RECENT LITERATURE

Beitrage zur Morphologie der Kiefermuskulatur der Oscines. Walter Fiedler. Zool. Jahrb. (Anatomie), 7: 235–288, 25 figs. 1951.—This important contribution to our understanding of the anatomy of passerine birds presents the results of an investigation of the extent to which jaw musculature in the Oscines conforms to a narrow basic pattern, despite observed adaptive differences in individual species. It thus forms a valuable addition to the careful studies of Moller on nectar-feeding birds, though it is more in the spirit of comparative anatomy than of functional anatomy. The species studied by Fiedler are: *Calcarius* sp., *Emberiza citrinella, Carduelis carduelis, Fringilla montifringilla, Pyrrhula pyrrhula, Pinicola enucleator, Loxia curvirostra, Coccothraustes coccothraustes, Munia oryzivora, Parus major, Parus cristatus, Panurus biarmicus, Paradoxornis* sp., *Sitta europaea, Certhia brachydactyla, Turdus musicus, Cinclus cinclus, Lanius senator, Nucifraga caryocatactes, Corvultur crassirostris, Hirundo rustica, Dryobates villosus, Micropus apus,* and *Falco peregrinus.* His comparison of his own studies on oscinine relationships with those of other authors for the non-passerine groups of the Coraciomorphae (Gadow's Second Legion) is particularly valuable. In the plan of his paper the description of the jaw musculature is followed by a section on innervation, then one on the ligaments of the jaw articulation. Finally he goes over the material again in a comparative section from which some details are drawn below.

The jaw musculature is supplied by the *Ramus mandibularis* of *N. trigeminus* and the *Ramus posterior* of *N. facialis.* The latter supplies *M. depressor mandibulae,* and the former innervates all the rest of the jaw musculature. Drawing on the unpublished findings of Feninger, Hofer, and others, as well as his own on Oscines, he gives an interesting account of the ligaments and patellae of the quadratomandibular joint. He found that all Oscines, except *Loxia,* have at least one patella in this position. Some have two, but this varies between species of a group, and he thinks on the basis of Hofer's study of *Uroaëtus* that dense connective tissue has often been mistaken for a patella.

In the comparative section he deals with the structural modifications noted in each of the muscle groups, both for the Oscines dissected by himself and for the representatives of other forms of Coraciomorphae dissected by other workers. He finds great constancy in the jaw muscles of passerines, contrary to findings in non-passerines. As regards *M. adductor mandibulae externus,* Hofer found that, within an order (Steganopodes, Gressores) some species may have a two-parted, others a three-parted muscle, whereas in Oscines it is always three-parted. Similarities in this muscle between the hummingbird *Sericotes* and the swift *Micropus* he assigns to close relationship despite different adaptation. Differences in this muscle in *Micropus, Hirundo,* and *Caprimulgus* (despite similar feeding adaptations) he thinks result from their membership in different groups. In *M. pseudotemporalis* he believes the one-parted condition primitive, the two-parted condition tending to be typical for passerines; and from the different emphasis on lateral or medial part he infers relationship. For finches the medial, for crows and shrikes the lateral slip, is seen to advance its insertion anteriorly along the median surface of the mandible with increased need for powerful adduction.

Fiedler discusses the relationships of two muscles originating on the quadrate. *M. quadratomandibularis* is missing in the parrots, Psittaci; its place is taken by the relatively weak *M. adductor posterior.* In the hornbills, Buceroti, the former is well-developed, the latter reduced. In the goatsucker *Caprimulgus, M. quadra-*

tomandibularis is missing entirely, as is the orbital process of the quadrate on which it has its attachment in forms in which it is present. In the swift *Micropus* and the hummingbird *Sericotes* the two muscles cannot be separated, whereas in the swallow *Hirundo* they are separated by a clear gap. In a series having similar feeding adaptations, he reasons that even the weak development in *Micropus* puts it in closer relationship to *Hirundo* than to *Caprimulgus* which lacks it altogether. Nevertheless, he concludes that this is not a good character for classification in non-passerines. Within the Steganopodes, *Phaëthon* and *Pelecanus* have it and *Sula* and *Phalacrocorax* lack it. Differences in *M. adductor posterior* in Oscines with increase in biting power are of degree, not kind, and the distinct presence of both muscles in all Oscines points up what he states repeatedly—that the muscle pattern in song birds is constant. There is no evidence of one muscle being replaced by another, as happens in non-passerines. Again, in *M. pterygoideus* he finds conformance to a single plan. He points out that, while the *M. pterygoideus dorsalis* has the rôle of drawing the upper mandible down, *M. pterygoideus ventralis* helps the adductors draw the lower mandible up, thus insuring co-ordination of the mandibles. The different balancing of these muscles against each other by the adaptive needs of the individual species accounts for the differences that exist. He discusses the asymmetry of these muscles in the crossbill, *Loxia*.

Fiedler compares the structure of specific muscles in titmice, finches, and shrikes, or within the Fringillidae, without regard to subgroups, even including the ploceid, *Munia*. One might wish for a greater awareness of current views of passerine classification—for example, that these finch groups have separate origins and have, therefore, achieved the adaptation for seeds independently. Unfamiliarity with ornithological literature is again suggested when he states his inability to discover the food habits of *Paradoxornis*. These can be found in the standard regional works covering its range. But he does not claim to study relationships and could not with his rather small sample—21 species of 11 families out of about 5000 species of 49 families (after Stresemann)—though one might expect a somewhat deeper study of function in view of his expressed interest in the adaptations.

Of course one of the deterrents to anatomical studies of passerine relationships is the large number of species to be dissected and classified. Various workers in different groups should be able to refer to Fiedler's drawings and thus avoid repeating his work, and for this his drawings should be as detailed as possible. He does not indicate either in text or drawings that the rostral slip of *M. adductor mandibulae externus* in *Lanius*, *Nucifraga*, *Parus*, *Munia*, and *Emberiza* is pinnate, a point important both to function and classification—but his illustrations are too small to indicate this had he wanted to.

He concludes that the material studied is too meager to permit the placement of disputed forms, but in groups of still undetermined homogeneity the muscle structure can clearly delimit the boundaries. It can also form the basis for deciding relationships between these groups. As an example, he would relate Fringillidae to Ploceidae, Laniidae to Corvidae, and Paridae to Paradoxornithidae. The reviewer agrees with the statement but not the example. Having only his sparse sample, Fiedler seems unaware of the danger of confusing convergent groups with phylogenetically related ones.

Finally, Fiedler departs radically from the nomenclature of Lakjer (1926), followed by Moller (1931), which was a careful attempt to stabilize terminology based on the homology of the jaw musculature for the entire Sauropsida. In his *M. adductor mandibulae internus* he includes Lakjer's *M. pseudotemporalis profundus*, *M. p.*

superficialis, and *M. pterygoideus* on the strength of an unpublished thesis by Feninger and of Hofer's (1950) work. He claims that Feninger's investigation of innervation shows the homogeneity of *M. adductor internus* and that this is supported by his own and by Hofer's studies. He also follows Hofer in changing *M. pseudotemporalis profundus* to *M. quadratomandibularis*, a term descriptive of its location in birds, because Hofer claims the homology of this muscle with the reptilian one is not established. In view of current studies (Straus, Biol. Rev., 21: 75–91, 1946) this claim receives some support. There is no doubt that Fiedler's nomenclature is simpler insofar as it is more descriptive of muscle position in birds, though one would be inclined to abandon Lakjer's attempts at stabilization of terminology only reluctantly.

This paper is reviewed rather critically because of the unfamiliarity of many ornithologists with this branch of study, but few of the points discussed seriously detract from Fiedler's work which is of very real value as a contribution in the field of the anatomy of passerine birds.—W. J. BEECHER.

A Guide to Bird Finding East of the Mississippi.—Olin Sewall Pettingill, Jr. (Oxford Univ. Press, New York), xvii + 659 pp., many ills. 1951. Price, $5.00. This book covers a new sector among field-guides. There are excellent guides to field identification of birds. It is logical to produce one which answers the question where and when can I find it? Other authors have had the idea, but Dr. Pettingill has had the persistence to carry the job through. It is an important contribution to ornithological field literature.

This volume covers states east of the Mississippi. A western volume is promised. The information is classified by states. Physiographic regions and types of habitats are described. There are lists of birds likely to be found in each.

To the growing thousands of bird watchers, this book with its mine of detailed information cannot fail to be of service. Obviously the local experts would be completely swamped if every bird watcher who came to town were to look them up. Dr. Pettingill's book will take a load from the shoulders of the generous but busy field naturalists in many communities.

The concentration points in the various states are well selected. Obviously, locations which shelter unusually rare or vanishing species ought not to be advertised in a guide of this kind. Dr. Pettingill has been aware of this. The lists of species given for most areas are usually, and very properly, of the more common birds. The more seasoned searchers for birds usually want to know of the rarer possibilities. But these seasoned observers usually become acquainted with the local experts who know of certain rarities which could not find a place in a formal guide to bird finding.

The author, with due regard to the location of the majority of bird people, heavily emphasizes the metropolitan areas and their immediate environments. Perhaps the weight of emphasis here could be somewhat modified in later editions, because most of the ornithological rarities are not to be found in city or suburban areas.

The author and his collaborators have consistently used great care in providing accurate information. One wonders, however, how soon rapidily changing conditions so characteristic of the United States, particularly in the East, the renumbering of route numbers, etc. will call for a new edition. Obviously a book of this kind, which is chiefly a travel guide, must be kept up to date if it is to continue to be of service. This point is recognized by the author in his preface, but it is important enough to bear emphasis.

