

In 1944 a pair of banded Starlings fledged a brood on May 21, and had been feeding a second brood in the same nesting place for 16 days when last watched on July 4; the female of this pair, at least, was a permanent resident. In 1948 one brood of a color-banded bird (sex not noted) left the nest on May 20; that nesting place was shortly destroyed, but from June 22 to 27 this bird carried raisins away from my feeding shelf, undoubtedly to a second brood being raised at a new location.

In 1939 one nesting place produced broods on May 22 and July 4. In 1945 noisy young were being fed in another nesting place on May 8 and June 17. The adults at these nests were unmarked, but the 1944 and 1948 observations support an assumption that in these instances, too, two broods were being raised by the same adults.

I have never happened to see a third brood attempted; my dates for the occurrence of young birds over a period of ten years do not seem to show time enough for the *fledging* of three broods. My earliest date for young out of the nest is May 19, 1946. My latest observed date of nest-leaving is July 18, 1940; that nest-hole had been seized from Flickers (*Colaptes auratus*) only on June 9. My latest observations of young still being fed out of the nest have been July 25, 1947, and July 27, 1939.—Hervey Brackbill, 4608 Springdale Avenue, Baltimore 7, Maryland.

**A Banded Albino Robin**—Many partial albino robins, *Turdus migratorius* L. have been reported from various sections of North America during recent years. Apparently the species is susceptible to frequent and varying degrees of albinism. Less often are pure albino individuals found. On July 13, 1948, Mr. Nelson Monical of the Portage Country Club at Akron, Ohio, called the writer and reported a completely albino robin fledgling which had been found on the grounds of the country club. The nest from which it presumably came was located in a tree at the edge of the golf course, and the parent birds were nearby tending this and a normally colored fledgling. The albino was banded with no. 39-311616 and released near its nest and parents. Its constant chirping brought several other robins to the trees nearby but none of them went directly to the albino. It was observed for a short time wandering over the golf course until darkness set in. The following day Mr. Monical observed it on the grounds but he did not see it again after that time. To-date it has not yet returned. In 1945 and 1946 an albino robin had been observed nesting on the grounds of the country club. The fledgling captured and banded in 1948 may possibly be a descendent from that one.—Ralph W. Dexter, Department of Biology, Kent State University, Kent, Ohio.

## RECENT LITERATURE

Reviews by Donald S. Farner and others

### BANDING

**1. Colorado's Mallards Come Home.** Johnson A. Neff. 1948. *Colorado Conservation Comments*, 10(8): 5-8, 27-28. During 1944-1947, 6,626 Mallards, *Anas platyrhynchos* Linnaeus, were banded at Valmont Reservoir near Boulder; 562 (9.5 percent) recoveries have been recorded up to 23 April 1948. Of these recoveries 58 percent were in Colorado. Most of the recoveries were the result of shooting. During the same period, 3,391 Mallards were banded in the Sedgwick area in northeastern Colorado and western Nebraska; up to 23 April 1948, there have been 204 recoveries (60 percent). Birds banded in the Sedgwick area displayed a tendency towards an eastward shift. Of the 562 Mallards recovered from the Valmont Reservoir operations, 6.4 percent were recovered during the season of banding; 65.3 percent during the season following banding; 24.5 percent during the second season following banding; 3.3 percent during the third season following banding.—D.S.F.

**2. Birds Banded in Foreign Countries and Recovered in Belgium.** (Oiseaux bagués à l'étranger et retrouvés en Belgique.) Ch. Dupond. 1948. *Le Gerfaut*, 38(3): 117-130. This is a summary of 176 records of birds banded in

foreign countries and recovered in Belgium mostly in 1947. Included are 28 records for Starlings, *Sturnus vulgaris vulgaris* Linnaeus, banded mostly in the British Isles, the Baltic countries, and Scandinavia. A Starling, banded 4 June 1933 in Lithuania, was recovered in Belgium 15 October 1942. There are records for 33 Goldfinches, *Carduelis carduelis* (Linnaeus), mostly banded in Solingen, Germany. A Sparrow Hawk, *Accipiter nisus nisus* (Linnaeus), banded in Swedish Lapland 15 June 1927 was recovered in Belgium 22 May 1942.—D.S.F.

**3. Bird-Banding Activities in Belgium in 1947.** (Oeuvre du baguage des oiseaux en Belgique.) Ch. Dupond. 1948. *Le Gerfaut*, 38(3): 97-116. This is a summary of 290 recoveries and returns for 1947 of birds banded in Belgium. Species for which the greatest numbers of records were accumulated are the Starling, *Sturnus vulgaris vulgaris* Linnaeus, 15; Chaffinch, *Fringilla coelebs coelebs* Linnaeus, 21; Great Tit, *Parus major major* Linnaeus 40; Blackbird, *Turdus merula merula* Linnaeus, 15. There are three interesting records for Cormorants, *Phalacrocorax carbo sinensis* (Shaw and Nodder): (1) Banded at Meetkerke 27 May 1935 in the nest, recovered 12 May 1943, 55 kilometers NE of banding locality. (2) Banded at Meetkerke 22 May 1939, in the nest, recovered 18 May 1946, 75 kilometers NE of banding locality. (3) Banded at Meetkerke 21 June 1934, in the nest, recovered 2 February 1947, in France, 800 kilometers SW of the banding locality.—D.S.F.

## MIGRATION

(See also Numbers 1, 2, 3, and 49.)

**4. The Migration of the Golden Oriole.** (Die Wanderungen des Pirols (*Oriolus o. oriolus*.) Erwin Stresemann. 1948. *Ornithologische Berichte* (May 1948): 126-141. The central European population of *Oriolus oriolus oriolus* (Linnaeus) winters in East Africa; perhaps small numbers from the breeding population of Morocco and the Iberian Peninsula winter in West Africa. "The central and western European Orioles, excepting those of the Iberian Peninsula, cross the Mediterranean Sea, for the greater part, in autumn in a different route than in spring. In fall they migrate in a southeasterly direction and pass over Greece, the Aegean Islands, and in part, over Crete to the Libyan Desert and Egypt. In spring they return over Tripolitania or Tunis and further across Sicily (Malta) and Italy. They perform thus a migratory loop ["Zugschleife"]." (p. 141.) The author is of the opinion that the Oriole has spread into Europe from the East and that East Africa has long been its winter area. "If this is correct, then the autumn migration is approximately in the same direction in which the expansion of the species has developed whereas the spring migration shortens this circuitous route to the western breeding areas of the species." (p. 141.)—D.S.F.

**5. Gyration by Migrating Gulls.** (Skruvflykt hos flyttande masar.) Gunnar Svårdson. 1949. *Vår Fågelvärld*, 8(1): 13-33. This paper is based on observations made at Ottenby in southern Sweden in August. Thermal and non-thermal gyrations were observed in the Black-headed Gulls, *Larus ridibundus* Linnaeus; Common Gulls, *Larus canus* Linnaeus; and Lesser Black-backed Gulls, *Larus fuscus* Linnaeus. Half of the Black-headed and Common Gulls performed gyrations of some kind during departure. The author does not agree with Waterhouse (*Ibis*, 91: 1-16, 1949) that gyrations function as orientation for birds with lost sense of direction. Rather he suggests that gyration by a single bird arises as a conflict between "drive-to-go" and "urge-to-rest." Gyration simultaneously by a large number of birds is presumed to represent a social reaction to do the same when one bird begins gyrations. The author likewise doubts that gyration can be considered to be a displacement reaction. "Alternately it might be argued that gyration is the parallel double [response to] two different drives as the bird is flying but yet stationary." The author feels that his hypotheses of gyration are supported by the fact that in disturbed flocks, birds change their balance from "urge to stay" to "urge to depart" with the result of the formation of a departing migratory flock.—D.S.F.

**6. The Use of Thermal Currents by Birds on Migration.** D. R. Mackintosh. 1946. *The Ibis*, 91(1): 55-59. White Storks, *Ciconia ciconia* (Linnaeus), which do much soaring in southward migration, cross the Gulf of Suez where there are no thermal currents thus necessitating flapping. Peculiarly many accipitrine migrants go to great lengths to avoid this crossing. Rather they cross farther north where thermal currents can be used constantly.—D.S.F.

**7. Notes on the Migration of Birds of Prey over Suez.** Derek Goodwin. 1949. *The Ibis*, 91(1): 59-63. During the period of observation, 4-12 October 1947, migratory movements did not begin before 9-10 A.M. With the exception of one day there was a bimodal density curve, the greatest numbers being noted in the morning, with a smaller peak in the afternoon. There are interesting notes on the use of thermal currents.—D.S.F.

#### LONGEVITY

**8. Observations on the Age Groups of the White-fronted Goose.** (Waarnemingen over leeftijdsgroepen bij Kolganzen, *Anser a. albifrons* (Scop.)) T. Lebret. *Ardea*, 36(3): 198-200. During December 1947 age-ratios were obtained for a flock of 2000 White-fronted Geese near Berkeley in Gloucestershire, "There were some 520 birds in juvenile dress, the average number of juveniles per pair being 3.8 or 2.5. This makes 136 or 208 families which means 272 or 416 adult birds-with-young-ones. Hence the number of immature birds in full dress (in second and third year) + barren pairs may have amounted to 2000—(520 + 272) = 1208 birds or 2000—(520 + 416) = 1064 birds." (p. 200.)—D.S.F.

#### MORPHOLOGY AND ANATOMY

**9. Variations in Plumage and Form in Birds. VII. Gynandromorphism and Intersexes.** (Les variations de plumage et de forme chez les Oiseaux (*fin*). Le Gynandromorphisme et Intersexués.) Marcel Legendre. 1942. *L'Oiseau et la Revue Française d'Ornithologie*, 12(2/3/4): 99-106. Gynandromorphism includes anomalies involving the juxtaposition of male and female characteristics in the same individual, caused by "pathologic deviations or senility of the genital glands" and consequent reflections in the secondary sex characteristics. Such gynandromorphic individuals are encountered mostly among domestic galliform and anseriform birds; nevertheless, interesting specimens have been found among wild birds. *Physiologic castration* or *semi-castration* caused by senility results in the assumption of male characters by females, more rarely by the assumption of female characters by males. Such changes have been noted particularly among pheasants. Disease or accident may bring about *pathologic castration* or *semi-castration* and the assumption of a mosaic of secondary sex characteristics of both sexes. Such cases have been noticed among cocks and hens of many species of pheasants, pea fowl, and ducks. There is a discussion of records of gynandromorphism among various wild species.—D.S.F.

**10. Contribution to the Study of the Innervation of the Heart in Birds.** (Contribution à l'étude de l'innervation du coeur chez les Oiseau.) Andrée Tixier-Durivault. 1942. *L'Oiseau et la Revue Française d'Ornithologie*, 12(2/3/4): 81-98. Although the innervation of the mammalian heart is well understood, corresponding information on the avian heart is scanty, hence the importance of this paper. The avian heart is innervated by branches of the two vagi as well as by ramifications of two sympathetic nerves. From the right vagus there are three branches, two of which form a plexus, the third passing to the auriculo-ventricular groove and the ventricles. The left vagus supplies two branches, the first forming a plexus, the second innervating the auricles. The two sympathetic nerves arise from the posterior cervical ganglia and reach the heart parallel to the vagi. The left sympathetic ramifies at the level of the auricles; the ventricles are innervated principally by fibres from the right sympathetic. The intermingling of the branches of sympathetic and parasympathetic (vagi) origins forms two supra-pericardial cardiac plexus: (1) The *left cardiac plexus* surrounds the left brachiocephalic

trunk at its origin; it continues into the auriculo-ventricular groove forming the *left coronary plexus* or *anterior coronary plexus* which supplies the auricles. (2) The *right cardiac plexus* is more extended and complex than the left; it covers the bases of the aorta, the pulmonary veins, and a part of the auricles. It also extends into the auriculo-ventricular groove giving rise to the *right coronary plexus* or *posterior coronary plexus* which extends to the ventricles and covers the coronary veins. "Finally, beneath the pericardium, the surface of the heart shows nervous elements more numerous and more equally distributed than in the supra-pericardial portion of the heart: these elements form two nerve plexus, one auricular and one ventricular." (p. 95.) Dissections and observations were made on *Sturnus vulgaris* Linnaeus, *Anas platyrhynchos* Linnaeus, *Corvus frugilegus* Linnaeus, *Circus cyaneus* (Linnaeus), *Columba livia* Gmelin, *Anser anser* (Linnaeus), *Fringilla coelebs* Linnaeus, *Pica caudata* Linnaeus, *Passer domesticus* (Linnaeus), and *Passer montanus* (Linnaeus).—D.S.F.

