The recent death of two mature and well established plants (Figure 1) in our garden was a mysterious occurrence. The article published in *Encephalartos* 105 (October 2011) by Paul Kennedy however shed some light on what might be happening. Also the various beetles we have discovered on our cycads deserves reporting.

There are a great diversity of beetles (order Coleoptera) known to be associated and often exclusive to cycads and none more so than with the genus *Encephalartos*. Beetles known to be truly associated with *Encephalartos* include species of: *Apinotropis* (Anthribidae); *Antliarhinus*, *Platymerus* (Brentidae); *Porthetes*, *Peltostethus*, *Amorphocerus* (Curculionidae: Amorphocerini); *Phaecorynes* (Curculionidae: Rhynchophorinae); *Metacucujus* (Boganiidae); along with several undescribed members of the Cucujoidea, Erotylidae and Languriidae (Oberprieler 1995; Downie et al. 2008; Suinyuy et al. 2009, 2010). These however are associations found in their natural habitat and are by no means a definite in a cultivated scenario especially in a region devoid of any natural cycads such as Pretoria. It is thus of interest to see which beetles have been able to cross over into cultivation.

**Figure 1.**—Healthy mature male *Encephalartos* transvenosus.

**Figure 2.**—*Encephalartos lebomboensis* Mananga form with female *Antliarhinus* sp.

**Figure 3.**—*cf. Encephalartos lebomboensis* Piet Retief form invested male cones.
The first species we discovered in our garden was both sexes of the seed parasite Antliarhinus zamiae found on the female cones of *E. lebomboensis* "Mananga form", and surprisingly also found on the adjacent male specimen's cones (Figure 2). Since these beetles are known not to be pollinators (Donaldson 1997) their presence on the male cone may be indicative of the identical volatiles released by male and female cones (Suinyuy et al. 2010; Suinyuy et al. in press.; Suinyuy et al. in prep.) which must be used as a guide by the parasite to the receptive and by extension “open” cones to parasitise.

Shortly after this we began to see an infestation (Figure 3) of mature male cones by some larva (Figure 4, 5), most notably on our *cf. E. lebomboensis* “Piet Retief form” (Figure 6) (cf. is short for confer in Latin meaning “compare to” and in botany usually means “most like” when the identity is unsure). These I have been unable to identify and would welcome any suggestions as to their identity. We are also uncertain as to what the adult form is and if the immature form eats the pollen, though we suspect it may.

The final and most alarming find relates back to the opening remarks. Both our *E. altensteinii* male (Figure 7) and *cf. E. lehmannii x E. trispinosus* female...
(parentage unknown) (Figure 8) had coned and when the cones were removed a peculiar beetle was found (Figure 9-11). The beetle looks identical (Figure 10, 11) to the *Melanotranes internatus* as reported to occur on *Encephalartos* by Paul Kennedy. Just before this our *E. transvenosus* of 25 years had suddenly died after coning and another of our mature *E. lebomboensis* males was also displaying the same symptoms with a loose crown of leaves shortly after coning. Once the leaves were pulled out of the crown we discovered larvae that to us looks identical (Figure 13-15) to the ones described as the immature form of *Melanotranes* in Paul Kennedy’s article.

On a more positive note there is also the possibility of pollinating beetles in our area as two gardens we know nobody has pollinated have female plants that produced viable seed. We however have never found any beetles active on receptive cones except for *Antliarhinus*. 

![Figure 9.—Beetle found in *E. altensteinii* crown after cone removal.](image1.png)

![Figure 10.—Beetles found in mature female cone.](image2.png)

![Figure 11.—Detail of beetle found on *E. altensteinii*.](image3.png)

![Figure 12.—Detail of beetle found on *E. lehmannii* x *E. trispinosus*.](image4.png)
As I am not an entomologist I would welcome any suggestions on the identity of any of these insects and have preserved samples in 70% ethanol. Also the possible treatment to malicious ones, though we have already administered Chlorpyrifos, Malathion (mercaptotrin), Blue death (carbaryl/permethrin + deltamethrin ) and Temik (aldicarb) to all our plants to combat the stem boring insect.

References


