

that he set out to destroy, for in so doing we are left with a work that is of little consequence to either the student of wildlife biology or the psychologist.

MALCOLM COE

**South's British Butterflies**, by T. G. Howarth. Warne, £10.50.  
**Colour Identification Guide to British Butterflies**, by T. G. Howarth, Warne, £3.00.

Richard South's classic work on British butterflies first appeared in 1906, and has served as the standard work ever since. We are told that T. G. Howarth, a world authority on butterflies, in revising South's work, has retained the charm and character of the original, but one's initial impression is of something completely new. Gone is the compact, easily held 'Wayside & Woodland' format, and in its place a splendid, but not-so-portable, textbook.

Part One comprises The Life Cycle of a Butterfly; Conservation (a new and very relevant addition); and Collecting—the last embodying up-to-date information on techniques and apparatus. Part Two, the major section of the book, covers the species descriptions, and it is a joy to use. The nine families, from *Hesperiidae* (Skippers) to *Danaidae* (Monarchs) are arranged in ascending order of specialisation; within the families each species is presented under a standard series of headings making for easy reference. It is in this orderly presentation of detailed information that this section scores heavily over its predecessor. A particular query can be answered quickly, and the inclusion of the heading 'History' for each species adds information only previously available from specialised journals.

In addition to the 70 species now included in the British list, the author has added details of 'reputed British species' and also of those 'accidental imports' reported, and presented, to the British Museum.

The 24 colour plates of adult butterflies are skilfully painted by A. D. A. Russwurm, who also drew the 27 text figures. A further 24 plates of developmental stages by R. D. Davis, copied from the originals of F. W. Frohawk, are extremely fine.

It is with the colour plate section that the reviewer is not happy with this otherwise excellent book. First, the magnification  $\times 1\frac{1}{4}$  makes the specimens appear unreal, and this impression is enhanced by the method of depicting only half specimens of upper and undersides. Secondly, a better follow-on of the plates of adults and larvae would seem possible. The author's reason for illustrating half specimens is the need to include as much material as possible—might this not have been achieved by depicting them as complete insects at natural size?

Where relevant, subspecies are illustrated, but an omission is the interesting Western Inverness-shire race of the chequered skipper. A number of striking variations are figured, including unfortunately, in some instances, full details of their provenance—the county alone would have sufficed. Naturalists' trusts have difficulty in wardening some of their reserves, and to see a particular hill mentioned when referring to a figured butterfly variation must surely make their work more arduous.

The inclusion of provisional maps of the resident species, prepared by John Heath at the Biological Records Centre, Monks Wood, is a valuable addition which has been missing from most previous works. The book concludes with a Classified List of Species, an Identification Key, and a Further Information section.

In summary, the author must be congratulated upon producing an outstanding work.

The second book is essentially a lightweight version of the first, with the

same 48 colour plates, but more compact versions of such topics as Classification, Status, Life History, Adult Structure, Variation, and Conservation and Collecting.

The main text is arranged in the form of concise information tables into which the author has skillfully embodied a wealth of information. Species are listed in alphabetical order of common names, and then receive individual mention under: family and scientific name; racial name; named aberrations; variation, calendar; food plants; instars and distribution. 'Aberrations' is full of surprises; for example, the chalkhill blue has 446, the meadow brown 93; even the large white has 34. We particularly liked the calendar where, at a glance, one can determine the stage at which a given species passes any one of our twelve months. There is an identification key and a classified list.

By comparison with its big brother, the price of this volume is moderate, and very good value.

BRIAN BAKER

**A Natural Ecology**, by Michael Graham. Manchester University Press, £1.80 paperback; £4.80 hard covers.

**Nature in the Round: a Guide to Environmental Science**, edited by Nigel Calder. Weidenfeld and Nicolson, £3.25.

With the mass of scientific theory increasing at its present rate, it is becoming increasingly difficult for one man to write a book that is both authoritative and sufficiently wide-ranging to be of more than specialist interest. There is always, however, room for a book such as this by Michael Graham. In no sense can it be considered a comprehensive ecology text; indeed the author never intended it as such. It grew out of a course of lectures he gave at Salford University some years after his retirement as the Director of Fisheries Research at Lowestoft, and he draws heavily on his experience there. In retirement at Rivington in Lancashire he started a successful community reclamation scheme for derelict coal-tips, and this too comes under discussion, as does his life-long interest in farming. Indeed it is on these three areas of practical ecology that this marvellously rewarding and readable book is based, and its strength lies, not in providing an up-to-date review of ecology, but in giving a coherent framework, based on a mass of practical experience. Thus his discussion of populations and numbers may not take some of the more modern mathematical concepts into account, but it displays a refreshing closeness to the subject. *A Natural Ecology* will not replace existing books, but surely no practising ecologist can afford not to read it.

If Michael Graham's book represents one solution to the problem of tackling the breadth of modern science, *Nature in the Round* adopts the other successful approach—that of collecting the work of experts in the various fields into a single volume. Nigel Calder, as Editor, states his aim as 'a step towards the invention of environmental science'. To this end he has gathered contributions from eminent ecologists, anthropologists, economists, geographers, planners, and, in short, representatives of all possible involved disciplines. But though such a compilation gives authoritative coverage of a broad field, in a way that no individual could attempt, there is a need for a strong unifying editorial line. Many of the individual chapters are excellent, but they often appear to be aimed at different audiences. From the work of 26 authors it would be invidious to select particular essays for comment, but many biologically minded environmentalists will find the more sociological contributions particularly valuable, whilst the more ecological parts are in all cases informative and important.