### PHYSIOLOGY

(See also Numbers 31 and 33.)

**11. The Relationship of Hearing and Vibration Sense in Birds.** (Über den Zusammenhang von Gehör und Vibrationssinn bei Vögeln.) J. Schwartzkopff. 1949. *Experientia*, 5(4): 159-161. It has been known for many years that birds with the labyrinth destroyed could perceive low-frequency tones. In experiments on Bullfinches, *Pyrrhula pyrrhula minor* Brehm, the author found the minimum intensity threshold of hearing to be about 3,200 cycles per second and that extirpation of both "cochlea and lagena" is followed by complete loss of hearing ability. It was possible to train birds, after extirpation of the inner ear, to react to vibrations from 100 to 3,200 cycles per second with maximum sensibility at 800 cycles per second. Frequency discrimination is poor. The receptors are the Herbst bodies between the tibia and fibula. "Hearing and the sense of vibration are distinctly different senses . . . in birds. But some central connection seems to exist, because after successful training of one sense the task is solved by the other without new learning." (p. 161.)—D.S.F.

**12. A Note on the Breeding of the White-bellied Stork (*Sphenorhynchus abdumii*)** in the National Zoological Gardens, Pretoria. R. Bigalke. 1948. *The Ostrich*, 19(3): 200-202. White-bellied Storks normally breed in North Africa soon after their arrival in May. In this breeding in captivity, the first egg was laid in late January. Incubation period was 30-31 days. There were two eggs in the clutch.—D.S.F.

**13. Respiratory Movements of the Chicken during the Parafoetal Period.** C. Romijn. 1948. *Physiologia Comparata et Oecologia*, 1(1): 24-28. The author was able to record respiratory movements for the 19th and 20th days of incubation. Rates varied tremendously among different birds e.g. 65-135 movements per minute, 2-25, 15-50. In general there was a tendency of the rate to increase up to the time of the breaking of the shell.—D.S.F.

### FOOD HABITS

(See also Numbers 31 and 42.)

**14. Feeding-activity in some Insectivorous Birds.** Jan Bøetius. 1949. *Dansk Ornithologisk Forenings Tidsskrift*, 43(1): 45-59. This paper records an interesting group of observations on the feeding of young in certain insectivorous species. Some interesting differences exist in the *rate of feeding*: Robin, *Erithacus rubecula* (Linnaeus), six in brood, 7.5 feedings per 30 minutes; Redstart, *Phoenicurus phoenicurus* (Linnaeus), six, 10.1; Starling, *Sturnus vulgaris* Linnaeus, seven, 10.0; Swamp Tit, *Parus palustris* Linnaeus, seven, 7.3; Blue Tit, *Parus caeruleus* Linnaeus, nine, 30.3. These data were taken at time of maximum food-demand by young. The difference between the tits is probably explainable on the basis of the size of the insect items. There are notes on removal of excrement and the relative rôles of male and female in feeding.—D.S.F.

**15. The Oyster-catcher of the Atlantic Coast of North America and its Relation to Oysters.** Ivan R. Tomkins. 1947. *The Wilson Bulletin*, 59(4): 204-208. The American Oyster-catcher, *Haematopus palliatus palliatus* Temminck, feeds largely on bivalves and is restricted along the Atlantic coast to regions where suitable oyster beds occur. Birds were observed to feed at low tide when the beds were covered with shallow water and the oysters were open and feeding. Field observations seemed to indicate that the bill is inserted between the valves and worked downwards with lateral tipping of the head until the tension on the adductor muscle is released.—John T. Emlen.

**16. The Daily Activity and Food of the Jackdaw in the Parish of Vitele, Eastern Karelia, in the Spring of 1943.** (Naakan, *Coloeus monedula* (L.), vuorokausirytmistä ja ravinnosta Vitellessä keväällä 1943.) Juhani Paatela. 1948. *Ornis Fennica*, 25(2): 21-28. With considerable fluctuations, daily activity began about 15 minutes before sunrise and lasted until about five minutes after sunset. Before nest construction began in the spring, 53-57 percent (6½-8 hours) of the day was spent in seeking food; after nest-construction began, about 6-7 hours. Grain was principal source of food in winter. Beginning in the latter part of April, beetles appeared in the diet. Young received both vegetable and animal food.—D.S.F.

**17. Notes on the Nesting and Feeding Habits of the Black-headed Heron, *Ardea melanocephala*.** J. Sneyd Taylor. *The Ostrich*, 19(3): 203-210. Examination of 200 pellets revealed the following general distribution: insects (in 91 percent of the pellets), mammals (mostly rodents) (61 percent), reptiles (59 percent), birds (9.5 percent), earthworms (4.5 percent), arachnids (4 percent). The author concludes that this species is deserving of protection.—D.S.F.

**18. Mammal Remains in Owl Pellets.** Ernest C. Driver. 1949. *The American Midland Naturalist*, 41(1):139-142. Principally a key to skulls of the genera of mammals known to occur in pellets of owls.—D.S.F.

**19. Bats as Prey of the Hobby.** (Vleermuizen als prooi van den Boomvalk (*Falco subbuteo* L.)) Fr. Haverschmidt. 1948. *Ardea*, 36(1/2): 39-42. On 21 August, 1944, four fresh wings of *Nyctalus noctula* (Schreber) and a partly devoured *Eptesicus serotinus* (Schreber) were found beneath the nest and the rest tree of a family of this species. Although bats have been previously recorded as prey of this species, these are stated to be the first identified records.—D.S.F.

## NIDIFICATION AND REPRODUCTION

(See also Numbers 12, 17, 31, 40, and 41.)

**20. Nest Records of the Song-Thrush.** E. T. Silva. 1949. *British Birds*, 42(4): 97-111. Another splendid paper from the British Trust for Ornithology. Members "are asked to complete a card for every nest of every species that they find, giving details of locality, situation, number of eggs, young, etc., with dates. The completed cards are sent in at the end of each nesting-season and are deposited at the Edward Grey Institute." The present paper is based on 484 such cards on *Turdus ericetorum* Turton, records of 454 nests from 48 years' records of A. Whitaker, on 561 records from Holland and 437 sets from Finland (Siivonen, 1939), besides a vast amount of information as to brood-size from the Bird Marking Scheme. Miss Silva has worked up this impressive array of information in 14 tables; she concludes: "The average clutch-size in Britain increases from early spring to a peak in May, and then decreases again. [In Finland the peak occurs in June—4.76 eggs per set.] The average clutch-size is larger in Holland than in Britain, and larger still in Finland, at the same time of year [4.52, 4.36 and 4.64 respectively in May]. There is a significant variation in average brood-size in different years in Britain. Predation is the most usual cause of nesting failure. Nesting success does not vary appreciably with clutch-size or season." As to success, 71 percent of 739 eggs hatched and 78 percent of 1034 young were fledged;  $0.78 \times 0.71 = 0.55$ , a fairly high percentage for open nesters.—M. M. Nice.

**21. Within a Nest Box.** (Binnenin een nestkast.) L. Tinbergen. 1948. *De Levende Natuur*, 5(10): 129-135, 5(11): 145-149. An interesting account of nesting and rearing of young by Great Tits, *Parus major* Linnaeus.—D.S.F.

**22. Blue Tit with Fifteen Young.** (Blåmeskull på 15 ungar.) Bo Ham-margren. 1949. *Vår Fågelvärld*, 8(1): 34. Record of a nest of *Parus caeruleus* Linnaeus 40 kilometers north of Stockholm with 15 young.—D.S.F.

### OOLOGY

**23. The Development of Egg Shell and Egg Coloration.** (Om äggskalets och äggfärgernas utbildning hos fåglarna.) B. Ottow. 1949. *Vår Fågelvärld*, 8(1): 1-7. The author discusses a number of deficiencies in our knowledge of the development of egg shells and egg-shell pigment. A plea for research material is addressed to field ornithologists.—D.S.F.

### BEHAVIOR

(See also Numbers 5, 6, 16, 17, 21, 40, 41, and 42.)

**24. Diversionary Display.—Part 1. Connotation and Terminology. Part 2. The Nature and Origin of Distraction Display.** Edward A. Armstrong. 1949. *The Ibis*, 91(1): 88-97; (2): 179-188. In Part 1, "a more exact terminology than that current is suggested for behaviour having the effect of deflecting intruders from a bird's nest or chicks." (p. 95.) The author's statement, "Usually injury-simulation occurs most vehemently just before, during or just after the hatching of the eggs. . ." (p. 180) should be limited to precocial birds; in my experience with altricial birds such behavior occurs most frequently shortly before the fledging of the young. It often happens that, especially with Charadriiformes, injury-simulation is used as a last resort in dealing with intruders; "according to the degree of excitement the sequence is threat, attack, distraction display." (p. 185.) The author suggests that "distraction displays have arisen through the 'displacement' of other behaviour contexts, particularly threat and epigamic (courtship) display, which have become ritualized into new behaviour-patterns with survival value." (pp. 186-187.)—M. M. Nice.

**25. Function of Love-habits among Penguins and Petrels.** L. E. Richdale. 1948. *The Emu*, 48(2): 95-103. "In penguins, love-habits, whether or not they concern breeding or unemployed members of the community, are taking place with equal intensity during the whole period that birds are on the breeding grounds. In sedentary species . . . love-habits probably occur in winter when the birds are ashore. As for the migratory species, when away from the breeding grounds they probably indulge in some form of love habits. . . But I do not think that the function of these winter habits at sea correspond to any one of the three functions discussed in the text. . . In petrels, with one important difference, a comparable situation occurs. The difference concerns petrels at sea in the off season when there are indications. . . that mated pairs and pairs 'keeping company' remain together at sea." (pp. 95-96.) Among the functions of love habits are (1) "attuning" function, a mutual stimulation of various reproductive processes; (2) bond-holding function; and (3) pair-formation function.—D.S.F.

