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ON THE COVER:

Zamia roezlii with a new bronze emergent leaf. The plant grew in an area cleared for subsistence farming in the town of Juanchaco, Colombia in August 2015. The vegetation was cut down above ground level without disturbing the roots. All over the area new leaves could be seen where zamias sprouted from the base and continued to grow. Also in the same clearing we found *Zamia chigua* (Photograph 2) that suffered the same fate. Photo: Wynand van Eeden.



Errata – The financial information published in the September issue was incomplete due to an error. The full report is available on our website, www.cycadsociety.org, for members to download should they want to read it.

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FROM THE COUNCIL / VAN DIE RAAD

VAN DIE PRESIDENT / FROM THE PRESIDENT

On the 3rd October, 2016 I underwent a left knee replacement operation and all went well. I would like to express my thanks to Wynand van Eeden who acted as President in my absence.

The Board has been advised that the following two posts will be becoming vacant:

- That of the Secretary/ Treasurer. Ian Bassingthwaight has decided to lay down his pen and calculator due to health problems. Also, he has been doing the job for the past 11 years and feels that it is time for a younger person with fresh ideas to take over.
- The second post which is becoming vacant is that of the Webmaster. Pieter van der Walt has been filling the post for many years but pressure of work prevents him from devoting as much time as he would like to these duties.

Should there be any members who feel that they would like to fill any of the mentioned posts they are please to contact me so that the matter can be discussed at the next Board meeting due to be held in February, 2017.

It has been brought to my attention that membership numbers are on the decrease. Will existing members please go out of their way in an endeavour to recruit new members. While on the subject, I ask the Eastern Cape members to please get together with the view to reviving that branch.

Invoices for the 2017 fees were included with the September issue of ENCEPHALARTOS. The amount payable by local members is R260.00. Please remember to cite your membership number when making payment. Foreign members are reminded that payment may be made via PayPal to wynand@ananzi.co.za. The Society's biggest expense is the printing and posting of our journal and members are asked to make their payments as soon as possible in order to cover these costs.

As mentioned, the next Board meeting will be held in February, 2017 and members are asked to submit to me any suggestions or complaints they wish to be discussed at the meeting. Suggestions on the recruitment of new members will also be welcome.

My thanks go to Japie Steenkamp the Society's media Liaison Officer who has been meeting with State officials regarding the introduction of new legislation surrounding cycads. Our relationship with these officials has improved to such an extent that we are at least able to have discussions with them regarding the introduction of the proposed new regulations.

Will members please consider submitting articles of interest for publication in ENCEPHALARTOS. Wynand van Eeden mentions that most of the articles he receives originate from abroad. Will the older and more experienced members please share their knowledge

Ek het die 3de Oktober 2016 'n linkerknie vervanging gehad en alles het goed afgeleef. Hiermee wil ek vir Wynand van Eeden bedank wat opgetree het as Waarnemende President tydens my herstel.

Dit het onder die raad se aandag gekom dat twee poste op die raad vakant gaan raak, naamlik:

- die van Sekretaris Tessourie, Mnr Ian Bassingthwaight, wat agv gesondheidsverwante probleme nie meer op die raad kan dien nie.
- die tweede pos wat vakant gaan raak is die van die Webmeester, Mnr. Pieter vd Walt, agv van werksdruk nie meer sy volle aandag kan skenk nie.

Indien daar van die lede is wat kans sien om een van die bg poste te vul, moet hul asb met my in verbinding tree sodat dit op die raadsvergadering bespreek kan word in Februarie 2017.

Dit het onder my aandag gekom dat ledetalle reeds daal. Daar word gevra dat bestaande lede uit hul pad sal gaan om nuwe lede te werf. Ek vra dat mense van die Oos Kaap dringend daarna moet kyk om weer 'n tak te stig, aangesien daar huidiglik geen tak bestaan nie.

Daar word 'n beroep op lede gedoen om ledegelde vir 2017 vroegtydig te betaal, wat tans R260 per persoon beloop. Lede moet asb onthou om hul lidnommer aan te dui as 'n verwysing by die betaling. Steeds word daar inbetalings gemaak sonder verwysing. Die vereniging se grootste uitgawe is die druk van ons joernaal en is dus noodsaaklik dat ledegelede vroegtydig betaal word om kostes te dek.

Daar word vroeg in Februarie 2017 'n Raadsvergadering gehou. Ek doen 'n beroep op lede om met voorstelle te kom vir nuwe idees of klagtes wat dan bespreek kan word. Daar kan ook bespreek word hoe om nuwe lede te werf.

Te danke aan Japie Steenkamp se noue betrokkenheid met die staat ivm wetgewing, vorder die Vereniging se verhouding met die amptenare positief. Ons is nou al op so vlak met hul dat besluite saam geneem en bespreek kan word. Ons dank gaan aan Japie uit vir al sy tyd en moeite wat hy hierin belè het.

