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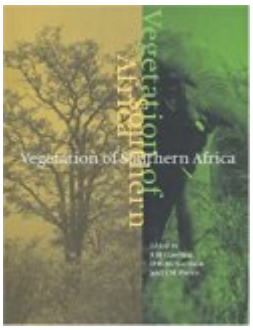

R. M. Cowling, D. M. Richardson, S. M. Pierce, eds.. *Vegetation of Southern Africa.* Cambridge: Cambridge University Press, 2003. xxxiv + 615 pp. Â£45.00, paper, ISBN 978-0-521-54801-4.

Reviewed by Jane Carruthers

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Vegetation of Southern Africa is one of the most important books to have been published about the region within the last fifty years. The hard-cover edition appeared in 1997 and has already become a classic in the scientific literature. Because of the great demand (even at the high price of £160) it has been out of print for a long time and the 2003 edition, reviewed here, is a paperback reprint, more reasonably priced at £45. Strictly speaking, this is not an historical work, and the question might well be raised as to why a book about plants--no matter how classic or popular--is reviewed on H-SAfrica. Quite simply, it is because this is an essential reference tool of outstanding quality that all scholars of southern Africa, including those in the humanities and social sciences, should know about and make appropriate use of.

The richness of southern Africa's vegetation is unparalleled and contains prime examples of many of the world's major ecosystems. South Africa itself is relatively small, but as the well-worn tourist slogan has it, it is indeed "a world in one country." As this book explains so competently, there is hyper-arid desert, savanna, tropical rainforest, alpine heathland, even an entire floral kingdom--the Cape fynbos--and more. The geology, climate, and topography vary in like degree, creating a dynamic landscape of enormous international ecological significance. Despite its small size, South Africa is the third most biodiverse country on the planet. But the importance of this can be measured in human as well as in ecological terms. Within this extraordinarily rich natural landscape have occurred some of the most dramatic of Africa's histories and they have been affected by the plant ecology. Socio-economic lifestyles of all southern Africans have been influenced directly and indirectly by the natural environment and this book provides easy access to understanding the plant cover of the country. It is a truism, but one nonetheless not always articulated by the non-scientific academic community, that vegetation is fundamental to human society, providing food, shelter, social patterns, and cultural enrichment. Together with the geological substrate and abiotic elements, it determines patterns

of settlement by offering a defined suite of possible socio-economic choices.

Different strategies of survival and pathways to prosperity have been employed by southern African communities in different parts of the subcontinent at different times, many of them environmentally driven. Certain tree species, for example, have provided charcoal for iron-smelting, building material, traditional medicine, and browsing for domestic stock. The savannas and grassland have been the foundation upon which the rich cattle economy of precolonial Africa was predicated and also form the basis of the extensive trade in the products of savanna animals--hides, skins, even ivory. The tropical vegetation of the KwaZulu-Natal coastline was removed for sugar plantations, an industry that changed the population dynamics and the economy of eastern southern Africa. Introduced Australian tree species literally propped up South Africa's deep-level mines. The alpine vegetation of the Drakensberg and eastern Free State highlands allowed Moshoeshoe's kingdom to prosper, while many San groups, with immense knowledge of the nutritional value of local plants, were adept survivors in the arid west. Sites of "Bantustans" and "homelands" were selected carefully to exclude the most productive areas of southern Africa. The desire for certain specific vegetational areas accelerated colonial expansion, sparked frontier conflict and led to the fission and fusion of many groups, clans, and communities on different social and time scales. Introduced plant species such as Australian eucalypts and wattles are among South Africa's most important agro-forestry products. Other introduced species benefit society by providing food, while others by contrast, may threaten ecological (and social) systems by their invasive tendencies. In short, some understanding of the natural environment is vital for all historians of southern Africa. *Vegetation of Southern Africa* meets this need in a single comprehensive and authoritative volume, and one moreover that is clearly written and devoid of unecessary or obfuscating scientific jargon.

Because of the complexity of southern African vegetation, writing an overview of it has to be a collaborative project. Some forty-eight of the country's most outstanding experts in their respective fields have been involved in this book. The majority of the authors and co-authors (twenty-seven in number) are attached to South African universities, principally the University of Cape Town (in 1997 the academic home of the three editors, Richard Cowling, D. M. Richardson, and S. M. Pierce), but also the Universities of the Witwatersrand, Western Cape, Natal, Durban-Westville, Orange Free State, Rhodes, Pretoria, Stellenbosch, and Namibia. Nine of the authors are employed by the National Botanical Institute, while the rest come from various research institutes, and government and semi-government environmental agencies. This is an impressive group and the experience and expertise of these contributors could not have been improved upon.

