The following table gives the complete data for each year—
1939—one brood of five young.
1940—one brood of seven young.
1941—two broods, five in first, three in second.
1942—one brood of six young.
1943—one brood of three young.
1944—one brood of six young.
1945—two broods, seven in first, five in second.

In all seven years the nests were successful and the young flew from the boxes.

Thus we find that this bird with its mates produced forty seven young in seven years, in two of which two broods were raised, the final year being the most productive.

In Bent's "Life Histories of North American Jays, Crows and Titmice", Bulletin No. 191, in the description of Tufted Titmice we find it recorded that this species only raises one brood annually, yet in this individual we find on two occasions two broods were raised.

Five times during the seven years while this bird was sitting on the nest we opened the lid of the box to see if the eggs were hatched, lifted the bird off by hand and then placed it back in the box only to have it settle right back on the eggs while we watched.

#39-126650 was a permanent resident and a consistant repeater in the traps, being taken in all seasons of each of the years. It was captured seventy times in the seven years, the highest being twenty-two in 1939. The last capture was on September 15, 1945 when it was at least seven and one third years of age.

One May after combing our collie dog, a pile of fine hair was thrown under some trees near the box in which the titmice were building; a few days later we found the nest completely lined with the dog hair.—Raymond J. Middleton, Norristown, Pennsylvania.

An old Goldfinch.—On 21 February 1949, I trapped at Lincoln, Massachusetts, an adult male Eastern Goldfinch (42-10197), banded by Mrs. Charles L. Smith on 19 February 1942 in the adjacent town of Weston. It is at least seven and one-half years old.—Charles H. Blake, Lincoln, Massachusetts.

RECENT LITERATURE

Reviews by Donald S. Farner and others

BANDING

(See also Number 7.)

1. The Activities of the Ornithological Station at Mesola, 1936-1940. (L'attivitá dell'Osservatorio Ornitologico della Mesola nel quinquennio 1936-1940.) Giuseppe Altini. 1942. *Ricerche di Zoologia Applicata alla Caccia*, 18. 116 pp. During this period 26,112 birds of 135 species were banded. Of these there were reports of 638 returns and recoveries in 69 species. Species banded most frequently include the Starling, *Sturnus vulgaris* Linnaeus 2,539; Greenling, *Chloris chloris mühlei* Parrot 828; Chaffinch, *Fringella coelebs coelebs* Linnaeus 2,220; Italian House Sparrow, *Passer domesticus italiae* Vieillot 1,526; Tree Sparrow, *Passer montanus montanus* Linnaeus 531; Great Tit, *Parus major major* Linnaeus 858; Blackcap, *Sylvia atricapilla atricapilla* Linnaeus 759; Songthrush, *Turdus philomelus philomelus* Brehm 669; European Blackbird, *Turdus merula merula* Linnaeus 1,188; European Redstart, *Phoenicurus phoenicurus phoenicurus* Linnaeus 605; European Robin, *Erithacus rubecula rubecula* Linnaeus 504; Common Heron, *Ardea purpurea purpurea* Linnaeus 1,841. Greatest numbers of returns and recoveries came from Starlings 86; Chaffinches 32; Great Tits 46; Heron 70; Lapwing, *Vanellus vanellus* (Linnaeus) 31. Details are given for the recoveries and returns together with brief analyses of their significance. A male Sparrow Hawk, *Accipiter nisus nisus* (Linnaeus), banded 25 October 1934 at Torre Abá (Mesola-Ferrara) was captured 14 September 1939 in Finland. A female Sparrow Hawk banded at same locality 18 January 1936 was recovered 18 May 1936 in Moravia. The data from the 70 recoveries and returns of Common Herons (almost all banded as young) are especially valuable; 54 recoveries were

in the same year as banding and at short distances from the banding locality; two were taken a year after banding in the banding locality; 14 were recovered away from the banding locality, one to five years after banding. The recoveries show well the erratic movements of these herons following the breeding season and before the beginning of migration. For example, a juvenile bird was recovered 370 kilometers to the west of the banding locality five months after banding. An interesting record is that of a European Golden Plover, *Charadrius apricarius altifrons* Brehm, banded at Selva Malvezzi di Budrio 10 March 1940 and recovered at Trujillo, Provincia di Caceres, Spain, 2 February 1942. A Lapwing was recorded as migrating 80 kilometers in two days (March 1938).—D. S. F.

2. Report on Banding Activities, Recoveries and Returns from the Ligurian Ornithological Station 1936-1940. (Repertorio degli inanellamenti e delle riprese dell'Osservatorio Ornitologico Ligure negli anni dal 1936 al 1940.) Giuseppi Altini. 1942. *Ricerche di Zoologia Applicata alla Caccia*, 17. 44 pp. For this period 9,181 birds of 68 species were banded. Species banded in largest numbers were Greenfinch, *Chloris chloris mühlei* Parrot 666; Goldfinch, *Carduelis carduelis carduelis* (Linnaeus) 726; Siskins, *Carduelis spinus* (Linnaeus) 575; Chaffinch, *Fringilla coelebs* Linnaeus 501; and Ortolan Bunting, *Emberiza hortulana* (Linnaeus) 2,098. There are 161 records of recoveries and returns from 34 species. Principal sources of recoveries and returns were Siskin 15; Chaffinch 19; and Ortolan Bunting 13. There is a record of a Songthrush, *Turdus philomelus philomelus* Brehm, banded 21 October 1934 as a young bird near Genoa and killed 12 March 1942 near Venice, 260 kilometers ENE of the banding locality.—D. S. F.

MIGRATION

(See also Numbers 1, 20, and 60.)

3. Some Observations on "Frost Flight" and "Border Migration" in the Sloe-Schengengebied during the Winters of 1935/1936 and 1936/1937. (Enkele waarnemingen over "vorstvlucht" en "randtrek" in het Sloe-Schengengebied tijdens de winters van 1935/1936 en 1936/1937.) D. A. Vleugel. 1948. *Ardea*, 36(3):143-162. During these winters the author observed in a portion of the Schelde estuary the populations of the Lapwing, *Vanellus vanellus* (Linnaeus); Golden Plover, *Charadrius apricarius* (Linnaeus); Avocet, *Recurvirostra avosetta* Linnaeus; Common Redshank, *Tringa totanus* Linnaeus; Spotted Redshank, *Tringa erythropus* (Pallas); Sheld-duck, *Tadorna tadorna* (Linnaeus); and Coot, *Fulica atra* Linnaeus. During four periods of frost the Lapwings and Golden Plover departed entirely and reappeared each time at the end of the period. Avocets were also affected by the frost periods. Spotted Redshanks increased during the frost periods. Coots and Sheld-ducks increased sometimes during the frost periods and sometimes decreased. "Frost flight" is a southwesterly flight during frost periods. "Border migration" is a northeasterly flight in warm weather. "Frost flight" is regarded as result of a strong feeling of distress due to unfavorable life and temperature conditions. It is suggested that border migration is the result of an increase in energy. The author suggests that, from the aspect of migration, the following groups be recognized: (1) *Introvert migrants* (introverse trekvogel) in which migration is not associated particularly with external factors. (2) *Extrovert migrants* (extroverse trekvogel) in which migration seems to occur under the influence of external influences. (3) Vagrant migrants (Zwerftrekvogel) which represent an intermediate status between wandering and migration; part of the population may move whereas part may be stationary. (4) *Extrovert residents* (extroverse standvogel) which are normally sedentary which may move in severely cold weather. (5) *Introvert residents* (introverse standvogel) which are sedentary under all circumstances. The emigratory movements recognized are (1) premigratory movements, (2) autumn migration, and (3) "frost flight"; return migratory movements are (1) reverse migration, (2) border-migration, (3) spring migration.—D. S. F.

