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BOOK REVIEWS

Blood-lily systematics: for botanist and plantsman

Snijman, D. 'A Revision of the Genus *Haemanthus* L. (Amaryllidaceae)', 1984, Supplementary Volume no. 12, *Journal of South African Botany*.

Those involved with the identification of cultivated plants are frequently confronted with material of unknown geographical origin, and are therefore often dependent on inadequate, horticulturally-oriented literature usually lacking keys. In many cases, it is not possible to determine whether a relevant regional flora is available. Even with increasing enlightenment on the part of botanic gardens in growing plants of known wild origin, successful identification will continue to rest heavily on the availability of well illustrated comprehensive generic revisions. Such works are, alas, all too few, but among them, Deirdré Snijman's revision of *Haemanthus* ranks with the best.

Haemanthus is known in cultivation mainly through the widely-grown species *H. coccineus*. If Snijman and other recent workers are to be followed, several species generally grown as *Haemanthus* are among those which should be referred to the genus *Scadoxus* (rhizomatous rootstock, thin-textured leaves, $2n=18$), leaving *Haemanthus* s. str. (true bulbs, fleshy leaves, $2n=16$) with 21 species.

Maintaining the high standard set by a revision of South African *Gladiolus* published as Supplementary Volume 10 of the same series, the *Journal of South African Botany* has produced, with careful attention to detail, a lavishly illustrated monograph of *Haemanthus*. The publication includes no fewer than 24 colour plates, 'to convey such taxonomically important features as texture, colour and markings of the floral and vegetative parts'. These illustrations are beautifully executed by the artists Ellaphie Ward-Hilhorst (23 plates) and Fay Anderson (1 plate), and succeed in their aim. It is not clear whether the lack of subtlety in the highlighting on leaves of three plates (7, 17, 20) is an artefact of reproduction, since in other respects, all plates are impeccably printed.

Each of the four species and three subspecies newly described by Snijman are illustrated with colour plates. Only five of the 21 species are not illustrated in colour. The provision of two colour plates for variants in each of three species seems excessive, though the two plates of the very variable species *H. coccineus* are certainly useful.

The text is in clear 10-point on good quality matt paper with effective use of headings, type-faces and setting out, making it a delight to read and use. The arrangement of details of specimens cited is perhaps a little wasteful of space. Clear distribution maps are presented for each taxon, and some half-tone plates, mainly of type specimens, are included. Figure 6, a reproduction of a photograph of a Cape Honey bee alighting on an inflorescence would better have been omitted since it is poor and conveys little information, especially as to the identity of the bee. Figure 7 is poorly exposed.

The scientific content of this monograph matches the high standard of presentation. A concise introductory section, for the most part based on thorough investigations, deals with background, methods, morphology, geography, ecology and habitat, evolution and various aspects of biology. Included is a detailed account of the structure of the various bulb types found in the genus; this could have been improved only by better illustration of median as compared with lateral compression of the bulb. It is the discussion on evolution and relationships, however, which is disappointing. Although a table arranging the species into four groups is presented, a synopsis indicating the characters on which this is based is lacking. The discussion outlining the relationships is not entirely clear, but it would appear

that species representing early off-shoots of different phylogenetic lines are united in the *H. humilis* group, on the common possession of primitive characters.

The taxonomic treatment comprises clearly presented synonymies, well written, cross-comparable descriptions, flowering and 'leafing' times, distribution and habitat details, notes (including variation) and lists of cited specimens. A workable, though probably fairly narrow species concept is adopted, while the assignment of subspecies rank has a sound basis and the temptation of subdividing the very variable and widespread *H. coccineus* is resisted. The habitat information presented is generally sufficiently detailed to be of use in gauging requirements in cultivation. Although distinctive features are detailed for all species, more reference to particular characters distinguishing a taxon from its closest relatives, or from morphologically similar taxa would have been useful. All new taxa are furnished with full Latin descriptions which are well written with the exception of one peculiarity: they are composed of several sentences each beginning in the nominative for the first clause but with the subjects of subsequent clauses in the ablative.

One further commendation would seem to be in order. It is heartening to see space made available not only for the inclusion of two identification keys but also for several species to be keyed out more than once. The main key is the second one, based primarily on floral characters. This is well-written, with contrasting leads which agree with the descriptions. Leaf characters are reserved for ultimate couplets and used only when really necessary to distinguish taxa. This is important because most species flower before leaves are produced. My only criticism of this key is the use of purely geographical criteria at couplet 23.

While the inclusion of a second key based mainly on vegetative characters is highly commendable, it is unfortunate that the best has not been made of this opportunity. The main reason for including such a key is that it allows some progress to be made with identification of leaf material of species in which flowers and leaves are produced at separate times. Regrettably, more than two thirds of these species follow a couplet based entirely on floral characters: such characters could have been reserved for use in later leads and only where absolutely necessary. Despite these minor criticisms I am sure that many will join me in the hope that the author, artists and publisher who combined to produce this excellent volume have plans for future taxonomic publications on groups of horticultural importance.