To bird searchers who are fortunate enough to travel in quest of new species this guide will be of particular value in its coverage of states which are not so much on the

beaten track. The sections, for example, on New York, New Jersey, and Massachusetts, with their great squadrons of bird watchers, will not fill so great a need as the admirable chapters on Georgia, Alabama, and Mississippi.

There are no maps. Line maps in black and white would greatly enhance the usefulness of the book. To find out-of-the-way spots on the basis of word descriptions is notoriously difficult.

One of the most valuable features of the book is the full and careful index which makes it possible for the reader to look up the species in which he is interested, and find in the body of the book reference to the locations where they may be seen.

The line drawings by George Miksch Sutton scattered through the book are strong and clear, are treated with sensitive regard to page design, and add greatly to the pleasure of using the book.—GUY EMERSON.

Contributions to the Breeding Biology of *Larus argentatus* and *Larus fuscus*. Knud Paludan. (Ejnar Munksgaard, Copenhagen), 142 pp., 2 pls., 30 text-figs., 1951. Price, 20 kroner.—This study, reprinted from Vidensk. Medd. fra Dansk naturh. Foren., 114:1–128, 1951, is here issued as a separate work with a summary in Danish (pages 129–142). It is based on some six years of observation and study on the island group of Ertholmene, especially the island of Graesholm. In the spring, when the Herring Gulls first occupy the colony, their courtship is still incomplete and their gonads are small. Both developments show great acceleration in the week or two before the first eggs are laid. This "pre-egg stage" lasts from six to seven weeks, although in 1947 it was reduced to 16 days "which seems to be the minimum time in which the synchronization of the partners and the final growth of the gonads can take place." In *Larus argentatus* 25 per cent of the individuals begin egg-laying during the first week of the egg-laying period, while in *L. fuscus* it may not be until the third week of the egg-laying period that 25 per cent of the birds have started laying. Eggs are normally laid at intervals of 48 hours, and the interval between the destruction of a clutch and the commencement of repeat laying is 11–12 days in both species. If eggs are removed from the nest at the beginning of egg laying, a fourth egg is laid, but not if the eggs are removed later than 24 hours after the laying of the second egg. If the eggs are constantly removed immediately after each is laid, protracted laying will occur. Cessation of copulation and the onset of broodiness occur as a consequence of the bird's contact with the eggs and not as a consequence of the actual egg-laying process. In the area studied intensively, about 2.5 chicks hatched per pair of *L. argentatus* and not quite 2.0 per pair of *L. fuscus*. At most, 20 per cent of the *argentatus* chicks and 5 per cent of the *fuscus* chicks grew to be fully fledged. Statistical calculations from banding records indicate a mortality rate of about 15 per cent of the population of sexually mature birds. In order to maintain the population at an even status, from 0.5 to 1.0 chick per pair of adults is necessary. In the American breeding population figures the mortality rate is 29 per cent, which means that about three times as many chicks must survive in the American population as in the Danish.—HERBERT FRIEDMANN.

Migration of Birds. F. C. Lincoln. (Fish and Wildlife Service, U. S. Dept. Int.) Circular 16, pp. iii + 102, 23 figs., 1950. (For sale by Superintendent of Documents, Washington 25, D. C.; Price, 30 cents.)—Those who are familiar with the previous circular by Mr. Lincoln on the migration of North American birds (No. 363, October, 1935) will be pleased with the more attractive format of the present one. They will be disappointed, however, that there has been little revision of the older circular.

The circular begins with remarks on the mystery of migration and a brief account (pp. 4–10) of two theoretical aspects of migration—advantages of migration and origin of migration. Although it is readily apparent that migration seems advantageous, the theories presented to account for its origin cannot help but be confusing to a beginner. The northern and southern ancestral home theories are concerned primarily with defining the ancestral home from which birds migrated and are based on the assumption that migratory behavior is an hereditary habit. The theory of photoperiodism is concerned with the annual stimulus for migration and not with the place of origin of the ancestral stock. The final theory presented, the theory of continental drift, is concerned essentially with the evolution of migratory routes in certain species and not the origin of migratory behavior. In the opinion of the reviewer, a more general presentation of the fundamental problems of migration and the theories postulated under each would be more helpful to a beginner. The bulk of the book is concerned with the "mechanics" of migration—when, where, and how birds migrate (pp. 11–69). Much of the material presented in these pages is identical with that published in 1935. The figures have been redrawn by Bob Hines and are more attractive. Of the 23 figures, only four are new, those depicting the four flyways of North America. Of the 19 figures used in 1935 and 1950, 15 appeared also in 1915 in the circular on migration by Wells W. Cooke. No mention is made of the relation between the banding data and observations of the past 35 years and the original data which were used to illustrate the speed of migration. In the final pages there are brief discussions of such topics as: evolution of migratory routes, vertical and vagrant migration, perils of migration, influence of weather on migration, and problems of migration. There are two appendixes, a bibliography, and an index.

The stated purpose of the book is "a brief presentation of the facts on the migratory habits of birds scientifically gathered by the Fish and Wildlife Service over many years" for the use of bird-study classes, conservation organizations, farmers, and others interested in the welfare of birds and, especially, in regulatory action for the protection of birds. There is no doubt in the reviewer's mind that the author has succeeded in presenting some of the facts of migration in a readable, interesting, and attractive manner, and at a cost that makes the book available to everyone.

The serious amateur or interested student may get the impression from the date of publication, 1950, and the presentation of such recent studies as hibernation in the Poor-will, the theory of continental drift, the new recoveries of Arctic Terns, etc. that the book includes all of the significant studies prior to 1950. However, a careful comparison with the text and figures of 1935 reveals that little is new. Moreover, when one finds a phrase—"during the World War" in the 1935 edition revised to read "during the World Wars," in the 1950 edition, with no change in the text which follows, he cannot help but wonder about the accuracy of the revision. Errors in citation and in the bibliography, loose statements, and omission of significant facts detract from the value of the book to serious students, but it was, after all, not written for them.—ALBERT WOLFSON.

Where Birds Live: Habitats in the Middle Atlantic States. Edited by Shirley A. Briggs and Chandler S. Robbins. (Audubon Soc. Dist. Columbia, Inc.), pp. 1–58, 1 map, 15 drawings, 26 photos, 1951. Price $0.75.—Assembled as chapters of this paper-covered book are 12 papers by various authors that once appeared in the 'Atlantic Naturalist' (including its predecessor, 'The Wood Thrush'), the journal of the Audubon Society of the District of Columbia. The chapters cover, altogether, the principal avian environments of the Washington Region (*i.e.*, the District of Columbia, Maryland, Delaware, and the northeast third of Virginia) from

ocean and ocean beaches to pine and upland deciduous woods. Nearly all the environments are described to the extent of mentioning the dominant plants or other important factors directly influencing the presence of bird life. Considerable space in each chapter is devoted to the kinds of birds to be found at different seasons and their relative abundance. A few of the chapters go into greater detail than others by pointing out the vegetation types or the niches in which the birds may be looked for. Occasionally a specific locality for a particular environment is indicated. Since the primary purpose of the book is "to assist bird watchers who are beginning to get acquainted with the birds of the Washington Region," it would have been helpful if a little more space had been taken to give specific localities for all the environments, together with directions for reaching them.—OLIN SEWALL PETTINGILL, JR.

Fauna of Thailand. Chote Suvatti. (Dept. Fisheries, Bangkok), pp. ii + 1100, frontispiece, 1950.—This pretentious publication purports to list all animal forms reported from Siam in the world's scientific literature, and to give a complete bibliography of sources, by chronology, by phyla, and by authors. The Class Aves is treated on pages 603 to 654, where the names of 230 forms are given, without the least attempt to collate synonyms.

Inasmuch as the entire work is straightforward compilation, the results are not nearly good enough, especially when it is considered that the undersigned has reported, in a single volume available to Suvatti, more than 600 different birds from northern Thailand alone, and that his personal files of *published* records of Siamese birds are divided among considerably more than 1,000. The value of this egregious book may be fairly summed up by noting that but two names appear under Timaliidae, and but three under Muscicapidae (of which the first and second are synonymous)!

There is no reason to suppose that the lists of names of groups other than birds are more soundly constructed, and one can only deplore the volume's publication as a waste of public funds.—H. G. DEIGNAN.

ABDULALI, HUMAYUN. 1951. Extension of breeding range of the stilt (*Himantopus h. himantopus*), and some notes on its habits and plumages. Journ. Bombay Nat. Hist. Soc., **49** (4): 789–791.

ALCORN, J. R., AND FRANK RICHARDSON. 1951. The Chukar Partridge in Nevada. Journ. Wildl. Manag., **15** (3): 265–275.—*Alectoris graeca chukar* is now well established in western Nevada after liberations which began in 1934. Late summer and early fall foods include seeds of *Bromus tectorum* and *Erodium cicutarium*, leaves of *Poa secunda*, and grasshoppers. Fourteen clutches averaged about nine eggs. In summer, the birds are restricted to vicinity of water; in winter they move to higher, wind-blown areas. "Males tend to band together while the females are nesting."—J. J. HICKEY.

ALEXANDER, H. G. 1951. Some notes on birds in Lahul. Journ. Bombay Nat. Hist. Soc., **49** (4): 608–613, 1 sketch-map.—Observations made between June 16 and June 30, 1950, supplementing and confirming those made by the late Hugh Whistler in 1921, 1922, and 1923 (Ibis, 1925: 152–208).—H. G. DEIGNAN.

