

REVIEWS

EDITED BY KENNETH C. PARKES

The Quaternary of the United States.—H. E. Wright, Jr., and David G. Frey, eds. 1965. Princeton, New Jersey, Princeton Univ. Press. Pp. x + 922, illus., 11 × 8½ in. \$25.00.—Knowledge is accumulating very rapidly in the general area of Pleistocene + Recent (= Quaternary) biogeography and evolutionary history. This exponential growth results from the rapid development of improved methods of dating organic matter (radiocarbon, potassium argon, etc.), in pollen core analysis, in glacial and extra-glacial stratigraphy, in oceanography, and in other areas, as well as from accelerated prosecution of classical paleontological and biogeographic analyses. Consequently, review papers and symposia grow out of date almost as rapidly as they are published.

Resulting from the seventh and latest Congress of the International Association for Quaternary Research (INQUA), at Boulder, Colorado, in 1965, the present massive volume supersedes all of its predecessors for the area in question (which, despite the title, variously relates to most of North America). Each review paper is complete in itself with its own bibliography; there are terminal indices to all. Emphasis is divided among Parts I-IV (Geology; Biogeography; Archaeology; Miscellaneous). While general background is always useful, Part II is obviously of the greatest immediate interest to ornithologists.

It is divided among "Phytogeography and Palynology" (pollen analysis), "Zoogeography and Evolution," and a summarizing "Pleistocene Nonmarine Environments" (by E. S. Deevey, Jr.). Under the second sub-heading are chapters on mammals (by C. W. Hibbard and four other active authors), birds ("Avian Speciation in the Quaternary"; pp. 529-542, by Robert K. Selander), amphibians (by W. Frank Blair), reptiles (by Walter Auffenberg and William W. Milstead), fishes (by Robert R. Miller), insects (by Herbert G. Ross), and a variety of additional invertebrate groups and topics by other leading authors.

Avian biogeographers and evolutionists should welcome these reviews of the histories of other groups, which are, in most if not all cases, better known than those of birds. This is well brought out by Selander's comprehensive review (184 titles in bibl.) and cautious, balanced conclusions, which emerge as the present standard for this subject and geographic area.

This well made and well proof-read volume, however expensive, is a must for active biogeographers, especially since reprints of the separate sections seem to have been somewhat sparingly distributed among the often multiple authors.—ROBERT M. MENGEL.

Communication and relationships in the genus *Tyrannus*.—W. John Smith. 1966. Allen Press, Lawrence, Kansas. Nuttall Ornithological Club, Publication no. 6. 250 pp., 3 tables, 51 figures. Cloth \$6.00, postpaid (obtainable from the Nuttall Ornith. Club, c/o Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts).—Nearly everyone agrees that the current classification to the tyrant-flycatchers, which comprise one of the largest and most heterogeneous passerine families, is unsatisfactory. Zimmer's unpublished manuscript, based on a classical analysis of morphology, has been tabled by the editors of Peters' Check-list in the hope that additional clues on the interrelationships of the genera and on specific limits will be

forthcoming from contemporary field and laboratory studies that emphasize comparative behavior, ecology, and anatomy. One of the new breed of students whose avowed target is the evolutionary history of the adaptive radiation that has taken place in the Tyrannidae is W. John Smith, who began his assault on the family while a graduate student with Dr. Ernst Mayr at Harvard. This publication, dealing exclusively with the type genus, is the first report of Smith's on-going field studies. The emphasis is on an analysis of the nature and integration of the display behavior of each of the 13 species of *Tyrannus*, as newly constituted by Smith. The Eastern Kingbird, *Tyrannus tyrannus*, was studied in greatest detail and serves as a basis for comparison with its congeners.

Descriptions of the vocalizations and non-vocal displays of each species are followed by discussions of the messages and functions of these communicative displays. These inventories of display behavior, along with the analyses of their adaptive significance, are well done and will provide a useful basis for comparison with other tyrannid genera. Vocal displays were recorded, analyzed spectrographically, and presented as simplified drawings of the original sound spectrograms (an unfortunate practice, resulting in the loss of some of the objectivity gained through the use of modern electronic equipment). A briefer section considers the comparative ecology and distribution of kingbirds. No specimens were collected. A glossary is included and needed (e.g., chapter 9 is entitled "Zoosemiotic Comparisons").

