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Ornithological Literature

Edited by William E. Davis, Jr.

SWALLOW SUMMER. By Charles R. Brown. Univ. Nebraska Press, Lincoln, Nebraska. 1998: xiii + 371 pp., black-and-white photographs. $16.95 (paper).—For the past 15 years, Charles R. Brown and his wife Mary have studied Cliff Swallows (*Petrochelidon pyrrhonota*) at Cedar Point Biological Station in the Sand Hills of western Nebraska. The Browns' research was (and continues to be) highly productive, partly because the swallows proved to be excellent research material. Cliff Swallows make mud nests in colonies that may range from a few birds to thousands. The swallows are relatively easy to capture (but provide the basis for many adventures) and are tolerant of extensive handling. Their natural history is relevant to numerous issues in the basic ecology of birds and to the understanding group behavior of animals.

This book is a non-scientific account of how the Browns came to work on this bird and the trials and tribulations of one season of their studies. Each year they arrive in Nebraska in May in advance of the first swallows. They capture, band, weigh, and measure birds until the swallows stop breeding in late July. With the help of numerous assistants, they have obtained data from thousands of swallows. In fact, their total sample size for some measurements must be in six figures!

The writing is clear, funny, insightful, interesting, and informative. If you have more than a passing interest in swallows, group behavior, or basic avian ecology, you should also read the scientific account, "Coloniality in the Cliff Swallow: the effect of group size on social behavior" (co-authored with Mary Brown; 1996, Univ. Chicago Press), if you have not already done so.

Prairie thunderstorms, clouds of birds, the mysteries of bird behavior, quotes from western movies (especially from "Lonesome Dove"!), the deep pleasures of spending the summer at a field station, the behavior of field assistants, the dirt/frustration/exhaustion of long days in the field, the satisfaction of discovery—these are just a few of the rich threads in the texture of Brown's account. If you have worked for a long time on one species, spent a summer with students at a field station, love western Nebraska, have struggled to fund and run a field research project, or simply would enjoy a good account of how field ornithologists see the world, you will appreciate this book.—CHARLES R. BLEM.

ATLAS OF BREEDING BIRDS OF INDIANA. By John S. Castrale, Edward M. Hopkins, and Charles E. Keller. Available from: Indiana Department of Natural Resources, Customer Service Center, 402 W. Washington St., Rm. W160, Indianapolis, IN 46204. 1998: 388 pp., 14 numbered text figs., 7 tables, 158 range maps. $20 plus $3.50 s&h, $1 sales tax for Indiana residents (cloth).—The Indiana Nongame and Endangered Wildlife Program of the Indiana Department of Natural Resources sponsored this atlas project, coordinating the nearly 600 volunteers and paid "block busters" during the fieldwork conducted from 1985–1990. Workers targeted 647 "priority blocks," west-central of the six blocks of each U.S. Geological Survey 7½′ topographic map of the state. A series of maps depict counties, public lands, rivers, urban areas, natural regions, forested areas (with separate maps for evergreen-deciduous and shrubland-early successional woodlands), agricultural row-crops, pastureland, and marshes and open water. In an attempt to provide some indices of abundance, atlas accounts used Breeding Bird Survey (BBS) and Summer Bird Count (SBC) data for the 1985–1990 period. The SBC uses the county as the sampling area, and counts are conducted on multiple days during June. A table lists in rank order the percentage of blocks in which a species was detected (e.g., American Robin, *Turdus migratorius*, 100%, rank = 1), abundance values and rank for BBS routes, and birds/party hour and rank for SBCs.

A biogeographic analysis by J. Dan Web-

ster includes a table that lists species extinct or extirpated by 1929, species extirpated between 1929 and 1979, possible or sporadic nesters, Twentieth Century additions as breeders, and confirmed breeding species since 1990. The analysis of bird distributions does not correspond well with physiographic patterns, vegetation, distribution of other groups of organisms, or "natural regions." The author suggests birds are poor indicators of biogeography in a small, flat state like Indiana. Major changes this century that have had a major impact on nesting species include the virtual disappearance of the prairies, the drainage and pollution of wetlands, and the fragmentation of forests. The extirpation of prairie, wetlands, and forest interior species, together with a uniform intrusion of alien species has resulted in a more uniform avifauna in the state.

