

Searching for Seeds from South African Cycads and Palms

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The southern tip of Africa is a botanical paradise with roughly 8% of all known vascular plants in just 0.8% of the world's land area. Amongst these extraordinary riches are a wealth of cycads and a few palms that occur along the eastern margin of South Africa as well as in the tiny Kingdom of Swaziland. As part of Montgomery Botanical Center's Revitalizing Program, I undertook several expeditions to collect seeds from as many of the 40 cycad and 4 palm species as possible.

Most of the localities I visited have been explored before so I cannot claim any great achievement in finding them. However, the goal was to collect seeds and that presents a vast challenge to even the most experienced cycad adventurer. African cycads are notorious for their poor seed set under natural conditions. Many populations simply do not produce cones for many years, or cones occur in such low numbers that finding them is an adventure in itself. Of course, any excursion into the African bush is likely to yield some surprises.

One of my intentions was to collect seeds of *Encephalartos umbeluziensis*, which grows in the catchment of the Umbeluzi river running eastwards from the subtropical savanna of Swaziland to the coast of neighboring Mozambique. I had been given details of the locality by a missionary who had worked in that area and it all seemed quite simple: drive to the nearby village, park near the little white church, and walk down the path, taking the left fork for a few hundred meters. When I got to the area, I contacted the local nature conservation officials; they were horrified by my plan and informed me that the villages en route were run by bandits who ferried weapons and other contraband between Mozambique and South Africa. After some discussion, I was sent off to find another group of conservators who lived closer to the *E. umbeluziensis* site. They agreed with their colleagues and insisted I would not emerge unscathed if I stuck to my original plan. Instead, they offered to guide me along the banks of the Umbeluzi river—an offer I decided to accept.

With my maps, global positioning system (GPS), and other paraphernalia, three of us set off to search for cycads. Ephraim and Simon were wonderfully knowledgeable about the plants along our route and delighted in feeding me a variety of berries and leaves, and then watching my reaction. After four hours of fast walking in the intense subtropical heat, we got to a point where Ephraim and Simon would go no further because they felt it was too dangerous. According to the GPS, we were still a kilometer away from where we wanted to be and we had seen only a few plants but no seeds. I was keen to push on, but we had already encountered a Mozambique Spitting Cobra and my first-ever Black Mamba (Africa's deadliest snake) on our way, and I was loathe to risk walking on alone. Needless to say, with the additional threat of arms smugglers, we returned to the car empty-handed. Starved of the adrenaline that would have flowed had we found some seeds, the walk back seemed an interminable

drudge.

I have to confess that not all my trips were quite so adventurous, but it did turn out to be a bad year for cycad seed set across southern Africa. I eventually managed to collect a reasonable number of seeds from 16 southern African cycad species.

When I was asked to collect palm seeds I was more than a little nervous. I know cycads well and have devised all manner of tricks to dislodge stubborn cones from their pedestal on top of the plant. Shinning up stems or using long cutters is not part of my cycad repertoire but, ever anxious to please, I agreed to collect palm seeds. I started with *Borassus aethiopum*, the largest and rarest species in South Africa. The tall stems towered above the surrounding bush near the little town of Leydsdorp, making me feel even more inadequate. However when I got to the site, the cupboard was bare—other collectors had gotten there earlier and taken all the seeds.

I was confident that I would find seeds of *Hyphaene coriacea*, which I had seen in great numbers in northern Zululand on the road that leads to where *Encephalartos ferox* grows. Imagine my dismay when I discovered these huge populations of palms with not a seed in sight. After close examination, I realized that all the plants were too small to set seed. The local people routinely cut back the palms to harvest leaves for basket-making and to collect the sap for palm-wine. The harvesting had been so intense that the plants could not reproduce. Fortunately, I was eventually able to find some large plants with abundant seeds and my sense of humor was restored.

All told, I spent 40 days in the field, flew 6000 km, and traveled an additional 7000 km by road, collecting seeds of 16 cycad and 2 palm species for Montgomery.



Among the more interesting cycads from which John Donaldson collected seeds were *Encephalartos aemulans* (left) and *E. cycadifolius* (above).