

RECENT LITERATURE

Groebbels' 'Der Vogel', vol. 2.—The first volume of this great work which appeared in 1932, was noticed in these pages (Auk, vol. 50, 246-247, 1933). All the praise accorded the first volume, which, in the intervening five years, has more than proved its usefulness as a work of the greatest value, as a stimulant, a guide, and a source book, may be equally given the present¹ somewhat smaller one. If anything, the present one, dealing as it does with sex and reproduction, including such popular topics as nesting, territory, care of eggs and young, etc., may prove to be the more widely consulted of the two volumes thus far issued.

The first section of the book is devoted to the biology of sex, including the following topics: sexual characters, the sex organs and other hormonal glands, the experimental approach to the study of secondary sex characters; genetic aspects—sex chromosome, sex-linked inheritance, etc. A conveniently arranged bibliography of approximately 600 references guides the reader to original source material.

The second section deals with reproduction behavior other than brood parasitism. This is the bulkiest part of the book and deals with the subject in both its general aspects and in great detail for individual species. Here there is a systematic as well as a biological treatment of data, making all the included material accessible from both points of view, a feature lacking in the first section. The behavioristic, physiological, chemical, anatomical, and embryological questions pertinent to the general field are taken up in full and, as in the first volume, the material is well digested and synthesized. The correlation and coordination of a vast quantity of data from many fields and sources is in itself a remarkable feat. The bibliography of this section totals 4032 references!

The third and last section of the book deals with brood parasitism, and forms one of the best single reviews of the whole subject yet published. A criticism in point here may be the failure to include the published observations and suggestions as to the existence of parasitism in the Birds of Paradise, inconclusive though they be, especially when we find included the relatively less pertinent data on the tyrannid *Legatus* which is not strictly a brood parasite in the usual sense, but a nest usurper. A few points regarding the parasitic habit in the weaverbirds (Ploceidae) also call for comment. *Anomalospiza* is erroneously called a fringillid. *Linura fischeri*, *Vidua hypocherina*, and *Steganura* are said to be parasitic on *Uraeginthus granatinus*, *Estrilda erythronotus*, and *Pytelia*, respectively. *Hypochera* is also said to parasitize *Pytelia*. The basis for these statements is Neunzig's paper in the Journal für Ornithologie for 1929, and Belcher's article in the Beiträge zur Fortpflanzungsbiologie der Vögel for 1930. If we go to these sources we find that Neunzig admits that nothing is known of the breeding habits of *Linura fischeri* or *Vidua hypochera* in a state of Nature, while Belcher's identifications of his supposed *Steganura* and *Hypochera* eggs in *Pytelia* nests are mere inferences. *Quelea quelea* is also said to be parasitic, but it is known to make its own nest and care for its eggs and young in normal fashion. Some 353 literature references accompany this part of the volume, which ends with an index to topics only; no index to species or authors is given.

It is hoped that this work, which, by its very nature can never be a "best seller," may be widely placed in libraries at all centers where serious ornithological work is done. No scientific investigator of bird biology can afford to do without it.—HERBERT FRIEDMANN.

¹ Groebbels, Franz. Der Vogel. II Band; Geschlecht und Fortpflanzung, xvi + 547 pp., 141 text-figs., 1937; Berlin, Gebrüder Borntraeger. Price \$13.05 (bound).

Portenko on the Bird Fauna of the North Urals.—This carefully worked out report¹ is based on the results of an expedition to the northern Urals in 1928, sent out by the Academy of Sciences of the U. S. S. R. and the Ural-Plan (Ural Planning Bureau) and forms a valuable contribution to northern Palearctic ornithology. Some 102 forms of birds were collected, two of which are described as new, *Tetrao urogallus obsoletus* and *Xylocopus minor neglectus*.

The author is inclined to ". . . consider the rôle of the Ural Mountains as a zoogeographical boundary to be greater than that of an ordinary boundary between districts and to ascribe to them the significance of a subprovincial boundary, i. e., approximately the same significance, in essence and equivalence, which Sushkin established for the Yenesei." However, his own discussion is apt to give the reader a quite contrary opinion. Thus, in speaking of his Riphean district, which represents the avifauna of the extra-polar part of the North Urals, the main object of his investigations, he writes, ". . . as regards the eastern boundary of the Riphean district we must make the following most interesting statement: that we do not know a single species of forest birds for whom this boundary serves as the limit of distribution either westward or eastward, thus once more emphasizing the Siberian character of the avifauna of the North Urals forests. It is impossible, at the same time, to deny the existence of this eastern boundary, as the Riphean district is a mountain territory, markedly differing in its general landscape and avifauna from the adjoining plains. This boundary is formed by the birds associated ecologically, on the one side, with mountains: dipper, black-throated hedgesparrow, ptarmigan; and on the other with flood-plains: grey laggoose, oystercatcher, and many others." The reviewer cannot help but interpret this as meaning that highland birds are in the mountains and lowland birds in the plains, but that the mountains are not a zoogeographic demarcation line in the strict sense of the word. This is further borne out by an ecological distributional study of the birds and the region, which brings the author to the following generalizations. The northern Urals have no summits covered with eternal snow; in the subalpine zone there is no belt of stunted 'creeping' trees; and in the zone of the true mountain forest there is no belt of deciduous trees. The bird fauna is very sparse and poor and is characterized not so much by zonal forms as by peculiar combinations of the species which likewise inhabit the neighboring plains. "The mountain avifauna of the Urals presents a not abundant, but varied mixture of intruders from different countries, which have colonized the mountain habitats of the Urals, devastated by glaciation and isolated by immense expanses of lowlands from other mountain chains. This is the reason of the peculiarities of the North-Urals avifauna taken on the whole. . . . the habitat of subalpine birch woods with hedgesparrows presents a phenomenon, which does not occur anywhere else. . ." The author suggests that this last be termed the "North-Urals Statio Prunello-Betuletum Subalpinum Riphæum," a term too cumbersome to be likely to meet with wide acceptance.

The reviewer was reminded, while reading this ecological account, of the fact that in the mountains of Ethiopia where a similar lack of altitudinal vegetational belts is to be found, the lowland birds range high up to altitudes that otherwise would be far out of their range. Vegetation, with its concomitant factors of food supply, forms the barrier, not mere altitude (as expressed by temperature or barometric pressure).—HERBERT FRIEDMANN.

¹ Portenko, L. A. The bird fauna of the extra-polar part of the North Urals. Moscow, pp. i-viii and 1-240, 12 plates, 2 maps, 1937. In Russian with an English summary (pp. 223-240).

Johnston's 'Crooked-bill, the Life of a Quail.'—Crooked-bill, a Bob-white, is the hero of this nature story,¹ who roams the fields and woods of West Virginia with his companions, encountering most of the problems and experiencing, or witnessing, most of the disasters common to the quail tribe.

The author has endowed Crooked-bill and his companions with human attributes in this narrative, at the same time following the life history of the Bob-white, as revealed by the intensive investigations of recent years, as a foundation throughout. In the light of these investigations, however, some of the actions attributed to Crooked-bill and his covey mates do not ring true, though the behavior described has all been presented as fact in earlier quail biographies. For instance, Crooked-bill and Big Boy, another quail character, whistle the *bob-white* callnote while their mates incubate eggs nearby, though this note is now known to be the love call of the unmated cock birds which normally occur in from five to ten per cent surplus in the quail world. It is further recounted that only one bird, the old cock leader of the covey, whistles from the roost spot at break of day, when commonly or usually several birds whistle at once from each roost. The return of Crooked-bill from extensive wanderings to the location of his infancy, after an absence of months, implies a well-developed 'homing instinct,' while experimentation with Bob-whites indicates the contrary. Grace, a quail character, washes the bloody wing of Jane, another who has been injured, strange behavior for a Bob-white but possibly permissible in a story of this type.

Crooked-bill is of an investigative turn of mind in this story and in his wanderings encounters much of the animal life of his habitat. The observations on other creatures, most of which are birds, are presented in a pleasing, readable manner which will hold the interest of the average reader, young or old. Accuracy of several of the allusions may be questioned, however, among which the following seem most debatable: (1) It is implied that Cooper's Hawks habitually tear the wings of captured Bob-whites from the body to prevent escape before death occurs. In the reviewer's experience this has not been done in several instances where quail have been recovered from Cooper's Hawks immediately after capture. The wings have been intact, though heads and legs have usually been pulled off and swallowed before plucking of feathers from the body has been completed. (2) A Bob-white being swallowed by a blacksnake was covered with a slimy substance "that the snake had breathed on me so that it could swallow me." Creatures being swallowed by snakes are naturally covered by saliva during the swallowing process, it is not *breathed* on. But questionable statements like the above are not numerous enough to detract seriously from the story, which is generally presented in an attractive style. Allusions to the banding of birds by private individuals and in collaboration with the U. S. Biological Survey occur in several places and will aid the layman in an understanding of the purposes of that work.

The type of presentation employed has evoked considerable acrimonious debate in the past, and undoubtedly has a certain inherent weakness. In the eyes of the young or impressionable reader, horned owls, Cooper's Hawks, blacksnakes, foxes and other creatures preying on the humanized Bob-whites appear as murderers, the killing of which is a worthy aim in consequence. Other living creatures utilized by the humanized bird characters as food appear in a different light, and the luckless insect being hammered on the ground or dismembered evokes scant sympathy.

¹ Johnston, I. M. *Crooked-bill, the Life of a Quail* with a foreword by Ernest Thompson Seton. Illustrations from author's photographs. 8vo, 179 pp., 1937; Dorrance & Company, Inc., Philadelphia. Price \$2.10 postpaid.