ALI, SÁLIM. 1951. The Heart-spotted Woodpecker—*Hemicircus canente.* Journ. Bombay Nat. Hist. Soc., **49** (4): 786–787.—The species is shown to have a continuous range and to exhibit a gradual cline in size from southwestern to northeastern India. Since it is not possible to define exact geographical limits for either of the two commonly accepted races, it is suggested that the subspecies *cordatus* be suppressed.—H. G. DEIGNAN.

ALI, SÁLIM. 1951. White-bellied Drongo catching a bird. Journ. Bombay Nat. Hist. Soc., **49** (4): 786.—*Dicrurus caerulescens* was seen to capture a wren-warbler (*Prinia*) in mid-air.

AUSTIN, O. L., JR. 1951. The Mourning Dove on Cape Cod. Bird-Banding, **22** (4): 149–174.—This study is based on 2,690 *Zenaidura macroura* banded from 1930 to 1950. Because of over-shooting, this bird had become rare in New England by 1900; after complete protection given in 1908 in Massachusetts it became a common summer resident on the Cape by the 1920's and has remained so ever since. A map shows the recoveries in the southern coastal plain. Annual mortality, starting from fledging, is about 80% the first year and 55% for the next 10 years. No observations were made on nesting, but the author calculates that 4.6 young per pair must be fledged each season to keep up the population. This requires "a nesting success of 77%" in three broods of two eggs each. Such a figure is out of line with the less than 50% success of eggs laid found in other published nesting studies on this species, as well as in studies of other altricial species with open nests, which showed about 45%; and it is even higher than the 66% success of hole-nesting species. McClure (Auk, 63: 26, 1946) reported 46.6% success with 8,018 Mourning Dove eggs. Mourning Doves may attempt more than three broods. McClure (Bull. Iowa State Coll., 310:384, 1943) found that 772 pairs in 3 years averaged 4.6, 5.1, and 5.4 attempts to nest per season. Five sets of 2 eggs equal 10 eggs and 46.6% success would give 4.66 young fledged per pair. Thus, doves may not require 77% success in all instances to keep up the population.—MARGARET M. NICE.

AUSTIN, O. L., SR. 1951. Age record for the Arctic Tern. Bird-Banding, **22** (4): 179.—An adult *Sterna paradisaea*, banded June 29, 1929, on Cape Cod, was retaken in 1936 and 1946 and found dead at Tern Island on July 13, 1951, "at least 23 years old, probably more," as this species usually starts breeding at three years of age.

BEECHER, WILLIAM J. 1951. A possible navigation sense in the ear of birds. Amer. Midl. Nat., **46** (2): 367–384, 8 figs.—In a critical review of the structure of the avian ear the author attempts to assign functions in navigation. The idea that movements of air in the tympanic cavity make the bird aware of thrusting movements of the head is new. If the head is maintained in its usual position the semicircular canals and otolith structures are inactive. Any streaming of the endolymph in the canals, as a result of the Coriolis force when the head is moved laterally, might provide a sort of compass for navigation.—H. I. FISHER.

BEHLE, WILLIAM H., AND ROBERT K. SELANDER. 1951. The systematic relationships of the Fox Sparrows (*Passerella iliaca*) of the Wasatch Mountains, Utah, and the Great Basin. Journ. Wash. Acad. Sci., **41** (11): 364–367.—Description of *Passerella iliaca swarthi* (North Fork, Ogden River, 5,200 ft., 2 miles west of Eden, Weber County, Utah).

BELLROSE, FRANK C. 1951. Effects of ingested lead shot upon waterfowl populations. Trans. 16th N. A. Wildl. Conf., pp. 125–135.—Of 4561 live-trapped Mallards in Illinois, 7.7 per cent carried ingested shot. Regionally this runs about 5.1–7.7, except in the Great Plains (2.7 per cent), and is 6.57 per cent for 18,454 ducks of all species. Banding results show that the number of pellets ingested is inversely correlated with the rate of movement by ducks and directly with the percentage of total bands returned.—J. J. HICKEY.

BENSON, C. W. 1948. Evergreen forests near Blantyre. Comparative variety of bird species. Nyasaland Journ., **1** (2): 45–53.—The bird life of the isolated small

highland forests on the hills within 25 miles of Blantyre suggests that these sylvan areas were at one time linked together. The variety of birds inhabiting each of them today varies directly with the size of the individual forest area.

BENSON, C. W. 1951. A roosting site of the Eastern Red-footed Falcon, *Falco amurensis*. Ibis, **93** (3): 467–468.—Several thousand of these winter visitors from northeastern Asia roosted in a grove of large trees near Dedza, Nyasaland.

BENSON, C. W. 1951. The bird life of Lake Nyasa. Nyasaland Journ., **4** (2): 40–66.—A rough ecological summary of the birdlife of the lake and its immediate environs.

BERGMAN, G. 1951. Unterschiede von Silbermoewe (*Larus a. argentatus*) und Heringsmoewe (*Larus f. fuscus*) in Lebensweise und Stimme. Vogelwarte, **16**: 17–18.—Differences in behavior, migration, situation of nesting colonies, molt, start of breeding season, size of colonies, food, and voice between Herring Gull and Lesser Black-backed Gull.

BISWAS, BISWAMOY. 1951. A new race of the ground-thrush *Turdus citrinus* (Aves: Turdidae). Journ. Bombay Nat. Hist. Soc., **49** (4): 661–662.—*Turdus citrinus amadoni* (Chanda, Chanda District, Central Provinces, India).

BRADT, GEORGE M. 1951. Birds of prey—do they deserve extinction? Desert Mag., **14** (13): 21–23.—Pictures of Swainson's Hawk, Golden Eagle, and Burrowing Owls.

BRENNECKE, H. E. 1951. Zur Jagdweise des Merlin-Falken. Vogelwelt, **72**: 82–84.—Description of the various methods by which Pigeon Hawks take their prey.

BROWN, R. H. J. 1951. Flapping flight. Ibis, **93** (3): 333–359.—Review of previous work on anatomy and wing motion with an attempt at a physical interpretation of wing shapes. There is an inconclusive account of the energetics of flight and a statement of some elementary notions of aerodynamics.—C. H. BLAKE.

BRUNS, H. 1951. Wann werden hartschalige Insekteneier von Meisen gefressen? Ornith. Mitt., **3**: 59–61.—Titmice (*Parus*) ignore most hard-shelled insect eggs.

BUMP, GARDINER. 1951. Game introductions—when, where and how. Trans. 16th N. A. Wildl. Conf., pp. 316–325.—A progress report on the introduction of exotics by the U. S. Fish and Wildlife Service. "The world game bank contains at least 355 species and 678 subspecies" of megapodes, guans, grouse, Phasianinae, guinea fowls, "Sand Grouse," bustards, and tinamous—"still largely unexplored resources to fill out vacant habitats." Climacurves are described by which monthly minimum and maximum temperatures can be used to analyze climatic factors; a six-point plan of study is described.—J. J. HICKEY.

CARL, G. CLIFFORD, C. J. GUIGET, and GEORGE A. HARDY. 1951. Biology of the Scott Island Group, British Columbia. Rept. Prov. Mus. Nat. Hist. and Anthrop., 1950: B21–B63, 17 figs.—Includes annotated lists of birds observed during visits to these islands in June, 1949 and 1950. The Group lies west of the northern tip of Vancouver Island.

CEYLON, NATIONAL MUSEUM OF. 1951. Administration report of the director . . . for 1950. Ceylon Admin. Rept. [Part IV—Ed., Sci. and Art (E)].—On page E 14 of this document, issued on June 12, 1951, P. E. P. Deraniyagala gives a valid description of *Eurystomus orientalis irisi* ("its skull is narrower and its wing length averages 183 mm. whereas in the Travancore race it is 200 mm."), based upon one male and one female from Maha-oya, Ceylon. A crude colored plate is inserted as a loose extra sheet. The author promises to discuss the bird in a future number of 'Spolia Zeylanica,' and gives no explanation for his eccentric choice of a medium for first publication!—H. G. DEIGNAN.

CLANCEY, P. A. 1951. The characters of a new race of Lanius collurio L from the western Palearctic Region. Bonner Zool. Beitr., **2** (1–2): 83–84.—*Lanius collurio juxtus*, from Martlesham, Woodbridge, East Suffolk, England.

COLE, LAMONT C. 1951. Population cycles and random oscillations. Journ. Wildl. Manag., **15** (3): 233–252.—Peaks of *Perdix perdix* harvested in England, as well as certain other cyclic phenomena, are shown to have a mean length of 3.0–5.8 years and a coefficient of variation of 27.1–50.1 per cent, whereas peaks in Tippett's random numbers average 2.9 "years" apart, with a V of 33.2 per cent. Thus, short-term cycles may well originate from such data, if peaks are recognized only when they reach some fixed proportion (such as 89 per cent) of the maximum value attainable. No explanation of the synchronism in grouse cycles is offered. —J. J. HICKEY.

COLLIAS, NICHOLAS E., AND RICHARD D. TABER. 1951. A field study of some grouping and dominance relations in Ring-necked Pheasants. Condor, **53** (6): 265–275.—Discussion of social organization during late winter and early spring (1947–48) of a wild population studied in a marsh near Madison, Wisconsin, where 38 cocks and 170 hens were trapped, color marked, and released. In winter the birds formed harems of hens, each harem under a single cock. Cocks dominated hens. In flocks at feeding stations dominance order was related to food competition and during the breeding season to crowing and establishment of territories.

COLLINS, HENRY H., JR. 1951. Birds of Montezuma Castle and Tuzigoot National Monuments. Illustrated by Roger Tory Peterson. (SW Monuments Assoc., Santa Fe, New Mexico), pp. 1–14, 7 col. pls., many other figs. Price, $0.25.—This attractive pamphlet is directed toward the park visitor who has a "potential" rather than a "developed" interest in nature. It is the first of a proposed series planned for various national parks and monuments.