Daar word steeds aan die lede 'n beroep gedoen om artikels vir die ENCEPHALARTOS joernaal te lewer. Volgens Wynand van Eeden kom meeste artikels van oorsee af. Ouer, ervare lede hoort hul kennis te deel sodat dit nie verlore sal gaan nie. Elke jaar word ons oudste lede minder en neem al hul kennis saam na die graf. Ons simpatiseer met die families van lede wat gedurende die jaar beswyk het.

Ondersteun julle verskeie takke met vergaderings en uitstappies.

so that it does not get lost. Each year the number of old members decreases and the deceased take their knowledge to the grave. Our sympathies go out to the families of those members who passed away during the past year.

Please support your regional branches by attending their meetings and their excursions.

I wish all those members who celebrate Xmas a very happy Xmas and to one and all a prosperous 2017.

Yours sincerely,
John Kloppers.
(President)

Ek wil graag aan alle lede 'n geseënde kersfees toewens en voorspoed vir 2017.

Mag jul 'n goeie broodboom jaar beleef in 2017!

Beste groete
John Kloppers

NEWS FROM THE CENTRAL BRANCH

TOUR TO CYCAD GARDENS AND HABITATS IN LIMPOPO

Christo Page

On Saturday the 6th of August 2016 thirty-four members of the Central Branch of the Cycad Society of South Africa and a few members from Limpopo and Mpumalanga met in Mokopane (Potgietersrus), Limpopo for the customary annual long weekend excursion to noteworthy cycad gardens and habitats, on this occasion in Limpopo Province.

Our first stop was at the house of Piet de Bruin in Mokopane to get everybody together and for refreshments. Piet de Bruin is the regional chairman for the Limpopo region and made a big contribution to the success of the tour. After everybody got acquainted we drove to the garden of Mielies Schoeman nearby. His daughter-in-law took us through his neat, very well-tended garden with many specimen plants of South African and some African cycads. The beautifully landscaped garden also has different species of tall growing palms and many interspersed aloes, euphorbias and other succulents between the cycads. The aloes were in flower and made an attractive contrast to the all green cycads.

Back at Piet's house we inspected his many grey leaved cycads which are mostly planted in raised flower beds to ensure good drainage. These include the Limpopo and the Eastern Province species. Particularly good specimens of *Encephalartos horridus* and *E. trispinosus* are to be seen. A number of different forms of *E. laevifolius* also grow in the garden.

After a light lunch of boerewors rolls, with braaing expertly done by Piet, and liquid refreshments, it was time to take the road north to Polokwane and east to Tzaneen where the four star Fairview Hotel and Lodge was to be our base for the next three nights.

On Sunday morning we travelled to the habitat of *Encephalartos dyerianus* in the Lillie Flora Nature Reserve near Mica. This 36ha reserve was proclaimed in 1972 to protect the only viable population of *E. dyerianus*. The visit to this habitat was arranged after lengthy negotiations between John Evert, Chairman of



Figure 1. Piet de Bruin, Johan Ehrke and George Moss discussing the grey leaved *Encephalartos* species growing in Piet's garden in Mokopane. Photograph: Christo Page.



Figure 2. Beautifully landscaped cycad garden of Mielies Schoeman in Mokopane, Limpopo Province. Photograph: Christo Page.



Figure 3. A long decumbent stem of *Encephalartos dyerianus* draped over a granite boulder with another tall erect stem and small suckers, all forming part of one plant – Lillie Flora Reserve near Mica in Limpopo Province. Photograph: Christo Page.



Figure 4. The erect stem of one of the tallest of the *Encephalartos dyerianus* plants in the Lillie Flora Reserve. Note the numerous greyish green leaves typical of *E. dyerianus*. Lowveld plain is in the back ground. Photograph: Christo Page.



Figure 5. *Tilania du Preez* with one of the armed guards at Lillie Flora Reserve. Photograph: Christo Page.



Figure 6. One of the few small seedlings of *Encephalartos dyerianus* seen between the mature plants. It is either an in-situ seedling or some of the artificially propagated seedlings planted by Nature Conservation in the Lillie Flora Reserve years ago. Photograph: Christo Page.



Figure 7. Abundant seed underneath mature female plants of *Encephalartos dyerianus* – Lillie Flora reserve. Photograph: Christo Page.

the Central Branch and the authorities responsible for the protection of this critically endangered cycad. It had been a big privilege to be able to visit the site as very few people are allowed to do so.

The colony of about 350 cycad plants (600 according to some sources) grows on top of an isolated granite hill. Being in the Lowveld, the area is very hot in summer with average day temperatures of about 33°C in summer (max measured 43°), 26°C in winter and average minimum night temperatures of 21°C in summer and 9°C in winter - Phalaborwa figures. It is also a low rainfall area with an average annual rainfall of about 500mm, mainly in summer.

The number of plants is significantly down from an estimated 1 000 in 1980 despite stringent security measures over many years. Apparently in January 2008 alone, 107 plants were stolen. We experienced some of this as there were attempts to dig out suckers a few weeks before our visit despite the security. This security includes fencing of the small Lillie Flora Reserve in which the colony occurs and a very secure game fence (to keep elephants in) around the large private game reserve surrounding the smaller area. On top of this, the game



Figure 8. A group of erect and decumbent *Encephalartos dyerianus* plants between granite boulders and in fissures in the boulders – Lillie Flora Reserve. Photograph: Christo Page.