One of Smith's basic premises is that a study of the vocal repertoires of kingbirds provides a legitimate index to phylogenetic relationships within the genus and, on that basis, he recognizes four groups of kingbirds. He would place three of these groups in a subgenus *Tyrannus*: the "tropical" group, consisting of *T. melancholicus*, *T. albogularis*, and *T. niveigularis*; the "western" group, including *T. verticalis*, *T. vociferans*, *T. crassirostris*, and *T. couchii*; and the "eastern" group, consisting of *T. tyrannus*, *T. dominicensis*, *T. caudifasciatus*, and *T. cubensis*. The fourth group, made up of *T. forficatus* and *T. savana*, would constitute the subgenus *Muscivora*.

The removal of the Loggerhead Kingbird (*caudifasciatus* of the Greater Antilles) from the monotypic genus "*Tolmarchus*" and its assignment to *Tyrannus* had been recommended by Zimmer, strictly on morphological characters, and by several contemporary workers. There may be more resistance, however, to Smith's decision to place the Scissor-tailed Flycatcher, *Muscivora forficata*, and the Fork-tailed Flycatcher, *M. tyrannus*, in *Tyrannus*. He believes that the morphological and behavioral characters of *Muscivora* are but adaptations of kingbirds to life in the more open savannas. Other workers have recognized the close relationship of the two groups and the decision to emphasize the similarities or the differences in taxonomy is admittedly an arbitrary one. I personally consider Smith's arrangement to be preferable. Some readers will be puzzled by the use of the name *savana* for the Fork-tailed Flycatcher. It would have been prudent for the author to have mentioned the necessity of reviving the next oldest available name for the species in order to replace the Linnaean name *tyrannus* which was made invalid (homonym) by shifting the species to *Tyrannus*.

Taxonomists will be most reluctant to accept Smith's proposal that the breeding kingbirds of northeastern Mexico (*couchii*) are specifically distinct from *T. melancholicus*, the Tropical Kingbird, with which they have been associated by all workers in this century. The recommendation for specific status rests exclusively on an alleged difference in voice, for there was no critical analysis of morphological characters in the populations involved. In order to acquire a background for interpreting Smith's data, I assembled a series of specimens of breeding kingbirds

from eastern Mexico. For loan of specimens under their care I am grateful to the following individuals: Pierce Brodtkorb, John W. Hardy, Richard F. Johnston, George H. Lowery, George M. Sutton, and Dwain W. Warner. The population *couchii* is separable from the Middle American races of *T. melancholicus* only by virtue of its more pointed wing and its larger size, as reflected in its longer wing and tail. There are no useful differences in plumage pattern or coloration. A cline of diminishing size, from *couchii* in southern Texas to *T. melancholicus chloronotus* in southern Mexico and Central America, is paralleled by similar north-south clines in a number of Mexican species. A rather pronounced step in this cline can be demonstrated in specimens from the central region of the Caribbean lowlands of Mexico (see Table 1). The critical zone of intergradation would appear to be northern and central Veracruz, eastern Puebla, and eastern Hidalgo. There is no morphological evidence to suggest any relationship other than the usual type of intergradation between a larger, partially migratory race in the north with a smaller, resident race immediately to the south.

TABLE 1
WING LENGTH (IN MM) OF BREEDING KINGBIRDS IN THE CARIBBEAN LOWLANDS
OF MEXICO

Sample	Males			Females		
	N	Mean	Range	N	Mean	Range
Texas, Tamaulipas	15	123.5	118-127	7	119.6	117-125
Southern San Luis Potosi	9	121.6	115-127	7	118.3	116-120
Southern Veracruz, Puebla, Morelos, Oaxaca	30	114.5	107-123	22	110.7	105-116
Chiapas, Tabasco, Yucatan	7	111.3	107-116	3	108.3	107-109

