

RECENT LITERATURE

Dickey and Van Rossem's 'Birds of El Salvador.'—After a youthful collecting trip to El Salvador in 1912, the junior author suggested to the late Donald R. Dickey a systematic survey of this small but unknown country. Accordingly most of the years 1925, 1926, and 1927 were occupied in field work, the expense of which was borne entirely by Mr. Dickey. These collections, totalling over four thousand specimens, were obviously made with the maximum degree of competence and judgment, and furnish the basis for the report¹ now before us. This was originally planned under joint authorship and was preceded by a number of papers describing new forms. As a matter of fact, Mr. Van Rossem wrote the initial rough draft and Mr. Dickey intended to write the final copy. The latter's health, however, failed completely in 1930 and he requested Mr. Van Rossem to put the manuscript into shape for publication. This task was completed shortly before Mr. Dickey's sudden death in April 1932, which incidentally destroyed all hope of prompt publication. The reviewer may be permitted a word on the human side of the book before passing to the scientific. Mr. Dickey unquestionably made valuable suggestions regarding the final account and had various ideas and wishes which have been scrupulously carried out. The pages of this book are a tribute to a loyal and devoted friendship.

The book begins with various introductory sections containing an historical summary, a detailed gazetteer, and full and clear accounts of climate and topography. El Salvador is a very small country, lying wholly on the Pacific slope of Central America. The rich avifauna of the Humid Caribbean forests is consequently lacking. Almost the whole country is in the Lower Arid Tropical Zone, up to elevations varying from 2000 to 3500 feet. Above these elevations, and occasionally reaching to 9000 feet, lies the Upper Arid Tropical Zone, chiefly on the southern or Pacific slopes of the mountains, wherever there are marked dry and rainy seasons. The third life zone in El Salvador is called the Humid Upper Tropical Zone, which is the Subtropical Zone of Chapman and others. It is best developed on the northern slopes of the high mountains along the Honduras frontier, with a slight tinge on the summits of certain isolated peaks near the coast. Of the 446 species and subspecies of birds known to occur in El Salvador, 308 may properly be considered to constitute the local avifauna. Of these, 161 are listed as characteristic of the Arid Lower Tropical; 51 of the Arid Upper Tropical; and 45 of the Humid Upper Tropical. A very brief discussion of geographical distribution then ensues. El Salvador is so small a section of Central America, that its avifauna is heterogeneous, composed of either widely ranging birds, or groups of species and subspecies which have their distribution centers outside the boundaries of the country. The authors recognize a western Guatemala avifauna, a western Nicaragua lowland avifauna and a Honduras highland avifauna, which together total about 21 per cent of the resident population. Endemism is confined to two volcanic peaks: two subspecies on the summit of the Volcan Santa Ana, and twelve on the Volcan San Miguel, of which five are confined to the summit, while seven spread out for varying distances over the adjacent lowlands.

In comment on this whole section, it is first of all fair to the authors to say that their remarks are as much as possible confined to El Salvador. Thus little or no mention is ever made of the distribution of any bird outside of El Salvador, and

¹ Dickey, Donald R., and van Rossem, A. J. The birds of El Salvador. Field Mus. Nat. Hist., zool. ser., 23: 1-609, pls. 1-24, text-figs. 1-29, March 21, 1938.

this often very necessary knowledge is assumed to be in the possession of the reader; if lacking, erroneous ideas might certainly result. At least two-thirds of the birds listed as characteristic of the Arid Lower Tropical, are not really characteristic of this zone at all if their ranges outside of Salvador are considered and there is no way of telling which are. They are characteristic of this zone only in that they do not range upward into the Arid Upper Tropical in Salvador. This method of treatment can be criticised as being unnecessarily local, and in the opinion of the reviewer the known learning of the authors did not require so modest a restriction of the discussion.

There are the usual difficulties with the use of terms, but here the authors usually make their position quite clear by defining them. They prefer the term Humid Upper Tropical to Subtropical and are entitled to their preference. They reject the term Temperate for any area south of the North Temperate Region, barring mountain peaks with freezing temperatures, and this explains why at 9000 feet they regard themselves as in the Arid Upper Tropical Zone, whereas Chapman and Griscom would put them in the Temperate Zone. One suspects that, should they have dealt with a much larger area with high mountain masses, they would have thought more of the low mean-annual temperature and less of the minimum temperature and the narrow daily range, especially if the avifauna were sharply distinct from that of the Arid Upper Tropical below it. They either ignore or disbelieve in the division of Central America into faunas as defined by Chapman, based primarily on endemic genera and species. In speaking of the Honduras highland avifauna and the western Nicaragua lowland avifauna, they are really speaking of minor groups of species and principally subspecies. They regard the four zones of the Tropical Region in Central America as "fully as well set off" from each other as any of Merriam's well-known zonal divisions of the Boreal and Austral Regions. Here they are certainly open to attack.

The annotated list occupies over 500 pages of the book. Under each species is given the citation of the original description, a list of Salvador specimens examined, records in the literature, localities where the species was observed, dates whenever important, a condensed summary of the status in El Salvador, nesting when known, and plumage notes if any. The meat of this section is really under 'Remarks.' This includes a masterly and authoritative discussion of the systematic status of the form involved, and pleasingly written accounts of personal observations on the general habits. Outstanding features of the systematic discussion are the broad-mindedness of the general approach and the courtesy with which differences of opinion are handled. Van Rossem is perhaps particularly interested in subspecific variation and believes in naming all slight average differences. He is well aware, however, how relatively slight is our knowledge of Central American birds, and how tentative are all systematic opinions based on meager material, and how certain they are to change when additional specimens and information arrive. This premise, indeed, accounts for the brevity of the section on geographical distribution. The reviewer has been particularly interested in Central American birds for twenty years. In the present volume he has a mine of information to which he will constantly refer and often defer for years to come.

The book is a credit to the publisher. The format, typography and paper are excellent. Twenty-three fine half-tone plates illustrate Salvador scenery and avian habitats, while one shows the astonishing local variations in the Bob-whites. All do full justice to excellent originals. Numerous text-figures give a map with collecting stations, illustrations of the distribution of the life zones, and maps showing the distribution of various birds in El Salvador where two or more critical races occur in

the country. Authors and publisher alike are to be congratulated on so excellent a publication, after such long delay.—L. G.

The new 'Handbook of British Birds.'—The immediate success of the 'Practical Handbook of British Birds,' completed in 1924, resulted in its going entirely out of print ten years later. The present work,¹ although in a sense a new edition, has been so thoroughly revised and rewritten in the light of later experience and more recent knowledge that it is essentially an independent work, well meriting its new and shorter title. Here is a vast compendium of well-presented information, covering the important facts ascertained in regard to the forms treated, uniformly arranged and with well-chosen side headings to make the subject matter quickly available.

Following an illustrated key to the orders and suborders of British birds, the body of the book presents for each group the chief diagnostic characters, then for the several species, a statement of the habitat, the field characters and general habits, voice, display and posturing (including 'courtship' and 'injury-feigning' as well as typical attitudes), breeding habits (including nesting site, construction of the nest, number, size and color of eggs, incubation and fledgling periods, and parental activities), then food, distribution and migration in the British Isles, and distribution abroad, ending with a careful description of the plumages and moults, the measurements, color of soft parts, and a brief statement of diagnostic characters and those of allied forms. In these accounts the portions contributed by each of the four authors are followed by the initials of the responsible writer.

The 'Introductory Notes' provide much that is illuminating or interesting. For the most part the names of the orders, suborders and families are those used in the well-known arrangement proposed by Dr. Alexander Wetmore, with a few deviations to which the authors call particular attention, such as the use of Apodiformes for Micropodiformes, and of Podicipiformes and Colymbiformes for the Colymbiformes and Gaviiformes, respectively, of Wetmore. The deliberate use of Colymbiformes in a different sense seems particularly unfortunate, and one may regret that the authors, while admitting that Wetmore's sequence "is probably the most satisfactory yet devised," have thought it best to reverse this in order to conform with that of Hartert, as being more familiar to European workers. However, for convenient reference, both arrangements are given in parallel columns for comparison, so that little criticism can be made. In further conformity to European custom, the sequence of families is also different, beginning for the Passeriformes with the crows and ending with the swallows. Of the twenty families of passerine birds represented in the area covered, the present volume treats of thirteen, including 123 numbered species. The paragraph by Mr. Tucker on the transcription of bird song has many good suggestions, which if followed, might lead to more uniform and satisfactory renderings. This author also provides a chart to show the song periods of the different passerine birds of the British Isles. A glossary of terms, a comparative table of inches and millimeters, and diagrams illustrative of measurements and avian topography complete the preliminary matter. A valuable feature is the frequent reference to important studies made by continental workers, for the readiness with which the authors have been willing to go well outside the confines of the British Isles to include results of recent intensive investigations by ornithologists of the neighboring countries, makes the handbook far more than a local treatise and places it in the front rank as a work of general reference on the birds of western Europe.

¹ Witherby, H. F., Jourdain, F. C. R., Ticehurst, N. F., and Tucker, B. W. The Handbook of British Birds | Volume I | (Crows to Flycatchers) | Svo, xl + 326 pp., 33 pls., text-figs, maps, 1938; H. F. & G. Witherby Ltd., 326 High Holborn, London. Price 21 shillings to subscribers to the five volumes, 25 shillings for the separate volume.

The editor expresses satisfaction in being able to present with the new handbook a series of colored figures illustrating the adults and young of practically all the species in summer and in winter plumage, thus adding greatly to the usefulness and beauty of the work. Most of these figures are by the well-known artist, Mr. M. A. Koekoek of Leiden, and are adapted from a series originally prepared for van Oort's work on the birds of the Netherlands. While these figures are necessarily small, and as bird portraits have little merit except as maps of color, they are so excellently reproduced as to show essential details remarkably well. Two full-page plates showing the heads of allied species of pipits and of wagtails are by Grönvold and stand in somewhat marked contrast for their beauty of color and execution. There are in addition a number of text-figures illustrating diagnostic details of closely related forms.

Although there is no table of contents, a good index practically obviates the need. Care has been taken to exclude from the "British list" many exotic species on the ground that the specimens taken are escaped cagebirds. These are mentioned in small type at the proper places; yet there does not seem to be conclusive proof that records of such North American birds as the Red-wing, Meadowlark, Goldfinch, Junco, White-throated Sparrow and some others, may not represent occasional strays in the autumnal migrations. The authors have chosen for each species but a single English name as an aid to a uniform usage, but have in a few instances preferred to coin vernacular names other than those in use in the A. O. U. 'Check-list' as Coues's Redpoll instead of Hoary Redpoll. Such matters, however, and the occasional use of other generic names (as *Carduelis* for the redpolls) are in part matters of preference notwithstanding that uniformity of usage is eventually desirable.

The new handbook is a work which cannot fail to find immediate approval and extensive use by ornithologists, whether professional or amateur, on both sides of the water, as a convenient and authoritative reference book on birds of the western palaearctic region. One may await with anticipation the four remaining volumes contemplated for the completion of this latest book on British birds.—G. M. A.

Archer and Godman's 'Birds of British Somaliland.'—Bordering the southern shore of the Gulf of Aden and extending thence inland for varying distances up to about two hundred miles, lies British Somaliland, a region still but little visited by ornithologists. Far from being an uninviting and barren country, as might be supposed, it is, like northern Kenya Colony, a fascinating land, arid to be sure, but breaking into verdure with the onset of the rains, parched and hot at seasons near the coast, with areas of desert, scrub and grassland, of a varied topography rising toward the south to the highlands of Ethiopia. Faunally it has much in common with Italian Somaliland adjoining on the east, and with the country stretching southward to the Guaso Nyiro region of northern Kenya.

In the two beautiful volumes¹ here reviewed, the authors have brought together in narrative form the more important facts hitherto ascertained as to the general habits, distribution and nesting of the birds of the country. During many years of official duties both in British Somaliland and in Kenya Colony, Sir Geoffrey Archer has made use of abundant opportunity to observe and collect birds and their eggs, thus acquiring an extensive first-hand experience which lends authority to his statements. For the more technical aspects of their work the authors acknowledge the assistance of the bird department of the British Museum. One may guess that a large share of this part of the work fell to the lot of Sir Archer's collaborator.

