## 'Aussie Takeover' – A Port Jackson fig asserts itself

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Some years ago I noticed that something had seeded itself into the crook of a *Melia azedarach* (chinaberry tree) that I pass regularly (Fig. 1). This is a common occurrence for trees where there is a sufficient hollow to allow humus to accumulate and is unremarkable, but over several years I realised that the seedling was flourishing and that it was a Port Jackson fig, *Ficus rubiginosa*. At the same time I noticed that it had started to grow roots down the trunk of the *Melia*.



**Fig. 1** *Ficus rubiginosa* (Port Jackson fig) growing as a hemiepiphyte on *Melia azedarach* (chinaberry tree). Photo: © Geoffrey Marshall.

This process of starting life as an epiphyte (technically a hemiepiphyte) is common in figs and also well known in New Zealand as a natural growth habit of northern rātā, *Metrosideros robusta*. This strategy usually results in the death of the host tree and the roots become a trunk which supports the crown of a now tall tree. In the tropics species of *Ficus* are often called 'strangler figs' as multiple roots descend and surround the host tree which usually dies, creating a hollow centre.

The Port Jackson fig was introduced into New Zealand, along with its equally handsome relative the Moreton Bay fig, Ficus macrophylla, in the mid-19th century as an ornamental tree and grows well in the upper North Island but was never seen to produce seedlings. This is because of the very particular way that figs are pollinated. The shape of an edible fig fruit is well known and is common to all fig species. It is what's known as a syconium and the flowers are produced on the inside of what is really a hollow swollen fleshy stem with a very small hole at its end where the fertilising wasp enters. This hole only opens when the flowers are ready to be fertilised and each fig species has a unique species of tiny wasp that does the job. The wasp that fertilises the Port Jackson fig is Pleistodontes imperialis and in its absence the New Zealand trees could not set ripe fruit. However, seedlings did start to appear in New Zealand in the 1960s (Cameron and Cameron, 1996) and so the wasp must have found its way here in that decade. The earliest physical sighting of this wasp in New Zealand is reported to be 1979 (Valentine and Walker, 1983) and entomologist Stephen Thorpe has posted observations of it on iNaturalist (https:// inaturalist.nz/observations?taxon id=395352) from 2014 to the present day (Fig. 2A-B).



Fig. 2 Pleistodontes imperialis (Port Jackson fig wasp). A, wasps (circled) crowded on the leaves of a Port Jackson fig. B, close-up of a female wasp. Photos: © Stephen Thorpe (CC-BY-NC), via https:// inaturalist.nz/observations/3837504.

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The crown of the young tree that I have been watching is now more than 2 metres high and wide and since the roots have reached the ground the growth of the crown has started to accelerate. It is now a substantial presence within the *Melia* and is very obvious in winter when the *Melia* is leafless.

It will be interesting to watch the gradual takeover of the *Melia* by the fig and I am hoping that no one thinks to interfere with the process. I'm aware that *Ficus rubiginosa* and the very similar *F. macrophylla* (Fig. 3) are now listed as unwanted weeds<sup>2</sup> but I am of the belief that while many weeds are a risk to our environment when growing rurally or on the edges of our cities, they may often be tolerable in city centres where transmission of seed to outlying areas is of lower risk. I think this specimen is a wonderful and publicly visible lesson in botany and given its position as a street tree there is no need for it to be removed. The site behind the tree is being redeveloped as commercial premises so as the fig gains height and width the winter shade it casts will not be of major importance. May it live long and prosper.

## References

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An interesting article on fig pollination can be found online at New Zealand Geographic: The fig and the wasp: www.nzgeo.com/stories/the-fig-and-the-wasp/



Fig. 3 Mature Moreton Bay fig with roots descending from main trunks. Photo: © 'Gen' (CC-BY-NC), via https://inaturalist.nz/observations/19576975.

<sup>&</sup>lt;sup>2</sup> Both are listed on the DOC Consolidated List of Environmental Weeds in New Zealand, and are Regional Pest Management Strategy plants for several regional authorities in New Zealand.