The bulk of the book is devoted to species accounts. Full species accounts accompany the 158 species that were confirmed breeders, supplemented by shorter accounts for 46 species not confirmed as breeders during the atlasing period (including extirpated breeders and those confirmed as breeding since 1990). Each map occupies a full page, with the species account on the facing page. The large size of the maps makes them very easy to read. The species accounts give very brief natural histories synopses, and the bulk of the accounts are concerned with historical distribution comparisons, analysis of the atlas results, and comparisons with bird distributions in the surrounding states of Ohio, Michigan, Illinois, and Kentucky. Each species account is accompanied by a table summarizing the atlas, BBS, and SBC data for north, central, and southern regions of Indiana, as well as statewide.

This is a well-done atlas that is a bargain at $20—the more than 350 references, many to local publications, alone are worth that. It should be of interest to those concerned with bird distribution.—WILLIAM E. DAVIS, JR.

A GUIDE TO THE NESTS, EGGS, AND NESTLINGS OF NORTH AMERICAN BIRDS, SECOND EDITION. By Paul J. Baicich and Colin J. O. Harrison. Academic Press. 1997: 347 pp., 64 color plates, and 103 black and white figures. $22.95 (paper).—This is an updated version of the 1978 edition, and this new edition is a must for the library of anyone interested in the nesting period of North American birds. The guide begins with an introduction that describes a variety of aspects of breeding biology including how and where nests are built; egg shape, color, and size; and clutch size, incubation, hatching, and the nestling period. Keys to nests, eggs, and nestlings are also provided in the introductory pages. The introductory section is followed by a series of individual species accounts. Each species account includes breeding habitat; location, description, size, and materials of the nests; number, shape, size, and color of eggs; breeding season; length of incubation; description of nestlings; length and description of nestling period; and roles of both sexes in these activities.

For many users, the most valuable aspect of this book is the color plates that provide photographs of the eggs of 597 species of North American breeders as well as 147 color drawings of nestlings. While most species' eggs are represented by a single photograph, several with particularly variable eggs are represented by multiple photographs; for example, the authors provide six different photographs of Sandwich Tern (*Sterna sandvicensis*) eggs. Additional information about variation within a species is described in plate legends as well as individual species accounts. Black-and-white drawings are scattered throughout the text to illustrate additional nestlings and a variety of nests.

The second edition of this guide includes substantial information, photographs, and drawings from the first edition; however, it also includes updates and new information that was not in the first edition. Species names (both common and scientific) and taxonomic affinities have been updated to reflect changes since the first edition. Numerous species accounts have been augmented with information about breeding biology, numbers of eggs, and incubation that was missing or not known in the first edition. Species accounts have been added for a number of species that were split from existing species (e.g., Bicknell's Thrush, *Catharus bicknelli*; California Gnatcatcher, *Polioptila californica*; and Island Scrub-Jay, *Aphelocoma insularis*) or have begun to breed

regularly in North America (e.g., Lesser Black-backed Gull, *Larus fuscus*; Buff-collared Nightjar, *Caprimulgus ridgwayi*; and Shiny Cowbird, *Molothrus bonariensis*). The plates have been updated to provide pictures of the eggs of the new species covered in the text and to reflect changes in taxonomic order, species names, and family groups. Another useful change in the revised edition is the grouping of all the plates together in the center of the guide rather than having the plates of nestlings scattered throughout the text pages. This change in format makes the guide easier to use than the first edition. The guide also now includes a selected bibliography of important works used in the revision and information on how to contact the author to obtain specific references for each of the accounts.