Just how different is the voice of *couchii* from that of the wide-ranging *T. melancholicus*? Smith makes the significant observation that there is considerable geographical variation in the vocal repertoire of *T. melancholicus* and, further: "it will take a larger tape-recorded sample than I have at present to enable proper description of the vocalizations, and the following account [of *T. melancholicus*] must be taken as provisional." In view of this geographical variation in voice, any significance attached to a difference in the voice of one segment of the species' population should be predicated on a thorough analysis of variation throughout the range of the species. Equally essential is an exhaustive field study in the critical area of contact, in this case the central eastern lowlands of Mexico, involving the collecting of birds of known vocalizations. Smith performed neither of these prerequisites. More disturbing yet, in view of the decision to split *couchii* away from *melancholicus*, is his own observation implying a certain amount of combining of the features of both repertoires in individuals within the critical contact zone. "Possibly there is a gradual dialect change in the repertoire of *T. couchii* as one moves southward—but why should such a change appear to converge with a *T. melancholicus* feature as the range of that species is approached?" Why, indeed? This apparent intergradation is a question that must be answered satisfactorily before Smith's recommendation can be taken seriously.

In view of the conflict between extreme similarity in morphology and an alleged difference in voice, it is unfortunate that Smith did not devote additional field work to this problem before making a decisive taxonomic decision, especially since he writes that he was aware of the vocal differences as early as 1962 and the study

was not completed until 1965. He spent only three days in the region from southern Tamaulipas to southern Veracruz, the zone of intergradation, and *no* original field recordings were made of birds within this critical zone. He did borrow some cuts of Mexican recordings from the Laboratory of Ornithology at Cornell and these, along with subjective notations made of three or four individuals in the field, are the only bases for the comparative analysis of the vocal repertoires.

I would also take issue with certain points in Smith's reconstruction of the evolution of kingbirds. Regardless of whether or not a divergence in voice has effected a partial barrier to interbreeding between the forms *couchii* and *T. melancholicus*, *couchii* is clearly a relatively recent derivative of *T. melancholicus*, not of the "western" group of kingbirds (*vociferans*, *verticalis*, and *crassirostris*), as proposed by Smith. His contention that *T. tyrannus* "could well be the result of an invasion of eastern North America by a West Indian stock" seems highly improbable. If he is correct that *T. tyrannus* is more closely related to West Indian kingbirds than to those of Middle America, then it would seem more likely that mainland *tyrannus* invaded the Greater Antillean region and that this colonization from the continent led to the development of the two insular forms, *cubensis* and *caudifasciatus*. The insular Gray Kingbird, *T. dominicensis*, is closer to the Neotropical *T. melancholicus*, in my opinion, than to the "eastern" group as suggested by Smith.

Though it is almost axiomatic that vocal characters should be important in discerning relationships among these flycatchers, as they are in *Empidonax* and *Myiarchus*, taxonomists will lament their use without a concomitant evaluation of morphological characters as well. It would have been helpful to know the relative plasticity or conservativeness of the various plumage patterns and pigments that run through the genus, as well as of the vocal characters. Detailed comparisons between continental and West Indian populations and between widely separated populations of the continental species might have provided meaningful clues. If, in his continuing studies of other tyrannid genera, Smith has reason to question specific limits, in particular, his field methods should be redesigned to answer basic questions relating to the relationships of the respective forms in the critical zones of overlap or intergradation.—WESLEY E. LANYON.

Vibra el llano.—Paul Schwartz. 1965. Instituto Neotropical, Apartado 4640 Chacao, Caracas, Venezuela. Two (nos. 2 and 3) 12" 33 $\frac{1}{8}$ RPM monophonic recordings. Program notes enclosed. Available through Laboratory of Ornithology, Cornell Univ., Ithaca, New York. \$7.75 each.—These are the second and third in a superb series of recordings of Venezuelan birds released by Schwartz's Neotropical Institute. The first, "Bird songs from the tropics" was issued in 1963 (see *Auk*, 82: 114, 1965) and contained songs and calls of 40 species with commentary by Schwartz. The present two treat 94 species. They differ from each other slightly in the species covered but more importantly in that number 2 has commentary while number 3 has none. Program notes are in both English and Spanish.

Paul Schwartz is unsurpassed in the difficult task of recording the voices of birds in the field. Thereafter, he is without equal in his ability to provide meaningful and engaging commentary on the recordings. And finally, he puts his commentary and the birds' voices together so gracefully that the listener quickly gets the feeling that he is taking a marvelously productive "bird walk" with the commentator, and that the whole collection of species was easily available within a walking distance encompassing the time that it takes to play the records.