4. New Contributions to the Problem of Navigation by Birds. (Neue Beiträge zur Frage der Fernorientierung der Vögel.) Gustav Kramer. 1948. *Ornithologische Berichte*, 1948 (December): 228-239. This is a discussion of recent experiments pertinent to navigation and homing. Yeagley's theory of navigation

by detection of the intensity of the vertical component of the earth's magnetic field and the intensity of the Coriolis force is regarded as unproven on several bases including the failure to consider wandering in the movements of the experimental birds, the method of treatment of the data on movements, and failure to recognize certain factors which may have biassed the data. The author agrees with the rejection of Ising's Coriolis-force theory by Thorpe and Wilkinson citing Steinhausen's observations which indicate the Coriolis energy would be much less than that involved in the streaming of the fluid in the semicircular canals. The experiments of Griffin and Hock emphasize the importance of vision in navigation in homing. The experiments of Schüz, Rüppel, and Rowan demonstrate some sort of "goal-less" sense of direction. Dijkgraaf's experiments indicate that there is no orientation without visual clues.—D. S. F.

5. Rook and Jackdaw Migrations Observed in Germany, 1942-1945. M. J. Waterhouse. 1949. *The Ibis*, 91(1):1-16. This very interesting series of observations was made while the author was a prisoner of war (1942-1945), principally at Dossel, Westphalia; Sagan, Silesia; and Eichstat, Bavaria. Rooks, *Corvus frugilegus* Linnaeus, and Jackdaws, *Corvus monedula* Linnaeus, were found to migrate jointly, "flocks being either mixed or of Rooks alone." (p. 16.) Two types of migratory flight were noted: (1) *high passage* in which birds flew in good formation above 600 feet, (2) *low passage* in which birds straggled at less than 100 feet. "The highest flock flew at 3000 ft. at least." (p. 16.) Both types of migratory flight were interrupted by descents to the ground. There is indirect evidence of nocturnal migration. Gyration, flight in ascending spirals within a restricted space by a flock, is suggested to be a device whereby birds which have temporarily lost their sense of direction are able to recover.—D. S. F.

6. Records of the Occurrence of the Broad-billed Sandpiper in Yugoslavia. (Onalazima *Limicola falcinellus falcinellus* (Pontoppidan) u Jugoslaviji.) Dragutin Rucner. 1948. *Larus*, 2: 39-45. There are seven records, all during fall migration, for Yugoslavia in which it must be regarded therefore as an uncommon migrant.—D. S. F.

LONGEVITY AND MORTALITY

(See also Numbers 27 and 85.)

7. Longevity in Swifts. (Livslängd hos tornsvalor (*Micropus apus* L.).) Mauritz Magnusson and Gunnar Swärdson. 1948. *Vår Fågelvärld*, 7(4):129-144. The authors have analyzed returns of Swifts banded as adults of unknown age at Hasselfors (central Sweden) where a banding program has been in progress since 1930. The population is stated to be stable. The original area included about 100 pairs; in 1942 the area was enlarged to include about 400 pairs. In calculating survival and longevity the authors assume a constant return to the previous breeding locality with the exception noted below. It has been necessary to calculate a "retrapping efficiency" factor which presumably indicates the percentage of actual returns retrapped; this was fixed at 38.5 percent and the numbers of returns are corrected accordingly. The annual losses beginning with first anniversary of banding are (in percent) 26, 19.6, 18.6, 18.0, 19.3, 18.2, 20.2, 19.0, 20.3, etc. Beginning with 100 banded birds (adults of unknown age) the series, as represented by successive years is: 100, 55, 42, 33, etc. For the first member of the series, 30 percent of the banded birds "have not died but reacted in ringing by non-returning, *i. e.* changing their nest-sites enough to get outside the controlled area or the controlled houses." (p. 143.) The annual mortality rate for adult birds is accordingly set at 19 percent and the expectation of life for adults is calculated to be 4.6 years. The oldest bird recorded was at least 17 years. Returns and recoveries of the 2,365 young banded have not been sufficient to check the longevity calculated from annual mortality rate. The authors estimate that a stable population of 500 pairs would produce annually 1,100 eggs from which 660 young would be fledged of which 399 would die during the first six months. The expectancy of further life of a young Swift leaving the nest would then be 2.5 years.—D. S. F.

PHYSIOLOGY

(See also Number 4.)

8. Biological Notes of Interest on Some Species of Owls in Captivity. (Zanimljivosti iz biologije nekih vrsta porodice Strigidae u zatočenju.) Konstantin Igalffy. 1948. *Larus*, 2: 111-123. The author kept in captivity for 25 years a female Eagle Owl, *Bubo bubo* (Linnaeus). After seven years she first laid a clutch of eggs. For the next 18 years she laid 2-4 eggs each spring. On several occasions domestic-fowl eggs were substituted; the female owl hatched them although it required eight days longer than the time required by a domestic fowl. She tried to feed the chicks; when they failed to eat, she ate them herself. The author describes another female Eagle Owl which was kept in captivity from an early age. At the age of 20 years, she began laying eggs and during the nine ensuing years hatched young.—D. S. F.

9. The Plumage and Other Sex Characteristics in Thiouracil-treated Brown Leghorn Fowl. L. V. Domm and Ben B. Blivaiss. 1948. *The American Journal of Anatomy*, 82(2): 167-194. The general effect of the administration of thiouracil in animals is that of the production of hyperplasia and hypertrophy of the thyroid gland together with symptoms of hypothyroidism. In general, the administration to the experimental birds produced a condition similar to that obtained previously as the result of thyroidectomy.—D. S. F.

10. The Weight of Nestling Robins. David Lack and E. T. Silva. 1949. *The Ibis*, 91(1): 64-78. Weights of nestling *Erithacus rubecula* (Linnaeus) increased rapidly for the first eight or nine days to a mean of 17 grams and thereafter remain quite constant until departure from the nest at 12-13 days. Differences up to 80 percent were noted among nestlings of the same age. Secondary coverts normally split open at about 6.5 days; the primaries at 7.5 days. Nestling period is apparently independent of body weight.—D. S. F.

11. Weights of Robins.—Part 1. Nestlings. John Lees. 1949. *The Ibis*, 91(1): 79-88. Weights of nestling *Erithacus rubecula* Linnaeus increased steadily from a mean of 1.72 grams for newly hatched birds to 17.8 grams on the tenth day and thereafter remained constant until departure from the nest. Late season broods fledged at greater weights than earlier broods. Broods of four or five young had the highest mean weights.—D. S. F.

12. Weights of Robins.—Part 2. Juveniles and Adults. John Lees. 1949. *The Ibis*, 91(2): 287-299. Mean weights for all adult *Erithacus rubecula* Linnaeus, male and female, transient (seven months) and resident, show similar seasonal variations. Mean monthly weight is 20.3 grams with maximum of 22.5 grams in January and minimum of 18.6 grams in September. British Robins apparently are about two grams lighter than continental Robins. The author believes, and the data seem to support the contention, that corrected averages (season, time of day, etc.), for individuals reveal a characteristic "congenital" adult weight. Means based on these corrected averages show that the weights have no tendency to decrease or increase from the first year through the fifth year.—D. S. F.

