



Research Adventures in the Human Ecology of an Atoll

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producing." There is no mention of mesotrophy or degrees of oligotrophy and eutrophy, and the resulting discussion is misleading and sometimes in error.

The chapter on behavior study is a commendable inclusion, although modern ethology is treated rather badly. Paraphrasing Lehrmann, the authors cite six specific objections to current ethological theory. As might be expected, most of these criticisms are directed toward the theory of innate behavior. Thus, the authors state, "By regarding traits as preformed and unchangeable, ethologists discourage inquiry into the actual source and development of the various aspects of behavior." While this view is common among psychologists, it is disappointing to find biologists who discredit the value of comparative studies and are content to brush aside the genetic and evolutionary implications of innate behavior.

The concluding two chapters discuss the use of biological literature and the choice and conduct of field problems. There is an eight-page glossary and a well-constructed

index. The appendix includes, among other things, lists of key publications about subjects in field biology, sources of biological literature, a list of bibliographies, and a section on tools and techniques. The book is well-written and profusely illustrated. There are, perhaps, more half-tones than are absolutely necessary; but most of them are of excellent quality, and the cost of the book is fairly reasonable. The companion volume, *WORKBOOK FOR FIELD BIOLOGY AND ECOLOGY*,² follows the basic outline of the text and contains descriptions of field techniques, selected laboratory and field exercises, and sample data sheets for each exercise:

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² Benton, Allen H. & William E. Werner, Jr. 1958. *Workbook for field biology and ecology*. Minneapolis: Burgess Publishing Company. x + 268 pp. \$2.75.

RESEARCH ADVENTURES IN THE HUMAN ECOLOGY OF AN ATOLL¹

A motivating love of environments in their panorama is the ecologists' inheritance from the naturalist. All too rarely the thrills are omitted in the scientific reporting, but in a new book, a scientific adventure by a science team among the native peoples of Ifaluk Atoll is described with charm and day-by-day enthusiasm. The inter-science group under the Pacific Science Board, including M. Bates, D. Abbott, T. Arnov, F. M. Bayer, E. G. Burrows, R. R. Harry, and J. I. Tracey, searched for an atoll of maximum isolation in order to gain some knowledge and feeling for the relationship of man and nature. What they report is the rewarding experiences in a scientific expedition, in life in sophisticated communal culture, in self-understanding, and in the deep, peaceful, thunder of Pacific reefs.

The spirit of the atoll has been captured before, but rarely have the daily satisfactions in environmental science been allowed to show in a report of a serious study group. In this book there is something of Margaret Mead's cultural perspective, Nordoff and Hall's epic finality, Heyerdahl's narrative, the ecological breadth of Mayor, and the candid chronological accounts of Beebe. It is a good book for young science aspirants; for it is an account of the regular, simple pleasures in science without the formidable, popular clichés of discovery, in-

vention, and applied service. The scientific results of the expedition are published elsewhere, but many facts and interpretations are presented in a general manner for the interest of reef scientist as well as for the layman. There is a bit of geology, hydrology, life history, human history, and anthropology. The book is organized in chronological sequence with each author writing half of the book. There are 28 pages of photographs.

Only a little space is given to describing the quantitative relationship of the human population to the atoll, but the conclusions are fascinating. In the last chapter, Abbott indicates that the annual yield of fish from the atoll to the 260 Micronesians is about 15 tons. From detailed food studies, it is suggested that protein supply from the reefs constitutes a limiting factor in determining the carrying capacity of the ecosystem. Neither the results of the other studies nor the conceptual objectives are made clear in the book, which in most aspects is a naturalist's account.

The candid account of the trip provides an example of the good and bad features of the type of expedition which has diffuse objectives and no strong organization. This book will be best appreciated by those already infected with tropical nostalgia from which, one suspects, there is no cure.

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¹ Bates, Marston & Donald P. Abbott. 1958. *Coral island, portrait of an atoll*. New York: Charles Scribner's Sons. 254 pp., plates. \$4.95.

THE WERNER LÜDI Festschrift¹

The publication of this volume marks the 70th birthday of Dr. Werner Lüdi, since 1931 director of the famous Rübel Geobotanical Research Institute in Zürich and permanent secretary of the International Phytogeographical Excursions which have done so much to unify European plant geographers and ecologists. The new impetus that Cowles gave to plant ecology was taken up directly by Lüdi, and with the stimulus of Graebner's work on the north German heaths Lüdi made soil develop-

ment a necessary part of plant succession studies. His later essay on "Methods of investigating succession in phytosociology" for *Aberhalden's HANDBUCH DER BIOLOGISCHEN ARBEITSMETHODEN* (11(5):527-728, 1932) can still be read with profit by American ecologists for concepts, methods, and results achieved. At least once a year the doubt that climax vegetation is most productive creeps into the American plant ecological literature, but Lüdi systematized these doubts long ago for particular ecosystems. He did it on the basis of soils studies, which both Cowles and Clements neglected.

As an outgrowth of successful efforts to establish on the Schyngeplatte above Interlaken, in one of the most

¹ Welten, M. & H. Zoller (editors). 1958. *Festschrift Werner Lüdi*. (Symposium.) *Veröffentlichen Geobotanischen Institutes Rübel in Zürich*. Heft 33. 292 pp. Bern: Verlag Hans Huber. 26.80 SFr., \$6.30.