Further, in this narrative the sportsman and his dog, when hunting our hero and his companions, are placed in a position sportsmen as a group cannot be expected to appreciate, especially as all death scenes are described so as to make them as harrowing as possible. The book will, however, be enjoyed by many to whom the matters pointed out may be of small moment.

There is a glossary of bird and plant names, the former at least of little value to the student as neither the technical nor the vernacular names are up to date while five of the first fifteen checked are incorrectly spelled.—H. L. STODDARD.

Makatsch on Brood-parasitism in the Cuckoos.—This little book¹ is a useful contribution to the literature of the European Cuckoo, *Cuculus canorus*, and the life-history material referring to that species is excellent. Unfortunately the author expanded his work to touch upon other parasitic birds with which he was not personally familiar, and as a result has made a number of mistakes which detract from an otherwise well-presented mass of data. We may dispose of these first as they really are side issues in the book and need not prejudice us against the main part of the work.

In discussing the cowbirds, he states their distribution is from southern North America to Patagonia, whereas, of course, the species *Molothrus ater* is known to breed as far north as the Athabasca country. An implication is made to the effect that the hosts of the parasitic weaverbirds lay white eggs similar to those of the parasites, although the chief victims of *Vidua macroura* in Ethiopia and Kenya Colony are species of *Cisticola*, whose eggs are decidedly spotted and speckled. It is definitely stated that *Hypochera chalybeata* is parasitic on *Lagonosticta* and that *Steganura paradisea* parasitizes *Pytelia*. The reviewer has been following the literature of the parasitic African weavers ever since his own field work with them in 1924 and 1925 and knows of no real, definite basis for either of these statements. In fact, there is more reason to believe, as far as the literature in such a subject is a help, that *Hypochera* may not be parasitic than that it is, although the reviewer has always suspected it of being a true brood-parasite! The Diplopterinae (= Taperinae) are referred to as being non-parasitic, although the only included species, *Tapera naevia*, is definitely known to be parasitic, a fact which the author refers to later on in his book. The Neomorphinae are likewise, and probably correctly, listed as non-parasitic cuckoos, but mention might have been made of the published material suggesting that *Dromococcyx phasianellus* may be a brood-parasite. Similarly it would not have been out of place to mention, even if only to refute, the implication of parasitism in the Birds of Paradise, made by Rothschild for *Phongammus keraudrenii* (Bull. British Ornith. Club, 51: 9, 1931). A few misspellings of scientific names, such as *Cossipha* for *Cossypha* (p. 103) and *Coccyzus erythrophthalmus* (p. 116) may be noted, and with these we may leave the matter of errors for the more inviting task of summarizing the mass of information Makatsch has compiled regarding one of the most written about and yet least understood birds in the world, the Common Cuckoo of Europe.

Besides his own observations the author has had access to many other observers' notes and specimens, and has combed the literature in a thoroughly adequate manner. We note that in a long and interesting discussion of the method of getting the egg into the nest, Makatsch is inclined to think that in some cases the birds may lay on the ground and then put the eggs into the nests with their bills, although he ad-

¹ Makatsch, Wolfgang. Der Brutparasitismus der Kuckucksvögel, mit besonderer Berücksichtigung von *Cuculus canorus canorus* L. Published by Quelle and Meyer, Leipzig, viii + 152 pp., 1 colored and 8 black-and-white plates, 1937. 10 Reichsmarks.

mits that in all cases where the egg-laying has actually been observed the egg was laid directly into the nest, even in some where there was only a small lateral entrance too small for the cuckoo to enter and actually sit on the nest. His position appears to be influenced by the fact that cuckoo's eggs have been found in nests seemingly impossible for a bird the size of the cuckoo to enter. This stand is backed by many of the best students of European birds and cannot be lightly dismissed.

Detailed lists of host species are given for each of nineteen areas in Germany, revealing some geographic differences in host frequencies, although the most commonly imposed-upon species are listed in most places, as might be expected. A total list of 125 hosts is given for *Cuculus canorus canorus*, 14 for *C. c. bangsi*, and 64 for *C. c. telephonus*. Shorter, incomplete lists are given for other African, Asiatic, and Australian cuckoos.

The similarity (or lack of it) between the eggs of the parasite and of its hosts is treated in detail and a colored plate showing cases of such similarity serves as a frontispiece. The writings of Baker, Jourdain, and others on this subject for both European and Asiatic cuckoos are discussed and the general inconclusiveness of many of the arguments is clearly demonstrated. On the whole, the author is impressed by the percentage of cases of egg similarity, and concludes by stating that species of parasitic cuckoos having many host species tend to produce more than a single general type of egg, a very fair statement of the case.

In discussing the matter of eviction of eggs or other nestlings by the young cuckoo, no explanation of the origin of the habit is definitely arrived at, but a rather indefinite suggestion is made by inferring that this habit occurs only, or chiefly, in cases where the young parasite and the young of the host are different in appearance, and not in cases where the two resemble each other fairly well. This of course, has no bearing on egg eviction, but only on nestling eviction.

The last chapter deals with the phylogenetic development of brood parasitism. The author considers the parasitic habit in the cuckoos to have started in some of the non-parasitic types when more than one female laid in the same nest, a thing that frequently happens. But the reason for the loss of the incubating and rearing instincts in the cuckoo he admits is still to be discovered. He reviews the various attempts to account for the cuckoo's present habits and shows wherein each of them fails wholly to satisfy. If the answer is ever to be found, it will come from a careful study of the cuckoos in intermediate stages, such as *Crotophaga*, *Dromococcyx*, *Geococcyx*, and from a comparative, accurate study of the different parasitic genera. Many years of intensive field work in various parts of the world are needed for this task. A bibliography of 592 titles completes the book.—HERBERT FRIEDMANN.

William Brewster's 'Concord River.'—The warm welcome accorded 'October Farm' (reviewed in 'The Auk', vol. 54, p. 217, 1937) has encouraged the publication of this second series of excerpts from the manuscript journals of William Brewster, which were bequeathed by him to the Museum of Comparative Zoölogy. 'Concord River' is a slightly larger volume,¹ attractively gotten up, and well sustains the varied and delightful quality of the first series, as well from a literary point of view as from the naturalist's standpoint. In many cases the portions now presented include the full entries for various days and thus give not only a better picture of the method and purpose of the writer, but also provide a fuller insight into the heart and spiritual qualities of the man himself. Thus, from brief details mentioned in passing, we may picture Brewster year by year, tramping his familiar woods and fields, sailing

¹ Concord River | Selections from the Journals of | William Brewster | Edited by Smith O. Dexter. 8vo, vii + 258 pp., 12 pls., 1937; Harvard University Press, Cambridge, Mass. \$3.50.

over the placid waters of Concord River, or silently paddling his canoe along its marshy borders at sunset, intent on every sound or movement. Often the name of a congenial companion is mentioned. Always the commoner birds and other animals held his keen attention no less than the rarer visitors, while the beauties of trees, skies and landscape were to him a never-failing source of pleasure. To the notes and songs of birds his discriminating ear was especially attuned. It was characteristic of him that he should have been so moved by the singing of a particular Vesper Sparrow that he lay down on the turf at sunset to listen until it ceased. "One must be very near this bird," he wrote, "to get the best effect of its song. I know of no other sound in Nature which so rests and soothes me. It is like the touch of a soft hand and steals through all the senses, quieting the nerves and bringing peace and rest."

The many observations recorded in these pages deal with the habits of birds and other wildlife of the Concord region as he saw them in making the rounds of his familiar haunts for the more modern methods of detailed and laborious observation from blinds for hours on end, had hardly come into vogue until the later period of his life.

Of unusual interest in bird portraiture are the twelve full-page illustrations reproduced from water color and etching by Frank W. Benson, an artist whose exceptional skill is in depicting effect rather than precise detail. Best of these is perhaps the wedge of Wild Geese over the river marshes for it carries the spirit of the book; the Woodcock rising through brush bring back to mind the whirr of wings; the Black Duck coming in to the marsh at evening and the flock of Grackles in the grass are admirable. A few of the others convey to the reviewer, at least, a less happy impression; the Chickadees seem too listless, the winter Crows too dejected, while the rising Osprey looks a bit strange with its sharply pointed tail feathers.

The Foreword by Dr. Thomas Barbour, supplies interesting comments on the publication of these notes and on the comparison sometimes made between Brewster and Thoreau. An excellent index makes the subject matter easily available.—G. M. A.

Baerg's 'Elementary Ornithology'¹ is a set of mimeographed notes bound in stiff covers, giving the substance of an outline course in general ornithology, the basis presumably of Professor Baerg's own lectures at the University of Arkansas. As outlined in the table of contents, an extremely brief history of the subject is given, after which are taken up fossil birds, the relationship of birds to reptiles, the value of birds, a short account of their structure and characteristics, their senses, songs, reproduction, flight, migrations, and other habits, with especial attention to certain species of general interest, followed by an appendix on food, and a key to the orders of land birds and the families of passerine birds, ending with a series of review questions. One might take exception to occasional statements or perhaps wish for more precise explanation, as where we are told that the Hoatzin is "a very perfect connecting link between reptiles and birds"; the use of "juvenile" for juvenal plumage is a mistake often made; and the inadvertent use of "auditory" for "olfactory" (p. 22) is an obvious slip. The author seems also to have confused *Hesperornis* and *Ichthyornis* in stating that the latter, having specialized in diving, had lost all power of flight. However, for teachers or others having in mind a course in general ornithology, this outline will serve as a suggestive and useful guide.—G. M. A.

¹ Baerg, W. J. *Elementary ornithology*. 70 pages, mimeographed, and in covers, copy-right by the author, University of Arkansas, Fayetteville, Ark.