¹ Archer, Sir Geoffrey, and Godman, Eva A. *The Birds of British Somaliland and the Gulf of Aden | their life histories, breeding habits, and eggs.* Large 8vo, London, Gurney & Jackson, 33 Paternoster Row, E. C., 2 vols.: pp. i-xcvi, 1-285, 21 half-tone pls., portrait, 10 colored pls., map; pp. 286-626, 10 colored pls., map, 1937. £3/3/-.

The introductory chapters include a brief historical sketch of the country and of the British military operations incident to its pacification, followed by an outline of the history of its exploration and a more extended chapter on the aspects of the country itself, its varied divisions and their characteristics, avifauna and peoples. Excellently told in plain, narrative style and illustrated by numerous photographic reproductions, this section brings vividly to mind the face of the land, from the hot burning sands of the coastal strip, to the acacia-dotted plains of the interior and the majestic hills and mountains of the hinterland. A complete list of the birds hitherto known from the country (many of them discoveries of Sir Archer) precedes the general account; it comprises 422 species and subspecies, of which 170 have been found to breed within the limits of the country. The accounts of these species follow in the order of Slater's well-known 'Systema,' the nomenclature of which is in general adopted. The first volume includes the ostrich, waterbirds and raptorial species, while the second treats of the francolins, rails, bustards, thick-knees, shorebirds, gulls, sand grouse, button-quail and pigeons. For each there is a short description of the external characters, then an account of the general distribution and the special occurrence in Somaliland, the characteristic haunts and behavior, and the nesting and eggs. Often there is pertinent discussion of the subspecific relationships with forms of neighboring areas and quotations from various authors as to the habits in this or other parts of Africa. Brief keys precede each of the groups treated, while in the appendices are found an interesting key to the larger types of nests and a calendar of nesting dates showing the relation of these habits to the dry and the rainy months. One is surprised at the shortness of the bibliography of papers and books dealing with the birds of the country. It is clear also, that our knowledge of the birds of Africa has not yet progressed very far beyond the somewhat generalized state, in which, although the more obvious facts of their life histories are in many cases made out, extremely few intimate studies of nest life, social behavior, and individual peculiarities have yet been made.

The two volumes are a superb example of book-making. The well-arranged subject matter, the excellent typography and generous spacings are pleasing to the eye; each volume is well indexed, while the sixteen beautiful colored plates of birds by Thorburn and the four of eggs by Grönvold are well executed, the former usually combining with the birds shown, some characteristic bit of Somaliland scenery. The only slight blemish observed is the consistent misspelling of 'iridescent' and of the Latin and vernacular name of the rock dassie as 'hierax' instead of hyrax. Two additional volumes are projected, to deal with the land birds, so that as the first of the more inclusive books on the avifauna of East Africa, this should prove a worthy counterpart of Bannerman's 'Birds of Tropical West Africa.'—G. M. A.

Hibbert-Ware on the Little Owl.—Following certain preliminary papers, this¹ is the final report of an investigation to settle moot questions as to food habits of the Little Owl (*Athene noctua vidalii*), a bird established in Great Britain, 1879–1889. The species is less common than it once was, probably as a result of the "settling down" process observed in the case of various introduced animals; clutch and brood sizes are less than in the most prosperous period. Pellets are described and illustrated in comparison with those of other birds of prey. They form the principal basis of the investigation, 2460 having been analyzed; in addition, material from 76 nests and larders was examined, and the contents of 28 gizzards identified. The study was undertaken especially to test the validity of claims that the Little Owl consumes

¹ Hibbert-Ware, Alice. Report of the Little Owl inquiry 1936–37 organized by the British Trust for Ornithology. H. F. and G. Witherby, London, 74 pp., 8 pls., 10 tables, 1938.

many chicks of game birds and poultry an effort was made to get material that would illustrate the full extent of such depredations. The results show that game chicks are taken rarely, only two, and seven poultry chicks being found destroyed in 16 months of investigation by the field workers and food analyst. The Little Owl feeds largely on insects at all times of the year, taking chiefly forms that are most abundant. Small rodents also are eaten in all months and birds are rather freely taken during the nesting season. No general summary of economic value is given, but opinions of authorities in five other countries are quoted.—W. L. MCATEE.

Buick on 'The Moa-hunters of New Zealand.'—In two previous books of a popular style, the author has given a general historical sketch of the discovery of bones of Moas in New Zealand, with some account of the birds themselves. In the present volume¹ he pursues this interesting subject further, chiefly from the standpoint of the archaeologist. Were these huge birds still living when the islands were first visited by man? Who were the people that hunted them and how long ago did the last birds perish? These and kindred questions the author takes up in the light of accumulated evidence, in part from old Maori tradition but chiefly from a study of the ancient kitchen middens and camp sites, long since abandoned and forgotten, where the huge leg bones and other parts of these birds are still to be found. Interest in these matters began when, in 1838, William Colenso and Reverend William Williams in the course of their missionary work in the North Island were told a fabulous tale of a fierce and dangerous Moa that lived on a bleak mountain side,—the last of its race. Williams was the first to send a consignment of Moa bones to Sir Richard Owen whose genius at once perceived their extraordinary interest; but the apparent lack of settled tradition concerning so striking a bird made Colenso loath to believe that the native Maoris could ever have known it in life.

After briefly tracing the conflicting views of the earlier naturalists—Colenso, von Haast, Mantell, Hector, and others—on the contemporaneity of the Moas with the earlier human inhabitants, the author reviews the abundant evidence from excavations and inspections of many of the old camp sites where the proof is ample that the bones of these giant birds were mingled with shells of mollusks and fragments of other food animals as dog, seal, penguin, albatrosses, owl parrots, in the ancient ovens of earlier human inhabitants. Often worked bones of the Moas were thus excavated, used in making fishhooks, awls, or decorative pieces. Mingled with these remains were abundant fragments of the shells of Moa eggs, as well as occasional stone implements, some of the polished type. The author concludes from his study that the ovens were of a characteristic Polynesian type and that doubtless the moa-hunters were of the same stock as the present-day Maoris. According to tradition the first great colonization by these peoples was about 1350 A.D., when the newcomers found the Moas abundant. Probably the birds were then present in numbers, perhaps more abundant on the South than on the North Island of New Zealand. The evidence seems to show that they had become extirpated, however, some time prior to the arrival of Captain Cook, perhaps even as far back as three hundred years ago, or perhaps somewhat less. Very little tradition of the Moas survives, but that gleaned in past years from the older natives indicates that the birds had the body feathers gray, and these were used in making mats; they inhabited the banks of rivers, lakes and swamps, feeding upon young shoots of water plants, perhaps even on fishes. Their cry was a loud screech or boom that could be heard at a distance.

¹ Buick, T. Lindsay. *The Moa-hunters of New Zealand* | Sportsmen of the Stone Age. | 8vo, xiv + 260 pp., illustr., 1937; Thomas Avery & Sons, Ltd., New Plymouth, New Zealand. 10 shillings.

They were hunted in various ways: by ambushing them as they followed well-worn paths, when they could be speared at close quarters; at times they were driven on to a point of land or by means of bush fires they could be forced into swamps and rendered helpless; again they were caught in pitfalls or run down by relays of hunters. The author believes that without doubt man was the cause of their final extinction.

The book is well written and presents a very readable, if rather general account of the birds themselves, of which apparently at least three genera and perhaps seven species are found in association with human relics. The illustrations show several of the sites excavated and there are interesting photographs of some of the older naturalists who were concerned with the earlier discoveries. The advantageous combination of archaeology with ornithology helps to throw new light on the melancholy history of these remarkable birds and to point the finger of guilt once more at the human offender.—G. M. A.

Roberts's 'Logbook of Minnesota Bird Life.'—In this attractive volume¹ the author has brought together in book form the bimonthly seasonal reports on bird life in the Minneapolis region that he has prepared for the columns of 'Bird-Lore' during the past twenty years. In a few cases these reports were written but for one reason or another were not published at the time; all have been carefully revised, and there are many brief comments in footnotes or in parenthesis calling attention to changes observed in the intervening years. There is thus a certain amount of new matter and the whole furnishes a unique and interesting review of the aspects of bird life in the region from season to season during the last two decades. Each of the twenty chapters covers usually a complete year from October to October or from December to December, giving thus a summary of the four seasons. The book is appropriately dedicated to the many observers who have contributed their field notes for the author's use in preparing the reports.

A consecutive reading of the pages, chapter by chapter, brings forcibly to view the fact that in this northern State of the mid-West each year presents some unusual feature of avian occurrence or of climatic condition, so that the recurring seasons show not only the general activities of the more usual bird population but also some special phenomena of particular interest. In such a marginal region the critical winter or spring conditions are seldom of an average nature; there is no such thing as a 'normal' season, but each is a picture by itself. Again, such a perspective record over a period of years brings out the fact of slow but constant change in the various elements: bird life in such a region is by no means of uniform or static quality. Thus the Green-winged Teal has in recent years become more common as a breeding species; the Louisiana Water-Thrush has considerably increased as a summer resident as far north as Minneapolis since 1918, and the same is true of the Field Sparrow; of late years, too, the Widgeon has nested in small numbers, while in 1931 it is noted that the Blue-gray Gnatcatcher is "evidently becoming established as a regular though still rare summer resident." There are winters of much or of little snow, occasional summers of great drought, periods of drastic contrasts in weather, and seasons of mild and temperate conditions, all of which may or may not be clearly reflected in their influence on bird life. It is plain that such a continuous record of observations written at the time and covering a considerable period of years is of far more value in an appraisal of these gradual changes and fluctuations in the avian population than are the more usual sorts of comparisons made from occasional retrospects or based on recollection alone. Thus the notes here presented in

¹ Roberts, Thomas S., M.D. *Logbook of Minnesota Bird Life 1917-1937* | 8vo, xii + 355 pp., illustr., 1938; University of Minnesota Press, Minneapolis, Minn. \$3.50.

convenient form become a permanent store that may be drawn upon at any time for the working out of questions that later arise.

The book itself is of convenient size, well printed and artistically bound. As chapter headings there is a series of well-executed vignettes showing various species of birds or mammals, while the frontispiece is reproduced from an etching showing a Duck Hawk perched (somewhat uncomfortably) in a tree. All these are the work of Mr. W. J. Breckenridge. An exhaustive analytical index will serve future use in finding notes on the many individual species. The volume comes as a contribution from the Museum of Natural History of the University of Minnesota, of which the author is Director. It should prove of much permanent value.—G. M. A.

Ridgway's 'Scientific Illustration'¹ will be accorded a warm welcome not only by those wishing to illustrate their own contributions but by professional illustrators as well, who often are unacquainted with the special requirements of certain types of technical papers. From his long experience in this work, not only in preparing colored and black-and-white figures of birds and other subjects in various branches of natural history, but also as (formerly) chief illustrator for the United States Geological Survey, the author is well qualified to offer some of the results of his own training for the benefit of others less skilled. Every scientific student in these times finds occasion to present with the results of his work some sort of figures to embellish or to make clearer the written text. No better method has yet been devised for transmitting to the mind the general appearance of an object or scene than a visual reproduction of it; yet as the author remarks, "the seeming lack of progress . . . in the use of illustrations for scientific purposes compared with the abundance of those now used in all other kinds of literature perhaps indicates that scientific authors should give greater consideration to the inherent value and subservient character of good illustrations."

After preliminary remarks on the purposes and advantages of illustrations, the author proceeds to give concise and helpful suggestions as to the choice of appropriate material, the respective advantages of line drawings, pencil sketches, photographs, black or white backgrounds, and kindred matters, the essential requirements of drawing, merits of different types of paper, and a list of drawing instruments needed. There is a brief and useful discussion of the principles of light and shade, with the suggestion that lighting of the objects be uniformly from the left-hand side for convenience as well as for comparative use. The great value of legitimate retouching is vividly illustrated by 'before and after' examples, and the results that may be attained from apparently hopeless material are well shown. Especially to those of less experience, the suggestions for making up plates, calculating the proportionate sizes and reductions, arranging figures and their lettering, should not only prove of great value to the writers of scientific papers, but in turn cannot fail to relieve the editors to whom such papers are submitted and to whom the miscellaneous figures often accompanying manuscripts become a time-consuming puzzle before they can be finally adjusted for publication. There is much on the preparation of maps and geological sections, a subject on which the author speaks with high authority, and finally an interesting and clear account of methods of reproduction, a subject often more or less of a mystery to many. An appendix presents a number of tables for use in map-making, metric equivalents, chemical abbreviations, Greek alphabet and mathematical signs, and there is a good index. The colored frontispiece shows a Meadowlark and its nest with appropriate background.