COLLS, D. G. 1951. The conflict between waterfowl and agriculture. Trans. 16th N. A. Wildl. Conf., pp. 89–93.—As farming encroaches on ancient waterfowl areas, barley, wheat, oats, and peas are being more acutely damaged by ducks, especially Mallards and Pintails.

COMMITTEE ON BIRD SANCTUARIES IN THE ROYAL PARKS (ENGLAND AND WALES). 1950. Bird life in the Royal Parks. (Ministry of Works, London), pp. i–vi, 1–45, 1951. Price, 2 shillings.

COTTAM, CLARENCE. 1951. Waterfowl's future depends upon management. Trans. 16th N. A. Wildl. Conf., pp. 109–117.—Habitat development and restoration of breeding and wintering areas are a necessity. Refuges serve as insurance. Public hunting areas should be developed by the states in areas near large federal refuges. Restriction of the harvest by "flyways" is biologically sound and administratively necessary.—J. J. HICKEY.

DAVIDSON, A. 1951. Studies of some species rarely photographed. XXXIII. The Rustic Bunting. The Pine Grosbeak. Brit. Birds, **44** (10): 346–348.—Five plates of *Emberiza rustica* and *Pinicola enucleator* at nests in North Finland.

DEIGNAN, H. G. 1951. A new blackbird (Aves) from western China. Proc. Biol. Soc. Wash., **64**: 135.—*Turdus merula sowerbyi* (Loshan, Szechwan Province, China).

DEIGNAN, H. G. 1951. New passerine birds from the Indo-Chinese subregion. Postilla [Yale Peabody Mus. Nat. Hist.], No. **7**: 1–4.—*Pellorneum ruficeps vocale* (Kanglatongbi, elev. 2933 ft., Chief Commissioner's District of Manipur, India) and *Oligura castaneo-coronata ripleyi* (Likiang Mountains, Yunnan Province, China) are described. *Oligura* Hodgson, 1845, is shown to be a valid generic name, and *Chlorotesia* Delacour, 1942, is consigned to its synonymy.

DELACOUR, JEAN. 1951. Preliminary notes on the taxonomy of Canada Geese, *Branta canadensis*. Amer. Mus. Novit., No. **1537**: 1–10.—A brief review of geographical variation in the Canada Goose, based in part upon notes left by the late James Moffitt. Twelve subspecies are recognized, of which three are new: *B. c. maxima* from Round Lake, Grant Co., Minn. (this race is considered extinct); *B. c. taverneri* from Colusa, California (breeds in the interior of northern and northwestern Alaska); and *B. c. fulva* from Graham Island, Queen Charlotte Islands. The small, coastal, arctic Cackling and Hutchins's geese are considered to belong to the same species as the Canada Goose, since they appear to intergrade with it in some areas, though not everywhere.—DEAN AMADON.

DERANIYAGALA, P. E. P. 1951. see Ceylon, National Museum of.

DE SCHAUENSEE, RODOLPHE M. 1950–51. The birds of the Republic of Colombia. Their distribution and keys for their identification (cont.). (Reprinted in book form, Acad. Nat. Sci. Phila.). Caldasia, **5** (24): 645–871, 1950, and **5** (25): 873–1112, 1951.—This volume represents the conclusion of the main list of birds; previous installments were printed in Vol. 5, Nos. 22 and 23 of 'Caldasia,' 1948 and 1949.

EICHLER, WOLFDIETRICH. 1951. Mallophagen—Synopsis. XVII. Genus *Koeniginirmus*. Bonner Zool. Beitr., **2** (1–2): 125–134, 6 figs.—Review of this genus of external parasites of birds.

ERICKSON, ARNOLD B., DAVID B. VESALL, C. EDWARD CARLSON, AND CLAIR T. ROLLINGS. 1951. Minnesota's most important game bird—the Pheasant. Flicker, **23** (3): 23–49, 9 figs., 6 tables.—Nest, foods, sex ratios, weights, parasites, behavior, mortality, and restocking and releasing of pheasants—based on a 10-year study.

FLEAY, DAVID. 1951. A Wedge-tailed Eagle for Christmas. 1951. Animal Kingdom, **54** (6): 162–169, 188–189, 8 photos.—Life history notes based on captive birds.

FREITAG, F. 1951. Am Nest des Rotkopfwürgers. Vogelwelt, **72**: 145–148.—Studies on nests of *Lanius senator*. Nest building continues after first eggs are laid; incubation period is 15–18 days.

GABRIELSON, IRA N., AND FREDERICK C. LINCOLN. 1951. A new Alaskan race of the Winter Wren. Proc. Biol. Soc. Wash., **64**: 73.—*Trogolodytes* [sic] *trogloydtes* [sic] *seguamensis* (Seguam Island, Aleutian Islands).

GABRIELSON, IRA N., AND FREDERICK C. LINCOLN. 1951. Post-mortem color change in bird specimens. Condor, **53** (6): 298–299.—Comparison of series of recently collected Fox Sparrows from Alaska with others taken at the same localities and seasons 50 years earlier showed that the latter had foxed and showed increased redness. Other species do not show so marked a change.

GABRIELSON, IRA N., AND BRUCE WRIGHT. 1951. Notes on the birds of the Fort Chimo, Ungava District. Can. Field-Nat., **65** (4): 127–140, 3 figs.—District visited in August, 1948. Comparisons with findings of Turner in 1882–1884 and Hildebrand in 1947–1948. Annotated list.

GIBSON, J. A. 1951. The breeding distribution, population and history of the birds of Ailsa Craig. Scot. Nat., **63** (2): 73–100, 7 figs., 2 tables.

GRANT, C. H. B., AND C. W. MACKWORTH-PRAED. 1951. Notes on East African Birds. Bull. Brit. Orn. Club, **71** (6): 38.—*Cyanomitra olivacea chyulu* van Someren = *C. o. neglecta* Neumann; *Cryptospiza salvadorii chyuluensis* van Someren = *C. s. kilimensis* Sclater; *Spinus citrinelloides chyulu* van Someren = *S. c. hypostictus* Reichenow.

GRIEB, JACK R. 1951. Tally counter holder for making field observations. Journ. Wildl. Manag., **15** (3): 334–335.—A wooden holder can be used to house three separate tally counters and thus simplify counting for some field investigators.

GUNN, W. W. H. 1951. The changing status of the Red-necked Grebe in southern Ontario. Can. Field-Nat., **65** (4): 143–145, 1 table.—Now a regular breeder in small numbers, and locally common in late summer and autumn along north shore of Lake Ontario.

HACHISUKA, MASAUJI. 1950. The occurrence of some rare Japanese birds. Tori, **13** (60): 21–24, 2 figs.—In Japanese. Includes records of *Turdus celaenops*, *Branta b. nigricans*, and *Tadorna tadorna*.

HAGEN, YNGVAR. 1950. Noen Iakttagelser over Hubro (*Bubo bubo* L.) I Rogaland. Stavanger Mus. Arbok, **1950**: 93–110, 8 figs.—Detailed life history based on four nests in Rogaland, Norway.

HAMILTON, W. J., JR. 1951. The food of the opossum in New York State. Journ. Wildl. Manag., **15** (3): 258–264.—Birds are prominent in the food items: robin, crow, "Meadow-lark," Bronzed Grackle and Vesper Sparrow. As in many other recent articles of this journal, scientific names of a number of animals are notably absent.—J. J. HICKEY.

HARPER, HAROLD T., CHESTER M. HART, AND DALE E. SHAFFER. 1951. Effects of hunting pressure and game-farm stocking on Pheasant populations in the Sacramento Valley, California, 1946–1949. Calif. Fish and Game, **37** (2): 141–176.—A harvest of 81–84 per cent of game farm birds was effected when the release was made two days before the hunting season opened. Stocking failed to increase breeding populations. In midfall, banded adults had bursae of Fabricius measuring 6–19 mm.—J. J. HICKEY.

HARTESVELDT, RICHARD J. 1951. The effect of climate on Pheasant range in Hawaii. Journ. Wildl. Manag., **15** (3): 330–332.

HARTESVELDT, RICHARD J. 1951. Sport for Pheasants? Journ. Wildl. Manag., **15** (3): 332.—Male Ring-necked Pheasants repeatedly glided down into the crater of an extinct volcano.

HICKEY, JOSEPH J. 1951. Mortality records as indices of migration in the Mallard. Condor, **53** (6): 284–297.—A review of over 6800 autumnal recoveries of banded Mallards in North America. Criticism of the duck-hunting pressure index based on the number of duck stamps annually sold.

HINDE, R. A. 1951. Further report on the inland migration of waders and terns. Brit. Birds, **44** (10): 329–346.—Charts are given showing the "Relation between the 18.00 hours temperatures at Bordeaux, Corunna, and Lisbon, and the passage of waves of migrants through the British Isles" from April 18 through May from 1947 through 1950. Such waves "usually coincide with, or follow, periods of warm temperatures in the Bay of Biscay area." "Winds are primarily of importance in that they may affect track or ground speed."—MARGARET M. NICE.

HÖHN, E. O., AND D. L. ROBINSON. 1951. Some supplementary bird notes from the general area of the Mackenzie Delta and Great Slave Lake. Can. Field-Nat., **65** (3): 115–118, 1 table.—Includes spring arrival dates in 1948 and 1949 for 23 species at Tuktoyaktuk, Mackenzie Delta.