**26. Contributions to the Knowledge of the Behavior of Swans.** (Bidrag til Svanernes Ethologi.) Holger Poulsen. 1949. *Dansk Ornithologisk Forenings Tidsskrift*, 42(4): 173-201. This is an interesting paper based on a comparative study of the Black Swan, *Cygnus atratus* (Latham); Whooper Swan, *Cygnus cygnus* (Linnaeus); and the Mute Swan, *Cygnus olor* (Gmelin), in the Zoological Gardens in Copenhagen with additional observations in the field on the Whooper and Mute Swans. There are interesting comparative notes on "threat display" and "escape-distance" (distance from observer at which birds flush). For Whooper and Mute Swans in winter "escape-distance" is about 300 meters although it may be reduced by familiarity with human beings. During the breeding season "escape-distance" in Mute Swans may be quite low when breeding occurs near habitations. Whooper Swans are much more shy during the breeding season. Swans do not show "inten-

tion movements" just prior to flight as do geese and ducks. The Mute Swan is strictly monogamous. Swans, like geese and ducks, lack the instinct to transport nesting material to the nest; they build only where material is available. In Mute Swans, the male was not observed actually to assist in nest-building although he collected material used by the female. Nest-building proceeded throughout incubation. The male Whooper never participated in incubation whereas the male Mute Swan occasionally did. "At the nest sometimes the male [Whooper Swan] reacted with a nest building action instead of aggressive behavior. This is a substitute activity (Tinbergen, 1939) caused by two antagonistic impulses of attack and flight, and this results in an inconsequent action." (p. 200.) Females [Mute Swan] will roll eggs into the nest from distances up to one meter; farther away they were ignored. "Like other birds the swans respond to an innate pattern of their eggs. The female Mute Swan under consideration did not roll in eggs, which were considerably smaller or greater than her own eggs nor eggs with an edged shape or deeply coloured eggs [red, green, blue]." (p. 200.) However, she would incubate such eggs as well as balls and bottles. These are only a few of the interesting observations presented in this paper.—D.S.F.

**27. The Distraction Display of the Arctic Skua.** Kenneth Williamson. 1949. *The Ibis*, 91 (2): 307-313. Interesting observations on a markedly demonstrative species in the Faeroe Islands. The lure display of *Stercorarius parasiticus* Linnaeus with fresh eggs is different from that employed later. The aggressive flights in which human intruders are often struck by the wings of the birds "is common throughout the nesting cycle in the colony, but is absent from the behaviour of solitary pairs." "A highly formalized version of the attacking flight was employed against a sheep, in which the pair showed a marked tendency to coordinate their movements."—M. M. Nice.

**28. Notes Concerning the Swift.** (Over de Gierzwaluw, *Apus a. apus* (L.).) H. J. Slijper. 1948. *Ardea*, 36 (1/2): 42-51. Swifts seeking prey are estimated to fly at about 40 kilometers per hour, which is less than the speed of flight of the Wood Pigeon, *Columba palumbus* Linnaeus, and the Starling, *Sturnus vulgaris* Linnaeus. This estimate is considerably lower than other estimates in the literature; however, the author believes that speeds in excess of 100 kilometers per hour are possible. There are other interesting notes.—D.S.F.

**29. Courtship Feeding of Starling.** Bertram M. A. Chappell. 1949. *British Birds*, 42 (4): 118-119. On May 4 and 6, 1947 an adult male *Sturnus vulgaris* Linnaeus was watched feeding an adult female with table scraps; the latter was "in excellent breeding-plumage, which was slightly fluffed out with the body held in a crouching position and the beak opened slightly. The food offered was taken on both occasions and coition took place after the second instance." Sturnidae are listed by Lack (*Auk*, 57: 177) as a family where courtship feeding is "absent."—M. M. Nice.

**30. Reactions of Some Passerine Birds to a Stuffed Cuckoo.** George Edwards, Eric Hosking and Stuart Smith. 1949. *British Birds*, 42 (1): 13-19. This is a description of an interesting set of experiments with 18 remarkable high-speed flash photographs, when a mounted female *Cuculus canorus* Linnaeus was placed near the nests with eggs or young of 15 passerine species. In most cases the mount was vigorously attacked. Willow-Warblers, *Phylloscopus trochilus* (Linnaeus), "will attack a dummy Cuckoo, but will not come near a stuffed Sparrow-Hawk," *Accipiter nisus* (Linnaeus). Nightingales, *Luscinia megarhynchos* Brehm, "attack both hawk and Cuckoo, but fear a stuffed Stoat (*Mustela erminea*)."  
Blackbirds, *Turdus merula* Linnaeus, "disregard a Cuckoo, but attack a Jay," *Garrulus glandarius* (Linnaeus). Tree-Pipits, *Anthus trivialis* (Linnaeus), "attack a Cuckoo violently, but will come nowhere near a Jay." Whinchats, *Saxicola rubetra* (Linnaeus), "attack both Cuckoo and Sparrow-Hawk." The authors "could get no reaction to the Cuckoo at nests of Wren, *Troglodytes troglodytes*, Redstart, *Phoenicurus phoenicurus*, Hedge-Sparrow, *Prunella modularis*, and Robin, *Erithacus rubecula*."—M. M. Nice.

**31. Studies on a Community of Willow Warblers.** D. J. May. 1949. *The Ibis*, 91(1): 24-54. Interesting three-year study on *Phylloscopus trochilus* (Linnaeus) on 15 acres in Surrey. A definition of territory is suggested as "practicable and reasonably accurate," for ". . . most of the small passerines. . .", viz. "the area over which, in spring, the male regularly roams and in which he sings without interference on most occasions from other birds of the same species." (p. 29.) "Territory in the Willow Warbler seems to limit the population of a given area. The food value of territory remains a 'plausible hypothesis.' Territory also functions as a pairing station and prevents promiscuity." (p. 53.) The male apparently recognizes a female only by her behavior, by her persistent return to his territory after being chased out. "Her silent persistence and his gradual weakening of aggression against her . . . are the two behaviour patterns that permit and result in the formation of pairs." (p. 38.) A brief description of the development of the young is given from hatching to leaving at 13-15 days. From 1944-1946, 244 eggs were laid in 41 nests; of these 212 (87 percent) hatched and 138 (56.5 percent) were fledged as nestlings, a high figure for a bird with an open nest. Percentages each year were surprisingly uniform, but conditions (of weather, vegetation, and predators) remained much the same. Practically all the males obtained mates. "A group of this size of adjacent territories, in which the total volume of song is thirty times that of a single territory, probably has a far greater chance of attracting females than has an isolated territory. Thus, if such be the case, mutual aggressiveness has resulted in a social advantage." (p. 51.)—M. M. Nice.

**32. Biological Notes on the Dipper.** (Notes biologiques sur le cincle plongeur *Cinclus cinclus* (L.)) J. Penot. 1948. *L'Oiseau et la Revue Française d'Ornithologie*, 18: 141-151. These notes were made in west-central France (Indre and Haute-Vienne), a non-mountainous area of low elevation. Although tentatively identified as the typical race, specimens show affinities towards the more southern *pyrenaicus* Dresser. In 1944 the author observed a nest beneath the turbine at Pont-Rompu. In general the notes recorded by the author correspond closely with similar observations on the American Dipper, *Cinclus mexicanus unicolor* Bonaparte. The observations on under-water movements are of interest: "When it is swimming on the surface, the dipper immerses and dives like a grebe; when it is ashore, it enters the water gradually and proceeds into the current until it disappears. Otherwise, but more infrequently, I have seen it hurl itself into the water and penetrate . . . obliquely, to reappear a meter away, regain its flight and hurl itself again into the water, thus one after another in many repetitions for a total distance of about 20 meters. It is to be noted that this last method of diving is with the direction of the current. I have seen it dive to descend or ascend the current. It dives by preference like the palmipedes where the river is 1.0-1.5 meters in depth. I have seen it dive in places where there are such depths, and since it frequently returns to the surface with its bill filled, it must have attained this depth. . . In calm water of 20-30 centimeters of depth I have seen it walk with ease on the gravel bottom proceeding similarly as on dry land; it had its wings folded against the body in a position of rest; it opened them a little for an instant and even at times it opened them a little one at a time as if to maintain equilibrium. More curiously, I have seen it walk backwards, without loss of equilibrium, and cross a feeble current obliquely. In stronger currents it usually spreads its tail more or less and walks submerged with the aid of its wings which it opens partially and closes in a sufficiently rapid cadence. Moreover this cadence, the movement of the feet, and in a general manner, its progress varies according to the strength. . . of the current with which it may be displaced voluntarily or involuntarily." (p. 149-150.)—D.S.F.

**33. The Under-Water Movements of the Dipper.** H. G. Brownlow. 1949. *British Birds*, 42(3): 69-73. Observations on under-water movements of *Cinclus cinclus* (Linnaeus) and discussion of various theories in regard to the mechanics involved, particularly Dr. Dewar's support of the de Vogué theory. The author found no evidence to support this. He found the Dipper seldom went against the current, that it used footholds to keep itself down and that it used its wings when it lost its footholds or when the bottom was unsuitable for footholds.—M. M. Nice.



**34. Hand-raising Birds in their Native Environment.** (Aufzucht von Vögeln in freier Wildbahn.) Otto Koenig. 1947. *Umwelt*, Nr. 6. While studying birds in the marsh the author took piped eggs of several species and let the young hatch beside his tent, bringing them inside at night. In this way he could better understand the behavior of the wild birds he was watching. Young Little Bitterns, *Ixobrychus minutus* (Linnaeus), left the nest after meals, but returned every two hours or so. A young Bittern, *Botaurus stellaris* (Linnaeus) was even tamer. Rail chicks followed him closely in response to his imitation of the parental note. Birds do not grasp a person as a whole but respond to the hand that feeds them or to the feet, the little Rails following shoes pulled by a cord!—M. M. Nice.

**35. The Behavior of the Unmated Red-Backed Shrike.** (Om beteenden och spelyttringar hos törnskatanen (*Lanius c. collurio* L.) under tiden för revirbesättandet, innan honan anlänt.) S. Durango. 1948. *Vår Fågelvärld*, 7(4): 145-156. This paper is based on observations of eight or nine pairs chiefly in Uppland and Gotland (Sweden). The male usually arrives at the territory 1-3 days before the female although in unfavorable springs they may arrive simultaneously. There was a single record of first arrival by a female. "The following features are more pronounced when there are no other shrikes, male or female in the vicinity. (1) Male is restless, roams a wider area than later when its territory is confined. . . (2) Male very often exposes itself in high tree tops, the higher the better. (3) From these conspicuous places it sings very frequently. (4) It also calls repeatedly . . . from the same lookouts. This call is often heard alternating with the song. (5) On several occasions male was observed in bushes and shrubberies suitable to nesting-sites. . . (6) A peculiar flight with quivering wing-beats has occasionally been observed." (p. 156.) Appearance of other shrikes has a stimulating effect causing increase in song and calls. "The "kscha"—call is of a greater importance than song for the defense of the territory. . ." (p. 157.)—D.S.F.

**36. Killing of a Viper by a Red-backed Shrike.** (Till törnskatans biologi; törnskata som dödar huggorm.) Bertil Hanström. 1948. *Fauna och Flora*, 1948(6): 225-231. Record of a male *Lanius collurio* Linnaeus killing a viper of at least 20 centimeters in length.—D.S.F.

