



EDITED BY LESLIE H. BROWN, EMIL K. URBAN, and KENNETH NEWMAN ILLUSTRATED BY MARTIN WOODCOCK and PETER HAYMAN

This five-volume set covers all species of birds found in Africa, including migrants from the Palearctic and vagrants. Resident birds are covered in full detail, with sections on their range and status, description, field characteristics, voice, general behavior, food, and breeding biology. These volumes are sure to be acclaimed as *the* authority on the avifauna of Africa for years to come. The quality of the text and the beauty of the plates will make them essential additions to the book shelves of ornithologists and birdwatchers everywhere.

Volume 1/1982, 521 pp., approx. 310 mm x 240 mm, 28 color plates, 4 black and white plates, \$99.00 ISBN: 0-12-137301-0

In two volumes . . .

ACOUSTIC COMMUNICATION IN BIRDS

EDITED BY DONALD E. KROODSMA and EDWARD H. MILLER TAXONOMIC EDITOR: HENRI OUELLET Volumes in the COMMUNICATION AND BEHAVIOR Series

FROM THE PREFACE: Our original intent was to compile both taxonomic and conceptual reviews [on bird sounds], but the meager knowledge of acoustic signals of many important avian taxa made the first of these impossible. Consequently, we solicited contributions from active researchers in bird acoustics, for chosen areas of evolutionary and behavioral ecology, and sought to complement them with reviews of sound recording techniques, and sound production, reception, and processing. . . We feel . . that these volumes will serve as a stimulating and valuable reference for students of communication and bioacoustics.

Volume 1: 1983, 360 pp., \$36.00 ISBN: 0-12-426801-3 Volume 2: 1983, 392 pp., \$39.00 ISBN: 0-12-426802-1

Set price for Volumes 1 and 2: \$64.50 (\$75.00, if purchased separately). Set prices are not valid in Australia or New Zealand.

Send payment with order and save postage and handling. Prices are in U.S. dollars and are subject to change without notice.

AVIAN BIOLOGY

EDITED BY DONALD S. FARNER, JAMES R. KING, and KENNETH C. PARKES

Written by international experts from many disciplines, this multivolume treatise is a comprehensive survey of avian biology. The volumes thoroughly review the 8600 living species-from advances in instrumentation and technology and improved transportation facilities that permit more detailed, farranging field studies than ever before. Volume 6 continues the format and philosophy of the preceding five volumes and covers a broad range of topics. Three chapters consider such uniquely avian features as the glycogen body, uropygial gland, and stomach oils. Another chapter reviews and updates information on the function of the lung-air sac system. Additional chapters discuss migration systems, avian mating systems, social organization in the nonreproductive season, and the effects of domestication.

1982, 512 pp., \$65.00 ISBN: 0-12-249406-7 Subscription price: \$55.50*

*Subscription prices are valid only on purchase of all volumes ordered before publication of the last volume. Subscription prices are not valid on orders from Australia or New Zealand.

ANIMAL MIGRATION, ORIENTATION, AND NAVIGATION

EDITED BY SIDNEY A. GAUTHREAUX A Volume in the

PHYSIOLOGICAL ECOLOGY Series

The aspects of animal migration treated in this volume include ecology and evolution, climatic influences, energetics, physiology, and the mechanisms of orientation, navigation, and homing. The first chapter considers migration in relation to current ecological and evolutionary theory and emphasizes the important role of migration in life history strategies. The second chapter covers the influence of long-term and short-term climatic factors in shaping the temporal and spatial patterns of dispersal and migration, while in the third, the energetics of migration, particularly the energy reserves and the energetic costs of migration, are reviewed. The fourth chapter treats the physiological mechanisms that direct preparation for, and adjustment to, migration. The final chapter emphasizes the diverse mechanisms that animals use in finding their way during migratory journeys.

1981, 400 pp., \$43.00 ISBN: 0-12-277750-6



A Subsidiary of Harcourt Brace Jovanovich, Publishers New York • London • Toronto • Sydney • San Francisco 111 FIFTH AVENUE, NEW YORK, N.Y. 10003



BIRDS OF TROPICAL AMERICA

BIRDS OF TROPICAL AMERICA



by Alexander F. Skutch Drawings by Dana Gardner

Among the thirty-four species of tropical American birds whose biographies fill this book are toucans, motmots, jacamars, tinamous, puffbirds, and potoos—birds whose very names evoke visions of the grand, mysterious forests of Central and South America and the fascinating feathered creatures who dwell there. For over five decades Skutch spared no effort to learn all he could about them as living creatures. His lovely, poignant accounts of their lives are equalled by the drawings of talented young artist Dana Gardner and by splendid photographs by the author \$29.95

Write for other books by Alexander F. Skutch.

