

BOOK REVIEWS

Biology and Comparative Physiology of Birds, Volume II.—Edited by A. J. Marshall. 1961. Academic Press, New York and London. x + 468 pp. \$14.00.—The two volumes of this work provide an excellent, comprehensive, and up-to-date review of the biology of birds (Volume I, reviewed by T. R. Howell in *The Auk*, 78: 279-282). According to the publishers "the work is designed not only for ornithologists but also for other biologists who require specific information concerning any aspect of avian biology or physiology. In addition to the full treatment of the subjects, the references following each chapter form an excellent guide to the literature."

Volume II contains 12 chapters (XIII-XXIV), ranging in length from 18 to 74 pages. A wide range of topics is covered, but the emphasis tends to be on behavior and on reproductive physiology. The work is a quite advanced treatment, each chapter being written by a specialist who has been active in research work in the particular field he reviews. A detailed table of contents and an outline at the start of each chapter help keep the reader oriented. Most of the chapters are factual, well documented, quite clearly written, and historically minded. The names of the authors, together with their subjects, will give most ornithologists a good idea of the authoritative and scholarly nature of the work. Some remarks on each chapter in Volume II seem in order, continuing the sequence of the reviewer of Volume I.

XIII. The Central Nervous System, by A. Portmann and W. Stingelin, emphasizes brain topography and distribution of groups of nerve cell bodies. This chapter helps provide a solid foundation necessary for further understanding of the central nervous system in birds, but one is left with an essentially static picture, no doubt reflecting the primitive nature of current knowledge of the dynamics of the avian brain. The authors have devised a "cerebral index," which they have applied to many birds with the interesting suggestion that the relative mass of the cerebral hemispheres increases with the body weight in practically all groups.

XIV. Sensory Organs: Skin, Taste, Olfaction, and Equilibration, by A. Portmann, is also a primarily morphological account. One is impressed with the extent to which our knowledge of the structure of sense organs seems to have out-paced knowledge of their functioning, as for example, in the complex innervation of the skin of birds.

XV. Vision and Hearing, by R. J. Pumphrey, provides some very stimulating ideas, emphasizing the great speed of avian visual and auditory reactions, compared with those of man. Both structure and function are dealt with in some detail, but the subject is a very large one and the condensed account is a little vague in spots. Pumphrey's conclusion that most birds are probably not sensitive to sounds above 10 kilocycles seems unduly restricted.

XVI. Endocrine Glands, Thymus, and Pineal Body, by E. O. Höhn, excludes the gonads, since the latter are considered in subsequent chapters. This useful review, like Chapter XVIII, well illustrates the great extent to which current knowledge of the basic endocrine physiology of birds depends on the domestic fowl, pigeon, and duck. The chapter includes a good summary of the relationship between molting and shifts in endocrine balance.

XVII. Sex and Secondary Sexual Characters, by E. Witschi, considers the genetics and physiology of sex differentiation and also provides a very useful and stimulating summary and discussion of the mechanisms of endocrine control over

sex and seasonal differences in plumage, bill color, and special ornaments. Witschi emphasizes the role of the pituitary in the control of secondary sex differences in plumage and extends to certain other birds his conclusion, originally based on his investigations on weaverbirds (illustrated in color in the frontispiece of the book), that LH may in some birds stimulate male-type plumage independently of the gonads. Witschi describes Caridroit's demonstration that the henny plumage worn by the mallard drake during the summer is induced by the testicular hormone in the spring, but few ornithologists will accept his contention that this dull plumage should therefore be considered the true nuptial plumage of the species.

XVIII. Reproduction, by A. J. Marshall, deals with the anterior pituitary, gonads and accessory sexual organs, with special reference to reproduction. A great deal of literature is cited in support of this critical and modern account of a complicated subject.

XIX. Energy Metabolism, Thermoregulation, and Body Temperature, by J. R. King and D. S. Farnner, is the longest chapter in the book. It is scholarly, quantitative, replete with helpful diagrams and useful tables, and cites over 200 selected references. The treatment emphasizes adaptations to the environment. One might wish that more than one paragraph (p. 267) had been devoted to discussing Allen's Rule and Bergmann's Rule.

