

Byfield Fern

In October this year the Rockhampton branch will be hosting the biennial 'Yabba' at which we hope to showcase some of the iconic plants of our region. One of the unique plants that we will probably **not** see (because of our itinerary) is the Byfield fern: *Bowenia serrulata*. The following is some background information for those who may be interested to seek it out independently.

The Byfield 'fern' is not really a fern at all but is rather from the Family ZAMIACEAE and therefore a reasonably close relative of the cycads (Family CYCADACEAE). In modern parlance, they are in the same clade. A sister species, *Bowenia spectabilis* (Zamia fern) is found in the wet tropics and is the only other extant species in the genus. The common name of the local species comes from the distribution (restricted to the Byfield area 40 km north of Yeppoon) and the fern-like shape of the leaves (see logo image on NPQ Rockhampton newsletter). The scientific name comes from a former governor of Queensland (Sir George Bowen) and the serrated form of the leaflets. The plant grows in the light sandy soils of the coastal eucalypt forests of Byfield. The annual rainfall in Byfield is approximately 1600 mm which is approximately double that of Rockhampton (which is located a mere 40 km further inland from the coast).

B serrulata is a slow growing plant with only the 1 metre leaves (and 10 cm seed cones) visible above ground. Below ground is a large turnip-shaped storage stem up to 30 cm in diameter. Also below ground but near the surface are the 'coral roots'. These house the symbiotic nitrogen-fixing microorganisms that assist *Bowenia* to survive in the N-depauperate soils.

The plants are dioecious (unisexual) and weevils act as the pollinating vectors. Recent research has shown that cones of most zamias and cycads produce heat which attracts the pollinating beetles. The cones on individual plants are not produced every year (even under optimum conditions) and the seeds are slow to develop (6+ months) and to germinate. Like many cycads the seeds are highly toxic and were only eaten after extensive treatment to wash out the toxins. The seeds turn a bluish colour when mature and the thin fleshy outer layer develops a sweetish smell. Natural dispersal of seeds has not been documented but probably involves native rodents. Cycad seeds generally are often seen with tooth marks on them.

In the past Byfield fern was probably being overharvested (certainly not sustainably in the longer term). The fronds were popular as a display in the windows of butchers' shops both because of their contrasting deep green colour and because they were long lasting. Their limited distribution and slow growth makes this fascinating plant a particularly vulnerable species. While they are relatively easy to grow (in a quite large pot), collecting and trade through nurseries is now tightly regulated.

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