¹ Ridgway, John L. *Scientific Illustration*. 8vo, xiv + 173 pp., col. frontispiece, 22 pls., 23 text-figs., 1938; Stanford University Press, Stanford University, California. \$4.00.

The book is handsomely printed in large clear type, with many figures by the author to illustrate the points and principles explained in the text. It should prove of immediate practical value to all who have occasion to prepare scientific papers in any branch of natural history.—G. M. A.

Bennett on the Blue-winged Teal.—Prepared as a doctorate thesis in graduate study at the Iowa State College, this monograph¹ deals particularly with the migrations, wintering grounds, courtship, breeding and food habits of the Blue-winged Teal with a consideration of its special requirements and its utilization as a game bird. The author has studied this duck more especially on its breeding grounds in Iowa and has followed it to Mexico to obtain first-hand knowledge of its winter status in that country. Many interesting points in its life history are brought out. It is a characteristic duck of open rolling prairie that provides an abundance of small sloughs, marshes and ponds, where grasses, particularly in Iowa the bluegrass, furnish abundant nesting cover. The absence of such conditions in the East no doubt accounts for its scarcity as a breeding species eastward of the Great Lakes; its center of abundance is in the middle west of North America from Saskatchewan southward to northern New Mexico. Since the beginning of this century, hunting, agriculture and drainage have wrought a great change in its breeding grounds in the United States, so that at the present time about eighty per cent of the teal population is bred in western Canada. Other facts of interest are: the obvious preponderance of males, which show an excess of from four to as much as eighteen per cent over females, not only among the adults but among the young ducklings as well; the avoidance of bush cover in choice of nesting sites; the 'waiting territory' selected by the male of a nesting pair during the period of egg-laying and early incubation by the female; the later desertion by the males. The incubation period is between twenty-one and twenty-three days. The interesting fact is discussed that in Iowa marshes nearly five per cent of teals' nests are parasitized by the Ring-necked Pheasant. In such cases the teal ceases to lay eggs when the nest is full so that the number of pheasant eggs lowers the number laid by the teal. This parasitism is thought to be due largely to an overabundant pheasant population, and is interesting as indicating a possible beginning stage of a brood-parasitic habit. In only one case did the number of pheasant's eggs exceed those of the teal in such a nest.

After a consideration of food, enemies and disease, with the inclusion of much original information, the author takes up the effect on the teal of drainage and agriculture and the optimum conditions of the bird's requirements. The maintenance of a proper water level over the prairie marshes is found to be the greatest single factor in production of food for these ducks. The concluding chapters take up the more practical aspects of providing a supply of birds for shooters and means of limiting the annual kill to a proper percentage of the ducks produced. In a final summary, eighty-four brief paragraphs give the principal results of the study. There is a short bibliography of works to which reference is made and a good index. A colored frontispiece by Mr. Sid Horn shows fairly well the breeding plumage of both sexes, while numerous half-tone insets reproduce—if often, somewhat dimly—various characteristic haunts and nesting conditions. Altogether this neat little volume offers an excellent account of the life history of the Blue-winged Teal with much in the way of practical suggestion for the safeguarding of the species and the proper regulation of its pursuit as a gamebird of our prairie States.—G. M. A.

¹ Bennett, Logan. The Blue-winged Teal [its ecology and management] 8vo, xiv + 144 pp., illustr., 1938; Collegiate Press, Inc., Ames, Iowa. \$1.50.

De Beer's 'Development of the Vertebrate Skull.'—In this rather ponderous volume¹ we have what is virtually a summary of all that has been done in the study of the development of the skull. For the various classes of vertebrates the author takes up first, the much-discussed matter of the segmentation of the skull, and concludes that the evidence from various angles indicates that at least in *Amia*, there are nine primitive segments. The major part of the book (Section II) takes up group by group, as illustrated by better-known examples, the development of the chondrocranium and of the osteocranium, while in a third section are considered the general morphological relations of certain cartilages. The final (fourth) section sums up the data on the embryology, phylogeny and growth of the skull, and concludes with an extensive bibliography and index. There are one hundred and forty-three plates of outline and wash drawings illustrating the text.

The portions referring to birds are rather limited but include brief summaries of investigations carried out on the domestic duck, fowl and pigeon, the kestrel, house sparrow, ostrich and apteryx. Of particular interest are the generalizations as to the types of the palate in birds. After summarizing the work of Huxley and his recognition of four different classes of palatal structure, and the later revision by Pycraft reducing these to two, palaeognathous and neognathous, the author suggests that after all the former type may not necessarily be phylogenetically primitive. For the well-developed basipterygoid processes of the dromaeognathous skull suggest a "kinetic" type, in which the pterygoid is capable of sliding, whereas the neognathous palate with its hinge between the palatine and the pterygoid is "akinetical" and phylogenetically is more primitive than the broad suture between these bones in the palaeognathous skull. Further, if the latter were more primitive, the author suggests that its occurrence in adult birds would be expected to be more widespread than it is. Here, however, the answer that might be given by palaeontology is and perhaps will ever be, incomplete.

For a volume of this size it is well printed and substantially bound, and should form for many years to come a standard work of reference for students of the morphology of the skull.—G. M. A.

Griscom and Brewster on 'Birds of the Lake Umbagog Region.'—Three parts of Brewster's posthumous work on the birds of Lake Umbagog have already been noticed in 'The Auk,' carrying the list through the Icteridae, the point where it was left by Brewster at the time of his death. The fourth and concluding part² is now issued, prepared by Mr. Ludlow Griscom from the notes and journals of Brewster. To conform with the three other sections the order of species remains that of the third edition of the 'Check-list,' with the names, however, brought to date as in the fourth edition, issued since publication began. It would have been permissible therefore to have placed the English Sparrow in its proper family as a ploceid rather than to have retained it in the Fringillidae. The compiler has followed the same treatment as begun by Brewster in the preceding parts, giving for each species a brief statement of its general manner of occurrence, followed by interesting, if often disconnected, quotations from Brewster's journals. In some cases these excerpts present much valuable detail of nesting or of migration as in the case of the Migrant Shrike where the single instance of breeding is minutely described, or of the

¹ De Beer, G. R. The Development of the Vertebrate Skull. 8vo, Oxford, the Clarendon Press; xxiv + 552 pp., 143 pls.

² Griscom, Ludlow. 'The Birds of the Lake Umbagog Region of Maine. Compiled from the diaries and journals of William Brewster.' Bull. Mus. Comp. Zool., 66: part 4, 523-620, Feb. 1938.

Veery whose nocturnal migration in the early autumn was traced by the calls of passing birds. For certain of the rarer warblers, as the Cape May and the Bay-breasted, there is a wealth of interesting detail on nesting habits, with valuable comment by the compiler emphasizing the changes that have taken place in the status of various species during and since Brewster's earlier days. Of especial importance are Mr. Griscom's remarks in the concluding pages in which are given the dates of Brewster's visits to the region (chiefly in summer and autumn, thus accounting for the great lack of spring notes), a gazetteer of the localities he mentions, and more particularly a summary of the important changes that have taken place in the representation of various birds in this region during the last decades. In addition the compiler has for the first time brought out the fact that many of Brewster's notes on rarer birds of the region, refer to observations across the state-line in New Hampshire rather than in Maine, for the lake lies partly in both States,—a point of some interest to compilers of 'state lists.'

The great value of this account of Umbagog's birds lies partly in the fact that it affords such an excellent basis for appraising the effect of human occupation and forest clearing upon the avifauna of the region in the course of a half century or more and partly in presenting a vivid picture of bird life in primeval northern New England. The compiler's work has been carefully done, with the advantage of a long perspective, so that he has been enabled to bring out many important contrasts and comparisons. It is a satisfaction to have this valuable review finally brought through to a close. It might have been helpful if an index to the entire volume in its four parts had been added.—G. M. A.

Sprunt on Birds of the Southern Sanctuaries.—The splendid work of the Audubon Societies and the National Association of Audubon Societies in saving from destruction the larger herons and ibises of our southern States is beautifully memorialized in this brochure of word and color pictures describing the birds and their haunts in Florida, Georgia, the Carolinas, Louisiana and Texas. Due to the effective protection given them through these societies and their devoted wardens, the breeding colonies of these spectacular birds have been gradually built up during the last quarter century from a rapidly dwindling remnant to their present populous state, so that most of the species are no longer near the danger point. Nevertheless, vigilant care must in no whit be relaxed lest human avarice and thoughtlessness continue to menace their existence.

For each of some twenty species the author, who is Supervisor of the Southern Sanctuaries, here¹ presents a well-written account of the general habits and haunts, with much useful information, prefaced by a brief statement of the derivation of the Latin name, a list of local vernacular names and an outline of the range in the United States. It is shown that the economic importance of such species as the Little Blue Heron and the White Ibis may be considerable in that they prey largely upon the crawfish that burrow into levees, while the esthetic value of these and other large birds is no less significant. Eleven full-page color plates depict nineteen species. Of these, the frontispiece is from a color photograph by S. A. Grimes showing a Roseate Spoonbill among mangroves, said to be the first picture of its kind ever published. It may be added without exaggeration that the seven plates drawn by Roger T. Peterson are not inferior, while the three other plates, executed by Francis L. Jaques, illustrate groups amid characteristic surroundings and are reproduced

¹ Sprunt, Alexander, Jr. Beautiful Birds of the southern Audubon Sanctuaries. Large 8vo, 40 pp., including eleven colored plates, National Ass'n of Audubon Societies, New York City, bull. no. 8, 1938. \$1.00.

from Howell's 'Florida Bird Life.' Of these last, the painting of a flock of White Ibises circling upward, strikingly illustrates this peculiar social habit of the bird.

Concerning the name *Casmerodius*, said to be of "derivation unknown," it may be suggested that it is carelessly compounded from the Greek *chasme*, gape, and *herodias*, a heron. In view of the large size of the page and the excellence of the illustrations, it is a pity that this pamphlet could not have been issued with some form of stiff covers for its better preservation as an educational and decorative work.—G. M. A.

PERIODICAL LITERATURE

- AMSLER, MAURICE. Breeding results for 1937 at Delmonden Manor. *Avicult. Mag.*, (5) 3: 38-46, Feb. 1, 1938.—Interesting experiences with aviary birds.
- ANDERSON, J. ALASTAIR. Colour feeding of Nonpareil Buntings. *Avicult. Mag.*, (5) 3: 63, Feb. 1, 1938.—By adding two or three drops of vitamin A to a tablespoonful of cod-liver oil, and mixing this with their seed food, it was possible to restore the red color to the birds with succeeding molts.
- ANDERSON, R. M. Faunas of Canada. The Canada Year Book, for 1937, 29-52, 6 maps, 4 pls., 1937.—A short popular account of the life zones of Canada and the characteristic birds and mammals of each, as well as the chief flyways of migration.
- AXTELL, HAROLD H. "Cock of the Woods." *Univ. of N. Y. Bull. to Schools*, 24: 135-137, fig., Mar. 15, 1938.—A sick Pileated Woodpecker restored to health in captivity.
- BAILLIE, J. L. The Museum's bird collection (with an account of early Ontario ornithology). *Contrib. Royal Ontario Mus. Zool.*, no. 12, pp. 7-15, text-fig., 1938.—History and extent of the collection now numbering nearly twenty-nine thousand specimens.
- BAUMGARTNER, M. D. Some notes on birds of Marion County [Indiana]. *Audubon Year Book, Indiana Audubon Soc.*, 5: 20-24, 1937.
- BELKNAP, B. H. Phoebe versus tent caterpillars. *Univ. of N. Y. Bull. to Schools*, 24: 121-124, 4 figs., Mar. 15, 1938.
- BELLROSE, FRANK. Notes on birds of the Great Smoky Mountains National Park. *The Migrant*, 9: 1-4, Mar. 1938.
- BENNETT, RUDOLF. Pocket list of Missouri birds. *Audubon Soc. of Missouri*, leaflet no. 4, 4 pp., May 1937.—The species known from this State are listed by Orders, with abbreviations to indicate the seasonal status of each.
- BERLIOZ, J. [A new race of hummingbird from Peru.] *Bull. British Ornith. Club*, 58: 44-46, Jan. 5, 1938.—*Oreonympha nobilis albolimbata*, from Yauli, Huancaavelica, central western Peru.
- BIRCKHEAD, HUGH. The birds of the Sage West China Expedition. *Amer. Mus. Novitates*, no. 966, 17 pp., Dec. 4, 1937.—New races are: *Ithaginis cruentus annae* Mayr and Birkhead, *Ithaginis cruentus beicki* Mayr and Birkhead, *Lanius schach hainanus* Birkhead, *Suthora fulvifrons albifacies* Mayr and Birkhead.
- BLOESCH, MAX. Die Störche im Kanton Bern. *Statistische Erhebungen 1937. Arch. Suisses d'Ornith.*, 1: 404-412, Oct. 1937.
- BOARDMAN, EDWARD T., AND BARTO, ELIZABETH. A pictorial guide to the families of birds (including a list of the birds of southeastern Michigan with their migration dates). *Bull. Cranbrook Inst. Sci.*, no. 7, 48 pp., Oct. 1937.—The obvious external characters of the families of North American birds (except the trogons) are briefly noted and marginal figures of examples of each are given.
- BOND, JOHN WALPOLE. With sea-birds in the Scillies—continued. *The Oologists'*

