

ORNITHOLOGICAL LITERATURE

AVIAN SPECIATION IN TROPICAL SOUTH AMERICA. By Jürgen Haffer. Publications of the Nuttall Ornithological Club, No. 14, Cambridge, Mass., 1974: viii + 390 pp., many figures, tables, maps. \$19.00. (Obtainable from the Nuttall Ornithological Club, c/o Museum of Comparative Zoology, Harvard Univ., Cambridge, MA 02138)—It is a rare individual that becomes an international leader in his chosen field, but it is an even rarer one that does it in his spare time. Jürgen Haffer is a petroleum geologist. For a period of 8 years between 1957 and 1967 he was based in Colombia, and for much of this time he lived in the steamy jungles of the lower Atrato Basin and Gulf of Urabá region. It was during this period when, following a natural affinity for birds, he became interested in speciation, his attention having been attracted by several prominent cases of hybridization in a region containing the contact zones of many related Central and South American forms. He began to publish on the birds of the Urabá region in 1959. As his experience with the Neotropical avifauna increased, he began to perceive the remarkably consistent distributional patterns that provide the empirical substrate for the present volume. The first expositions of his views on the role of cyclical climatic changes in the speciation process were in landmark papers that appeared in 1967 and 1969. His book expands on the material contained in those papers, and offers a wealth of additional supportive evidence, both geological and biological.

Haffer's thesis is that a high proportion of the species, semispecies, and races of Neotropical forest birds differentiated during late Pleistocene times in a set of isolated pockets of high rainfall that supported humid evergreen forest when most of the continent was comparatively arid and covered with non-forest vegetation (savannahs, thorn scrub, etc.). There is extensive physical and geological evidence behind the contention that South America experienced a series of alternations between relatively wet and dry conditions during the Pleistocene. The stratigraphy, palynology, and glaciology of the continent all lead to similar conclusions. A precise chronology has yet to be established, as have the correlations with phases of glacial advance and retreat in the Northern Hemisphere. But these insufficiencies in our knowledge do not in the least mitigate the force of Haffer's arguments which depend simply on the historical fact of climatic reverses. Others before Haffer (especially Moreau and Keast) realized that unstable Pleistocene climates played an important role in the speciation of birds and other taxonomic groups in the tropics, but it had not been previously appreciated that Pleistocene events had a truly overwhelming influence on today's taxonomic relationships and distributional patterns.

The book opens with a series of concise background chapters on the Ecological Geography of Tropical South America, the History of Ornithological Exploration, Important Collecting Stations, and the Composition of the Neotropical Avifauna. The heart of the work, and of Haffer's own contribution begins with Chapter 9 on Distribution Patterns and Population Structure of Neotropical Forest Birds. Here he marshalls the zoological evidence for the existence of Pleistocene forest refugia: centers of endemism, the distribution of the allospecies of superspecies groups and the location of hybrid zones and zones of secondary contact. Remarkably consistent distributional patterns appear in diverse bird families with widely different habits and trophic status: frugivorous guans, cotingas and manakins; omnivorous trumpeters and toucans; and insectivorous jacamars, woodpeckers, and icterids. The separate lines of evidence all point to a limited number of centers of differentiation that are

interpreted to have been disconnected outposts of humid forest during the recurrent dry interludes of the Pleistocene. Some 15 refugia are postulated from the biological data: 3 in Central America, 3 in trans-Andean Northwestern South America, and 9 in cis-Andean South America. Seven or 8 of these can be considered major. Ancillary evidence from other taxonomic groups, so far as is available, points to very much the same set of refugia. More or less detailed analyses have been published of lizards (*Anolis chrysolepis*), *Heliconius* butterflies, the *Drosophila willistoni* and *pauistorum* complexes, arboviruses, tapirs, certain monkeys, and plant families. The inferred positions of major refugia are the same in every instance, although the number and identity of suggested minor refugia vary from case to case. Only the largest refugia appear to have been significant for mammals, while plants seem to have survived in areas too small to show up in the bird data. This is precisely what we would expect if survival in forest islands were a function of the size of the contained populations.

Two short chapters discuss the biogeography of the tropical non-forest and montane avifaunas of South America. Under today's relatively humid conditions, non-forest vegetation is found in 2 major regions to the north and south of the forested central Amazon basin. The wide separation would suggest a high degree of differentiation in their respective avifaunas; yet this is strikingly not the case. Most of the genera, and even many of the species of the Caribbean coastal deciduous forests and xeric scrub are common to similar formations in southeastern Brazil, the cerrado, and caatinga, adding strength to Haffer's contention that the 2 regions were connected by broad corridors during a relatively recent dry interval. This interpretation is further supported by the existence today of numerous undifferentiated non-forest forms which occur in the many isolated savannah and scrub enclaves that are scattered through the forest of the Guianas and eastern Brazil. As for the montane faunas, a repeated lowering and raising of elevational vegetation zones can be presumed to have successively opened and closed corridors of access, both between sectors of the Andes that are transected by deep arid gorges, and between the Andes and isolated mountain masses in southern Venezuela, the Guianas, and southeastern Brazil.