Figure 9. A cluster of short to very tall *Encephalartos dyerianus* stems which probably originated from a single plant. Photograph: Christo Page.



Figure 10. A very impressive cluster of erect and reclining suckers of a Modjadji cycad, *Encephalartos transvenosus* at the Modjadji Cycad Reserve. Photograph: Christo Page.

reserve is patrolled by security personnel to prevent the killing of rhinos in the reserve (and preventing stealing of the cycads). Additionally, six or eight other **armed** guards have their camp amongst the cycads on top of the hill to provide around the clock security to the plants. Furthermore, the road up the hill to the colony is very rough, even with 4x4 vehicles and even rougher by foot over the boulders and between the thorn trees. The colony is far from the main road and the game reserve is inhabited by all the big predators and elephants.

After a very bumpy 4x4 trip up the hill, it was with great excitement that we walked the last 200 metres up the steep slope from the parking area to the first *Encephalartos dyerianus*. The cycads grow scattered between and in crevices in large to very large granite boulders. Some plants even grow recumbently over the rocks and ground between the boulders, twisting to follow the contours of the substrate. The mature cycads have robust, unbranched stems 300–400mm in diameter. The largest cycads have a stem length of about 6 metres and many are up to about 4 metres long. *E. dyerianus* typically has a dense crown of many grey-green leaves – the most of any of the *Encephalartos* species. The plants readily form suckers and most large plants have a few to several suckers of various ages. All the plants are very healthy and there are signs of regeneration in the population as there are some smaller plants and a few small seedlings. However, some or all of these may be seedlings Nature Conservation planted between the mature plants years ago. A lot of seed is



Figure 11. View of the *Encephalartos transvenosus* forest and the information centre in the distance. Photograph: Christo Page.

produced which lay scattered around the female plants. It is unknown how much of the seeds are viable as we were not allowed to pick them up and were under constant surveillance by the guards to ensure that we did not do so.

Being there in a healthy and the only viable population of *E. dyerianus* was a very special highlight of our tour. It is also gratifying to know that the plants are under as strict protection as humanly possible. It is a pity that human greed (and hunger) always finds ways to bypass good intentions.



Figure 12. Some of the very tall *Encephalartos transvenosus* plants in the Modjadji Cycad reserve. Photograph: Christo Page.



Figure 13. Leaf damage possibly caused by leopard moth (*Zeronopsis leopardina*) on young leaflets of an *Encephalartos transvenosus* plant. Photograph: Christo Page.



Figure 14. The very large Sunland baobab tree a few weeks before it collapsed, probably of old age, and was destroyed. Photograph: Christo Page.

On Monday the 8th of August we drove through a quite highly populated part of Venda to the world renowned habitat of the Modjadji cycad, *Encephalartos transvenosus*, near the palace of the Rain Queen of the Balobedu Tribe. As it was a public holiday everybody was driving or walking on the roads.

This forest of tall, majestic cycad trees has been under the protection of the Rain Queen for many generations. The Modjadji Cycad Reserve is 560ha in size and lies against the slopes of two hills. It is said to be the largest cycad forest in the world. Climate here is

subtropical and average rainfall is quite high at about 1 500mm annually. After paying our entrance fees, we spent a few hours walking around between the cycads taking pictures. Some of us sat in the shade of a thatch roof shelter discussing cycads or philosophising about solutions to the world's problems. It was a rather hot day compared to the early spring weather in Gauteng.

The tallest of the cycad trees are about 12m high and stand erect. Some recline or are decumbent and grow nearly parallel to the ground. The larger plants have suckers and form large clusters of upright and



Figure 15. *Encephalartos inopinus* and some of the many other beautiful cycads in Daan van Zyl's garden in Tzaneen. Photograph: Christo Page.

reclining trunks. The propensity to sucker may be a survival mechanism for some cycad species as they are subjected to many agents which could kill them like veld fires, insects and diseases. Upkeep of the Modjadji Cycad Reserve seems to be good presently as the terrain is quite neat and invasive plants between the cycads are under control. Many stems are blackened due to veld fires. The information centre and other buildings on sight are rather neglected and not functional but the cycad nursery some 6 or 8 kilometres distant from the reserve that sells *E. transvenosus* seedlings, is functional again. Transport permits for the plants are obtained and payment is done at the reserve gate.

Our next stop was at the so-called Sunland Boobab tree about 30 km away from Ga-Modjadji. This giant tree is reported to be the biggest recorded boobab in the world with a circumference of more than 47 metres. We were able to replenish our liquid refreshment with beers and soft drinks at a small kiosk on site. The photos we took was to be some of the last ever to be taken of this magnificent tree - a few weeks after our visit the tree was no more. It collapsed on its self as boobabs do when they have reached the end of their life span.

