BARK AND AMBROSIA BEETLE ACADAMY MAY 2014

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During May this year the Bark and Ambrosia Beetle Academy held a workshop, the first of its kind, at the University of Florida in Gainesville in the USA. This workshop was organised by Dr Jiri Hulcr (Assistant Professor in Forest Entomology at the University of Florida), a world renowned researcher in ambrosia symbiont relationships. The workshop specialised in every aspect of bark and ambrosia beetle dynamics including ecology, evolution, sociology, acoustics, genetics and taxonomy. The 50 attendees included research professors at the top of their field from around the world (Norway, Czech Republic, Germany, Australia and the USA) as well as post graduate students.

Bark and Ambrosia Beetle Academy Workshop Group 2014 (insert: Prof Bjarte Jordal)

I was very fortunate to obtain a bursary from the University of Pretoria, where I am currently conducting research towards obtaining a PhD, to attend this very special meeting. My PhD project deals with the unexpected die-offs of *Euphorbia ingens* trees in South Africa. Ambrosia beetles are playing an important role in these die-offs and the understanding of this group of beetles is crucial not only for my project but also for South Africa as a whole. My primary training is in the field of microbiology, thus this workshop provided an excellent opportunity to gain knowledge and insight on this increasingly important group of beetles.

In recent years, a number of Ambrosia beetles and their associated fungi have been identified as the cause of important tree diseases. Normally ambrosia beetles produce populations within dead or severely stressed trees. Recent work (Kühnholz *et al.* 2001, Kubono & Ito 2002, Fraedrich *et al.* 2008 & Kolařík *et al.* 2011) have shown that increasing numbers of these beetles, together with their fungal symbionts, are attacking and killing healthy trees, leading to substantial tree mortality.

The meeting consisted of ten days non-stop lectures, hands on beetle work in the lab as well as fieldtrips on a daily basis. Lectures were presented by all of the senior researchers dealing with their specific work, followed by a practical. The practicals were fantastic since the demonstrators were the experts in their field and the ones you would usually approach, or be referred to, whenever you require assistance with these beetles. The fieldtrips were led by Dr Jiri Hulcr, and included visits to see Southern Pine Beetle (*Dendroctonus frontalis*) and Black Turpentine Beetle (*Dendroctonus terebrans*) attack on *Pinus taeda*, Redbay beetle (*Xyleborus glabratus*) attack on *Persea borbonia* as well as Black Twig borer (*Xylosandrus compactus*) attack on broadleaf trees.

Dr Jiri Hulcr hunting for *Myoplatypus flavicornis* (ambrosia beetle, secondary to Southern Pine Beetle attack) on *Pinus taeda*

It was on the night of the light trapping social that I realised how fortunate I was to attend this workshop and to have the opportunity to have one-on-one discussions with researchers whose work you have read time and time again. I would like to thank the University of Pretoria for awarding me the bursary to attend the workshop, as well as my supervisors (Prof Jolanda Roux, Prof Mike Wingfield and Prof Diana Six) for giving me the opportunity to participate in this meeting. I also want to thank the Bark and Ambrosia beetle Academy for allowing me to attend this world-class workshop.

Relevant literature:

- Fraedrich, S.W., Harrington, T.C., Rabaglia, R.J., Ulyshen, M.D., Mayfield, A.E., Hanula, J.L., Eickwort, J.M., Miller, D.R., 2008. A fungal symbiont of the redbay ambrosia beetle causes a lethal wilt in redbay and other Lauraceae in the southeastern United States. Plant Disease 92, 215–224.
- Kolařík, M., Freeland, E., Utley, C., Tisserat, N., 2011. *Geosmithia morbida* sp. nov., a new phytopathogenic species living in symbiosis with the walnut twig beetle (*Pityphthorus juglandis*) on *Juglans* in USA. Mycologia 103, 325–332.
- Kubono, T., Ito, S., 2002. *Raffaelea quercivora* sp. nov. associated with mass mortality of Japanese oak, and the ambrosia beetle (*Platypus quercivorus*). Mycoscience 43, 255–260.
- Kühnholz, S., Borden, J.H., Uzonovic, A., 2001. Secondary ambrosia beetles in apparently healthy trees: Adaptations, potential causes and suggested research. Integrated Pest Management Reviews 6, 209–219.