13. Selecting Probable 500-Mile Winners and Breeders of 500-Mile Winners from Six-month-old Pigeons. S. W. E. Bishop. 1948. *American Racing Pigeon News*, 64 (2): 4-5. This paper attempts to explain a criterion developed in Britain which has been tested on a nationwide scale and is now reported as generally accepted here. The paper is concerned primarily with the use of the ciliary muscle in the homing of pigeons. The convexity, and hence the focus of the crystalline lens is governed by the ciliary muscle which is attached to the crystalline lens by the ciliary processes and ligaments. According to the author, it is possible with a magnifying glass, by looking through the cornea to observe the ciliary muscle. It is stated that the strength of this muscle, which has a wide variation in the eyes of pigeons, is an indicator of long distance racing capabilities of a bird. Some birds do not have a ciliary muscle strong enough to be detected and these are useless as 500-mile winners or even homers over the distances. Others have a little, some have a fair amount, and the champion pigeon

has the muscle in abundance. It is the recognition of these variations in the ciliary muscle of the bird that indicates its possibilities. In conclusion, the author states: "I make no attempt to proffer a scientific or technical treatise in which the principles of this method are amply demonstrated by formula and precedent. The entire subject is without precedent . . . . I can only verify, as an honest and reputable fancier, that this visible characteristic, known as the "Eye-Sign" in Great Britain, has survived every test, running into thousands of individual birds, without once making a mistake. It has been suggested to me that as memory plays such a large part in a bird's homing ability, the pigeon with the keenest and longest-visioned eye is able to record a deeper and more lasting impression on its mind, and consequently its memory of what it has seen when passing over the terrain. That a keen-eyed bird would fare better than one with poor eye-sight when negotiating bad weather and poor visibility, or evading pursuit of birds of prey, cats, etc., is a matter for logical reasoning." If this so-called "eye-sign" is such a reliable indicator, investigation as to its exact nature would be of interest. It is difficult to believe that the ciliary muscle itself is actually observed in this test.—James Hodges.

14. "Eye-Sign" and the so-called Homing Instinct. S. W. E. Bishop. 1948. *The American Racing Pigeon News*, 64(4): 4-8. The author defends the validity of the "eye-sign" as well as his contention that there is no true "homing instinct" in pigeons, but rather that homing is based on memory facilitated by good eye sight as indicated by the "eye-sign."—D. S. F.

15. "Eye-Sign" and "Type." S. W. E. Bishop. 1948. *The American Pigeon Racing News*, 64(12): 1-4. The author further defends his contention that homing in pigeons is based on memory and vision and that birds with good vision, as indicated by "eye-sign," make the best distance racers.—D. S. F.

16. "Eye-Sign." W. F. Hollander. 1948. *The American Racing Pigeon News*, 64(12): 5. The author is skeptical of the "eye-sign" test as developed by Captain J. Craiger and described by S. W. E. Bishop. (See reviews above.) He justifiably doubts that, in the "eye-sign" test, the ciliary muscle is actually observed.—D. S. F.

17. Secret of the Eye. S. W. E. Bishop. 1948. *American Racing Pigeon News*, 64 (15): 1-4. This is a continuation of an article published in the same journal in March, 1948, on the selection of distance flying pigeons by certain factors revealed in the examination of the birds' eyes. This paper delves into the genetics of the subject. The author states that the "eye-sign" is a recessive factor since the mating of two birds, each with strong "eye-signs" was no assurance that its offspring would possess such a sign of the same or improved kind. In fact, out of four nests, only one or two of the progeny would respond. (The author obviously does not use "recessive" in accordance with the accepted meaning of the term in genetics.) What they did discover was that a greater measure of success resulted from the mating of birds in whom eye-sign was contrasted. The most important discovery of all, according to the author, is that the colored "eye-sign" is certainly "dominant" to the common dark markings.—James Hodges.

FOOD HABITS

(See Numbers 32 and 51.)

NIDIFICATION AND REPRODUCTION

(See also Numbers 8, 21, 26, 27, 31, 63, and 84.)

18. The Breeding of a Paradise Flycatcher. R. E. Moreau. 1949. *The Ibis*, 91(2): 256-279. This interesting and valuable paper is based on 300 hours' observation of four nests of *Tchitrea perspicillata ungujaensis* Grant and Mackworth-Praed, at Amani, Tanganyika Territory. Soft moss and cobwebs are used in the construction of the nest. Sites were on the edge of the forest and nearly always near water. Incubation, brooding, and feeding young were shared by both parents, somewhat unusual in species with such pronounced sexual dimorphism and showy males. Eggs were covered 90 percent of the time. Brooding of the young, which was initially as intensive as incubation, ended about five days after hatching. Nestling period was about 11 days. Two eggs seems to be the normal clutch in tropical Africa although three is frequent in South Africa.—D. S. F.

19. The Secret of the Bristle-thighed Curlew. Henry C. Kyllingstad. 1948. *Arctic*, 1 (2). Reprint, six pages, not numbered. A popular account of the discovery of the nest of *Numenius tahitiensis* (Gmelin) north of Mountain Village, Alaska in June 1948. A second nest was found in the same area.—D. S. F.

20. Some Notes on the Reproduction of the Collared Pratincole. (Quelques notes sur la reproduction de la Glaréole *Glareola pratincola* (L.) en France.) G. K. Yeates. 1938. *L'Oiseau et la Revue Française d'Ornithologie*, 18: 98-103. The author believes that the colony of 15 pairs of this desert species which he observed in Camargue is the first definite breeding record, at least for a number of years, for Camargue. Subsequent observations by the author and others indicate it to be a limited breeder at present in Camargue. The typical breeding places are dry mud flats with zig-zag cracks, caused by the heat of the sun, with dwarfed and dried *Salicornia*.—D. S. F.

BEHAVIOR

(See also Numbers 18, 27, 31, 33, 38, and 84.)

21. Behavior of the Bearded Tit. (Das Verhalten der Bartmeise.) Otto Koenig. 1947. *Umwelt*, Nr. 5, 2p. *Panurus biarmicus* (Linnaeus) is not a titmouse, but a member of the Paradoxornithinae or Parrotbills. All true Titmice (Paridae) are hole nesters, but the Bearded Tit builds an open nest in the reeds and this is constructed by the male alone. It does not hop, but runs, and often scratches with both feet. The sexes are distinguishable as fledglings and soon after becoming independent they associate in pairs. Their social sleeping and mutual preening are characteristic of many tropical birds; even some tropical Rails sleep closely pressed together, perhaps in response to the sharp temperature contrasts between hot days and cold nights.—M. M. Nice.

22. Home Range of Unconfined Hens. (Auslaufgrenzen unbeschränkt gehaltener Hühner.) Carlheinrich Engelmann. 1948. *Zeitschrift für Tierpsychologie*, 6 (2): 262-271. Distances hens wander from their houses depend on a variety of factors—land marks, cover, disturbances encountered, temperament of the birds, and hunger. In a garden hens went 200-300 meters from home, in woods, 150 meters, in an open field 80 to 150 meters.—M. M. Nice.