An important chapter on the Geologic and Climatic History of Tropical South America will be of special interest to biologists, because it is here that Haffer's expertise and perspective as a geologist come forward. In the space of 22 pages he discusses such topics as the breakaway of South America from Pangea in the Cretaceous, the geologic structure of South America, the formation of the Amazon basin, the Andean orogeny, and the formation of the Middle American isthmus. The presentation is admirably concise and informative, synthesizing a vast amount of literature and knowledgeable first hand experience.

The final section of the book, consisting of nearly half its length, lays out a detailed systematic treatment of 2 autochthonous South American bird families, the toucans and jacamars. Haffer's 2-fold intention here was to revise the somewhat muddled taxonomy of these groups while presenting further, more detailed evidence in support of the thesis he expounds in the first part of the book, incidentally demonstrating how the recognition of refuge areas can help in analyzing phyletic relationships. While exemplary as a modern study in systematics by its extensive use of sonograms and ecological information, this section will be of less interest to the non-systematist who, for his \$19, may feel that this is too heavy a dose of specialized material.

The major conclusions of Haffer's work lead to new insights into the stubborn problems of tropical diversity. Tropical regions share a unique geographical property:

climatic symmetry about the equator. With the advent of a dry period, the continuous evergreen forest breaks up centrifugally into peripherally isolated refugia. Undoubtedly, many local extinctions occurred in these refugia, but their very number provided a redundancy which assured that few species lines vanished altogether. A large number of effective refugia allows speciation to run ahead of extinction. Quite a different situation prevailed at temperate latitudes. Climates varied along a steep gradient. Populations could retreat into refugia by moving in only one direction—towards the equator. Necessarily the number of refugia was small. Instead of the 7 or 8 that existed in the Neotropical region, North America offered only 2 major refugia, the Florida peninsula and Texas-Mexico. Consequently, instead of having many super-species groups that are made up of 5 or 6 members, North America has superspecies that normally contain only 2 members, e.g., the buntings, orioles, bluebirds, grosbeaks, meadowlarks, tanagers, etc.

Haffer's work completely destroys the notion of tropical faunas as "old" and "stable." Rather, they appear to be young and dynamic. This holds even for such allegedly conservative non-passerine groups as parrots, jacamars, and toucans. Ironically, it is beginning to look as if the climatic and vegetational *instability* of the tropics is a major cause of high tropical diversity.—JOHN TERBORGH

AUTUMN OF THE EAGLE. By George Laycock. Charles Scribner's Sons, New York, 1973: 239 pp., photographs and maps. \$6.95.—This is an informal but engaging account of the life of the Bald Eagle, and its decline and threatened extinction at the hands of mankind. In addition to accounts of its life and habits, there are numerous discussions of individuals and organizations who have been prominent in the study, destruction, and preservation of our national bird.—R. J. R.

SONG OF THE NORTH WIND: A STORY OF THE SNOW GOOSE. By Paul A. Johnsgard. Anchor/Doubleday, Garden City, New York, 1974: 150 pp., B & W Illus. by Paul Geraghty, 27 photos. \$5.95.—The author resolved "to write a story that not only might be biologically accurate, but which might also bring into sharp focus the contrasting visions of our natural resources as seen by aboriginal North Americans and by our policy making bureaucrats in Washington, as well as establish parallels in the attitudes of whites toward both our wildlife and the Indians." In a highly readable, popular fashion, Johnsgard has succeeded well in accomplishing his goals.

After a preface in which the author recounts his boyhood experiences with Snow Geese in North Dakota, the book shifts to a discussion of the colonization of North America by aboriginal people. Hypothetical encounters by these people with North American wildlife are included. The remainder of the book follows a year in the life of Snow Geese, principally those from Southampton Island, starting and ending with geese on their tundra breeding ground. Recent research on the Snow Goose is summarized and a great deal of information on goose biology is interestingly presented. The plight of geese in the face of terrific pressure both from hunting and through environmental destruction is well pointed out. Twenty-three Indian and Eskimo stories, ceremonies, and myths, interesting enough on their own, are augmented by the 17

impressionistic pen and ink drawings of Paul Geraghty. The 27 photos at the rear of the book are of little value. Had they been placed near appropriate discussions, about half of them would have enhanced the book.