These two records survey the avian sounds of the llano, a vast, rolling, tropical grassland, broken by riparian gallery forest and islands of dense mato that resemble tropical rain forest. Schwartz takes the listener through the seasons and the habitats, including open woodland and scrub, lagoon and palm grove, and forest-bordered river bank in the dry season, and woodland and savannah in the wet season.

The first disc (no. 2) treats 69 species. Side A is concerned with the dry season, and side B with the wet. Each side begins with an introduction to the character of the llano in the season in question. The species are not treated in any formal order but appear in the nearly random fashion in which one might expect to encounter them in real life. Schwartz's genius appears in his adroitness in passing from consideration of one species to another. Occasionally it is evident that the recording of two or three forms featured in sequence on the record has merely been transferred to the phonograph disc as it conveniently happened, Schwartz adding commentary. But that simply could not have been the case with so much success so often as it might seem from hearing the record. Often, as Schwartz completes his comments on one species while it still calls or sings, the next form to be dealt with (and sometimes the one after that) can be heard in the immediate background. Then, as Schwartz introduces you to the next species, the one just completed may continue to vocalize as the new one comes in loud and clear. In a few places, the concluding remarks on a species are followed by the sound of the bird flying away. Of course, given good recordings in the field, a master sound engineer (which is what Schwartz is) can accomplish the transitions heard on this recording, using the various mixing devices available in professional studios.

In spite of their superb natural flow and unity, these recordings would still fail were it not for their astounding clarity and fidelity. Schwartz achieves a higher signal to noise ratio than most people do in a laboratory. In fact, some birds are so closely and clearly "miked" that they seem unreal, simply because under the best conditions in the wild one would not be able to hear so clearly and closely as the well directed parabolic reflector and microphone can hear.

Schwartz gives extensive attention to the repertoire of a species, when he has recordings sufficient to allow this. Thus, one hears the songs and calls and through the commentator's description gets some idea of the concomitant behavior of the bird, the conditions under which it is vocalizing, and perhaps even a clue as to why it is singing as it is.

The following sequences are among the highlights on record no. 2: three species of tree-ducks (*Dendrocygna bicolor*, *autumnalis*, and *viduata*) are encountered in a flock and distinguished from each other; a group of the large rodents called capybaras (*Hydrochoerus*) is frightened and in turn causes a group of hoatzins (*Opisthocomus hoatzin*) to call; a striped cuckoo (*Tapera naevia*) sings a two-note song as a tropical storm gradually builds to crashing thunder and a down-pouring of rain. The storm fades and the cuckoo simultaneously resumes singing but changes to three- and five-note songs. Some of the aurally most astonishing vocalizations include the very nasal cry of a wren (*Campylorhynchus nuchalis*), the piping notes of an ibis (*Cercibis oxycerca*) sounding like an audio test signal shorting in and out, the unlikely "boiling" chorus of the anis (*Crotophaga major*), and the heaving belch of the screamer (*Anhima cornuta*). I was also intrigued by the song of the Venezuelan meadowlark (*Sturnella magna*, probably *meridionalis*) which is most un-Eastern Meadowlark-like to my ear, and by the song of the Common Potoo (*Nyctibius griseus*), which appeared on Schwartz's first recording. The birds here sing an equally musical but different series of notes from those on the first record.

The second record (no. 3), without commentary, is valuable mainly as background sound, I have concluded, and can be listened to most pleasurably if one is not interested in what birds are making the sounds. Of the 76 species represented on this disc, 50 duplicate species on number 2. I expect most listeners will miss the lack of commentary here and will find Schwartz's delivery on the first such that it in no way interferes with the enjoyment of the record, while considerably increasing understandability. There is very little criticism to be made of these recordings. I noted a few misspelled names in the notes, but they are a minor distraction. Schwartz has made a contribution to ornithology with these recordings. They stand by themselves as descriptive works on a facet of the ecology of a tropical biome. Moreover, they add to the growing body of vocal "specimens" available to scientists interested in adaptive and evolutionary significance of vocalizations. In these records alone, for example, one could find stimulus for launching comparative studies of the songs of turdine thrushes, or the relationships between the bobwhites (*Colinus cristatus* is presented here and is extremely similar to *C. virginianus* in song). I am aware from personal communication with Schwartz that he is attempting to gather material on vocalizations of all Venezuelan species of certain difficult tropical families (such as Formicariidae). A long-play summary of his results would undoubtedly be an invaluable contribution to the intriguing studies now being carried out on the anatomy of some of these assemblages. Let us hope for more such records.—JOHN WILLIAM HARDY.