- Record, **17**: 25-29, June 1937.—An account of the breeding of Manx Shearwaters and Stormy Petrels in the Scilly Isles.
- BOUET, G. Nouvelles recherches sur les cigognes blanches de l'Afrique du Nord. L'Oiseau et Rev. Française d'Ornith., 1938, 1-26, map.—On migration and population density of the White Stork in northern Africa.
- BOUGHTON-LEIGH, P. W. T. Breeding notes from Nigeria, near Ilorin (1930-1931). Oologists' Record, **17**: 73-79, Dec. 1937.—On hawks, waterfowl, and sand grouse.
- BRAMWELL, W. H. Cuckoo laying in Wheatear's nest. The Oologists' Record, **17**: 35-36, June 1937.—A European Cuckoo was seen apparently trying to invade a Wheatear's nest in a rabbit burrow, but was repeatedly driven off by these birds, whose nest then contained four of the owners' eggs. Two days later, the nest contained one egg of the Cuckoo and five of the Wheatear.
- BROEKHUYSEN, G. J., JR. Gedrangingen van geslachtsrijpe en nog niet geslachtsrijpe Zilver- en Grote Mantelmeeuwen (*Larus argentatus* Pont. et *Larus marinus* L.) buiten de broedtijd. Ardea, **26**: 159-172, pls. 27-28, Dec. 1937.—During winter sexually mature Herring and Great Black-backed Gulls show actions usually considered characteristic of the breeding season. Food-begging actions are continued into adult life by maturing birds, but become less and less strong, and finally become habitual as a reaction to any emotion, becoming at the breeding season an introductory part of the actions leading up to copulation.
- BROUWER, G. A. The organization of Nature protection in the various countries. Special Publ. Amer. Comm. for International Wild Life Protection, no. 9, 112 pp., 1938.—An English translation of the author's summary of 1931, reviewing the present status of protective work the world over.
- BRYENS, OSCAR MCKINLEY. Experiences with the Northern Shrike (*Lanius borealis borealis*, Villot.) [sic]. Jack-Pine Warbler, **16**: 25-26, Jan. 1938.
- BURDET, A. Troisième cas de nidification du harle huppé (*Mergus serrator* L.) en Hollande. Ardea, **26**: 111-115, pls. 12-13, Dec. 1937.—Third instance of this bird nesting in Holland, May 1937, on island of Texel.
- BURGH, JUAN. Horneros. El Hornero, **6**: 462-465, 1 text-fig., Sept. 1937.—Notes on nest-building habits of the Ovenbird.
- BURNS, FRANK L. The song periods of some common southeastern Pennsylvania birds in comparison with their seasonal reproductive cycles. Oologist, **54**: 114-130, Oct. 1937.—Twenty-five species are discussed and for each in summary tables are given the approximate duration of the song period and of the nesting period.
- BURTCH, VERDI. Nesting of the Great Horned Owl. Univ. of N. Y. Bull. to Schools, **24**: 131-133, 3 figs., Mar. 15, 1938.—In New York State.
- BUSSMANN, J. Biologische Beobachtungen über die Entwicklung der Schleiereule. Arch. Suisses d'Ornith., **1**: 377-390, pl. 19-22, Oct. 1937.—A detailed study of the growth and behavior of a brood of Barn Owls at a nest in a church tower in Switzerland. The presence of mesoptiles in the downy plumage is illustrated.
- C., E. F. The Arctic or Mountain Bluebird (*Sialia currucoides*). Avicult. Mag., (5) **3**: 33, col. pl., Feb. 1938.
- CAMPBELL, A. G. Further notes on the birds of Toolern Vale [Victoria]. The Emu, **37**: 131-132, pl. 22, Oct. 1, 1937.
- CAMPBELL, JAMES W. Scottish bird notes. Scottish Nat., 175-177, 1937.
- CASTELLANOS, ALBRETO. Observaciones de algunas aves de Tierra del Fuego e Isla de los Estados. El Hornero, **6**: 382-394, 4 text-figs., Sept. 1937.—Concluded from previous number, with notes on a cormorant, and twenty-three land birds of Tierra del Fuego.

- CASTILLO, SANTOS R. Algunos casos de coloración anormal en nuestras aves. El Hornero, **6**: 493-496, 4 text-figs., Sept. 1937.—Notes on cases of partial albinism and xanthism in Argentine birds.
- CHASEN, F. N. The birds of Billiton Island. Treubia, **16**: 205-238, Dec. 1937.—In all, one hundred and sixty-seven birds are now listed for the island, including the following new races: *Turnix suscitator kuiperi*, *Phodilus badius parvus*, *Chloropsis cochinchinensis billitonis*, *Macronus ptilosus sordidus*.
- CHASEN, F. N. On a collection of birds from the Krakatau group of islands, Sunda Strait. Treubia, **16**: 245-259, Dec. 1937.—With a tabular list of birds of these islands.
- CHITTY, DENNIS, AND ELTON, CHARLES. Canadian arctic wild life enquiry, 1935-36. Journ. Animal Ecology, **6**: 368-385, Nov. 1937.—Summary of the first of a series of annual questionnaires sent out to secure data on population fluctuations of Snowy Owls, ptarmigan and certain arctic mammals.
- CHRISTOFFERSON, KARL. Another record for the east and west migration of Eastern Evening Grosbeak. Jack-Pine Warbler, **16**: 28-29, Jan. 1938.—A bird banded at Blaney Park, Michigan, was found dead at Jamestown, New York, three years later, April 20, 1937.
- CLARK, ARNOLD. Morning song commencement. British Birds, **31**: 265-266, Jan. 1, 1938.—For ten British species the time in minutes before sunrise when the birds begin to sing, is given.
- COOK, MRS. H. P. Experiences with Cardinals. Audubon Year Book, Indiana Audubon Soc., **15**: 42-45, text-fig., 1937.
- CORTI, ULRICH A. Der Rotmilan, *Milvus m. milvus* (L.) in der Schweiz. Der Ornith. Beobachter, L'Ornithologiste, **34**: 205-209, 1937.—The distribution, migration and general occurrence of this kite in Switzerland are briefly given. Breeding records are few; the author lists those known to him.
- CORTI, ULRICH A. Mitteilungen über das Vorkommen der Turteltaube, *Streptopelia t. turtur* (L.) in der Schweiz. Der Ornith. Beobachter, L'Ornithologiste, **34**: 209-215, 1937.—Gives a list of records for the Turtle Dove in Switzerland. Though most of the occurrences fall in May and June, there is an astonishing lack of breeding records, of which but two are given.
- CREAGER, BARON. Cypress swamp of the Kiamichis. Amer. Forests, **44**: 160-161, 187, 3 figs., Apl. 1938.—Account of the preservation of this area in Oklahoma, where American Egrets and Anhingas nest.
- DEIGNAN, H. G. A new race of *Yuhina flavicollis*, from the mountains of North Siam. Proc. Biol. Soc. Washington, **50**: 217-218, Dec. 28, 1937.—*Yuhina flavicollis rogersi*.
- DEIGNAN, H. G. A new *Myiophonus* from North Siam. Proc. Biol. Soc. Washington, **51**: 25-26, Feb. 18, 1938.—Describes a new Whistling Thrush, *Myiophonus caeruleus rileyi*, type from 7000 feet on Doi Angka, Siam.
- DENHAM, REGINALD. Birds of the Cerdagne. Bird Notes and News, London, **17**: 137-140, pl., 1937.—Brief notes on birds seen in an excursion to the Spanish Pyrenees.
- DE SCHAUENSEE, RODOLPHE M. On a new species of drongo from Siam. Proc. Acad. Nat. Sci. Philadelphia, **89**: 337-338, Oct. 20, 1937.—New: *Dicrurus bondi*, from Ubol-Chanuman, eastern Siam.
- DE SCHAUENSEE, RODOLPHE M. First preliminary report on the results of the second Dolan expedition to west China and Tibet: Two new birds from Tibet. Proc. Acad. Nat. Sci. Philadelphia, **89**: 339-340, Oct. 20, 1937.—New: *Crossoptilon*

- crossoptilon dolani* from Jyekundo, southern Kokonor, and *Charadrius mongolus schäferi* from about one hundred miles north of Jyekundo.
- DE VRIES, TSJEARD G. De Midden-Europeesche goudpluvier, *Charadrius a. apricarius* L., als broedvogel in Friesland. *Limosa*, **10**: 118-119, Sept. 1937.—Breeding of this plover in Holland.
- DINELLI, LUIS M. La proteccion de las aves. El Hornero, **6**: 483-488, Sept. 1937.—Brief notes on birds and mammals as predatory species affecting bird life.
- DIXON, JAMES B., AND DIXON, RALPH E. Nesting of the Western Goshawk in California. *Condor*, **40**: 3-11, 6 figs., Jan. 1938.—Nesting is in first week of May; three eggs is usual number laid. During the period the young were in nest, the food supplied was entirely mammals.
- DUBOIS, DAWES. The McCown Longspurs of a Montana prairie. *Condor*, **39**: 233-238, text-fig. 63-65, Nov. 1937.—The migration, song-flight, and nesting are described. Protracted rainstorms and late spring snows are the factors most destructive of the young.
- DUMONT, PHILIP A. Franklin's Gulls nesting on Sand Lake Refuge, South Dakota. *Oologist*, **55**: 3-5, Jan. 1938.
- DUNAJEWSKI, ANDRZEJ. Bemerkungen über einige mittelasiatische Vögel. *Acta Ornith. Musei Zool. Polonici*, Warsaw, **2**: no. 6, 69-86, Aug. 28, 1937.—Notes on various birds from Transcaspiia and Ferghana, with description of a new rail, *Porzana pusilla bareji*, from Gultscha, Ferghana.
- DUNAJEWSKI, ANDRZEJ. Ein Beitrag zur Systematik der Rabenvögel (Corvidae). *Acta Ornith. Musei Polonici*, Warsaw, **2**: no. 9, 145-156, Jan. 31, 1938.—New: *Coloeus monedula sophiae* from Dolsk.
- DUNAJEWSKI, ANDRZEJ. Zwei neue Vogelformen. *Acta Ornith. Musei Zool. Polonici*, Warsaw, **2**: no. 10, Jan. 31, 1938.—New are: *Gallinula chloropus lucida* and *Sylvia borin kreczmeri* of Poland, paler than typical birds from the British Isles and France respectively.
- DUNAJEWSKI, ANDRZEJ. Die geographischen Formen der Dorngrasmücke (*Sylvia communis* Lath.). *Acta Ornith. Musei Zool. Polonici*, Warsaw, **2**: no. 12, 229-238, Feb. 26, 1938.—Six races are recognized in Europe east to Turkestan, including a new race, *Sylvia communis hoyeri*, from Poland.
- DUPOND, CH. Oeuvre du baguage des oiseaux en Belgique. Le Gerfaut, pt. 2, **27**: 53-102, 1937.—Returns of birds banded in Belgium in 1936 are listed.
- ERRINGTON, PAUL. What is the meaning of predation? *Smithsonian Rept. for 1936*, 243-252, 1937.—“Whether taken by predators or otherwise lost, the surplus must disappear; population sooner or later coincides with carrying capacity.”
- ESTEN, SIDNEY R. Birds of Jay County, from records of Hal Coffel. *Audubon Year Book*, Indiana Audubon Soc., **15**: 12-19, 1937.
- EVANS, CHARLES. A Bittern's courtship actions. *The Flicker* (Minneapolis), **9**: 12, Dec. 1937.
- GLEGG, WILLIAM E. Birds in Middlesex. *British Birds*, **31**: 297-301, Feb. 1, 1938.
- GRANT, C. H. B., AND MACKWORTH-PRAED, C. W. (1) On the type-locality of *Cypselus barbatus* (*Micropus apus barbatus*) P. L. Selater, *Proc. Zool. Soc. Lond.* 1865, p. 599; (2) On some East African swifts. *Bull. British Ornith. Club*, **58**: 49-51, Jan. 5, 1938.
- GREAVES, R. H., AND TREGENZA, L. A. The Nile Valley Sunbird (*Nectarinia metallica*) in Egypt. *Oologists' Record*, **17**: 79-83, Dec. 1937.—During the last twenty years the breeding range of this bird has been extended northward in the Nile Valley nearly two hundred miles at least to Kena, and it has been seen at Cairo,

doubtless as a result of introduction of its favorite flowering plants, a calendar of which is given showing on what species it depends at different times of year.