HOLGERSEN, HOLGER. 1950. Sjøfuglundersøkelser I Rogaland 1949–1950. Stavanger Mus. Arbok, **1950**: 61–76, 7 figs.—Breeding birds and census of island of Rott, southwestern Norway.

HOLGERSEN, HOLGER. 1950. Stavanger Museums Ringmerkingsarbeid 1950.

Stavanger Mus. Arbok, **1950**: 77–86, 2 figs.—Brief accounts of significant recoveries of birds banded at the Museum.

HOLLOM, P. A. D. 1951. Great Crested Grebe sample census: report to end of 1950. Brit. Birds, **44** (11): 361–369.—Adult *Podiceps cristatus* have been counted in May and June in 21 counties in England for 6 years. The estimated totals were 1,760 in 1931; 1,445 in 1947 (after a very hard winter); 1,734 in 1948; and 2,178 in 1950. The grebes are attracted to "relatively newly filled waters."

HUBBS, EARL L. 1951. Food habits of feral house cats in the Sacramento Valley. Calif. Fish and Game, **37** (2): 177–189.—Of 184 stomachs containing food, 74 included bird remains. The 33 Pheasants and 10 ducks (mostly adult females), 8 Coots, 1 California Quail, 1 Domestic Chicken, 1 Green Heron, and 29 passerines found accounted for 25.2 per cent of the bulk.

HUBER, J. 1951. Einige brutbiologische Mitteilungen über den Flamingo. Vogelwelt, **72**: 73–77.—Description of a visit in 1948 to the flamingo colony in the Camargue. An estimated 6000 birds were nesting at the time.

HUNGERFORD, K. E. 1951. Ruffed Grouse populations and cover use in northern Idaho. Trans. 16th N. A. Wildl. Conf., pp. 216–224.—Annual fall censuses on 2200 acres ran 14.3, 15.1, 21.3, 14.3, and 11.1 birds per 100 acres, according to King's method. [Hayne's criticism of this technique seems to have been overlooked.] Hunting seasons of 2.5–3.0 days harvested 6.0–7.0 per cent of the total population. Microclimates on ridges and in ravines are importantly utilized by the birds according to season.—J. J. HICKEY.

HUXLEY, JULIAN. 1951. Natural history in Iceland. Smiths. Rept. for 1950: 327–338, 4 figs., 1 table.—Emphasis is on birds, with notes on life habits and changing populations.

INORUYE, MOTONORI. 1950. An examination of the food habits of birds as viewed from the control of may beetles. Tori, **13** (60): 9–21, 60.—Tabulated results (page 60) for many species. In Japanese with English summary. Birds do exert a suppressing effect on the insects in this region.

JANY, E. 1951. Der Balzruf eines südafrikanischen Ziegenmelkers. Vogelwelt, **72**: 157–160.—Observations of the calls of *Caprimulgus rufigena* made near Windhoek (S. W. Africa).

JOUANIN, CHRISTIAN. 1950. Catalogue systématique des types de Trochilidés du Muséum de Paris. Bull. Mus. Natl. d'Hist. Nat. Paris, Series 2, 22 (suppl. 11): 1–27.

JUDD, W. W. 1951. Bird lice (Mallophaga) from a Florida Gallinule and a Baird's Sandpiper. Can. Field-Nat., **65** (3): 120.

KARTMAN, LEO. 1951. Notes on *Tetrameres* sp. (Nematoda, Spiruroidea) parasitic in the English Sparrow in Hawaii. Pacific Sci., **5** (3): 252–255, 1 fig., 4 tables.

KEELER, J. E., AND F. WINSTON. 1951. Mourning Dove trapping in the Southeast. A cooperative dove study. Bird-Banding, **22** (4): 174–179.—A description of technique.

KIPP, FRIEDRICH A. 1951. Der Fischadler Süd-Chinas: *Pandion haliaetus mutuus* subsp. nov. Bonner Zool. Beitr., **2** (1–2): 112.—From Foochow, China.

KOSSACK, CHARLES W. 1951. Securing celluloid bands on waterfowl. Journ. Wildl. Manag., **15** (3): 335–336.—Sealing pliers can be used to fasten hollow rivets.

KUNO, KENTARO. 1950. Adaptability of the lark and the Great Reed-Warbler to their different habitats. Tori, **13** (60): 24–33.—Larks live successfully in areas of grassland as small as 50,000 square meters. Populations in this type of grass

(seasonally inundated) were as great as in adjoining dry land. The Reed-warbler will nest in dry bamboo forest if its usual habitat of reeds disappears. In Japanese.

KURODA, YASUKICHI. 1950. Notes on the moults and movements of the Korean Ring-necked Pheasants, Phasianus c. karpowi. Tori, **13** (60): 33–37.—Cocks molt early in fall and move into hills; females and young molt later. Females in winter are found chiefly in deciduous forest and males in mixed deciduous and coniferous forests. Local movements occur in relation to harvesting of crops. In Japanese with English summary.

LEITCH, WILLIAM G. 1951. Saving, maintaining, and developing waterfowl habitat in western Canada. Trans. 16th N. A. Wildl. Conf., pp. 94–99.—Efforts of Ducks Unlimited (Canada).

LISTER, M. D. 1951. Some bird associations of Bengal. Journ. Bombay Nat. Hist. Soc., **49** (4): 695–728, 1 sketch map.—A classification of cover types in the vicinities of Jessore, a country town, and Dhubalia, a smaller community, and discussion of habitat preferences exhibited by members of the local avifaunas.

LISTER, ROBERT. 1951. Trumpeter Swans breeding in the Cypress Hills of Alberta. Can. Field-Nat., **65** (4): 157–158.

LOCKLEY, R. M., AND S. MARCHANT. 1951. A midsummer visit to Rockall. Brit. Birds, **44** (11): 373–383.

LÖHRL, H. 1951. Brutbeginn und Entwicklung im Vogelei. Vogelwelt, **72**: 1–4.—The true incubation period is the time interval between the laying and hatching of the last egg. Earlier eggs, incubated only intermittently, usually hatch with the last egg or only slightly earlier. This may be due to two reasons—either a full 24-hour period of incubation is needed to initiate the development of the embryo or the brood patch does not start to function properly until the last egg is laid. Illustrated by case histories in *Muscicapa albicollis*.—E. MAYR.

LORENZ, K. 1951. Ueber die Entstehung ausloesender "Zeremonien." Vogelwarte, **16**: 9–13.—"Formalized" or "ritualized" actions may acquire a genetic basis and become specifically orientated. For instance, the "inciting" of the female duck, which in the Tadornini is still clearly composed of two components, a movement directed to the enemy and one directed to the male, has become a single rigid behavior pattern in the Anatini. While an "Uebersprungsbewegung" leads to nervous relaxation, the new instinctive pattern replacing it leads to nervous stimulation.—E. MAYR.

MACGREGOR, WALLACE, JR., AND MANLEY INLAY. 1951. Observations on failure of Gambel Quail to breed. Calif. Fish and Game, **37** (2): 218–219. *Lophortyx gambelii* remained in nonbreeding coveys during a drought, and delayed breeding for four months.

MANGOLD, R. E. 1951. Notes on Bob-white fall and winter mortality. Iowa Bird Life, **21** (3): 46–49, 3 figs.

MANVILLE, RICHARD H. 1951. A small island community in midsummer. Ecology, **32** (4): 608–617.—Eighteen pairs of breeding birds of 10 species on 9.5 acres of white cedar, aspen, and balsam fir; Michigan.

MARTIN, ALEXANDER C. 1951. Identifying pondweed seeds eaten by ducks. Journ. Wildl. Manag., **15** (3): 253–258.—*Potamogeton* seeds can be sectioned and identified under low-power magnification. Comments and illustrations on 21 species are given.

MCCLURE, H. ELLIOTT. 1951. An analysis of animal victims on Nebraska's highways. Journ. Wildl. Manag., **15** (4): 410–420.—Birds represented 23.5 per cent of 6723 animals counted in 3.3 years on 77,000 miles of road. Included were 17

Sparrow Hawks, 386 Pheasants, 55 Mourning Doves (mainly in July), 93 Burrowing Owls (especially in August), 109 Horned Larks, and 265 House Sparrows (mostly in July).

MEINERTZHAGEN, R. 1951. Some relationships between African, Oriental, and Palaearctic genera and species, with a review of the genus Monticola. Ibis, **93** (3): 443–459.—In the first portions of his article Col. Meinertzhagen sets up four categories: (1) The distributional gap between certain European species and their representatives in East Asia and North America; (2) The distributional gap between certain Palaearctic genera and species and their representatives in South Africa; (3) The close connection of certain South Asiatic genera and species with their representatives in Africa; and (4) The many more cases of true geographical races of Palaearctic birds in Africa than is generally realized. Numerous instances are cited under each heading, and in all such instances the "representative form" is relegated to subspecific standing. In many cases the author is doubtless correct, but in other instances the "theory of descent with modification" is applied too rigidly. For instance, Col. Meinertzhagen would place the true bitterns (*Botaurus*) in a single species, and thus the North American, South American, and Australian birds would all become races of the Palaearctic *B. stellaris*. These species, however, are not only widely separated in space, but probably also in time. It is entirely conceivable that they have developed different genetic characters which would render them reproductively isolated were they to be brought together. Under these circumstances they would be regarded as species under modern specific concepts. The types of representative forms are so diverse as to require a certain flexibility in the application of the "Formenkreis" theory.

The second portion of the article is devoted to a revision of the rock thrushes and of the genus *Monticola*, which embodies a mixture of the four categories already set forth. Four species are recognized (as against ten of all other authors) together with their respective races. The wide distributional gaps are emphasized and hypotheses suggested to explain these gaps.—J. L. PETERS.