Oologica Belgica.—R. K. Verheyen. 1967. Brussels, Inst. Royal des Sci. Nat. de Belgique. Text: 331 pp., illus., paper covers; plates: 72, almost all col., unbound in folder. \$16.00 postpaid.—This work, in French, was begun by the late René Verheyen and revised and completed by Rudolf Verheyen; the plates of eggs were painted by Paul de Vree. The front matter contains general information, such as structure and formation of an avian egg, its physical characteristics and how they are described, some remarks on identifying and collecting, and comments on the relation of oology to ornithology generally. The egg-shape chart appears to be derived from Preston (*Auk*, **70**: 166, 1953), the terminology mostly being the same as applied to Preston's shapes by the present reviewer and included in front matter of the *Handbook of North American birds*, vol. 1, 1962. There are 10 patterns of egg markings with descriptive terminology.

The bulk of the text treats, under (usually) trinomial headings, the birds known to breed in Belgium within the span 1900–64, including introduced species that have become established. Topics covered under each are: identification (of the bird), habitat, nest location, nest description, laying season (in Belgium), clutch size, egg description (color, markings, etc.), dimensions, incubation period, number of clutches per year, and reference to a plate in the folder.

Under dimensions are given sample size(s) plus standard deviation, in addition to maximum and minimum length and breadth; also, for many species, egg weight. Coverage includes: Belgium (by Verheyen and others), Holland (Hellebrekers), Britain (Jourdain *in* Witherby; Bannerman), Germany (Niethammer), and "Europe" (various authors)—the scope being much broader geographically than the title indicates. Scattered through the text are 40 excellent full-page halftones, usually showing parent bird at nest but some showing eggs *in situ*. There is a good index.

The colored plates, though not outstanding, are good. For some of the larger species there is a single egg or two; for small birds the number ranges up to 25

of a single species, filling an entire plate and showing variation in shape and color or markings. There is no explanation in plate captions that certain brownish grebe eggs illustrated were essentially white when laid, though this color change is mentioned in text.

Since text plus plates comprise more than a portable equivalent to a fully labelled representative collection of eggs of birds of western Europe and vicinity, the many uses of this work—at the species level—are obvious. Except for using some of the same measurements, this treatise has essentially no overlap with the worldwide catalog of Schönwetter (see *Auk*, **80**: 390–391, 1963).—R. S. PALMER.

Wilhelm von Nathusius 1821–1899 on avian eggshells. (A translated and edited version of his work.) C. Tyler. 1964. 104 pp. in paper covers plus 18 loose plates, together in portfolio. Privately printed. Obtainable from Berkshire Printing Co., Reading, England, for about \$6.20 postpaid.—This is a curious work. Professor Tyler has read (and translated most of) the papers by von Nathusius that relate in any way to eggshells. Since these writings were found to be verbose and repetitive, he has extracted such items as he considered worthwhile and has arranged these in 11 chapters on the shell and membranes and their characteristics, plus a final chapter on use of eggshells in avian taxonomy. The republished plates show various structural details. All in all, it is a specialized and not exactly uncomplicated subject. Von Nathusius was diligent and persistent, making his observations and publishing on this topic over a span of 30 years. His work either was overlooked or not regarded as a useful foundation for further investigation. He seems to have been ahead of his time as regards some facets of the study of eggshells, though he definitely was behind in matters of general biological concepts—as pointed out by the translator in an interesting introductory essay.—R. S. PALMER.