Professional and amateur ornithologists will find that this guide provides extensive information about nests and eggs in an easy-to-use format. I would highly recommend *The Guide to Nests, Eggs, and Nestlings of North American Birds* to anyone interested in identifying birds' nests and eggs or learning more about the nest and nestling stage of North American birds.—SARA R. MORRIS.

BREEDING BIRDS OF WASHINGTON STATE: LOCATION DATA AND PREDICTED DISTRIBUTIONS. By Michael R. Smith, Philip W. Mattocks, Jr., and Kelly M. Cassidy. Available from Seattle Audubon Society, 8050–35th Avenue NE, Seattle, WA 98115. 1997: 538 pp., 10 numbered text figs., 6 tables, 244 range maps. $30 plus $3 s&h (paper).—The authors attempt to fill two roles with this book: compilation of the Seattle Audubon Society's breeding bird atlas project, and a part of the final report of the Washington State Gap Analysis project (administered by the National Biological Service). The goals of this aspect of the Gap Project were to map existing land cover, and model the breeding distributions of birds. The book is divided into an introductory chapter (22 pp.) and 258 species accounts that include 244 maps (489 pp.).

The introductory chapter traces the history of the Atlas project and summarizes the data collected and analyzed. Over 600 volunteers contributed data over the decade beginning in 1985. The sampling unit was a block of nine square miles that constituted one quarter of a township, for a total of 7912 blocks. Data provided by the Washington Department of Fish and Wildlife, particularly from their shrub-steppe bird study and National Heritage database, were included. Coverage of blocks was incomplete, with 56% containing at least one "possible" species record, 51% a "probable" record, and 44% a "confirmed" record. More than 10 species were confirmed breeders in 6% of the blocks (the highest number of confirmed species in a block was 67). The authors discuss the biases in the data, including the concentration of records from more developed areas of the state. They also point out that records do not reflect abundance, and give the delightful example: "a confirmed breeding record of a Ruby-crowned Kinglet in the Ponderosa Pine zone in the Blue Mountains (where the species is uncommon, but can usually be found) occupies the same area on the map as a confirmed record derived from the Subalpine Fir zone, where Ruby-crowned Kinglets are best measured by the ton."

For most species models predicting breeding distribution (extent of a species' breeding habitat) were prepared and appeared on the species' distribution map as "Habitats in core zones" with, in some cases, an additional "Habitats in peripheral zones" presented in a lighter shade of gray. Habitats were selected from a satellite image landcover map of the state. Bird-habitat associations were developed from literature reviews, location of breeding records, and consultation with experts. The introductory chapter detailed the modeling process and mapping processes, albeit with a touch of jargonese (e.g., "Each scene was spectrally clustered into 120 to 256 spectral classes using bands 1, 2, 3, 4, 5, and 7" or "the presumption that error in a cover is equal to the product of the errors in each layer comprising that cover is an over-simplification. The effect of an error in a source layer upon a derived cover depends on what is being derived."). Ecoregions, vegetation, and vegetation zones are detailed in tables, a black-and-white map, and in two color plates.

Each species account is divided into three parts, the first "Breeding Status and Distribution," the second "Model" gives the char-

acteristics of the model predicting the breeding distribution, and the third "comments," provides aspects of the species' biology. The latter contains such information as maximum abundance numbers for island nesting species, comments on taxonomy, e.g., American (*Corvus brachyrhynochos*) and Northwestern (*C. caurinus*) crows, and an historical perspective on the species. I found the "comments" sections particularly informative.

This is an interesting book. It is a hybrid volume, and thus provides a great deal of information on habitat and computer modeling not usually found in breeding bird atlases, but is also somewhat jarring because of the contrast of sophisticated jargon associated with the Gap Analysis and the more usual distribution descriptions associated with atlas projects. The atlas coverage seems sparse and I wonder why Breeding Bird Survey data weren't used to provide a better measure of bird abundance. As is usually the case, the more than 200 references, many from local journals and unpublished sources, are a gold mine of regional information. Certainly this book should be part of the library of every serious student of bird distribution, and all academic libraries.—WILLIAM E. DAVIS, JR.