Later the Monday afternoon we visited the cycad garden of Daan van Zyl in Tzaneen. He has a well laid out garden of indigenous cycads which include *E. hirsutus*, the rarer Old-Transvaal grey leaved species and *E. laevifolius*. In the more shaded part of the garden a good collection of different types of bird's nest and other ferns as well as interesting palms thrive. The condition

of the plants was a good indication that Tzaneen has a favourable climate for gardening having equable warm weather and good rainfall. That late afternoon and evening the group got together for a braai around the swimming pool area at Fairview Hotel, the last before the journey to Polokwane and home. All in all, the food and lodgings at this hotel was excellent and the staff went out of their way to make our stay enjoyable. A minor problem of the lack of hot water in some of the rooms due to a leaking hot water system, was easily 'solved' by upgrading us to their very luxury Fairview Village.



Figure 16. An unusual form of *Encephalartos eugene-maraisii* in Daan van Zyl's garden. Leaflets have one or two prominent teeth on the lower margins and are a lovely blue-grey colour. Photograph: Christo Page.



Figure 17. Dr Diekie de Klerk discussing a specimen plant of the rarely seen *Encephalartos brevifoliolatus* which grew in his garden in Polokwane, Limpopo Province. Photograph: Christo Page.



Figure 18. A view of some of the cycads in Diekie de Klerk's cycad garden in Polokwane, Limpopo Province. The cycads have been disposed of and removed. Photograph: Christo Page.

Tuesday morning after a good breakfast we left for Dr Diekie and Karen de Klerk's house in Polokwane for, what was to be the last visit by any group to this magnificent cycad garden. Diekie had disposed of his collection and the plants were to be removed later that week. The propagated plants in his nursery were already gone. Diekie was still recovering from a very serious operation and was a great privilege to be able to visit the garden.

We spent some time looking at and discussing a large plant of the very rare and seldom seen *Encephalartos brevifoliolatus*. This species is closely related to *E. laevifolius* but has noticeably wider and shorter leaflets. Amongst the many other *Encephalartos* species, speci-

men plants of different forms of *E. nubimontanus*, *E. eugene-maraisii* and *E. dyerianus* were noteworthy. After enjoying top class refreshments provided by Karen, we all left for our respective homes.

All of the trips organised for members of the Central Branch are very informative, sociable and enjoyable. This particular one was right up there amongst the best. We have to thank John Evert, Herman Böhm and Piet de Bruin for all the arrangements, and Piet de Bruin, Mielies Schoeman, Daan van Zyl and his wife and Dr Diekie and Karen de Klerk for allowing us to visit their gardens. Many thanks are also due to Dusty Joubert and personnel of Selati Game Reserve for allowing and facilitating the visit to the *Encephalartos dyerianus* habitat.

NEW MEMBERS

The Society welcomes the following new members who joined between June and November, 2016.

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4152 W	COMPION, Dr E B	COURTRAI, 7646
4153 W	ALBERTS, Mnr J E	Posbus 878, GROOT BRAKRIVIER, 6525
4154 G	DU PREEZ, Miss A	P O Box 72356, LYNNWOOD RIDGE, 0040
4155 W	COLLARD, Mr G A	P O Box 30, CONSTANTIA, 7806
4156 G	HARTDEGEN, Mev C C	CAPITAL PARK, 0087
4157 W	DAVIDSON, Mr J M	Harfield Village, CAPE TOWN, 7708
4158 G	CYCADS UNLIMITED (PTY) LTD	Postnet Suite 165, P/Bag X1007, LYTTELTON, 0140

Membership fees for 2017

All members must please pay their membership fees as soon as possible to ensure that they receive a copy of *Encephalartos*.

An invoice for membership fees was included in the September issue. Please consider the debit order payment facility to ease the administration burden on both yourself and the Secretary/ Treasurer. The completed form should be sent to Ian Bassingthwaight for processing.

Foreign members are reminded that they may pay their fees via PayPal to wynand@ananzi.co.za.

THE GOLDEN CYCAD OF FIJI: NEW DEVELOPMENTS

Roy Osborne¹, Mike Jessop² & Anders Lindström³



Figure 1. Roy Osborne with young local inspecting a Golden Cycas, Lufilufi Village, Samoa, November 2016. Photo: Angela Osborne.

In the September 2016 issue of *ENCEPHALARTOS*, Roy Osborne reported on the “Golden Cycad of Fiji” after a visit to that Island. Since that time, some surprising new information has come to light, on which we now report.

First, Osborne had the opportunity to visit the Pacific island complex of Samoa in November 2016. There is a small village called Lufilufi on the north-western coast of Upolu Island, the smaller of the two main Samoan islands. In that village, he found 12 impressive specimens of “Golden Cycas” in three different gardens. The owners of these gardens were unable to tell where these plants came from but suggested either Vanuatu or Fiji. The occurrence of the “Golden Cycas” on Samoa has not previously been reported in the cycad literature.

Apart from the plants at Lufilufi village, there are large numbers of *Cycas revoluta* in public and private gardens throughout the Samoan islands, and also a



Figure 2. The “Golden Cycas” typically produces numerous stem and basal suckers; these are easily removed and rooted, explaining how the cycad, once introduced, has become fairly common in the Pacific Islands. Photo: Roy Osborne.

significant number of *Cycas seemannii*. However, there are no native cycads in the Samoas; all introduced from elsewhere. We also now know that the Pacific Island people call all species by the same names: “namele” in Vanuatu, “logologo” (pronounced longolongo) in Fiji, and “pama” (pronounced palma) in Samoa.