University of Texas Press Box 7819 Austin, Texas 78712





A.O.U. CHECK-LIST OF NORTH AMERICAN BIRDS

6th Edition

The Species of Birds of North America from the Arctic through Panama, including the West Indies and Hawaiian Islands

PRE-PUBLICATION SALE

Pre-publication price: \$28.00 (\$22.50 to A.O.U. members). Post-publication price: \$35.00 (\$28.00 to A.O.U. members).

Scheduled publication in Summer 1983.

Order from: A.O.U., P.O. Box 368, Lawrence, Kansas 66044 All orders must be prepaid in U.S. funds.



The monthly journal for every birdwatcher

British Birds

For a free sample copy write to Mrs Erika Sharrock, Fountains, Park Lane, Blunham, Bedford MK44 3NJ, England

NAAAAAAAAAAA by Amadeo M. Rea

Once a River

Bird Life and Habitat Changes

On the Middle Gila

Environmental abuse has turned a thriving river into a dry bed in Arizona; yet a mere two centuries ago, Indians fished from the banks of the Gila and numerous birds frequented its marshes.

Amadeo Rea, curator of birds at San Diego's Museum of Natural History, documents the disappearance of avian habitats along the Gila in this startling book. Drawing on ethnohistorical sources, skeletal remains, and his own extensive fieldwork, he reveals changes in migration patterns that accompanied habitat deterioration; suggests a link between Sonoran Desert subspecies and those of Baja California and the lower Rio Grande; and even offers a new look at traditional taxonomy.

Also included are unpublished notes of biologist M. French Gilman, who worked on the middle Gila from 1907 to 1915.

270 pp., illustd. \$24.50 clothbound. April 1983.

University of Arizona Press

1615 E. Speedway, Tucson, AZ 85719

1982 A CODED WORKBOOK OF BIRDS OF THE WORLD 1982

Vol. 1-Non-Passerines-Second Edition

Ernest P. Edwards

Covers all birds of the world except the order Passeriformes, with common name, scientific name, distribution, and alphanumeric code, for each species.

Includes indexes of common names and scientific names, to species. Two world maps and eight detailed regional maps illustrate distributional symbols. Listing of widely-used alternate names, and many taxonomic notes, help relate this to other books.

134 + xxi pp., plastic comb binding. In U.S. send \$10 + \$1.00 handling (50¢ handling for each additional book), or we can bill you for cost, plus handling, plus postage. Outside U.S., write for pro forma invoice.

Ernest P. Edwards, Box AQ, Sweet Briar, VA 24595

BERNARD QUARITCH LTD Antiquarian Booksellers since 1847

5-8 LOWER JOHN STREET, GOLDEN SQUARE, LONDON W1R 4AU

FINE ANTIQUARIAN ORNITHOLOGY

Bernard Quaritch Limited, who have been trading in London since 1847, are major specialists in colour plate ornithological literature of the 18th and 19th century. Our clients include museums, ornithological institutes, university libraries and private collectors.

We hold a large stock of the better known illustrated bird books. At the moment this stock includes, inter alia: Gould's Humming Birds and Birds of Europe, Elliot's Monograph of the Pheasants, Schlegel's Traite de Faucounerie, Sharpe's Monograph of the Birds of Paradise, Shelley's Monograph of the Sunbirds, Levaillant's Histoire naturelle des Perroquets, Edward's Natural History of Uncommon Birds, Mathew's Birds of Australia, Dresser's Birds of Europe and Monograph of the Rollers, David and Oustalet's Oiseaux de la Chine and Sclater's Exotic Ornithology.

We publish at least one general Natural History catalogue a year which includes ornithology. Please let us know if you would like to receive these catalogues and advise us of any particular item you require. We may have it in stock or be able to trace a copy for you.

BERNARD QUARITCH LTD.,
Antiquarian Booksellers since 1847
5/8 Lower John Street, Golden Square, London W.1.
Telephone: 01 734 2983 Telex: 8955509 (BQSLDN G)
Cables: Quaritch London W.1.
Bankers: Barclays Bank Limited, 52 Regent Street, London W.1.
Directors Natural History Department: H. E. Radclyffe,
W. P. Watson.

