

MACROZAMIA — THE REPRODUCTION CYCLE

This photographic study by Merv Hodge (opposite) provides a picture story of the plant to fruit, to seed, to plant cycle of these fascinating plants.

A — A *Macrozamia* Seed Cone Cut to Show Seed.

A ripe female seed cone cut across to show the red seed ready to harvest. The white capsules are immature seed that failed to develop. The sporophylls appear as the outer sections of the cone with a spike in the centre (see photograph C). Each contains two seeds, shown well in this photograph A with two immature white seeds. Not all seeds mature.

B — A *Macrozamia* Seed Cut To Show The Inside.

A seed cut across to show the outer sarcotesta (orange), the fleshy outer layer of the seed testa and the sclerotesta (the dark skin) enclosing the white endosperm or living core of the seed. The discolouration of the white endosperm is the result of damage white cutting the seed.

C — A *Macrozamia* seed (female) cone.

A female cone with mature seed ready for harvest. This is a female cone of *Macrozamia miquelii*. Previously green with a spike in the centre of each, the sporophylls have been forced apart as the maturing seeds have swollen. The orange seeds (see photograph A) may be seen forcing the sporophyll apart.

D — A male Pollen Cone of *Macrozamia*

A male cone has been cut across to show the pollen sacs (sporangia) on the underside of each sporophyll. The pollen sacs are open having released the pollen.

E — The root of a *Macrozamia*

This photograph of a *Macrozamia* seedling (that has been dug up) shows the development even at this early stage of *coralloid* (coral-like) roots. These are specialised upward-growing roots, emerging just above the soil surface, the spongy tissues of which contain blue-green algae (cyanobacteria) which are believed to have a symbiotic relationship with the cycad. Below is the thick taproot, and growing up from the centre is the stalk of the first frond.

F — The female cone of *Macrozamia riedlei*

A characteristic feature of this species is the shape of the spine in the centre of each sporophyll, each 1.5 to 6 cm long, broad at the base. This seed cone is not yet mature; as the seeds ripen and swell they will force the sporophyll segments apart revealing the orange seed as in C above.

G — Propagation of *Macrozamia* By Seed

A *Macrozamia* seed has germinated. For advice on how to germinate seed quite successfully see the chapter on propagation by seed. This photograph shows how the seed was placed on the surface, how the two cotyledons had emerged from the end of the seed and turned down into the soil. The shoot begins from this point below the soil where the two cotyledons join, and emerges from the soil with the first frond as shown.

H — *Macrozamia* In Horticulture

A superb plant of *Macrozamia* gracing the front lawn of this house. *Macrozamia moorei* or *M. communis*? Only a close examination after reference to the key presented in this issue will confirm which, but to many, who cares?. They are beautiful graceful plants.

The genus *Macrozamia* is one of four genera of cycads found in Australia. The others are equally magnificent. So that they may be adequately illustrated in colour they are described from page 28 at the rear of this issue to associate them more closely with colour plates. The article by Len Butt "Cycads of Australia" is continued on page 20 following a key to the species of *Macrozamia* by Dr. L. A. S. Johnson, Director of the Royal Botanic Gardens, Sydney

