

Field Naturalists Club of Victoria

In which is incorporated the Microscopical Society of Victoria

Established 1880

Registered Office: FNCV, c/- National Herbarium, Birdwood Avenue, South Yarra, 3141.

OBJECTS: To stimulate interest in natural history and to preserve and protect Australian fauna and flora.

Members include beginners as well as experienced naturalists.

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The Victorian Naturalist

Vol. 106, No. 2

March / April 1989



Published by the FIELD NATURALISTS CLUB OF VICTORIA

Registered by Australia Post. Publication No. V.B.P. 1268

\$3.50

A New Locality for the Eastern Underground Orchid, *Rhizanthella slateri*

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The orchid genus *Rhizanthella* is endemic to Australia and comprises two species, *R. gardneri*, which is known from a number of sites in S.W. Western Australia and *R. slateri* which is now known from six confirmed sites in eastern Australia. One of the most remarkable characteristics of this genus is that almost the entire life cycle is spent underground.

The western underground orchid *R. gardneri* has been studied extensively (George 1980, Dixon and Pate 1984, Warcup 1985). The eastern underground orchid *R. slateri* has not yet been studied in detail, largely because of its extreme rarity. Until the discovery described below only one site with an extant plant was

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known. The species was first discovered by Edwin Slater in 1931 and the six confirmed sites range from Springwood in the south to Lamington National Park in the North.

On 9th October, 1988 the author was out bushwalking in Heaton State Forest near Newcastle with several friends when one of them, Roger Ward, rolled over a large cut log and noticed several unusual purple coloured flowers at ground level, partially covered by leaf litter. Three of the six flower heads were broken in turning the log and of these two were taken for identification, photography and later preservation in 70% alcohol. The species was identified from the key to the Orchidaceae in Morley and Toelken, (1983) and confirmed from Jones, (1988). This

last reference includes a photograph and diagram with the description.

Each flower head consists of about 25-35 flowers arranged in a flat spiral or capitulum and is something like a glistening purple dandelion in appearance. The flower head is surrounded by fleshy bracts and is supported by a thick vertical whitish fleshy stem also covered in fleshy bracts. The stems grow from a horizontal subterranean rhizome which has no roots, only fine hairs. The plant has no chlorophyll and is saprophytic.

Observations on the progress of the flowers indicate that flowering occurs from early September to November. The flower has an unusual 'chemical' scent which probably attracts pollinating insects. Of the three remaining flower heads one died without producing any fruit. The second flower head produced a single fruit which developed rapidly but died off leaving no apparent seed. The third flower which may have been the only one not disturbed by the original log turning, has continued to progress very slowly towards producing a full head of fruits.

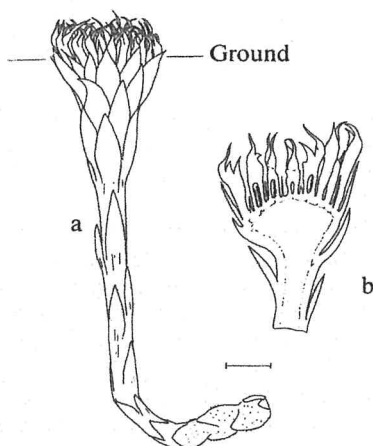


Fig. 1a. Entire flowering stem and piece of horizontal rhizome. Note arrangement of bracts and relation of plant to ground level (GL). **b.** Vertical section through flower head, bracts are found both surrounding the capitulum and between individual florets. Scale: 10 mm.

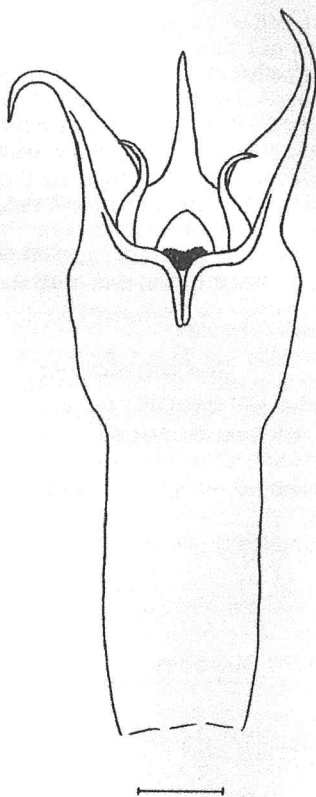


Fig. 2. Individual floret showing petal arrangement and hairy labellum. Scale: 2 mm.

It remains to be seen whether viable seeds will be produced and what fungal and other plant association is involved in the biology of this rare orchid.

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