GREGG, H. R. Birds of Rocky Mountain National Park. Rocky Mt. Nature Ass'n, Publ. no. 2, 80 pp., illustr., Mar. 1938.—A convenient list of birds hitherto found to occur within the bounds of this national park in Colorado. It is based on records filed in the offices of the Park and comprises some 184 species and subspecies, including the introduced Ring-necked Pheasant and House Sparrow, neither of which appears to be common. For each form the Latin and English names are given, followed by a brief statement of relative abundance, times of occurrence, nesting data and other notes of interest. It is, in effect a revised edition of the similar list published in 1930 by Babcock and Ashton and should prove helpful to the many tourists and other visitors wishing to know what birds may be looked for in the region. While not intended as a guide-book or manual, it includes a brief artificial key to the species based on the one previously issued by Babcock, in which the birds are grouped in accordance with their characteristic habitats. A number of illustrations from photographs or drawings add to its attractiveness besides facilitating identifications. There is also a bibliography of important references to literature that concern the Park and a directory of persons to whom bird records are chiefly due. The nomenclature follows carefully that of the A. O. U. 'Check-list' even to its misprints (the double 'i' in Accipitridae and Micropodiformes), although the family heading 'Falconidae' is inadvertently omitted and there are too many misspellings of Latin names.

Among other interesting points, is the vertical migration of Pine Grosbeak, Brown-capped Rosy Finch, and Gray-headed Junco, birds which in winter move down to lower levels from their alpine or subalpine breeding grounds. The American Pipit, which arrives at lower levels after mid-April and reaches its summer home above timber-line in May, is sometimes driven back to lower elevations in large flocks by storms occurring as late as mid-June.—G. M. A.

GROTE, H. [*Anthus nicholsoni chapini* subsp. nova.] Alauda, (3) 9: 205, 1937.—A dark race of this pipit from the Bamenda highlands, Cameroons.

GUGGISBERG, C. A. W. Auf der Vogelinseln von Pembrokeshire, 26. April–2. May 1937. Ornith. Beobachter, L'Ornithologiste, 34: 192–203, 4 text-figs., 3 pls. 1937.—An account of the bird life on these bird sanctuaries off the coast of Wales. Excellent photographs of nesting Gannets.

GUGGISBERG, C. A. W. Beobachtungen am Eisvogelnest. Ornith. Beobachter, L'Ornithologiste, 35: 7–10, fig., Oct. 1937.

GUGGISBERG, C. A. W. Der Durchzug der Limicolenarten am Fanelstrand (Albert Hess-Reservation). Ornith. Beobachter, 35: 17–33, 1937.—Shorebird migration at Neuenberg Lake, Germany.

GUGGISBERG, C. A. W. Der Durchzug der Limicolenarten am Fanelstrand. Ornith. Beobachter, L'Ornithologiste, 35: 49–54, fig., Jan. 1938.

GUNTHER, R. T. The Oxford Dodos. Bird Notes and News, London, 17: 141–142, 1937.—History of the mounted Dodo formerly at Oxford, of which the head and a foot remain. The museum also has a number of bones from Mauritius.

GWYNNE, A. J. Notes on the Green Catbird [*Ailurodoeus crassirostris*]. The Emu, 37: 76–78, Oct. 1, 1937.—This and the Spotted Catbird are not bower-builders in spite of such reports.

HAINARD, ROBERT. Notes ornithologiques. Alpes valaisannes et vallée du Rhone. 1932–1937. Arch. Suisses d'Ornith., 1: 391–403, 3 figs., Oct. 1937.

HAMER, W. H. The hummingbirds of Jamaica. Bird Notes and News, London,

- 17: 172-176, 4 text-figs., 1937.—Habits of the Streamer-tailed Hummingbird (*Aithurus*).
- HAMPE, HELMUT. Ueber Nestbau und Geschlechtsunterscheide der *Agapornis*-Arten. Journ. f. Ornith., **86**: 107-112, 4 text-figs., Jan. 1938.—On the nesting in captivity of species of these parrots.
- HARKNESS, WILLIAM J. K. Notes on introduced Capercailzie. Canadian Field-Nat., **52**: 43, Mar. 1938.—Eight birds were released on Georgian Bay shore between Midland and Parry Sound in 1903, but were not heard of in later years.
- HEDDMANN, H. VON. Ueber die winterliche Nahrung der Nonnengans (*Branta leucopsis*). Ornith. Monatsber., **45**: 204, Dec. 13, 1937.—In the region of Hamburger Hallig the Barnacle Geese that regularly winter in the region have been found to depend for winter food chiefly if not altogether upon the grass, *Festuca thalassica*, seldom taking cel-grass if at all.
- HEINROTH, O. Die Balz des Bulwersfasans, *Lobiophasis bulweri* Sharpe. Journ. f. Ornith., **86**: 1-4, pl. 1, 2 text-figs. Jan. 1938.—A fine colored plate illustrates the striking display of Bulwer's Pheasant as seen in the Berlin Zoological Gardens. The contrastingly pure-white tail is spread to its utmost, and the bright blue lappets of the head are inflated to form two long narrow projections, one hanging downward, the other extending back from the head. At the height of this action, the bird utters an explosive *gack*. The mechanism of the inflation is described in a succeeding article by A. SCHNEIDER, who from an anatomical examination, concludes that the lappets are distended by the pressure of blood supply with which they become turgid.
- HIBBERT-WARE, ALICE. Report of the Little Owl inquiry. 1936-37. British Birds, **31**: 249-264, pls. 5-10, Jan. 1, 1938.—Gives the result of pellet analysis, particularly with regard to insects taken. The Little Owl is found to feed largely on insects at all times of year; the dominant species eaten at any time are usually those then most abundant.
- HINDWOOD, K. A. The Black-chinned Honeyeater. The Emu, **37**: 143, pl. 25, Oct. 1, 1937.
- HOLDOM, M. W. Albino White-crowned Sparrow (*Zonotrichia leucophrys nuttallii*). Canadian Field-Nat., **52**: 61, Apl. 1938.—At Surrey Centre, British Columbia; the general color was cream, but the black crown with its white median stripe was present.
- HOogerWERF, A. Uit het leven der witte ibissen, *Threskiornis aethiopicus melanocephalus*. Limosa, **10**: 137-146, pl. 7-14, Dec. 1937.—A careful account of the nesting of this White Ibis in Java. Often the nests of a breeding colony are so close together in bare trees as to form an almost continuous platform. The young feed by inserting the bill in that of the parent. Many excellent photographs of adults and young.
- HOogerWERF, A., AND SICCAMI, G. F. H. W. REGNERS HORA. De avifauna van Batavia en omstreken. Ardea, **26**: 116-159, pls. 14-26, Dec. 1937.—The second installment of an annotated list of birds of Batavia in Java, covering the ibises, herons, cormorants, hawks and owls, with exceptionally fine photographs of various species at their nests.
- HUGUES, ALBERT. Contribution à l'étude des oiseaux du Gard, de la Camargue et de la Lozère. Alauda, (3) **9**: 151-209, 1937.—An annotated list of the birds of the Camargue and adjacent regions, with a bibliography.
- HUSAIN, M. AFZAL AND HEM RAJ BHALLA. Some birds of Lyallpur and their food. Journ. Bombay Nat. Hist. Soc., **39**: 831-842, December 1937.—The studies reported

- involved, in most instances, examination of stomach contents. The account is remarkably condensed, results from analyses of the food of 262 House Sparrows, for example, being given in five lines. In all, however, considerable definite information is given on the occurrence, food, and economic status of ninety-three species of birds of a district, the avifauna of which has altered and increased following irrigation.—W. L. M.
- IREDALE, TOM. J. R. & G. Forster, naturalists. The Emu, **37**: 95-99, Oct. 1, 1937.—Notes on the history of J. R. Forster's writings, with the resuscitation of several hitherto overlooked names for Australian birds.
- ISENBURG, F. R. Albino Robin. Oölogist, **54**: 103, Sept. 1937.—A pure-white Robin with pink eyes was secured in East Peoria, Illinois, that was being attacked by other normally colored Robins. The bird later died of its injuries and was preserved.
- JACOBS, J. WARREN. On the reasoning instinct of the Tufted Titmouse (*Baeolophus bicolor*). Oölogist, **55**: 6-7, Jan. 1938.—A sitting bird covers itself with nest material when its nest cavity is opened.
- JENKS, RANDOLPH. A new subspecies of Pine Grosbeak from Arizona with critical notes on other races. Condor, **40**: 28-35, text-fig. 13-17, Jan. 1938.—Describes *Pinicola enucleator jacoti* from base of Baldy Peak, Apache County, Arizona, where it is restricted to a boreal 'island' in the White Mountains.
- JOHNSON, PERRY FRANK. Notes on birds of northeastern Indiana. Audubon Year Book, Indiana Audubon Soc., **15**: 46-48, 1938.
- JONES, F. M. Weather prophets and woodpeckers. Oölogist, **55**: 10-12, Jan. 1938.—An autumnal flight of Red-headed Woodpeckers in the Cumberland Mountains of Virginia.
- JOURDAIN, F. C. R. [The European White Stork.] Bull. British Ornith. Club, **58**: 38-39, Jan. 5, 1938.—With comment by D. A. Bannerman, p. 39-41, and others.
- JOURDAIN, F. C. R. Erythristic eggs of the Rook. *Corvus f. frugilegus* (L.). Oölogists' Record, **17**: 89-90, pl. 1 (col.), Dec. 1937.—Various records of erythristic Rook's eggs, and a set from Ireland figured.
- JOURDAIN, F. C. R. Messrs. C. G. & E. G. Bird's East Greenland collections. Oölogists' Record, **17**: 90-91, Dec. 1937.—Account of a collection made at Myggbukta, Mackenzie Bay, among others, five sets of the Knot, three of which were of four, two of three eggs. "The supposed eggs of the Knot from Iceland in the Ottosson collection at Stockholm are not, in my opinion, authentic, nor is the single egg from West Greenland (Seeböhm collection) in the British Museum, and the eggs in the Tring collection from Labrador and the Varanger Fjord (!) are obviously wrongly identified."
- JUNGE, G. C. A. Resultaten van het ringonderzoek betreffende den vogeltrek, ingesteld door het Rijksmuseum van Natuurlijke Historie te Leiden, XXIV. Limosa, **10**: 98-108, Sept. 1937.—Yearly report on returns from banded birds carried on by the Leiden Museum.
- JUNGE, G. C. A. Resultaten van het ringonderzoek betreffende den vogeltrek, ingesteld door het Rijksmuseum van Natuurlijke Historie te Leiden, XXIV (slot). Limosa, **10**: 151-162, Dec. 1937.—Conclusion of the list. In all 22,901 birds were banded.
- JUNGE, G. C. A. *Tringa totanus totanus* L. de in Nederland broedende subspecies van de tureluur. Limosa, **10**: 166, Dec. 1937.—The breeding bird of Holland is the typical race.
- KATE, TEN. Ornithologie van Nederland 1937, 2e mededeling. Limosa, **10**: 108-117, Sept. 1937.—Second instalment of a list of Holland's birds with notes.