There are twenty-three chapters in all, and the book is divided into three parts. Each chapter is followed by its own list of references. Part 1 gives a rich background to the rest of the book. Entitled "Physiography and History," it contains four chapters: viz. "Evolution of Landscapes," "Climate," "Phytogeography, Flora and Endemism" and "Vegetation History." The main part of the book is part 2, "Biomes," a discussion of the discrete entitities that comprise the various vegetation zones (or eco-regions). Here, and in ten detailed chapters, each of southern Africa's biomes is considered, explained, and analyzed in terms of structure, functions, boundaries, environmental drivers, and processes. There are separate themed chapters on coastal vegetation, freshwater wetlands, and marine vegetation. Part 3 ("Ecological themes") consists of eight chapters. Dealing with issues like fire, herbivory, and species diversity, it also includes humans directly in the story, and this is narrated in terms of human use of plants

and human impacts on vegetation (agriculture, population growth, plant introductions, and conservation policy and practice). In addition to these twenty-three chapters, there is a glossary of terms and two indexes, one by subject matter and the other by biota and taxa. Helpful illustrations, maps, and graphs appear throughout the book.

The history of this book and its subject (outlined in the preface) is an interesting vignette of the history of science in the region and it deserves to be read for this content alone. As is becoming better understood with more scholarly historical research, southern African plant scientists pioneered much of the innovative thinking that underpinned the emerging discipline of plant ecology in the early decades of the twentieth century and provided it with some of the contours that persist to this day. One of the most intruiguing of these characters was J. P. H. Acocks who produced--as sole author--*Veld Types of South Africa* in 1953 (there was a second edition in 1975 and a third in 1988). Many botanists currently recognize the seven biomes in southern Africa discussed in *Vegetation of Southern Africa* (desert, forest, fynbos, grassland, nama-karoo, savanna, and succulent karoo) together with an eighth, thicket, that Cowling believes would have to be included in any revised edition because of its intrinsic importance and our increased understanding of this biome.[1] Acocks, however, described smaller areas of many more "veld types," a typology of scale that remains relevant even today. Acocks, together with men such as I. B. Pole-Evans, J. Bews, J. P. Phillips and others, deserve to loom even more largely in South African history, since our environmental paradigms were shaped so substantially by their thinking, mirroring as it did, the society and period from which it emanated. There is a strong sense in which Acocks's "uniquely South African perspective of vegetation patterns and dynamics" (p. xxix) has been brought up to date in the book under discussion--although it took nearly fifty contributors to do so.

Although, as has been mentioned, the focus of this book is its central section on the various biomes, non-scientific readers will be more interested in the scientific thinking behind this book and the chapters in the first and final sections. In addition to its use as a work of reference about the various plant communities of the region, *Vegetation of Southern Africa* is itself a substantial book of environmental history, although perhaps not all the authors would be comfortable with this description of their contributions. Unlike Australia, southern African historians have not yet discovered or explored "deep time." The cultural histories of palaeontology, climatology, and other earth sciences have yet to be written by historians, but, as evidenced in *Vegetation*, Tim Partridge (author of chapter 1, "Evolution of Landscapes") and L. Scott, H. M. Anderson, and J. M. Anderson (authors of chapter 4, "Vegetation History") are adepts. Partridge's analysis of the changing South African physical landscape is presented succinctly and deftly, as can only be done by someone with immense knowledge and research experience. He brings the evolutionary history of the region alive. Read together with R. E. Schultze's chapter on climate (chapter 2), the scene is set for increased understanding of settlement patterns in the region which would relate to many archaeological findings very productively.

More recent historical themes are explored in chapter 20, "Human Use of Plants' by A. B. Cunningham and G. W. Davis, and in M. Timm Hoffman's chapter "Human Impacts on Vegetation." In these two chapters and that on "Alien Plant invasions" by D. M. Richardson, I. A. W. Macdonald, J. H. Hoffmann, and L. Henderson it is clear that the historical nexus between humans and nature is being competently analyzed in historical terms, although not with the focus that an historian might provide. Cunningham and Davis discuss plant use by San and mixed farmers, not only from a practical point of view but also the spiritual. They include a poem, *Agathosma*, recounted to Wilhelm Bleek in 1874, about (the plant) buchu,

and are sensitive to the cultural context of plant use. They explain the relationships between indigenous knowledge and colonial commercial exploitation of certain plants and discuss the current economic importance of the "hidden economy" in traditional plant use. Hoffman turns the story around by analyzing human impacts on vegetation, discussing theories of desertification and degradation, the role of agriculture, and increasing population densities.

Because this book is so important to everyone interested in southern Africa, it is a pity that the publishers and authors did not revise it rather than merely reprint it. Seven years is a long time in modern botanical research and biodiversity thinking, and many would have welcomed an updated version.

Note

[1]. Personal communication with the reviewer.