

## Southern Drakensberg Botany

*The Botany of the Southern Natal Drakensberg* by O M Hilliard and B L Burt. 1987. Annals of Kirstenbosch Botanic Gardens Vol. 15, National Botanic Gardens, Cape Town. Pp. 253: 38 illustrations in colour. ISBN 0 620 10625 5. Price (South Africa) R52.40 (i.e. R45.00 + R5.40 gst + p/p R2.00). Overseas price US \$25.00 inclusive.

In the latter part of this century, the high Drakensberg region has been well served botanically, both by extensive scientific studies and by well illustrated more general popular works which have included much on the flora. It was wise therefore of the present authors to choose as the region for their attention, a part of the Drakensberg not previously dealt with in depth and still, fortunately, relatively unaffected by man and his cohorts of invasive foreign weeds. I thus looked forward with keen anticipation to this work by two of the most prolific writers on South African botany. They have, individually and together, produced a large number of sound and well written books and articles, mainly on the Natal flora and dealing with whole families or other large groups.

There are three sections to the book — contents, maps and plates. I am pleased with the first, slightly critical of the second and sadly disappointed with the third. The text, fully up to standard, as one expects from these authors, covers a far wider field than the works of those preceding them, and they have obviously collected far more thoroughly in the area than has previously been done. This does not lessen the pioneer work of Bews (whose *Flora of Natal and Zululand* is inexplicably left out of the reference list), Galpin, Killick, Pearse and Trauseld; these authors have, however, all worked either earlier (Galpin for example) or on other sections of the 'Berg (Killick). The scope of the present book is indicated in the 14 chapter headings which range from the scene (i.e. topography and climate) through botanical exploration, vegetation patterns and phytogeography to acknowledgements and references. Citing even this small number of headings shows that the present work is of importance in extending our knowledge of the basics of field botany in this part of southern Africa.

The introductory chapter gives the setting for the whole book, something necessary not only for overseas workers in botany but also for those living in southern Africa. Too often the country between Underberg and Dordrecht, Bethlehem and Wepener seems to disappear into limbo, yet this heavily mountainous area is, if account is taken of the ups and downs of the terrain, a very large surface portion of the subcontinent, supporting a flora over a great range of altitudes, soils and climatic factors. Studying this region is no easy task, either, from a physical point of view. It is in this chapter also that the three aims of the authors are set out — to discover what grows in the area, to give a wide-ranging account of the floristics of the region and, finally, to venture into botanical speculation on the relationships of the flora as a whole. How far their conclusions will meet with approval from other botanists remains to be seen but the check list enumerating the flora of the area studied lays a solid basis for future work in this region.

In the second chapter, the authors state their lower altitudinal limit as 1 800 m, the upper being, naturally, the crest of the mountains of their study area. The east/west limits are given as Giant's Castle and the Endwana River. Apart then from material from Sehlabathebe in Lesotho, all specimens mentioned come from an area where the river drainage is towards the east and the Indian Ocean, the climate is severe, the soils shallow and the general aspect facing the cold southern winds from Antarctica. As I know from personal experience, such conditions lead to icicles hanging for weeks from cliffs on one side of a valley, snow covering southfacing slopes equally long, while on the opposite slope there is a daily fluctuation between below-freezing temperatures at night and a comfortable warmth during the day; there can be a great deal of solifluction and vegetation is not easily established under these circumstances. Much more study of such situations is needed but the present work is helpful.

Chapter three is a discussion of land use and of the botanical exploration of the region. Here one begins to feel the need for a gazetteer, for there can be few as yet who recognise in Thukela the much more familiar Tugela (see second paragraph of this chapter, line 5). The map of collecting localities (fig. 4) is helpful but one needs an atlas nearby, otherwise, with the rivers omitted, there is only the international boundary line to give some clue as to which valley is which.

Following on in the next chapter is a most important subject for the whole of the Drakensberg area — the fire regime of the region. Just how much the vegetation of all Africa has been altered since man learned the making of fire, we shall never know but since pastoral man started burning to gain fresh green grass for his flocks and herds, Africa's flora has been severely taxed. Flying over the continent in the dry seasons or driving on the higher veld of South Africa at the same period, one is never out of sight of fire and palls of smoke. Naturally occurring fires were surely never so frequent and must have happened rarely in winter, while in summer lightning strikes are often followed by quenching rain. We know so little about the fire-cycle periodicity of our vegetation but, as is pointed out in this book, the authorities concerned with conservation in the study area are following a carefully controlled programme. This, one hopes, will bring about greater understanding of the effects, and a more sympathetic use, of fire.