**37. Dominance in Winter Flocks of Juncos and Tree Sparrows.** Winifred S. Sabine. 1949. *Physiological Zoology*, 22(1): 64-85. Two winters were spent watching 25 *Junco hyemalis hyemalis* Linnaeus and six *Spizella arborea* (Wilson) at a feeding shelf in Ithaca, New York; all birds were marked with colored feathers, but no attempt was made to distinguish sex, although wing measurements and, with the Junco, amount of white on the tail, have been shown to give fairly reliable indications as to sex. Four criteria of dominance were used: the peck, which was never more than a gesture; sudden avoidance; threat posture of two birds and retreat of one; fights. "In threat postures, the junco draws the body up, throws the head up repeatedly, keeps the bill closed, and creates the effect of added height. The tree sparrow reaches toward the opposed bird with fanned tail and open bill." (p. 66.) Birds fed together under two conditions—"indifferent tolerance" ("lower birds in the ranking order do not often tolerate still lower subordinates"), and "hostile tolerance" when a subordinate bird approaches a dominant with threatening postures; the latter postures in response and they eat and posture alternately. All the birds ate faster upon the approach of other birds. The Juncos were "socially organized in a straight-line pecking order, modified by triangular relations and reverse pecks." The Tree Sparrows showed a "straight-line pecking order, modified by reverse pecks in one pair-relationship." The "four dominant juncos were subordinate, as a rule, to the tree sparrows, while the latter were, or tended to be, subordinate to the six subordinate juncos." The author finds no satisfactory explanation for this phenomenon. Strange birds coming to the shelf were subordinate to the habitués, which is natural enough and to be explained upon the basis of confidence in the old birds and uncertainty in the new; there is no evidence here of "winter terri-

tery" of either species studied. Territory needs to be defended. The author showed extraordinary patience in watching from indoors for 484 hours; one wishes she had devoted some of that time to observing her subjects under natural conditions. A feeding-shelf is decidedly artificial and the study would have been far more valuable if the behavior of these individualized birds had also been followed in the wild. I cannot recall instances of pecks, threats and fights among wintering sparrows feeding on lawns and in fields.—M. M. Nice.

**38. "Anting" of Chaffinch.** A. R. Longhurst. 1949. *British Birds*, 42(4) : 120. An adult male *Fringilla coelebs* Linnaeus was seen "grovelling, in the attitude of a dust-bathing sparrow, on the site of a well-known and active nest of a small ant, *Lasius niger*; it repeatedly picked ants off the flagstones in its bill and placed them among the feathers of its back and beneath its wings."—M. M. Nice.

**39. House Sparrow Plucking Feathers from Pigeon.** Leslie Baker. 1949. *British Birds*, 42(4) : 121. A female *Passer domesticus* (Linnaeus) sidled up to a London pigeon and grasped a beakful of feathers, apparently "a deliberate act of plucking feathers from a living bird for the purpose of lining the nest."—M. M. Nice.

### LIFE HISTORY

(See also Numbers 16, 21, and 31.)

**40. The Antillean Grebe at Central Soledad, Cuba.** Alfred O. Gross. *The Auk*, 66(1) : 42-52. A pair of *Colymbus dominicensis dominicensis* (Linnaeus) was studied at the Atkins Garden and Research Laboratory, about 12 miles east of Cienfuegos, Cuba. In a year the female "laid three sets of five, and five sets of four eggs, a total of 35 eggs, of which 27 were hatched and two sets of four each were deserted or destroyed. Twenty-four young were successfully reared." That the same adults were studied was "made reasonably certain by the relation of the adults to the successive broods of young." (p. 52.) The author's study for a month was supplemented by data from the director of the garden. Shallow ponds with food and open water are nesting requirements. Nests are anchored to floating vegetation. Three clutches were hatched in succession at one nest and two at another. Incubation (period not determined) begins with the first egg. Both sexes incubate. Eggs were covered with debris when not tended. The non-incubating adult fed and tended young of a preceding brood. Both parents carry and feed small chicks, the food (vegetable and animal) being taken from the parent's bill. Members of successive broods were distinguishable by changes in plumage and color of iris. The male defended a territory, roughly 40 feet in radius from the nest, against a pair of Pied-billed Grebes, *Podilymbus podiceps podiceps* (Linnaeus), his defense being more vigorous after hatching. The Pied-bills eventually gained temporary control. Then the original defenders returned, built again near an old site, and one bird defended the nest against the Pied-bills. During incubation, the Pied-bills began building a nest within a few yards of the smaller grebe's and forced the latter to give up its nesting territory. Some young of the smaller species may have been killed in the territorial fighting.—Ralph S. Palmer.

**41. Life History of the Yellow-thighed Manakin.** Alexander F. Skutch. 1949. *The Auk*, 66(1) : 1-24. *Pipra mentalis* (Sclater) was studied on Barro Colorado Island and in Costa Rica. It occupies a vertical zone from brushy undergrowth to lower boughs of dominant trees in rain-forest. Food—insects and berries—is taken by the bird in flight. Pairs are not formed. From December to May or later, males occupy display perches 15 to 50 (rarely 70) feet above ground, one male to a perch, and several males spaced from a few yards to rods apart. Males have a variety of vocal and mechanical noises and posturings. When a female visits a perch, courtship activity is intensified throughout the assembly of males. Copulation occurs at the perch. In the absence of a female, two males may visit midway between perches and each, in turn, direct a subdued display

toward the other. Females are more attracted by solitary males than twos. Sub-adult males practiced courtship antics in November. The female's role is passive at the perch, but she exhibits many of the male's display patterns when under some types of emotional tension, as when the nest is disturbed. The female makes the shallow 'hammock' nest, five to 30 feet above ground, and eggs (two per clutch) are recorded from March to July. She alone incubates (probably a 19-day period) and cares for the young which are fed by regurgitation. The fledging period was not recorded. Some comparative data on other Manakin species are given in this fine paper.—Ralph S. Palmer.

**42. The Tasmanian Masked Owl.** David Fleay. 1949. *The Emu*, 48(3): 169-176. *Tyto castanops* (Gould) (*Tyto novaehollandiae castanops*) is a "giant version" of the common Barn Owl, *Tyto alba* (Scopoli) and in general behavior resembles its smaller relative. Tasmanian Masked Owls disgorge pellets which may be 3½ inches long and 1¾ inches in diameter. The author observed a pair in which the male weighed one pound, five ounces and the female two pounds, 13½ ounces. A pair bred in captivity in the author's aviary. A clutch of two eggs was laid. "From the laying of the first egg she brooded continuously *without relief at any time by the male*, though he was most diligent and efficient at all times in carrying food into the hollow." (p. 172.) Incubation period was 35 days. Only a single bird hatched. While this owlet was still in the nest, a clutch of four eggs was laid; incubation again began following the laying of the first egg despite the interference of the owlet in the hollow; eventually all eggs were broken. Breeding is, potentially at least, irrespective of season although food supply may be a limiting factor.—D.S.F.

## CENSUSES AND POPULATIONS

(See also Numbers 31, 82, and 95.)

**43. Population Studies on the Yellow Wagtail on Helgoland.** (Populationsstudien an der englischen Schafstelze, *Motacilla flava flavissima* Blyth, auf Helgoland.) R. Drost. 1948. *Die Vogelwarte*, 1: 18-28. From 1910 to 1936 from one to four pairs of Yellow Wagtails nested on Helgoland; in 1937 there were ten pairs, then eight, then ten, then eight, but in 1941 the population was wiped out by rats. Dr. Drost had banded the young since 1927, but in 1936 started to band most of the breeding birds with colored bands. A remarkably high percentage of young returned to birthplace, 21 out of 124 ringed between 1936 and 1939, 17 percent. On the other hand, a low percentage of banded adults returned, only 21 percent. One male returned for five years. One case of inbreeding occurred, brother and sister from two different broods of one pair. In 1940 the population consisted of three ringed birds that had bred before, nine ringed birds hatched the previous year and three unringed birds. In 1939 there was a surplus of females, two of which never mated, while the third became the second mate of a bigamous male.—M. M. Nice.

**44. Bird Population of an Illinois Floodplain Forest.** Ben J. Fawver. 1947. *Illinois Academy of Science Transactions*, 40: 178-189. The data presented in this paper are the result of observations of a portion of the floodplain of the Sangamon River, March 1946 to March 1947. The highest breeding densities (pairs per 100 acres) were those of the Cardinal, *Richmondia cardinalis* (Linnaeus) 14; Red-eyed Vireo, *Vireo olivaceus* (Linnaeus) 12; American Redstart, *Setophaga ruticilla* (Linnaeus) 12; Indigo Bunting, *Passerina cyanea* (Linnaeus) 12; Wood Pewee, *Contopus virens* (Linnaeus) 12; Black-capped Chickadee, *Parus atricapillus* Linnaeus 10; Crested Flycatcher, *Myiarchus crinitus* (Linnaeus) 10; Downy Woodpecker, *Dendrocopos pubescens* (Linnaeus) 10; Wood Thrush, *Hylocichla mustelina* (Gmelin) 8; Yellow-billed Cuckoo, *Coccyzus americanus* Linnaeus 8. The most abundant winter species were Black-capped Chickadee, 34 individuals per 100 acres; Tufted Titmouse, *Parus bicolor* Linnaeus 28; Cardinal 14; Downy Woodpecker 8.—D.S.F.

**45. Statistics on Swiss Storks for 1948.** (Die Störche in der Schweiz.) Max Bloesch. 1949. *Der Ornithologische Beobachter*, 46(1): 13-15. During 1948 seven breeding pairs of White Storks, *Ciconia ciconia* (Linnaeus), were reported. In five nests 14 young were hatched; all survived to leave the nest. In 1947, five nests produced 20 young.—D.S.F.

### ECOLOGY

(See also Numbers 15, 16, 43, 44, 52, 53, 69, 82, 85, 86, 103, and 104.)

**46. The Influence of Predators on Densities of their Prey.** (De invloed van roofdieren op de aantalssterkte van hun prooidieren.) L. Tinbergen. 1948. *Vakblad voor Biologen*, 28(12): 217-228. This is an interesting and thought-provoking discussion of the complex and intricate factors which maintain a balance between reproductive and mortality rates in a population. "If we measure mortality in the same units as the reproductive data. . . then it should, in normal population densities, oscillate in the same values as the reproductive data. In higher densities it should, at least after the course of some time, become greater than the reproductive figures, in lower densities lower than the reproductive figures." (p. 218.) Mortality is a complex function consisting of biologic and abiologic (climatologic, for example) factors. Emphasis is placed on predation as one of the biologic factors. Assuming non-selectivity among polyphagous predators, the degree to which a species is taken is a function of its relative abundance among all species taken by the predator. When a species represents a relatively small (one percent, for example) portion of the available prey, an increase in density results in an approximately proportionate increase in the take by predators with no appreciable change in percentage taken. If a species increase sufficiently so that the total number of animals available for prey is much increased (30 times, for example) the situation is different; the actual number is taken proportionately higher but the percentage loss by predation is lower than at the lower population level. These examples assume non-selective hunting by polyphagous predators and population changes in but a single prey-species. Actually there are many complications; most of the paper is devoted to an enumeration and discussion of these. Seldom, if ever, will there be increases in a single prey-species without some changes in densities of others. Likewise, the situation may be complicated further by increase in predator density either by immigration or increased rate of reproduction by predators. In some instances there may be increased food-intake by predatory species when more food is available. Specialization in predation is a further complicating factor. Specialization may be the result of peculiar hunting habits or of an adjustment to predation on an abundant source. The two forms of selective hunting should influence predation-rate most when the relative abundance of the prey-species is average. Whenever, for example, a species of mouse is so dominant, that it, without selection, should constitute 90 percent of the food of a predator, can this percentage (and therewith the predation-rate), through selection, be raised at most 10/9 of its original value. If on the other hand the prey-species is less abundant so that it, without selection, should make up 30 percent of the diet, then selection could, in principle, make the predation-rate three times as high as in non-selective predation. Because, on the other hand, in relatively low densities of a prey-species no selective consequences should appear, since specialization would not be profitable to the predator, there must be an optimal zone of influence." (p. 224.) Another complication is the phenomenon designated as *Errington's principle*; an increase in general density of a species is in reality an invasion and/or large increase in less favorable habitats with a disproportionately small increase in the optimal habitats. Individuals in the less favorable habitats are more vulnerable to predation. The author does not feel that this principle is applicable to many species of song birds. In general the author believes that predation is not of primary importance in reducing large populations. Other factors concerned in increasing mortality rate above reproductive rate in such situations are parasitoid infestations, parasites, infectious diseases, immigration to unfavorable habitats, hunger, and deficiency diseases. Still further complications, from the standpoint of the effects of predation, are differ-

ences in habits of predatory species so that changes in relative abundance of predatory species will modify the effects of predation on the populations of the various prey-species.—D.S.F.

