RECENT LITERATURE

EDITED BY FRANK McKINNEY

Anatomy and Embryology

Cobb, S. 1960. Observations on the comparative anatomy of the avian brain. Perspectives in Biol. and Med., **3:** 383–408.—A readable discussion of the comparative anatomy of the avian brain in relation to evolutionary developments of the senses and behavior.—R. E. P.

Fisher, H. I. 1961. The hatching muscle in North American grebes. Condor, **63:** 227–233.—Morphology, development, and probable function of the "hatching muscle," M. complexus, in five species of grebes.—R. E. P.

Rutschke, E. 1960. Untersuchungen über Wasserfestigkeit und Struktur des Gefieders von Schwimmvögeln. Zool. Jahrb., **87:** 441–506.—Experiments on ducks and coots showed that waterproofing of feathers results from structural peculiarities of the feathers and not from the secretion of the oil gland. The latter functions in keeping the feathers pliable and in preserving their structure. Microscopical comparison of the feathers from swimming birds of several orders and from birds that do not swim revealed structural adaptations for waterproofing.—F. M.

Hartman, A. 1961. Locomotor mechanisms of birds. Smithsonian Misc. Coll., **143** (1): 1–91.—Primarily a tabulation of selected data obtained directly by the author for 360 species in 70 families. For most of the species the following are given: body weight, heart weight, upper extremities as percentage of body weight, lower extremities as percentage of body weight, ratio of wing area to body weight, aspect ratio (wing length divided by median wing width), supracoracoides as percentage of body weight, pectoralis superficialis as percentage of body weight, remainder of flight muscles as percentage of body weight, ratio of tail area to body weight, total gliding surface, and buoyancy index (ratio of square root of wing surface to cube root of body weight).—D. S. F.

Behavior

Barth, E. K. 1961. The tameness of some Scandinavian waders. Brit. Birds, **54:** 133–136.—Notes on *Charadrius morinellus, Phalaropus lobatus,* and *Tringa glareola,* with photographs.—F. M.

Gould, P. J. 1961. Territorial relationships between Cardinals and Pyrrhuloxias. Condor, **63:** 246–256.—Great similarity in behavior and ecological requirements indicates that these two species should be considered congeneric.—R. E. P.

Johnson, E. D. H. 1961. The pair relationship and polygyny in the Stonechat. Brit. Birds, **54:** 213–225.—Conclusions drawn from a 12-year study of *Saxicola torquata.* Pairs form after the assumption of first-winter plumage and remain intact throughout the winter. The pair bond is relaxed for a short period in spring, and changes of mates may take place. Males may engage in polygynous relationships with two or more females and are able to adapt their behavior to that of females in different stages of the breeding cycle.—F. M.

Lind, H. 1959. Studies on courtship and copulatory behaviour in the Goldeneye (*Bucephala clangula* (L.)). Dansk Orn. Foren. Tidsskr., **53:** 177–219.—The displays given in courting groups and in association with copulation are described. They are thought to have evolved from displacement activities (comfort movements and drinking) and from intention movements (of attack, escape, and copulation). On the basis of the relative frequency of the displays in eight situations, conclusions

are drawn on the underlying motivation. The relative and absolute strengths of attack, escape, and sexual tendencies are thought to be different for each display. The probable functions of the displays are discussed.—F. M.

Lind, H. 1961. Studies on the behaviour of the Black-tailed Godwit (*Limosa limosa* (L.)). Munksgaard, Copenhagen. 157 pp., 51 figs.—This paper provides a very important contribution to knowledge of breeding behavior and other aspects of reproduction in shore birds. It is based on four seasons of field work carried out at the Tipperne bird sanctuary in West Jutland. There are 12 chapters: "Predator-reactions," "Intraspecific hostile behaviour," "Courtship and pair-formation," "Copulation and pair-displays," "Nesting behaviour," "Egg-laying," "Behaviour in the brooding phase," "Breaking of eggs and hatching," "Chicks and adults," "Some causal and functional aspects of nesting and brooding behaviour," "Territories and colony tendencies," and "Remarks on non-reproductive behaviour." The many interesting and important conclusions drawn cannot be summarized here, but the discussions of predator reactions, the origin, motivation, and functions of displays, and the activities concerned with incubation and hatching are particularly significant and stimulating.—F. M.