The authors remark that a sufficient quantity of information has been accumulated now to indicate that the range of normal, adult, deep-body temperatures among the entire class is only of the order of six or seven degrees. No body temperatures are given for birds in flight, although one of the authors had actually accomplished this difficult feat of measurement on a wild species. The authors note (p. 258) Zeuthen's suggestion that the air sac system of birds may be of importance in the dissipation of heat during flight, and state that this aspect of thermoregulation deserves further investigation.

This chapter closes with a discussion of the recently analyzed phenomenon of temporary hyperthermia as an energy-saving device in certain goatsuckers, swifts, and hummingbirds.

XX. Flight, by R. H. J. Brown, considers the mechanics of flying in birds, and deals with both gliding and flapping. It is the shortest chapter in the book. Brown provides a good, basic, over-all organization and some significant and stimulating ideas, but the detailed explanations are very condensed and do not always seem to be as clear as they might be. Somehow the briefness of this chapter (18 pp.) does not seem entirely adequate for a phenomenon that is the central feature of avian biology. Only two papers less than 10 years old are cited, and one of these is on insect flight.

XXI. Breeding Seasons and Migration, by A. J. Marshall, describes the internal and external factors regulating breeding seasons and the impulse to migrate. This account is characterized by its broad viewpoint and research outlook with emphasis on and awareness of the gaps and uncertainties in our knowledge. Indeed, these attributes are, to a considerable degree, true of the entire book, no doubt in good part tracing to the editor and to his selection of authors.

XXII. Long-Distance Orientation, by the late G. Kramer, is a critical discussion and summary by a modern pioneer of this perennially favorite topic. Field experiments have shown that both directional orientation and goal orientation by migrating birds exist. Kramer summarizes the well-known experiments by himself and his associates on sun orientation, discusses the mechanisms of homing, ap-

praises the evidence for nocturnal orientation, and describes facts of visible migration as related to experiments.

As Kramer says (p. 352), "In the field of biology there is hardly another subject in which opinions have differed so greatly as on the question of homing orientation." He felt the G. V. T. Matthews' hypothesis that a bird can perceive the arc of the sun's movement within very short times and can quickly estimate the sun's elevation at noon (and thus estimate its latitude) had been disproved. Elsewhere in the book, Pumphrey (p. 58) holds that a bird can see so much faster than a man that it could easily perceive the arc of the sun's movement, although the sun might appear stationary to us. Throughout this chapter, Kramer recognizes the limitations of current information, and emphasizes that various observations all "indicate that there exist means of orientation still unknown to us."

XXIII. Behavior, by R. Hinde, is an excellent review and analysis of bird behavior from the customary viewpoints adopted by the European ethologists, *i.e.*, with emphasis on stereotyped behavior patterns, appetitive and consummatory behavior, sign stimuli and releasers. In addition, about half the chapter deals with various functional groups of activities—flocking, feeding, relations to predators, fighting, reproduction, and vocalizations.

Learning is recognized as entering into many phases of bird behavior, and ornithology seems destined to draw away gradually from the cliché that the behavior of birds is "almost entirely instinctive," although no doubt species-typical behavior depends ultimately and essentially on genetic differences between populations.

Bird behavior has been a popular subject for review, and this current treatment clearly reflects the trend toward a broad perspective and a synthesis of diverse viewpoints of various students of animal behavior, along with development of a simplified, objective, and consistent terminology.

XXIV. Bird Populations, by J. A. Gibb, discusses in a clear and well-documented way the measurement, growth, variation, and regulation of numbers of birds. "There is no easy or straightforward way of counting bird populations over extensive blocks of country, and various indirect methods have been used. . . ." Gibb stresses the importance of food supply and territorial relations in the regulation of population density, and draws attention to the relative neglect of the potential significance of autumn and winter territories in this regard.

At the end of Volume II there is an author index and a brief subject index. However, species of birds mentioned in the text are not included in the index.

There are numerous good illustrations throughout the text. Typographical errors are very rare but not absent (*e.g.*, Narler for Marler on p. 407), and errors of fact (Davis and Domm worked on chickens and not pigeons as stated on p. 196) seem likewise to be of minor and extremely rare occurrence. On the whole, each author discusses and attempts to give due recognition to the viewpoints of other qualified workers in his specialty when these views differ from his own.