Friedmann on birds of Ethiopia.—After an interval of seven years, it is a satisfaction to record the publication of this second volume,¹ concluding Dr. Friedmann's summary report on the birds collected in Ethiopia by the late Dr. Edgar A. Mearns, who, after his work with the Roosevelt Expedition in 1909, extended his African experience as a member of Childs Frick's expedition to what was then Abyssinia. Through his skill and industry was secured the great collection of over 5200 birds, which forms the basis of the report, a monument to his ability as a collector.

One realizes on perusing the pages, that Africa's rich avifauna is now fast approaching that state where it may be described as fairly well known. It remains for the systematist to complete the 'mopping-up' process in working out the details of distribution and geographic variation and appraising the value and interrelationships of many of the named forms. Dr. Friedmann's own field experience in eastern Africa and his excellent knowledge of its avifauna have made possible the best use of the abundant material at his command. Although much good revisionary work is here given, the author points out again and again where further study of additional material is requisite for a final understanding of many points still obscure. It is characteristic of the field naturalist's work that even the most careful collecting may result in tantalizingly few specimens of many less-known species, and almost every expedition still brings back something additional of value.

In the account of the collection, for each of the forms treated, the original citation followed by a list of the specimens, precedes a brief discussion of the salient characters and relationships, and where possible, distributional maps and field notes are added. The summary chapter at the beginning of the volume contains much of general interest to the student of geographic distribution. The author finds that the ecological regions outlined by Dr. J. P. Chapin are upheld, while the views put forth by Lönnberg as to the history of the East African fauna receive confirmation. The gradual drying out of this portion of Africa since Miocene times, aided no doubt by the destructive efforts of man, has brought about in the course of centuries a wide break in what was once a continuous east-west belt of tropical forest with the resulting development of arid areas and an invasion by Asiatic types of vertebrates adapted to steppe life. Ethiopia itself rises above the surrounding area as a mountainous country with peaks reaching to over 15,000 feet. Here are found a small number of endemic forms, relicts probably, not occurring elsewhere. Since the mountains present no impassable barriers of an ecological nature, many lowland birds range high up on their slopes. A curious and unexplained fact is that many genera of birds of this northeastern corner of the continent reappear again in South Africa, but are absent from the intervening areas.

Such new forms as have been detected in the collections have already been described in preliminary papers, but some have since been found to be invalid. Thus our knowledge gradually becomes rounded out, as previous conclusions are reviewed in the light of wider experience, and, like a variable approaching a limit, slowly approximates the truth. A colored plate of *Ploceus fricki* and a series of halftone plates illustrating various characteristic types of environment, add to the value of the account, while a thorough index renders the subject matter readily available.—G. M. A.

Mills's 'Bugs, Birds and Blizzards'.—When in a single summer more than twenty thousand tourists visit the Yellowstone National Park, make excursions to

¹ Friedmann, Herbert. Birds collected by the Childs Frick expedition to Ethiopia and Kenya Colony. Bull. U. S. Nat. Mus., no. 153, xii + 506 pp., 14 pls. (1 col.), 30 text-figs., 1937. Price 70 cents, Superintendent of Documents, Washington, D. C.

its various points of interest, wait to catch a glimpse of its wild sheep, deer, bear, and many birds, stop to listen to the evening lecture by the Park Naturalist, and depart with an awakened enthusiasm in what they have seen and heard, it is evident that there is a growing interest in natural beauty and wildlife. This booklet,¹ prepared by a former Park Naturalist, may well serve these visitors as a reminder of their tour. It deals mainly, however, with the winter aspects of the Yellowstone region and is written in a spirit of keen enthusiasm for its varied and interesting phenomena. The snow insects, the large game mammals, the many birds, the magnificence of the snowclad ranges come vividly before the reader. While there is little of unusual scientific importance in its pages, a few points are worth mentioning, such as the actions of a pair of nesting Red-tailed Hawks in driving a Bald Eagle away from their territory, the robbing of a Short-eared Owl of its prey (a meadow mouse) by a Marsh Hawk, the status of the Trumpeter Swan which here finds a year-round sanctuary; two excellent photographs belonging to the National Park Service show an adult pair and their brood of cygnets. A new departure in binding is provided by the novel method of wire loops which permit the pages to lie flat when open like a student's notebook.—G. M. A.

Bennett and Nagel on resident game and furbearers of Missouri.—Considering that the authors together expended less than a year and a half in the actual work on this report, they have brought together in this preliminary survey² of the game animals of Missouri an astonishing amount of pertinent facts that may serve as a basis of future efforts toward a wiser use of these natural resources within the State.

During the first half of the nineteenth century, which covers the period of settlement by white men, the bison, wapiti, pronghorn antelope, black bear and cougar were practically eliminated from the State. In the second half of the century the destruction of forests, draining of marshes and cultivation of prairie lands profoundly affected the native fauna; while in the following years the development of market shooting and of hunting as a sport resulted in the further decimation of other species. The game birds treated are the Eastern Bob-white, Ruffed Grouse, Prairie Chicken, Eastern Wild Turkey, Ring-necked Pheasant and Mourning Dove. The range requirements of each, and the relations to predators and especially to man are taken up, with discussion of present and past status in Missouri. For Bob-white it is estimated that the average annual kill by man is one half the autumn population; Ruffed Grouse, once abundant, are now all but gone; the Prairie Chicken still persists in scattered areas, but in greatly decreasing numbers; while the Wild Turkey, so abundant a century ago that a four-horse load of these and other game went "twice a week from Bourbon to St. Louis," now numbers an estimated population of about 3500 birds. The Passenger Pigeon disappeared a half century or more ago. For the native ducks and upland game the story is much the same. Altogether the white man's effect on the larger species is one of appalling destruction.

The report embodies recommendations for increased protection and artificial propagation for certain species, that may or may not help to stave off the day when they will cease to exist in Missouri. Although one cannot read these pages without grave misgivings for future prospects, he may nevertheless find encouragement in the fact that these matters are now so clearly brought to view. The estimates of

¹ Mills, Harlow B. 'Bugs, Birds and Blizzards in the Yellowstone.' 8vo, vii + 76 pp., 8 pls., Collegiate Press, Inc., Ames, Iowa, 1937. Price Fifty Cents.

² Bennett, Rudolf, and Nagel, Werner O. 'A survey of the resident game and furbearers of Missouri.' Univ. of Missouri Studies, 12: no. 2, 8 + 215 pp., 8 text-figs., 10 maps, April 1, 1937. \$1.25.

population and relation to annual kill seem to have been made with care and should prove of value as a basis for protective measures. Such a survey as this, imperfect as it may be, is a long step in the direction toward a more intelligent program of wildlife conservation.—G. M. A.

Linsdale's 'Natural History of the Magpies.'—In this monograph¹ are gathered together not only the author's own extensive notes on American magpies, but also the scattered literature on the habits of these and of the Old World species as well. Especial attention is given throughout the paper to the Yellow-billed Magpie (*Pica nuttalli*) with which the author is best acquainted, a species first described a century ago by Audubon from specimens obtained near Santa Barbara, California, by Thomas Nuttall.

The genus *Pica* is distinctly a north-temperate one. Of the seventeen forms treated, ten are Asiatic, four are chiefly European, one occurs in northwestern Africa and two are North American. Of those in the Old World, the northwest African bird is regarded as a distinct species, as is also *Pica bottanensis* of Sikkim to eastern Tibet, while all the others are currently considered races of *Pica pica*, as is also the Black-billed Magpie of North America. No attempt has been made, however, to review critically the taxonomic status of the Old World forms.

The Yellow-billed Magpie is one of the few American species of birds whose range is entirely confined to the State of California, where it is chiefly found in the central coast region and the adjacent San Joaquin and Sacramento valleys. Even here, its status has changed considerably within historic times, as a result of changes in agricultural practices. By contrast, the American Black-billed Magpie extends only to the northeastern borders of California, whence it ranges eastward to the Mississippi valley and in a coastal area northward to southern and western Alaska. Both are regarded as derivatives from Asiatic stock, perhaps in early Pleistocene times. Whereas the Yellow-billed Magpie requires a certain amount of forest growth with open spaces as of cultivated fields, and a uniform climate lacking high winds and cold winters, the Black-billed species is more a bird of thorny, scrubby vegetation and a cooler, more varied climate. Both are birds of weak flight. The survival of the former may be in part due to an apparent lack of predacious enemies, whereas the latter, at least in immature stages, is a frequent prey of various hawks.

In fourteen chapters sundry phases of the biology of magpies are treated, their distribution, habitat relations, food, migration, nesting, young, plumages, anatomy, general habits, populations and relations to other animals, including man, and frequent comparison is made between American and Old World birds. A remarkable habit both in America and in the Old World is that of other birds in utilizing abandoned or even fresh nests of magpies for their own purposes. Sparrow Hawks particularly seem so inclined.

A very brief summary chapter gives the gist of the mass of published details here brought together, yet it leaves the reader with the impression that a great deal remains to be filled in before the biology of the magpies is really understood. A series of excellent figures illustrates the development of the feathering in the young bird as well as characteristic poses of the conspicuous adults. Nor is the importance of folklore, representing the beginnings of natural-history observation, forgotten. There is a well-prepared bibliography covering twenty-four pages of small print, in which the important literature is included. Altogether this monograph forms an

¹ Linsdale, Jean M. 'The natural history of the magpies.' Pacific Coast Avifauna (Cooper Ornithological Club), no. 25, pp. 1-124, pls. 1-8, col. frontispiece, text-figs. 1-20, August 24, 1937.

excellent summary of our present knowledge of magpies, and affords a solid basis for further studies of their habits.—G. M. A.