- KATE, TEN. Ornithologie van Nederland 1937, 3e mededeling. *Limosa*, **10**: 163-166, Dec. 1937.—Third part of list of Holland's birds.
- KATE, TEN. Terugvondsten van in het buitenland geringde vogels, 9. *Limosa*, **10**: 167-170, Dec. 1937.—Further list of returns from birds banded in Holland.
- KOCH, NORMA. Hawaii's early treatment of birds. *Audubon Year Book, Indiana Audubon Soc.*, **15**: 28-32, 1937.
- KEYSERLINGK, ALEXANDER GRAF. Beobachtungen an Uferschwalben (*Riparia riparia*). *Ornith. Monatsber.*, **45**: 185-188, 13 Dec. 1937.—Overtaken in early September by inclement weather, storm and cold, large numbers of Bank Swallows migrating along the coast of Estlands, took shelter in a dove-cote in one mass, and a second solid mass gathered for the night on the side of a stall. The entire mass in each case huddling together for warmth, seemed to remain a unit and could be shoved to one side or finally pushed into a box, whence many were removed for banding. The birds were warmed and later released after experiments in inducing them to take food.
- KRÄTZIG, H. Histologische Untersuchungen zur Frage der Struktur- und Farbveränderungen an Federn nach künstlicher (Thyroxin) Mauser. *Roux' Arch.*, **137**: 86-150, 36 fig., 1938.—An important contribution toward the study of the influence of thyroxin on the growth and pigmentation of feathers. Most differences from the normal molt can be explained on the basis of the "speed up" of all physiological and growth processes in the feather germ. The melanin (pigment) is produced by giant epidermal cells. Again it is stated, as indeed by most workers with birds, that eumelanin (the black pigment) and phaeomelanin (the brown pigment) are independent pigments, while workers on mammals explain these color differences by different pigment concentrations. A reduction or disappearance of the lipochromes is caused by the increased metabolism.—E. MAYR.
- LACK, DAVID, AND LOCKLEY, R. M. Skokholm bird observatory homing experiments. 1. 1936-1937. Puffins, Storm-petrels and Manx Shearwaters. *British Birds*, **31**: 242-248, Jan. 1, 1938.—A summary of experiments in releasing these birds at varying distances from their nesting burrows, after banding. The presence of an egg or a chick furnished a motive for their return. The farthest distance to which a bird was taken was 930 miles in a direct line, in the case of a shearwater that was carried to Venice. The bird was retaken in two weeks. If the bird returned by sea, the distance traversed must have been about four times as great.
- LASKEY, AMELIA R. Bird banding brevities—no. 12. *The Migrant*, **9**: 10-11, Mar. 1938.—At Nashville, Tennessee, a number of interesting returns of banded birds were secured in autumn of 1937, including Gambel's Sparrow, and a White-crowned Sparrow that had spent four consecutive winters there, two Field Sparrows each now about five years old and a Junco about five and a half years old.
- LEACH, E. P. Recovery of marked birds. *British Birds*, **31**: 302-308, Feb. 1, 1938.—List of 1937 British recoveries.
- LEWIS, HARRISON F. Notes on birds of the Labrador peninsula in 1936 and 1937. *Canadian Field-Nat.*, **52**: 47-51, Apl. 1938.—Among various rarer species, an American Egret is noted near Harrington Harbour, May 12, 1937.
- LINSDALE, JEAN M. Geographic variation in some birds in Nevada. *Condor*, **40**: 36-38, Jan. 1938.—Intergradation is demonstrated between *Aphelocoma californica* and *woodhousei*, so that the latter is regarded as a race of the former. A pale chickadee, *Penthestes atricapillus nevadensis*, is named as new from Salmon River, Elko County, Nevada.
- LIPPERT, O. H. Notes on the birds of Crawley, Perth, in the early 'nineties. *The Emu*, **37**: 133-134, Oct. 1, 1937.

- LOW, G. CARMICHAEL. The supposed races of the Grey- or Black-bellied Plover (*Squatarola squatarola*). *Ibis*, (14) 2: 154-158, Jan. 1938.—A comparison of British, American and eastern birds sustains American usage in not recognizing an American subspecies.
- MALTBY, FRED. Some experiences with the Pacific Night Hawk. *Oölogist*, 55: 16-20, Feb. 1938.—Habits near Seattle, Washington.
- MATHEWS, G. M. [A new name for the British Long-tailed Tit.] *Bull. British Ornith. Club*, 58: 44, Jan. 5, 1938.—*Aegithalus caudatus rosaceus*.
- MATHEWS, GREGORY M. A new shearwater for Western Australia. *The Emu*, 37: 114-116, pl. 16, Oct. 1, 1937.—*Puffinus leptorhynchus* Mathews.
- MATHEWS, GREGORY M. Remarks on Prions. *The Emu*, 37: 118-121, Oct. 1, 1937.
- MATHEWS, GREGORY M. Key (dichotomous antithesis) of the storm-petrels. *The Emu*, 37: 136-143, Oct. 1, 1937.—New subgenus, *Fregolla*, for *Fregetta melanoleuca*.
- MCNAMARA, ELLIS. Birds of the blackberries. *The Emu*, 37: 99-102, Oct. 1, 1937.—A brief account of Australian birds that have adapted themselves to living in the thickets of introduced blackberry.
- MAYR, ERNST, AND GREENWAY, J. C., JR. Forms of *Mesia argentauris*. *Proc. New England Zool. Club*, 17: 1-7, Mar. 24, 1938.—In addition to the typical race from Sikkim and southwestern Yunnan, and *M. a. tahananensis* from peninsular Siam and the Malay peninsula, two new races are recognized: *M. a. vernayi* from Upper Chindwin River, and *M. a. galbana* from Mt. Angka, northern Siam.
- MEIKLEJOHN, R. F. Determinism and norm in bird biology. *Arch. Suisses d'Ornith.*, 1: 414-416, Oct. 1937.—On factors possibly affecting the number of eggs to a set.
- MILLER, ALDEN H. Biotic associations and life-zones in relation to the Pleistocene birds of California. *Condor*, 39: 248-252, Nov. 1937.—Comparison of the known flora and small-bird fauna of the three Pleistocene stations, Rancho La Brea, Carpinteria, and McKittrick, in California with those of the present day indicates that formerly "southern California resembled northern Lower California in abrupt contrasts, yet had certain northern components not now found in Lower California. Northern California was of more boreal aspect."
- MILLER, R. S. The Spotted Catbird [*Ailuroedus melanotus*]. *The Emu*, 37: 73-76, pl. 13, Oct. 1, 1937.
- MOFFITT, JAMES. Seventh annual Black Brant census in California. *California Fish and Game*, 23: 290-295, Oct. 1937.
- MOORE, ROBERT T. Unusual birds and extension of ranges in Sonora, Sinaloa and Chihuahua, Mexico. *Condor*, 40: 23-28, Jan. 1938.
- MOREAU, R. E. [A new race of the Bar-throated Warbler.] *Bull. British Ornith. Club*, 58: 48-49, Jan. 5, 1938.—*Apalis murina fuscigularis* from Taita Hills, Kenya Colony.
- MOREAU, R. E., AND SCLATER, W. L. The avifauna of the mountains along the Rift Valley in north central Tanganyika Territory (Mbulu district).—Part II. *Ibis*, (14) 2: 1-32, Jan. 1938.—The concluding part of this list of upland birds with brief annotations. The European Blackcap, which winters commonly, is a frequent singer during the winter months. The author suggests, from the fact that he found the gonads well developed in an October and a January bird, that they do not shrink in this season.
- MORRISON, ALASTAIR. Notes on the birds of north-east Iceland. *Ibis*, (14) 2: 129-136, text-fig. 1, Jan. 1938.—This corner of Iceland has been less investigated than other parts. The Iceland Falcon has decreased in recent years. The Iceland

- Whooper Swan is still fairly common in Melrakka Sietta. Here, too, the Eider is abundant. Nine Eider Duck farms yield about five hundred pounds of cleaned down annually. Figures plotted for yields of one farm since 1910 show a steady decline in production, since 1928.
- MORRISON-SCOTT, T. C. S. A note on the distribution of the two shrews found in Jersey. *Journ. Animal Ecol.*, **6**: 284-285, 2 tables, Nov. 1937.—The author's interest in the contents of three lots of Barn Owl pellets from Jersey was evidence as to habitat preferences of shrews. As complete lists of the animals represented in the pellets are given, they make a welcome contribution to knowledge of food habits of the Barn Owl, a cosmopolitan species, data on the diet of which, so readily obtained by pellet analysis, probably already exceed those for any other bird. From a theoretical point of view, the findings are of interest as shrews and moles, supposedly "protected" animals, amounted to a third of all the organisms taken. Small rodents, as usual, were prominent and birds made up 15 per cent of the total number of captures, most of them being English Sparrows.—W. L. M.
- MORRISON-SCOTT, T. C. S. Experiments on colour-vision in the Satin Bowerbird (*Ptilonorhynchus violaceus*), with other observations. *Proc. Zool. Soc. London*, **107** (ser. A): 41-49, pl. 1, 1937.—The distinct choice of blue and greenish-yellow objects for decoration of its bower may be correlated with the fact that the eyes of the female are blue while greenish yellow matches the tint of her body feathers and underside of the wings and hence these colors are attractive to the male.
- MURPHY, ROBERT CUSHMAN. Dark skies—a scientific voyage in a 38-foot boat along the rainy Pacific shores of Colombia, the least-known continental seacoast in the world. *Natural History*, **41**: 164-178, illustr., Mar. 1938.—An important discovery was that the main wintering ground of the Black Tern is off the western shores of Colombia. An interesting account of the winter conditions and bird life of the region.
- MURRAY, J. J. Some breeding birds of Letcher County, Kentucky. *Kentucky Warbler*, **14**: 1-4, Feb. 1938.
- NAUMBURG, ELSIE M. B. Studies of birds from eastern Brazil and Paraguay, based on a collection made by Emil Kaempfer. *Bull. Amer. Mus. Nat. Hist.*, **74**: 139-205, Dec. 31, 1937.
- NICHOLS, J. T. The European Starling's relation to native species. *Univ. of N. Y. Bull. to Schools*, **24**: 129-130, Mar. 15, 1938.
- NICOL, A. C. On the nest of the Sora Rail (*Porzana carolina* Linn.). *Canadian Field-Nat.*, **52**: 55-57, 2 figs., Apl. 1938.—A Sora covers its eggs with leaf scraps when leaving the nest; locality not given.
- NIETHAMMER, GÜNTHER. Ueber den Kropf der männlichen Grosstrappe. *Ornith. Monatsber.*, **45**: 189-192, Dec. 13, 1937.—The Great Bustard of Europe, is found to have in the male a secondary enlargement of the crop, which develops as an out-pocketing as the bird matures. It is the expansion of this that produces the swelling of the throat when the bird displays. No other strictly comparable structure is known in birds.
- NIETHAMMER, G. Über die Beziehungen zwischen Flügellänge und Wanderstrecke bei einigen europäischen Singvögeln. *Arch. f. Naturg.*, new ser., **6**: 519-525, 1937.—Author quotes considerable material to show that the increase of wing-length with latitude, which is observed in so many birds, is frequently not an index of larger body size, because the weights of northern birds are not correspondingly larger. It rather seems that there is a correlation between wing-length and length of migration route.—E. MAYR.