23. Abnormal Perceptual World of a Greenfinch. (Abnormes Umweltbild eines Grünfinks.) Hugo G. Schmitt. 1948. *Zeitschrift für Tierpsychologie*, 6 (2): 271-274. A hand-raised *Chloris chloris* (Linnaeus) with a crippled wing showed extreme anxiety whenever taken from her cage, but would be content on a bare table top if her feeding and drinking cups and bath tub were arranged about her in the accustomed positions. Although fearless of the people, cats and dogs she knew, she was much afraid of strange people and animals. She was very despotic towards other birds in the house except a wild male Greenfinch that visited her cage during one summer; on these occasions there were very pretty duets.—M. M. Nice.

24. "Anting" of Green Woodpecker. F. G. Stanford. 1949. *British Birds*, 42(2): 59. A female *Picus viridis* Linnaeus perched on an ant hill, "rapidly pecked up some ants, ... and vigorously rubbed them beneath its left wing and under the breast feathers."—M. M. Nice.

25. House-Sparrows Pursuing Pigeons. Derek Goodwin. 1949. *British Birds*, 42(2): 64. In London *Passer domesticus* Linnaeus often pursues pigeons, "the sparrow apparently endeavouring to fly beneath the pigeon's wing close to its body and presumably to peck at it. . . . The pigeon shows every sign of fear, flying at great speed, twisting and swerving." We recently saw such an occurrence in Chicago.—M. M. Nice.

LIFE HISTORY

(See also Numbers 7, 10, 11, 12, 18, 84, and 85.)

26. Observations of the Citril Finch. (Beobachtungen am Zitronenzeisig.) Ernst M. Lang. 1948. *Der Ornithologische Beobachter*, 45(6): 197-205. This paper contains detailed observations of two nests which were found during

1946 on the alpine ridge of Zermatt. Four nests were discovered but only two could be studied. Only the female incubates; she is fed on the nest by the male approximately once an hour by regurgitation. The longest observed absence of the female from the nest was seven minutes. From the intervals at which the egg hatched the author concludes that incubation began in one case with the first egg and in the other with the second. Five young hatched in one nest and three in the other; the number of eggs in each nest was not reported. After the eggs hatched the male continued to feed the female which in turn fed the young. Frequency of feeding at one nest when only two young had hatched averaged once every 25 minutes; 13 days later when five young were present the frequency had decreased to an average of once every 53 minutes. Three days after the first young hatched, the male fed the young directly for the first time. Feces from the young were regularly eaten by the female but rarely by the male. The author suggests that they constitute an important part of the female's food supply. The juvenal plumage is characterized by the absence of the bright yellowish green rings. These are only a few of the observations from a detailed and interesting paper which is illustrated by two photographs.—R. O. Bender.

27. Notes from Five Years' Study of Nesting Box Activities. (Några erfarenheter från fem års holkfågelstudier.) Anders Enemar. 1948. *Vår Vågelvärld,* 7(3): 105-117. The author has placed a large number (49-100) of nesting boxes in a variety of habitats and has recorded consequently many interesting data. Common inhabitants of the boxes were Great Tits, *Parus major* Linnaeus. Average size for 24 clutches was nine; an incubating female abandoned a clutch of eleven and laid a second clutch of eleven which was successfully hatched. Among Blue Tits, *Parus caeruleus* Linnaeus, two clutches of 14 were recorded. A female with a clutch of nine laid a second clutch of five in a nearby box before the first brood left the nest. Most frequent inhabitants were Pied Flycatchers, *Muscicapa hypoleuca* Linnaeus. Among 283 clutches, the largest was eight; the mean for 64 clutches was 6.3. Banding data on this species indicate that about 15 percent of the newly banded young and returns from banding of previous years returned to breed. This agrees well with the data from other passerine species. There is a record (possibly two) of two females incubating simultaneously a clutch of 11 eggs. A very valuable paper.—D. S. F.

28. Some Notes on the Cuckoo in Pays Drouais northern part of Département d'Eure-et-Loir). (Quelques notes sur le Coucou *Cuculus canorus* L. en pays Drouais.) André Labitte. 1948. *L'Oiseaux et la Revue Française d'Ornithologie,* 18: 78-93. In observations over a span of 25 years, the author has recorded 17 Cuckoo eggs in 12 different host nests. Species parasitized were the Wren, *Troglodytes troglodytes* (Linnaeus), three; White Wagtail, *Motacilla alba* Linnaeus, three; Spotted Flycatcher, *Muscicapa striata* Linnaeus, one; Grey Wagtail, *Motacilla cinerea* Linnaeus, one. Five of the nine eggs deposited in Wren nests were adopted by the parents. In the Robin nests all were adopted; one of three was adopted in the White Wagtail nest.—D. S. F.

CENSUSES AND POPULATIONS

(See also Numbers 7, 27, 40, 42, 84, and 85.)

29. A Shetland Bird Population: Kergord Plantations. L. S. V. Venables and U. M. Venables. 1948. *Journal of Animal Ecology,* 17: 66-74. The 8-9 acres of trees planted since 1909, consisting largely of sycamore, maple, Japanese larch and Sitka spruce, have changed the status of some birds formerly present as passage migrants. "Among these are jackdaw (*Corvus monedula*), breeding; goldcrest (*Regulus regulus*), wintering and possibly attempting to breed; yellow-bunting (*Emberiza citrinella*), wintering; blackcap (*Sylvia atricapilla*), apparently attempting to breed; long-eared owl (*Asio otus*), wintering and one breeding record; and wood-pigeon (*Columba palumbus*), breeding and endeavouring to become resident." "Both the songthrush (*Turdus ericetorum*) and the blackbird (*T. merula*) are becoming commoner as breeding species on Shetland." Between August 1945 and July 1947 the writers took 94 counts of the birds in the Kergord plantations; monthly averages of the more regular species are given as well as a chart of the numbers of Blackbirds seen on every count.—M. M. Nice.

30. The Index of Heron Population, 1948. W. B. Alexander. 1949. *British Birds*, 42(3): 81-83. The breeding population of Grey Herons, *Ardea cinerea* Linnaeus, is only slightly more than half of normal, 57 percent, while that of last year was 54 percent. In "previous years when the index has fallen after a severe winter there has been a rapid recovery after the first mild winter." Although last winter was very mild, it seems probable that the winter of 1946-47 killed off most of the birds of the year that would otherwise have bred for the first time in 1948.—M. M. Nice.

ECOLOGY

(See also Numbers 20, 29, 30, 45, 46, 51, 54, 57, 60, 83, and 84.)

31. The Breeding of Avocets in England, 1948. Philip E. Brown. 1949. *British Birds*, 42(1): 2-12. For the second year in succession *Recurvirostra avosetta* Linnaeus bred successfully in East Anglia; rats destroyed 18 eggs, several young perished from unseasonable cold, while 13 chicks were fledged. Detailed observations are given on behavior. Both sexes incubated in periods ranging from a few minutes to 250 minutes. During incubation the birds were quiet except during the curious group displays, but after the chicks hatched, at the slightest alarm, the parents "would immediately set up a shrill and continuous piping and, leaving the chicks, fly towards the cause of the disturbance, bearing down upon it and only swerving aside at the last moment." Almost any bird is pursued: "Ringed Plover (*Charadrius hiaticula*) and Redshank (*Tringa totanus*) were especially harried, and very often when a parent was flying off in pursuit of a plover, the chicks would be left exposed to the mercies of gulls flying low above them." Yet no "serious attempt" was seen "by any species of gull or by Carrion Crows to take either eggs or chicks of the Avocets, though they certainly had the opportunity of doing so on occasion."—M. M. Nice.