The second development has been an unexpected discovery by Mike Jessop in November 2016, of one large coning male “Golden Cycas” on Efate Island of Vanuatu. Osborne had seen this particular plant in 2009 but there was no evidence of reproductive activity at that time. Until, now, no male specimens of this cycad were known from Efate.

Third, in 2000 Anders Lindström visited Vanuatu and found small but persistent populations of yellow *Cycas* growing on a volcanic island in southern Vanuatu. This is remarkable as being the first record of any sighting of “Golden Cycas” in the wild, although the possibility of a wild population in Vanuatu was mooted by Keppel et al. in 2008. Lindström saw both male and female plants, and seedlings. More than half of the plants in most populations were of the yellow form. Interestingly,

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certain surrounding vegetation, such as coconuts, *Casuarina equisetifolia* and *Dendrolobium umbellatum*, also had a high percentage of yellow forms. The yellow “mutation” in these plants does not change in cultivation; for *Dendrolobium* and *Casuarina* all seedlings retain the yellow colour. By contrast, *Cycas* seeds collected on the island germinated to give only a low proportion of yellow seedlings. Both male and female specimens from these populations were collected under permit and are now in cultivation at Nong Nooch Botanical Garden in Thailand.

The knowledge of a limited number of male specimens, and the hitherto unreported discovery of plants in the wild, bring into question Ken Hill’s hypothesis that the “Golden Cycas” comprises one huge female but sterile clone, which has become propagated entirely from suckers and offsets (Hill 1994a & b). Similarly, it challenges the conclusions in a recent report by Osborne (2016).

A revised view is that this taxon has its origin in Vanuatu and that both yellow and green forms exist. The yellow form, and specifically female individuals, appear to have been selected by local tribesmen, and was given as gifts many decades ago to the chiefs on other Pacific islands, where the cycads have now become propagated by suckers and have become relatively common. Hill’s name “*Cycas rumphii* forma *aurea*” is now considered inappropriate as this cycad has closer affinities to *Cycas bougainvilleana* and *C. seemannii*, this is also consistent with the comparative allozyme studies of Keppel et al. (2008).

It remains uncertain whether the yellow colouration is due to environmental factors or a genetic modification. However, there is sufficient circumstantial evidence to speculate that it may be associated with earlier seismic activity in the area where Lindström subsequently found the only known wild populations. It is known, for example, that volcanic eruptions often lead to a release of radioactive material and boosts of radiation; gamma radiation, in particular, is known to cause mutagenic changes in plants and animals (e.g. Ebisuzaki & Maruyama 2015, and references cited therein). So perhaps the origin of the “Golden Cycas” was simply due to its presence on a volcano. Furthermore, dare we suggest that the much sought-after “yellow form” of *Cycas revoluta*, which occurs near Okinawa, is similarly the result of mutagenesis associated with an earlier local and perhaps severe volcanic event?

ACKNOWLEDGEMENTS

We thank Gunnar Keppel for comments on an earlier draft of this text.



Figure 3. The unusual finding of a coning male “Golden Cycas”, Efate Island, Vanuatu, November 2016. Photo: Mike Jessop.

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RESCUE MISSION OF *CYCAS SEEMANNII* ON FIJI

Roy Osborne*



Figure 1. The upper Sigatoka valley on Viti Levu – previously an area abundant in *Cycas seemannii* but now almost total altered by agricultural usage. Photo: Roy Osborne.

The current IUCN Red List gives *Cycas seemannii* as Vulnerable, and recognises that population numbers are decreasing. This is true throughout its range on Fiji, Tonga, Vanuatu and New Caledonia (Keppel & Osborne 2004). On all these island groups, the pressures from human population growth, tourism expansion, and forestry and agricultural land demands have had a collective effect in reducing cycad populations.

Cycas seemannii was once fairly common in the drier forests of many of the Fijian islands. Large numbers of the cycads have been lost, particularly when land has been taken over for sugarcane production, the main agricultural activity on the bigger islands.

In August 2016, I was pleased to meet with Dr. Dick Watling, a local environmental scientist, who has been responsible for a major cycad rescue mission. In 1993 Dick was alerted to a land-clearing project on Vanua Levu, the second largest island on the Fiji group, and knew that a cycad population in the immediate area was at risk. After obtaining permission of the landowner, he arranged to have the plants excavated and ferried to Viti Levu. Here, about 50 specimens were carefully replanted in a valley upstream on the Sigatoka River, a known habitat for *Cycas seemannii*. The plants have responded well to the move, and are now producing plentiful seeds crops annually.

Not all is doom and gloom. Some quite extensive natural cycad populations remain on several of the islands. The small island of Makogai, midway between the much larger landmasses of Viti Levu and Vanua Levu, has its own cycad forest (Dick Watling, pers. comm.). A particularly impressive specimen, 10-12 m tall, remains on the Tavuta mine lease in the Sabeto valley in western Viti Levu.