Brewster's 'Birds of the Lake Umbagog region,' part 3.—At his death in 1919, William Brewster left uncompleted the manuscript which he had for many years been preparing on the birds of the Lake Umbagog region of Maine. Nearly half of the work, however, was in such shape as to permit the publication of two parts which appeared in 1924 and 1925, respectively, as numbers 1 and 2 of volume 66 of the 'Bulletin' of the Museum of Comparative Zoology. Now the third part,¹ edited by Mr. Ludlow Griscom, carries it forward and comprises the accounts of the cuckoos, kingfisher, hummingbird, and woodpeckers to the flycatchers, jays and grackles. The text is essentially as left by Brewster himself except that the accounts of the Canada Jay and the Bronzed Grackle have been compiled by the editor from the journals and notes.

The treatment is similar to that of the preceding sections, with for each species a narrative account of its general status and habits in the region, followed by extensive quotations from the journals concerning various incidents of especial interest. These are replete with valuable notes on little-known or rarely mentioned habits, gathered in the course of many years' experience, for Brewster used his unusual opportunities to full advantage. The work is of particular value as presenting a vivid and detailed picture of the bird life of what even in the final quarter of the last century was still a primeval northern wilderness, the avifauna of which was imperfectly known. To later generations of ornithologists these notes will be of increasing interest for comparison with the changed conditions of the present day, resulting from destructive activities of mankind. A final part, including the remaining passeriform birds is projected by the editor to complete this work.—G. M. A.

PERIODICAL LITERATURE

ALDRICH, JOHN W., AND BOLE, BENJAMIN P., JR. The birds and mammals of the western slope of the Azuero peninsula (Republic of Panama). *Sci. Publ. Cleveland Mus. Nat. Hist.*, 7: 1-196, 8 pls., map, Aug. 31, 1937.—The Azuero peninsula projects into the Pacific Ocean from the southern part of Panama. It includes a mountain ridge running at right angles to the main cordillera, and separated from it by low country, while in the southeastern portion is a second mountain mass. In the report (by Aldrich) on birds collected here, comparisons show that several local races may be distinguished, which are described as new: *Tinamus major brunneiventris*, *Crypturornis soui poliocephalus*, *Ortalis garrula olivacea*, *Chaetura vauxi ochropygia*, *Sittasomus griseicapillus veraguensis*, *Manacus aurantiacus flaviventris*, *Elaenia flavogastra pallidorsalis*, *Habia rubica aurantiicapilla*, *Atlapetes gutturalis azuerensis*. Critical notes on many of the species are given; in addition the material shows the distinctness of the Coast Rican woodpecker, here described as *Centurus rubricapillus costaricensis*. The single Turkey Vulture preserved proves to be the western bird, lately named *Cathartes aura teter*, confirming Chapman's view that the winter Turkey Vultures of Panama are in part migrants from farther north. The ranges of the races of *Buteogallus anthracinus* are tentatively worked out. Lesson's Motmot, usually regarded as a bird of the subtropical zone, was found to occur down to sea level.

¹ Brewster, William. 'The birds of the Lake Umbagog region of Maine.' *Bull. Mus. Comp. Zoology*, vol. 66, pt. 3, pp. 403-521, November 1937. \$1.50.

- ANDERSON, R. M. Mammals and birds of the western arctic district, Northwest Territories, Canada. *Canada's Western Northland*, Ottawa, p. 97-122, map, July 9, 1937.—Several pages are devoted to an analysis of the avifauna of the western arctic and subarctic regions of Canada. Many geese and ducks breed in the lake and marsh regions, especially of the Mackenzie valley. The greater area to the eastward with its clear lakes provides little duck-food and hence is comparatively unimportant as a duck-breeding region. The absence of murre, puffins, auks and auklets from the western arctic of Canada is striking, and to be correlated with the fact that these coasts are low and afford no cliffs such as the birds require for nesting, nor do they penetrate the arctic archipelago far enough to reach the rocky ledges of the Coronation Gulf region, which except for a few gull rookeries, is singularly lacking in seabirds. As a food species the Willow and the Rock Ptarmigan are perhaps the most important of arctic birds from the human point of view.
- BAZUIN, CLAYTON. A new Arkansas Kingbird record for Michigan. Jack-Pine Warbler (*Bull. Michigan Audubon Soc.*), **25**: no. 3, 21, July 1937.—The first known nesting of the Arkansas Kingbird in Michigan is here recorded. A pair was found on June 30, 1937, nesting in an oak tree near Delton, Barry County. The birds were later observed by various other competent ornithologists.
- BIGALKE, R. The naturalization of animals, with special reference to South Africa. *South African Journ. Sci.*, **33**: 46-63, March, 1937.—This article refers to some of the more striking (usually disastrous) results of animal introductions in various parts of the world and records all known cases for animals of all groups in South Africa. The birds that have been established include the English Sparrow, Indian Mynah, European Starling, and Chaffinch, extensively, and the Song Thrush and Ring-necked Pheasant on a lesser scale. Introductions are objected to not only on account of the material losses which they may cause but also on account of their vitiating the native fauna. The only sorts countenanced are those making good actual deficiencies in the fauna and those needed in connection with the biological control of pests. The article has a bibliography of some 60 titles.—W. L. M.
- BODENSTEIN, G., AND SCHÜZ, E. Rossittener Heringmöwe (*Larus f. fuscus*) am Victoria-See (Ostafrika). *Der Vogelzug*, **8**: 61-62, 1937.—A case has previously been reported of a Gray Gull banded in Finland being retaken on the Congo in equatorial Africa. Here a second case is put on record of a young bird banded at the Rossitten Station, as a migrant on October 14, 1936, and found dead on the north coast of Lake Victoria, central Kavirondo district, on January 2 following.
- BOGERT, CARDINE. Birds collected during the Whitney South Sea Expedition. XXXIV. The distribution and the migration of the Long-tailed Cuckoo (*Urodynamis taitensis* Sparrman). *Amer. Mus. Novitates*, no. 993, 12 pp., July 6, 1937.—From data now available the remarkable migration of the Long-tailed Cuckoo is here mapped out. From its breeding area in New Zealand, it migrates northward in the southern autumn to certain of the island groups of the South Seas, chiefly between 5° and 25° south of the equator. At this period it is accidental on the Chatham and Kermadec group and Auckland Island, but winters regularly in Melanesia, Micronesia (as far west as Palau) and Polynesia (as far east as the Marquesas). By November the birds return to New Zealand, the males slightly preceding, and start mating. Eggs are laid in November and December, and young appear in January and February. In March they gather in small groups and set off on their migration northward. Fifteen species of fourteen genera of New Zealand birds are known to be parasitized by this cuckoo.

- A list of these birds, a history of the development of our knowledge of the species, and a map showing breeding and wintering areas are given.
- BOX, HAROLD E. Observations on wild cotton in birds' nests in Antigua. *Tropical Agriculture* 14(9): 254-255, 1 pl., Sept. 1937.—Golden Warblers (*Dendroica petechia bartholemica*) and Honey Creepers (*Coereba dominicana*) freely use the lint (including seeds) of wild cotton in building their nests. This plant is regarded as a weed in relation to Sea Island cotton and contributes to the maintenance of insect pests of the cultivated species. The cotton nests become sanctuaries for some of these insects including the highly destructive pink bollworm.—W. L. M. BROOKS, ALLAN. Thayer's Gull (*Larus argentatus thayeri*) on the Pacific Coast. *The Murrelet*, 18: 19-21, Sept. 4, 1937.—The history of the discovery of this bird is briefly given. It winters regularly and in numbers on the coast of British Columbia to southern California, but how it reaches this area from its breeding grounds in eastern arctic America is unknown. Living birds show several important distinctions as compared with the common Herring Gull, which occurs in smaller numbers on the same coasts in winter. The straw-colored iris is thickly peppered with brown or grayish specks instead of being clear; the eyelids are always purplish pink instead of yellow to orange red; the bill is paler yellow to greenish. From Kumlien's Gull it differs in its larger bill, darker wing tips and especially in the color of the eyelids which in the latter species is dark scarlet red in adults at all seasons. Thayer's Gull is common on the British Columbia coasts from October to late April.
- CHAMBERLAIN, E. B. Seasonal list of South Carolina birds. *Charleston Mus. Leaflet*, no. 8, p. 1-21 [1937].—This leaflet provides a summary list of the birds of South Carolina, mainly nominal or with very brief notation of occurrence. The species are arranged in the following groups: permanent residents, 104 species; summer residents, 58 species; winter visitors, 105 species; transient visitors, 51 species; accidental or casual visitors, 55 species; a total of 373 for the State. In addition there is a hypothetical list of 26 species, for one of which, the King Eider, the author has in the interim published an authentic record.
- CLELAND, J. BURTON. The history of ornithology in South Australia. Part III. *The Emu*, 37: 33-47, July 1, 1937.—Continuing the review of early exploration and ornithological work in South Australia, brief accounts are given of the routes and bird observations on expeditions from 1891 (The Elder Exploring Expedition) down to 1907 (cruise of the 'Governor Musgrave'), followed by brief notes on the later history of ornithology in this region. Of special interest are notes on the famous Horn Expedition to central Australia. The value of certain species of birds as water indicators in desert country has more than once proved of timely aid to thirsty explorers, especially crows, Chestnut-eared Finches and Emus. Emus will scratch holes in the sand to obtain water and the crows frequently indicate the proximity of natives, often an important matter, so that in this way birds have played a part in the success of expeditions and probably also in the saving of lives.
- COOKE, MAY THACHER. Flight speed of birds. *Circ. U. S. Dept. Agric.*, no. 428, p. 1-14, May 1937.—A summary table is given of various flying-speed records for slightly over one hundred species, chiefly North American birds. The greater part of these were ascertained by means of the speedometer of an automobile following the birds. Variations in speed may arise from a variety of causes, such as force of wind, the age of the bird, or the state of its plumage. The highest on the list is the Duck Hawk, credited with a speed of from 165 to 180 miles per

hour, as determined both by stop-watch and by airplane tests. Various ducks may attain over fifty miles an hour, the Golden Plover seventy miles. The Ruby-throated Hummingbird may fly at from 45 to 55 miles per hour, but the average of most passerine birds is much less, even the Barn Swallow scarcely exceeding 42 miles. The European Starling is one of the rapid fliers, for several measurements show that its usual rate is at least from 25 to 30, and may frequently exceed 45 miles. A few data are added on the running speed of five species, the swiftest of which is the Australian Emu paced by automobile to 31 miles an hour, while the Road-runner in California has similarly been found to run at a rate of from 15 to 20 miles per hour.