MADE FOR EACH OTHER: A SYMBIOSIS OF BIRDS AND PINES. By Ronald M. Lanner, Oxford Univ. Press, New York, New York. 1996: 160 pp., 14 chapters, 24 figures, 8 tables, and 15 color photographs on 4 plates. $35.00 (cloth).—This slim book interweaves a description of symbiosis on a "grand scale" between some corvids and over twenty species of pines across "vast tracts of North American and Asian wildland" with the coevolutionary story of the Clark's Nutcracker (*Nucifraga columbiana*) and whitebark pine (*Pinus albicaulis*) of the western United States. The author makes the case that the nutcracker-pine relationship is a strong mutualism because nutcrackers are the most important dispersal agents of the pine seeds and the pine seeds are a nutrient-rich food essential for nutcracker survival. The critical message, delivered in the final chapter, "Is the Keystone Slipping?," is an alert that serious threats to the whitebark pine may diminish populations of the nutcracker and other animal species that depend on the pine seeds.

This is a book for pine lovers. To support his argument for the mutualism between corvids and pines, Lanner examines the phylogeny, comparative morphology, and ecology of pines, particularly the 35 species of "soft pines" in the subgenus *Strobus*. This group of species has a high proportion of species with wingless seeds: a critical adaptation to dispersal by corvids. The five species of stone pines—Eurasian and one North American—that are close mutualists with the Eurasian (*Nucifraga caryocatactes*) and Clark's nutcrackers receive the most attention. Characteristics of stone pine cone fertilization and development, and seed germination and nutritional content, are described in detail. Some of these descriptions are less relevant to the main thesis of the book than others, but they provide a rich natural history.

A review of the family Corvidae quickly focuses on the "pine birds": the nutcrackers and the Pinyon Jay (*Gymnorhinus cyanocephalus*). "Pine bird" adaptations to a diet of pine seeds are long bills, the ability to carry numbers of pine seeds, and well-developed spatial memory for retrieving cached seeds. The foundation for the pine-corvid mutualism, including experimental evidence that Clark's Nutcrackers use fixed objects as visual cues to find food caches, is provided primarily by the research of Diana Tomback, Stephen Vander Wall, Russell Balda, and Lanner's own work on seed dispersal by birds. Lanner is careful to point out that nutcrackers are not completely dependent on a single species of pine. He notes that nutcrackers use a variety of other pine seeds and foods and migrate (irrupt) when the pine seed crop fails. However, nestlings are fed pine nuts that were cached almost exclusively, and cached foods are used extensively during fall, winter, and spring when other foods are scarce.

In Lanner's view winged pine seeds are ancestral to wingless seeds, and corvids provide the selection pressure to make this transition. He presents a scenario for evolution of wingless seeds in two groups of closely related pine species: the *P. ayachuite-strobifomis-flexilis* complex in Mexico and the western United States and the *P. parviflora* complex in eastern Asia. Pine seeds cached by corvids

are less likely to dessicate and more likely to germinate than seeds dispersed by the wind. Therefore, in drier climates, characteristics in pines that enhance dispersal by corvids—vertical fruiting branches, sessile cones, non-opening "breakaway" scales, seed-retaining cone cores, and large, wingless seeds—would be advantageous.

Lanner's two main theses—whitebark pine depends on Clark's Nutcracker for effective seed dispersal, and the whitebark pine is a keystone species—superficially seem difficult to reconcile. Many animal species (birds, squirrels, and bears) extract, move, and eat whitebark pine seeds (the keystone concept), but the nutcracker is essentially the only agent of seed dispersal (a tight mutualism). The final chapter ("Is the Keystone Slipping?") presents the case that whitebark pine is a species upon which Clark's Nutcracker, red squirrel (*Tamiasciurus hudsonicus*), and grizzly bear (*Ursus arctos*) depend to varying degrees. The whitebark pine is seriously threatened by "competition from more shade-tolerant trees due to fire exclusion; heightened bark beetle attacks, also engendered by fire exclusion; loss of habitat through global warming; and quick death from a parasitic fungus." If these threats severely diminish populations of whitebark pine, over the long term and in a diffuse ways, the nutcracker, and to a lesser extent, the red squirrel and grizzly bear will suffer.

