

Classified material

V.H. Heywood

Guide to Standard Floras of the World.
By D.G. Frodin.
Cambridge University Press: 1985.
Pp.619. £95, \$175.

THE best description of this remarkable compendium is given by the subtitle, "An annotated, geographically arranged systematic bibliography of the principal floras, enumerations, checklists, and chorological atlases of different areas". The second part of the book, some 500 pages, comprises just that. There are, however, really two separate elements in this enterprise — a thoughtful analysis of *Floras* and floristics, and the application of this analysis to the geographically arranged guide to the most useful *Floras* and checklists of vascular plants of the world, selected according to the concept of "standard" works. The idea for this compilation dates back to 1962, and we are told that the main catalyst was the publication of the so-called "Green Book" produced by the *Flora Europaea* editorial committee for the guidance of contributors, in which a list of "standard" *Floras* of Europe was given.

Preparation of the *Guide* began in 1970 and was completed in 1975. It is a tribute to the author that he was able to contemplate such a work based in Papua New Guinea, scarcely one of the world's leading bibliographical centres (in a remarkable piece of understatement he comments that the "remoteness of Port Moresby was ... a handicap"!)). Publication has been delayed for nearly six years after the submission of the manuscript to the publishers, and with a cut-off year of 1980 the text is already seriously out of date in many places.

Floristic projects are advancing so rapidly today that the whole question of maintaining an up-to-date database needs careful consideration. It is not at all clear to me that a hard-copy guide such as this, however selective it is, is the most effective instrument for bibliographical purposes. The author explains, however, that his aim was not just to present a classified bibliography but, by being analytical and interpretative, to act as a mirror on the progress of the subject. His ideas are expanded in the first section of the book. This includes essays on the style of *Floras* which are an important contribution to the literature on the subject. Frodin believes that the basic role of a *Flora* should still be a utilitarian and practical one — "inventory, identification and essential related data". He further echoes the increasingly expressed view that, for tropical countries in particular, floristic works should be written in such a way as to have a wide public appeal.

A disappointing feature of this introductory section is that although the author looks to the future, and emphasizes the

need for a reappraisal of the ways in which floristic data are stored and presented, he does not put forward any very concrete suggestions. It is unfortunate that the book was completed just at the time when several new approaches to floristics were being implemented, most of them related to electronic data-handling. Thus a whole series of developments in the use of databases in systematics are omitted or only touched upon, such as the Viciae database at Southampton, the revived Flora North America project (which will be heavily dependent on database technology) and the European Science Foundation Taxonomic Information System and database at Reading, not to mention the substantial reorganization of taxonomic services, involving electronic data processing, that several major taxonomic institutions are currently engaged upon.

In the main part of the *Guide*, Frodin's essays and annotations make interesting reading and present a very idiosyncratic interpretation of the facts reported. This material would have been better published separately. Indeed, altogether it is highly questionable whether it was wise for a world bibliography of *Floras* to have been undertaken as a one-man operation. One cannot but admire the author's enormous achievement in compiling this unique, expensive and fascinating work, but, at the same time, one cannot help feeling that the time for personal statements in this field has been bypassed by events, as Frodin himself hints. □

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Past futures

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Late Quaternary Environments of the Soviet Union.

Edited by A.A. Velichko.
University of Minnesota Press/Longman:
1985. Pp.327. \$45, £50.

This is a third, companion volume to *Late Quaternary Environments of the United States* (reviewed in *Nature* 311, 488; 1984), and similarly arises from the USA-USSR bilateral agreement on the environment and meetings of the scientists sponsored by that agreement. This English language edition brings to the West a whole new range of data, new not least because much of the research summarized here is the product of recent years only.

As such, the book is self-evidently a publication of some significance. Given the vast area of the Soviet Union (exceeding that of the United States and Canada combined), and the diversity of the environments it encompasses, it is inevitable that the quality of coverage will be uneven. But slowly the long-standing, mostly geo-

morphologically based work is being supplemented by sedimentological, chronological and biostratigraphical studies. Appropriately enough, nearly all those Soviet scientists who have worked so hard to transform the situation figure in the book.

There are 30 chapters, many of which cover topics of international interest: the Late Pleistocene glaciation of the northern Soviet Union (in which a carefully argued case that large ice-sheets *did not* occupy the sites of the Barents and Kara Seas is prominent); mountain glaciation; permafrost in the Late Pleistocene and Holocene; and loesses, with a not unexpected demonstration, which nevertheless fills another gap in global correlation, that nine soil complexes are found above the Matuyama-Brunhes reversal in Central Asia. Furthermore, in the Tadzhik Depression the Olduvai reversal is identified; thus parallels emerge between Europe and points farther east, and ultimately with the global deep-sea isotope signal. An account of vegetational history gives a welcome insight into a greatly expanded field of endeavour, even though the data are regionally uneven and of varying quality, while a fascinating chapter on inland sea basins shows how sea-level change varies according to global as well as regional controls: thus 60,000 years ago the Caspian Sea rose to 76m above its present level, an event attributed to reduced evaporation and increased input from the Volga.

Palaeoclimatic reconstruction has long been a strength of Soviet scientists and included are convincing reconstructions of the principal stages along with inferences on their atmospheric circulation. It is shown that the "glacial monsoon" of the western Soviet Union, created by juxtaposition of cold high-pressure zones over the ice sheet and warmer low-pressure systems farther south, played a vital role in the transport and deposition of the loess deposits so critical for correlation.

Many readers will repair eagerly to the section on the dispersal of primitive cultures, not least in the hope that evidence from Siberia will throw light on the timing of the entry of man into the New World via the Bering Strait and on the attendant possible extinction of the megafauna. Unfortunately, however, the evidence from many late Palaeolithic sites in the Soviet Union is equivocal and contributes little to resolution of this problem.

The introduction to the English edition by H.E. Wright and C.W. Barnosky pulls the wide range of chapters together in an integrative and informative manner. Given the continuing exploration and development of the natural resources of the Soviet Union, it seems likely that much of the Late Quaternary framework evident there will be further elaborated and be of still greater benefit to Quaternary scientists elsewhere.

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