Overall, this is a well done popular account of Snow Geese. It will be of special interest to anyone who marvels at the sight of geese overhead.—LEWIS W. ORING.

FRANCIS LEE JAUQUES/ ARTIST OF THE WILDERNESS WORLD. By Florence Page Jaques. Foreword by Roger Tory Peterson. Doubleday & Co., Garden City, N.Y., 1973: xxi + 370 pp., 64 col. paintings and dioramas, 100 drawings. \$25.00.—We have here a handsome book on the life and works of one of America's finest wildlife artists, Francis Lee Jaques. This humble, gentle man, of exceptional talents, brought the museum diorama to a fine art form. Over the years, millions of people have stared through huge plate glass windows and momentarily lost themselves in his wilderness vignettes. Few museum visitors ever knew the name of the man who created these glorious backgrounds of limitless prairies, dazzling sandy beaches, fog rolling in from Arctic seas, sun-baked African plains, or an English countryside in May. The great Whitney Bird Hall in The American Museum of Natural History, with all of its backgrounds painted by Jaques, has no plaque or marker giving credit to his work.

Jaques' museum background painting, however, represents but one approach to his artistic world. His many oil paintings are tops in their field, and I believe his pen and ink scratch board drawings have never been surpassed.

Luckily, Florence Page Jaques, who survived her husband by three years, was able to gather her memories and write a most touching and excellent biographical essay on their young days and married life together. In her early eighties, but with a keen mind, she also was able to select some of the most representative examples of her husband's art for publication in this book.

The biographical essay is followed by a large collection of paintings, mostly color reproductions of oils. Three appraisals of Jaques as an artist are then followed by many pencil drawings of animals. Next come carefully chosen excerpts from the Jaques' 6 popular books. An appendix contains Jaques' short journal of his trip to the Peruvian islands, Louis H. Westcott's description of the artist's unique home model railroad system, and "A buffalo hunt" by Ephraim Jaques, the artist's father, which was published in the magazine FOREST AND STREAM in 1900. These varying selections and approaches may sound fragmentary as I describe them, but they serve, each in its way, to give special substance to the Jaques story. The different sections of the book stand on their own, and can be read as separate entities.

Going over the artwork carefully, I found few title errors. The pencil drawing titles of wolverine and martin are reversed, and the leaping dolphins are common dolphin, not bottle-nosed. The scratch board drawing of swimming loons (p. 33) is tilted out of position with the drawing reversed, as the characteristic F.L.J. signature testifies. With so many top paintings to choose from, I was disappointed to see two oils of Wood Ducks, both of them rather lifeless, over-stylized, and very similar. The double-page illustrations for William O. Douglas' *My Wilderness* (pp. 102-107) are untitled and thus confusing. I found it hard to distinguish whether some of the drawings were one-page reproductions or meant to stretch across two pages.

Lee Jaques' love and understanding of that almost extinct species, the steam locomotive, was truly marvelous. A few oils reproduced in the book testify to his love affair with trains. As a kid in New York, I often went to the Kennedy Galleries, where many of his

finest paintings were on show. I marveled that a man could be so diversified in his talent as to paint trains and birds with the same devotion.

Lee Jaques' black and white scratch board drawings have seldom been equalled in the field of natural history. His composition, placement, and simplicity of dark shapes on a white field and vice versa never cease to hold me spellbound. How few well-placed lines a skilled technician really needs to convey his message to the viewer! I would like to have seen more of these drawings reproduced.

Glancing over the 50-odd oil paintings that are shown, I was most impressed with those that depict a mammal or bird in relation to vast expanses of air, water, clouds, or just space. The pen and inks can take you into a dark, bushy corner and show you a hiding snowshoe rabbit, but the oils really turn your mind completely free to explore the horizon. To me, 6 exceptionally fine paintings are "Morrisey and Ivory Gull" (p. 132), "Red Fox on Alaskan Peninsula" (p. 140), "Road After Rain" (p. 158), "Pronghorn Antelope" (p. 214), and "Passing of the Old West" (p. 224). The last has an N. C. Wyeth mood and Peter Scott formations of geese, but the final result is strictly Jaques, and a deeply moving picture, indeed.

Florence Page Jaques' text, both the biographical essay and the excerpts from the 6 books provide delightful reading. She has great warmth, a gentle sense of humor, and excellent power of description. Writing about personalities, friends, and acquaintances, she minces no words in telling whom she was or was not fond of, and why.

