

now is, "Doflein-Reichenow"—remains to exhibit to us the Protozoa, not only as causes of serious diseases of man and animals, but also as organisms of which the astonishing beauty and variety of form, physiology and adaptation pose for us unsolved problems of great biological importance. It is a pity that a work like this, to which there is nothing comparable in other languages, has never been translated for the English-speaking reader. G. LAPAGE

SOUTH AFRICAN ALOES

The Aloes of South Africa

By Gilbert Westacott Reynolds. Pp. xxiv+520+77 plates. (Johannesburg: Trustees of the Aloes Book Fund, 1950.) 73s. 6d.

THIS sumptuous volume concerning a fascinating genus of succulents is the result of the labour of one who, to quote from the foreword written by the late General Smuts, "has explored almost every hole and corner of South Africa where Aloes grow". The author's indefatigable search for members of this genus has ensured a knowledge of the natural habitats of these plants and a familiarity with them in all their variations under their native environments that have produced a monograph of unrivalled reality.

Moreover, the author's skill as a photographer both in colour and in black-and-white has resulted in a series of photographs of the species in their wild setting that will be the envy of those writing monographs on other genera.

A group of this character can only be effectively studied by extensive field-work, and we have in this book the outcome of the effective combination of the results of the study of the growing plants with examination of herbarium material. It is interesting in this connexion to note the author's comment: "The more field experience and the nearer to Nature and instructive perception one can approach the more is one urged along the path of grouping within reason, rather than splitting"; or again, "some present day European workers have added to the confusion by erecting species and varieties on the flimsiest pretext with total disregard as to the manner in which Aloes grow and vary in their South African natural habitats".

The first part of the work is concerned with a brief account of the early travels in South Africa, but it was not apparently until 1674 that specific mention of these plants was made. Later, in 1685-86, Claudius, who accompanied the expedition of Simon Van der Stel, painted four species of aloe. Also, there is good reason for believing that at the end of the seventeenth century Oldenande had ten species of the genus in cultivation in the Gardens of the Dutch East India Company, but in general the earlier collections paid little attention to the aloes. Historical notes are provided regarding a number of botanists that have contributed to the study of the genus, and of these some of the more notable in recent years have been Dr. S. Schonland (1860-1940), A. Berger, Dr. Pole Evans, N. S. Pillans, Dr. F. Z. Van der Merwe, and last of all the author, Mr. G. W. Reynolds himself, who, though not a professional botanist, has described no less than twenty-five new species besides several distinctive varieties.

These historical notes, together with a short description of Bushman's paintings of two aloes,

occupy the first seventy pages. Bibliographical notes in the pre-Linnaean and later period are next considered (pp. 71-96), and these together with brief accounts of taxonomy, a list of references and a table of flowering periods constitute the first part.

The second part (pp. 103-505) is devoted to the descriptions of the species themselves and their main varieties, all of which are illustrated in their native habitats either in black-and-white or colour, sometimes in both, and the individual flowers are shown natural size in various stages of development. The colour plates illustrate no less than seventy-five species, three varieties and three hybrids.

For every species the author provides bibliographical references, a detailed taxonomic description, an account of the type, locality and distribution, flowering period, and notes on variation and putative hybrids that throughout witness to a profound knowledge of the living plants. One cannot, however, but regret the absence of distribution maps as a record of the author's unrivalled field experience which words alone cannot convey.

The South African species here described number no less than one hundred and thirty-two, of which more than eighty are to be found in the Transvaal area. Of the ten sections of the genus, two only have no South African representatives. These are the section *Aloinella*, to which the dwarf Madagascan *A. haworthioides* belongs, and *Sabæaloe*, of which the Arabian tree aloe, *A. sabæ*, is the type. The aloes range in height from dwarf species such as *Aloe albida* from the East Transvaal and *A. saundersiae* from Natal, both only about 15 cm. in height, to large trees such as *A. bainesii* that can attain 18 m. The very distinctive *A. polyphylla*, with its beautiful dense, almost spherical, rosettes of leaves like a glorified house-leek, one of the rarest species, is confined to a small area in Basutoland, while *A. striata* with its coral-red flowers is equally noteworthy for the beauty of its inflorescence. An unusual habit is represented by the scrambling *A. ciliaris*, as also by *A. suffulata* with a very slender inflorescence that obtains support from the bushes through which it scrambles, while *A. mitriformis* has shoots that are prostrate extended rosettes.

A more or-less bulbous habit is exhibited by *A. kniphofioides* and the Rhodesian *A. bulbicaulis*. Naturally, one thinks of such succulent plants in relation to dry habitats, and some of the aloes are extremely resistant to drought. For example, *A. krapokliana* grows in areas with an annual rainfall of less than 10 in., while the procumbent *A. claviflora*, with its curiously oblique red inflorescences and 'fairy-ring' like growth, occurs in areas with a precipitation of less than 5 in., and Mr. Reynolds mentions this species as frequently having to endure temperatures of more than 100° F. But, at the other extreme, *A. nubigena*, which is found on the precipitous faces of the Drakensburg at an altitude of about 4,700 ft., enjoys an annual rainfall of 75 in. and grows in damp shaded situations within the clouds and the spray zone of a waterfall.

The genus thus lacks neither morphological variety nor ecological interest, and this account is a monument to the assiduous labours of the author, who travelled more than a hundred thousand miles in search of his data and has provided in this book a beautifully illustrated record that will remain a classic monograph alike in its contents and presentation. E. J. SALISBURY