Simmons, K. E. L. 1961. Foot-movements in plovers and other birds. Brit. Birds, **54:** 34–39.—Discusses the species that perform "foot-trembling" and other behavior patterns and the possible functions of such movements.—F. M.

Skutch, A. F. 1961. Helpers among birds. Condor, **63:** 198–226.—An annotated list and discussion of birds "helping" individuals other than their mates with reproductive activities, and in other ways. The most common "help" is warning calls, then feeding, and other activities to a lesser extent.—R. E. P.

Stokes, A. W. 1961. Voice and social behavior of the Chukar Partridge. Condor, **63:** 111–127.—A four-year behavior study of wild and captive partridges with special emphasis on the motivation of displays. Consistent with other ethological studies, courtship appeared to be a resultant of attack, escape, and sexual tendencies. Dominant males courted less and mated later than less-aggressive birds.—R. E. P.

Diseases and Parasites

Semashko, L. L. 1961. [The Tree Sparrow and House Sparrow as carriers of ticks and mites in Turkmenistan.] Zool. Zhurn., **40:** 1070–1078.—Results of a five-year study of *Passer montanus pallidus* and *P. domesticus griseogularis*. Fourteen species of ticks and mites were found. Examination of 2,237 birds showed that 50 per cent of the Tree Sparrows and 33 per cent of the House Sparrows carried these ectoparasites. Cultures of different pathogens (*e.g.*, typhus, paratyphus, salmonella) were obtained from the blood and some organs. The author concludes that the sparrows are serious vectors of ticks and mites, especially significant for the poultry industry. (In Russian; English summary.)—J. F. T.

Shiranovich, P. I., and T. V. Chumakova. 1961. [Experimental studies on some bird vectors of rodent fleas.] Zool. Zhurn., **40:** 577–582.—Two species of birds (*Chloris chloris* and *Melanocorypha leucoptera*) and three species of fleas (*Neopsylla setosa, Ceratophyllus tesquorum,* and *Ctenophthalmus wagneri*) were involved in a series of 17 cage tests. It was found that fleas stayed on birds for 4.5 to 27 hours, depending on the species, sex, and condition of the fleas (hungry fleas being occupied with sucking the bird's blood). Fleas could be transported by the birds for a distance of about 10 km. (In Russian; English summary.)—J. F. T.

Distribution and Annotated Lists

Baillie, J. L. 1960. New Ontario breeding birds. Ont. Field Biol., **14:** 14–23.—Detailed records for 11 species.

Baillie, J. L. 1961. More new Ontario breeding birds. Ont. Field Biol., **15:** 1–9.—Details of an additional 13 species.

Bruun, B. 1960. [Distribution of the Mute Swan (*Cygnus olor* (Gm.)) at the coast and in the interior of Denmark 1935–1959.] Dansk Orn. Foren. Tidsskr., **54:** 77–84.

Dragesco, J. 1961. Oiseaux des savanes d'Afrique équatoriale. L'Oiseau, **31:** 179–192.—Notes on birds of the savannas of equatorial Africa, based on a trip covering the former French colonies and Belgian Congo.—E. E.

Goethe, F. 1961. A survey of moulting Shelduck on Knechtsand. Brit. Birds, **54:** 106–115.—Aerial surveys of the largest molting concentrations in Europe.—F. M.

Goethe, F. 1961. The moult gatherings and moult migrations of Shelduck in northwest Germany. Brit. Birds, **54:** 145–161.

Guildal, J. A., and J. V. Hansen. 1960. [Studies on the Grasshopper-warbler (*Locustella naevia* (Bodd.)) in Denmark.] Dansk Orn. Foren. Tidsskr., **54:** 109–124.—Summarizes past and present status. The species was rare until 1940; since then there has been an invasion and one certain breeding locality is known. Specimens killed at Danish lighthouses between 1850 and 1958 can probably be accounted for by migrational drift. (In Danish; English summary.)—F. M.

Heu, R. 1961. Observations ornithologiques au Ténéré. L'Oiseau, **31:** 214–239.—Observations on a trip back and forth across the sandy African desert of Ténéré, extending from southeastern Algeria to Lake Chad (chiefly in the Republic of the Niger), an area with little bird life. The birds most often seen were falcons, every rocky elevation being used.—E. E.

