the confines of the garden (Figure 59). The *Encephalartos munchii* plants were stunning in color and appearance (Figure 60). Douglas wanted to show me the *E. relictus* planted on the grounds but we were unsuccessful at finding it. This was a disconcerting revelation as Douglas had seen it six months earlier. Cycad thefts had occurred at this garden in the past. Six days after I left South Africa, twenty rare cycads worth hundreds of thousands of rands were stolen from the Durban Botanical Gardens. Some of the cycads were valued as high as R75 000 ($10,000 US) and the belief was that they were sold to local collectors.[45]

As we headed west back to the suburbs of Durban, I sensed that the whereabouts of the *Encephalartos relictus* plant was weighing on Douglas' mind. Ideally,

Figure 60. *Encephalartos munchii* at the Durban Botanical Gardens (photo by Paul Sternberg).

the rarity of this species dictates that those left in existence should all be documented and accounted for. Those that remain should be protected and propagated to ensure against extinction of the species. Certain botanic gardens have the expertise and funding to fulfill these requirements and do make a difference in the preservation of certain species. The desirability and high premium placed on so many *Encephalartos species*, however, places them at a greater risk of being stolen. A good number of these cycads will live out their lives behind tall, solid block walls topped with barbed wire and "protected" by dogs and security cameras. These cycads, in essence, have been sentenced to a life in prison. A scenario as I have described, shown in Figure 61, was one that Douglas dramatically illustrated several years ago. No longer will these irreplaceable plants be thriving in their native soil. Their freedom to exist in the environment that they were accustomed to will be lost forever. The natural life cycle of the cycad has been taken from it and will never be recovered.

Figure 61. "Cycads locked up" in a maximum security prison (illustration by Douglas Goode).

Our final outing for the day was an hour-long tour of a private cycad garden. Morton had been collecting cycads for at least ten years and his collection focused primarily on different forms of *Encephalartos natalensis*. Morton found beauty in the varieties of leaflet shape and coloration. He found the *E. natalensis* forms with recurving umbrella-like foliage especially captivating. Identification tags were clearly absent from his cycads in the ground. I admired his mature *E. ngoyanus* flourishing with glossy dark green leaves close to 0.8 m (2.6 feet) long (Figure 62). The stem height was at least 20 cm (8 inches), and 15 cm (6 inches) in diameter. Douglas and I had missed seeing this species in habitat so I found the sheer beauty of this particular plant mesmerizing.

Morton walked us through his meticulously manicured bonsai plant collection. His artistic cultivation abilities were manifested in every plant on display. Morton praised the *Cycas revoluta* as being the cycad of choice for bonsai specimens. These miniaturized cycads definitely had their own horticultural niche. As the garden tour came to an end, a friend of the family, Monty, had come to visit and we spoke briefly about his cycad collection and his desire to possess all conceivable species and forms of *Encephalartos*. I asked Monty his views regarding the removal of cycads from habitat and his response was "If we don't take them, someone else will." I quickly saw where this conversation was headed and welcomed its interruption by a gesture to enter the home of Morton and his wife.

As all of us sat around the bar enjoying a drink, I complimented Morton's wife on their lovely home and enchanting garden. Our visit was pleasant and engaging. The hosts generously shared their evening with us and I appreciated their hospitality. The graciousness of the South African people deeply affected me regardless of where we ended up on any given day. As we proceeded to leave, the events of the next day were already falling in to place. Tomorrow was slated for our departure back in to cycad habitat and I eagerly anticipated the adventure awaiting us.

Continued in ENCEPHALARTOS 132

Figure 62. Mature *Encephalartos ngoyanus* in a private garden.

CYCADS: ANCIENT TREASURES OF THE WORLD

Collecting and investing in cycads started in earnest approximately 30 years ago in South Africa and has since developed into one of the fastest growing hobbies worldwide. These majestic, fascinating and prehistoric plants have also drawn the attention of people in other countries and cycads are now being collected worldwide on a large scale.

Why are these ancient plants, which existed since prehistoric times, some 250 million years ago, regarded as valuable and sought after in these modern times?

We are not quite sure about the reasons, which led to this phenomenon. For some people it lies in their beauty, others say it is because they are so rare and different from any other plants on earth. We will never really know, but whatever the reason, cycad collections are being bought up everywhere by private collectors as well as corporate institutions at an alarming rate. Cycad species that sold for R500 approximately 15 years ago are now in great demand for R15000. In fact, the demand far outstrips the availability of certain species.

This situation has unfortunately put pressure on the wild populations of many species. On the positive side however, it can be stated that cycad growers have successfully propagated more plants from seed in the past 10 years than nature itself in the last 1000 years.

There are thousands of cycad enthusiasts country-wide and many of them belong to the Cycad Society of South Africa. The Society is widely recognised for its excellent conservational efforts, as well as their support of conservation through cultivation programmes.

We are fortunate that the recognition of these precious plants by private collectors and institutions worldwide, has led to greater awareness, organised propagation of seed, research and expeditions into the wild.

Cycads grow very old. Individual plants in nature are estimated to be as old as 3000 years. Some of these plants have grown up to 7m in height.