- NORTHWOOD, J. D'ARCY. Notes on Hawaiian bird life. *Bird Notes and News*, London, **17**: 152-153, 1937.—A short account of the Hawaiian avifauna. "To-day there are probably only five species of the native perching birds to be found on Oahu." Several exotic species have become naturalized through introduction, including the American Cardinal, the Brazilian Cardinal and the American Mockingbird.
- ORFILA, RICARDO N. Los Psittaciformes argentinos. *El Hornero*, **6**: 365-382, pl. 3, Sept. 1937.—Continuation of a review of the Argentine parrots.
- OVERINGTON, R. BRUCE. A trip to the tropics. *Oölogist*, **54**: 105-109, Sept. 1937.—An account of the discovery of the nest of a Harpy Eagle, and the collecting of the adult female and her three eggs near Turrialba, Central America.
- PAGET-WILKES, A. H. Notes on the breeding of some species in north-eastern Uganda. *Ibis*, (14) **2**: 118-129, Jan. 1938.—Among other birds noticed, the barbet, *Trachyphonus darnaudii*, is remarkable in that it digs a nesting burrow vertically in sandy soil to a depth of two or three feet.
- PAYN, W. A. Spring migration at Tangier. *Ibis*, (14) **2**: 33-38, Jan. 1938.—In tabular form are given migration dates of spring arrivals and their departure northward at Tangier. Males usually arrived about ten days ahead of females. "In no case were the gonads of passage-migrants at all developed on arrival; nor do birds sing on arrival, except, possibly, the Oriole."
- PAYN, W. H. Some notes on the spring migration in Malta and Gozo. *Ibis*, (14) **2**: 102-110, Jan. 1938.—"Evidently rather than make the long sea-crossing direct from the Libyan coast, migrants follow the coastline round till they reach Tunis, whence the journey via Malta and Sicily to the Italian peninsula is a comparatively easy one."
- PEASE, H. J. R. Birds of Hailuoto, Finland. *Ibis*, (14) **2**: 38-65, Jan. 1938.—An annotated list of birds seen on a visit to this island near the head of the Gulf of Bothnia. Several species, as Starling, Rustic Bunting (a recent colonist), Common Buzzard, Lapwing, Curlew, Great Black-backed Gull, have increased in recent years, while others, as Raven, House Sparrow, Osprey, Grey Lag-Goose, Selavonian Grebe, Razorbill, Black Guillemot, Common Crane, Capercaillie, Willow Grouse, have decreased.
- PEREYRA, JOSÉ A. Viaje al paraiso de nuestras aves acuaticas. *El Hornero*, **6**: 466-476, 3 text-figs., Sept. 1937.—Account of a visit to the breeding grounds of many aquatic birds near General Lavalle, Argentina.
- PEREYRA, JOSÉ A. Miscelanea ornitologica. *El Hornero*, **6**: 431-449, 3 text-figs., Sept. 1937.—The notes include new bird records for Buenos Aires province; Swainson's Hawks feeding on locust swarms, habits of the parrot, *Myiopsitta monacha*, a probable new species of *Sicalis*, provisionally named *Sicalis striata*, albinism in various birds, and a correction of synonymy whereby a specimen referred by Arribalzaga to *Merula maranonica* is shown to be *Turdus amaurochalinus*.
- PETERS, JAMES L., AND GRISCOM, LUDLOW. Geographical variation in the Savannah Sparrow. *Bull. Mus. Comp. Zoöl.*, **80**: 443-478, 1 pl., Jan. 1938.—On the basis of a very large series of specimens representing the Savannah Sparrows of North America, the authors have critically examined the various geographic forms of this difficult group with many interesting results. They for the first time point out that the Ipswich Sparrow, hitherto given specific rank, is after all but a geographic race of the Savannah Sparrow, differing in its pale coloration in correlation with the sandy nature of its breeding ground on Sable Island. The eastern *Passerculus sandwichensis savanna* is shown not to be a breeding bird in South Carolina, as

- believed by Figgins, and the supposed race *bradburyi*, described by him, is thus a synonym. The dark race of the Labrador east coast and Newfoundland is upheld as *labradorius*, although the determination of migrant birds from farther south is often difficult in certain stages of wear. The bird from the west side of Hudson Bay, southward east of the prairies to northern Minnesota, is distinguished as a new race, *P. s. oblitus*, while the stout-billed bird of the Alexander Archipelago and adjacent mainland, Alaska, is separated as *P. s. crassus*. Other western races are carefully defined and the migration periods, summer and winter ranges are carefully worked out for all the subspecies. While the authors have not attempted to review the large-billed forms of the west coast, these are included with brief comment, for the sake of completeness, on the basis of previous study by Californian ornithologists. The colored plate brings out the subtle points of difference between the races *P. s. savanna*, *P. s. nevadensis*, and *P. s. labradorius*.
- PETERSON, THEODORE. The Parasitic Jaeger. Jack-pine Warbler, **16**: 6-8, Apl. 1938.—Observed at St. Joe, Michigan, in 1922.
- PINNEY, M. E., AND MACNAUGHTON, J. F. Some early bird records of Wisconsin and neighboring territory to the west and north (1896-1900) and of Indiana (1876-1877). *Trans. Wisconsin Acad. Sci., Arts and Lett.*, **30**: 87-116, 1937.
- POGOSSIANZ, H. Karyotypes of some representatives of Passeres (*Passer domesticus* L., *Coloeus monedula* L., *Turdus pilaris* L.). *Biol. Zhurnal.*, **6**: 665-688, 7 fig., (1937).—Russian, with English summary. The chromosome sets of the three species are quite different. The total number of chromosomes varies in the sparrow from 40 to 48, in the Jackdaw from 56 to 67 and in the Thrush from 74 to 81, a variation almost exclusively caused by the "small" chromosomes. The sex-chromosomes were found in Jackdaw and Thrush, differed considerably. The suggestion that the differences between the three species pointed to a polyphyletic origin of the Passeres is hardly to be taken seriously in view of the differences of the chromosome sets of the various species of the one genus *Drosophila*.—E. MAYR.
- PUTZIG, P. Der Frühwegzug des Kiebitzes (*Vanellus vanellus* L.) unter Berücksichtigung anderer Limicolen. Seine Physiologie und Bedeutung für das Problem Zugtriebauslösung. *Journ. f. Ornith.*, **86**: 123-164, pls. 10-11, Jan. 1938.—Relation of migratory urge to state of the gonads and the colloid-secreting glands.
- PUTZIG, P. Zum Zuge der Zwergmöwe, *Larus minutus* Pall., im Gebiet der Kurischen Nehrung. *Limosa*, **10**: 147-151, Dec. 1937.—Migration of the Little Gull in the Kurische Nehrung of East Prussia. As in the case of the Black-headed Gull, the immatures of the previous year are later in their spring arrival than the adults.
- RÄBER, JOH. Rotmilanzug im Fricktal. *Ornith. Beobachter*, **35**: 39-41, map, 1937.—Migration of the Kite in Germany.
- REED, WILLIE RUTH. A female Cardinal fights her reflection. *The Migrant*, **9**: 17-18, Mar. 1938.
- RENSHAW, GRAHAM. Some extinct birds. *Bird Notes and News*, London, **17**: 161-162, pl., 1937.—A brief account of the 'Corbeau Indien' with a plate reconstructed from De Bry's and Harmanszoon's figures of this extinct parrot of Mauritius.
- ROOKE, K. B. Unusual reproductive behaviour: the reactions of a male Bishop-bird in non-breeding plumage to nestling Canaries. *Ibis*, (14) **2**: 147-149, Jan. 1938.—A male bird in an aviary constantly fed young Canaries and removed droppings from the nest. The female Canary at first resented the intrusion though the male was more tolerant, and eventually the stranger was accepted by both and took a very active part in the feeding and sanitation, while at the same time he gave up attempts at nest building though he continued to sing.

- ROBERTS, N. L. Some ecological aspects of bird life. Part II. The Emu, **37**: 150-156, Oct. 1, 1937.
- ROBINSON, H. W. First Fulmar Petrel to hatch on the Bass Rock. Scottish Nat., **172**, 1937.
- ROBINSON, H. W. Young Gannets with malformed beaks. Scottish Nat., **172**, 1937.—Two with crossed mandibles on Bass Rock.
- RYSGAARD, G. N. Afoot in northern Minnesota. An informative narrative of the adventures of four enthusiastic bird-students on vacation. The Flicker (Minneapolis), **9**: 1-5, 2 text-figs., Dec. 1937.
- RYSGAARD, G. N. 1937 Minnesota nesting records. The Flicker (Minneapolis), **9**: 7-12, Dec. 1937.
- SANDLAND, P. T. Notes on birds on Pelsart Island. The Emu, **37**: 144-149, pl. 26, Oct. 1, 1937.
- SAUER, E., AND SEILER, P. Beobachtungen an einem Turmfalkenhorst. Ornith. Beobachter, **35**: 33-39, 1937.—A detailed series of observations during a day at a Peregrine Falcon's nest.
- SCANLON, W. N. Les oiseaux du Taimir. Le Gerfaut, **27**: 108-120, 1937.—Description of habitats and characteristic species of the tundra of Taimyr (continuation).
- SCHÄFER, ERNST. Third preliminary report on the results of the second Dolan expedition to west China and Tibet: Four new birds from Tibet. Proc. Acad. Nat. Sci. Philadelphia, **89**: 385-386, Nov. 5, 1937.—New: *Hirundo daurica tibetana* from one hundred miles north of Jyekundo; *Lophobasilus elegans meissneri*, from south of Litang; *Passer montanus maximus* from Jyekundo; *Petronia petronia jyekundensis* from Jyekundo.
- SCHENK, JAKOB. Der Zug des Kranichs im historischen Ungarn. Journ. f. Ornith., **86**: 54-58, 2 text-figs., Jan. 1938.—The migration of the Crane (*Grus grus*) in Hungary is described. The species rarely winters, and in one region, occurs in summer, where the herdsmen sometimes hunt molting birds that are unable to fly.
- SCHNEIDER, A. Bau und Erektion der Hautlappen von *Lophophanes bulweri* Sharpe. Journ. f. Ornith., **86**: 5-8, Jan. 1938.—Erection of the skin flaps during display of Bulwer's Pheasant results from increased blood pressure due to the contraction of the muscles of the blood vessels which at the same time cut off the local circulation.
- SCHNEIDER, AD. Die Vogelbilder zur Historia Naturalis Brasiliae des Georg Marcgrave. Journ. f. Ornith., **86**: 74-106, 4 text-figs., Jan. 1938.—A reexamination of the figures on which various names of South American birds are based results in various reidentifications and consequent changes in names.
- SCLATER, W. L. The late Lord Rothschild. Ibis, (14) **2**: 111-118, pl. 2, Jan. 1938.—A biographical sketch with portrait and bibliography.
- SERVENTY, D. L. Local migration in the Perth district, Western Australia. The Emu, **37**: 90-94, Oct. 1, 1937.
- SERVENTY, D. L. *Calamanthus* forms in the Shark's Bay district, Western Australia. The Emu, **37**: 103-105, Oct. 1, 1937.
- SHAW, TSEN-HWANG. Einige Bemerkungen zum Oberschenkelknochen des fossilen STRAUSSSES *Struthio anderssoni* Lowe von Chou Kou Tien in Nord-China. Ornith. Monatsber., **45**: 201-202, Dec. 13, 1937.—In a table are given the comparative measurements of the femur of living forms of Ostrich as a contrast with that of the extinct Mongolian species, the total length of which is 355 mm.
- SHEPPARD, R. W. Rare gulls at Fort Erie on the Niagara River. Canadian Field-Nat., **52**: 61-62, Apl. 1938.—Kumlien's Gull identified January 29, 1937, and on September 18, 1897, a Laughing Gull in transition plumage.