**47. Breeding Birds of Virgin Palouse Prairie.** Leonard Wing. 1949. *The Auk*, 66(1): 38-41. The study area comprised 28.2 acres, at an altitude of about 2,850 feet, some 12 miles South-by-East of Pullman, Washington. A section of perhaps the largest prairie type west of the Rocky Mountains, it is characterized by an *Agropyron-Poa* association and greater dryness on South-facing slopes, and *Festuca-Agropyron* type with brushy spots elsewhere (most of the area and, relatively, with much higher bird population). Census of breeding pairs, 1942-1947 inclusive, "listed on the basis of average number on a hundred acre basis," was: Brewer's Sparrow, *Spizella breweri* Cassin, 46.8; Lazuli Bunting, *Passerina amoena* (Say), 24.1; Tolmie Warbler, *Oporornis tolmei* (Townsend), 17.7; Song Sparrow, *Melospiza melodia* (Wilson), 9.2; Little Flycatcher, *Empidonax traillii* (Audubon), 9.2; and seven other species in much smaller numbers. There was little yearly variation from the five-year average of 246 birds per hundred acres. "The consistency in the total perhaps indicates that in a stabilized community, such as we seem to find in the Virgin Palouse Prairie, changes in abundance of one species are reflected by adjustment changes in other species, so that the combined total remains substantially the same from year to year." (p. 41.)—Ralph S. Palmer.

**48. The Avifauna of the Vardar Park in Skoplje, Macedonia.** (Ornithofauna Vardarskog parka u Skoplju.) S. L. Karaman. 1948. *Larus*, 2: 95-100. This is a brief account of the changes in avifauna during the development of a 100-hectare park from an area of bleak sandstone along the Vardar River beginning in 1928. A dike was constructed to divert the river so that the area was covered by a layer of rich mud. Prior to the deposition of mud the breeding species were the Common Tern, *Sterna hirundo* Linnaeus; and the Little Ringed Plover, *Charadrius dubius curonicus* Gmelin. During the period of grass and young willow trees, the green parts were inhabited by the Black-headed Wagtail, *Motacilla flava feldegg* Michahelles, and the dry parts by the Corn Bunting, *Emberiza calandra* Linnaeus. Within two years these species disappeared and were replaced, as reeds and dense willows developed, by the Sedge Warbler, *Acrocephalus schoenobaenus* (Linnaeus); the Great Reed Warbler, *Acrocephalus arundinaceus* (Linnaeus); and the Marsh Warbler, *Acrocephalus palustris* (Bechstein); only the last remained as ground became drier and the reeds withdrew; at this time Cetti's Warbler, *Cettia cetti* (Temminck), began to nest along the canals. The third year after planting Robins, *Erithacus rubecula* (Linnaeus); Great Tits, *Parus major* Linnaeus; and Blue Tits, *Parus caeruleus* Linnaeus, nested among the roots of willows. As the trees became larger the breeding species included Goldfinches, *Carduelis carduelis* (Linnaeus); Turtle Dove, *Streptopelia turtur* (Linnaeus); Orioles, *Oriolus oriolus* (Linnaeus); Penduline Tits, *Remiz pendulinus* (Linnaeus); and Blackcaps, *Sylvia atricapilla* (Linnaeus). There are also notes on the use of the area by migrants and winter visitants.—D.S.F.

**49. Notes on the Role of the Rose-colored Starlings in the Control of Locusts in Macedonia.** (Podaci o ulozi ružičastog čvorka (*Pastor roseus* (L.)) u borbi sa skakavcima u Makedoniji.) L. D. Mazaev. 1948. *Larus*, 2: 106-110. Emigrations of this species coincide in time and magnitude with the time and magnitude of locust outbreaks. Small flocks of males usually precede the invasions. The author regards the Starlings as having a very extensive role in the control of the locusts.—D.S.F.

**50. The Birds of the Cocos-Keeling Islands (Indian Ocean).** C. A. Gibson-Hill. 1949. *The Ibis*, 91(2): 221-243. The first part of this paper consists of notes on climate, ecology, numbers of birds, breeding season, etc. Seventeen breeding species are recorded. Four are exotics: Green Jungle Fowl, *Gallus varius* (Shaw and Nodder) (introduced 1880-1890); Horsfield's Thrush, *Turdus javanicus erythropleurus* Sharpe (1885-1900); Java Sparrow, *Padda oryzivora oryzivora* (Linnaeus) (probably 1828). Pulo Luar (245 acres) had, in 1941, about

500 Thrushes, 400 White-eyes, and 200 Java Sparrows. The population of the last for the entire group is 650. Among the sea birds the following estimates were made for the entire group of islands: Red-footed Booby, *Sula sula rubripes* Gould, 3500-4000 pairs; Lesser Frigate Bird, *Fregata minor* (Gmelin), 1000-1250 pairs; Least Frigate Bird, *Fregata ariel* (G. R. Gray), 750-1000 pairs; Common Noddy, *Anous stolidus pileatus* (Scopoli), 500-750 pairs; Brown Booby, *Sula leucogaster plotus* (Forster), 75-100 pairs; Reef Heron, *Demigretta sacra sacra* (Gmelin), 50-75 pairs; Masked Booby, *Sula dactylatra bedouti* Mathews, 40-50 pairs; White-tailed Tropic Bird, *Phaëthon lepturus lepturus* Daudin, 10-15 pairs; Red-tailed Tropic Bird, *Phaëthon rubricauda westralis* Mathews less than five pairs. Part 2 is an annotated list which includes 17 breeding species, 17 "strays and visitors" (1941), and 11 previously recorded but not seen in 1941. Part 3 compares the avifauna of Christmas Island and Cocos-Keeling Islands.—D.S.F.

### CONSERVATION

(See also Number 106.)

**51. How to Know our [Finnish] Water-fowl.** (Vesilintujemme tunteminen—Hur man känner igen vara sjöfaglar.) Kalevi Raitasuo. 1948. *Suomen Riista*, 3: 119-155. This paper consists of an excellent series of diagnostic black and white sketches of water-fowl in flight and afloat. There are brief descriptions, statements of ranges, etc., (Finnish and Swedish) for 45 species.—D.S.F.

**52. How to Know the Birds of Prey [Finland].** (Päiväpetolintujen tunteminen.) D. Wikström. 1948. *Suomen Riista*, 3: 156-174. Keys with sketches and description designed to allow the layman to identify the Finnish species of birds of prey. Birds of prey which are not protected by law are the Eagle Owl, *Bubo bubo* (Linnaeus); Goshawk, *Accipiter gentilis* (Linnaeus); Sparrow Hawk, *Accipiter nisus* (Linnaeus); Peregrine Falcon, *Falco peregrinus* Linnaeus; Merlin, *Falco columbarius* (Linnaeus); Golden Eagle, *Aquila chrysaetos* Linnaeus; Snowy Owl, *Nyctea nyctea* (Linnaeus); Hawk Owl, *Surnia ulula* (Linnaeus); Ural Owl, *Strix uralensis* (Pallas); and the Tawny Owl, *Strix aluco* Linnaeus.—D.S.F.

### AVIFAUNAL DYNAMICS

(See also Numbers 4, 48, 67, 84, 100, and 104.)

**53. The American Egret in Iowa.** James Hodges. 1947. *Iowa Academy of Science*, 54: 317-323. The author reviews the known history of *Casmerodius albus egretta* (Gmelin) from 1907 to date. Prior to 1942 there was apparently a period of 20 years with no records although earlier it had been observed as a rare visitor. In 1942 there was a breeding colony in Jackson County along the Mississippi River. This colony ultimately disappeared but since that time the species has continued to be observed as a migrant.—D.S.F.

**54. The American Egret in Wisconsin.** Frank H. King. 1949. *The Passenger Pigeon*, 11(1): 3-16. The author summarizes recent records of *Casmerodius albus egretta* (Gmelin) which indicate that there have been population (invasion) peaks in 1938, 1946, and 1948. These maxima are associated with dry years although the relationship is not understood nor is the source of birds known. Nineteen nests, which produced 57 young, are recorded for the period, 1939-1948. Analogous increases have apparently occurred elsewhere in the central states. This may represent an important recovery by this species which early in the 19th century may have been reasonably common in those states.—D.S.F.

**55. Ornithological Observations in Norway in 1947.** (Ornithogiske iakttagelser i Norge i 1947.) H. L. Løvenskiöld. 1948. *Dansk Ornithologisk Forenings Tidsskrift*, 42(3): 117-124. Included in this paper are observations contributing further to our knowledge of the northward expansion of certain southern species into Scandinavia. The author reports breeding occurrences of the Reed-warbler, *Acrocephalus scirpaceus scirpaceus* (Hermann); and Sedge-warbler, *Acrocephalus schoenobaenus schoenobaenus* (Linnaeus); as well as new breeding occurrences and range expansion of other more southern species.—D.S.F.

**56. Are Certain Birds Increasing Their Range in Hungary?** Andrew Keve. 1948. *The Ibis*, 90(3): 465-466. The author, although inclining to discredit most publications concerning range-expansions of birds, describes "very obvious" range expansions in the Danube Basin in the last 30 years. Three definite examples are the Indian Ring Dove, *Streptopelia decaocto* (Frivaldszky); Syrian Woodpecker, *Dryobates syriacus* (Ehrenberg); and the Olivaceous Warbler, *Hippolais pallida* (Ehrenberg).—D.S.F.

**57. A Few Remarks Concerning the Range Dynamics of the Balkan Woodpeckers.** (Nekoliko reči o rasprostranjenju naših detlova.) Vladimir Martino. 1948. *Larus*, 2: 31-38. The author is of the opinion that the present species were also members of the Tertiary woodpecker fauna of the Balkan Peninsula and central Europe. The Three-toed Woodpecker, *Picoides tridactylus* (Linnaeus), an Arctic relict, is an exception. *Picus viridis* Linnaeus and *Dryobates medius* (Linnaeus) were presumably displaced to the southernmost parts of western Eurasia during the glacial periods and have respread into central Europe in post-Pleistocene times.—D.S.F.

### PARASITOLOGY AND DISEASES

**58. Methods of Exchange of Ectoparasites among Birds.** (Ueber die Uebertragungsweise von Ektoparasiten bei Vögeln.) W. Büttiker. 1949. *Die Vögel der Heimat*, 19(4): 74-78. Flightless avian ectoparasites may pass from one host to another by (1) direct contact of hosts, (2) attachment to dead objects, (3) attachment to feathers, (4) well-developed free-living stages, (5) phoresia (transportation of flightless parasites by winged arthropods e.g., transportation of Mallophaga and mites by hippoboscid flies). The author cites several records of phoresia. Instances of attachment of mites to the legs of Mallophaga are likewise cited.—D.S.F.

**59. Mortality Among Barn Owls.** (Sterfte onder Kerkuilen, *Tyto alba* (Scopoli).) A. L. J. van Ijzendoorn. 1949. *Limosa*, 21(4): 135-138. This is a description of an emaciating epizootic disease noted in winter and spring of 1948, in and near the Wieringermeerpolder. Apparently a similar epizootic appeared in much greater magnitude in 1934-1935, and apparently also among Barn Owls in Switzerland during the winter of 1947-1948. Although two birds examined during the 1948 epizootic in the Netherlands were infected with *Isospora buteonis* Henry, there is no evidence that it was the ethiologic organism. Voles had been poisoned in the area with thallium salts.—D.S.F.