One problem is that some *Cycas seemannii* populations in Fiji are being attacked by the larvae of the cycad blue butterfly, *Theclinesthes onycha*, or a closely-related species. It is not know if this problem is widespread.

Although the ethnobotanical recognition of the *logologo* (pronounced “longolongo” and the most common of several names for the Fijian cycad used by past generations of islanders) has now faded into obscurity, horticultural demand has become increasing important both in Fiji and elsewhere in the Pacific. A report earlier this year, for example, mentioned the near-naturalisation of imported *Cycas seemannii* on the Cook Islands (Osborne & McCormack 2016).

For more information on *Cycas seemannii*, the reader should consult the useful publications by Gunnar Keppel (2008, 2009).

I thank Mark Bonta, Gunnar Keppel, Rolf Oberprieler, Lou Randall and Dick Watling for their interest and assistance in this report.

* cycad101@bigpond.com

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Figure 2. A few of the approximately 50 *Cycas seemannii* plants rescued from Vanua Levu by Dick Watling and now re-established in the upper Sigatoka Valley. Photo: Roy Osborne.



Figure 3. The re-established *Cycas seemannii* specimens are producing abundant fertile seed crops. Photo: Roy Osborne.



Figure 4. Some *Cycas seemannii* populations in Fiji are being attacked by the larvae of the cycad blue butterfly, *Theclinessthes onycha*, or a closely-related species. Photo: Roy Osborne.

CYCAD GARDEN IN KZN NATIONAL BOTANICAL GARDENS

Sthembile Zondi*



Figure 1. The new area to be converted into a home for the plants donated to the Pietermaritzburg Botanical Garden. Truckloads of soil were brought in and landscaped to turn the flat area into ridges with good drainage for cycads.

The KwaZulu-Natal Botanical Garden (KZN NBG) has developed an exciting, new theme garden on its premises situated in the middle of the garden close to the main entrance. It was utilized as a picnic spot but has now been transformed into a show of cycads in beautiful rockeries.

This is the only garden in KZN and the province that has these living fossils that has survived three mass

extinction events. The garden is beautifully landscaped, giving a feel of the natural habitat. The plants are divided according to the provinces they originate from and include a variety of cycad species from the Eastern Cape, KwaZulu-Natal and old Transvaal. The cycads garden includes succulents growing over and in between the rocks, low growing shrubs, ground covers and bulbs.

The garden received a huge donation of cycads from a company that had closed down more than ten years ago. Therefore, we as the garden have ensured a home for them where they will be conserved, displayed for the

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Figure 2. The garden was laid out with raised beds and pathways between them to improve conditions for the cycads.



Figure 3. Moving so really big plants is hard work, but many hands made light work of it.



Figure 4. Avis Nel supervised the activities to make sure the plants had a good chance of survival.



Figure 5. Many of the plants are big mature specimens and needed to be handled with care. Here you can see the leaves of *Encephalartos lehmannii* wrapped in plastic to protect them and to ensure the staff did not lose too much blood!



Figure 7. Once the cycads are re-established, the soil settled and everything is growing, this will be a cycad spectacle and well worth a visit.



Figure 6. The spaces between the cycads are planted with other species to provide ground cover and to enhance the beauty of the garden.

public to enjoy and learn more about their importance and value.

We were very fortunate to receive all the soil and rubble from a local contractor that were doing construction work on a sports field nearby. We have used the rocks from Nxamalala area where road construction was done for edging and in between the plantings.

The actual implementation of this garden started on 2 July 2015 when the big machines, a TLB and Bobcat, started by cutting and filling the soil, giving the garden shape and creating elevations. Over a period of 3 months we have managed to bring all the plants, more than 120 species from the donor, to the garden and got them planted in the garden. Approximately 12 SANBI employees of KZN NBG and volunteers from Mr Glen Mc Arthur from Transnet and ward councillor, planted this garden, with the gracious assistance and guidance from



Figure 8. Once the new plants are settled, the huge trees will make it seem as if this garden has been there for many years.

our consultants, Avis and Danie Nel of the Cycad Centre. Training has also been provided to the staff by Avis, ensuring that they are well informed about the activities.

We have currently done about 85% of the actual planting and the paving of the entire section is still going

to be finished. I can assure visitors and all nature and garden lovers that KZN NBG is the place to be and it will provide a show of cycads that you can enjoy while educating people about cycads in general. A lot can be learnt about cycads by planting, conserving and caring for these exciting living fossils.



Figure 9. Avis Nel also provided training for staff of the garden. Here valuable lessons are learnt about how one cares for, and plant, suckers removed from parent plants.



Figure 10. The process of artificial pollination was explained and staff had the opportunity to practise on cones harvested for the purpose.



Dear Editor,

This weekend I was going through my emails and realised this one, that I thought I'd sent you several months ago had never sent. So sorry it's late arriving but I thought you would like to receive it anyway.

