

ORNITHOLOGICAL LITERATURE

ELLIOTT COUES: NATURALIST AND FRONTIER HISTORIAN. By Paul R. Cutright and Michael J. Brodhead. Univ. Illinois Press, Urbana, Illinois, 1981:509 pp., 8 pp. of photos. \$28.50.— With preparations for the 1983 centennial of the American Ornithologists' Union well under way, the appearance of this biography of one of the AOU's principal founders is timely. The book provides a sensitive and objective insight into the extraordinary life and character of one of the 19th Century's leading American zoologists. Although Coues is best known today for his extensive ornithological contributions, Cutright and Brodhead provide a comprehensive account of his involvement in other branches of natural history, as well as in theosophy, women's rights and the history of the American West.

Coues' passion for natural history was inspired by his mother, Charlotte Ladd Coues, who contributed lively essays on plants and animals to the "New Hampshire Gazette" in the 1850's. From her he also began to acquire the facility of expression that so characterized his writings. From the time of his early expedition to Labrador through his long service as an Army surgeon at numerous western and southern outposts, Coues made extensive natural history collections, primarily for the Smithsonian Institution. Throughout this time he wrote tirelessly to his early mentor, Spencer Fullerton Baird, and eventually to many others who became his colleagues and friends, among them J. A. Allen, William Brewster and John Burroughs. We are treated to numerous excerpts from these letters as well as from published articles, so full of keen observation and vivid verbal pictures of frontier life. During his first sojourn in Arizona Coues had occasion to skin an Arizona coral snake (*Micruroides euryxanthus*) on horseback "under the untoward circumstances of a hasty retreat from hostile Indians." Noteworthy is the contrast between the opportunities for comfortable birdwatching in the southwest today and conditions in Coues' time, in his words: "Practical ornithology in Arizona was a very precarious matter, always liable to sudden interruption [by Indians], and altogether too spicy for comfort." Coues published hundreds of articles and larger works on natural history, medicine, theosophy and history. One of the numerous honors bestowed upon him for his zoological work was a "Memorial" signed by 38 of Britain's leading scientists, among them Charles Darwin, Alfred Russell Wallace and Thomas Huxley.

The biography is written with that painstaking detail that makes history reality. Certain events in Coues' life were particularly intriguing and the authors do not disappoint the reader's instant longing for detail. As a young medical student Coues evidently engaged in occasional body snatching, and we learn thereby of the history of this grisly practice. We are also allowed details of Coues' numerous and occasionally illicit friendships with women.

A brilliant man who approached genius, Coues could be irascible, and he showed no mercy when he felt that one of his colleagues had violated the rules of logic, grammar or spelling. Cutright and Brodhead, while highly respectful of their subject, do not attempt to defend him when his outbursts were unreasonable. If his personal faults lie undefended, however, his special kindnesses to his younger colleagues do not go unpraised, and we learn of the attention paid by Coues to his young protégé, Louis Agassiz Fuertes. Fuertes' extraordinary talents as an artist were in danger of being neglected, as his father thought engineering a more lucrative calling. When Coues' nephew, a friend of young Fuertes, brought the latter's work to his uncle's attention, Coues immediately recognized the potential of the artist and devoted considerable effort to the development of Fuertes' career as a painter of birds. One of his first steps was to arrange an exhibit of Fuertes' paintings at the 13th Congress of the AOU in 1895. The artist was 21 years old at the time, and his work "caused a furore" at the meetings.

I noticed a few inaccuracies in avian nomenclature. While for the most part giving current

scientific names and, often, enlightening explanations of common names, several changes appearing in the 32nd Supplement to the AOU Check-list (Auk 90:411-419) go unrecognized. These include use of the name *Hylocichla* for *Catharus*, *Richmondia* for *Cardinalis*, *Passerherbulus* for *Ammospiza* and *Rhynchophanes* for *Calcarius*. The authors cite this supplement and thus were certainly aware of the changes made; therefore, their failure to incorporate these changes into the manuscript can only be regarded as an oversight. In most cases, the authors were careful to provide current scientific names, both zoological and botanical, after those used by Coues if changes had been made since his day.