In reviewing this book on the life and work of Francis Lee Jaques, I am compelled to compare it to *Louis Agassiz Fuertes and the Singular Beauty of Birds*, edited by Frederick George Marcham (Harper & Row, 1971). Fuertes, 13 years Jaques' senior, had a brilliant life, cut short while crossing a railroad track in 1927. Fuertes was the master of bird portraiture in this country since John James Audubon, and he is still the hero of almost every bird painter. His was not the genius of composition or background, but of the eye that caught the exact shape, size, and placement of nostril, bill, and gape, and directed the brush strokes that recreated the living bird. We still stand in awe of his chickadees and gyrfalcons. The art work chosen for this coffee-table extravaganza does not, in any way show the full range of Fuertes' talents. In his desire to reproduce unfamiliar paintings, the editor used much second class work, often incorrectly titled. The greatest faults, however, are the enlargement of several tiny rough watercolor sketches to full page size, and the printing of a crude drawing of a screech owl with no mention in the caption that it was done when Fuertes was a child.

No crimes of this calibre have been perpetrated in this fine volume of Jaques. Both art and reading matter are well chosen and in excellent taste.—JOHN HENRY DICK

EAGLE DAYS. A STUDY OF AFRICAN EAGLES AT THE NEST. By Peter Steyn. Purnell Library Service, New York, 1973: xviii + 158 pp., 147 photographs (22 in color). \$24.55.—Surely the great African eagles are the finest collection of raptorial birds in the world, and the author's handsome photographs bring us an unparalleled nest-side panorama to which no words can do justice. The many large plates of more than 10 species portray not only the eagles and their nests, but bring such a sense of intimacy that the reader feels himself a participant of the scene, in which bird, nest, tree, surroundings, and more distant terrain are grasped in a breath-takingly vivid view. The text is narrative, always entertainingly and often beautifully written, an account of Peter Steyn's personal experience with eagles beginning as a young lad on the slopes of Table Mountain above Cape

Town viewing through mist-shrouded cliffs the magnificent Verreaux's Eagle. Within a few years the author's love for the eagles was becoming recognized as his photographs and accounts of eagles began to appear, particularly in *Bokmakierie* and *Ostrich*. This book fills in all the gaps in his series of scientific papers, and to one familiar with the latter, it is a delight to now locate and place in both time and location the various nest-sites and eagle experiences, and all the while gaining an added breadth to his view of this unique ornithological scene.

Major accounts are given of 10 African eagles, along with some comments and experiences with others, as well as a Golden Eagle safari in Scotland with Leslie Brown, with an Eric Hosking photograph.

All the chapters are excellent reading, but those on the Snake Eagles, Tawny, and African Hawk-Eagle are much more complete. I have the feeling that the chapter on the Black Eagle has less information simply because his close friend and associate Valerie Gargett is making already world-famous studies upon this species, and in like manner, the Fish Eagle and Crowned Eagle chapters may not be as complete in deference to the work of his friend and colleague, Leslie Brown (who has provided a delightful Foreword. . . I shall never forget MacCrimmon!). The average reader will not have read Mr. Steyn's accounts of the "Brown Snake" and "Black-breasted Snake" in *Ostrich*, and to him the accounts of these cobra-eating eagles will seem incredible. How does the eagle avoid fatal poisoning in capturing the black-necked spitting cobra whose second-splitting jet of poison aims straight at the eyes . . . is the nictitating membrane sufficient? And the almost ludicrous feat of a Black-breasted Snake Eagle in full flight swallowing a snake head first, the snake being inched forward by the eagle's feet in conveyor-belt fashion . . . and then being pulled forth and again swallowed . . . all in all 6 times! Incidentally, a cobra is swallowed at 30 cm a minute. And to those of us who have felt safe tramping the Matopos hills in the cold months, let it be known that the snake eagles bring in a fine array of cobras, boomslangs, and puff adders to their nests.

All in all, this is about the finest book on the "hook-bills" that I have ever read, and the color plate reproduction is simply superb. My one regret is that the latter could easily have shown more of the late-nestling juvenal plumages; . . . the fledgling Verreaux's Eagle is a beautiful warm brown and brick red, in startling contrast to the somber black and white of its "Black Eagle" parents.—WALTER R. SPOFFORD.

SWANS OF THE WORLD. By Sylvia Bruce Wilmore. Taplinger Publishing Co., Inc., New York, 1974: 229 pp., eight half-tone plates, eleven maps, numerous line drawings by the author. \$9.95.—This book, by an English cygnophile, is the second book-length summary on swans to appear in the last 2 years. The other, *The Swans*, published in 1972 by the staff of the Wildfowl Trust, is so similar to it that comparisons are inevitable.