MEISE, WILHELM. 1951. Hampes Mischzucht von Haus- und Feldsperling. *Passer d. domesticus* (L.) × *P. m. montanus* (L.). Bonner Zool. Beitr., **2** (1–2): 85–98.—Natural history, behavior, and development of these hybrids.

MEUNIER, K. 1951. Korrelation und Umkonstrucktion in den Grossenbeziehungen zwischen Vogelflugel und Vogelkorper. Biol. Generalis, **19** (4): 403–443.

MICHENER, JOSEPHINE R. 1951. Territorial behavior and age composition in a population of Mockingbirds at a feeding station. Condor, **53** (6): 276–283.—A sequel to an earlier paper, this describes modified behavior resulting from an unusual concentration of food provided at a feeding station at Pasadena from 1936 to 1940. The proportion of adults to juveniles increased. Mockingbirds may reach an age of at least 12 years.

MILLS, HARLOW B. 1951. Facts and waterfowl. Trans. 16th N. A. Wildl. Conf., pp. 103–109.—A plea for more research.

MOLTONI, EDGARDO. 1951. Brevi cenni sul parassitismo degli uccelli. Riv. Ital. Ornit., **21** (4): 129–136.

MOREAU, R. E. 1951. Geographical variation and plumage sequence in Pogonocichla. Ibis, **93** (3): 383–401, pl. (map).—This monotypic genus of African Turdidae is confined to the evergreen forests of eastern Africa; nine races are recognized and their characters graphically shown by means of five tables. A peculiarity of this species is the occurrence of three distinct plumages which appear to correspond to the juvenal, immature, and adult, but their sequence varies

geographically. In the southern population the olive (immature) plumage is regularly acquired, and it is believed that the birds may breed in that dress; in the northern groups young in the spangled (juvenal) plumage usually molt directly into the adult livery, but cases of progressive or retarded second (immature) plumages are common.—J. L. PETERS.

MURPHY, JOHN A. 1951. The nesting of the Black Swift. Nat. Hist., **60** (10): 446–449, 6 photos.—Popular account of first recorded nest of this species in Colorado.

NIETHAMMER, GÜNTHER. 1951. Arealveränderungen und Bestandsschwankungen mitteleuropäischer Vögel. Bonner Zool. Beitr., **21** (1–2): 17–54.—A comprehensive review of changes in status of Middle European birds, with accounts of invasions by breeding and non-breeding birds from other parts of the continent.

NORTH, M. E. W. 1951. Opportunism in the use of burnt ground for breeding. Ibis, **93** (3): 466–467.

NORTH, M. E. W. 1951. Tropic-birds at Ras Hafun. Ibis, **93** (3): 466.—Believes that a record of a probable breeding colony of Tropic-birds (Ibis, 1951:142) at Ras Hafun, Somaliland, is erroneous; that the previous author mistook a migrating flock for resident birds.

OWEN, D. F. 1951. Nightjars mobbing owls. Brit. Birds, **44** (9): 324.—Nesting pairs of *Caprimulgus europaeus* mobbed a Tawny Owl, *Strix aluco*, and Little Owl, *Athene noctua*.

PARKS, G. H. 1951. An old White-breasted Nuthatch. Bird-Banding, **22** (4): 180.—An adult male *Sitta c. carolinensis* banded Nov. 15, 1942, in Connecticut, returned Dec. 10, 1950.

PEITZMEIER, J. 1951. Uber die Wirkung der Trockenheit auf die Vogelwelt. Vogelwelt, **72**: 111–117.—The extreme droughts in central Europe in 1947 and 1949 affected bird populations in many ways: increases or decreases of certain species, shift of habitat or food, and changes of date of migration. The effects are not nearly as severe as those of a very cold winter.

PETRIDES, GEORGE A., AND CHARLES R. BRYANT. 1951. An analysis of the 1949–50 fowl cholera epizootic in Texas Panhandle waterfowl. Trans. 16th N. A. Wildl. Conf., pp. 193–216.—About 4,400 waterfowl perished from *Pasteurella multocida*. Deficient rainfall may make for such outbreaks, typically among crowded concentrations of wintering ducks on relatively small and shallow ponds.

PEUS, FR. 1951. Nüchterne Analyse der Massenvermehrung der Misteldrossel (*Turdus viscivorus* L.) in Nordwesteuropa. Bonner Zool. Beitr., **2** (1–2): 55–82.

PFEIFER, S. 1951. Gruppenbalz oder Frühlingsversammlungen des Eichelhähers? Vogelwelt, **72**: 12–14.—Screaming parties of European Jays in spring are analyzed and interpreted as part of the courtship. The display appears to be precisely like that of the Blue Jay.

PHILLIPS, W. W. A. 1951. Nests and eggs of Ceylon birds (Zosteropidae, Nectariniidae and Pittidae). Ceylon Journ. Sci. (sec. B. Zool.), **24** (3): 145–163, 6 pls.—Full notes on nidification, etc., of two species of white-eyes, three of sunbirds, and three of flower-peckers. The pitta is not yet certainly known to breed in Ceylon.

PHELPS, WILLIAM H., AND WILLIAM H. PHELPS, JR. 1951. Four new Venezuelan birds. Proc. Biol. Soc. Wash., **64**: 65-72, 1 fig. (map).—*Glaucidium brasilianum margaritae* (Boca de Río, at sea level, Isla de Margarita, Nueva Esparta); *Chamaeza campanisona huachamacarii* (Cerro Huachamacare, 650 meters, Territorio Amazonas); *Phylloscartes chapmani duidae* (Cerro Duida, 1980 meters, Territorio

Amazonas); *Phylloscartes nigrifrons maguirei* (Cerro Paraque, 1500 meters, Territorio Amazonas).

PITELKA, FRANK A. 1951. Ecologic overlap and interspecific strife in breeding populations of Anna and Allen hummingbirds. Ecology, **32** (4): 641–661.—A five-year study indicated that due to interspecific competition *Calypte anna* maintained a population density at 80% of the maximum possible in the 125 acres, while for *Selasphorus sasin* this was only 48%.

PITELKA, FRANK A. 1951. Nomenclature of the Hooded Jay: a correction. Condor, **53** (6): 300.—*Cyanolyca mitrata* becomes *C. cucullata*.

PITELKA, FRANK A. 1951. The tyrannid Aechmolophus mexicanus in Guerrero. Condor, **53** (6): 300.—Heretofore known only from two specimens, a third is reported from Chilpancingo.

POST, GEORGE. 1951. Effects of toxaphene or chlordane on certain game birds. Journ. Wildl. Manag., **15** (4): 381–386.—Total game bird mortality in plots baited with these insecticides was 23 per cent; in control plots, 10 per cent.

PRESTWICH, ARTHUR A. 1951. Records of parrots bred in captivity. Part IV. (Ring-necks and Kings). (A. A. Prestwich, London), pp. 122–180.

PRZYGODDA, W. 1951. Feldmausbekämpfung und Vogelwelt. Vogelwelt, **72**: 106–111.—The effect on birds of feeding field mice killed by various poisons.

RABELER, W. 1951. Systematik der Vogelgemeinschaften im Hinblick auf Biozonötik und Pflanzensoziologie. Ornith. Abhl., **9**: 3–10.—The relation of birds to plant associations.

REQUATE, H. 1951. Uber Brutausfall durch den Befall mit der Schmeissfliege *Lucilia sericata* Meigen bei einigen Seevogelarten. Vogelwelt, **72**: 33–34.—Larvae of this fly entered freshly-pecked eggs, delayed hatching, and killed the young within a day after hatching.

RINGLEBEN, H. 1951. Aus dem Leben des Mittelsägers (*Mergus serrator* L.). Part 1. Vogelwelt, **72**: 43–50, 84–87, 119–128.—A detailed life history of the Red-breasted Merganser. Social life before and during breeding season and a description of the various types of displays, nest location, incubation, and hatching.

RIPLEY, S. DILLON. 1951. Birds collected and noted round Dhahran, Saudi Arabia, and Bahrein Island. Postilla [Yale Peabody Mus. Nat. Hist.], No. **9**: 1–11.—Notes on twenty-odd forms, of which three are described as new: *Ammomanes deserti insularis* (Bahrein Island); *Pycnonotus leucotis dactylus* (Dammam, near Dhahran, Saudi Arabia); *Prinia gracilis anguste* [sic] (Bahrein Island). *Ammomanes deserti insularis* Ripley, May 10, 1951, has 12 days' priority over *Ammomanes deserti faenorum* Meinertzhagen, May 22, 1951.—H. G. DEIGNAN.

RIPLEY, S. DILLON. 1951. Three birds from the mountains of Muscat. Postilla [Yale Peabody Mus. Nat. Hist.], No. **10**: 1–2.—Remarks on a dove, a lark, and a pipit. The lark is described as new: *Galerida cristata thomsi* (Seik, Jebel Akhdar, Muscat).

RIPLEY, S. DILLON. 1951. Migrants and introduced species in the Palau Archipelago. Condor, **53** (6): 299–300.—Seven species reported on.

RITTINGHAUS, H. 1951. Der Star als Nahrungsschmarotzer der Zwergseeschwalbe (*Sterna albifrons*). Vogelwarte, **16**: 15–17.—Starlings tore fish out of bill of attacking Least Terns.

RITTINGHAUS, H. 1951. Uber das Verhalten koloniebrütender Seevögel gegenüber Raubvögeln und anderen Vogelarten. Vogelwelt, **72**: 149–152.—Observations on the behavior of terns, plovers, and shelducks towards gulls, crows, hawks, and other predatory species.