I experienced only one inconvenience in reading this book, viz., the lack of a chronology of Coues' life in the form of an appendix for quick reference; this sometimes necessitated a bit of skipping about in order to refresh one's memory. We are provided, however, with extremely valuable bibliographies: works both about Coues and by Coues, as well as a list of taxa described by him. The footnotes are a mine of information. With the introduction of each new character, no matter how minor a role the person played in Coues' life, we are provided with a few lines or more of biographical data. The footnotes also convey peripheral information of possible interest to the reader, such as attempts to give modern interpretations of medical symptoms described by Coues during the course of his medical service.

This careful and scholarly work will appeal to biologist, historian and layman alike. While written in an engaging style, it is unembellished with the fanciful speculation that so often characterizes popular accounts. The biography represents an impressive amount of research, and it is very clear that the authors found the work, as Coues so often said of his own extensive labors, "wholly congenial."—MARY C. MCKITRICK.

BIRDS OF THE NORTH SOLOMONS. By Don Hadden. Wau Ecology Institute (Wau, Papua New Guinea) Handbook No. 8, 1981:ix + 107 pp., 24 color plates, map. \$9.50 postpaid (paper). Order from Bishop Museum Press, Box 1900-A, Honolulu, Hawaii 96819.—The Wau Ecology Institute, in the mountains of eastern Papua New Guinea, has been issuing an admirable series of handbooks, of which this is the eighth. Previous handbooks have covered New Guinea frogs, beetles and rodents; montane birds of NE New Guinea; ecology of Mt. Kaindi; biological terms in Melanesian Pidgin; and reptiles of the Solomon Islands. The North Solomons, the area covered by the new handbook, includes only Bougainville Island of World War II memory and the small adjacent island of Buka. These two are politically part of Papua New Guinea, whereas the rest of the Solomon Islands comprise an independent nation.

No true field guide published to date includes the birds of the Solomons. Land and fresh water birds were listed for each of the major islands or island groups and were briefly described by Mayr (Birds of the Southwest Pacific, 1945), but his book was minimally illustrated. Postwar advances in our knowledge of Solomons birds is indicated by Mayr's total of 89 species for Bougainville and by his statement that "There is not a single [Solomon] island on which one can expect to find more than 100 species." The Bougainville list of land and fresh water birds now totals over 100, and adding migrants, seabirds and shorebirds brings the list to over 150 species. Of these, 76 are illustrated in the new handbook by excellent color photographs by the author, who has conscientiously indicated which were taken elsewhere than in the Solomons (Papua New Guinea, Sarawak, New Zealand). In a few, the photographs are so reduced as to make them of little use for identification. In others, the birds were photographed in the hand or at close range from a blind; many are superb. Color reproduction seems adequate in most instances, although the subtle iridescence of the Glossy Swiftlet (*Collocalia esculenta*) has become a garish blue.

The text begins with a brief description of Bougainville and Buka, followed by lists of

species to be expected in various habitats. Then comes a history of the ornithology of these islands. For beginners who want to identify birds seen in easily accessible non-forest areas, Hadden gives descriptions of 24 of the most common species, arranged by habitat. Suggestions follow as to the best times and places to see birds on Bougainville and Buka. The species accounts occupy most of the book, followed by several appendices. Two are of special ecological interest, dealing with the effects on bird life of the large copper mines in the Crown Prince Range, and of the newly-formed delta at the mouth of the Jaba River, growing at the rate of 6–7 ha per month from sediments containing mining wastes (71 species have been seen on the delta, with nesting confirmed for six).

The species accounts contain descriptions (often but not always including voice), habitat, and total distribution of the species. A paragraph entitled "Field Notes" includes such miscellaneous information as feeding and flocking habits, breeding data, behavioral notes, etc. Each family has a one- or two-sentence general introduction.

The level of ornithological knowledge of the North Solomons can be deduced from the fact that Hadden includes excellent photographs of a bird, its nest and egg that were previously unknown to science. A formal description of the "Thicket Warbler" is said to be in press. Also intriguing is the "odedi," a bird well known to local natives, and readily heard (but never seen) by western observers at elevations of 850–1340 m, but not yet identified. All of the exciting discoveries are not just coming from Peru!

This little book is a model well worth emulating, and its author is to be congratulated. The price may seem a bit steep for a small paperback, but the fine illustrations and the uniqueness of its geographic coverage make it a good buy.—KENNETH C. PARKES.