- CRANDALL, LEE S. Further notes on certain Birds of Paradise. *Zoologica* (N. Y. Zool. Soc.), **22**: 193-195, 1937.—The display of the Red Bird of Paradise is described. Although male birds in captivity were kept under observation for several years, no display was seen until March 1937, when by a fortunate chance a new perch having a slanting branch extending downward from the trunk at an angle of about 45 degrees was introduced. This slanting branch seemed to take an important part in the display. Standing with his body held stiffly parallel to the perch, with the head plumage fully distended, a male bird then moved the wings slightly away from his body, and vibrated them rapidly. Then jerking the body erect, the vibrating continued. Next, lowering his body, he started down the slanting branch to its end, where he remained for some twenty seconds, the head lower than the tail, the wings slightly spread and vibrating. The plumes filled the space between wings and tail. It seems very likely that the slanting perch is necessary for the performance. Moulting requires four months. In the Twelve-wired Bird of Paradise the average moulting period is three months. Seven years were required for the development of the complete adult plumage in birds at the New York Zoological Gardens. The display of the green breastplate and the flank plumes is accompanied by a sidewise leap from the perch to the adjacent trunk of the perch, which the bird seized with its powerful feet and turned slowly around it. When the turn had been completed it leaped back to the branch from which it started. The great grasping power of the feet may be correlated with the unusual development of the short muscles of the metatarsus.
- CURTIS, ELIZABETH L. Comparative weights of live birds. *The Murrelet*, **18**: 29, Sept. 4, 1937.—In tabular form the weights of seventeen species are given in grams, ranging from that of the Rufous Hummingbird, 2.85 grams, to that of the Cooper's Hawk, female, 355.8 grams. Various species include western forms of wren, thrush, towhee, robin, jay and flicker. Each bird, when captured for banding, was slipped into a paper bag, and the whole then quickly weighed.
- DANFORTH, C. H. An experimental study of plumage in Reeves Pheasants. *Journ. Exper. Zool.*, **77**: 1-11, 2 text-figs., 1937.—Shows that there are marked differences between this pheasant and the Common Fowl in the mechanism for controlling secondary sex characters in plumage. By the time of hatching, feather follicles of the male and of the female pheasant have acquired distinctive potentialities that persist throughout later life. In the Common Fowl the feather follicles of males and females are supposed to react identically to the same hormonal influences although some doubt has been cast on this in the little-known paper of Matsui's.—E. MAYR.
- ERRINGTON, PAUL L., AND HAMERSTROM, F. M., JR. The evaluation of nesting losses and juvenile mortality of the Ring-necked Pheasant. *Journ. Wildlife Management*, **1**: 3-20, July 1937.—Typically, the hen Ring-necked Pheasant

brings off but a single brood a year, but if disaster overtakes the first laying of eggs, the bird will make a second attempt. In a total of 445 nests under observation in Iowa between 1933 and 1935, seventy-seven per cent were unsuccessful. Allowing for various unusual factors brings the loss down to fifty-nine per cent. Large as this loss seems, it is partly made up by second nestings. Hypothetically, one hundred hens should bring off between 631+ and 697+ young in a season. As a check on this figure, at the termination of the nesting season 106 hen pheasants were found to have a total of 441 young.

GROTE, H. Zur Fortpflanzungsbiologie einiger Strandläuferarten (*Calidris*).

Beitr. z. Fortpflanzungsbiol. d. Vögel, **13**: 127-132, July 1937.—Notes on the breeding habits of six Old World species of this genus of sandpipers, especially the courtship display and its duration as well as the part each sex plays in the care of the eggs and young. In *C. minuta* the female apparently assumes the chief part in incubation; in *C. temminckii* the male seems to be more active in taking a part in these duties. In the case of *C. testacea*, both parents share in the nesting and are seen accompanying their downy young. On the other hand, in two cases where *C. tenuirostris* was observed, a single bird alone was found incubating, and one of these when collected proved to be a male while the other was presumed to be of that sex.

GUGGISBERG, C. A. W. Auf den Vogelinseln von Pembrokeshire 26 April-2 Mai 1937. Der Ornith. Beobachter, L'Ornithologiste, **34**: 192-203, pls. 1-3, 4 text-figs., 1937.—As a guest of Mr. Lockley, the author spent a week at the bird sanctuaries of the islands Skokholm and Grassholm, off the southwest coast of Wales, and gives a brief account of the seabirds nesting there. Two Fulmars were seen and Lockley believes that in the course of a few years more they will nest on the islands. In 1894, Fulmars were rare visitors in autumn and winter and till 1878 St. Kilda in the Hebrides formed their southernmost breeding station. Later they suddenly increased their area of distribution, when about 1900 the first colonies were established on the English coast. From 1910 on, they began nesting on the coast of Ireland. On Skokholm is a large breeding colony of Manx Shearwaters with which in 1936 Lockley made the following experiments, using banded birds. A bird taken to South Devon was back at its nest shortly before midnight the same day. A second bird carried six hundred miles north and a third taken to the Färoe Islands and released, were retaken in their nest burrows on his return to the island a fortnight later. Two others taken to the Firth of Forth were both retaken at their burrows some days after. These and the nesting petrels doubtless owe their escape from predatory gulls to their nocturnal and hole-nesting habits. Oyster-catchers proved to be somewhat active by night. The island of Grassholm is inhabited by a fine colony of Gannets. In 1886 the nesting birds numbered some 250 birds, but a photographic survey in 1933 showed that this number had increased as a result of careful protection to about 4750 breeding pairs.

HANN, HARRY W. Life history of the Oven-bird in southern Michigan. Wilson Bull., **49**: 145-237, pl. 1-11, Sept. 1937.—This intensive study has chiefly to do with the nesting activities of the Oven-bird. Locally breeding males are among the first to arrive in spring, while females are from nine to fourteen days later. The birds reoccupy their old territories while new birds occupy the remaining space. Territories vary in size from half an acre to about four and a half acres. Copulation between non-mated birds is common and in two cases males had two mates each. Flight song is commoner toward evening. The average incubation period is twelve days and five hours. Eggs are pipped from fifteen to twenty

hours before hatching. The young are more precocial than those of most passerines, leaving the nest at eight days of age. They pass through four stages: a hopping stage, for at first they progress in this way and gradually learn to run; the early flying stage, from the eleventh to twentieth day after leaving the nest; a semi-dependent stage in the following ten days in which they begin to pick up food for themselves; and an independent stage, from this time to about the fortieth day, when they have attained their first-year plumage and are ready to migrate. Less than half (43.5 per cent) of the eggs produced young that left the nest while the number of young that mature sufficiently to leave the woods was estimated to be hardly a quarter of the total number of eggs laid. About half the nests were parasitized by the Cowbird, resulting in a loss of about 18 per cent of the number of eggs, chiefly through the removal of eggs by the Cowbird. Out of forty Cowbird eggs, probably not more than five young reached the age when they left the woods, so that the Oven-bird is not a very favorable host.

- HERMS, W. B., AND KADNER, C. G. The louse fly, *Lynchia fusca*, parasite of the owl, *Bubo virginianus pacificus*, a new vector of malaria of the California Valley Quail. Journ. Parasitol., **23**: 296-297, June 1937.—Positive results in experiments show that this fly can transmit quail malaria caused by *Haemoproteus lophortyx*.
- HICKS, LAWRENCE E. The breeding birds of unglaciated Ohio. The Cardinal, **4**: 125-141, 2 pls., July 1937.—In this analysis of the avifauna of Ohio, the author finds that the Chuck-will's-widow is the only species that is limited in the State to the unglaciated southeastern portion. The dominant forest trees are oak, chestnut and hickory. Of the 183 species that breed in Ohio, 130 are found nesting in the unglaciated area. Of these, only six are confined to the more southern parts as breeding birds. The northern conifer forest is almost unrepresented in the unglaciated area, and there are no true bogs with bog flora. Though hemlock grows sparingly in every county, it is only in a few places that it is common enough to influence the bird population.
- HOESCH, W. Brut- und Mauserbeobachtungen an verschiedenen *Lophoceros*-Arten. Ornith. Monatsber., **45**: 106-114, 4 text-figs., July 8, 1937.—Interesting notes are presented on the nesting habits of four species of the smaller hornbills (*Lophoceros*) of the arid country of Southwest Africa. Two species (*L. nasutus* and *L. bradfieldi*) breed in rock crevices of cliffs; *L. flavirostris leucomelas* and *L. monteiri* nest in hollows of trees. The food of *L. bradfieldi* consists of various larger insects, small reptiles and fruits. Breeding males can be distinguished in the field by the worn feathers of the tail, which is used as a prop to support the bird while feeding the incubating female at the nest-hole. This last is walled up except for a narrow slit. The breeding female then proceeds to moult, losing the wing and tail feathers almost simultaneously. A nest of *L. flavirostris leucomelas* in a hollow tree consisted, when opened from below, of about two liters of bits of bark, but contained no eggs, although it had evidently been walled up for some while. On the following day the female was found to have broken her way out, and though partly moulted, was still capable of flight. The birds remained in the vicinity and in about three weeks the female was again immolated, and on opening the nest from below three weeks later, three slightly incubated eggs were found, which later proved infertile, probably because of the interruption of the nesting cycle.
- HOLLOW, P. A. D. Observations on the courtship and mating of the Smew. British Birds, **31**: 106-111, fig. 1-5, Sept. 1, 1937.—The little-known display of the male Smew is carefully described as observed on reservoirs in Surrey and Middlesex.