Mrs. Wilmore has generally organized her book into a series of species accounts, plus 4 introductory or comparative chapters, whereas the Wildfowl Trust's book is entirely comparative in organization. For the lay reader, who might wish to readily extract all the available information on, say, the Mute Swan, this organization does have considerable appeal. Additionally, the species accounts are well-written and relatively comprehensive. There can be no doubt that Mrs. Wilmore has relied extensively on information available in *The Swans*, although a substantial number of her literature citations did not appear in that book. Regrettably, there are no in-text references to the literature used, and many of the references in the bibliography are either inaccurate or incomplete. Where in-text

references do occur (as on p. 37), these are not to be found in the bibliography. The line drawings, although adequate, cannot compare with the quality of the corresponding ones in *The Swans*. There are some errors of fact that no doubt result from the presumed non-scientist background of the author, such as the descriptions of the bone structure of the wing, the mechanism of feathering of the primaries during flight, and the functional significance of the V-formation of waterfowl in migration. There are other minor annoyances, such as the misuse of the term "mortality" in the accounts of the Black and Black-necked swans, the confusion of Whistling Swans for Trumpeter Swans as the breeding birds on the Clarence Rhode National Wildlife Range, and the use of outdated information on the Mute Swan population in North America.

All told, in its content and accuracy, the book is a compromise between such potboiler titles as *The World of the Swan* and the comprehensive expertise of *The Swans*. Thus the bird enthusiast who buys books primarily for their readability rather than as an effort to build a reference library may well wish to invest in *Swans of the World*. For one interested in the latter, the extra cost (\$5 more) of *The Swans* would be the better choice.—PAUL A. JOHNSGARD.

PARROTS OF THE WORLD. By Joseph M. Forshaw, illus. by William T. Cooper. Doubleday and Co., Inc., Garden City, New York, 1974: 584 pp., 158 color plates with caption figs., 344 range maps, 11 numbered text figs., 3 tables. \$65.00.—No birds surpass the psittacines in being appropriate for a 19th century-style monograph, and no bird book produced in recent years equals "Parrots of the World" in copying the extravagant format characteristic of this bygone era. The book measures $11 \times 15\frac{1}{2} \times 2\frac{1}{2}$ inches, weighs over 10 pounds, and includes color paintings of almost 500 parrots.

Species accounts for all Recent parrots, including those known only from bones, occupy over 90% of the pages. These are divided into 3 "distributions," Pacific, Afro-Asian, and South American. Within each distribution the accounts are arranged in a sequence similar to that of Peters (1937, Check-list of Birds of the World, vol. 3, Harvard Univ. Press, Cambridge). Brief introductions to each distribution include analyses of its parrot fauna and a large map showing political areas. The 344 accounts are each about 2 to 3 pages long. They include brief species descriptions, information on distribution (and a range map), descriptions, and measurements of all subspecies, and general notes on natural history including calls, nesting, and eggs.

Preceding the species accounts are a foreword by Dean Amadon, and sections on fossils, classification, and natural history of the entire order. Reference to Brodkorb (1971, Bull. Florida State Mus., vol 15, no. 4) would improve the brief section on fossils. Forshaw clearly states that he is not a taxonomist, but still proposes a classification; it differs only in minor ways from that of Peters (*ibid.*), who recognized 1 family and 6 subfamilies. Forshaw proposes 3 families, the Loriidae, Cacatuidae, and Psittacidae. The first 2 are the same in constituency as 2 of Peters' subfamilies. The third of Forshaw's families includes as subfamilies the remaining 4 subfamilies of Peters, the Strigopinae, Nestorinae, Micropsittacinae, and Psittacinae. I was disappointed to find no reference to the fairly recent and innovative classification of parrots proposed by Hans von Boetticher ("Papageien." Die Neue Brehm-Bücherei, Heft 228, 1959). All other recent attempts at classifying the order seem to be included in the brief analysis.

The section on physical attributes includes 4 full-page figures. With the surfeit of space provided, additional features of the skeleton could have been labeled with no

crowding. For example, the toes are not numbered, and only abbreviated names are given for the 2 distal leg bones. Furthermore, certain wing bones distal to the radius and ulna are both incorrectly drawn and either labeled wrong or not at all. Mention of the considerable, and as yet unexplained, variation in furcular structure of parrots, for which several references exist, should have been included.

Forshaw's fascination with parrots goes back to his youth, and he has amassed extensive experience with a large number of species both in the field and the aviary. He has traveled extensively in Australia to observe wild parrots, and has visited Asia and the Americas for the same purpose. Related to this he has been most successful in bringing together the profuse and diffuse parrot literature published by aviculturists. His references cited take up 7 pages in small type.