Keve, A. 1960. Der Blutspecht (*Dendrocopos syriacus*) in Ungarn. Vertebrata Hungarica, **2:** 243–260.—Deals with the past and recent distribution of the Syrian Woodpecker in Hungary and in the Carpathians. The species has spread to the northwest, reaching the Carpathians in 1928, Hungary in 1937. Hybrids with *D. major* occur where the two species are in contact, and these hybrids are discussed. On the basis of recent taxonomic studies the author corrects the scientific name *D. syriacus balcanicus* to *D. syriacus syriacus*. (In German; Hungarian summary.)—J. F. T.

Macfarlane, A. M., and A. D. Macdonald. 1960. An annotated check-list of the birds of Hong Kong. 92 pp. Hong Kong Bird Watching Society, c/o The Chartered Bank, Hong Kong. Price: H. K. $7.50.—A cloth-bound booklet, listing scientific and English names, general range, and local status of 333 species, with map, useful bibliography, and index.—E. E.

Mann, F. G. 1960. Regiones biogeográficas de Chile. Inv. Zool. Chilenas, **6:** 15–49.—Description of the biotic communities of Chile, amply illustrated with maps and with useful drawings of the landscape and of characteristic animals, including birds. (In Spanish; English summary.)—E. E.

McKinley, D. 1961. History of the Canada Goose in Missouri. The Bluebird, **28** (3): 6–12.

McNeil, R. 1961. Avifaune du Parc de la Vérendrye, Québec. Nat. Canad., **88:** 97–129.—Results of four months' observation in the summer of 1960. The status, habitat, and relative abundance of 122 species are tabulated and discussed.—F. M.

Perrins, C. 1961. The "Lesser Scaup" problem. Brit. Birds, **54:** 49–54.—A duck, suspected of being a Lesser Scaup, was collected in Berkshire and proved to be a hybrid (probably *Aythya ferina* × *A. fuligula*). This specimen throws doubt on

other sight records of possible Lesser Scaups in England, and the species is not yet admitted to the British List.—F. M.

Phillips, A. R. 1960. La ornitología Mexicana en los últimos cincuenta años. Rev. Soc. Mex. Hist. Nat., **21:** 375–389.—A review in Spanish of Mexican ornithological work over the past 50 years, expressing the author's views on "new" species described, the need for series taken at all seasons, and the available literature. The printed bibliography is especially useful, and a supplemental mimeographed bibliography is available to serious workers on application to the author.—E. E.

Pinto, A. A. da R., and D. W. Lamm. 1960. Contributions to the study of the ornithology of Sul do Save (Mozambique). Pt. 4. Mem. Mus. Dr. Alvaro de Castro, **5:** 69–126.—Families Zosteropidae, Nectariniidae, Ploceidae, and Fringillidae are treated. Each species listed, with data on local status, and habitat, and often on habits and taxonomy.—E. E.

Røen, U. 1960. [Observations on the Greater Snow Goose (*Anser caerulescens atlanticus* (Kennard)) in the Thule District in the summer of 1959.] Dansk Orn. Foren. Tidsskr., **54:** 128–135.—Information on new breeding grounds in northern Greenland. (In Danish; English summary.)—F. M.

Shuntov, V. P. 1961. [Migration and distribution of marine birds in the Southeastern Bering Sea during the spring and summer.] Zool. Zhurn., **40:** 1058–1069.—Deals with 25 species belonging to six orders. On the basis of observations made from a ship in 1960, the relative abundance, distribution, migrations, and density per square kilometer have been determined. Correlations are made with depth of water and the distribution of plankton, benthos, and fish. The main concentrations and migration routes of birds are closely related to the biological productivity of the sea studied. (In Russian; English summary.)—J. F. T.

Walkinshaw, L. H., and D. A. Zimmerman. 1961. Range expansion of the Brewer Blackbird in eastern North America. Condor, **63:** 162–177.

Wilhoft, D. C. 1961. Birds observed during two crossings of the Pacific Ocean. Condor, **63:** 257–262.

Ecology and Populations

Andersen, T. 1961. [A population of Tawny Owl (*Strix aluco* L.) in Northern Zealand, studied in the breeding season.] Dansk Orn. Foren. Tidsskr., **55:** 1–55.—Results of a four-year study providing an interesting comparison with the English population studied by Southern (Ibis, **96:** 384–410). Broods were larger than in England, but winter losses are thought to be higher in Denmark because of hard weather. Young birds in England were dependent on their parents for food until the beginning of August; Danish young apparently hunted for themselves much earlier. This behavioral difference is thought to contribute to the ability of Dutch owls to raise large families without using a larger area per individual than English birds. Other sections of the paper describe the major calls of adults and young with interpretations of their functions, territorial behavior, habitat, and food. (In Danish; eight-page English summary.)—F. M.