Considering the large number of authors involved the book has remarkably good over-all integration and coverage. A little more information on the genetics of birds and more information on nests and nest building of birds would have seemed appropriate in a comprehensive survey of the biology of birds.

In conclusion, this work on the biology of birds meets very well a long-standing need for a modern and detailed account of ornithology in the English language. It will no doubt be highly useful to a good many biologists for a long time to come,

and the perspective furnished by it should greatly stimulate the further advance of ornithological knowledge.—NICHOLAS E. COLLIAS.

Bird Study.—Andrew J. Berger. 1961. John Wiley and Sons, Inc. xi + 389 pp., 178 figs.—There seems little point in attempting a comparison between this book and the other general, elementary texts on ornithology that have appeared recently. Despite the fact that the present work would not suffer from such a comparison, the scope of *Bird Study* warrants individual consideration.

This was not intended to be a definitive text on the subject. As specifically stated in the preface, it was written for use in a one-semester course for liberal arts students, in which Pettingill's *A Laboratory and Field Manual of Ornithology* would be used as a supplement. Accordingly, the author has permitted himself the luxury of a modicum treatment of morphology and physiology. A perusal of the "Contents" substantiates the implication, inherent in the title and spelled out in the preface, that the emphasis ". . . is on the living bird." The 11 chapters are headed, "Introducing the Bird," "Field Identification," "Bird Habits," "Migration," "Behavior," "Song," "Courtship and Nest Building," "Eggs and Young," "Structure and Function," "Conservation," and "Systematics." Eight pages of individual chapter references, 11 of "Common and scientific names of birds," and a 17-page index complete the book. The numerous illustrations are well chosen and generally very good.

The emphasis on behavior, both in the specific ethological and in the more general bionomic sense, may come as a surprise to those who consider Berger as primarily an avian anatomist. To preclude any suggestion that the book fails in the author's intent to supply a sufficiency of anatomical background for the purpose intended, we should note that in addition to the one chapter on structure and function, further morphological information is incorporated elsewhere, notably in Chapters one, six, seven, and eight.

Despite its intriguing aspects, the chapter devoted specifically to behavior was, for this reviewer, one of the least satisfactory in the book. This is not, necessarily, an indictment of the manner in which it was written. In fact, the calculated avoidance of anthropomorphic reasoning is extremely gratifying. Rather, this objection stems from the reviewer's impatience with the inane welter of terminology with which ethologists seem bent on duplicating some of the earlier aura of ecology. Readers unsympathetic toward the Lorenz-Tinbergen school, specifically, are not likely to enjoy this section.

In view of the relatively heavy treatment of the "doing" bird, Berger manages to include a surprising variety of other subject matter. Much of the material reflects the current literature, despite the fact that the treatment is, of necessity, frequently scanty. Thus, the section on migration (p. 123) explains proximate and ultimate factors but does not mention the refractory period. Despite (or because of?) the brevity in many cases, however, nonbiology majors may acquire an insight into a considerable amount of subject matter impinging upon, but not usually treated in, ornithology courses. In this connection, most of the references listed are cited in the text. Numerous experiments and reports mentioned throughout various chapters, however, are not included in the literature citations. The author rationalizes that most of this information is common knowledge to ornithologists and therefore that excessive documentation would merely be distracting in an elementary text. Nevertheless, he envisions the work as a possible ". . . source book for teachers in elementary and high schools and for parents of inquisitive

children," as well as a college text. It may well be, therefore, that some of his readers would benefit by knowing where to find such things as Yeatter's discussion of the possible effects of excessive air temperature on the southern distribution of Ring-necked Pheasants (p. 73), or Yeagley's paper on the postulated effects of the Coriolis force in bird navigation (p. 127).