Courting was first seen on December 27 and continued until about the third week of February, diminishing in intensity in the latter part of the period. The display begins with the erection of the crest on the forehead. The head is then drawn in and back against the neck, and the breast is puffed out. In a few seconds the head and neck may be jerked forward. If sufficiently excited, the male then rears up on the water from time to time, with the bill open and shaken from side to side. Only a few times was a drake seen to follow this by pointing the bill upward, nor was one seen to throw the head back as Millais has depicted. An action common to both sexes was pointing the bill to the water as if to drink, then raising it upward. The female has also a bobbing action in which the head is pointed vertically down against the breast, after which the bird bobs quickly upward several times in succession. The mating actions are described in detail. In this the duck seems to take the initiative, extending her head just above the water. The drake may or may not respond, nor are his courtship actions an immediate prelude to copulation. The early season of year in which the courtship takes place is remarkable.

JOURDAIN, REV. F. C. R. The so-called "injury-feigning" in birds. III. The Oologists' Record, 17: 14-16, March 1937.—In this further compilation of records of birds resorting to "injury-feigning" tactics when their nests are approached, an especially interesting case is that of the Short-eared Owl as observed by C. E. Baker in Orkney. The bird alternately used threatening actions, clapping its wings and calling while circling about in the air, then as the observers remained watching, would "side-slip" to the ground and flutter as if helpless. The first set of actions belongs to the "attacking" group, the second is usual with a dangerous enemy that cannot be intimidated but may be enticed away by signs of apparent weakness. Thus it may appear that the bird has the power of discriminating between dangerous and relatively harmless intruders.

LÉPINEY, —, AND NÉMETH, —. [On the high-mountain fauna of the Great Atlas.] Bull. Soc. Sci. Nat. du Maroc, 16: 144-145, 1937.—From a résumé of this paper in the Ornithologische Monatsbericht, 45: 149, 8 July 1937, it appears that the hitherto inaccessible upper parts of the Djebel Toubkal (4165 meters), the highest part of the Great Atlas in Morocco, have now been visited, and as long ago anticipated by Hartert, have yielded several breeding birds of European affinities, including *Pyrhocorax pyrrhocorax*, and *P. graculus*; *Rhodopechys sanguinea aliena*, of which three specimens were taken forty years ago in the Great Atlas, but since then not found; *Phoenicurus ochruros gibraltariensis*, found breeding above 2000 meters for the first time in Morocco; and *Prunella collaris* of which two specimens taken are the first from French Morocco.

LLOYD, BERTRAM. On the behaviour of male Mallards with broods. British Birds, 30: 334-336, Apl. 1, 1937.—While the male Mallard does not ordinarily take any care of his progeny, leaving their guidance and defence to the female, yet in 1936 exceptions to this rule were observed at the Tring Reservoirs, where in five instances broods of young ducklings were seen accompanied by a male and a female adult, apparently the parents. In each case the company-keeping behavior of the Mallard drakes and their evident concern in the families "left no doubt that the association was a real and not a fortuitous one."

LÜDERS, OTTO. Ueber Ortsbewegungen des Waldkauzes (*Strix a. aluco*). Der Vogelzug, 8: 54-57, April 1937.—A study of the Wood Owl in Germany by means of banding, shows that the adult birds are sedentary. Up to an age of from twenty days to two months, before they are strong on the wing, the young remain in the

neighborhood of their nest site, although individuals may move off as far as ten kilometers. At the age of from two to eight months the true dispersal takes place, and they then are found at distances from ten to fifty kilometers from their starting point. This dispersal movement ends at from nine to twelve months of age. The greatest distances from their original nest site hitherto established are 210 and 300 kilometers.

MATHEWS, GREGORY M. Notes on New Zealand ducks. The Emu, **37**: 31-32, July 1, 1937.—The author's views as to the narrow limits of genera and species, result in the erection of a new subgenus, *Zesarkaca* for the New Zealand Paradise Duck, distinguished from *Casarca* by its different color and wider, blunter nails. A new subgenus, *Zeafulix*, is proposed also for *Anas novaeseelandiae* on account of its lacking the long head crest of *Fuligula*. The North and South Island ducks of New Zealand belonging to the species *Elasmonetta chlorotis*, *Zeafulix novaeseelandiae* (now used in a generic sense) and *Hymenolaimus malacorhynchus* are in each case found to be subspecifically different and new names are provided.

MAYR, ERNST. Birds collected during the Whitney South Sea Expedition, XXXII. On a collection from Tanna, New Hebrides. Amer. Mus. Novitates, no. 912, 4 pp., Feb. 27, 1937.—In 1936, L. Macmillan visited the island of Tanna in the southern New Hebrides group, and made a thorough collection of birds, some twenty species of which were previously unrecorded from the island. A comparison of material from the northern and the southern islands, indicates that there are distinguishable races of certain species in these two parts of the group. Four are thus described: *Zosterops lateralis macmillani* from Tanna; *Z. flavifrons efatensis* and *Myzomela cardinalis tenuis* from the northern islands; and *Myzomela cardinalis tucoipiae* from Tucopia Island.

MAYR, ERNST. Birds collected during the Whitney South Sea Expedition. XXXIII. Notes on New Guinea birds. I. Amer. Mus. Novitates, no. 915, 19 pp., Apl. 10, 1937.—This number is a brief review of the swiftlets of the genus *Collocalia*, except for such well-defined species as *esculenta*, *trogodytes*, *gigas*, *whiteheadi* and *lowi*. Attention is chiefly devoted to the species *vanikorensis*, of which a series of over two hundred specimens was available, from various island groups in Oceania. A close study indicates that on these groups the populations tend to become slightly differentiated so that at least ten races are here distinguished of which four are described as new. Over much of its range, a second species, *C. hirundinacea*, occurs with *C. vanikorensis*. The differential characters of the two species are carefully pointed out.

MAYR, ERNST. Birds collected during the Whitney South Sea Expedition. XXXV. Notes on New Guinea birds. II. Amer. Mus. Novitates, no. 939, p. 1-14, July 21, 1937.—The present paper includes notes on various cuckoos, owls, frog-mouths, kingfishers and hornbills of the Papuan region. In spite of sundry older records for the European Cuckoo the author has seen no authentic specimen from New Guinea, and suggests that at least some of these refer to *Cuculus optatus*. A new *Centropus* (*C. bernsteintii manam*) is described from Manam Island. *C. phasianus nigricans* is shown to be restricted to the south coast of southeastern New Guinea, and two additional races are named. A new genus, *Uroglaux*, is proposed for the long-tailed owl, *Athene dimorpha* Salvadori. It is suggested that since New Guinea records for *Eurostopodus mystacalis* are all in the southern winter, the species is perhaps a winter visitor from Australia. A new race of hornbill, *Rhyticeros plicatus jungei* is named, to include birds of northern and eastern New Guinea which average larger than those from other parts of the island.

- MAYR, ERNST. The homing of birds. *Bird-lore*, **39**: 5-13, 1937.—A timely summary of recent views and experimentation on the homing of birds, in which 'homing' is defined as the 'ability to return to a known goal over an at least partially unknown flight-route', thus distinguishing it from the fall migration of immature birds that fly toward an unknown goal. Experiments carried out with nesting Starlings in Germany prove that a percentage of the birds return to their nest boxes even though transported as far as 439 miles distant, and the results are not essentially different when birds are released from localities far to one side of their presumed normal migratory flight line. As yet no adequate explanation is available, for the 'retracing theory' as well as that of 'knowledge of geographic position' fall down. Nor is there any evidence that electrical or magnetic fields are perceived by birds as a help in orientation. It is pointed out that in the case of homing birds there is a constant stimulus in the form of the known goal which acts as a directive influence.
- MEYER, OTTO. Australische Zugvögel im Bismarckarchipel. *Ornith. Monatsber.*, **45**: 48-51, Mar. 10, 1937.—Three Australian birds, the Shining Cuckoo (*Chalcites lucidus*), the Sacred Kingfisher (*Halcyon sancta*) and the bee-eater, *Merops ornatus*, regularly migrate in the southern autumn northward to the Bismarck archipelago. Seven other species also occur irregularly, including a swallow, a kingfisher, a roller, a cuckoo, a hawk and a rail.
- MOORE, ROBERT T. New race of *Chubbia jamesoni* from Colombia. *Proc. Biol. Soc. Washington*, **50**: 151-152, Sept. 10, 1937.—This snipe of the Paramo zone of the central Andes of Colombia is a larger-billed and slightly grayer bird than its relative of Ecuador, and is here named *Chubbia jamesoni chapmani*; type from Santa Isabel, Quindio Andes, Colombia.
- MOREAU, R. E. Der Herbstzug von *Lanius c. collurio* über das Mittelmeer. *Der Vogelzug*, **8**: 45-47, April 1937.—The author opposes the previous belief that the European Red-backed Shrike in autumn crosses the eastern Mediterranean Sea by a flight along a very narrow front due south from the Aegean Sea to Alexandria. He concludes that the front is wide, covering from 21 to 30 degrees of east longitude and that a large part of the birds cross in a north-south direction instead of passing to the southeast or around the eastern end of the Mediterranean.
- MOUSLEY, HENRY. A study of a Virginia Rail and Sora Rail at their nests. *Wilson Bull.*, **49**: 80-84, June 1937.—Both species were found nesting in successive years, each in a separate small cat-tail swamp near Montreal. The Sora seemed much the shyer bird. The nest of this species contained its first egg on May 14, the full complement of eleven eggs on the 24th, while the young hatched on June 7, or fourteen days from the date of laying the last egg. All had gone the following day. In the case of the Virginia Rail the first egg was laid on May 18, the tenth and last on May 27, while the first young appeared on June 13, or seventeen days after the deposit of the last egg.
- MUNRO, J. A., AND CLEMENS, W. A. The American Merganser in British Columbia and its relation to the fish population. *Bull. Biol. Board of Canada*, no. 55, 50 pp., 10 figs., 5 tables, Sept. 1937.—Summary of investigations, several units of which have previously been reported upon. The life history of the bird is discussed in its bearing on the economics of the species; territorial requirements are touched upon in a section on population studies; and there is a brief statement about restrictive factors. For a study of the food habits 363 "stomachs" were available. Aids to identification of the fish-food items are discussed and illustrated. The authors took the unusual but praiseworthy course of studying the food habits of the fishes