THE AUK

A Quarterly Journal of Ornithology

PUBLISHED BY THE AMERICAN ORNITHOLOGISTS' UNION

Editor: JOHN A. WIENS, Department of Biology, University of New Mexico, Albuquerque, New Mexico 87131

Copy Editor: JEAN FERNER

Editorial Board: WALTER BOCK, JAMES R. KING, HELMUT C. MUELLER, RICHARD L. ZUSI

Associate Editors: HERBERT W. KALE, II (Periodical Literature), WILLIAM E. SOUTHERN (Book Reviews)

THE AUK welcomes original reports dealing with the biology of birds, emphasizing the documentation, analysis, and interpretation of laboratory and field studies, theoretical or methodological developments, or reviews of existing information or ideas. Contributions are welcomed from throughout the world, but must be written in English.

SUGGESTIONS TO CONTRIBUTORS. Submit the typewritten original and two copies of the text, tables, and all other material to the editor. Three copies of illustrations should be submitted. All typewritten material must be double-spaced on one side of numbered $8\frac{1}{2} \times 11$ inch ($21\frac{1}{2} \times 28$ cm) good quality bond paper, with at least 1 inch ($2\frac{1}{2}$ cm) margins. Originals typed on erasable, light weight, or mimeo bond will not be considered, but copies may be clear reproductions. Number pages through the Literature Cited. Avoid footnotes. The style of manuscripts should conform to general usage in recent issues. A cover page should contain the full title, a shortened version of the title (not to exceed 35 characters in length) for use as a running head, and your address at the time the research was conducted. Your present address, if different, should be given at the bottom of the first text page. The cover page should include the name and full address of the individual to whom proof is to be sent.

Each article should be preceded by an Abstract not exceeding 5% of the length of the paper. The Abstract should recapitulate the findings of the paper, not describe the work done. Acknowledgments should follow the text and precede the Literature Cited. Scientific and English names of birds always should be given where first mentioned in the text, and should follow the A.O.U. Check-list of North American Birds and supplements or the appropriate equivalent unless departures are explained and defended. SI metric units should be used in all measurements. In general, abbreviations of statistical terms and mensural units should conform with the Council of Biology Editors (CBE) Style Manual, 4th ed. Use the 24-hour clock (0800 and 2030) and "continental" dating (1 July 1971).

Tables, which must not duplicate material in either the text or illustrations, are typewritten (double-spaced throughout!) separately from the text. Each table should contain a short but complete heading, and must not contain vertical rulings. Illustrations (including labels of coordinates) should be on $8\% \times 11$ inch ($21\% \times 28$ cm) sheets, and must be mailed flat. The name of the author and the figure number should be penciled on the back of each figure. Legends should be typed consecutively (double-spaced) on a separate page. Drawings should be drafted with undiluted india ink, and be large enough to permit 16 to 16 reduction to the size that they will appear in print. Graphs may be drafted on coordinate paper ruled with light blue lines; do not use coordinate paper ruled with green lines. Use mechanical lettering, pressure transfer letters, or calligraphy; typewritten lettering is not acceptable. Lettering should be large enough to be easily readable after 50% reduction of the figure, but not overly large. Lettering style should be uniform among all figures for a manuscript, as should the size of lettering following reduction. Photographs should be glossy prints of good contrast and sharpness, and should be approximately the same size as they will appear in print. Letters and arrows on photographs are best applied by pressure-sensitive materials. The Auk is published in a double-column format; give careful attention to designing your tables and illustrations accordingly.

Literature citations for all manuscripts are listed (double-spaced!) in a Literature Cited section following the text and Acknowledgments. Text citations should include author and year (e.g. Darwin 1858), or, if more than two authors are involved, the first author and year (Jones et al. 1947). If critical matter is cited or quoted directly from longer works, indicate the pertinent pages (e.g. MacArthur 1972: 204). Citations of two or more works on the same topic should be cited in chronological order (e.g. Meanley 1971, Dyer 1975). For abbreviations and forms of titles of serial publications, follow the BIOSIS List of Serials. Consult recent issues of The Auk and the CBE Style Manual for additional details.

A more detailed set of instructions for contributors appeared in the Auk, Vol. 99, No. 1 (January 1982), copies of which are available from the Editor.

ORNITHOLOGICAL MONOGRAPHS

Order from Glen E. Woolfenden, Assistant to the Treasurer A.O.U., Department of Biology, University of South Florida, Tampa, Florida 33620. All orders must be prepaid and include a \$0.50 handling charge. Prices to AOU members are given in parentheses.

No. 2. A Comparative Study of Some Social Communication Patterns in the Pelecaniformes, by Gerard Frederick van Tets. 1965. \$3.50 (\$2.50).

No. 3. The Birds of Kentucky, by Robert M. Mengel. 1965. \$15.00 (\$12.50).