Blue Moon Montessori senior primary class, have done research on cycads, including organising an outing to see them at Kirstenbosch. They chose to write a puppet show which had moths and beetles as characters to inform the younger children, and their parents about how important they are to protect, made models of the males and females, researched the leopard magpie moth and sword beetles whom rely on their existence and assist with pollination. I thought you may be particularly interested in the poem that was written by eleven year old Jordan who is happy for you to use it for the society if you would like to.





We found it difficult to find information in children's books about cycads for 9–11 year olds so the children ended up reading through university theses and newspaper articles, finding out so much more as a result!

On a visit to Ardene gardens, the guide took us round the different plants and showed the children the cycads, and then informed them that the dinosaurs ate them. Immediately two hands went up, and the children politely informed him that they had read that there is no evidence of this.

The subject of a poisonous plant, a brightly coloured moth and beetles with swords attached to their heads, robberies and tracking devices, and the potential to impact saving a species which we have in our local gardens, had enough excitement to fascinate everyone in the group!

Maybe one day I will write it up into a children's story too!

Kind regards
Emma Trousdale (e_trousdale@yahoo.co.uk)

Our Cycad Tree, by Jordan Khan.

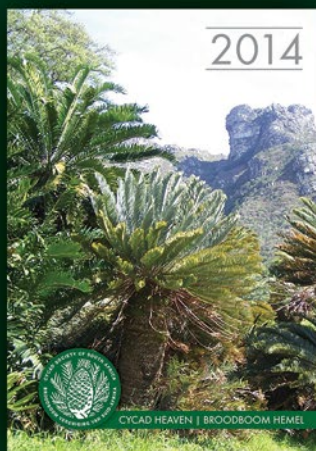
Cycads, scientific prehistoric monsters,
The wise kings of the plant kingdom,
With a poison tipped crowns of swords,
Alive from the time of the dinos
All the way to our modern rhinos,
Quick we must think,
To put ourselves in their shoes,
And cry for what we are about to lose.
Our poisonous plants of the prehistoric food chain,
That feed our weevils and beetles,
So come with me and we can be
The people to save the cycad tree.

Membership fees for 2017

All members must please pay their membership fees as soon as possible to ensure that they receive a copy of *Encephalartos*. An invoice for membership fees was included in the September issue. Please consider the debit order payment facility to ease the administration burden on both yourself and the Secretary/ Treasurer. The completed form should be sent to Ian Bassingthwaite for processing.

Foreign members are reminded that they may pay their fees via PayPal to wynand@ananzi.co.za.

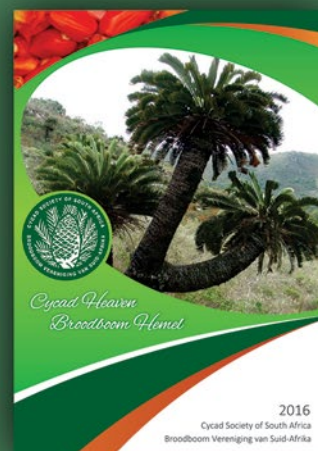
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Tak Kode: 260 147

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Tilania du Preez (tilania1@gmail.com) of John Kloppers (cycad@mweb.co.za).

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- **Cycadfeed** – The complete nutritional product for your established cycads, including N, P and K in the correct ratios for cycads as well as all the required micro-elements. R450/20kg.
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Contact Andre Cilliers at 082 4996515 or acilliers@nulandis.com



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The annual membership fees for TCS are listed below. For your convenience, you may join or renew your membership online using PayPal (see www.cycad.org/members/membership-info.htm), and you may pay your dues up to three years in advance, except for student memberships, which can only be paid one year at a time.

Two of the most important benefits of TCS membership are the Cycad Newsletter and the Cycad Society Seedbank.

- Student Memberships: \$25.00 per year
- Non-US Student Memberships: \$35.00 per year
- US Memberships: \$35.00 per year
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- Non-US Student Memberships: \$35.00 per year
- US Memberships: \$35.00 per year
- Non-US Memberships: \$45.00 per year

ENCEPHALARTOS PLANTS FOR SALE

Roughly 50 **Encephalartos** plants are for sale in Johannesburg due to moving houses and downscaling. Exact species must still be identified properly as the sun faded the name tags. Most of the green as well as blue South African species are available. Sizes up to about 40cm. Some in pots and some in soil. All registered with Nature Conservation.

Contact Rocco Barnard on 0832883503.



CYCAD COLLECTION FOR SALE

A collection consisting of 100 plus mature cycads is for sale. My collection is a must see with there are a number of large, rare species, including *Encephalartos inopinus*, *E. heenanii* and *E. dolomiticus*. A number of large feature plants are included which would enhance any collection. Plants will not be sold separately; collection must go to one buyer only.

Contact seller for a list/pictures: Kevin Pinnoy, 083 450 6245, kpinnoy@yahoo.com

NOMINATIONS FOR THE POST OF HONORARY SECRETARY-TREASURER

After more than ten years in the post, Ian Bassingthwaighte has decided to lay down his pen as he feels that a younger person with fresh ideas should take over running of the Cycad Society. He has also recently developed some health issues which prevent him from giving the administration all the attention it requires.

