Book Review

Illustrated guide to New Zealand sun orchids, *Thelymitra* (Orchidaceae)

By Jeremy R. Rolfe and Peter J. de Lange

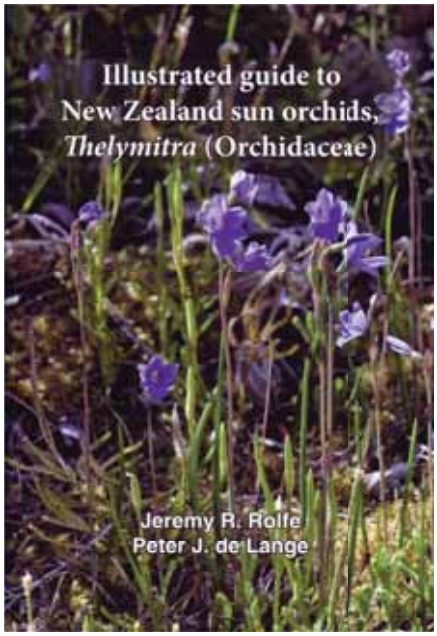
Published by Jeremy Rolfe, Lower Hutt, New Zealand

Paperback, 64 pages, 145 × 210 mm (A5), 2010

ISBN 978-0-473-16881-0

NZ$25.00

Reviewed by Murray Dawson



Sun orchids belong to the genus *Thelymitra* and are so-named because they typically open their flowers on hot sunny days. Their showy flowers range in colour from white to pink to dark blue and may also be spotted or striped. *Thelymitra* are found throughout New Zealand commonly in open sites from coastal to subalpine environments.

Jeremy Rolfe and Peter de Lange are two authors from the Department of Conservation who have again teamed up to write a book on this genus. Previous collaborations include *Wild Orchids of the Lower North Island* (reviewed in the *New Zealand Garden Journal*, 2008, Vol. 11(1): 32–33), which provided the impetus for this current book, and the recent *Threatened Plants of New Zealand* (reviewed in the *New Zealand Garden Journal*, 2010, Vol. 13(1): 31–32). For an *Illustrated guide to New Zealand sun orchids*, Jeremy Rolfe provided the photographs, layout and introductory text and Peter de Lange wrote the descriptions.

This new work is a welcome addition to the growing body of guidebooks on New Zealand native orchids (e.g., de Lange et al., 2007; Scanlen and St George, 2010; St George, 1999; St George et al., 2006). Unlike previous titles, this book concentrates on the one genus, *Thelymitra*, and delivers a useful and easy to use guide for their identification.

The Introduction (p. 1) explains that *Thelymitra* is a taxonomically complex genus (like many other native orchids) and comprises some 100 species (mainly in Australasia), with eight species endemic to New Zealand.

As discussed in the taxonomy section (pp. 2–5), the authors accept 12 endemic and indigenous species (*Thelymitra aemula*, *T. carnea*, *T. colensoi*, *T. cyanea*, *T. formosa*, *T. hatchii*, *T. malvina*, *T. matthewsii*, *T. nervosa*, *T. pulchella*, *T. sanscilia* and *T. tholiformis*), two species aggregates (*T. longifolia* agg. and *T. pauciflora* agg.), *T.* aff. *ixioides* and the hybrid *T.* ×*dentata*. Additional taxa (*T.* aff. *longifolia* "Whakapapa", *T.* "rough leaf", *T.* aff. *pauciflora* "Ahipara", *T.* aff. *pauciflora* "Darkie" and *T.* cf. *brevifolia*) with no formal taxonomic status are excluded from the identification key but illustrated in the notes and photosets. The relatively conservative approach of the authors is fully justifiable in lieu of urgently needed taxonomic research to resolve the status of the numerous informal (tag-named) orchid taxa in New Zealand.

Following pages discuss similar orchid genera (p. 5), flower structure (pp. 6–7) and stem bracts (p. 7). These pages provide a concise but informative preamble. For example, the structure of *Thelymitra* flowers is an important diagnostic character and is nicely explained and illustrated.

The key to New Zealand *Thelymitra* (pp. 8–18) is a pictorially-based adaptation of the dichotomous identification key originally published in the *Flora of New Zealand*, Vol. II (Moore, 1970). For the non-expert trying to identify a sun orchid, it is a great help to see thumbnails of what the characters actually look like, and these complement the specialised orchid terminology.

The book then divides each species into two sections. The first (pp. 19–43) contains photosets with short text and captions and the second has descriptions (pp. 44–55). For keeping all of the images and all of the descriptions together, I think that it was a valid decision to organise the content this way, regardless of the need to flick between the two sections. However, this separation may have resulted in a few inadvertent contradictions between the captions and the descriptions. For example, the *Thelymitra colensoi* caption (p. 21) states "Flowers 1–4 per stem" whereas the description (p. 45) incorrectly states "Flowers 1–7". Similarly, the *T.* "rough leaf" caption (p. 29) states "up to 5 flowers…" but the description (p. 55) more correctly states "Flowers 1–8".

The photo section contains excellent images that are a credit to Jeremy Rolfe, the main photographer; images contributed by Kevin Matthews are equally impressive. There are about 130 colour photos that provide a tremendously useful guide for identifying *Thelymitra*. Remarkably, Jeremy Rolfe's images have been taken especially for this book; none are shared with *Wild orchids of the lower North Island* (de Lange et al., 2007).

Another strength of this book is the comprehensive descriptions prepared by Peter de Lange. Guidebooks by other authors all too often summarise (to the point of trivialisation) descriptions already published in floras. Not so for an *Illustrated guide to New Zealand sun orchids*. A close comparison of the descriptions in this book reveals that there are a lot of new character measurements and observations not found in the *Flora of New Zealand*, Vol. II (Moore, 1970) or in the other guidebooks that include native *Thelymitra*. This is painstaking and detailed work and provides a valuable contribution to *Thelymitra* taxonomy. Very similar descriptions appear on the New Zealand Plant Conservation Network website (www.nzpcn.org.nz). These were also prepared by Peter de Lange (pers. comm.) but updated for the book so the drafts have diverged with a few differences in the quantitative characters.

The book concludes with a glossary (p. 56) and references (p. 57); both are concise rather than extensive to appeal to a wide readership. Although I am biased, the authors could perhaps have also referenced my paper (Dawson et al., 2007) which updates some of Molloy and Dawson's (1998) discussion of hybridism and amphidiploidy in *Thelymitra*. Amphidiploidy (or allopolyploidy as it is also known) is chromosome doubling of often sterile hybrids to produce fertile progeny. This has been an important process in the evolution of *Thelymitra* and is an interesting story barely mentioned in the book. The authors have perhaps wisely refrained from digressions such as this and have kept the guidebook brief and focussed on identification. I also noticed that the authors have not used common names for *Thelymitra* (unlike their earlier book; de Lange et al., 2007).

I recommend an *Illustrated guide to New Zealand sun orchids*; it is the best reference available for identifying this fascinating group of plants.

References

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Available from Jeremy Rolfe (co-author and publisher) and the New Zealand Plant Conservation Network (www.nzpcn.org.nz).

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Erratum

Hammett, K. (2010). The 2010 Banks Memorial Lecture: Responsibilities in maintaining biodiversity in a changing world. *New Zealand Garden Journal 13(1)*: 23–26.

The timeline (Fig. 2, p. 24) indicated that the Banks Memorial Lectures first began about 1970. However, 1926 is the correct year that the Institute first named the annual lecture after Sir Joseph Banks. See the timeline at www.rnzih.org.nz/pages/RNZIH_timeline.htm.