

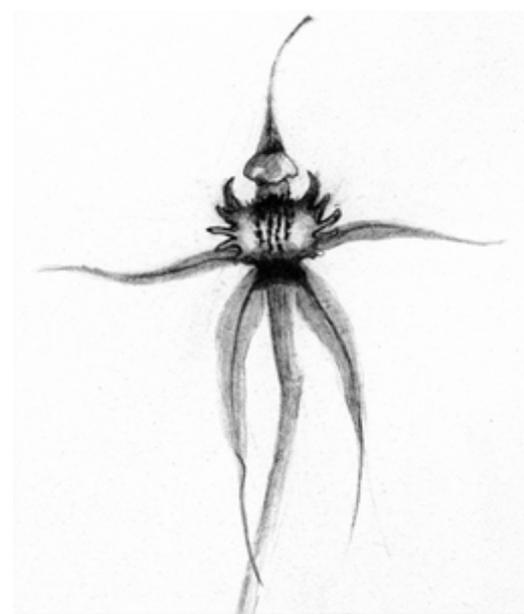
***Lophocheilus anilitatus* An Orchid Pollinating Wasp ... Grace Lewis**

I spent some time wandering around the heathlands at Fraser Avenue during the ANGAIR Wildflower show. It was amazing to see the variety of orchids and other wildflowers, but for me the real excitement was from a small wasp about 3 cm long, perched on a grass stem, and carrying what I initially thought was a caterpillar. I photographed away madly trying to get a good picture, but it wasn't until I got home that I worked out what I was looking at.

The wasp was a male wasp of the Family Tiphidae, or Flower Wasps, and it was carrying a female. The females are flightless, and spend most of their time underground, feeding on soil-dwelling insects, emerging only to breed. When they emerge, the females emit powerful pheromones, attracting male wasps, which then carry the females off to mate. After mating, the females find a beetle larva and inject it with an egg. The wasp larva feeds on, and eventually consumes the beetle larva as it develops.



The Family Tiphidae has approximately 750 species spread throughout Australia, so I wasn't confident of being able to work out exactly which species of wasp I was looking at. However, thanks to Enid Mayfield's book *Flora of the Otway Ranges Volume 1*, and some Googling to confirm, I learned that this wasp is *Lophocheilus anilitatus* (no common name). It pollinates *Caladenia parva* Small Spider-orchid, which was in flower at Fraser Avenue during the Wildflower show. It also pollinates *Caladenia phaeoclavia* Brown-clubbed Spider Orchid.



So how important is this wasp and its pollination relationship with orchids, and how does it work? Some species of Tiphidae wasps have co-evolved with orchids to form an amazing relationship, and it has been shown that many orchids are pollinated by their own unique species of pollinator. Spider orchids develop raised markings on the labellum, which are a different colour, and stand out to their target pollinators. In addition, the orchids can emit a scent that mimics the pheromones emitted by female wasps. The poor males, tricked into thinking that the flowering orchid is actually a female wasp, fly in to "mate", and in the process pick up pollen, which is then transmitted to other orchids of the same species in the area.

As a reproductive strategy for the orchid, it works brilliantly. It may be why some species of orchid time their flowering to periods of warmer weather, as warmer weather generally implies higher insect activity, and therefore increased chance of successful pollination. To distinguish male Tiphid wasps from other wasps, look for a shiny, hairy, black wasp, up to 40 mm long. Females are smaller, but have no wings, powerful legs for digging, and a much fatter abdomen. The females are usually seen being carried around by males between flowers.

Reference: Mayfield, Enid, 2010 *Flora of the Otway Plain & Ranges 1*, Orchids, Irises, Lilies, Grass-trees, Mat-rushes and Other Petaloid Monocotyledons **CSIRO PUBLISHING**

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