No. 6. Adaptations for Locomotion and Feeding in the Anhinga and the Double-crested Cormorant, by Oscar T. Owre. 1967. \$6.00 (\$4.50).

No. 7. A Distributional Survey of the Birds of Honduras, by Burt L. Monroe, Jr. 1968. \$14.00 (\$11.00).

No. 10. The Behavior of Spotted Antbirds, by Edwin O. Willis. 1972. \$9.00 (\$7.50).

No. 11. Behavior, Mimetic Songs and Song Dialects, and Relationships of the Parasitic Indigobirds (Vidua) of Africa, by Robert B. Payne. 1973. \$12.50 (\$10.00).

No. 12. Intra-island Variation in the Mascarene White-eye Zosterops borbonica, by Frank B. Gill. 1973. \$3.50 (\$2.50).

No. 13. Evolutionary Trends in the Neotropical Ovenbirds and Woodhewers, by Alan Feduccia. 1973. \$3.50 (\$2.50).

No. 14. A Symposium on the House Sparrow (Passer domesticus) and European Tree Sparrow (P. montanus) in North America, edited by S. Charles Kendeigh. 1973. \$6.00 (\$4.50).

No. 15. Functional Anatomy and Adaptive Evolution of the Feeding Apparatus in the Hawaiian Honeycreeper Genus Loxops (Drepanididae), by Lawrence P. Richards and Walter J. Bock. 1973. \$9.00 (\$7.50).

No. 16. The Red-tailed Tropicbird on Kure Atoll, by Robert R. Fleet. 1974. \$5.50 (\$4.50).

No. 17. Comparative Behavior of the American Avocet and the Black-necked Stilt (Recurvirostridae), by Robert Bruce Hamilton. 1975. \$7.50 (\$6.00).

No. 18. Breeding Biology and Behavior of the Oldsquaw (Clangula hyemalis L.), by Robert M. Alison. 1975. \$3.50 (\$2.50).

No. 19. Bird Populations of Aspen Forests in Western North America, by J. A. Douglas Flack. 1976. \$7.50 (\$6.00).
No. 20. Sexual Size Dimorphism in Hawks and Owls of North America, by Noel F. R. Snyder and James W.
Wiley. 1976. \$7.00 (\$6.00).

No. 21. Social Organization and Behavior of the Acorn Woodpecker in Central Coastal California, by Michael H. MacRoberts and Barbara R. MacRoberts. 1976, \$7.50 (\$6.00).

No. 22. Maintenance Behavior and Communication in the Brown Pelican, by Ralph W. Schreiber. viii + 78 pp., 38 text figures. 1977. Price \$6.50 (\$5.00).

No. 23. Species Relationships in the Avian Genus Aimophila, by Larry L. Wolf. viii + 220 pp., 17 text figures + 10 plates, long-play phono disc album. 1977. Price \$12.00 (\$10.50).

No. 24. Land Bird Communities of Grand Bahama Island: The Structure and Dynamics of an Avifauna, by John T. Emlen. xi + 129 pp., 38 text figures, appendix. 1977. Price \$9.00 (\$8.00).

No. 25. Systematics of Smaller Asian Night Birds Based on Voice, by Joe T. Marshall, viii + 58 pp., frontispiece, 15 plates, phono disc supplement, appendices I-III. 1978. Price \$7.00 (\$6.00).

No. 26. Ecology and Behavior of the Prairie Warbler Dendroica discolor, by Val Nolan, Jr. xx + 595 pp., color frontispiece, 42 text figures, 8 appendices. 1978. Price \$29.50.

No. 27. Ecology and Evolution of Lek Mating Behavior in the Long-tailed Hermit Hummingbird, by F. Gary Stiles and Larry L. Wolf. viii + 78 pp., 26 text figures. 1979. Price \$8.50 (\$7.50).

No. 28. The Foraging Behavior of Mountain Bluebirds with Emphasis on Sexual Foraging Differences, by Harry W. Power. x + 72 pp., color frontispiece, 12 text figures. 1980. Price \$8.50 (\$7.50).

No. 29. The Molitor Scrub Jays and Blue Jays in Florida, by G. Thomas Bancroft and Glen E. Woolfenden. viii + 51 pp., 15 text figures. 1982. Price \$8.00 (\$6.50).

No. 30. Avian Incubation: Egg Temperature, Nest Humidity, and Behavioral Thermoregulation in a Hot Environment, by Gilbert S. Grant. viii + 75 pp., 35 text figures. 1982. Price \$9.00 (\$7.00).