**60. An Epizootic of Thorny-headed Worms and Coccidia among the Common Eider Ducks on the Island of Bornholm.** (Epidemiagtigt Sydo-meudbrud blandt Ederfugle (*Somateria mollessima* L.) ved Bornholm, forårsaget af dyriske Snylttere.) M. Christiansen. 1948. *Dansk Ornithologisk Forenings Tidsskrift*, 42(2): 41-47. Large numbers of sick and dead Common Eider Ducks were found in August and September 1947, along the east coast of Bornholm. In some places the populations were reduced from several hundred to only a few individuals, although, some of the reduction may have been the result of early migration. The dead birds were greatly emaciated. All five autopsied individuals were found to be parasitized by the acanthocepholid worm, *Polymorphus boschadisi*. The autopsied sample, however, is too small to allow conclusions as to pathogenicity. Three of the five birds had severe lesions of the kidney, apparently caused by an undescribed species of Coccidia. Despite this loss in 1947, it is of interest to note that in 1948 the population, in which 794 clutches were counted, showed no essential reduction.—D.S.F.

**61. A New Acanthocephalan from the Bob-white.** J. Dan Webster. 1948. *Journal of Parasitology*, 34(2): 84-86. *Mediorhynchus colini* Webster is described from the jejunum of *Colinus virginianus texanus* Lawrence.—D.S.F.

**62. Suggestions to the Field Worker and Bird Bander. Avian Pathology.** Gordon M. Meade. **Collecting Mallophaga.** H. H. Poor. 1946. *Proceedings of the Linnaean Society of New York*, 54-57: 36-39. A plea for more attention to bird pathology and directions for sending diseased specimens; Dr. Meade's special interest is "foot disease," and he would welcome "bits of the abnormal tissue (which can be broken off without danger to the handler) at the University of Rochester School of Medicine. Mr. Poor urges banders to collect Mallophaga from their birds and lists ten species he has taken from six species of birds.—M. M. Nice.

**63. Two Cestodes from a Nighthawk.** J. Dan Webster. 1948. *Journal of Parasitology*, 34(2): 93-95. *Bakererpes addisi* Webster is described from the intestine of *Chordeiles minor minor* (Forster); the record of *Paricterotaenia paucianulata* (Fuhrmann) from the same species appears to be the first record of this tapeworm in America.—D.S.F.

### ZOOGEOGRAPHY AND GEOGRAPHIC DISTRIBUTION

(See also Numbers 4, 50, 102, and 104.)

**64. Birds of Perry River District, Northwest Territories.** Angus Gavin. 1947. *The Wilson Bulletin*, 59(4): 195-203. This is an account of the distribution and abundance of birds observed during four years at the Perry River post of the Hudson Bay Company, seventy-five miles north of the Arctic Circle. Thirty-nine species are listed, five of them passerines. A map (without scale) shows the distribution of nesting colonies of eight species and subspecies of geese.—John T. Emlen.

**65. The Vertebrate Fauna of the Huron Mountains, Michigan.** Richard H. Manville. 1948. *The American Midland Naturalist*, 39(3): 615-641. This is an important briefly annotated list, since it comes from an area of primeval forest. The bird list contains 206 species and subspecies.—D.S.F.

**66. The Altitudinal Limits of Certain Birds in the Mountains of the Southeastern States.** Henry M. Stevenson and Arthur Stupka. 1948. *The Migrant*, 19(3): 33-56. In describing the distribution of birds, there is frequently a pronounced tendency to overlook the matter of altitudinal limits. This paper, in emphasizing altitudinal limits, is therefore, of considerable importance. As an inventory of such information, it shows the tremendous amount of investigation that still remains to be done in this field. Most of this paper consists of a list of 152 species with annotations relative to their altitudinal limits.—D.S.F.

**67. Nesting of the Double-Crested Cormorant in Nebraska.** Mrs. Carl N. Collister. 1948. *Nebraska Bird Review*, 16(1): 22-26. *Phalacrocorax auritus auritus* Lesson has now been reported from 22 Nebraska counties. In 1948 there were 228 nesting pairs at McConaughy Lake (three colonies) and ten or twelve pairs near North Platte.—D.S.F.

**68. Report on Collections of Birds Made by United States Naval Medical Research Unit No. 2 in the Pacific War Area.** Rollin H. Baker. 1948. *Smithsonian Miscellaneous Collections*, 107(15). 74 pp. This report is based on a collection of more than 1300 specimens collected from June 1944 to December 1945 in the islands of the southwest Pacific and central Pacific. It is principally an annotated list of species by island groups.—D.S.F.

**69. Birds of the Capricorns—Great Barrier Reef.** Roy P. Cooper. 1948. *The Emu*, 48(2): 107-126. This is a summary of observations made during December 1946. There is a very interestingly annotated list of 64 species of which 17 were noted to be breeding.—D.S.F.

**70. The City Birds of Makassar (South Celebes).** (Stadsvogels van Makassar (Zuid-Celebes).) L. Coomans de Ruiter and L. L. A. Maurenbrecher. 1948. *Ardea*, 36(3): 163-198. A richly and interesting annotated list of 77 species.—D.S.F.



**71. A Complementary List of Birds of Cambodia.** (Liste complémentaire aux Oiseaux du Cambodge.) P. Engelbach. 1948. *L'Oiseau et la Revue Française d'Ornithologie*, 18: 5-26. An annotated list of 55 species.—D.S.F.

**72. A Note on Some Species of Birds Previously Unrecorded for Tranninh and likewise for all Indo-China.** (Note sur quelques oiseaux nouveaux pour le Tranninh et même pour l'Indochine.) A. David-Beaulieu. 1948. *L'Oiseau et la Revue Française d'Ornithologie*, 18: 133-140. Annotated list of 15 species.—D.S.F.

**73. Birds of the Inundation Zone of the River Niger, French Soudan.** Kenneth M. Guichard. 1947. *The Ibis*, 89(3): 450-489. This paper is based primarily on notes made incidentally during several canoe trips on the River Niger through the Inundation Zone. There is an annotated systematic list of 248 species and subspecies including also the records of previous investigators in the area.—D.S.F.

**74. Notes on Birds Seen and Collected at Jedda and in Arabia during 1938, 1939, and 1940.** A. C. Trott. 1947. *The Ibis*, 89(1): 77-98. An annotated list of 139 species and subspecies.—D.S.F.

**75. Notes on the Birds of Sierra Leone. Part I.** William Serle. 1948. *The Ostrich*, 19(2): 129-141. Notes on 39 species.—D.S.F.

**76. Notes on Birds in the Sabi Valley, Southern Rhodesia.** G. L. James. 1948. *The Ostrich*, 19(2): 142-147. Annotated list of 54 species.—D.S.F.

**77. Notes on the Occurrence of the Snow Finch and the Snow Bunting in Yugoslavia.** (Podaci o dolaženju *Montifringilla n. nivalis* (L.) i *Plectrophenax n. nivalis* (L.) u oblast jugoslavenske ornitofaune.) Dragutin Rucner. 1948. *Larus*, 2: 46-49. The Snow Finch is asserted to be a breeding species in the high mountains; the Snow Bunting is an irregular winter visitant.—D.S.F.

**78. The Rook as a Breeding Species in Croatia.** (O gnijezdenju *Corvus frugilegus frugilegus* L. u Hrvatskoj.) Stjepan Ivković. 1948. *Larus*, 2: 51-55. Formerly regarded as only a winter visitant, the author reports five nesting colonies recorded from 1926 to 1948. The Sava River should be designated as the southern limit of this species in Croatia.—D.S.F.

**79. Notes on the Red-breasted Flycatcher in Serbia.** (O malo mukharitsi *Muscicapa parva* Bechst.) u Srbiji.) C. D. Matvejev. 1948. *Larus*, 2: 83-87. Ten specimens have been collected by the author during the breeding season in Serbia; it is suggested that, contrary to previous ideas, this species is a common breeding species in all parts of Yugoslavia in suitable biotopes. Presumably it has been previously overlooked to a great extent.—D.S.F.

**80. The Red-breasted Flycatcher as a Breeding Species on Medvednica Mountain in Croatia.** (Muharica crvenovljka (*Muscicapa parva parva* Bechstein) gnjezderica gore Medvednice.) Renata Kroneisl. 1948. *Larus*, 2: 59-82. Prior to 1947 there were few breeding records of this species in Yugoslavia; these were confined to the northern parts of Slovenia. The author first noted the species breeding on Medvednica Mountain near Zagreb in 1947; a nest was observed in detail during 1948 when more individuals of the species were observed. This apparent increase leads the author to suggest the species to be a recent newcomer to the area. He thinks that it is probable that other breeding records may be forthcoming in Yugoslavia, Asia Minor, and the Caucasus thus connecting the European and Caspian Sea breeding areas of the species.—D.S.F.

**81. Observations on Ile d'Ouessant during the Summers of 1946 and 1947.** (Observations faites à l'Ile d'Ouessant durant les étés de 1946 et 1947.) M. H. Julien. 1948. *L'Oiseau et la Revue Française d'Ornithologie*, 18: 27-32. Annotated list of 16 species.—D.S.F.

**82. Some Supplementary Notes on the Birds of the Rhône Delta.** G. K. Yeates. 1948. *The Ibis*, 90(3): 425-433. This paper is of interest in that it notes changes in the avifauna from 1938 to 1947. The dry period 1938-1946, has had marked effects on paludicolous species. The severe winter of 1946-1947, is suggested as the cause for the absence of Cetti's Warbler, *Cettia cetti cetti* (Temminck), and Stonechat, *Saxicola torquata rubicola* (Linnaeus), during the spring of 1947. Flamingoes, *Phoenicopterus ruber roseus* Pallas, bred during 1947; successful breeding occurred also in 1942. In 1947, 1500 pairs fledged about 2000 young. The Bee-eater, *Merops apiaster* Linnaeus, became established, or reestablished since it may have been a breeding species about 1910, during the war years. The Roller, *Coracias garrulus garrulus* Linnaeus, has increased in numbers and expanded northward.—D.S.F.

**83. The Occurrence of the Slender-billed Curlew in the Netherlands.** (Over het voorkomen van *Numenius tenuirostris* Vieill. in Nederland.) A. L. J. van Ijzendoorn. 1948. *Limosa*, 21(4): 113-118. A specimen found dead on 23 January, 1947, is the ninth definite record for the Netherlands.—D.S.F.

**84. Bittern Breeding on the Malären in 1948.** (Häckande rördrom (*Botaurus stellaris*) i Malären 1948.) Lars Broberg. 1948. *Vår Fågelvärld*, 7(3): 97-104. Although this species was common in central and southern Sweden in earlier times, definite breeding records during the present century scarcely exist. However, in recent decades Bitterns have been observed more frequently. In Söderfjärden (a bay in Malären) in 1948 there are four females and a single male; polygamy is assumed to have occurred since there were apparently four nests. In Hjälstaviken (another bay) there was a single nest.—D.S.F.

**85. A Comparison between the Bird Life of 1947 and 1948 in an Area on the Lower Dalälven River.** (En jämförelse mellan fågellivet 1947 och 1948 inom ett område vid nedre Dalälven.) Viking Olsson. 1948. *Vår Fågelvärld*, 7(4): 157-163. This is an interesting comparison with censuses of 1947 (See *Bird-Banding*, 19(3): 137-138). Particularly notable are increases in the populations of Robins, *Erithacus rubecula* (Linnaeus); and to a lesser extent, Redstarts, *Phoenicurus phoenicurus* (Linnaeus).—D.S.F.