The few errors of commission noted were mostly of small moment. *Pseudotsuga taxifolia* has been in synonymy for some time (p. 119). Kudzu has proved to be less than a blessing in the forestry-conscious southeast (Fig. 3, p. 313), and it came as a surprise to this reviewer to see the Galliformes categorically listed among the birds possessing a "penis" (pp. 190 and 301). One of the most delightful facets of the text is the author's candid and frequently iconoclastic exposé, ranging from the ostensible perspicacity of some ethologists (p. 133), through the diarrhetic pens of some taxonomists (pp. 337 and 341). Furthermore, *Bird Study* assumes considerable stature through its emphasis on the "principle approach" to its subject. Biology has traditionally been taught as a cold, hard core of facts, to be memorized and then regurgitated when the proper string was pulled. It is patent that facts are necessary before thinking is possible, but the assimilation of facts all too frequently has been, and is, an end in itself. It is refreshing, therefore, to encounter an elementary text in which man's biological ignorance is not only admitted but glaringly delineated, and in which the reader's attention is directed toward some of the more spacious and hence significant questions that challenge our ingenuity. Berger notes the necessity of a teacher to go with a text in any good college course; granting the assumption, *Bird Study* could provide the basis for a good course in ornithology.—ERNEST E. PROVOST.

Hummingbirds.—Crawford H. Greenewalt. 1960. Published for The American Museum of Natural History by Doubleday and Company, Inc., Garden City, New York. xiv + 250 pp., 69 color plates, 37 additional illustrations. \$25.00.—This remarkable book is truly a unique contribution to ornithology. The color plates, which illustrate 59 species, constitute an almost unbelievable technologic and artistic attainment in high-speed color photography. Actually these plates defy description and must be seen to be appreciated. The accompanying text is excellently presented with numerous diagrams and drawings. The arrangement, design, and layout of the book give it a technical excellence that is rarely, if ever, excelled. The actual quality of the text is somewhat variable, perhaps the almost inevitable consequence of attempting to present relatively complex scientific material for the layman. There are excellent discussions of hummingbird colors and hummingbird flight, the latter placed in admirable perspective with animal flight in general. On the other hand anthropomorphisms are not infrequent, and there are instances in which emphasis on the spectacular has obscured or supplanted the possible rationalization of a phenomenon. It is readily apparent that these are devices intended to enhance popular communication, although I personally remain unconvinced that such are really necessary. Nevertheless, the text is generally very effective and provides a good resume of the general biology of the Trochilidae. Moreover, I must emphasize that, were there no text whatsoever, the plates alone would constitute a highly significant contribution to ornithology. The book will have a highly useful function in the library of any ornithologist; it will be a treasured item in the collection of most connoisseurs of good books.—D. S. FARNER.

Dimensional Relationships for Flying Animals.—Crawford H. Greenewalt. 1960. Privately produced by the author, Greenville, Delaware. 7 pp., 17 graphs,

64 pp. of tabular data.—The author has gone to extensive effort to summarize in tables and graphs a vast quantity of data on animal flight and flying animals. The graphs relate (1) logarithm of wing length and logarithm of body weight for birds and insects, (2) logarithm of wing length and logarithm of body weight for hummingbirds alone, (3) logarithm of body weight and logarithm of wing area for insects and birds, (4) logarithm of body weight and logarithm of wing area for birds, (5) logarithm of wing area and logarithm of wing length for birds, (6) the same for insects, (7) the same for bats, (8) logarithm of wing length and logarithm of wing spread for birds, (9) logarithm of wing weight and logarithm of wing area for birds and insects, (10) logarithm of wing length and logarithm of rate of wing beat for birds and insects, (11) the same for hummingbirds alone, (12) the same for insects alone, (13) logarithm of body weight and logarithm of weight of pectoral muscles for birds, (14) logarithm of weight of large pectoral muscle and logarithm of wing weight for birds, (15) logarithm of weight of small pectoral muscle and logarithm of body weight for birds, (16) logarithm of weight of small pectoral muscle and logarithm of large pectoral muscle, (17) logarithm of total body weight and logarithm of muscle weight for insects. This compilation will be most useful to any serious student of the physiology or biology of flight. Serious students of this subject may obtain this compilation from the author's limited supply. It would be most useful if publication and a consequently wider distribution can be accomplished.—D. S. FARNER.