- preyed upon as a guide to appraisal of economic values, and report upon those of ten species. The findings regarding the Merganser and the fishes are presented both by localities and in summary. The outstanding foods of the fish duck are freshwater sculpins, salmon eggs, Salmonidae (char, trout, salmon), and sticklebacks. A great many of the eggs consumed are waste and were evidently dead when eaten. Considering all aspects of the problem in the light of their very thorough investigation, the authors conclude "that the American Merganser does not affect adversely the production of trout and salmon to an appreciable degree, because its numbers are not excessive and its food consists to a very large degree of coarse and undesirable fishes." This conclusion does not preclude the idea that control may be locally desirable but control efforts should be undertaken only where proper biological investigation shows them to be warranted. "When special measures of control are necessary they should be regarded as a corrective for a temporary abnormal condition and not as a permanent policy. In such special habitats as rearing ponds, or where fish cultural activities are concentrated, there may always be a need for control. A general reduction of American Mergansers on the assumption that at some time or in some place they may cause losses of trout or salmon is considered an unsound and unwarranted procedure."—W. L. M. NICE, MARGARET MORSE. Curious ways of the Cowbird. *Bird-lore*, **39**: 196–201, 2 figs., 1937.—On Interpont, Ohio, eggs of the Cowbird laid in Song Sparrows' nests have been found to hatch in eleven or twelve days, with occasionally one or two days in addition, so that the reputed ten-days' period of incubation is not sustained. As illustrative of the extent of parasitism, 98 of 223 Song Sparrows' nests were found to be parasitized. While 66 unparasitized nests raised an average of 3.4 Song Sparrows, 28 successful but parasitized broods averaged only 2.4 Song Sparrows so that each Cowbird reared costs one Song Sparrow. With an abundance of Cowbirds, individual territories do not seem to be kept, but may be shared; each bird usually ranges over about twenty acres. Various other notes on habits are given.
- OLIVER, W. R. B. The Wrybill Plover. *The Emu*, **37**: 1–4, pl. 1 (col.), July 1, 1937.—The beautiful colored plate and the summary of our knowledge of this remarkable bird afford timely information. First described in 1830 by the naturalists of the Astrolabe expedition, it has been only in recent years that accounts of its habits have been available, for the paper of Pitts in 1870, giving the first general account of it, has only been supplemented by that of Stead in 1932. Though migratory, its passages are limited, for it breeds in shingly areas of the rivers in the South Island of New Zealand, and in the southern autumn (December) migrates to the North Island for the winter. Usually but two eggs are laid, and the young when hatched already have the tip of the bill bent about twenty degrees to the right. Since the shingly areas where it breeds and in which its colors are well adapted for concealment, are likely to persist, its chances of escaping extermination for a good while to come seem assured. The curious asymmetry of the bill remains without adequate explanation.
- PETTINGILL, OLIN SEWALL, JR. The New Hampshire hummingbirds. *Bird-lore*, **39**: 191–195, 2 figs., 1937.—The success with which Ruby-throated Hummingbirds have been attracted to the Webster home may be estimated when in the course of an hour at least fifty individuals came to the vials of sugar solution prepared for them. These vials are adorned with brilliant red, since experience showed that the birds are attracted more quickly to those that are thus marked. The photographic illustrations are from pictures taken by Professor Harold E.

Edgerton with a special high-speed camera, by which the motion of the birds' wings is successfully 'stopped', with an exposure of about fifty feet of film per second. A study of the film shows a rate of from fifty to fifty-five wing beats per second while hovering, and seventy-five per second in forward flight.

PHILLIPS, JOHN C. Man's influence on Ruffed Grouse populations. Suggestions for further investigations. sm. 8vo, 24 pp., privately printed, Cambridge, Mass., 1937.—In spite of much surmise, the sum total of man's influence on the Ruffed Grouse is still hard to estimate accurately. The greatest single factor for destruction of the birds is the gun. In much-hunted territory, probably one half the grouse inhabiting it are annually shot, in spite of an obvious increase in the wariness of the birds. Returns show that in years of abundance half a million birds are killed in the State of Maine alone and nearly as many in Pennsylvania.

Under natural conditions grouse probably did not reach very great abundance in primeval forest. Partial clearing of land areas by axe and fire may be beneficial in the resulting aftergrowth of mixed vegetation and cover and for a similar reason this is true also of agricultural decline. On the other hand, extensive fire at breeding time kills many sitting females and over-clearing and clean farming render the areas unsuitable for the birds. The net effect of natural enemies has probably been exaggerated and is doubtless less than that of feral cats, hunting dogs and house rats. The motor car and good roads now make it possible for hunters to cover much wider territory than formerly, but this is somewhat offset by the inaccessibility of back roads which, as edges of forest, are favorite haunts of the birds. The added effect of cyclic decline makes difficult any efforts to carry out regulatory measures.

PUTZIG, P. Von der Beziehung des Zugablaufs zum Inkretdrüsensystem. Der Vogelzug, 8: 116-130, July 1937.—Experiments were made with Black-headed Gulls and Gray Gulls in Germany to throw light on the relation of the internal glands to the abatement of the migratory urge. Castrated birds were, when fully recovered and banded, loosed and some were later recaptured on their normal wintering areas, showing that migration had proceeded independently of the condition of the reproductive organs. Experiments with male Robin Redbreasts by exposing them to artificial lighting during the winter months, resulted in bringing about a strong development of the reproductive organs, though not before the Christmas season. The difference is more noticeable in the testes than in the ovary, and takes place much earlier than in control birds under normal lighting for that time of year.

ROBINSON, H. W. Recoveries of Gannets from the Bass Rock. Scottish Naturalist, p. 133-134, Sept.-Oct. 1937.—Over a period of five years 349 young Gannets have been banded on Bass Rock, of which twenty-two recoveries are here listed. Of these five are from the French coast, one each from Spain and Portugal, while the most southern are single birds each from Casablanca, Morocco, and Rio de Oro, West Africa.

SCHILDMACHER, H. Zur Physiologie des Zugtriebes. III. Versuche mit künstliche verlängerter Tagesdauer. Der Vogelzug, 8: 107-114, July 1937.—Experiments were made to test the effect of artificially lengthened day on two migratory species. Three males and a female Robin Redbreast in Germany were daily exposed to the light of a 60-watt lamp until midnight, from January 18 till May 12. In contrast to four male controls, they showed a premature urge to migrate and in two of them, a premature moult set in. Three male European Redstarts lighted for increasing lengths of time from September 23 to December 16 up to one and a half hours

beyond normal, showed no obvious falling off of the migratory urge and no ripening of the testes. On the other hand, a male lighted an hour and a half daily from Nov. 12 on, showed a ripening of the testes and a falling off of migratory urge between November 23 and December 13. Six other male Redstarts given a daily exposure to a 75-watt lamp of from 19 to 33 hours between May 15 and July 2 showed a somewhat earlier autumnal moult extending into September. With the onset of moult, the migratory urge fell off.

SCHNURRE, O. Zur Frage der Familienauflösung beim Vogel. Beitr. z. Fortpflanzungsbiol. d. Vogel, **13**: 125-127, July 1937.—In the study of the dispersal of broods of the Wood Owl, and presumably in the case of birds in general, the author considers three possibilities: (1) the simultaneous awakening of the desire of the young birds to leave their parents and the desire of the parents to leave their young; (2) the onset of the desire of the young to leave their parents before the desire for isolation develops in the latter; and (3) the converse of the last, that the urge to leave the young may arise in the parents before the opposite is manifest in the young. In the last case the young are actively driven away from parental territory, in the second the parents seek to follow and minister to the young in spite of apparent desire of the young to be independent of them; while in the first case, the young merely depart and leave the parents in sole possession of the territory.