The full page color plates are generally excellent. Particular attention has been given to the backgrounds and the results are most successful. My only general criticism is that for some of the species certain dark colors seem too dark. Short, in his review (*Auk* 76: 850-852, 1974), levied a similar complaint after examining several copies of the book. Each illustration is based on a specimen whose registration number is listed under the caption figures. These figures are the only direct references to the plates, but I find this system adequate.

My major complaint with the book is not with the contents, which generally are first-rate, but with the format. Unfortunately I find I must parrot certain of my criticisms of Forshaw's other recent work "Australian Parrots" (*Wilson Bull.* 83:107-108, 1971). The book is too big because of much wasted space. The margins are far too wide, and several maps and drawings could be much smaller with no loss of detail. The book could easily be 3 inches shorter. A related problem seems to be the binding. Short (*ibid.*) wondered if the covers ($\frac{1}{4}$ " thick) were too heavy to remain attached. On the copy I received, the front cover broke free of the pages when the review editor first opened the book. Certainly a smaller book would reduce several of these problems. Furthermore, the reduced size might have decreased the price, and thus put the book more within the means of the wide audience for which it was intended.—GLEN E. WOOLFENDEN

CHECK-LIST OF JAPANESE BIRDS. Fifth and Revised Edition. The Ornithological Society of Japan. Gakken Co., Ltd., Tokyo. 1974. viii + 364 pp. in English; x + 120 pp. in Japanese. Bound separately; boxed together. \$29.00. Available through International Division, Gakken Co. Ltd., 4-40-5. Kami-ikedai, Ohta-ku, Tokyo 145 Japan.—The area covered includes Japan proper, the southern Kuriles, the Ryukyus, the Bonins, and the Volcano Islands. A map of this region is found on the inside cover. The 490 species on the regular list are arranged in the order of Peters' "Check-list of Birds of the World." Species accounts in the English version include scientific, English, and Japanese names, reference to the original description, range, status in Japan, and habitat. Under each subspecies, reference to original description, range, and locality records are given. Indices to Japanese and scientific names, a list of synonyms and invalid names, and a list of species and subspecies "of uncertain records" complete the volume. References to original descriptions and species accounts are omitted from the Japanese version.

Approximately one-fourth of the species included are extinct, very rare, or of casual occurrence, and there is much inconsistency in the way in which the status of these birds is described. Species which have been found but once in Japan are variously listed as "accidental," "accidental straggler," "rare accidental," "rare straggler," or

"straggler." The terms "casual," "casual straggler," "occasional straggler," "rare casual," and "vagrant" are also used for rarities. It would be helpful to users of future editions if the person responsible for correcting the English would define such terms and see that they were used consistently.

Aside from this, there is little to criticize in this well planned and printed work. I found few errors (the name of Miyaki Island is omitted for the map in the English version) and was pleased to find documentation for a high proportion of the rarities. It is a concise and usable source of information on the distribution, status, and habitats of Japanese birds.—ROBERT W. STORER.

BIRDS OF WESTERN NORTH AMERICA. NONPASSERINES. Paintings by Kenneth L. Carlson; text by Laurence C. Binford. Macmillan Publishing Co., N. Y., and Collins Macmillan, London, 1974: 223 pp., 50 color plates, cloth, \$25.00.—This book contains an 8-page introduction on the "hows," "whys," "wheres," and so on, of being a "birder." Then follow the plates with a page of text about each and an index which has entries for the birds and much of the vegetation shown with them. The page facing each plate is blank, except for a caption, and the backs of the plates are blank; all these are counted as numbered pages, thus giving considerable paging to 50 color plates plus brief commentary.

The text is chatty and informal, yet it contains much interesting biological information. The printing of the color plates is excellent. The species shown are western (including Pacific), there being both land and water birds, in size from hummingbirds to the California Condor.

In addition to this book, this reviewer also has recently looked at excellent reproductions of the work of several other illustrators who specialize in birds. A general impression gotten from this experience is one of too much sameness—as though each painter had kept an eye on the others so that their respective end results seem more alike than any constraints of subject matter require. Apparently another limiting factor is that most illustrators, and also the public in general, are so conditioned to visualizing birds as portrayed in field guides that arbitrarily maintaining the local color of feathering and soft parts seems to be the prime criterion of what currently is acceptable (and saleable?).