ROLLIN, NOBLE. 1951. A central electro-photographic recorder and comparator. Dawn Song and all Day, **1** (5): 45–47.—Brief description of use of a "robot bird watcher" which works on basis of translating activities into light which is recorded on micro-film. The machine has immense possibilities.

ROSENE, WALTER. 1951. Breeding bird populations of upland field borders. Journ. Wildl. Manag., **15** (4): 434–436.—Field borders planted to *Lespedeza sericea* averaged 11.7–11.9 breeding pairs per 1000 feet in contrast to 9.5–9.8 for control areas.

SAUNDERS, GEORGE B. 1951. A new White-winged Dove from Guatemala. Proc. Biol. Soc. Wash., **64**: 83–87.—*Zenaida asiatica alticola* (near Patzún, altitude about 6900 feet, Department of Chimaltenango).

SAVILE, D. B. O. 1951. The Ring-billed Gull at Ottawa, Ontario, and its field recognition. Can. Field-Nat., **65** (3): 109–112, 1 table.—Emphasizes similarities to and distinctions from Herring Gull at various ages.

SAVILE, D. B. O. 1951. Bird observations at Chesterfield Inlet, Keewatin, in 1950. Can. Field-Nat., **65** (4): 145–157, 2 tables.—Annotated list covering 48 species, plus sections on migration (some southbound in spring at this station), population density (breeding census), and phenology.

SCHEER, G. 1951. Ueber die zeitliche Differenz zwischen Erwachen und Gesangsbeginn. Volgewarte, **16**: 13–15, diagram.—European Robins begin to sing about 3 minutes after awakening; European Blackbirds 5–6 minutes; Chaffinches 15–20 minutes. It is incorrect to equate awakening with the beginning of singing.

SCHILLER, EVERETT L. 1951. The cestoda of Anseriformes of the North Central States. Amer. Midl. Nat., **46** (2): 444–461.—List of tapeworms found in 184 birds examined. As many as 1,680 worms of six different species may be found in a single host bird. The occurrence of many cestodes is not limited to a single species of birds; the same form of the parasite may occur in several host birds. It seems that a balance between host and parasite is frequently reached, without serious harm to the bird.—H. I. FISHER.

SELANDER, ROBERT K., AND SHERMAN J. PREECE, JR. 1951. Cock roosts of Nighthawks. Condor, **53** (6): 302–303.—Observations on *Chordeiles minor* indicate that gregarious roosting assemblages of males are of common occurrence and that such behavior may be normal for breeding as well as non-breeding individuals.

SICK, H. 1951. Das Ei von *Nyctibius grandis* (Gmelin) und Bemerkungen über andere Tagschläfer-Eier. Vogelwelt, **72**: 40–43.—A description of the eggs and nesting sites of *Nyctibius griseus* and *grandis*.

SIMMONS, K. E. L. 1951. The autumn flight-reactions of House Sparrows, swallows and other passerines. Brit. Birds, **44** (11): 369–372.—Intra- and interspecific chasings by *Passer domesticus* and *Hirundo rustica* are apparently a "type of exaggerated social response."

SIMMONS, K. E. L. 1951. Raptor migration in the Suez area: Autumn 1949–Spring 1950. Ibis, **93** (3): 402–406, 1 text-fig.

SIMMONS, K. E. L. 1951. Interspecific territorialism. Ibis, **93** (3): 407–413.—The concept of interspecific territorialism is defined as "a territory holder of one species exhibits persistent aggressive behaviour to an intruding bird of a second species, showing to it some, if not all of the reactions usually forthcoming in intra-specific encounters." Examples are cited, based on the author's field experience in the region of the Suez Canal. The conclusion is that "interspecific territorialism is apparently one of the means evolved to eliminate the effect of competition between closely allied species with a similar ecology."—J. L. PETERS.

SIMMONS, K. E. L., AND A. G. HURRELL. 1951. Nile Valley Sunbirds in the Suez Canal Zone. Ibis, **93** (3): 468–469.

SKEAD, C. J. 1951. A study of the Hadedah Ibis. Hagedashia h. hagedash. Ibis, **93** (3): 360–382, 1 pl.—A study of its biology, conducted in the Albany district, Cape Province.

SPENCER, DAVID L., URBAN C. NELSON, AND WINSTON A. ELKINS. 1951. America's greatest goose-brant nesting area. Trans. 16th N. A. Wildl. Conf., pp. 290–295.—The Yukon-Kuskokwim Delta is a key area for Cackling Geese and Black Brant. Early establishment of a national refuge is recommended.

SPRINGER, PAUL F., AND JOHN R. WEBSTER. 1951. Biological effects of DDT applications on tidal salt marshes. Trans. 16th N. A. Wildl. Conf., pp. 383–397.—Dosages of 0.2–1.6 lbs. per acre had little effect on birds. Swallows and gulls moved off after spraying.

STABLER, ROBERT M., AND CARLTON M. HERMAN. 1951. Upper digestive tract trichomoniasis in Mourning Doves and other birds. Trans. 16th N. A. Wildl. Conf., pp. 145–163.—Infections of *Trichomonas gallinae* reached epizootic proportions during the summer of 1950 in the Southeastern States.

STEWART, ROBERT E. 1951. Clapper Rail populations of the Middle Atlantic States. Trans. 16th N. A. Wildl. Conf., pp. 421–430.—In Virginia, 71 nests averaged 8.38 ± 0.18 per acre, their density being directly correlated with the acreage of edge. In 47 acres of *Spartina alterniflora*, they averaged 2.5 per acre; 80 per cent were within 15 feet of tidal creeks. Hatching success in 1950 was very high, about 90 per cent. Of 198 banded, 4 per cent were shot by hunters.—J. J. HICKEY.

TANDAN, BHUP KISHORE. 1951. Mallophagan parasities from Indian birds. Part 1. Ann. and Mag. Nat. Hist., ser. 12, **4** (44): 802–813, 13 figs.

TAIBEL, ALULAH M. 1951. La Tortora dal collare orientale—*Streptopelia decaocto decaocto* (Friv.)—avvistata anche nel Polesine. Accertata nidificazione a Rovigo. Riv. Ital. Ornit., **21** (4): 137–150.

TAKASHIMA, HARUO. 1950. Gruidae of Japan and its adjacent territories. Tori, **13**(60): 5–9.—Brief discussion and listing of status of cranes in the area. In Japanese with English summary.

TANTZEN, R. 1951. Ergebnisse der Storchforschung im Land Oldenburg 1949 und in den angrenzenden Gebieten. Ornith. Abhl., **9**: 11–28.—In normal years 90 per cent of the storks return to northwest Germany before the end of April. In 1949 two-thirds arrived in May. Most of these birds failed to nest. Only 67 young were raised in Oldenburg, as against 196 in 1948, and 716 in 1939. Conditions in the winter quarters seem more responsible for these fluctuations than do those in the breeding area. Birds from this area have been recovered from both the southeastern and southwestern migration routes.—E. MAYR.

TEIDOFF, EDGAR. 1951. Zur Ökologie, Biologie und Psychologie des Haselhuhns (*Tetrastes bonasia*). Bonner Zool. Beitr., **2** (1–2): 99–108.

TERRILL, LEWIS MCI. 1951. Shore bird migration at Montreal. Can. Field-Nat., **65** (3): 87–98.—Extensively annotated list; arrival and departure dates.

THOMPSON, ST. CLAIR. 1951. The southeastern cooperative dove study. Trans. 16th N. A. Wildl. Conf., pp. 296–306.—Monthly population trends, plot and roadside counts, and band-recovery rates are compared. Rural mail carriers' counts ran within the narrow limits of 11.8–24.7 doves per 100 miles, while biologists' road counts ran 4.7–63.1. Young birds can be aged by means of dropped primaries (the 9th is dropped at 130 days). The percentage of immatures among

birds bagged has varied widely, 35–89 per cent, but causes for these variations are not explained.—J. J. HICKEY.

THOMSON, A. L., AND E. P. LEACH. 1951. Report on bird-ringing for 1950. Brit. Birds, **44** (9): 289–310.—76,106 birds were ringed, 33,994 being nestlings. Sixteen pages are devoted to a "Selected List of Recoveries."

TIMMERMANN, G. 1951. Aus meinem isländischen Tagebuch 1949–1950. Vogelwelt, **72**: 34–40, 77–82.—Life history notes on the Icelandic population of many arctic species of birds.

TORNIELLI, ANNIBALE. 1951. Comportamento di migratori nei riguardi di un pozzo metanifero in fiamme. Riv. Ital. Ornit., **21** (4): 151–162, 1 fig.

TURČEK, F. 1950. O vztahu sojky (Garrulus glandarius L.) k obnove dubu (Quercus sp.) (The Continental Jay in relation to the oak and its distribution.) Lesnická Práce, **29** (9–12): 385–396.—English summary. About 25 years ago jays began to underplant a 100-year-old monoculture of Scotch pine on 5412 hectares in West-Slovakia. Now about half the forest is underplanted and in some stands the oak undergrowth is a dense canopy. Average underplanting is about 50% of artificial planting. A map of the Eastern Hemisphere shows the close correspondence between the ranges of the oak and the jay.—M. M. NICE.

VAN BEMMEL, A. C. V., AND K. H. VOOUS. 1951. On the birds of the islands of Muna and Buton, S. E. Celebes. Treubia, **21** (1): 27–104, 1 fig.—An annotated report on material from these two islands in the museums of Amsterdam and Bogor, and in the private collection of J. G. van Marle. Three forms are described as new: *Aceros cassidix brevirostris* van Bemmel (Labasa, Muna Island); *Accipiter rhodogaster butonensis* Voous (Buton Island); *Treron pompadora dehaani* Voous (Buton Island).—H. G. DEIGNAN.