**86. The Avifauna of Härjedalen from a Zoogeographical Aspect.** (Fuglelivet i Härjedalen, zoogeografisk belyst.) Finn Salomonsen. 1949. *Dansk Ornithologisk Forenings Tidsskrift*, 42(4): 216-253; 43(1): 1-45. Härjedalen is situated in southern Norrland in Sweden, 62°-63°N. and is zoogeographically important because it lies on the boundary between the "northern high-boreal (= Siberian taiga) and the southern middle-boreal (= the European deciduous or mixed-forest) region." The southern boundary of the arctic-alpine area also runs through this region or somewhat to the south. There are discussions of ecology and zoogeography and an annotated list of 110 species and subspecies.—D.S.F.

**87. Notes on the Occurrences and Habits of some Passage-Migrants and Rare Vagrants in the Faeroe Islands.** Kenneth Williamson with notes by Niels Fr. Peterson á Botni. 1947. *The Ibis*, 89(1): 105-117. This is a continuation of a previous paper dealing with the non-resident species of the Faeroe Islands (*Ibis*, 85, p. 326, 1943 and 87, pp. 249 and 550, 1945). The present paper is mainly an annotated list of 53 species and subspecies. A careful examination of available data and records indicates that the Harlequin Duck, *Histrionicus histrionicus* (Linnaeus), should be removed from the list for the Faeroe Islands. An imponderable record is that of the Black Grouse, *Lyrurus tetrix* (Linnaeus), based on the remains of a female found on Nólsoy heath on 15 January 1942. The author entertains the suggestion of transport by a convoy returning from the Murmansk coast.—D.S.F.

**88. Notes on the Ornithology of the Faeroe Islands, 1945 and 1947.** Kenneth Williamson and Niels Fr. Peterson á Botni. 1949. *Dansk Ornithologisk Forenings Tidsskrift*, 42(4): 202-215. Primarily an annotated list of 50 species and subspecies, nine of which are new to the Faeroe list. Included is evidence of breeding by the Water Rail, *Rallus aquaticus hibernans* Salomonsen.—D.S.F.

**89. A Study of the Bird Life of the North Atlantic.** M. Neal Rankin and Eric A. G. Duffey. 1948. *British Birds*, 41, Special Supplement, 42 pp. 2s. 6d. The results of 28 crossings in convoys throughout the year from 1942 to 1945; detailed records and maps are given for most of the species, sometimes summer and winter maps. There is a good bibliography. An important paper.—M. M. Nice.

### SYSTEMATICS

(See also Numbers 101 and 102.)

**90. Variation and Hybridization among the Paradise Flycatchers of Africa.** James P. Chapin. 1948. *Evolution*, 2(2): 111-126. By logical use of concepts of hybridization and ecologic requirements, the author is able to explain some of the perplexing variations formerly attributed unsatisfactorily to polymorphism alone. The author feels that this interspecific hybridization has been developed, as the result of breakdown of reproductive isolation associated with the fragmentation of the forested areas. Thus the populations of the two forest-dwelling species, *Terpsiphone rufiventer* Swainson, and *Terpsiphone rufocinerea* Cabanis, have become subjected to hybridization with *Terpsiphone viridis* P. Müller, as it has invaded the "diminishing patches of forest." This explanation would seem to imply that the specific reproductive isolation between *rufocinerea* and *viridis*, and between *rufiventer* and *viridis* was never complete, but rather largely bolstered by ecologic isolation.—D.S.F.

**91. The Influence of Humidity on the Coloration of Plumage in the Great Grey Shrikes of North Africa.** (L'influence de l'humidité du climat sur la coloration du plumage chez les Pies-Grièches de l'Afrique du Nord (*Lanius excubitor* L.)) Eberhard Jany. 1948. *L'Oiseau et la Revue Française d'Ornithologie*, 18: 117-132. The race *algeriensis* Lesson is most melanistic and occurs only in the rainier areas (400 mm. or greater per year); *dodsoni* Whitaker is somewhat lighter and inhabits the semiarid zone (200-500 mm. per year); *elegans* Swainson is the inhabitant of a more arid zone (less than 250 mm. per year, generally about 100 mm. per year) and is much paler than *dodsoni*. A previously undescribed race, *oasis* Jany, is regarded as a darker race developed in an area of somewhat higher humidity or greater cloudiness, from the tendency of the pale desert race, *elegans*, to produce darker mutants. Parallelisms with racial differentiations in color in *Lanius ludovicianus* Linnaeus in North America as described by Miller (*University of California Publications in Zoology*, 38(2): 11-242. 1931) are discussed.—D.S.F.

**92. Distribution of the Races of the Swamp Sparrow.** W. Earl Godfrey. 1949. *The Auk*, 66(1): 35-38. The race *Melospiza georgiana ericrypta* Oberholser has a wide breeding range, from central Mackenzie and central British Columbia to eastern Newfoundland. June and July specimens of typical *georgiana* (Latham) were examined from Ontario, Quebec, Pennsylvania, and West Virginia. Material apparently was inadequate for defining the winter range of either race.—Ralph S. Palmer.

**93. Variation in *Dumetella carolinensis*.** A. L. Rand and M. A. Traylor. 1949. *The Auk*, 66(1): 25-28. A study of the color of ventral parts of breeding Catbirds, *Dumetella carolinensis* (Linnaeus), reveals a pale western, dark central, and intermediate eastern seaboard population in North America. "Even with the debated convention that 75 per cent of one population be separated from 75 per cent of the other, the western could be separated from the central, but neither from the eastern." (p. 26.) It is suggested that perhaps the breeding range of wintering populations can be determined if adequate series of specimens are studied.—Ralph S. Palmer.

**94. Notes on *Harpyhaliaetus*.** Dean Amadon. *The Auk*, 66(1): 53-56. Regarding two neotropical eagles, it "is suggested that *Urubitornis* J. Verreaux be considered a synonym of *Harpyhaliaetus* Lafresnaye; the latter will then contain two species *coronatus* and *solitarius*. They appear to be closely related and to have complementary ranges, as far as known." (p. 56.)—Ralph S. Palmer.

**95. Red Bob-white—A Report and Correction.** L. J. Cole, H. L. Stoddard, and E. V. Komarek. 1949. *The Auk*, 66(1): 28-35. "The 'red quail' condition is apparently an incomplete dominant which has cropped out several times within the more northern part of the range of *Colinus virginianus*, but nowhere, except possibly at Grand Junction, Tennessee, has it shown a tendency to persist." (p. 33.) In addition to unusual color, these birds also differ from the 'normal' in having less vigor, much lower egg fertility, much higher mortality both before and after hatching, and they bleed more easily. A number of generations of pen-reared stock were studied and various crosses tried. This color phase is rare in wild birds. Bibliography of eight titles.—Ralph S. Palmer.

**96. The Genus *Lophura* (Gallopheasants).** J. Delacour. 1949. *The Ibis*, 91(2): 188-220. Ten species are recognized; *leucomelana* (Latham) and *nycthemera* (Linnaeus) constitute a superspecies; unstable hybrid populations occur east of the Irrawaddy in Upper Burma.—D.S.F.

**97. Geographic Variation in Newfoundland Birds.** Thomas O. Burleigh and Harold S. Peters. 1948. *Proceedings of the Biological Society of Washington*, 61: 111-126. This is an important contribution to our knowledge of the ranges and systematics of certain Newfoundland species, including *Perisoreus canadensis sandfordi* Oberholser accepted as a valid race. Seven new races of passerine species from Newfoundland are described.—D.S.F.

**98. A Natural Hybrid between the European Goldfinch and the Greenfinch.** (In het wild gevangen bastaard Putter x Groenling, *Carduelis carduelis* x *Chloris chloris*.) M. D. Tekke. 1947. *Limosa*, 20(4): 254. A male taken 13 April 1947 at Ringstation Ockenburgh, Netherlands, now deposited in Rijksmuseum van Natuurlijke Historie te Leiden. There is at least one previous record of such a hybrid, a male taken 7 October 1879 at s'Gravenhage.—D.S.F.

**99. A Hybrid of the Green Woodpecker and the Grey-headed Woodpecker.** (En Hybrid mellem Grønspætte (*Picus v. viridus* L.) og Graaspætte (*Picus c. canus* Gm.). Finn Salomonsen. 1947. *Vår Fågelvärld*, 6(3/4): 141-144. This remarkable hybrid was taken in southern Lapland (northern Sweden) 20 November 1938.—D.S.F.

## EVOLUTION

(See also Numbers 90 and 91.)

**100. The Influence of Pleistocene Glaciation on the European Avifauna.** (Der Einfluss der Eiszeit auf europäische Vogelwelt.) G. Steinbacher. 1948. *Biologische Zentralblatt*, 67(9/10): 444-456. Stresemann has suggested that during the last glacial period the populations of many European species, in retreating before the glaciers, split into two populations, one going into an isolated southwestern area with a damp climate and the other going into an isolated southeastern area with a drier climate. Under the influences of these climates subspeciation and even speciation were presumed by Stresemann to have taken place. With the recession of the glaciers and the consequent northward movements of these species and races the ranges of the eastern and western forms became contingent and, in many instances, overlapping. The author believes that our present knowledge makes the Stresemann hypothesis untenable. In the first place he believes that the assumed isolation of the southeastern and southwestern Mediterranean areas probably did not exist. Likewise a number of incongruent cases are described and discussed. Further, there is evidence that subspeciation may occur much more rapidly and may have occurred, in some cases, much more recently than is assumed in the Stresemann hypothesis. Also the known climatic changes and changes in flora since the last ice age as well as certain recent avifaunal changes, in the opinion of the author, make the hypothesis still more improbable.—D.S.F.

**101. Evolution in the Family Dicuridae.** Ernst Mayr and Charles Vaurie. 1948. *Evolution*, 2(3): 238-265. In this careful study of the drongos all of the species and "superspecies" are united into the genus *Dicurus* with the exception

of the "aberrant" *papuensis* which still retains the twelve tail feathers and which is placed in *Chaetorhynchus*. The familial affinities of the drongos still remain uncertain. In the course of evolution, such taxonomic characters as large size, frontal crests, long tails, and modification of the outermost tail feathers have arisen independently in different parts of the family. Each of the "species" characters varies geographically; in many cases the variation can be correlated with ecologic factors. The number of subspecies per species varies from one to 32, with the most distinct subspecies occurring peripherally in the range of the species or "at other very isolated locations." The occurrence of *Dicrurus montanus* (Riley) and *Dicrurus hottentottus leucops* Wallace on Celebes is regarded as a double invasion as is also the occurrence of *Dicrurus andamanensis* Beavan and *Dicrurus paradiseus otiosus* (Richmond) on the Andaman Islands. There are several interesting examples of hybrid populations resulting from separation of two races sufficiently long for morphologic differentiation, but not long enough for reproductive isolation.—D.S.F.

### HISTORY

**102. Birds Collected in the North Pacific Area During Capt. James Cook's last voyage (1778 and 1779).** Erwin Stresemann. 1949. *The Ibis*, 91(2): 244-255. An important discussion of Cook's ornithological observations and collections. Seven nomenclatorial changes necessitated by the present rules are listed.—D.S.F.

**103. The History of the Starling Nest-box.** (Geschichte des Starenkastens.) Erwin Stresemann. 1948. *Der Ornithologische Beobachter*, 45(5): 169-179. The construction of nest-boxes for Starlings probably has originated since the middle ages, first as a device to obtain young Starlings as a supplementary source of meat, a use which persisted in eastern Germany into the twentieth century. Shortly after 1820, the bird-protection movement began to make use of Starling boxes. This is a very interesting paper.—D.S.F.