BIRDS OF SOUTHERN CALIFORNIA. STATUS AND DISTRIBUTION. By Kimball Garrett and Jon Dunn. Illustrated by H. Lee Jones. Los Angeles Audubon Society, 1981:408 pp., maps, numerous line drawings. Order from L.A.A.S., 7377D Santa Monica Blvd., Los Angeles, California 90046. \$18.95 plus \$1.50 postage and handling. California residents add \$1.14 sales tax.—Southern California is a region of great topographic and climatic variety, which is reflected in the diversity of its avifauna. In this book, Garrett and Dunn have combined to provide up-to-date and critically-evaluated information on the more than 500 species that have occurred there. The region treated is essentially the Southern Pacific coast region of "American Birds," but the authors also include summary information on 30-odd additional species that have been recorded in the northern half of the state. This is, then, a book on the birds of California.

No, of course it will not replace Grinnell and Miller's (1944) classic work on the avifauna of the state. As the authors point out, Grinnell and Miller painted an essentially complete picture of the breeding birds and racial distribution but knew little about the status of migrants and vagrants, information that has increased dramatically in the past two decades. Garrett and Dunn have managed to condense and interpret these new data in an attractive, informative manner, including information on habitats. They also provide critical data on the status of some well-defined races, appreciation of which has diminished with the decline of legitimate collecting and the re-emergence of lumping. Details of most records, names of observers and citations of the original literature are largely omitted, but will be provided on request.

The authors have done their homework. The taxonomic arrangement used is largely in accordance with that of the forthcoming AOU Check-list; nevertheless, it is a shock to find the loons hidden back with the Charadriiform assemblage.

The book is well balanced and only rarely strikes an alarmist tone. For example, it remains an open question whether the current commercial take of anchovies will affect the repro-

duction of Brown Pelicans (*Pelecanus occidentalis*), the least endangered of all species so classified.

If there is room for quibbles it is in the fluctuating standard of species accepted for inclusion. Mostly, the authors abide by decisions of the California Bird Records Committee. Yet, they list some species whose authenticity has not been judged, and some, which though accepted, are based on shaky evidence. I cannot understand the inclusion of the Parakeet Auklet (*Cyclorhynchus psittacula*), known from decomposed specimens that may have washed in from afar, and the exclusion of Kittlitz's Murrelet (*Brachyramphus brevirostris*), known from a bird found alive on a beach.

In summary, this is a well-conceived and well-executed book, enhanced by the fine line drawings of H. Lee Jones. Perhaps better than any other recent book it illustrates the sophistication of well-trained birders and the ever-increasing contribution they are making to knowledge of the changing patterns of avian distribution. It is a strong addition to the regional literature and will be a standard reference for California for a long time.—J. R. JEHL, JR.

THE CUCKOO. By Ian Wyllie. B. T. Batsford Ltd., London; Universe Books, New York, New York, 1981:176 pp., 15 color plates, 35 black-and-white photos., with line drawings and tables. \$30.00.—The Common Cuckoo (*Cuculus canorus*) is the bird best known in the world to be a brood parasite. For centuries Europeans have known it to lay eggs in the nests of other birds, which then rear the young. Nevertheless, it may not be the best-known parasitic bird. Shy and elusive, it has been described in most complete detail by Edgar Chance in Worcestershire, England. Chance wrote two books on his cuckoos, "The Cuckoo's Secret" (1922) and "The Truth About the Cuckoo" (1940). By finding all nests of the local host species, the Meadow Pipit (*Anthus pratensis*), Chance was able to anticipate the laying cuckoo and could take his colleagues into the field to watch the female arrive on schedule and lay her egg. His intimate knowledge of the cuckoo allowed him to recognize a female even though she was not color-marked, as her eggs were individualistic in color and spotting pattern. Later field workers have used the same means of identifying their birds by their eggs, and not until Ian Wyllie's study has a biologist followed the behavior of individually marked cuckoos. The present book summarizes much of what is known about other populations and cuckoo species of the world, reports Wyllie's field observations and gives a good series of photographs of cuckoos parasitizing a population of Reed Warblers (*Acrocephalus scirpaceus*) in Cambridgeshire.