The Romance of the Lyrebird.—Alec H. Chisholm. 1960. Angus and Robertson, Sydney, Australia. 156 pp. 16 pl. (1 col.). 1 map. 27s. 6d. (Aust.)—The Australian Lyrebirds (*Menura*), large, primitive Passeres, resembling pheasants in appearance and in some of their habits, are ground inhabitants of the temperate and subtropical rain forests of the southeast of the continent. Their bizarre tail ornaments and extraordinary powers of vocal mimicry have long earned them more than ornithological renown. So it is amazing that a bird with so much potential biological interest should have been so neglected for serious study. Mr. Chisholm's book, a review of what is known about these birds, reveals partly why this is so—the difficult terrain, the usually secretive habits, long period of immaturity, and long life span of the birds, are all factors that militate against easy, short-term research projects. Curiously enough, the most useful summary of the ecology of these birds available to ornithologists until recently was in an American source, a review by Grace Sargent (in *News from the Bird-Banders*, 11 (3), 1936: 34) based on the field work of the Australian Tom Tregellas. Fortunately, local investigations on the biology of Lyrebirds are now in progress on an intensive scale, and we look forward to interesting results.

The value of the present volume is not so much for the novelty of the biological information it summarizes but for the accurate and highly exciting details of historical discoveries connected with the bird during the 19th and late 18th centuries. Mr. Chisholm is a competent archives researcher, and he has presented the results in his usual graphic style. Much of the early story, as hitherto known, had come down to us in garbled form. Chisholm relates the part played by governors, high colonial functionaries, convicts, and many other folk, in Australia and elsewhere, in uncovering the Lyrebirds' story. The accounts are fully documented, and there are numerous reproductions of early drawings and portraits of the characters in this entrancing ornithological drama.

The final chapter briefly discusses conservation problems. The two species survive in strength, and there is little to fear for their future. Lyrebirds nest in the

rough, sandstone country within a few miles of Sydney, and any tourist will have no difficulty in seeing the birds in the Sherbrooke Forest reserve near Melbourne. In the past, however, the outlook appeared grim. The southern bird (*M. superba*) was massacred for its spectacular tail plumes. They were displayed in bush inns and household parlors, and dealers and hawkers traded in them freely. As late as 1910 two Sydney dealers had traded the feathers of nearly 1,300 birds in a year. Times have completely changed, and to kill or harm a Lyrebird in Australia today would be unthinkable.—D. L. SERVENTY.

Birds of River Tama.—Sakae Tamura. 1961. Japan Trading Co., Ltd., Chiyada-ku, Tokyo, Japan. 177 pp. 300 photographs (four in color). Y3,500.—The Tama-gawa, so named for its clear water, has become excessively polluted by the rapid growth of Tokyo and Kawasaki. The curious but effective mixture of photographs depict well the effects of industrialization and overpopulation, and equally well the interesting bird life that manages to survive. Of particular interest are good series of photographs of the Japanese Long-billed Ringed Plover (*Charadrius placidus*), the Snowy Plover (*Charadrius alexandrinus*), the Little Ringed Plover (*Charadrius dubius*), and the Asiatic Little Tern (*Sterna albifrons*). This book is indeed a strong voice for enhanced conservation measures in Japan.—D. S. FARNER.

Die Vogelwelt des Südkaspischen Tieflandes.—Ernst Schüz. 1959. Schweizerbart, Stuttgart. 199 pp. DM 18.—The author spent the three spring months of 1956 on the coast of the Caspian Sea. The results of this expedition are worked into a thorough zoogeographic-faunistic monograph of the Caspian area of Persia. The geographic picture is illuminated by the excellent habitat photographs of the author and by numerous maps. The previous faunistic literature—from 1774 to date—is critically evaluated, and also treated in the annotated check-list, which forms the bulk of the publication. The zoogeographic analysis corroborates Stegmann's (1938) finding, *viz.*, that the avifauna has a strong European character. In a comparison with birds of West Europe only one fifth of the South Caspian species are missing, mainly of Mediterranean origin: over half of the fauna is represented by the same subspecies from France throughout Turkmenia; the arid plains of the latter, and the arid mountains that delimit the South-Caspian plains in the south had apparently engulfed and preserved this avifaunal outpost throughout the postglacial times. The recent climate is Mediterranean-subtropical, and local subspecies are generally darker. Many also show habitat peculiarities and songs or calls different from their west European counterparts, and these are summarized. A quite considerable chapter deals with bird migration, and here the great experience of the author, and his summarizing of the recent Soviet literature, resulted in a clear sketch of the role of wintering groups, transients, weather movements, guiding lines, etc. This is an important wintering area of southeast European and west Siberian waterfowl. Finally we learn from this fine book that oil pollution and hunting pressure on the coast, further habitat alterations and other human influences would necessitate immediate conservation measures to preserve the avifauna; especially the bigger birds, eagles, vultures, etc., so rare in the western part of their range, could and should be saved.—M. D. F. UDVARDY.