The Shell bird book.—James Fisher. 1966. London, Ebury Press & Michael Joseph. Pp. 344, illus. 8 × 5 in. 25 shillings.—Americans (and perhaps the British as well) find it hard to believe James Fisher is the name of a man and not of an organization. The name appears on publications emanating from the eastern side of the Atlantic with something like the same frequency as “Roger Tory Peterson” does on our side; it is hardly surprising that the two men are old friends and collaborators. Fisher comes from a land with a long tradition of ornithological literature; in 1954 (*A history of birds*) he informed us that an average of one bird book a week is published in Britain. Many of these, of course, deal specifically with the British avifauna, which is neither large nor spectacular. There is, therefore, a high level of redundancy in British bird books. Yet, somehow, James Fisher seems to be able to find *different* approaches to British natural history. He has recently produced a well-received nature lover’s atlas of England, Scotland, and Wales, with details of local distributions of flora and fauna, addresses of County societies, location and rules of sanctuaries, etc. And now he has managed to write a *different* British bird book.

Instead of being a book about British birds, this may more correctly be said to be a book about *the study* of British birds. It is an “everything else” book—it doesn’t compete with the field guides or with the *Handbook*, but supplements them. It opens with the paleontological, prehistoric, and historic record of the British avifauna, with thumbnail biographies of the early naturalists. A chapter misleadingly entitled “The peculiarity of British birds” is actually a detailed zoogeographical analysis of the

breeding avifauna, and is followed by a short chapter, equally mistitled, called "The migrants." The chief subject of the latter is neither the migrants nor migration, but rather the history and techniques of the *study* of migration. Another largely historical chapter is "Bird protection." Remarkably complete is a short chapter called "Bird gardening," a very British-sounding term covering the use of feeders and nest boxes to attract birds. The historical emphasis of the book is well illustrated by the brevity (3½ pages of text) of the chapter on the study of bird song, while 40 pages are devoted to "Birds in literature, music, and art." Fisher then discusses "The ornithologists," which turns out to mean those of the Nineteenth Century. A long "Guide to the birds' provinces" includes a basic bibliography of British birds, plus lists of refuges, nature reserves, organizations, and regional publications, arranged by vice-county. Last comes what is perhaps the nearest thing to a traditional publication in the entire book: an up-to-date check-list of the birds of Great Britain and Ireland at the species level, compiled by Fisher "on my own responsibility." It is the first such list to include data on fossil birds. This list, in reprint form, was supplied to delegates to the XIV International Ornithological Congress at Oxford.

Even though not a "bird guide," the book is profusely and heterogeneously illustrated. There are maps, portraits of people, photographs of objects and of places, and black-and-white reproductions of bird art of several centuries. There are 48 small but attractive watercolor vignettes by E. A. R. Ennion, and twelve color paintings, by several artists, of British sanctuaries and refuges.

The exact nature of the participation of the Shell Oil Company in the production of this book is nowhere specified or acknowledged; the word "Shell" in the title, the company's well-known scallop trademark on the dust-jacket, and the copyright notice, are the only intrusions of the presumably sponsoring organization. The Shell people are to be congratulated, as is James Fisher, for the production of a truly different British bird book, at a bargain price.—KENNETH C. PARKES.

Red data book. Volume 2—Aves. 1966. Compiled by Jack Vincent. International Union for Conservation of Nature and Natural Resources, 1110 Morges, Vaud, Switzerland. Ring binder with 275 loose-leaf pp. \$10.—This useful publication is an inventory, sponsored by the International Council for Bird Preservation, of the rare and endangered birds of the world. Each species or subspecies is allotted a single sheet. Most are on white sheets, but pink sheets are used for those forms thought to be in immediate danger of extinction (if not already extinct), and green for those forms previously thought to be endangered but now considered safe. The change in status may be a result of known population increase, as in the Trumpeter Swan, or simply because new information has shown that the bird was not as rare as had been thought, as in the so-called Giant Canada Goose.

The information presented for each species or subspecies, so far as possible with present knowledge, is as follows: present distribution, former distribution, status (i.e., rare but increasing, very rare and decreasing, etc.), estimated numbers, breeding rate in wild, reasons for decline, protective measures taken, protective measures proposed, number held in captivity, breeding potential in captivity, and remarks and references.

Certain spectacular species, notably the Whooping Crane and California Condor, have received so much publicity as to cause them to overshadow many other truly endangered forms. About 50 species and subspecies are assigned "pink" status in this edition of the *Red data book*. For most of these the population size is

either unknown or is thought to be less than 100 individuals. Discouragingly many pages bear such statements as "last seen in 1938" or "must be very near extinction."