VAN DEN AKKER, JOHN B., AND VANEZ T. WILSON. 1951. Public hunting on the Bear River Migratory Bird Refuge, Utah. Journ. Wildl. Manag., **15** (4): 367–381.—Hunting results (1932–1948) are analyzed. Green-winged Teals and Pintails were the species most often taken. Sex ratio on 53,000 shot in 5 years was 79 males to 100 females. The age ratio in 1947 was 0.68 young per adult.—J. J. HICKEY.

VAN DEN BRINK, J. N. 1951. De turkse tortel, *Streptopelia d. decaocto* Friv., thans ook broedvogel in Nederland. Limosa, **24** (1–2): 10–11.—The first breeding record for the species in Holland.

VAURIE, CHARLES. 1951. A new race of *Artomyias fulginosa* from Southern Nigeria. Bull. Brit. Orn. Club, **76** (6): 37–38.—*Artomyias fuliginosa chapini*, new subspecies.

VAURIE, CHARLES. 1951. A new species of flycatcher from Mindanao, Philippine Islands. Amer. Mus. Novit., No. **1543**: 1–4.—*Muscicapa crypta* new species, from Mt. McKinley, Mindanao; related to *M. hyperythra*, *M. bonthaina*, and *M. rufigula*. Known from three specimens.

VERHEYEN, RENÉ. 1950. Sur la portée pratique due "Cline" en ornithologie systématique. Inst. Roy. Sci. Nat. Belgique, **26** (60): 1–10.

VERHEYEN, R. 1951. De Watervogels van België (Met Uitzondering der Eendvogels en der Steltlopers). (Koninklijk Belgisch Inst. Natuurwet., Brussels), pp. 1–173, 65 figs.—Using the term "waterfowl" in its broadest sense, the author undertakes, in the first 35 pages, to discuss the variability of this group and to emphasize the rôle of the environment in effecting many of the superficial resemblances between sub-groups. In this discussion are included similarities in structure, behavior, and ecology. On pages 36–45 is a key to some of the water-

fowl of Belgium. Following this is the systematic account for each species. Included here one may find: a brief synonymy; description of plumages by sexes and ages; breeding behavior; description of anatomical features; and distribution. For certain forms the information is detailed—the species of *Podiceps*, *Phalacrocorax*, *Sterna*, and *Larus*, for example.

The ducks, phalaropes, and gruiform birds are not included, having been considered in previous papers. The paper would have been more valuable to those unacquainted with the literature had there been a more complete listing of already-published studies.—H. I. FISHER.

VESELOVSKY, Z. 1951. Postembryonální vývoj kachny chocholaté (Nyroca fuligula L.). Sylvia, **13** (1): 1–19.—This study of the postembryonic development of the Tufted Duck is concerned primarily with plumage changes shown in 15 birds raised in captivity from the eggs. Changes in color of iris, sex differences at hatching, growth of bill, differential growth of bill and limbs, weights, voice, and behavior are noted in some detail. English summary.—H. I. FISHER.

VIERECK, H. v. 1951. Ueber die Ursachen fuer die Abnahme der Ringelgans (*Branta bernicla*) in den Winterquartieren. Vogelwarte, **16**: 18–22.—European Brant, badly decimated by the eelgrass disease, are still decreasing. Since eelgrass is also beginning to recover in European waters, unfavorable conditions in the breeding quarters may be responsible for the continued decline.—E. MAYR.

VOROBIEV, K. A. 1951. Novaya forma indiiskoi kukushki—*Cuculus micropterus ognevi* subsp. nova. Doklady Akademii Nauk SSSR [Reports Acad. Sci. U.S.S.R.], [new ser., 19] **77** (3): 511–512.—The type (from Guberovo, mid-course of the Ussuri) and three specimens from Amur-land differ from two Indian specimens of *C. m. micropterus* by greater length of wing and bill (wing length 200–213 mm., against 188–192 mm.). The new form ranges from Amur-land and the frontiers of Ussuri-land through Manchuria into Korea (southward limits uncertain).—H. G. DEIGNAN.

WENDLAND, V. 1951. Zwanzigjährige Beobachtungen über den Schreiadler *Aquila pomarina*. Vogelwelt, **72**: 4–11.—A life history of the Spotted Eagle. Two territories were occupied for 20 years consecutively. Nest, eggs, incubation period, death of second young, feeding, prey, habitat, and population density are discussed.

WESTERNHAGEN, W. v. 1951. Raubvogelzug an der Ostseeküste. Ornith. Mitt., **3**: 7–11.—Description of magnitude and direction of hawk migration along the shores of the western Baltic.

WETMORE, ALEXANDER. 1951. Observations on the genera of swans. Journ. Wash. Acad. Sci., **41** (10): 338–340.—After a study of the comparative osteology, the author places the seven living swans in three genera: *Chenopis*, *Cygnus*, and *Olor* (the last divided into the subgenera *Olor* and *Clangocygnus*). All generic names so far used for the group are allocated.—H. G. DEIGNAN.

WHITE, C. M. N. 1951. Systematic notes on African birds. Ibis, **93** (3): 460–465.—Two races of *Hagadashia hagedash* are recognized definitely, and a third tentatively. The races of *Butorides striatus* from Madagascar and the Seychelles appear to have been derived from African mainland stock; those from Mauritius, Réunion, Rodriguez, Assumption, Diego Garcia and the Comoro Islands show more affinities with the race of southern Asia (*B. s. javanicus*). It is proposed to lump the ralline genera *Limnocorax*, *Porzana*, *Crecopsis*, and *Aenigmatolimnas* with *Crex*. *Pterocles namaqua ngami* is not separable from *P. namaqua; P. burchelli makarikari* is valid; *P. bicinctus chobiensis* is not regarded as recognizable. *Treron australis clayi* White, 1943 becomes *T. a. salvadorii* (Dubois) 1897, and *T. a.*

salvadorii of authors, not of Dubois, becomes *T. a. granviki* Grote 1924. The correct subspecific name of the South African form of *Anthus richardi* is *rufuloides* Roberts. It is believed that the types of *Bradornis benguellensis* Bocage are wrongly labelled and did not come from Benguella. *Lanius collaris congicus* Reichenow (1902) is considered a synonym of *L. c. capelli* Bocage (1879).—J. L. PETERS.

WILLIAMS, JOHN G. 1951. Notes on *Scepomycter winifredae* and *Cinnyris loveridgei*. Ibis, **93** (3): 469–470.—Notes on plumage and habits of these two species based on specimens taken and observations made in the Uluguru Mts., Tanganyika.

YAMASHINA, Y. 1950. Duck hybridization by artificial insemination. Tori, **13** (60): 1–5, 2 figs.—Description of Onishi's method of securing sperm and inseminating female; of significance in obtaining crosses to check interspecies fertility.

YEAGER, LEE R., WAYNE W. SANDFORT, AND L. JACK LYON. 1951. Some problems of Pheasant management on irrigated land. Trans. 16th N. A. Wildl. Conf., pp. 351–367. "Despite a mortality of 69.0 per cent in [313] nests, 24.9 per cent in [792] chicks, and 19.6 per cent in [296] adults . . . the late-summer populations showed 255 to 311 per cent increases over the breeding populations during the 3-year period of 1948–50." Crop harvest activities destroyed 35 per cent of all nests, 8 per cent of all chicks, and 28 per cent of all nesting hens. Weather was second in importance as a mortality factor.—J. J. HICKEY.

ZIMMER, JOHN T. 1951. Studies of Peruvian Birds. No. 61. The genera *Aglaeactis, Lafresnaya, Pterophanes, Boissonneaua, Heliangelus, Eriocnemis, Haplophaedia, Ocreatus,* and *Lesbia*. Amer. Mus. Novit., No. **1540**: 1–55.—Taxonomic revisions, including remarks on hybridization. New races are: *Aglaeactis castelnaudii regalis* from Rumicruz, Dept. Pasco, Peru; *A. cupripennis cajabambae* from Cajabamba, Peru; *Lafresnaya lafresnayi orestes* from San Pedro, south of Chachapoyas, Peru; *Pterophanes cyanopterus caeruleus* from Paramo Guamues, Nariño, Colombia; *Heliangelus amethysticollis decolor* from Rumicruz, Dept. Pasco, Peru; *Eriocnemis luciani marcapatae* from Marcapata, southeastern Peru; and *Ocreatus underwoodii ambiguus* from Salento, western Quindio Andes, Colombia.

OBITUARIES

WALTER ALLEN ANGELL, an Honorary Life Associate, elected to the American Ornithologists' Union in 1901, died at Smithfield, Rhode Island, on February 5, 1950. He was born in Johnston, R. I., September 5, 1868. After attending the Johnston Public Schools, he became a taxidermist and furrier and developed into a well-rounded naturalist. He also manufactured Riker mounts for use in the study of insects. His collection of rare butterflies was destroyed completely in the hurricane of 1938. He also specialized in the raising of dahlias and gladiolas. Aside from a collection of bird skins, domestic and foreign, he had one of the best collections of the eggs of the birds of New England, found for the most part by himself.—A. W. SCHORGER.

FRANK WESTON BENSON, an Associate of the American Ornithologists' Union, elected in 1920, died at Salem, Massachusetts, November 14, 1951, at the age of 89. He was born at Salem on March 24, 1862. After studying at the Boston Museum of Fine Arts, he went to the Julian Academy in Paris where he was a pupil of Boulanger and Lefebre. His initial reputation as an artist was gained in oil. Probably