Cycads are not only collected by individuals for private gardens, but magnificent collections can be viewed and enjoyed in parks and public gardens such as the Botanical Gardens of Pretoria, Durban, Kirstenbosch, Nelspruit and Roodepoort, the Union Buildings, UNISA and the Monte Casino Bird and Cycad Gardens to name a few in South Africa. There are also numerous parks and cycad gardens worldwide for public enjoyment.

Although conservation authorities are strict with the issuing of permits, they unfortunately do very little to proactively encourage organised pollination and germination of seed in the veld. Re-establishing pure germinated seed back into their natural habitat can be another form of conservation and will ensure the stabilizing of numbers in nature. This can also lead to job creation for many people in different provinces of South Africa, which may then also result in the protection of

Pl. 10. Wood's Cycad (*Xanthostrobus woodii*)

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mature seed-bearing plants by the indigenous people themselves.

Funding of numerous projects by private individuals and institutions has now also influenced government bodies to make their own contributions and hopefully this will result in similar conservational proportions as currently being experienced with the protection of our wildlife.

Cycad Societies are now also established in Australia and the USA. Comprehensive books on Cycads and notably publications by Prof Nat Grobbelaar and Douglas Goode, are available from leading bookstores.

Every three years the International Conference on Cycad Biology is hosted by a country, mostly where cycads are indigenous. The conference is well attended and delegates include collectors, conservationists and academics.

Cycads are the most primitive seed bearing plants known to man. They have been around for at least 250 million years. As with the dinosaurs, cycads reached their peak in numbers and diversity during the Jurassic period 136 million to 193 million years ago. One can almost say they are the coelancanths of the plant world. Relatively few of the original cycad forms survived the ice age and very few living plants occur in relatively small and isolated pockets on earth.

Cycads are dioecious and the sex becomes evident only when a plant produces a cone. Female plants produce a seed-bearing, pineapple-like cone whereas the male produces a thinner cone with yellowish pollen.

South African and other African cycads, which are the most sought-after worldwide, belong to the genus *Encephalartos*. Other genera like *Cycas*, *Dioon* and *Zamia* occur in tropical and subtropical parts of the world such as the Americas, Asia and Australia.

Cycads are commonly known as "broodbome" ("breadtrees" - Ed.) in South Africa, grow naturally in the northern and eastern provinces and on the east coast from Mozambique down to the Humansdorp area, which is the most southern natural habitat. Approximately 40 species have been described so far. One of which, *E. woodii*, is already extinct in nature, with at least another seven species on the brink of extinction.

Botanical history was made in 1895 when Dr Medley Wood collected the only specimen of a cycad from Ngoye Forest in KwaZulu-Natal. This very rare plant was loaded onto an ox wagon and carted to the botanical gardens where it is still growing today. Stems of the plant were separated from the main clump and replanted in the garden. In later years, one of the stems was donated to Kew Gardens in the UK where it is still being admired by visitors from all over the world.

This solitary clump of *E. woodii* was collected from its natural habitat and this event can be viewed in different ways.

A. That Dr Wood removed the only specimen of this plant from its habitat and in the process rendered it being totally extinct in nature and that although this species was on the brink of extinction through natural means, it would be claimed by certain conservationists as improper to remove the one and only remaining plant from its natural habitat; or

B. That the removal of the plant from its natural habitat has ensured the survival of *E. woodii* for humankind.

It is estimated that there are now in excess of 500 specimens of *E. woodii* all over the world, propagated from basal suckers from the original plant and its offspring – a process which is now continuing with positive and exponential results.

E. woodii is considered to be the most valuable of all plant species on earth, both from a botanical and financial viewpoint. Growing in a Johannesburg garden is a mature *E. woodii* on offer for R3 million.

The Cradle of Human Kind was established as a world heritage site at Sterkfontein near Krugersdorp and fossils are being unearthed all over South Africa. This together with the discovery of new cycad species and the establishment of cycad national parks and nature reserves has left us with a rich inheritance. South Africa is unique in many ways with all our natural treasures and wildlife and it is up to us to preserve and improve on what we have for the enjoyment of generations to come.

To quote Charles A. Williams: "I am a Cycad. I saw the appearance of the dinosaurs and their death. I saw the early appearance of mammals. My numbers were many when the Ice Age one million years ago decimated my relatives in Europe and North America. Your mind and your appreciation of me and other animals of my kingdom set you above other animals. Yet you cannot comprehend my antiquity. My strength is in my antiquity and tenacity and you."

For further information, contact:
Cycads Unlimited
Tel: Jackie 0760324238
Gerhard 0836600017
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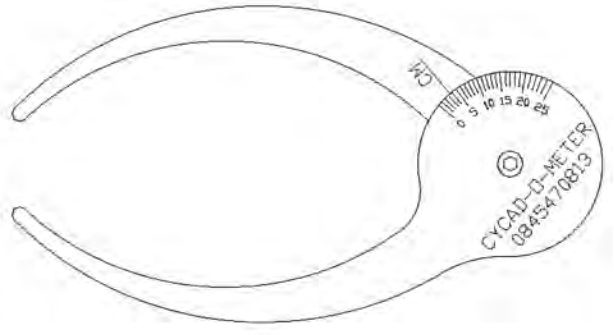

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- Scan at 300 dpi.
- Save as jpeg, using maximum file size (i.e. minimum compression).
- Send by e-mail to **wynand@ananzi.co.za** and mark 'For Encephalartos'.

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
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