Wyllie marked cuckoos with colored wing tags and with radio transmitters. He followed the behavior of individual tagged birds for five years (1975–1979), to determine territorial and social relations, and mating system. He also marked young cuckoos in the nest to determine whether they would return and lay eggs like those of their mothers, thus tracing the genetics of the egg mimicry and polymorphism.

"Reed Warbler Cuckoos" are spaced apart and the males sing and chase; individual females appear to be more territorial and exclusive than males. One female lays most of the cuckoo eggs in a local colony of Reed Warblers, but other females sometimes lay in the same colony and even in the same nest. Nearly all parasitized nests have only one cuckoo egg. In several cases, the apparently locally-dominant female removed the eggs of another female, then laid her own. In one population, three subordinate females lived in the active range of another apparently dominant female. Six males were present in the same area. Individual males were said to be recognizable by their songs; no audiospectrograms are shown, and in my experience song varies more with mood than with individuals. The primary laying female fed over a wide area, but mainly along a railway line 4–5 km from the warbler population that she

parasitized. Cuckoos generally ignored each other on the feeding area, and Wyllie suggests that this area was ecologically indefensible as the female spent much of her time in the laying area.

All male singing, and all attempted and observed matings were in the laying area, not the feeding area. Females were courted by more than one male. Wyllie observed only three matings, none involving marked pairs. Two of these involved a marked female mating with, apparently, one unmarked male on alternate days, then shortly thereafter laying in warbler nests. Wyllie concludes that cuckoos are not strictly territorial but may be organized in a loose social hierarchy within an area, and that they are probably promiscuous, no pairs travelling together. Social interactions among cuckoos deserve further field study.

Wyllie was able to confirm many of the observations that Chance had made in a different cuckoo population. Individual females laid almost exclusively in the nests of a single species of host. Females laid a variable number of eggs in a single season, sometimes quite a few: three "Reed Warbler Cuckoos" laid 1–12, 15 (twice) and 3–6 eggs in a season. Females laid every other day, over a period of several days, then took a break for a few days. The series, or clutches, in the best-known cuckoo were 8, 3 and 4 eggs. Cuckoos usually laid late in the afternoon.

Studies of the population structure of cuckoos had limited success. Wyllie had four cuckoos wing-tagged that returned to their home area in a later breeding season. Three were males; the female was seen only twice and did not stay and breed. The study did not determine whether daughters have eggs like their mothers' eggs. Wyllie did not compare his observations of young returning to their natal site in a later year with the larger number of observations of other banders showing that most young return to a site other than their natal site, usually more than 10 km away (Payne, *Ann. Rev. Ecol. Syst.* 8:1–28, 1977; Seel, *Ibis* 119:309–322, 1977). Given the dispersal of cuckoos in general, I was impressed by the number of young that did return. Wyllie wing-tagged 32 young cuckoos of at least 10 days of age from 1975–1978, so an appreciable proportion of young birds surviving did return in a later year. The cases of the returning birds suggest that the possible mother-daughter series of eggs over the years in local populations reported by others may have been correctly interpreted. However, the larger number of cuckoos that are genetically effective dispersers from their birth site gives us strong evidence opposing the idea that local cuckoo populations are inbred races or "gentes" in the sense of Southern (*in Evolution as a Process*, 1954). Although Wyllie does not discuss the proportion of dispersers and local returners, he does suggest that the egg mimetic polymorphism is likely transmitted genetically as a simple sex-linked trait passing from mother to daughter without involving locally coexisting races of cuckoos that do not inter-breed with each other (the "gens" concept). Wyllie does not critically evaluate the "gens" concept himself, but his observations of several males courting a female suggest promiscuous behavior, not assortative as required of the "gens" concept.

Other chapters in the book discuss cuckoos in general, host specificity among the cuckoo species, migration, food and songs. Wyllie suggests the hawk-like appearance of cuckoos may be an adaptation that reduces hawk predation, but he does not discuss the aggressive behavior of hawks towards each other that would nullify the plumage mimicry hypothesis nor how this "mimicry" may be related to parasitism. The material covered was spotty, and I found a number of statements that reflect a lack of intimacy on the part of the author with other species and areas. The book is more successful in describing the fieldwork with the marked cuckoos, though as the author is quick to note, we still have a lot to find out about them.

