

**D**URING high summer of this year I was fortunate to be able to observe a fascinating event in the garden, featuring native solitary bees, *Megachile* sp, and a delightful parasitic wasp, *Gasteruption* sp. These wasps lay their eggs in the nests of bees and other wasps, cuckoo fashion. They are known as cleptoparasites.

The little *Megachile* is related to the reasonably familiar and adaptable leaf cutter bees that leaves those sculptural semi-circles in rose and other leaves. She makes use of bamboo stakes and holes in fence posts and pergolas to build her nests which she constructs from masticated leaf fragments and resin from gum trees.

The nests are provided with pollen and nectar [bee-bread] to feed the developing young. On the farm, I have observed them favouring Marri and grevillea leaves for construction, and vertical bamboo stakes. Myrtaceous pollen is favoured, and nest building coincides with Marri flowering, and also *Melaleuca huegelii*. No coincidence, I don't think. Bamboo stakes are in abundance on the farm, as we use them in groups of 3 or 4 with all the tree guards we provide for our seedlings. One reason for

## FAUNA

# BEEES IN MY BAMBOO!

Margaret Moir

favouring the vertical stakes may become clear as this story unfolds.

The *Megachile* bee in this story is slightly smaller than a feral honeybee, about 15mm, with bright orange hair on the face and tip of the abdomen, and strongly marked in furry white and black. I initially noticed her working away at a grevillea, rasping away fragments of leaf, rather than cutting circles like the related leaf cutters. She flew repeatedly between a bamboo garden stake, the Marri trees for resin and pollen, and the grevillea for leaf matter, climbing right into the bamboo with her booty, but making sure the exit was plugged firmly with her abdomen.

A wise move it appears, as I saw other bees arrive at the nest and appear to be trying to lever her out. They would actually grasp her abdomen and pull with might and main! Without success, I might add.

Then as if that wasn't enough to contend with, a gasteruptionid wasp arrived, observing her carefully from a neighbouring banksia. These wasps are amazing-looking creatures with an extremely long

ovipositor that looks quite unwieldy. Everytime she would leave on another foray, the wasp would fly to the stake, back up, and try to insert her ovipositor into the nest. The ovipositor is inside a protective sheath when not being used, so the impression is of it splitting in two, with one being held away from the body for balance. All attempts by the wasp failed to get the angle correct, the vertical stake proved just too tricky. Interestingly, no bees used horizontal stakes, which I had provided as well, and maybe this is why, to foil the wasps. I saw the wasps successfully laying eggs in many bee nests elsewhere that were made into horizontal wood holes.

Eventually, after some 4 hours, the nest was finished, and after a few hours it dried glass-hard and waterproof. This nest building has been repeated numerous times all over the farm, but I will be watching that one special nest, so close to my back door, very closely next spring.

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*Would you like to learn more about native bees? Visit the Australian Native Bee email study group: <http://groups.yahoo.com/group/ANBees/>*



Megachile bee starting her nest



The wasp is unable to get her ovipositor in



A second bee tries to dislodge the first



A parasitic wasp eyes the action



The finished nest

## FAUNA

# SPIDERS AND WOODLANDS GO TOGETHER

Rosemary Jasper

THE fauna of healthy Salmon Gum woodlands is dominated (in terms of number of species) by small reptiles and the invertebrates. And once you focus in at this level of the woodland, there is an amazing array of shapes and sizes of ants, termites, spiders, moths, beetles, snails, geckos and skinks, etc.

Look at this photo taken in a good quality patch of bush on private property near Ravensthorpe. It shows an impressive spider burrow, which Barbara York Main identified as probably built by the black wish-bone trapdoor spider *Aname mainae* (Family Nemesiidae).

The 'wish-bone' refers to the fact that these spiders build two entrance tubes, the obvious silk-swathed entrance (as in the photo) and a nearby entrance (near the edge of the silk sheet) which has a collapsed opening and is not visible. This is the emergency escape route. The two tubes join up underground into a single burrow.

*Aname mainae* is found across southern Australia from near the Flinders Ranges to the west coast of WA. They are generally shiny black though the abdomen may be grey. The males have a single large spur on the first walking legs. Males mature and wander during early to mid-summer. The females remain in their burrows unless dug out or otherwise disturbed.

Burrows like this or the ubiquitous ant holes are indicators that a piece of woodland is in good condition. Grazing by stock will destroy these structures and will compact the soil. Once this occurs, and if the understorey is also eaten out, to restore the woodland to good condition will usually require some active management apart from simply fencing out the stock. It is easier to look after what is in good condition than to resurrect a patch.

These issues and more were covered during a very enjoyable field day held near Ravensthorpe in March. The participants visited two privately owned patches of Salmon Gum woodland and were able to compare the features of each as well as consider actions that could be taken to restore the one that had been grazed in the recent past.

One of the remnants was very interesting because there had been a fire through a section of it 20 years ago which has resulted in a healthy regeneration of understorey species and Salmon Gum. Salmon Gum woodland does not carry fire very readily but fire along with other disturbances (like a wind storm, a flood, or a drought) which cause the deaths of mature trees, are



Wishbone Trapdoor Spider burrow



Some participants during the field day

recognised triggers for regeneration. Another example of regeneration, which has apparently occurred after a wind storm cut a swathe through the bush, can be seen on the Lake King Heritage Trail, near the Lake King townsite.

If you have Salmon Gum or other woodlands on your property, it is well worth searching for these smaller creatures, to get a true idea of the biodiversity present. Julianne Waldoock of the WA Museum (ph. 9427 2734) may be able to help with the identification if you have clear photos.

### *Congratulations!*

To Clive Malcolm of Denmark, who has been awarded the 'Great Southern Natural Resource Management Medal' for 2004. Clive was a pioneer of saltland agronomy and continues (even in 'retirement!') to work towards the productive use and rehabilitation of secondary saline land, as well as encouraging many other initiatives in natural resource management. Individuals can make a difference!