Snijman, D. 1984. 'A Revision of the Genus *Haemanthus* L. (Amaryllidaceae)', pp. 139, figures 32, with 23 colour plates by E. Ward-Hilhorst and one by Fay Anderson. (Published by *Journal of South African Botany*, as Supplementary Volume no. 12). Hard-bound. Price R20.

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Plants of the Cape Flora

Bond, P. & Goldblatt, P. 'Plants of the Cape Flora. A descriptive catalogue'. 1984, Supplementary Volume no. 13, *Journal of South African Botany*.

This mammoth compilation of 8505 species in 150 families and 955 genera demands special attention as it is the only recent book which deals with the whole of the Cape Flora. Each species is accompanied by a brief diagnosis, the flowering time, a broad distribution range, sometimes with ecological notes and often with a common name. The diagnostic characters are usually sufficient to identify plants at least in the smaller genera that is, if one

knows by previous experience the name of the genus as there are no keys or references to where one would find keys. It is thus a checklist of the species with some synonyms mentioned only in a few families. For checking names the 'List of species of Southern African plants' by Gibbs Russel (1984) has the advantage that it covers the whole of the Southern African flora and includes subspecific taxa, but it is merely a list, whereas 'Plants of the Cape Flora' has a little additional information.

The format of this publication is based on Beard's (1965) 'A descriptive Catalogue of West Australian Plants'. It is a pity that the authors were not inspired by this example to designate some phytogeographic units within the Cape Region even if only as a basis for further discussion.

Contrary to hopes expressed by the authors that it "will fill an important gap in the literature both for researchers in the area and for science at large" this is hardly likely as there are very few references given in the introductory chapters of the book and none at all under the family or genus. The use of some names is complicated because while one may not find them in existing literature, "species not yet published, but with the expectation that they will be within a year of the appearance of this work, are treated as valid names"! This should not cause undue concern in the long run except that authors have been known to change their preference for a certain epithet while the species are being prepared for publication.

In the chapter on 'How to use the catalogue' no mention is made of Dyer's (1976) 'The Genera of Southern African flowering plants', which is the only recent publication with keys to families and genera, as well as references to recent revisions, so that it would be the obvious book to use in conjunction with this Cape Flora catalogue. The Dyer reference is mentioned only in passing as a basis for the families and genera, but had to be adapted because of new information published since its publication.

The introductory chapters are very informative and show in the case of 'Geographic Definition' the difficulties involved in delimiting the area. In parts arbitrary decisions have to be taken and relics of this flora on the Groot River Heights and Zuurberg Ranges have been left out to simplify a nevertheless complex evaluation. The definition of the Cape Floristic Region in terms of vegetation types is problematic. As the Cape Region (as accepted above) includes vegetation types which extend their distribution far beyond the set boundaries. The Cape Region as boldly outlined on the end papers of the book is a mosaic of different vegetation types extensively moulded in time and space mainly by changing climatic conditions, several mountain ranges and unusually poor sandy soils often leaving only small refugia for some communities. There is evidence that the flora has been isolated for a long time, and the species of several families have radiated out in an evolutionary sense into a wide range of niches, while others have shown a proliferation of species e.g. Ericaceae with 650 endemic species of *Erica*.

The 'Analysis of the Flora' demonstrates importance of this unique flora. Although it occupies ca 90,000 sq.km, or less than 4% of Southern Africa it includes between 40% and 46%, or 8505 species of the flora. Six families, 193 genera and 68.2% of the species are endemic to the Cape Region. This percentage of endemism is lower than that of isolated islands such as New Zealand, but considerably higher than any floristic region on a larger land mass. Although these figures are largely based on Goldblatt (1978) and Raven and Axelrod (1978), many of them were adapted to include new information. Appendix 1 provides details of the genera and species, each with their number of endemics in the 150 families enumerated. This table shows at a glance the more important families of the Cape Flora according to their size and number of endemics.

The 13 photographs were well selected to show some aspects of the varied nature of this region. The whole work was obviously typed on E.D.P. which has produced a different type

face unusual for this Journal. Editorially interesting is the use of the abbreviation sp (without full stop) for one or more species presumably because it is a plural noun. The abbreviation of Peninsula for what must be assumed to be the Cape Peninsula throughout the check list is not explained, and, is at first confusing, because the unabbreviated form is used throughout the introductory chapters. Leguminosae, the more common alternative name for the Fabaceae cannot be found in the check list of the general index, although other names are cross indexed. From an Australian point of view it is almost incredible how few alien species have naturalised although it is stated that exotic species readily become established and displace the native flora.

In spite of these minor shortcomings the work is an amazing compilation which should be useful as an interim reference, but foremost will hopefully promote more research on a unique floristic region which is often classified as one of the six floral kingdoms of the world.

Bond, P. & Goldblatt, P. (1984). 'Plants of the Cape Flora'. A descriptive catalogue pp. 455, 13 colour photographs. (Published by *Journal of South African Botany*, as Supplementary Volume No. 13) Hard-bound. Price not known.

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