The photographs show mimicry and polymorphism of cuckoo eggs, egg-ejecting behavior of the young cuckoo upon hatching, egg predation of both the host eggs by breeding female cuckoos, and the tiny hosts feeding their oversized foster young. The author was first

stimulated to look at cuckoos by working with Maurice Tibbles during the making of his film, "The Private Life of the Cuckoo." Both that film and Wyllie's book are successful studies in the natural history of a curious bird, and the book is the best available source on behavior of the cuckoos.—ROBERT B. PAYNE.

YELLOWLEGS. By John Janovy, Jr. St. Martin's Press, New York, New York, 1980:192 pp. \$9.95 (hard cover). Houghton Mifflin Co., Boston, Massachusetts, 1981, \$5.95 (paper cover).—"Yellowlegs" is not a natural history of the Lesser Yellowlegs (*Tringa flavipes*), nor is it the fruit of any conventional research on this shorebird. It is the work of a man obsessed by the vision of what others might call an "ecological nightmare": mysteriously, the yellowlegs represents for Janovy both the natural world at the mercy of misguided technology, and a wondrous travelling machine that should command our respect. The Lesser Yellowlegs, and in fact, one individual of this species, becomes the symbol of what the author must learn about if he is to become an ecologist of conscience. On a self-granted sabbatical from his teaching duties as a professor of biology, Janovy decides to follow his chosen bird as far as he can, and the believability of his story, and its rather melodramatic conclusion hinges to some extent upon whether or not the banded yellowlegs he keeps sighting at various spots during its migratory flight within the United States is indeed one bird.

The factual aspects of the story are combined with sections that are more imaginative, where, for example, Janovy muses about what his bird (a "she," he assumes) is doing, and thinking, as she travels across the technological landscape that we have created. Clearly there are long stretches during which the author can only follow his bird in his mind's eye. He then gives us portraits of some of the human characters he encounters during his own "flight south," and his book reads in large part like a rambling travel journal with philosophical asides. While lamenting the devastation that technological growth can cause, Janovy does not simplistically condemn technology. At the heart of his book is the realization that the machine concept can be applied to both human and natural products. Indeed, Earth is the "ultimate machine" for Janovy, and he worries about the fact that there is no sensible garage we can take it to in the future when it breaks down like an old Ford. Janovy is a critic of the misuse of machines, or rather of the lack of planning in their proliferation, and his nightmare is of "the world as a complicated machine driven by a species that doesn't know how to take care of it" (p. 32). The bird he has chosen to follow, the planet, and a second-hand car are all examples of beautiful machines for the author, and they all require an attitude of respect if they are to be treated properly. Using the hackneyed division between the "classic" and "romantic" perspectives, Janovy argues for the primacy of the latter. A "romantic" is someone who follows intuition (and, presumably, yellowlegs); a willingness to do so when dealing with very complicated machines implies a belief that these machines have an integrity that may not yield up its secret immediately to a "classic" approach that uses only a part-by-part analysis of the mechanism to understand it. What Janovy's position amounts to is the old faith that parts of the natural world are put together with delicacy and precision, however arrived at, and that we neglect this at our peril when we interfere in natural processes.

Janovy writes as if he is a talker, and an embellisher of tales. "Yellowlegs" is a stream of consciousness book, and suffers from the shifting perspectives that the author delights in. The reader can easily get lost and lose sight (as the author did during his quest) of the small, grayish bird that supposedly unifies the story. Janovy's rhapsodic style comes perilously close to being a parody of the poetry of Allen Ginsberg, replete with exclamation points: "The egg tooth was the technological equivalent of a monstrous controlled fire-bomb skyscraper Saturn rocket—used once to get into the world of flight then discarded!" ((p. 43).