In the present book the birds are on white paper, with no background that might modify the local coloration of birds in the foreground, and essentially no perspective. Some of the birds are too flat, in this respect having only a very slight resemblance to figures on Japanese prints. The immediate surroundings of the birds are good, but occasionally a bit too obviously contrived; for example, the arrangement of vegetation around a white bird (Ross' Goose) to separate it from the white background. The constraint of maintaining local color inhibits logical opportunities to modify it even slightly so as to separate planes—an obvious need when one wing is behind the other (California Condor plate). The Green Kingfisher plate is rather innovative, showing the bird capturing a fish beneath the surface of the water. Yet the bird appears as it would in air: perfectly dry, all feathering in perfect arrangement, eye with highlight unmodified by aquatic environment.

Allowing for the conventions used in maintaining what some would term true-to-life colors, this reviewer rates about three-fifths of the plates as excellent to good, most of the others as of lesser quality, and a few as poor (usually for unsatisfactory anatomy). The whole production is moderately lavish and its main market probably is among affluent birders.—RALPH S. PALMER.

SYSTEMATICS AND EVOLUTION OF THE GRUIFORMES (CLASS AVES). 3. PHYLOGENY OF THE SUBORDER GRUES. By Joel Cracraft. Bull., Art. 1, Am. Mus. Nat. Hist. 151(1), 1973:127pp., 51 figs., 49 tables. Paper cover. \$4.75. Available from the Librarian, American Museum of Natural History, New York, New York 10024.—This work is Cracraft's third contribution in a comprehensive review of the fossil Gruiformes and includes a summary of his earlier revisions of the Geranoididae and the Bathornithidae. The monograph is divided into 6 major sections with the bulk of it (82 p) devoted to morphology and systematics. There are many excellent stereophotographs, but they are not to any exact scale and there is no consistent orientation of individual bones. The descriptions are detailed, but are sometimes hard to follow. Comparisons are facilitated by several tables comparing morphological features of various genera.

The work deals with the phylogeny of the suborder Grues which Cracraft divided into 2 infraorders, the Ralli and the Grui. Major taxonomic changes include: the placement of *Ibidopsis* in the Rallidae rather than in the Threskiornithidae (Ciconiiformes); the creation of a new family and superfamily, the Laornithidae and Laornithoidea, for Marsh's Cretaceous species *Laornis ewardsianus*; the placement of *Gypsornis* in the Idiornithidae rather than in the Rallidae; and the Ergilornithidae are Gruiformes and do not share a close common ancestry with the Struthioniformes. Three new species are described within the Rallidae: *Palaeorallus brodkorbi*, *Quercyrallus quercy*, and *Palaeoramides minutus*; and one within the Idiornithidae: *Idiornis gaillardi*.

Cracraft relies heavily on the features of the distal end of the tibiotarsus for making taxonomic decisions. This is largely beyond his control as it is the most commonly preserved element. However, I am not convinced that it has always led him to make correct systematic interpretations. I am especially dubious of the placement of the Laornithidae close to the Rallidae on the basis of general resemblance in this element. His restrictions of this study to extinct Tertiary genera seriously limits its "comprehensive scope." The inclusion of extinct Tertiary species of living genera would not have expanded it beyond reasonable limits, and would have necessitated comparisons with living genera, which are otherwise notably lacking.

There is a short section on morphological variability in fossil samples including examples drawn from the Idiornithidae and the Bathornithidae, which provide useful information concerning the variability of these extinct families. Cracraft also provides an analysis of 4 Quaternary and/or Recent samples of rails. However, the formulation of generalities about variability in the avian skeleton might have been more useful if recent samples had been used.

In Cracraft's summary of the phylogeny of the infraorder Grui, he suggests that there are 2 distinct phyletic lines; one for the Geranoididae, Bathornithidae, and Idiornithidae, and one for the Gruidae, Psophiidae, Aramididae, Ergilornithidae, and Eogruidae. He suggests that the geranoidids are primitive gruiformes that gave rise to the idiornithids in Eurasia after they had dispersed across the North Atlantic intercontinental connection, and to the bathornithids in North America. The eogruids and ergilornithids share a close common ancestry, while the aramids and psophiids are especially close to each other, an arrangement that is difficult to reconcile with Olson's (Wilson Bull. 85:381, 1973) suggestion that the Psophiidae are close to the primitive Rallidae.

The section on evolutionary considerations contains a variety of rather unrelated topics including a discussion of convergence between ostriches (Struthionidae) and ergilornithids in the reduction and loss of the inner trochlea on the tarsometatarsus.

Rates of morphological change in bathornithids and the influence of Eocene-Oligocene climate on gruiform evolution are also discussed.