32. Birds in an Oak Forest during a Gypsy Moth Outbreak in South Slovakia. Frank J. Turcek. 1948. *The American Midland Naturalist*, 40(2): 391-394. During an intensive outbreak of the Gypsy Moth, *Liparis dispar* Linnaeus, a noticeable concentration of birds, using the larvae as food for young, was noted. Particularly noteworthy were the increases in Golden Orioles, *Oriolus oriolus* (Linnaeus); Hawfinches, *Coccothraustes coccothraustes* (Linnaeus); Starlings, *Sturnus vulgaris* Linnaeus; and Chaffinches, *Fringilla coelebs* Linnaeus. Adults were fed upon by titmice; Red-backed Shrikes, *Lanius collurio* Linnaeus; Great Spotted Woodpeckers, *Dryobates major* (Linnaeus); Spotted Flycatchers, *Muscicapa striata* Linnaeus; Barn Swallows, *Hirundo rustica* Linnaeus; and Nightjars, *Caprimulgus europaeus* Linnaeus.—D. S. F.

33. The Nesting Association of Birds with Social Insects and with Birds of Different Species. S. Durango. 1949. *The Ibis*, 91(1): 140-143. This is a translated extraction from the authors "Om vanan hos vissa fåglar att bosätta sig intill insektsamhällen eller andra fågelarter," *Fauna och Flora*, 1947: 185-205, 245-259. (See *Bird-Banding*, 20(1): 68-69.)—D. S. F.

34. Notes on Birds of the Kabba, Ilorin and N. Benin Provinces of Nigeria. L. H. Brown. 1948. *The Ibis*, 90(4): 525-538. Notes on distribution, breeding, and ecology for 61 species.—D. S. F.

35. An Ecological Survey of the Birds of the Crater Highlands and Rift Lakes, Northern Tanganyika Territory. H. F. I. Elliott and N. R. Fuggles-Couchman. 1948. *The Ibis*, 90(3): 394-425. This paper contains a discussion of the biota, and their bird-plant communities, of the area, a discussion of breeding seasons, suggestions as to the origin and evolution of communities, and systematic notes on 23 species of "special interest."—D. S. F.

36. Three Bird Islands of Skåne (Sweden) in the Summer of 1946. (Tre skånska fågelöar sommaren 1946.) Gunnar Otterlind. 1947. *Fauna och Flora*, 1947(1/2): 10-21. This paper records observations on the islets of Eskiltorps, Säxon, and Gråen.—D. S. F.

37. Field Notes on the Faroe Starling. Kenneth Williamson. 1947. *The Ibis*, 89(3): 435-438. The Faroe Starling, *Sturnus vulgaris faroensis* Feilden, is common in all of the settlements, nesting in bird houses and holes in the walls of houses, etc.; many breed on the coastal cliffs. Breeding in the settlements may be a recent development. There are many interesting notes.—D. S. F.

38. Protective Coloration in Birds. (Le Mimétisme dans la Classe des Oiseaux.) R. Verheyen. *Le Gerfaut*, 38(2): 41-52. A brief interesting discussion of the origin and function of protective coloration in adults, young, and eggs. Unfortunately, there is no bibliography.—D. S. F.

CONSERVATION

(See also Numbers 44, 84, and 86.)

39. The Present Problems of Conservation of Game in the Finnish Archipelago (Aktuella problem vid skärgårdens jaktvård.) Goran Bergman. 1946. *Suomen Riista*, 1: 143-156. Marine game birds suffered severe losses in this area during the war. Particularly affected were the Common Eider, *Somateria mollissima* (Linnaeus); Red-breasted Merganser, *Mergus serrator* Linnaeus; and the Goosander, *Mergus merganser* Linnaeus. Total protection is recommended for these species including prohibition of camping and even landing on the nesting rocks, and the prohibition of egg-collecting. Systematic extermination of crows is suggested and consideration should be given to the reduction of the Great Black-backed Gulls, *Larus marinus* Linnaeus. Whether or not the Lesser Black-backed Gull, *Larus fuscus* Linnaeus, is to be considered detrimental must await further studies. "It will probably be necessary altogether to cancel the right of the population not domiciled in the archipelago to shoot eider, velvet scoter, red-breasted merganser, goosander, and tufted duck, since the stock does not even under normal conditions stand such a strain."—D. S. F.

40. Waterfowl Conditions on the Mackenzie Delta—1947. Ian McTaggart Cowan. *The Murrelet*, 29(2): 21-26. Comparison of the author's data with those of Porsild for the same area in 1934 indicate a startling decline. For example, Porsild estimated a density (all species) of 20 per mile of river in 1934, whereas the author's data for 1947 indicate less than one duck per mile. "It should be remembered that this decline has taken place in a region in which water is abundant and waterfowl food of the finest type is present in profusion." (p. 24.)—D. S. F.

41. Control of May Beetles by Aerial Dusting with DDT and its Influence on Birds. (Flugzeugbestäubung mit Gersarol gegen den Maikäfer und ihre Auswirkung auf die Vogelwelt.) W. Büttiker. 1948. *Die Voegel der Heimat*, 18(10/11): 169-177. About 40 hectares of deciduous forest edge were treated with 1,800 kilograms of Gesarol (5 percent) for purposes of controlling *Melolantha vulgaris* Linnaeus. The author's observations of nesting birds, after the above described treatment on 7 May 1948, indicate no ill effects on the bird population. —D. S. F.

42. Ornithological Experiences during a Trip to the Refuge of Poelau Doewa. (Ornithologische ervaringen tijdens een naar het Natuurmonument Poelau Doewa gemaakte dienst-tournee.) A. Hoogerwerf. 1947. *Limosa*, 20(4): 193-196. Poelau Doewa, an island of about ten hectares in the Bay of Bantam, Java, was established as a "Natuurmonument" in 1935 and provided with two native wardens. During the breeding season there were 8,000 to 10,000 birds on the island including many colonial breeders. There are six excellent photographs.—D. S. F.

43. The Wood-Pigeon (*Columba palumbus* L.) on the Poultry Market; Preliminary Note. Miriam Rothschild. 1947. *The Ibis*, 89(4): 611-615. The Wood-pigeon was not placed under price control in Britain during the war, hence increasing the taking of this bird. In 1944, the number sold in London was 532,839; in 1945, 754,291. It is thought that the post-war availability of ammunition in greater quantities will increase the persecution of this species.—D. S. F.

WILDLIFE MANAGEMENT AND METHODS

(See also Number 86.)

44. The Ruffed Grouse and its Management in Ohio. Floyd B. Chapman, Hubert Bezdek and Eugene H. Dustman. 1948. *Wildlife Conservation Bulletin* No. 6, 24 pp. Ohio Division of Conservation and Natural Resources. A good popular bulletin. "Land use trends, in which rather large forest tracts are developing in glaciated northeastern and unglaciated southeastern Ohio, are

responsible for an addition of not less than 100,000 acres annually of improved grouse range in the state." Some 60 percent of nests are destroyed, and over 30 percent of young lost before the end of August. Excellent advice is given on management—exclusion of livestock, realistic control of deer, and *no* control of predators.—M. M. Nice.