In musing about what his bird is thinking, Janovy's writing is perhaps least successful, yielding such commonplaces as "She had no knowledge or understanding of a concept such as a rule" (p. 133), and, "She was simply a bird" (p. 125). It is difficult to follow the story line through meandering chapters, although this elusiveness might add to the charm of such a book for some readers. Clearly the author has had some sort of mystical experience, but at the end we come only to the conclusion that he is a sincere, enthusiastic teacher who discovered for himself the primacy of creative thought in a world increasingly technological. His intriguing promise to deal with how his yellowlegs negotiates its human-transformed environment in migration is really carried out only in imagination. Janovy is certain that his experience of trying to follow a migrating bird (by car) and discovering certain limitations has made him a better ecologist and a better teacher of biology. But, ultimately, the book is confusing in its details and frequently strains the reader's credulity. Janovy's insights are not new, but he has seen something important, and it does transform his attitude toward the natural world. One wishes that his message could have been more coherent. As it is, his book is almost as hard to follow as a migrating yellowlegs.—K. E. DUFFIN.

ANNUAL VARIATION OF DAILY ENERGY EXPENDITURE BY THE BLACK-BILLED MAGPIE: A STUDY OF THERMAL AND BEHAVIORAL ENERGETICS. By John N. Mugaas and James R. King. *Studies in Avian Biology* No. 5, Cooper Ornithological Society, 1981:78 pp, 20 tables, 14 figs. with captions. \$8.00.—This book is more than just a study of the daily energy expenditure of the Black-billed Magpie (*Pica pica hudsonia*); it points out the importance of an integrated approach (combining ecology, physiology and behavior) to answering ecologically relevant questions. Over the past 10 years economic modeling (time-energy budgets) has become extremely popular among ecologists. The present study by Mugaas and King differs from preceding studies in that it deals with the magpie's time-energy budget throughout the year, whereas previous studies dealt mainly with one portion of the year, usually the reproductive season. As the authors point out it is the annual time-energy budget that allows one to determine what the bottleneck of energy or time is that puts limits on the survival or distribution of the species. The present study emphasizes the importance of the use of the microclimate by the magpie and points out the dangers of relating macroclimate to geographic distribution. Though this is not a new concept to physiological ecologists, the detailed analysis of the thermal environment, the behavioral responses to thermal stress, the energetic cost in the different microclimates and the cost of various behaviors greatly strengthens the concept.

The time-activity laboratory (TAL) method used in this investigation to determine total daily energy expenditure was shown to give reasonably accurate estimates as long as measured energy equivalents are available for the behavior being described and thermoregulatory demands are adequately determined. I agree with the authors that there are many pitfalls to using this method, mainly because of the large number of assumptions one must make. Theoretical calculations of the effect of forced convection on metabolic rate rather than actual measurements of the effects of wind on metabolic rate and variation in the cost of flight, to name a few, can introduce relatively large errors. The authors review the various TAL methods and compare them to the more expensive, more accurate D_2O^{18} method for estimating total daily energy expenditure, and point out the precautions one must take to use the TAL method.

The study described in this book is the most thorough investigation of daily energy expenditure of a bird in the literature and should be read by anyone interested in integrating behavior, physiology and ecology into an economic model of total energy expenditure.—SHELDON LUSTICK.

THE AUDUBON SOCIETY HANDBOOK FOR BIRDERS—A GUIDE TO LOCATING, OBSERVING, IDENTIFYING, RECORDING, PHOTOGRAPHING AND STUDYING BIRDS. By Stephen W. Kress. Charles Scribner's Sons, New York, New York, 1981:xiii + 322 pp., 172 figs. (black-and-white photos. or line drawings). \$17.95.—As O. S. Pettingill, Jr., points out in the Foreword to this impressive introduction to field ornithology, the study of birds, both on a casual basis and from the view of advanced research, has enjoyed an enormous growth in the past several decades. Along with this there has been a concurrent increase in the technical and popular literature, the number and kinds of equipment, and the range of opportunities, both geographic and otherwise, for enjoying birds. This book is a remarkable summary of all of these facets, written to be useful to the amateur as well as the more advanced student.