Seminaire sur l'Histophysiologie du Complexe hypothalamo-hypophysaire.—J. Benoit. 1961. Séminaires du Collège de France, Chaire d'Histophysiologie,

No. 1. 350 pp. (mimeographed).—The 24 papers in this seminar constitute useful reviews and present interesting new ideas concerning many aspects of the organization and function of the hypothalamo-hypophysial axis. The balance of the seminar is good with ample attention to nonmammalian vertebrates. This collection will be of particular value among ornithologists to those who are interested in the mechanisms by which such phenomena as molt, reproduction, and migration are controlled. A most useful contribution is that of A. Tixier-Vidal on the cytology of the adenohypophysis of birds (pp. 102-112), a subject that is indeed in need of critical study.—D. S. FARNER.

Ecology of the Aspen Parkland of Western Canada in Relation to Land Use.—R. D. Bird. 1961. Res. Branch Can. Dept. Agric., Ottawa, Public. 1066, 155 p.—This is a well-documented description of past vegetation and animal life upon which changes were induced by land-use practices of white man. General, nonstatistical descriptions of grassland, forest, and aquatic communities are given. The influence of Indian fires in restricting distribution of aspen forest is firmly established, but the evidence seems insufficient to conclude that bison and wapiti overutilized the arboreal vegetation to the point of limiting distribution. Aspen forests initially expanded over former grassland when white man controlled fires. The trend now is toward intensified agriculture, reduction in aspen forest, and simplification of communities through the use of pesticides. Valuable comments are provided on general changes in many populations of insects, birds, and mammals. The description of biotic changes provides a useful background for understanding present plant and animal life in the region considered.—H. K. BUECHNER.

Type Specimens of Birds in the United States National Museum.—Herbert G. Deignan. 1961. U.S. National Museum Bulletin 221. x + 718 pp. Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. \$2.75.—The U.S. National Museum, having one of the major collections of birds, is also one of the major depositories of type specimens. Because of this, Dr. Deignan's painstaking list is an invaluable contribution to taxonomic ornithology.—D. S. FARNER.

Bird Songs in Your Garden.—Cornell University Records, Cornell University Press, Ithaca, New York. 24 pp., one vinylite record. \$5.95.—A magnificent feast for eye and ear awaits those who acquire a copy of *Bird Songs in Your Garden*. This publication is in the form of a bookalbum, consisting of a loose-leaf, hard-back notebook containing some 24 pages of descriptive material and a pocketed, 10-inch disc recording. The text is concerned with 25 species whose songs are heard commonly in the gardens of eastern United States and Canada; it contains 53 handsome photographs, 31 in full color, from National Geographic Society reproductions. Included also are notes on plumage, planting to attract birds, building water and feeding stations, and homes, as well as a selected reading list for gardeners.

The recording occupies both sides of a flexible, vinylite, long-play disc at 33½ rpm. The reproduction is almost flawless on a good, high-fidelity, play-back system. Frequency range is excellent, and we have seldom heard such a low background noise level. The original recordings were made by Professor P. P. Kellogg and surely will add further luster to his high international reputation in this field.