AVIFAUNAL DYNAMICS
(See also Number 67.)

45. The Distribution and Ecology of the Nightingale and Thrush Nightingale. (Nachtigall und Sprosser: ihre Verbreitung und Ökologie.) Erwin Stresemann. 1948. *Ornithologische Berichte*, 1948 (December): 193-222. This is a careful comparative study of many of the aspects of the biology and zoogeography of these closely related and apparently recently-separated species. The breeding range of the Nightingale, *Luscinia megarhynchos megarhynchos* Brehm, includes northwestern Africa, Asia Minor, western and southwestern Europe north to southern England and Denmark and east to the Black Sea. The breeding range of the Thrush Nightingale, *Luscinia luscinia* (Linnaeus), includes central Europe east to Sweden, Denmark, western Germany and the northern part of the Balkan Peninsula, European Russia, and Siberia. An irregular area extending from the Black Sea to the Baltic in east-central Europe is occupied by both species. The Thrush Nightingale prefers damp biotopes including thick undergrowth and low brush beneath tall trees whereas the Nightingale has no such preference for dampness in its biotope but rather appears to prefer a certain degree of dryness. Hybrids have been produced with captive birds but hybridization does not appear to occur naturally. "This is probably not the consequence of the ecologic differences alone, but also of other biologic differences." (p. 129.) The origin of the Nightingale in Europe is from the South whereas the origin of the Thrush Nightingale is from the East. In central Europe the Nightingale has a single brood per year whereas in the Mediterranean region most pairs have two broods per year. This is interpreted as indicative of a greater loss of southern European Nightingales than of northern European Nightingales. The Thrush Nightingale does not spend sufficient time even in the southernmost part of the breeding range to rear more than a single brood. Up into the first half of the last century the Thrush Nightingale, bred in the Danube plains of lower Austria and Hungary, on the March River, on the Thaya River, and further in the region of the Middle Elbe. It is stated that the Thrush Nightingale was eliminated from this area by "Vogelfänger." During the last as well as the present century the Nightingale has given up some breeding range; its northern limit was previously farther north in Pomerania and Mecklenburg than at present. The theory that it has been simply displaced by the Thrush Nightingale is regarded as improbable. More likely the change is to be explained by the present conditions in northern Germany, from Pomerania through Mecklenburg to Schleswig-Holstein, which favor the requirements of the Thrush Nightingale more than those of Nightingale, because the Thrush Nightingale prefers damper places which are not so close to dwellings and cats.—D. S. F.

46. Decline in Numerous Mammal and Bird Populations in Northwestern Europe during the 1940's. Lauri Siivonen. 1948. *Riistatieteellisiä Julkaisuja* (Papers on Game-Research), 2. 26 pp. Since the mid-1930's there has been a gradual decline of the Finnish populations of certain waterfowl; Capercaillie, *Tetrao urogallus* Linnaeus; Hazel Grouse, *Tetrastes bonasia* (Linnaeus); Willow Grouse, *Lagopus lagopus* (Linnaeus); Partridge, *Perdix perdix* (Linnaeus). Similar declines have been noted in Scandinavia and the British Isles. The author is of the opinion that the cause of decline varies in different species. Increased winter snow depth is thought to be the cause of the decline of the Partridge and possibly of the Tawny Owl, *Strix aluco* Linnaeus. Deviations in "short-term fluctuations" are regarded as the basis of the decline in Hazel Grouse and Capercaillie.—D. S. F.

47. The Range Expansion of the Collared Turtle Dove towards Germany. (Vordringen der Turkentaube nach Deutschland.) E. Stresemann. 1948. *Ornithologische Berichte*, 1948 (December): 223-227. Since 1930 *Streptopelia decaocto decaocto* (Frivaldsky) has expanded into Hungary. (See *Bird-Banding*, 18(4): 179.) and more recently has appeared in Austria and Croatia. Several records are now recorded for Germany.—D. S. F.

48. The First Appearance of Savi's Warbler in Scandinavia and Remarks Concerning the Invasion of Sweden by other Species of Locustella. (*Locustella luscinioides* (Savi) för första gången sedd in Norden och något om släktet Locustellas invandring till vårt land.) Yngve Melander. 1947. *Fauna och Flora*, 1947(6): 229-239. The author records a sight record, 12 June 1947 at Hammarsjön in northeastern Skåne, as the first record of this species in Scandinavia. Also discussed are the histories in Sweden, and observations of, the Grasshopper Warbler, *Locustella naevia* (Boddaert); and the River Warbler *Locustella fluviatilis* (Wolf).—D. S. F.

49. The First Record of the Great Spotted Cuckoo in Finland. (Slatgöken, *Clamator glandarius* (L.), ny för faunan.) Ragnar Bäck. 1947. *Ornis Fennica*, 24(2): 53. This interesting record is based on a specimen found dead in Gamla Karleby, October 1946.—D. S. F.

50. The Little Rail in Finland. (*Porzana parva* (Scop.) Suomessa.) Olavi Leivo. 1942. *Ornis Fennica*, 19(1): 23-24. This bird observed from 27 May to 11 June 1941 near Helsinki is the first record for Finland. This is a further bit of evidence of northward range expansion into Finland.—D. S. F.

GEOGRAPHIC DISTRIBUTION AND ZOOGEOGRAPHY

(See also Numbers 19, 20, 34, 45, 48, 49, and 50.)

51. The Birds and Mammals of the Vanderhoof Region, British Columbia. J. A. Munro. 1949. *The American Midland Naturalist*, 41(1): 1-138. This extensive paper is based on field work performed during May-September 1945 and June-July, August 1946. It contains a tremendous variety of information including descriptions of habitats, notes on migration, notes on parasitism by protocalliphorid larvae (seven species), berries as sources of food, and a richly annotated list of 187 species and subspecies of birds, including a very interesting set of notes on the breeding activities of a pair of Saw-whet Owls, *Aegolius acadicus* (Gmelin).—D. S. F.

52. Winter Ornithological Observations at Alakurtti (Northeastern Finland). (Ornithologische Winterbeobachtungen bei Alakurtti (NO—Finland.) J. Franz. 1942. *Ornis Fennica*, 19(3): 88-91. These observations were made from 15 October 1941 to 15 April 1942, in an eastern Lapland forest (67° 00′N, 30°30′E.) There is an annotated list of 33 species.—D. S. F.

53. Birds of Gold Coast. F. C. Holman. 1947. *The Ibis*, 89(4): 623-650. This paper is principally an annotated systematic list including 129 species and subspecies.—D. S. F.

54. The Birds of Karabil, South-east Russian Turkestan. G. P. Dementiev, E. P. Spangenberg, and A. K. Rustamov. 1947. *The Ibis*, 89(4): 615-623. Following a brief discussion of ecologic aspects of this region, the remainder of the paper consists of a well annotated systematic list of 42 species.—D. S. F.

55. Observations from the Kota-kota district of Nyasaland. C. W. Benson. 1947. *The Ibis*. 89(4): 553-566. The observations recorded in this paper were made between September 1943 and March 1944. The recorded notes concern 58 species and subspecies.—D. S. F.