It is obvious that wide circulation of this volume (the companion Volume 1 covers mammals) will help to call to the attention of biologists all over the world the plight of such little-known birds as the Seychelles Kestrel (*Falco araea*) and the Western Tragopan (*Tragopan melanocephalus*). Whether such information will reach government officials responsible for formulating and enforcing protective measures remains to be seen. Certainly the scientific community should cooperate in declaring a moratorium on the collecting of any form whose numbers are known to be so low as to be critical.

The introduction states that "no attempt has been made to include in these pages any representative of that vast assemblage of species which are only termed rare because they are known from but a few examples, a single specimen, or just a type locality. In most of such cases information is so scanty that it is impossible to guess at the true status." Nevertheless, some such forms have found their way into the book. The description above would certainly apply to *Falco kreyenborgi*, *Apus loulsoni*, *Erihacus ruficeps*, and *Sericornis nigroviridis*, for example.

Purchase of a copy of the *Red data book* entitles the owner to receive periodically a set of new and amended sheets. One such issue, of 36 sheets, was mailed in November, 1966, and another in June, 1967.—KENNETH C. PARKES.

ALSO RECEIVED

Distribution of North Atlantic pelagic birds. Serial atlas of the marine environment: Folio 14.—Robert Cushman Murphy. 1967. American Geographical Society, Broadway at 156th Street, New York, New York 10032.—This publication consists of nine loose-leaf folios, the first being a clear and concise text which discusses the status of our present knowledge of the subject and various factors affecting the distribution of pelagic birds and comments briefly on each species involved. The ranges and breeding sites for 37 pelagic representatives of nine families of Procellariiformes, Pelecaniformes, and Charadriiformes are shown on 32 $8\frac{1}{4} \times 7$ inch maps printed on the other eight folios. Pen and ink sketches by Arthur Singer, of each species, accompany the maps. This Folio should be added to every reference library.—M.A.J.

A lifetime with the birds. An ornithological logbook.—Earle R. Greene. 1966. Privately published. Printed by Edwards Brothers, Inc., Ann Arbor, Michigan. Pp. ix + 404, illus., 9×6 in. \$6.00.—A highly personal account of the author's many years of observing birds, containing some items and photographs of historical interest.—M.A.J.

Where to watch birds.—John Gooders. 1967. Andre Deutsch Limited, 105 Great Russell Street, London, 313 pp., 4 plates. $7\frac{3}{4} \times 5$ in. 30 shillings.—A useful guide which describes over 500 places in England, Scotland, and Wales, listing various species regularly present in each. The local maps and instructions on routes are so detailed that one cannot conceive of the birds daring to be absent.—M.A.J.

Travels and traditions of waterfowl.—H. Albert Hochbaum. 1967. University of Minnesota Press, Minneapolis. Paper. Pp. x + 301, illus., $10 \times 6\frac{7}{8}$ in. \$2.95.—A paperback reprint of the text originally published in 1955 (reviewed, *Auk*, 74: 107–109, 1957).—G.D.S.

The technique of wildlife cinematography.—John Warham. 1966. London and New York, Focal Press, 222 pp., illus., $8\frac{3}{8} \times 5\frac{1}{2}$ in. 42 shillings.—Techniques used in photographing animals with a movie camera are described. Among the sections included are ones on choosing equipment, shooting, using baits and lures, using hides and blinds, field zoology, and editing and presentation. The book is mainly concerned with filming wild animals in their natural surroundings.—G.D.S.

Buller's Birds of New Zealand.—E. G. Turbott (reviser and editor). 1967. East-West Center Press, Honolulu. Pp. xviii + 261, 6 figs., 48 col. pls., $14\frac{1}{4} \times 9\frac{3}{4}$ in. \$25.00.—This handsome book reproduces the 48 colored plates by Keulemans which accompanied the text of the second edition of W. L. Buller's *A history of the birds of New Zealand* (1887–88). It also includes Buller's informally written, "popular history" sections of that edition, which were concerned in large part with the effects of encroaching civilization on the avifauna of New Zealand. Appropriately, the editor has added for each species an assessment of its present status. The introduction contains an account of Buller's life and works.—M.A.J.