The writing is clear and the pace brisk. Figures and tables are used judiciously and the plates are excellent. Some readers may object to instances of anthropomorphism ("Whitebark pine takes its seeds very seriously indeed when it comes to distributing the tree's resources.") and unabashedly adaptationist interpretations, but this is perhaps expected in a book directed to a general readership. Details of pine phylogeny and the uses of pine nuts by people help to flesh out the story. I heartily recommend this book to all interested in good natural history writing and forest ecology in particular.—R. TODD ENGSTROM.

SKUAS AND JAEGERS: A GUIDE TO THE SKUAS AND JAEGERS OF THE WORLD. Klaus Malling Olsen and Hans Larsson. Yale University Press, New Haven and London. 1997: 190 p. 12 color and 1 black-and-white plate, 156 photographs, 20 of these in color and 7 maps. $35.00 (cloth).—This is an excellent field guide to the skuas and jaegers, and the only current reference I know that correctly illustrates and describes the juvenal and winter plumages of all seven species. For this reason, the book is an essential reference for all interested in seabird identification. The basic, alternate, and juvenal plumages of three jaeger and four skua species are all illustrated with attractive color paintings by Larsson; most or all of these are depicted in clear photographs as well. A painting of adults of the four species of skuas is oddly reproduced in black-and-white; presumably this was done to save costs—it slightly mars the otherwise excellent graphic presentation.

The book is organized into an Introductory section of 28 pages that includes such topics as "Breeding Behavior", "Skuas and Man", and "Observing Skuas in the Field"; followed by the species accounts which form the main body of the text. The species accounts contain sections on identification, geographical variation, food, and range during migration and winter (including maps). Compared to the obvious precision and attention to detail characteristic of the species accounts, I found the Introductory sections to be somewhat cursory and containing a number of questionable statements. For example, on page 9 it is stated that "Unlike gulls, skuas have supraorbital salt glands . . . ."—gulls certainly have these as well, as anyone who has watched "runny-nosed" gulls at the seashore probably knows. The dogma about clockwise migrations around the North Pacific and North Atlantic Oceans by South Polar Skuas is perpetuated, despite the lack of evidence to support the notion that any individual bird follows such a path. My final quibble is about a point of long-standing confusion about the occurrence of Brown Skuas (*Catharacta skua*) in the Caribbean. While the confusion is obviously no fault of the authors, this book would have been an ideal forum for the settling of this issue. I leave it to the reader to puzzle out whether the recovered banded skuas from "Guadeloupe" and the "Lesser Antilles" are one or two individuals, and how likely it is that either were misidentified South Polar

Skuas (*C. maccormicki*). Recent sightings from the North Atlantic suggest that Brown Skuas may be transequatorial migrants.

To me, the most novel and interesting information in this book pertains to recent observations of migrating skuas and jaegers, both from land and from ships at sea. Not only have some remarkable numbers of these birds been observed, but compilations of such observations suggest they could be used as estimates of reproductive success the previous season. This is due to correspondence within years of the proportions of juvenile birds seen. In all, the authors are to be congratulated. This is a valuable and long overdue work, skillfully and artfully executed.—RICHARD R. VEIT.