### BOOKS AND MONOGRAPHS

**104. Handbook of Norwegian Birds.** (Handbook over Norges Fugler.) Herman L. Løvenskiold. 1947 (only 1 Hefte dated). Gyldendal Norsk Forlag, Oslo. 1 Hefte, pp. xi + 1-148; 2 Hefte, pp. 149-324; 3 Hefte, pp. 325-468; 4 Hefte, 469-628. 6.00 Norwegian kroner per hefte (five hefte to be published). The author has obviously succeeded well in his objective of producing a practical handbook useful to everyone interested in birds. Following a brief introduction and brief explanations of terminology and nomenclature, the handbook follows the traditional organization of regional ornithologies with keys to families, genera, and species as well as characterizations of orders, families and genera inserted at the proper places. For each species or subspecies there is a synonymy of scientific names, common names (Norwegian, Lapp, Danish, and Swedish), description (primarily of adults with only brief reference to juvenal plumages), field-identification characteristics including distinctive calls and songs, distribution in general, distribution in Norway, notes on biotope, migration, nesting and rearing of young, and food habits. The sections under the various species on distribution in Norway contain much interesting information on changes in range and abundance. The illustrations, although not numerous, are useful. Particularly noteworthy are the comparative illustrations of owls. (pp. 380-381.) The author and his publisher are well deserving of commendation for the production of this excellent treatise.—D.S.F.

**105. Wyoming Hawks.** Ralph B. Williams and Clyde P. Matteson, Jr. 1948. Bulletin No. 5, Wyoming Game and Fish Department, Cheyenne, Wyoming. viii + 84 pp. This attractive treatise discusses in some detail the status and habits of the 17 species of Wyoming Hawks. The information in this respect should be of interest to the ornithologist as well as to the layman for whom the bulletin was prepared primarily as an "endeavor toward the furtherance of a better understanding and easier identification of the species known to reside in

or visit Wyoming." Identification would be easier if descriptions and comparisons were blocked off from the remainder of the text. The keys (pp. vii—viii) will have limited usage since many of the criteria require a bird in the hand. A plate entitled "A Key to Western Hawks" (p. 3) will be useful. The illustrations are a mixture of photographs of living birds (frequently excellent) and photographs of Brooks paintings. There are several inconsistencies in the use of scientific names and some typographical errors. The reviewer is heartily in accord with the usage of Peregrine, Kestrel, and Merlin rather than Duck Hawk, Sparrow Hawk, and Pigeon Hawk. This bulletin should go far in producing an increased appreciation and understanding of Wyoming hawks; The Wyoming Game and Fish Department is to be commended for its publication of it. It is hoped that other state game departments will follow suit.—D.S.F.

**106. Waterfowl Populations and Breeding Conditions—Summer 1948 with Notes on Woodcock Studies.** C. S. Williams *et al.* 1948. *Special Scientific Report* 60. U. S. Department of the Interior, Fish and Wildlife Service — Canada Department of Mines and Resources, Dominion Wildlife Service. 186 pp. This informative report consists of 21 contributions (18 on waterfowl and three on woodcock). Among the many interesting aspects are the observations of Robert H. Smith and Robert P. Allen indicating generally lower waterfowl densities in the Far North than in areas farther south, and their opinion that game waterfowl in this area have decreased. According to Allen G. Smith, the prairie and parkland areas of Alberta had more water than in many years and the breeding populations of ducks was about 11 percent higher than last year. The breeding season was two weeks later than usual. J. Dewey Soper likewise found a later breeding season in Saskatchewan with surface water more abundant than in several decades. There was a slight population increase over 1947. The observations of Arthur S. Hawkins and F. Graham Cooch in Manitoba indicate no increase in breeding stock although reproductive success was better. Jerome H. Stoudt has summarized seven years' duck-brood censuses in Chippewa National Forest, Minnesota. The 1948 breeding population was 33 percent above 1947 and only 13 percent below average. Nesting success was excellent. Howard L. Mendall found the general status of migratory waterfowl in Maine to be noticeably better at the beginning of the breeding season. Despite an unfavorable spring including a severe mid-May flood, total nesting success was better than in 1947. These are only a few of the interesting conclusions drawn in this publication.—D.S.F.

**107. In the High Grampians.** Richard Perry. 1947. Lindsay Drummond. London. 173 pp. 15/— . A vivid description of natural history in the Scottish Highlands as observed during two years by the author who "roamed daily . . . over 150 square miles of deer forest, grouse moor and sheep run." Excellent photographs by various people add much to the interest of the book. The scenery is magnificent, the climate terrific. Finding of the nests of the Snow Bunting, *Plectrophenax nivalis* (Linnaeus), and Dotterel, *Eudromias morinellus* (Linnaeus) was especially thrilling to Mr. Perry. Around his headquarters—Drumguish—are planted forests of Scotch pine, trees so close together that no flowers grow on the forest floor, no birds or insects sing in the canopy—"a place of absolute silence . . . the pine wood of a nightmare—a wood of death . . . suffocated by a monstrous greyish-white lichen." (p. 57).

Between 1837 and 1840 the lessee of a single estate in this region caused his keepers to destroy 457 ravens, 1766 hawks of 11 species, 18 ospreys, 42 eagles, 109 owls, 48 otters, hundreds of martens, wild cats, polecats and 1866 other "vermin". "In this year of 1946 there are on the 100,000 acres of my beat only 2 pairs of golden eagles, 1 of buzzards, 3 of peregrines, 3 of ravens, not more than 6 of kestrels, and possibly 1 of merlins. Yet in those three black years, little more than a century ago, there were destroyed on this single estate 1,484 individuals of these six species. Rough-legged buzzard, sea eagle, kite, goshawk, osprey, hobby, gyrfalcon, marsh harrier, honey buzzard and, I believe, short-eared and long-eared owls are totally extinct or immigrate no longer, . . . as are also marten and polecat." "Yet (ghastly irony) never before in the history of the Grampians have grouse and blackgame been scarcer than they have been for nearly a decade

now. There are not, on my beat, 50 brace of grouse, nor 25 of blackgame. . . Four generations of game-preserving, and a natural zoological reserve has become what is, in comparison, a zoological vacuum, in which for seven months of the year Black-faced sheep and rabbits are likely to be the only obviously numerous inhabitants." (pp. 55-56.) Thus this malevolent slaughter of the supposed enemies of the game has resulted in the disappearance not only of the predator but of the prey.—M. M. Nice.

**108. Shetland Sanctuary. Birds on the Island of Noss.** Richard Perry. 1948. London. Faber and Faber. 300 pp. 25s. In 1946 the author devoted the summer to a study of three species on this bleak northern island. The 113 pairs of Great Skuas, *Stercorarius skua skua* (Brünnich), laid 219-223 eggs, hatched 155 nestlings of which 144 fledged, 51 percent. Incubation lasted 29 days, fledging 46. Once Mr. Perry rescued six clutches that were lying in pools of water after long continued rains, putting them in dry "nests" at the side; the next day all had been moved back into the water and five sets failed to hatch. (p. 133.) The 31 breeding pairs of Arctic Skuas, *Stercorarius parasiticus* (Linnaeus), laid 57-61 eggs, hatched 46-48 young and fledged 29, about 49 percent. Incubation lasted 25-26 days, fledging 29-30 days. Both species mobbed the author severely, striking him with their powerful feet.

As to the Gannets, *Sula bassana* (Linnaeus), the most interesting observations were those on how the young go down to sea. From the age of nine weeks, it seems as if feeding by the adults ceases; the young practice wing-flapping a great deal, but always facing away from the sea, until the day they are ready to leave when they face the sea and take off, while their parents pay no attention. The young remain on the ocean for two to three weeks before they are able to rise from the sea and really fly.

Since 1896 Noss has lost seven breeding species, but has gained the Great Skua, the Gannet and the Fulmar, *Fulmarus glacialis glacialis* (Linnaeus). In 1947 protection was removed from the Great Skua, and in 1948 many nests of both Skuas had been robbed of their eggs. "Noss is no longer a sanctuary." There are pleasant accounts of the Shetlanders, many good photographs of birds by various people, summaries of observations on the three species watched, an index, but no bibliography and this is a serious defect; Mr. Perry makes all too few references to the work of others.—M. M. Nice.

**109. Between the Andes and Atlantic. Journeys of a Biologist in South America.** (Zwischen Anden und Atlantik. Reisen eines Biologen in Südamerika.) Hans Krieg. 1948. Carl Hanser Verlag. Munich. 490 pp. 24.80 DM. A very interesting account of four collecting trips in Paraguay and Brazil by a naturalist, physician and artist. Vivid descriptions are given of the multitudes of tick-eating birds, various Cowbirds, *Tyrannus melancholicus* (Vieillot), *Crotophaga ani* Linnaeus, and our Sparrow Hawk, *Falco sparverius cinnamomina* Swainson; of the birds and mammals that flock to the settlements to help themselves to crops and domestic animals; of the remarkable morning chorus of the Serama, *Cariama cristata* (Linnaeus); and of the charming Pygmy Owl, *Glaucidium brasilianum* (Gmelin), that is a favorite cage bird, being looked upon as a symbol of luck and love, yet in reality it cannot be kept with another member of its species. Domestic animals are discussed: Spanish cattle are being displaced by modern breeds; horses increased to such an extent that 500,000 were killed in the first quarter of the last century, while Spanish dogs took to the wild and lived on calves and colts.

In the Chaco cattlemen and Indians insist on burning the grass with the result that all trees but palms are killed and originally wooded country is being turned into steppe with accompanying change of climate. Moreover, grazing land is being invaded by thorny bushes that are spread by cattle. In northwestern Paraguay, "Here and there we saw the enormous effect of tropical rains which in some places where the earth is not protected by tree growth, have in relatively few years lowered the ground level several meters." (p. 165.)

A fascinating description is given of the wild life to be seen on a river journey through primeval forests. It is a pleasure to read of country still under-peopled

and abounding in strange birds and beasts. Dr. Krieg pleads for Wild Life Reserves before it is too late. One of the greatest charms of this book lies in the 347 sketches of landscapes, birds and animals; these give an intimate and vivid idea of the country and its fauna.—M. M. Nice.

## CORRECTION

Bird-Banding, 20(2), April 1949, p. 79, fig. 2, read—Polecat *Putorius (Mustela) putorius*: Recent spread into Finland (After Kalela 1940.)  
p. 80, fig. 3, read—*Turdus merula*: Extension of the continuous area of breeding in Finland.  
p. 86, fig. 4, read—Temperature difference between 1930-31 and 1859-1900 etc.

## CORRESPONDENCE

Editor of BIRD-BANDING,

Dear Sir:

I was much interested in Raymond J. Middleton's notes in the July 1949 BIRD-BANDING on the "Northern Crested Flycatcher" and "Tufted Titmouse Nesting Seven Years." It is a pity that he did not use colored bands on his breeding birds, for then he could have been positive that the Crested Flycatcher A147214 nested with him eight years in succession. Also if he had noted which individuals had incubation patches, he would have known the sex of the nesting flycatchers and titmice, for in all the Tyrannidae and Parinae so far as known only the female incubates. Unfortunately no reliance can be placed on the statements in regard to this matter in many of our standard books. The Tufted Tit that nested seven years was a female since she was lifted off the eggs. Ruth Thomas of Morrilton, Arkansas, tells me that some of her Tufted Titmice at North Little Rock raised second broods.

Very truly yours,  
MARGARET M. NICE

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