Should you wish to nominate a member of the Society or volunteer for the position, please contact Ian or Wynand van Eeden, the editor of ENCEPHALARTOS. You are also welcome to contact Ian in order to discuss the matter.

Ideally, the incumbent should be retired or semiretired; have some knowledge of the various Microsoft programs, some book keeping knowledge and be able to communicate in both Afrikaans and English. As Ian has built up a support structure over the years in and around the area where he lives, in the northern parts of Pretoria, such as printers for the journal, processors of the debit orders and postal authorities, it would be beneficial if the 'new' incumbent also lived in the area, although this is not a requirement. Finally, if the person has some storage space where back issues of the journal could be kept, this would also be an advantage although, again, not a necessity.



CYCAD SOCIETY OF SOUTH AFRICA

www.cycadsociety.org

MEMBERSHIP FORM 2017

I/We _____

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

Membership number of existing member
for membership renewal

Of postal address _____

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Tel _____

Fax _____

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

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

- Membership fee for **2017***

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

- Cycad Society research fund
- General donation

Total (Membership fee and other donations)

YES

NO

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

Signature _____

Date _____

*MEMBERSHIP FEES FOR 2017:

Local members (residents of South Africa)	R 260			
Southern African members (Namibia, Swaziland, Zimbabwe, etc.) <i>Air mail delivery</i>	R 370	Southern African members (Namibia, Swaziland, Zimbabwe, etc.) <i>Surface mail delivery</i>	R 330	Foreign members <i>Air mail delivery</i>
				R 410
				US\$ 56
				AU\$ 58
				€ 40
				£ 34
				Foreign members <i>Surface mail delivery</i>
				R 365
				US\$ 50
				AU\$ 50
				€ 38
				£ 30

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

The appropriate addresses are:

- **Ian Bassingthwaight**: P.O. Box 176, 0159 Montana Park (Pretoria), South Africa.
- **Paul Kennedy**: 21 Sierra Road, Engadine, NSW 2233, Australia.
- **Willie Tang**: 13320 SW 28 St., Davie, Florida 33330, U.S.A.

Payments in South African Rand can be made at:

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SWIFT	SBZAZAJJ						

Reference of payment: Name of member and membership number.

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

e-mail: cycad@cycadsociety.org

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



CYCAD SOCIETY OF SOUTH AFRICA

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

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- I and/or the CLIENT, individually and collectively hold harmless Cycad Society of SA, STRATCOL LTD and/or its agents against any claim of any nature arising from the electronic debit or transfer or from any other cause following this authorisation and irrespective whether such authorisation had been withdrawn or not;
- In the event of the relevant account not having sufficient cleared funds to meet any debit, I am aware that a unpaid fee will be debited against the CLIENTS account by its bank and an additional unpaid fee of R50 will be charged by Cycad Society of SA relating to the return of the debit. I accept the responsibility to ensure sufficient cleared and available funds to the minimum of the limit above (or as amended from time to time).
- Any reference to the entities above includes a reference to any successor in title or in appointment;
- This authorisation is not an amendment to any specific arrangement regarding payment of accounts and serves merely as an arrangement as the method of payment, in part or in full and any account with Cycad Society of SA will only to be credited once actual payment is received by the Cycad Society of SA, and
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Ek/Ons _____

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Lidmaatskapnommer van bestaande lid
vir lidmaatskaphernuwing _____

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

- Ledegeld vir 2017*

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

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- Algemene donasie

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JA

NEE

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

Handtekening _____

Datum _____

*LEDEGELD VIR 2017

Plaaslike lede (inwoners van Suid-Afrika)	R 260			
Suid-Afrika lede (Namibië, Swaziland, Zimbabwe, ens) <i>Lugposaflewering</i>	R 370	Suid-Afrika lede (Namibië, Swaziland, Zimbabwe, ens) <i>Landposversending</i>	R 330	Oorsese lede <i>Lugposaflewering</i>
				R 410 US\$ 56 AU\$ 58 € 40 £ 34
				Oorsese lede <i>Landposversending</i>
				R 365 US\$ 50 AU\$ 50 € 38 £ 30

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

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

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

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SWIFT	SBZAJJ						

Betalingverwysing: Lidnaam en lidnommer.

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

e-pos: cycad@cycadsociety.org

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



CYCAD SOCIETY OF SOUTH AFRICA

www.cycadsociety.org

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R	Jaarlikse aftrekkings	X	Voltooi alleenlik datum van 1ste aftrekking	d	d	m
Verhoogings	Sien nr. 7 onderaan			m	j	j

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

Ek aanvaar die volgende om van toepassing te wees hiertoë:

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

DATUM: _____

HANDTEKENING: _____

STRATCOL VERW.

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INSTRUCTIONS TO AUTHORS

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

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

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

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

Contributions should reach the editor not later than:

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

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

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

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Page size	Black and white	Colour
Quarter page	R175	R250
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VOORSKRIFTE AAN OUTEURS

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

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

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

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

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Junie-uitgawe	: Eerste week van April
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Desember-uitgawe	: Eerste week van September

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

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