SCHUZ, E. Ringfunde europäischer Rauchschwalben (*Hirundo r. rustica*) in Afrika. Ornith. Monatsber., **45**: 136-144, 2 text-figs., July 8, 1937.—The Common Swallow of Europe is well known to winter in Africa, from Senegal southward to the Cape of Good Hope. There are now available fifty-seven captures of banded birds of this species from this area. On plotting these it is seen that the greater part of the returns from the Bight of Benin and the Congo basin are of birds banded in Germany, with a few from Denmark and Sweden; while of the birds retaken in eastern Cape Colony and Natal, most are birds banded in England and Scotland, with a very few from Germany and Sweden. There are thus on the whole rather definite and separate wintering areas for the birds from these European countries.

SOUTHERN, H. N. The supercilium of the Grey-headed Wagtail. British Birds, **31**: 101-103, fig., Sept. 1, 1937.—The character distinguishing the Swedish race, *thunbergi*, of the Grey-headed Wagtail is the obsolescence of the white superciliary line in the male bird. In females, however, it is more or less developed, sometimes well marked, especially behind the eye, while in the young it is well evident. In the typical race it is present and clearly developed. The conclusion is that its obsolescence in *thunbergi* is a progressive character of this race.

SPAULDING, NINA G. Studies of the nesting activities of Latimer's Vireo (*Vireo latimeri* Baird). Journ. Agric., Univ. of Porto Rico, **21**: 17-28, pl. 2-4, Jan. 1937.—This study was made in western Porto Rico, where Latimer's Vireo is found in tangled low scrub. Its song, nest, eggs and behavior in the breeding season are described. Each pair maintains a well-defined territory, most easily determined at the time preceding the mating when the male is daily heard singing from certain confines. This commences at least by late January. The female sings also but her singing is confined to the courting period. At such times the two birds of a pair sing responsively, and birds of adjacent territories may do the same. The pendant nest invariably overhangs an open space in a thicket; the usual number of eggs is three. Both sexes share the incubation, but the female apparently takes the larger share, although after the young are hatched the male is more active in feeding the young than is the female.

- STEINFATT, OTTO. Aus dem Leben des Grossbuntspechtes. Beitr. z. Fortpflanzungsbiol. d. Vögel, **13**: 144-147, July 1937.—The two sexes of Greater Spotted Woodpecker live for the larger part of the year separate though apparently having part of their hunting and living territory in common, so that they more or less keep in touch. The male and female incubate alternately, and at first both devote themselves to rearing the young, which sooner or later the male alone cares for, just as he also takes the chief part in the incubation. The male alone incubates the eggs at night or broods the young in the nest during the night. Incubation begins before all the eggs are laid, at least by the deposition of the fourth egg, and requires twelve days, after which twenty-one or twenty-three days elapse before the young leave the nest.
- STONER, DAYTON. Records of bird temperatures. Circular N. Y. State Mus., no. 19, p. 1-16, July 1937.—Temperatures of twenty-nine species of eastern birds are here recorded. Data for a family of young Belted Kingfishers showed a consistent increase of four or five degrees F., after thirteen days. Similar observations on a brood of Phoebes showed an increase of from about 101 to 102 degrees at a day or two after hatching, to about 107 to 108 at the end of two weeks, nearly twice as great an increment as in the young kingfishers. Extensive data for Bank Swallows show a mean temperature in adults of 106.8 degrees, with a maximum of 112.4 F. A regular increase in the body temperature of nestling Barn and Cliff Swallows is noted, beginning in the first days of nest life at a mean of 98.2 degrees F. for the former and 100.2 for the latter, and attaining about 107.5 in about eighteen or twenty days. Among those showing the highest temperatures, is the Eastern Robin, with a mean in four adults of 111.2 degrees F.
- STRESEMANN, E. Ein neuer Fund von *Neodrepanis hypoxantha* Salom. Ornith. Monatsber., **45**: 135-136, July-Aug. 1937.—Salomonsen in 1933, described this Madagascar species from two skins found in the collection of the British Museum, and taken in the forest east of Tananarive in 1881. Now a third specimen has turned up in a German museum, taken by J. M. Hildebrandt in rain forest near Andrangoloaka, central Madagascar, in November 1880, as well as two others taken by the same collector at the same time and place and now in the Berlin Museum. The town at this locality no longer exists. It was situated in the higher part of the east scarp of the plateau, a little east of Antsirabe and is now quite denuded of forest so that it is no longer suitable for this species, which is supposed now to be extinct; at least nothing was found of it by the recent Franco-Anglo-American expedition.
- SUTTON, GEORGE MIKSCH. The juvenal plumage and postjuvenal moult of the Chipping Sparrow. Occ. Papers Mus. Zool., Univ. of Michigan, no. 355, p. 1-5, June 28, 1937.—A young bird reared and observed from day to day carried no red-brown feathers in the crown; these appear when the bird is about four weeks old, and may be part of the first-winter plumage. The postjuvenal moult begins when the bird is about thirty days old. The juvenal middle and greater coverts drop out almost simultaneously when the bird is about six weeks old. The body plumage is renewed more slowly, but the streaked feathers of the under parts are all gone at forty-five days. The remiges and rectrices are not lost at the postjuvenal moult, but the tertials are, and fall after the middle and greater wing coverts.
- VAIDEN, GORDON. Feeding and nesting of the Mississippi Kite. The Migrant, **8**: 45-47, pl., Sept. 1937.—Brief notes are given on the nesting of this kite as observed in the vicinity of Rosedale, Mississippi. One pair of birds, presumed to be

the same individuals, continued to nest in the same woods for at least seven years, until the area was cleared. A remarkable concentration of these kites is described as occurring in late May, 1937, to feed on the abundant adults of the periodical cicada then emerging. On May 20 no less than thirty-four birds were counted. Two collected for specimens contained respectively fifty-one and forty-two of the insects. A great many of the insects were taken on the wing from the trees, others in flight.

VAN TYNE, JOSSELYN, AND SUTTON, GEORGE MIKSCH. The birds of Brewster County, Texas. Misc. Publ. Mus. Zool., Univ. of Michigan, no. 37, 119 pp., col. frontispiece, pl. 1-5, Aug. 1937.—This summary of field work extending over several years in the Great Bend region of western Texas, gives a brief account of the itineraries of the several trips, and is followed by a carefully annotated list of the birds found. In all, 239 species or subspecies are listed of which 86 were determined to nest in the region. Five additions to the known fauna of the United States were made, namely, *Lampornis c. clemenciae*, *Colaptes cafer nanus*, *Phainopepla n. nitens*, *Vermivora crissalis* and *Icterus c. cucullatus*. Eleven others are new to the Texas list. The work has resulted in the finding of three or four new races, one of which, the Towhee of the Chisos Mountains, is here described, *Pipilo maculatus gaigei*. Two others have been described in previous papers. The single specimen of Turkey Vulture proves to be a typical *Cathartes aura*. The colored plate shows the newly described *Buteo jamaicensis fuertesi*, with its pale under parts. At Maravillas a male of this form was found mated to a female of the darker, more northern race, *calurus*, supposed to be a case of a migrant bird having mated with the paler form and failed to go north.

WAGNER, H. O. Der Einfluss von Aussenfaktoren auf den Tagesrhythmus während der Zugphase. Der Vogelzug, 8: 47-54, April 1937.—In this study of the influence of external factors on the daily rhythm during the migratory period, it was found that with experimental birds, the nocturnal restlessness expressing the migratory urge can be partially or completely overcome by increasing the amount of food given. High temperatures retard, lower temperatures increase the nocturnal activity. In absolute darkness caged migratory birds at the season of passage become completely quiet.

WALTON, ARTHUR. On the eclipse plumage of the Mallard (*Anas p. platyrhynchos*). Journ. Exper. Biol., 14: 440-447, 1 pl., 1937.—Wild-caught Mallards which received artificial lighting in the middle of December, showed sexual activity three weeks later and began to moult into the eclipse plumage early in February, three months earlier than normal birds. A second experiment was a failure. Castration of male Mallards did not prevent the assumption of eclipse plumage in the first year, but did so in the second. The author apparently did not investigate whether the loss of the eclipse plumage was due to an upset of the moulting mechanism, as Kuhn suggests, or due to an actual change in the hormonal condition.—E. MAYR.

WEAKLY, HARRY E. The Whooping Crane at North Platte, Lincoln County [Nebraska]. Nebraska Bird Review, 5: 58, July 1937.—Of this fine bird, continued reports indicate that small numbers still pass to and fro on migration. A flock of thirty-one birds including but three in immature plumage, was observed on the North Platte River, proceeding westward, May 4, 1937.

WOOD JONES, FREDERIC. The olfactory organ of the Tubinares. Part II. The development of the nasal tubes of *Puffinus tenuirostris* Temminck. The Emu, 37: 10-13, pls. 3, 4, July 1, 1937.—In the embryo it is shown that the nasal tubes are

lateral, as they are in the albatrosses, and that this, as has been believed, is probably the retention of a primitive condition, but the usual statement that in the adult the tubes are 'not separated by the culmen' is not strictly true, for a section of the bill shows that the change which takes place consists in the approximation of the tubes through the relative diminution in breadth of the intervening culmen which always remains, separating them in the midline.

WYNNE-EDWARDS, V. G. *Sea-birds at Percé, Province of Quebec.* 8vo, Montreal, 32 pp., Gnaedinger Printing Co., 1937.—The many visitors to Gaspé will find this a convenient brief account of the eleven common seabirds that are to be found nesting there in the brief summer. For each species, a short description is given and some account of the habits, so that the booklet forms not only a guide to what species may be found but also an attractive souvenir of the visit. A number of excellent black and white sketches of the birds in characteristic attitudes or of the heads to show markings, add to the facility of identification, while the last five pages are left blank for "Notes."