JOHN ABBOT'S BIRDS OF GEORGIA: SELECTED DRAWINGS FROM THE HOUGHTON LIBRARY, HARVARD UNIVERSITY. Introduction and commentary by Vivian Rogers-Price. Beehive Press, Savannah, Georgia. 1997: vii-xlii, 25 color plates and facing-page commentary, unnumbered and unpaginated. $125 (cloth with linen slipcase).—This publication presents the first color reproductions, in book form, of bird paintings of John Abbot (1751–1840), an English-born artist-naturalist who spent most of his long adult life in Georgia. He completed more than 5000 watercolors of natural history subjects including more than a thousand of birds, most of which are extant, and another thousand of insects, their life cycles and food plants. The remainder includes everything from mites and ticks to crabs and millipedes. Abbot's father had encouraged his early natural history illustration predilection, providing him with an abundance of fine bird books and professional instruction from teacher Jacob Bonneau. At age 22 Abbot sailed to America and landed in Virginia where he remained until the rumblings preceding the American Revolution prodded him into moving to the then less militant Georgia. He remained there for the rest of his life where he supported himself largely through the sale of natural history collections and watercolor paintings that were eagerly sought by Europeans from his agent in London, John Francillon. Abbot published little himself, but in England several volumes about butterflies, moths, and other insects were illustrated by his work. John Latham used Abbot's drawings and specimens in his book *General History of Birds* (1821–1824). Abbot met and aided Alexander Wilson in the compilation of his *American Ornithology,* and aided George Ord in the completion of this major work following Wilson's untimely death.

Probably at least partially because his work was published by others and because of his own parochialism, John Abbot's bird work was largely eclipsed by Wilson and Audubon. However, Abbot's style of presentation was apparently modeled after George Edwards, and similar to William Bartram's, with stylized foregrounds and birds perched on dwarfed trees. Abbot did not progress artistically beyond the limitation of this approach, which Wilson and Audubon did, and by the time of his death in 1840, his bird portraits appear rather archaic. Nevertheless, I find it remarkable that nearly two centuries elapsed before a selection of this important American bird artist's watercolor paintings of birds were published.

This large-format (27 × 31 cm) book begins with a 17-page introduction that provides a biographical sketch of Abbot's life, highlighting his natural history collections and paintings and his European colleagues and patrons. It is a scholarly work, with 115 endnotes that, in small type-face, at 19 pages much exceed the length of the introduction. The heart of the book is the 25 watercolors of birds that are reproduced at the same size as the originals. Each of the paintings is accompanied on a facing page by a brief commentary and any of Abbot's notes that relate to the species. The book concludes with the history and final disposition of 12 collections of Abbot's original paintings, including the collection of 181 bird portraits, painted from 1801–1810, from which the paintings reproduced in this book were selected.

I compared the plates with the originals at the Houghton Library at Harvard University. The quality of reproduction was variable but generally good (the American Oystercatcher, *Haematopus palliatus,* was faded in appearance but the Mourning Dove, *Zenaida macroura,* was as crisp as the original). The backgrounds in the reproductions were darker

and buffier than the originals and made the reproductions warmer than the originals, but muted the colors, especially the greens somewhat; and the contrast was not as crisp. This was particularly a problem for the light-colored egret and heron paintings. The selection of paintings includes a hummingbird, which was the only bird Abbot ever painted in flight, a signed and dated Bald Eagle (*Haliaeetus leucocephalus*), a vulture, an owl, three woodpeckers, one sparrow, one wren, a nighthawk, a dove, a crane, seven herons and ibises, an oystercatcher, a tern, and four ducks. I found the heavy emphasis on herons, ibises, and ducks somewhat perplexing, although many, like the preening Wood Duck (*Aix sponsa*), illustrated interesting poses or behaviors.

I have a strong bias against footnotes and endnotes, and found flipping back and forth from the introductory text to the endnotes annoying. The commentary facing each plate could have been expanded—there is a lot of empty space. Minor problems aside, this is an important work—thoroughly researched and attractively presented. I commend the Beehive Foundation for making Abott's important work accessible. I recommend the book to those with particular interest in the history of ornithology or bird art. The price may limit sales, but every academic library should have a copy.—WILLIAM E. DAVIS, JR.