As the album states, "The recording starts before dawn in an eastern garden with the awakening song of the Wood Pewee and ends after dark with the tremolo of the Screech Owl (who never screeches)." On Side One, the birds are briefly announced, whereas on Side Two, there are no announcements. Each bird virtually sings alone. We first hear him low in the background as he is announced and then more loudly and clearly as he sings his performance. There is never any question as to what bird is "on stage." It is this feature that makes this recording such an excellent study device for bird recognition. At the same time, the "on-stage" quality makes for a certain lack of naturalness, since the bird appears to have been removed from his setting.

A comment, which may or may not be valid, is that Side Two, wherein the birds sing unannounced, may have been improved by having the order of bird entrances differ from those on the announced side. In that way, the recording might serve better as both textbook and quiz.—E. W. GREENFIELD.

[Dr. Greenfield is an electrical engineer with long and varied experience in the recording and reproduction of sound. I asked him to prepare this review giving careful attention to the technical quality of the recording. Ed.]

An Annotated Bibliography on the Uses of Statistics in Ecology.—Vincent Schultz. 1961. Atomic Energy Commission, Office of Technical Information, TID-3908. 315 pp. \$3.00.—The author has recorded and classified references to papers using statistics in ecology from a modest sample of 25 journals that are primarily ecological or that contain ecological papers. Also included are references from six statistical journals. Papers dealing with birds are included in the section on wildlife (pp. 1-63), which, like the other sections, has the references arranged by journals. The indices are arranged primarily from the aspect of statistics and uses thereof in the papers listed.—D. S. FARNER.

Ornithological Books in the Yale University Library Including the Library of William Robertson Coe.—S. Dillon Ripley and Lynett L. Scribner. 1961. Yale University Press, New Haven, Conn. vii + 338 pp.—Since the Yale University Library contains one of the largest collections of ornithological books in the country, the authors have rendered an important service to ornithology in preparing this list. Holdings in ornithological journals and biological journals that contain papers on birds are also listed, thus enhancing the value of the publication. Many of the entries include brief but useful annotations.—D. S. FARNER.

Ten-Year Index to the Auk, Volumes 58-67, 1941-1950.—Prepared by George Willett and Charles K. Nichols; edited by Charles K. Nichols. 1960. iv + 449 pp. \$10.00 (bound); \$8.00 (unbound).—Although the extensive and painstaking effort required to produce this volume was begun by the late George Willett, the vast bulk of the task remained for Charles K. Nichols. It should be emphasized that this index is by no means a simple compilation of the 10 annual indices. Mr. Nichols read and abstracted every article, note, review, and item of recent literature and then indexed each item that he considered of interest. Although working scientists use such indices repeatedly, few of us appreciate their enormous value and even fewer appreciate the effort and talent required in their preparation. The Union and ornithologists generally are deeply indebted to Mr. Nichols for this invaluable contribution.—D. S. FARNER.

The Bird Watcher's Guide.—Henry Hill Collins, Jr. 1961. Golden Press, 630 Fifth Avenue, New York. 125 pp. \$3.95.—The primary function of this lavishly illustrated little book will be that of leading from a casual interest in birds to a hobby of bird watching or a serious study of ornithology. Particularly in the initial steps it should be very effective. It is packed with useful and condensed information. The compilation of such information has not been without errors. As examples, I find among "Food Preferences of Birds" that the Tree Swallow likes bayberries; the address of the editor of *Bird Banding* is incorrect; and curiously the German ornithological organizations have been omitted from the list of societies abroad. The sections dealing with equipment for bird watching, photographing birds, bird banding, and conservation are good if considered in light of the objectives of the book. All in all, it should be useful as an introduction to bird watching.—D. S. FARNER.

Style Manual for Biological Journals.—Prepared by the Committee on Form and Style of the Conference of Biological Editors, J. R. Porter, Chairman. Published for the Conference of Biological Editors by the American Institute of Biological Sciences, 2000 P Street, NW, Washington 6, D.C. xiii + 92 pp. \$3.00.—This manual is the result of a concerted and well-conceived effort to effect a reasonable standardization of the preparation of manuscripts for biological journals. It is both comprehensive and succinct and should go far in easing the problems of preparation of manuscript by busy investigators in all fields of biology. The manual has been adopted, in whole or in part, by 78 journals, including *The Auk*.—D. S. FARNER.