- SICK, HELMUT. Zur Frage der Kleingefiederstruktur von *Agapornis*. Journ. f. Ornith., **86**: 113-122, 4 text-figs., Jan. 1938.—Feather structure.
- SLOAN-CHESSER, S. Bird-nesting on Lancashire Moors. Oölogists' Record, **17**: 83-88, Dec. 1937.
- SNYDER, L. L. An extralimital record of the Magpie in Ontario. Canadian Field-Nat., **52**: 45, Mar. 1938.—One taken in early spring, 1937, near Mammamattawa, Cochrane district, is now in the Royal Ontario Museum of Zoology.
- SNYDER, L. L. Ontario and its avifauna. Contrib. Royal Ontario Mus. Zool., no. 12, pp. 1-6, 2 text-figs., 1938.
- SPROT, G. D. Migratory behavior of some Glaucous-winged Gulls in the Strait of Georgia, British Columbia. Condor, **39**: 238-242, text-fig. 66 (map), Nov. 1937.—Banded birds show the usual heavy mortality up to three years of age. Immature birds tend to make the longest autumnal flights from the colony where they were hatched.
- STANFORD, J. K., AND TICEHURST, CLAUD B. On the birds of northern Burma.—Part I. Ibis, (14) **2**: 65-102, pl. 1 (map), Jan. 1938.—This forested triangle of northeastern Burma is described in its various topographical subdivisions, and the first part of a list of its birds is given. Nine species are listed as new to the Indian fauna. Critical remarks are made as to the generic division of the Laughing Thrushes, *Garrulax* and its relatives.
- STEGEMANN, B. Ueber die Flügelhaltung von *Archaeornis* in der Ruhestellung. Ornith. Monatsber., **45**: 192-195, 2 text-figs., Dec. 13, 1937.—From a study of the hand and wing bones in *Archaeornis*, the author concludes that the wing when at rest could not have been folded with the hand turned backward, but must have taken a more lacertilian position, with the palm directed more or less anteriorly.
- STEINBACHER, GEORG. Schlangen als Raubvogelbeute. Ornith. Monatsber., **45**: 197-198, Dec. 13, 1937.—Describes the method of attacking and killing snakes by a Secretary-bird in the Berlin Zoological Garden, and the apparent caution used by the bird, contrasting it with the more direct method of *Circaetus gallicus*.
- STEWART, MALCOLM. Notes on the gannetries of Sule Stack and Sula Sgeir. British Birds, **31**: 282-294, pls. 11-12, Feb. 1, 1938.
- STONER, DAYTON. The American Egret in the Albany region. Univ. of N. Y. Bull. to Schools, **24**: 119-121, fig., Mar. 15, 1938.
- STONER, DAYTON. Three returns of a Bank Swallow. Science, n.s., **86**: 469-470, Nov. 19, 1937.—A banded bird was recovered at its nesting colony on four successive springs, having made at least five round-trip journeys between its nesting ground and its winter quarters, and nested four seasons in the same sector of the same colony. In two of the latter years it had a different mate and was eventually found dead and partly eaten by a rat in a burrow a few yards from the one occupied by it four years earlier.
- STONER, EMERSON A. A record of twenty-five years of wildfowl shooting on the Suisun Marsh, California. Condor, **39**: 242-248, text-fig. 67-69, Nov. 1937.—Of various ducks killed, the Pintail and American Widgeon together form nearly half.
- STONOR, C. R. On the case of a male Ruff (*Philomachus pugnax*) in the plumage of an adult female. Proc. Zool. Soc. London, **107** (ser. A): 85-88, 1 pl., 1937.
- STONOR, C. R. On the attempted breeding of a pair of Trumpeter Hornbills (*Bycanistes buccinator*) in the Gardens in 1936; together with some remarks on the physiology of the moult of the female. Proc. Zool. Soc. London, **107** (ser. A): 89-94, 1 pl., 1937.—Full molt took place while the female was immolated in the breeding box.

- STREICH, G., AND SWETOSAROW, E. Die natürliche Mauser der Entenvögel. I. *Biologia Generalis*, **13**: 435-464, 1937.—A study of the molt of three different flocks of Domestic Geese yields the following facts. There are two molts, one beginning in May, the other in September, twenty days after the end of the first. There is practically no difference between males and females, but birds from southern Russia start molting earlier than birds from northern Russia, in exact correlation with an earlier laying period. Body plumage and tail-feathers begin to molt simultaneously, primaries and secondaries ten days later. The wing molt is ascending, the tail molt irregularly centrifugal. There is a noticeable loss of weight during the replacement of the wing-feathers. Data are given on the sequence and length of molt in different regions of the body.—E. MAYR.
- STÜLCKEN, KARL, AND BRÜLL, HEINZ. Vom Nestleben der Nachtschwalbe (*Caprimulgus e. europaeus*). *Journ. f. Ornith.*, **86**: 59-73, pls. 2-9, Jan. 1938.—An account of the nesting of the European Nightjar in Germany, illustrated by a series of remarkable flashlight photographs, showing the adults feeding the young by night, and especially the actions of the adults when the nest is approached. The display of the male at dusk is described and the differing reaction when the nest is approached by day or by night. In the former case, the bird goes through the 'injury-feigning' action, but if an enemy appears at night, the 'threat reaction' takes place in which the bird gives a warning call as it walks about near the intruder.
- SUGDEN, JOHN W. The status of the Sandhill Crane in Utah and southern Idaho. *Condor*, **40**: 18-22, text-fig. 8-12, Jan. 1, 1938.—Fish Springs, Utah, at the southern end of the Great Salt Desert, marks the southern limit of the present breeding range in the intermountain region.
- SWETOSAROW, E., AND STREICH, G. Die experimentelle Analyse des Geschlechts- und Saisondimorphismus im Gefieder der Enten. *Zool. Jahrb.*, **58**: 225-240, 2 fig., 1 pl., 1937.—The sexual dimorphism in the Rouen Duck (domestic Mallard) is caused by the female hormone. Injection of this hormone in males and castrates changed the plumage to the female type. The threshold of different feathers is different, secondaries acquiring the female characters only at the application of high concentration of female hormone. Drakes which were castrated between September and April no longer molted into an eclipse plumage. If the castration took place between May and August the eclipse plumage was not suppressed. It is suggested, in view of the close relationship of male and female hormone, that the eclipse plumage of males is caused by female hormone developed in the male gonad during the period of its maximum development. The assumption of the authors that the lack of the breeding plumage of other species of ducks is due to a lowered threshold for female hormone sounds improbable, but could easily be checked by the castration of some Black Ducks.—E. MAYR.
- TAUBE, CLARENCE. Reminiscences of wildfowl migrations. ^{1/2} Jack-pine Warbler, **16**: 8-10, Apl. 1938.—In Michigan.
- TAVISTOCK, MARQUESS OF. The breeding of the Tahiti Blue Lory (*Coriphilus peruvianus*). *Avicult. Mag.*, (5) **3**: 34-38, Feb. 1, 1938.—In the author's British aviaries.
- TEMPERLEY, GEORGE W. Notes on the bird life of the island of Raasay, Inner Hebrides. *Scottish Naturalist*, no. 229, p. 11-27, 1938.
- TUFTS, R. W. Winter birds in Nova Scotia. *Canadian Field-Nat.*, **52**: 61, Apl. 1938.
- TYLER, BRUCE P. Blue Goose in Hawkins County. *The Migrant*, **9**: 18, Mar.

- 1938.—A bird killed on the Holston River, below Church Hill, is the third record for eastern Tennessee.
- UBACH, FRANCISCO A. Observaciones de ornitología patológica. El Hornero, **6**: 419-437, text-figs. 1-18, Sept. 1937.—Notes particularly on tuberculosis in birds in captivity.
- VAN BENEDEN, A. Les oiseaux diurnes la nuit. Le Gerfaut, **27**: 103-108, 1937.—Notes on night habits of diurnal birds.
- VAN DEN BRINK, J. N. Het bedekken van de eieren door den patrijs, *Perdix p. perdix* (L.), gedurende den legtijd. Limosa, **10**: 174-176, Dec. 1937.—An account of the interesting habit of the European Partridge of covering its eggs for concealment during the period while the set is being laid.
- VAN DOBBEN, W. H. Voorjaarstrek over Nederland (11e publicatie van het "Vogel-trekstation Texel"). Limosa, **10**: 81-97, 3 text-figs., Sept. 1937.—Account of the migration of Starling, Chaffinch and Brambling in Holland.
- VAN ROSSEM, A. J., AND MARQUESS HACHISUKA. A new hummingbird of the genus *Saucerottia* from Sonora, Mexico. Trans. San Diego Soc. Nat. Hist., **8**: 407-408, Jan. 18, 1938.—*Saucerottia florenceae* from Rancho Santa Barbara, twenty miles northeast of Guirocoba, Sonora.
- VENABLES, L. S. V. Birds seen in two winter transects of the North Atlantic. British Birds, **31**: 295-296, Feb. 1, 1938.—"The increase of Kittiwakes and the decrease of Fulmars and Great Shearwaters should be noted when compared with the summer months."
- WACHS, HORST. Schutz der Seeschwalben zur Brutzeit durch biologische Trennung. Ornith. Monatsber., **45**: 199-201, Dec. 13, 1937.—On the North Sea coasts, the nesting terns are much harassed by gulls, that rob the nests of eggs or young. It is found that this may be largely prevented by the simple method of stringing wires above the nesting areas of the terns so as to make interspaces not more than two or three meters square. The terns in alighting on their nests come down almost vertically, and easily pass between the wires, whereas the larger gulls in attacking the nests come to the ground at a wide angle. In attempting to do this, they are prevented by the wires.
- WENDNAGEL, AD. Ein Bastard zwischen Weiss- und Schwarzstorch. Ornith. Beobachter, L'Ornithologiste, **35**: 1-6, 9 figs., Oct. 1937.
- WETMORE, ALEXANDER. The tibiotarsus of the fossil bird *Bathornis veredus*. Condor, **39**: 256-257, text-fig. 70, Nov. 1937.—A long section of the tibiotarsus of this Oligocene bird is figured from a specimen lately discovered in the Middle Titanotheres beds of Oligocene age, on Indian Creek, South Dakota.
- WETMORE, ALEXANDER. A Miocene booby and other records from the Calvert formation of Maryland. Proc. U. S. Nat. Mus., **85**: 21-25, 3 figs., 1938.—*Microsula*, new subgenus for *Sula avita*, new species.
- WETMORE, ALEXANDER. Another fossil owl from the Eocene of Wyoming. Proc. U. S. Nat. Mus., **85**: 27-29, text-fig. 4-5, 1938.—A new species, *Protostrix mimica*, from the Wasatch formation, twelve miles north of Worland, is a fourth known species of the Protostrigidae.
- WETTSTEIN, OTTO VON. Die Vogelwelt der Aegäis. Journ. f. Ornith., **86**: 9-53, map, Jan. 1938.—An annotated list of birds of the Grecian archipelago.
- WHITE, C. M. N. [Notes on birds of the Solomon Islands.] Bull. British Ornith. Club, **58**: 46-48, Jan. 5, 1938.
- WHITLOCK, F. LAWSON. Birds of the Norseman district, Western Australia. The Emu, **37**: 106-114, Oct. 1, 1937.

- WHITLOCK, F. LAWSON. A new petrel of the genus *Puffinus*. The Emu, **37**: 116-117, Oct. 1, 1937.—*P. leptorhynchus* Mathews.
- WILSON, HUGH. Notes on the Night Parrot, with references to recent occurrences. The Emu, **37**: 79-87, map, Oct. 1, 1937.—Rediscovery of *Geopsittacus occidentalis* and list of known specimens.
- WINTERBOTTOM, J. M. Bird population.—VIII. The avifauna of Fort Jameson, Northern Rhodesia, 1932-35. Proc. Zool. Soc. London, **107** (ser. A): 191-204, 1937.
- WOOD, CASEY A. Some of the commoner birds of Ceylon. Smithsonian Rept. for 1936: 297-302, 1938.
- WOOD JONES, FREDERIC. The question of species: with particular reference to the Tubinares. The Emu, **37**: 121-127, Oct. 1, 1937.
- WOOD JONES, FREDERIC. The olfactory organ of the Tubinares. The Emu, **37**: 128-131, pl. 17-21, Oct. 1, 1937.—“It is obvious that the whole olfactory apparatus of *Diomedea* must be regarded as a highly-developed and fully-functional organ of smell.”
- ZIMMER, KARL. Methoden zur Messung der Atemfrequenz bei Vögeln.—Sitz.-ber. Ges. Nat. Freunde, Berlin, 1936, pp. 142-156.—Quietly sitting hummingbirds had a breathing frequency of 170-250 times per minute. A sunbird (*Cinnyris habessinicus*) 100 (times per minute), a siskin (male 102, female 114), a goldfinch (102) and a Black-capped Warbler (102), showed similar figures. Larger birds were breathing more slowly; a crow 30.6, a pigeon 28.8, and a loon 17.4. Walking and flying increased the frequency very rapidly, a flying pigeon breathing 450 times per minute, 15 times as fast as when quietly sitting.—E. MAYR.
- ZOTTA, ANGEL B. Una nueva subespecie de pecho colorado, *Pezites militaris catamarcanus*, subsp. nov. El Hornero, **6**: 449-454, text-fig., Sept. 1937.—From Catamarca Province, Argentina.
- ZOTTA, ANGEL R. Notas ornitologicas. El Hornero, **6**: 477-483, 1 text-fig., Sept. 1937.—The notes include observations on *Turdus subalaris*, the first record of the Groove-billed Ani in Argentina, notes on the Giant Hummingbird in Argentina.
- ZOTTA, ANGEL R. Lista sistematica de las aves argentinas. El Hornero, **6**: 531-554, Sept. 1937.—Continuation of his list of birds of Argentina, from Columbiformes to Micropodiformes.
- ZOTTA, ANGEL R., AND DA FONSECA, SECUNDINO. Sinopsis de los Ciconiiformes argentinos. El Hornero, **6**: 395-418, text-figs. 11-21, Sept. 1937.—Conclusion of a synopsis of the characters of Argentine storks, ibises, and flamingoes.