



STUDIES IN ORCHIDOLOGY

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## P R E F A C E.

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For the degree of D.Sc. in the University of Adelaide the candidate is required by the regulations to "furnish satisfactory evidence of scholarship and power of original scientific research." I submit the following:-

1879. Holder of a University Scholarship (£150 and exemption from University fees.) Competition open to all schools and colleges in State.
- 188<sup>1</sup>. Passed final examination in Arts and declared equal with S.E. Holder, for South Australian Scholarship £800. Refused offer to divide the award and sat for further examination March 188<sup>2</sup>. Scholarship awarded to S. E. Holder.

- March 188<sup>2</sup>. Admitted B.A. degree, Adelaide.
1897. " M.A. degree, Adelaide.
1884. Senior medallist of my year in Zoology, University of Edinburgh.
1885. Bursar in Chemistry, Zoology and Botany, University of Edinburgh.
1887. M.B. and Ch.M., Edinburgh.
1896. M.D., Edinburgh.
- Fellow and Past President, Royal Society of South Australia.
- Fellow Linnean Society of London. Elected 1924.

*Ex-President* Member Board Governors of Public Library, Museum and Art Gallery for 40 years. Chairman Museum for many years.

President Section of Botany, Australian and New Zealand Association Adv. Science, Sydney 1932.

Have contributed about 50 Botanical articles to the following:-

1. Royal Society of South Australia.
2. Royal Society of Western Australia.
3. Royal Society of Victoria.
4. Royal Society of Queensland.
5. Royal Society of Tasmania.
6. Journal of Botany, London.
7. Victorian Naturalist.
8. Australian Encyclopoedia (A & R) Illustrated  
Article on Orchids.
9. The Family Orchidaceae in Black's Flora of South  
Australia.
10. Pan-Pacific Congress  
and others.

It will be noted that my thesis consists of five studies in the Orchidaceae, the last two being under separate covers. All have been published, but are now submitted for approval in somewhat modified form.

In their production I am not conscious of having availed myself of the work of others, unless this is specifically stated in the context.

For the arrangement and presentment of material I am personally entirely responsible. My reading in the literature of the Orchidaceae has been wide and catholic and I suppose it is practically impossible to escape the influence of such classical publications as those of Darwin, Lindley, Bentham,

Blume and Reichenbach, and possibly some of the more recent investigators in this field such as R. D. FitzGerald, J. J. Smith and Schlechter. However my obligations have been noted wherever I am conscious of their existence. A condensed bibliography of the literature with which I am most familiar, will be found at the close of Study V.

STUDY I. I regard this as a series of original investigations. They were carried out on living material at various stages of growth from the bud to the fully matured flower. The plates which illustrate them were prepared from my own dissections and under my own supervision.

STUDY II. on the "distribution of orchids" was read before the Pan-Pacific Congress in Melbourne. It was prepared at the request of the local Committee of that meeting. It is of course based upon careful observation of scattered reports such as appear in periodical and other current literature, regarding "stations" of orchidaceous plants. It was badly required for practical purposes and has I understand supplied a real "want." It is not a mere compendium and contains much that is original.

STUDY III. This is important original systematic work. The Lane-Poole collection was made at high altitudes in the Owen-Stanley Ranges and it is greatly to be regretted that a portion of it was destroyed during an attack on the camp by hostile natives. No Orchid-Flora of Papua has yet appeared and the

literature is extremely scanty and scattered. Collectors are unlikely to re-visit these mountainous regions in the near future.

The discovery of Rhizanthella in Western Australia was, at the time of publication, an event unique in the history of orchids. It has since been paralleled by the discovery of another subterranean orchid in New South Wales.

STUDY IV. (under separate cover). Every description and every illustration has been made from living material. All are therefore new. The differential tables are likewise original. To reduce the cost of publication and to bring the section into conformity with the rest of Black's book, synonyms have been omitted. Since 1922, when this part of the South Australian Flora was issued, certain additions and alterations both as regards technical names and localities, have occurred. Most of these "addenda" (and they are not numerous in the Orchidaceae) will be found on pages 680 and 681 of the main work.

STUDY V. (under separate cover) is a Presidential address which I gave at a meeting in 1932 of the Australian and New Zealand Association Adv. Science in Sydney. It is a retrospect of botanical effort in the Orchidaceae, so far as it affects Australia and adjacent territories. Nothing of the sort has been attempted, so far as I am aware, and it brings advances in this field practically up to date.

## C O N T E N T S.

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## I. MECHANISM OF POLLINATION IN CERTAIN AUSTRALIAN ORCHIDS -

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2. Flora of Exotic Origin	" 63
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4. Endemic flora	" 83

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| 2. Contributions to the Orchidaceous flora of<br>Papua (illustrated)   | " 104 |
| 3. Contributions to the Orchidaceous flora of<br>Papua and New Guinea  | " 123 |
| 4. Contributions to the Orchidaceous flora of<br>Papua and Australia   | " 135 |
| 5. A new genus of Australian Orchid (subterranean)   | " 145 |

IV. Copy of the Family Orchidaceae from Black's Flora  
of South Australia (separate) 1922.

V. Reprint Presidential Address Australian and New  
Zealand Association Adv. Science, Section M.,  
at Sydney, 1932.