Curio, E. 1959. Beiträge zur Populationsökologie des Trauerschnäppers (*Ficedula h. hypoleuca* Pallas). Zool. Jahrb., **87:** 185–230.—A six-year study of a rather well-isolated population of color-banded Pied Flycatchers in Germany gave significant data on homing of adults and yearlings, mortality rates, clutch size, hatching and fledging success. A strong homing tendency (44.7 per cent of adult males, 30 per cent of adult females returning) is probably caused by outstanding attractiveness of habitat in study area. The tendency to keep to the territory of former years

increases with age. More than 35 per cent of females but, at most, 30 per cent of males breed when one year old; the rest mature at an age of two. Birds breeding in their first year are generally offspring of early broods. The earlier maturity of females is regarded as an adaptive compensation for their heavier yearly mortality. Seasonal, geographic, and annual variations in clutch size are recorded. Clutch size remains relatively constant throughout the life of an individual, indicating genetic differences between females.—F. M.

Hansen, H. A. 1961. Loss of waterfowl production to tide floods. J. Wildl. Mgt., **25:** 242–248.—Greatest loss was due to lowered viability of exposed eggs. Both ducks and geese responded to flooding by building up their nests, thus keeping losses to a minimum.—J. P. R.

Joensen, A. H. 1961. [Studies of bird populations in Western Jutland, in the summer of 1959.] Dansk Orn. Foren. Tidsskr., **54:** 169–188.—A census of breeding birds in an area including heath, dunes, beach, and coniferous wood. Densities in the different habitats are compared. About nine times as many pairs were found in the wooded area as in the open areas. The results are compared with densities found in other European studies. (In Danish; English summary.)—F. M.

Nørrevang, A. 1960. [Habitat selection of sea-birds in Mykines, Faroes.] Dansk Orn. Foren. Tidsskr., **54:** 9–35.—Describes the habitat of 17 species on one of the Faroe Islands, with counts or population estimates. (In Danish; full English summary.)—F. M.

Poulsen, H. 1959. [The Shelduck (*Tadorna tadorna* (L.)) in Denmark, with special reference to inland breeding.] Dansk Orn. Foren. Tidsskr., **53:** 155–169.—The Shelduck is a common coastal breeder and has increased since its protection in 1931. In the last few years, it has been found breeding inland on fresh-water lakes. (In Danish; English summary.)—F. M.

Evolution and Genetics

Banks, R. C., and N. K. Johnson. 1961. A review of North American hybrid hummingbirds. Condor, **63:** 3–28.—Description of a new specimen and a new look at previous records and specimens including more complete descriptions of several specimens. Discussion of evolutionary implications and behavioral and ecological isolating mechanisms points out gaps in our knowledge of this group.—R. E. P.

Huxley, J. 1960. The Openbill's open bill: a teleonomic enquiry. Zool. Jahrb., **88:** 9–30.—A review of the evidence on the function of the peculiar bill of *Anastomus* suggests that it is used to hold and crush the shells of mollusks under water, the shell fragments then being washed away by shaking of the head before the body is swallowed. Adaptations of other birds that eat mollusks are reviewed and discussed. —F. M.

Morejohn, G. V., and R. E. Genelly. 1961. Plumage differentiation of normal and sex-anomalous Ring-necked Pheasants in response to synthetic hormone implants. Condor, **63:** 101–110.—Study of the genetic and hormonal control of plumage color.—R. E. P.

Sammalisto, L. 1961. An interpretation of variation in the dark-headed forms of the Yellow Wagtail. Brit. Birds, **54:** 54–69.—Geographical variation of four variables is analyzed: length of supercilium, amount of black on the head, amount of white on the chin and throat, and length of the hind claw. On the basis of these characters, the populations are divided into three groups; two are considered to represent the parental types, the third their hybrid forms. The group is thought to have evolved in Europe, a "supercilium form" inhabiting the central lowlands and a

"black-headed form" the mountain regions of the southeast. The latter extended its range northward and came into contact with the supercilium form. The resulting "intermediate form" and the supercilium form expanded eastward into Asia. This hypothesis differs from previous ones, which assume that expansion in the northern cline took place from east to west.—F. M.