The organization of the book roughly parallels the progress of an individual from the beginnings of birding through the first approaches to technical research. The first chapter introduces methods for field study, including bird identification, how to approach and locate birds, and how to lead a bird walk. As with the subsequent chapters, Kress provides sufficient detail to be useful in a wide variety of situations but does not overwork the points he has to make. The second chapter deals with the topic of binoculars and spotting scopes, from technical details of the optics to suggestions on purchasing and use. Kress has obviously been teaching others about this equipment for a long time; this is the best treatment of the subject I have seen. Chapter three covers the beginnings of bird study: how to observe birds. Considerable space is devoted to the kinds of behavior likely to be encountered, and systems for recording field observations are emphasized. Another section covers sketching of birds in the field. If birders followed the procedures suggested here they would be well on their way toward publishing in the technical literature. Kress is an expert photographer and his fourth chapter covers in detail the photographing of birds. The discussion is limited to 35mm slide photography but many of the suggestions apply to motion picture making as well. As with the chapter on binoculars, technical details are included and the presentation of results (slide shows) is covered along with the equipment and techniques of photographing birds. The chapter concludes with a short section devoted to the equipment and techniques of sound recording. The remaining chapters (5–8) cover the educational and research opportunities open to amateurs as well as an introduction to the literature published in North America on birds. The number of bird courses, tours and research programs (chapters five and six) is impressive and covers all of the North America north of Mexico; the cooperation of the professionals in providing these data is commendable. Chapters seven and eight cover the ornithological organizations and their publications. As with the educational opportunities, the coverage is remarkably complete. In addition, Kress gives specific recommendations of books and journals for a variety of topics; they agree well with my own preferences. Finally, three appendices cover suppliers and retailers of birding equipment and books (Appendices A and B) as well as a list of publications available from natural resource agencies (Appendix C); I have often wished for such complete lists.

The book is well illustrated with black-and-white photographs (mostly from the author's collection) as well as excellent line drawings by Anne Senechal Faust. All appear to be carefully chosen and add considerable clarity to an already well-written text. Kress has succeeded in answering in print the myriad questions that have (I am sure) been posed to him by countless amateurs (and professionals). I have often had these same questions asked of (and by) me and I am very glad to have this reference, both to consult for myself and to suggest to others. I recommend it highly to all who spend time observing birds, whether they merely watch the backyard bird feeder or are engaged in sophisticated research questions.—
D. SCOTT WOOD.

THE RELATIONSHIPS OF THE PEDIONOMIDAE (AVES: CHARADRIIFORMES). By Storrs L. Olson and David W. Steadman. Smithsonian Contributions to Zoology No. 337, Smithsonian Institution Press, Washington, D.C., 1981:25 pp., 13 black-and-white figs. Price not given.—The Australian Plains-wanderer (*Pedionomus torquatus*) has been placed in a monotypic family close to the button quails, Turnicidae, now included in the order Gruiformes. Based largely on a phenetic study of osteology, Olson and Steadman conclude that *Pedionomus* should be transferred to the order Charadriiformes near the Thinocoridae.—R. J. R.

VARIATION IN THE JAW MUSCULATURE OF THE AVIAN FAMILY VIREONIDAE. By Ronald I. Orenstein and Jon C. Barlow. Life Sciences Contributions, Royal Ontario Museum No. 128, 1981:60 pp., numerous tables, charts and line drawings. \$3.75 (Canadian). Order from Royal Ontario Museum, Publication Services, 100 Queen's Park, Toronto M5S 2C6, Canada.—The jaw musculature is compared in *Vireo*, *Hylophilus*, *Cyclarhis* and *Vireolanius*. One basic pattern occurs, but variations are related to differences in the feeding apparatus, foraging behavior and food type.—R. J. R.

BIRDS OF A FEATHER: UNPUBLISHED LETTERS OF W. H. HUDSON. Edited by Dennis Shrubbsall, Illustrated by Marcus Beaven. Moonraker Press, Bradford-on-Avon, Wiltshire, England. Distributed in U.S.A. by Buteo Books, Vermillion, South Dakota; 1981:108 pp., 10 plates. \$16.—To readers familiar with W. H. Hudson's extensive writings these letters offer a somewhat surprising view of the author's life, for they reveal him as a sickly and sedentary man chained to city life rather than as the endlessly wandering adventurer we might imagine him to be.

The editorial remarks and footnotes, while useful, are insufficient to satisfy the reader's curiosity about some aspects of Hudson's life that are hinted at in his letters; the collection serves mainly as a companion to more thorough biographical treatments available elsewhere. The book has a pleasing format and is illustrated with numerous skillfully rendered wood engravings.—MARY C. MCKITRICK.