56. The Winter Fauna of Northern Lule Lapland. (Något om vinterfaunan i norra Lule Lappmark.) Kai Curry-Lindahl. 1946. *Fauna och Flora*, 1946 (4/5): 145-175. The localities visited are in pine forests between 67°N. and 69°N. The observations were made between 23 January and 6 April. The paper is mostly an annotated list of the mammals and birds (34 species) observed. Ravens, *Corvus corax corax* Linnaeus, were paired in January, performed their aerial circuses in February, and nested in March. In early April flocks of Snow Buntings, *Plectrophenax nivalis nivalis* (Linnaeus), were observed in flight NNW. Large numbers of Fieldfares, *Turdus pilaris* Linnaeus, were observed in midwinter. Strangely the Capercaillie, *Tetrao urogallus urogallus* Linnaeus, and the Black Grouse, *Tetrao tetrix tetrix* Linnaeus, were very rare.—D. S. F.

57. The Atherton Tablelands and its Avifauna. P. A. Bourke and A. F. Austin. 1947. *The Emu*, 47(2): 87-116. These are valuable notes made by the authors while on military duty in northern Queensland. In addition to geographic and ecologic notes, there is a richly annotated list of 216 species.—D. S. F.

58. Among the Birds at Melville Bay. Cyril P. Humphries. 1947. *The Emu,* 47(2): 130-136. This annotated list of 104 species is based on observations made during 16 months in Arnhem Land in Northern Australia.—D. S. F.

59. Northern Territory Bird Notes. Eric H. Sedgwick. 1947. *The Emu,* 46(4): 294-308; 46(5): 349-378. An extensively annotated list of 148 species based on observations made during a period of 16 months.—D. S. F.

60. Field Notes on Waders in the Southwest Pacific with Special Reference to the Russel Islands. P. C. Bull. 1948. *The Emu,* 47(3): 165-176. These are an important series of biological data, including notes on migration, concerning twelve species of shore birds.—D. S. F.

61. Birds Observed at Torokina, Bougainville Island. R. M. Virtue. 1947. *The Emu,* 46(5): 324-331. An annotated list of 42 species observed November 1944 to May 1945 and August 1945 to September 1945.—D. S. F.

62. The Birds of Curaçao, Aruba, and Bonaire. (De vogels van Curacao' Aruba en Bonaire). M. de Jong. 1948. *Limosa,* 21(1): 1-9. A briefly annotated list of 59 species and subspecies.—D. S. F.

63. Some Breeding and other Records from Nyasaland. C. W. Benson and F. M. Benson. 1947. *The Ibis,* 89(2): 279-291. These interesting notes concern 35 species and subspecies and include drawings of the nests of five species of *Apalis.*—D. S. F.

64. The Birds of Mzimbiti, near Beira, Portuguese East Africa. C. W. Benson. 1947. *The Ostrich,* 18(2): 125-128. Notes on species observed during brief visits in December 1943 and June 1946, and collected 6 to 18 February 1946.—D. S. F.

65. The Birds of Ladysmith, Natal. D. C. H. Plowes. 1947. *The Ostrich,* 18(2): 134-154. This is an annotated list of 153 species observed between April 1943 and March 1944.—D. S. F.

66. South and East of Sautso. (Söder och öster om Sautso.) Sten Larson. 1947. *Fauna och Flora,* 1947 (3/4): 98-136. This is principally an annotated list of the vertebrates occurring in this interesting area within the Arctic circle. The list of birds includes 101 species.—D. S. F.

67. Two Records of the Turtle Dove on Gottland. (Två fynd av turturduva (Streptopelia t. turtur (L.)) på Gotland.) Nils Noréhn. 1947. *Fauna och Flora,* 1947 (3/4): 142-144. These two records from Tofta, 6 June 1935 and from Stora Karlsö, 11 June 1944 are apparently the first for Gottland.—D. S. F.

68. Zoological Impressions from a Spring in Northern Norway. (Zoologiska intryck från en vår i Nordnorge.) Erik Dahl. 1946. *Fauna och Flora.* 1946 (6): 256-282. These are notes made in the area about Tromsö in northern Norway during spring and early summer of 1946. In addition to a variety of zoological observations there are notes on 82 species of birds.—D. S. F.

69. A Contribution to the Faunistics of Tanganyika Territory. R. E. Moreau. 1947. *The Ibis,* 89(2): 216-231. This paper consists mostly of four annotated lists of species and subspecies, based on recent collections, "confined to those birds showing points of particular interest." They concern respectively, (1) east side of Lake Tanganyika, 34 species and subspecies; (2) southeast corner of Lake Tanganyika, 17; (3) Liwale District, 8; and (4) the Matengo Highlands east of Lake Nyasa, 16.—D. S. F.

SYSTEMATICS

(See also Numbers 45, 73, 74, 75, and 80.)

70. Common Sense in Common Names. Ludlow Griscom. 1947. *The Wilson Bulletin,* 59 (3): 131-138. The case against revision and reform in vernacular names is here presented in clear-cut positive terms. About eighty percent of the common bird names now in use are inappropriate or misleading. To set up an appropriate vernacular nomenclature would require sweeping changes,

complex rules and arbitrary decisions which would never be universally acceptable and could hardly be enforced; only greater confusion would result. The fathers of scientific nomenclature early learned that ideas of appropriateness must give way to rules of priority and that appropriateness itself is evasive, unstable and unimportant. The scientific name of a species takes care of the all important factor of stability. Amateur gardeners interested in avoiding the confusion of local terminology can handle scientific names; why can't amateur ornithologists?—John T. Emlen, Jr.

71. Suggested Principles for Vernacular Nomenclature. Eugene Eisenmann and Hustace H. Poor. 1946. *Wilson Bulletin,* 58(4): 210-215. Every bird student, particularly the beginner, is from time to time confused by inconsistencies in the common names of North American birds. In this paper a Committee on Vernacular Nomenclature of the Linnaean Society of New York proposes a series of reforms in the hope that they will be heeded by the American Ornithologists' Union Committee on Classification and Nomenclature in their forthcoming edition of the Check-List. The suggestions, well considered and nicely presented may be summarized under two headings: (1) Every species name should be applicable to all the included subspecies and appropriately comprehensive in its nature. (2) Every subspecies name should be formed by prefixing an appropriate word, generally of a geographical nature to the species name. The objections that changes in the established vernacular names will disturb stability and lead to cumbersome polynominals are thoughtfully considered to be outweighed by the clear need for reform.—John T. Emlen, Jr.

72. On the Position of the Genus Zavattariornis. Percy R. Lowe. 1949. *The Ibis,* 91(1): 102-104. The author concludes, on the basis of study of the skull, that this unique monotypic genus is related neither to the Corvidae nor to the Sturnidae. He suggests that it be placed in a separate family, Zavattariornidae.—D. S. F.

EVOLUTION

(See also Number 45.)

73. The Development of Geographical Color Variation of Plumage in Birds. (O postanku geografskih varijacija obojenja perjanog ruha Kod ptica.) Vladislav Vasić. 1948. *Larus,* 2: 124-131. A brief review of the literature. The author feels that two sets of factors must be considered: (1) *Direct,* the effect of nutrition and "oxidative processes." The latter depends on light acting *via* the endocrine system; light and nutrition may be modifying factors. (2) *Indirect,* hereditary changes in feather structure. "The geographical color variations caused by the oxidation processes and the adaptation of organisms (change in feather structure) occur parallel with the radical changes in the organism and do not change themselves, even after many generations, if the organism were taken to other climatic conditions. The geographical color variations caused by change of the nutriment are less stable." (p. 129.)—D. S. F.