Selander, R. K., and D. R. Giller. 1961. Analysis of sympatry of Great-tailed and Boat-tailed grackles. Condor, **63:** 29–86.—A detailed study of morphology, ecology, and ethology of *Cassidix major* and *C. mexicanus* in a zone of sympatry on the Gulf coast. *C. mexicanus* is larger, tends to be less restricted to marshes, and the males tend to be more attentive at the nest than in *C. major*. Apparently, females select males on the basis of postures and calls, which differ in the two species. Thus, an ethological isolating mechanism is thought to account for the absence of hybridization in areas of sympatry.—R. E. P.

General Biology

Anderson, A. H., and A. Anderson. 1961. Life history of the Cactus Wren. Part IV: Development of nestlings. Condor, **63:** 87–94.

Arámburu, R. H., and N. A. Bó. 1961. Descripción de colonias de nidificación (Delta del Paraná y Golfo de San José, Chubut) y estudio de los estados juveniles de *"Phalacrocorax brasilianus brasilianus"* (Gmelin). Rev. Mus. de La Plata, **7:** 107–121.—Description of nesting colonies of the Olivaceous Cormorant in the Paraná Delta and the Gulf of San José, Chubut, Argentina, with a special study, illustrated by photographs, of the development of the young from the embryo about to hatch to full growth. Dates of nesting in different localities vary widely from year to year, without apparent reason.

Ash, J. S., P. Hope Jones, and R. Melville. 1961. The contamination of birds with pollen and other substances. Brit. Birds, **54:** 93–100.—Samples from Britain and France were analyzed. *Citrus* pollen was the main constituent. In some cases, pollen may be taken as food; in others, birds may be contaminated when searching for nectar or insects. The presence of certain pollen on Chiffchaffs throws light on their migration routes.—F. M.

Balát, F. 1960. [A study of moulting in the Dipper, *Cinclus cinclus* (L.)] Zool. Listy, **9** (23): 257–264.—A three-year study on a total of 63 wild birds that were captured in nets. The timing and course of the molt are described in detail. In young birds, the date on which the molt begins depends on their date of hatching; in adults, it is dependent on the end of the reproductive period. It was discovered that this species has a short, flightless period, comparable to that of waterfowl, during which birds may take shelter in aquatic vegetation. (In Czech; full English summary.) —F. M.

Delvingt, W. 1961. Détermination de l'âge et du sexe des étourneaux, *Sturnus vulgaris* L., résidant ou séjournant en Belgique. Gerfaut, **51:** 55–63.—A useful article indicating external characters on which the Common Starling may be sexed and aged. (English summary.)—E. E.

Ellis, J. A. 1961. Consumption of some food items by pen-reared Bobwhites. J. Wildl. Mgt., **25:** 258–264.—All of 41 different seeds tested were accepted. The volume presented and frequency of presentation increased consumption of specific seeds.—J. P. R.

Fairfield, G. 1961. A nesting study of Redwinged Blackbirds. Ont. Field Biol., **15:** 24–25.—Data on 19 nests.

Kubík, V. 1960. [Beiträge zur Fortpflanzungsbionomie des Wiedehopfes (*Upupa epops*).] Zool. Listy, **9** (23): 97–110.—On the breeding biology of the Hoopoe, based on a study of 31 nests. (In Czech; German summary.)—F. M.

Labitte, A. 1961. Dates de premières apparitions et des débuts de pont chez des oiseaux nicheurs du pays drouais, au cours des trente dernières années. L'Oiseau, **31**: 240–245.—A summary of dates of first appearance, average, earliest, and latest dates of first egg laying of the breeding birds of the Drouais region of northern France, based on 30 years of observations.—E. E.

Sládek, J. 1960. [Beitrag zur Nahrungsökologie des Rauhfussbussards (*Buteo lagopus* Brünn.) in den tschechoslowakischen Winterquartieren.] Zool. Listy, **9** (23): 111–126.—On the food of the Rough-legged Buzzard in its winter quarters in Czechoslovakia. (In Czech; Germany summary.)—F. M.