OISEAUX DE LA RÉUNION. By Nicolas Barré, Armand Barau, and Christian Jouanin, illustrated by Nicolas Barré. Second edition, revised and corrected by Nicolas Barré and Christian Jouanin. Les Éditions du Pacifique, 62 rue du Couédic, 75014 Paris. 1996: 207 pp., 10 color plates, numerous color and black-and-white text illustrations, bibliography, indexes. ISBN 2-87868-027-8. Cloth. No price given.—Although only ten pages longer, the second edition of "Oiseaux de la Réunion" is an improved and slightly larger-sized volume (21 × 15 instead of 20 × 12.5 cm) than the first (which I reviewed in 1983, Auk 100:541–543). The disadvantage of a slightly larger size, of course, is that the new book fits less easily in a pocket than the original edition did. As the first edition had been out of print since 1990, the need for a second edition had been felt for quite some time. The problem was that the two original authors were no longer available for this job. Sadly, one of them, Armand Barau, who was an agronomist, had died in 1987, and the second author and illustrator, Nicolas Barré, a veterinarian, had left Réunion in 1982, the year the first edition was published. In the preface to the second edition, Christian Jouanin, Associate at the Muséum national d'histoire naturelle in Paris, who brought the project of a second edition to fruition, explains how Armand Barau's widow and Nicolas Barré persuaded him to undertake the revision. We are fortunate that he accepted this task. This important guide (which, when still in print, was difficult to get, as one had to write the authors in Réunion in order to obtain copies) has now been handsomely produced by the Éditions du Pacifique in Paris.

Although the text of the second edition is quite similar to that of the first, Jouanin has brought the species accounts up to date and has incorporated much new information, both published and unpublished, that has been gathered on the status and distribution of the birds of Réunion by a number of workers since the early 1980s. Eight of the ten color plates in the second edition are the same as the eight of the first, except for their numbering: Plates VI, VIII, and X were numbered as V, VII, and VIII, respectively, in the first edition. Two plates are new: numbers VII (including seven species of kites, frigate-birds, plovers, terns, and ducks; pages 148–149) and IX (including 4 morphs of the endemic white-eye *Zosterops borbonicus borbonicus* and several plumage variations in the endemic chat *Saxicola tectes*; pages 178–179; a very welcome addition). Interestingly, the eight original plates are better reproduced in the second than in the first edition (at least in my copies). They are fresher, their colors are crisper, and their slightly larger size mean that the birds on each plate are slightly larger, an improvement in my opinion. As in the first edition, the second has numerous black-and-white text illustrations. Not all original drawings are included, however, and some have been redrawn. For example, the attractive and evocative drawings of several species of seabirds and a fishing boat (first edition, page 89) and of shorebirds on a mudflat (first edition,

page 131) have been omitted from the second edition, a pity. The attitudes of plovers, fresh from a field sketchbook on page 138 of the first edition, has been redrawn for the second edition (page 132), but is now stiff and artistically much less interesting. A novel feature is the inclusion of a color portrait of each species, taken from the plates, next to the name of each species in the species accounts. As in the first edition, the introductory sections are illustrated with color photographs of habitats of Réunion. Whereas there were 6 such photographs in the first edition, the second has 12, thus giving the potential visitor a better overview of these landscapes.

In addition to the species accounts and the plates, this volume includes an excellent description of Réunion (pages 14–23); a thorough and fascinating (if sad) review of the past avifauna (pages 26–52, illustrated with nicely reproduced color plates of extinct species, borrowed from older publications); a detailed presentation of the modern avifauna (pages 53–76, including hints about bird watching and information about conservation); and suggestions about how to use the guide. The book ends with a bibliography (pages 194–199) and four indices (French, Latin, English, and Créole names). One regret: this book does not have a map showing the position of Réunion in the Indian Ocean (this was true of the first edition also).

Beautifully produced, full of carefully researched information, easy to use thanks to its user-friendly typography; I strongly recommend this book to all students of insular avifaunas. No one visiting Réunion can be without it. As I wrote in my review of the first edition, this book "should be mandatory reading for all school children of Réunion taking courses on the geography of their magnificent island." My thanks go to Christian Jouanin for having seen this second edition through the press.—FRANÇOIS VUILLEUMIER.

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