Reading chapter five left me with the feeling of being back at school, being encouraged by the biology teacher to enter some botanical competition; a series of topics is displayed before one, on such subjects as pollination methods, growth forms, hybridisation and today's major study, weed species. All these with others are briefly treated and I fail to see why the chapter has been introduced at all. Each topic requires, for sound discussion at least a long chapter of its own, if not a book. Whether the observations given in this present chapter will encourage others to carry out further work on these subjects, is problematic. Again, is this the place and the audience to address a warning on *Hypericum patulum* (p. 41, 11. 37–38)? If this is a weed which requires watching, weed control authorities and other bodies should be informed directly. Readers of this book are unlikely to find an illustration of the plant or look at herbarium specimens, then to spot it in the field and try to eradicate it.

The following chapter contains a simple description of the types of vegetation

in the area and sets the scene for the listing of species in chapter eleven. The uncomplicated terminology used will be helpful to non-botanists. Chapter seven, in contrast, has long lists of species used to make comparisons with neighbouring areas or regions. Such lists are botanically necessary but will be tediously boring for those who wish to use this book as a field guide.

The floristics of the area are dealt with concisely in chapter eight, where the startling dominance of the Compositae (the authors prefer this name for the family, over the now more generally used Asteraceae) is clearly shown. This chapter's four pages of text lead readily on to the next, that dealing with phytogeographical analysis. In this, chapter nine, the writers attempt to define the area they have worked on, in terms of endemic species and those restricted to montane and submontane habitats. In such discussion there is always the question of how extensive collecting has been in places where the terrain is difficult — steep, rocky, arid, densely vegetated, *et cetera*. Then too, the travelling arrangements of collectors may make a difference as to areas covered. Hilliard and Burt worked from base camps, thoroughly examining each surrounding countryside, but, again, could not do this at all seasons and under all weather conditions — dry, wet and so on. Nevertheless they collected extensively and intensively and probably better than anywhere else of such size has been covered in the Drakensberg. For the Drakensberg flora, they find 53 % is endemic to mountainous country south of the Limpopo and a total of 70 % at least of all species, including less altitudinally dependent members, is endemic to Africa south of the Limpopo.

With this analysis as the starting point, chapter ten is devoted to a consideration of where the Drakensberg flora (not only that portion listed in the book) fits in to African phytogeography. Here the writers disagree with Killick's opinion (as given in Werger: *Biogeography and ecology of southern Africa*) that there is an Afro-alpine region south of the Limpopo, based on the flora of the high Drakensberg. Instead, the present authors prefer to follow White (1976) and have decided, on the basis of White's new categories of chorologically different areas, to assign the whole high altitude Drakensberg flora to a mosaic, which they define as the South-eastern Mountain Regional Mosaic. This follows from their demonstration of the mixture of floristic elements and the endemic richness of this region. This is in part a revival of ideas entertained to some extent by Bolus, as long ago as 1886, and Phillips (1917).

The check list which forms chapter eleven will be, as such lists always are, immensely useful to botanists working on the flora of the Drakensberg area. It covers almost 140 pages of small print and ranges from the mosses upward. The moss list is as given in Magill's first section of his first moss fascicle so that many more names can be added to this portion from the second section issued in 1987, obviously after the manuscript of Hilliard and Burt's work was in the printer's hands. A brief habit description is a useful addition as is also the world distribution for genera, with the number of species, and a habitat note for the species listed. A surprising feature is the species key to *Cliffortia* (p. 162) — useful probably but unusual. However, as it is labelled a field guide, the authors obviously intend the book to be taken into the field. I would hesitate to do this for several reasons — the paper is coated and moisture will affect it, the book is weighty and about half of its contents are topics for consideration at the laboratory bench or at home. Also, the shape is awkward but

that has been conditioned through keeping it in conformity with the Kirstenbosch Annals series.

This brings me to the illustrations. Here I wring my hands in despair. Why, oh why, from such outstanding workers who have produced such excellent photographs as that forming the dust jacket, and those of the frontispiece and many others giving scenic overviews, have we to put up with so many plates where the illustrations of this species or that are indistinguishable pinpricks of colour on a fuzzy background? For example, look at plates 8 B: 9 C, E: 17 D: 18 A, B, F: 19 E, and, sadly so many more. Fewer plates, but with all plants recognisable, would have made a tremendous difference to the non-botanist at least. Another criticism is that often the subject referred to is not clearly indicated. In looking at plate 22, photograph A, which of the two small trees is *Heteromorpha*? The brief remark in brackets, (on left), would have been sufficient, but otherwise it is not recognisable.

CTP Book Printers, Cape, are to be congratulated on their usual clean, competent and careful work. I have not, so far, found a single typographic error; this is, of course, a tribute to the writers also for their efficient preparation and proof reading. The binding seems sturdy and altogether, the book is a pleasure to handle. It is a welcome addition to the series from Kirstenbosch and may encourage others to take up investigation of the many unexplored parts of our floral heritage, so rapidly being obliterated by man's activities even in far-distant places or those difficult of access.

**A Jacot Guillarmod**  
*c/o Albany Museum*  
*Grahamstown*