Cracraft devotes 2 pages to methods in classification. He argues that classifications should be based on derived characters in the sense of Hennig (Phylogenetic Systematics, Univ. Illinois Press, Urbana, 1966), and that classifications are best expressed in a dichotomous fashion. He gives an example of this type of arrangement for the Grues, which permits one to identify sister-groups in the classification. To do this he has to change the traditional rank of many gruiform taxa and he does not use it elsewhere in the work. In fact, there is little evidence of any special "cladistic approach" throughout the work, which tends to be very similar to other taxonomic reviews in paleontology.

There are a few typographical errors. *Palaeoaramides minutus* described as a new species on p. 30 is misspelled *P. minimus* in the table on p. 28, and *P. eximius* is misspelled *P. eximus* (p. 27-29). The characters on table 48 are not numbered, although they are referred to by number on p. 109.

This work comes into a virtual vacuum, as the only other large group of fossil birds to receive a taxonomic review in recent times is the penguins (Simpson, Bull. Am. Mus. Nat. Hist., 87, 1946). This, along with the extensive summary and numerous illustrations of fossil gruiformes, makes this publication a major contribution to the study of avian paleontology.—LARRY D. MARTIN.

BIRDING FROM A TRACTOR SEAT. By Charles T. Flugum. Privately printed (Box 30038, St. Paul, Minnesota), 1973: 435 pp., 20 black and white illustrations by Walter Breckenridge. \$8.95.—This book is a compilation of 137 of Mr. Flugum's monthly columns which appeared in *Community Magazine*, published in Albert Lea, Minnesota. The short chapters take you through the seasons for the years 1952-1964. To quote the author (pp.333-34): "Birds apparently consider a tractor operator a part of the machine and do not associate the machine with danger. At any rate, a tractor seat is a good vantage point from which to see field birds at close range." Having found that a seat on a tractor was almost equivalent to being in a blind, the author was able to make close observations, particularly of field birds which some of us rarely see closely. The book is a pleasing combination of Mr. Flugum's personal experiences with birds and information about them from other sources. Interested in birds from early boyhood on the farm, Mr. Flugum has studied, read, talked to ornithologists, and attended meetings of ornithological societies. This results in his writing being very factual and with authoritative though brief discussions of some ornithological subjects. The nature of the book—a compilation of columns almost as printed—results naturally in some repetition of particular facts or subjects, but this does not detract from the charm.

It is nicely put together. Each essay is about 3 pages, the print is easy to read, typos are few, as are misspellings and grammatical errors. We may disagree with a few of his statements, but all in all it is very accurate.

There are a few charming illustrations by Walter Breckenridge, reprinted from elsewhere with credit, and a foreword by Howard Cleaves, who refers to the author as "an authentic dirt farmer." The author acknowledges many who encouraged him in his writing and helped him in other ways, from (alphabetically) A. A. Allen to Alexander Wetmore. He expresses appreciation to his mother, who encouraged his interest as a boy, and to his son who helped him edit his columns.

It may be nit-picking to point out that Turkeys are not in the pheasant family (p.187), that the Latin specific name should not be capitalized (p.226), that one of the chief values of the Arm and Hammer soda cards (p.331) was that the paintings were done by L. A. Fuertes (not mentioned), and that Longspurs are not "true larks" (p.72). These are very minor errors. An index would be helpful.

Put this book on your coffee table—pick it up and read a chapter or two at a time. One can dip into it at any time on any page with enjoyment.—SALLY HOYT SPOFFORD.

EDITORIAL

For several years it has been the intended policy of the Wilson Bulletin editor not to allow literature citations that refer to "in-house" reports and other similar documents that are not available to the scientific community. Occasionally such citations have been published. In recent months the number of such citations in manuscripts submitted to the Wilson Bulletin has multiplied. This increase no doubt reflects government recognition of environmental problems and its bureaucratic response: environmental impact statements, detailed permit applications, management plans for endangered species, etc. Because some of these reports contain the raw data on which a manuscript is based, citation of them may be important. While I still do not encourage the practice, where necessary, such citations will be allowed if the author is willing to deposit a copy of the report (or the appropriate portion of it) in the Josselyn Van Tyne Memorial Library. Notice of the availability of the report will then be made in the Wilson Bulletin.

In addition to the above service, Wilson members should be aware that the Van Tyne Library also acts as a depository for English translations of foreign ornithological literature. Many translations are already available on request. If you have English translations of foreign literature that you are willing to share with the ornithological community, please send them to the Josselyn Van Tyne Memorial Library, The University of Michigan, Museum of Zoology, Ann Arbor, MI 48104.

Finally, the stock of many back issues of the Wilson Bulletin is low. If you have extra copies that are collecting dust, please consider donating them to the Wilson Society. Such donations are tax deductible and sale of the copies will facilitate the continued growth and services of the Van Tyne Library.

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