Management and Conservation

Craighead, J. J., and D. S. Stockstad. 1961. Evaluating the use of aerial nesting platforms by Canada Geese. J. Wildl. Mgt., **25**: 363–372.—Platforms did not increase the population but caused a decrease in ground nesting. Use of aerial platforms slightly increased the reproductive rate, hatching and nest success, and reduced predation.—J. P. R.

Frankel, A. I., and T. S. Baskett. 1961. The effect of pairing on cooing of penned Mourning Doves. J. Wildl. Mgt., **25**: 372–384.—The frequency of cooing by a male dove depends on whether or not it is mated. Tenfold increases in the frequency of cooing resulted when females were removed from their mates. When the females were returned, cooing dropped to the previous level, if pair bonds were restored. This must be taken into account in evaluating the call-count census method.—J. P. R.

Hamerstrom, F., and F. Hamerstrom. 1961. Status and problems of North American Grouse. Wils. Bull., **73**: 284–294.—The status of each North American species of grouse is reported, and the conservation and management programs in progress and those needed are described.—J. T. T.

Labisky, R. F. 1961. Report of attempts to establish Japanese quail in Illinois. J. Wildl. Mgt., **25**: 290–295.—Three groups of 500 quail failed to establish themselves. A discussion of the general failure of this species to become established in the Midwest is presented.—J. P. R.

Norton, H. W., T. G. Scott, W. R. Hanson, and W. D. Klimstra. 1961. Whistling-cock indices and bobwhite populations in autumn. J. Wildl. Mgt., **25**: 398–403.—The usefulness of whistling cock counts in summer to estimate fall populations is doubtful, and a better method is needed.—J. P. R.

Migration and Orientation

Christensen, N. H. 1960. [Ornithological observations at Atbara, North-Sudan.] Dansk Orn. Foren. Tidsskr., **54**: 144–161.—Notes on local species and passage migrants in the Nile valley. The narrow belt of vegetation along the river was the preferred resting habitat for migrants. Observations on diurnal migration are reported. (In Danish; English summary.)—F. M.

Cornwallis, R. K. 1961. Four invasions of Waxwings during 1956–60. Brit. Birds, **54**: 1–30.—Never before have large-scale Waxwing invasions been recorded in Britain in four successive winters. These invasions are considered to have been caused by failure of the rowan berry crop in northern Europe in certain years and

high Waxwing populations in the other years. The invasion type of migration is discussed as an adaptation to conditions that fluctuate irregularly.—F. M.

Coulson, J. C. 1961. Movements and seasonal variation in mortality of Shags and Cormorants ringed on the Farne Islands, Northumberland. Brit. Birds, **54:** 225–235.—Analysis of recoveries of *Phalacrocorax aristotelis* and *Ph. carbo* banded mostly as nestlings showed that young birds of both species disperse farther than the adults. Young Shags tend to move south of the breeding colony in winter and north in summer; the reverse trend occurs in the Cormorant.—F. M.

McLean, I., and K. Williamson. 1960. [Migrants between South Greenland and Iceland.] Dansk Orn. Foren. Tidsskr., **54:** 69–76.—Observations from an ocean weathership in the entrance to Denmark Strait, in spring and fall, 1959. Twelve species (seven passerine) were recorded in spring, four (none passerine) in fall. (In Danish; English summary.)—F. M.

McLean, I., and K. Williamson. 1961. [Spring migrants between South Greenland and Iceland.] Dansk Orn. Foren. Tidsskr., **54:** 189–195.—Further observations from a weathership in Denmark Strait, during May 1960. (In Danish; English summary.) —F. M.

Nørrevang, A. 1960. [Some behavioural observations on migrating terns.] Dansk Orn. Foren. Tidsskr., **54:** 125–127.

Preuss, N. O. 1960. Ground-speed and air-speed according to flock-size in migrating birds. Dansk Orn. Foren. Tidsskr., **54:** 136–143.—Migrating Oystercatchers (*Haematopus ostralegus*) flew lower with a head wind than with a tail wind. The theory that flight speed increases with the size of the flock could not be confirmed.—F. M.

Schelde, O. 1960. [The migration of Danish Sparrow-hawks (*Accipiter nisus* (L.)).] Dansk Orn. Foren. Tidsskr., **54:** 88–102.—Analysis of 147 recoveries from over a thousand banded birds. Half of the birds from eastern Denmark were migratory as opposed to only 13 per cent of the Jutland population. Young birds were sexed by the thickness of the tarsus. No sexual differences in migratory behavior were detected. First- and second-year birds winter farther south than older ones. Mortality is 63 per cent for first-year birds; about 40 per cent for older birds. Only some yearlings breed, and the population is declining, primarily as a result of shooting. (In Danish; English summary.)—F. M.

