

# Book Reviews

## BOTANY

### Arctic Adaptations in Plants

By D. B. O. Savile. Canada Department of Agriculture, Research Branch, Monograph No. 6. 1972. 81 p. Free on request from Information Division, Canada Department of Agriculture, Ottawa K1A 0C6.

This very readable booklet is difficult to characterize. It is not a comprehensive review, it is not a textbook, it is not a research report. It reads somewhat like a series of well-prepared lectures by an authority in the field of arctic adaptations in plants. Dr. Savile is eminently qualified for the task, and has obviously put his many years of field and laboratory experience to good use by writing this refreshing personal account of a very complicated subject.

The book is divided into five main sections: Introduction (pp. 7-13), Flowering plants (pp. 14-54), Cryptogamic plants except fungi (pp. 55-60), Fungi (pp. 61-75), and Conclusions (pp. 76-77). A selective list of 107 references (21 of which are entirely or partly by Savile himself) concludes the work. A short index might have helped, but a detailed table of contents and numerous cross-references provide a useful alternative.

The technical layout is excellent, verging on flawless. I noticed only a few typographical errors ("Jan Meyen Island" on p. 40, and "asocarp" which occurs three times on p. 62-63). The heading "B Winter survival" placed at the bottom of p. 14 obviously should have been transferred to the top of p. 15, and p. 54 consists of only three lines of text which for some unknown reason were not placed in the ample blank space at the bottom of p. 53.

Dr. Savile's style flows easily, making the booklet a masterpiece of clarity in thought and word. One gets the impression that it has been spared undue editorial interference, and it is consequently more interesting and readable. Far too often original ideas and reflections are made to conform to a more sterile scientific style and format. It is also worth noting that there are only nine simple figures and three tables in the booklet, and any of them could have been omitted without any substantial loss in clarity.

It is significant that the title is *Arctic Adaptations in Plants* rather than *Adaptations in Arctic*

*Plants*. Thus related observations on boreal and montane adaptations are also included. The bulk of the examples used are from the Canadian Arctic but some effort was made to include research from other polar countries.

Not surprisingly the section on flowering plants is the most extensive, especially the discussion on wind dispersal which, although controversial, cannot be ignored by arctic botanists. I noted several minor errors of fact and implication in the section on flowering plants, and especially in the short section on cryptogamic plants except fungi. Perhaps because the author is primarily a mycologist, the section on fungi is probably the best in the book. The elucidation of modifications in life cycles of parasitic arctic fungi is one of its most significant contributions.

Although the quote from Al Purdy's poem "Trees at the Arctic Circle" is welcome, the only aspect of the book which disturbs me is a teleological undertone, e.g. (p. 37) "These are fly-flowers, which have evolved specifically to attract Diptera" and (p. 65) "These fungi have three choices." Undoubtedly biologists are often tempted to use teleology to explain the otherwise unexplainable, but to do so in such a formal way is, I think, unwise. This booklet will be of immense use to students in a wide variety of subjects and it is unfortunate that they may be unconsciously led astray by certain statements in this otherwise excellent treatise.

On the whole, however, arctic botanists must be thankful that the broad topic of arctic adaptations in plants has been handled in such a masterful way. The controversial or weak points of the book in no way detract from the impact the book ought to have, and I feel certain will have, on arctic biology. It is an ideal text for discussion groups or seminars in senior undergraduate or graduate university courses. The Department of Agriculture is to be congratulated in making the booklet available free to anyone on request.

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Brassard, Guy R. 1973. "Arctic Adaptations in Plants, by D. B. O. Savile [Review]." *The Canadian field-naturalist* 87(2), 193–193.

<https://doi.org/10.5962/p.343756>.

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