BRISBANE BOTANIC GARDENS Mt. Coot-tha

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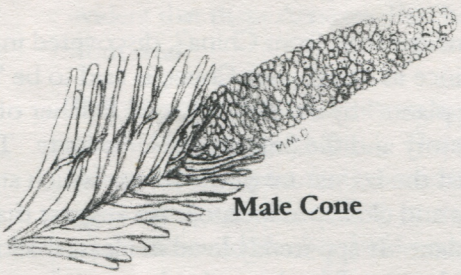
Watch Your Step – Hello Wolly

Wollemia nobilis

Family: Araucariaceae



Male Cone

Imagine the sense of excitement that David Noble experienced in 1994 when it was determined that the magnificent tree he discovered was a survivor from dinosaur times. Even to stand beside our caged specimen at Mt Coot-tha provides a certain sense of awe. The Wollemi Pine (*Wollemia nobilis*) derives its name from the Darkinjung aboriginal word *wollumnii*, which means 'look about you' or 'watch your step'. The story of the discovery of the Wollemi Pine and its identification by botanists is well documented by James Woodford in his book (referenced) and is a must read for any guide not familiar with this great event. Also well known is the work of the research staff at Mt Annan Botanic Gardens to develop methods of propagation. These methods were used by a contracted plant nursery to provide commercial quantities of plants aimed at conservation of the species and the protection of the small number of trees (about 40) in the wild from inappropriate harvestings.

Fossil pollen, first found in the 1960s by geologists from oil-drilling cores, and known as *Dilwynites* is in fact pollen of *Wollemia*. Two species of *Dilwynites* were recognized, one of which (*D. granulatus*) is almost identical with that of *W. nobilis*. Pollen grains of these two fossil *Dilwynites* are buried throughout Northern Territory, New South Wales, Tasmania, New Zealand and Antarctica. They provide proof that Wollemi Pines were once part of a much larger and more diverse group of trees. The earliest occurrence of *Dilwynites* is 91 million years ago, (*D. granulatus* flourished about 65 million years ago) and essentially disappeared from the geological record between 10 and 2 million years ago. How and why our Wolly survived is a story still to unfold.

The Wollemi Pine is relatively free from pests and disease. During the development of stock material for propagation, some trees became infected with a mealy bug of a species found only on Araucariaceae and is controlled biologically, at least in the nursery situation, by a parasitic wasp and predatory ladybug. The wasp lays eggs on the young mealy bugs, the wasp larvae feed on the mealy bug's internal fluids and when the wasp pupates, the bug dies. The ladybug is less effective. I wonder if these creatures or their ancestors were contemporary with *Dilwynites*?

According to Mt Annan staff and the nursery that produces the tree commercially, the pine grows quickly and responds to a fertilizer application. In the wild it is mycorrhizal (a symbiotic association with a fungus) similar to that of present-day Araucariaceae. These structures are like the mycorrhizal roots of fossil conifer species (*Geinitzia*) from the Cretaceous period found in the Otway Basin of Victoria and presumably serve the same purpose to enhance phosphorus and nitrogen uptake. This is an important feature in the establishment of Wollemi Pine in new habitats.

You can contribute to Wolly's conservation and enjoy the sense of excitement of growing an ancient tree by buying a potted plant from one of several selected nurseries in the Brisbane area.

Dick Date

Features...

References:

James Woodford *The Wollemi Pine: The Incredible Discovery of a Living Fossil from the Age of Dinosaurs* Text Publishing, Melbourne 2000

Royal Botanic Gardens Sydney http://*www.rbgsyd.nsw.gov.au/information_about_plants/wollemi_pine*