Urquhart, F. A. 1960. A discussion of the use of the word "migration" as it relates to a proposed classification for animal movements. Ont. Field Biol., **14:** 1–7.

Physiology

Farner, D. S. 1961. Comparative physiology: Photoperiodicity. Ann. Rev. Physiol., **23:** 71–96.—A valuable review based mostly on literature published since 1950. While "only a fraction of the available literature is cited because of space limitation," 341 references are included. The paper presents the current status of knowledge of photoperiodicity in both vertebrates and invertebrates and outlines the principal trends of research.—F. M.

Farner, D. S., A. Oksche, F. I. Kamemoto, J. R. King, and H. E. Cheyney. 1961. A comparison of the effect of long daily photoperiods on the pattern of energy storage in migratory and non-migratory finches. Comp. Biochem. Physiol., **2:** 125–142.—Caged White-crowned Sparrows, when subjected to long daily photoperiods in midwinter, deposit large amounts of subcutaneous and visceral fat and develop migratory behavior. There is a reduction in the glycogen content of the pectoral muscles and liver, a suppression of the diurnal glycogen cycle in these organs, and a marked

increase in their fat content. Oregon Juncos, which have more restricted migratory movements, show similar but less extensive responses. Nonmigratory English Sparrows show no such alteration in the pattern of energy storage. The relatively small amount of glycogen available and the excessive storage of fat suggest that there must be very extensive use of fat or fatty acids directly by the pectoral muscles in flight.—F. M.

Howell, T. R., and G. A. Bartholomew. 1961. Temperature regulation in Laysan and Black-footed albatrosses. Condor, **63**: 185–197.—Temperatures of eggs, chicks, juveniles, and adults were measured under a variety of environmental conditions. Temperatures of adults were higher during the day than at night. Young can lose heat by panting and through the foot webs.—R. E. P.

King, J. R. 1961. The bioenergetics of vernal premigratory fat deposition in the White-crowned Sparrow. Condor, **63**: 128–142.—Energy intake and expenditure, body weight, and nocturnal activity of *Zonotrichia leucophrys gambelii* were measured in captives in 1955 and 1956. Abrupt weight increases in April resulted from increased food intake rather than any energy-sparing mechanisms, and began before *Zugunruhe*.—R. E. P.

Miller, A. H. 1961. Molt cycles in equatorial Andean Sparrows. Condor, **63**: 143–161.—Study of trapped and of color-marked individuals shows two molts annually, generally in the dry periods but spread over much of the year. Antagonism between breeding and molt is suggested; especially for females, breeding appears to interrupt molt.—R. E. P.

Taxonomy and Palaeontology

Nicolai, J. 1960. Verhaltensstudien an einigen africischen und paläarktischen Gerlitzen. Zool. Jahrb., **87**: 317–362.—A comparative study of displays and breeding behavior in a number of African and Palaearctic species of serins. Hybrids between species and back crosses were raised to give information on hybrid fertility. The ethological and hybridization findings agreed closely and indicate that the species fall into three genera: *Serinus, Crithagra,* and *Ochrospiza*. "The Ethiopian Carduelidae are not a homogeneous group. They are composed of groups of related species, whose genealogical relationships are no closer than those between the Palaearctic genera of this family."—F. M.

Pitelka, F. A. 1961. Comments on types and taxonomy in the jay genus Aphelocoma. Condor, **63**: 234–245.

Woolfenden, G. E. 1961. Postcranial osteology of the waterfowl. Bull. Florida State Mus., **6** (1): 1–129.—The postcranial osteology of nearly all genera of Anatidae is described, and on this basis taxonomic changes are proposed. *Anseranas* is placed in a monotypic family. *Cereopsis* and *Merganetta* are placed in monotypic tribes. *Stictonetta* is classified tentatively in the Dendrocygnini. *Plectropterus* is placed in the Tadornini, *Tachyeres* in the Anatini, and *Rhodonessa* in the Aythyini. The tribe Cairinini is merged with the Anatini and the Somateriini with the Mergini. Ten genera are resurrected.—F. M.