74. Polymorphism and Breeding of the Rock Dove in the Faeroe Islands. Niels Fr. Petersen á Botni and Kenneth Williamson. 1949. *The Ibis,* 91(1): 7-23. *Columba livia livia* Gmelin has been a resident of the Faeroe Islands at least since 1500. The average population on Nólsoy Island is 50-60. Variations are in response to severity of the winters and not to fowling. The birds of the Nólsoy Colony are polymorphic, "the mutants showing a tendency towards melanism and having mantle and wing coverts spotted black. These occur in the ratio 1:7 of the normal type when the population is at its peak, but seem less able to survive a severe winter, so that the proportion falls steeply to 1:15-20 birds. . . . The character is thought to be recessive, and more than one gene may be concerned." (p. 23.) Breeding occurs only in summer.—D. S. F.

75. Natural Selection and Family Size in the Starling. David Lack. 1948. *Evolution,* 2(2): 95-110. An analysis of clutch-size in Switzerland, Holland, and England leads to the conclusion that the percentage of eggs which produce fledged young is similar in all ordinary sizes of clutches (3-8). "Among Starlings which survive at least three months after leaving the nest, the recovery rate is

lower for young from broods of above average size than it is for the young from broods of average size or smaller." (p. 108.) This implies a higher early mortality rate for the young of large broods than for the young of small broods. Swiss Starlings have a higher mortality rate and higher reproductive rate than British Starlings. Natural clutch size seems to be genetically fixed.—D. S. F.

PARASITOLOGY AND DISEASES

(See also Number 51.)

76. Psittacosis, a Disease Important to Ornithologists, Transmitted from Birds to Man. (Die Papageienkrankheit (Psittacosis), eine für den Ornithologen wichtige, durch Vögel übertragbare Krankheit des Menschen.) Lothar Szidat. 1942. *Ornithologische Monatsberichte*, 50(4/5): 116-121. Psittacosis is a disease of birds occasionally transmitted to man, rarely transmitted directly from man to man. This disease, first described in man in Switzerland in 1879 as contracted from exotic birds, has been reported from various species of parrots and their relatives as well as many fringillid species, the domestic fowl, and pigeons. A virus closely related to that of psittacosis is the cause of the disease of the Atlantic Fulmar, *Fulmarus glacialis* (Linnaeus), which causes a lung infection of man in the Faroe Islands.—D. S. F.

77. Helminth Parasites of Birds and Mammals in Western Massachusetts. John S. Rankin, Jr. 1946. *The American Midland Naturalist*, 35(3): 756-768. This includes notes on the parasitic worms taken from 49 specimens of nine species of birds.—D. S. F.

78. Entroparasites in the Capercaillie (*Tetrao urogallus*). Hj. Munthe-Kaas Lund. 1946. *Skandinavisk Veterinärtidskrift*, 1946: 641-666. These are preliminary data derived from the examination of 28 specimens. Data are given on the occurrence of *Syngamus trachea* (Montagu), *Capillaria longicollis* (Mehlis), *Ascaridia compar* (Shrank), *Raillietina urogalli* (Modeer), *Raillietina globocaudata* (Cohn), *Davainea tetraoensis* Fuhrmann, and coccidia in these 28 specimens.—D. S. F.

79. On some Haematozoa of Swedish Birds with Remarks on the Schizogony of *Leucocytozoon sakharoffi*. Karl Georg Wingstrand. 1947. *Kungliga Svenska Vetenskapsakademiens Handlingar* (Tredje Serien), 24(5): 1-31. This excellent paper contains notes and host-records for five species of *Leucocytozoon* and two species of *Haemoproteus*. A tabulation of the results of the examination for blood parasites of twenty species of birds is given.—D. S. F.

80. The Systematic Position of the Musophagi as Indicated by their Mallophagan Parasites. Theresa Clay. 1947. *The Ibis*, 89(4): 654-656. The presence of two genera of Mallophaga common to the Musophagi and Galli indicates a possible common ancestry. There is no evidence from these parasites however to relate the Ophisthocomi to the Musophagi.—D. S. F.

81. Protective Coloration in Mallophaga. (Schutzfarbung bei Federlingen.) Wolfdietrich Eichler. 1948. *Die Voegel der Heimat*, 18(6): 103-108. This is an interesting collection of examples of coloration and patterns of coloration assumed to be protective against attack by the host.—D. S. F.

82. A Preliminary Survey of Parasites of Eastern Washington Waterfowl. Charles W. McNeil. 1948. *The Murrelet*, 29(1): 2-4. An enumeration of the numbers of Trematoda, Cestoda, Nematoda, and Acanthocephala found in the examination of 38 mallards, *Anas platyrhynchos platyrhynchos* Linnaeus; six Canada Geese, *Branta canadensis* Linnaeus; three Pintail, *Anas acuta tzitzihoa* Vieillot; three Redhead, *Aythya americana* (Eyton); one Baldpate, *Mareca americana* (Gmelin); one Gadwall, *Anas streperus* Linnaeus; one Canvasback, *Aythya valisineria* (Wilson); four Coots, *Fulica americana* Linnaeus.—D. S. F.

83. The Fauna of the Nests of White Storks. (A gólyafészek állatvilága.) V. Szekessy. 1944. *Albertina*, 1: 155-174. An analysis of the faunae of the nests of White Storks, *Ciconia ciconia* (Linnaeus), revealed no less than 86 species, including mollusks, isopods, millipedes, insects (mostly beetles and beetle larvae), pseudoscorpions, and spiders. There is an interesting discussion of the ecologic aspects of these inhabitants of Stork nests.—D. S. F.

BOOKS AND MONOGRAPHS

84. The Flamingos of the Camargue. (Die Flamingos der Camargue.) Étienne Gallet. 1948. Verlag Werner Krebser Co., Thun, Switzerland. 17.50 Swiss Francs. This beautiful little book with its 53 excellent illustrations is one of those rare combinations of literary and scientific merit. It is based on 15 years' observations of the Camargue colony on the Mediterranean Coast of southeastern France. In 34 years, Flamingoes have nested 16 times in this area; on four occasions the eggs were destroyed, once the broods were destroyed. The average annual production of young by the colony is about 1200. The birds are apparently permanent residents. Normal clutch is two. The only natural enemy is *Larus argentatus michahellis* Naumann which takes young up to the age of one month. This book is of particular importance in view of the fact that the breeding of this species in Camargue has not heretofore been generally accepted. The author's data, in addition to establishing the breeding status of the population, indicate that it is reproductively self-sustaining. Interestingly the author found only mud in the digestive systems of the birds and suggests that the organic material therein is the source of food. This is an important book and should become a part of the library of all serious students of ornithology.—D. S. F.

85. A Study of a Group of Penguins of Known Age. L. E. Richdale. 1949. Dunedin, N. Z. Otago Daily Times & Witness Newspapers Co. 88 pp. 12/6 or 10/ from author, 23 Skibo St., Kew, Dunedin, S. W. 1. After twelve years of intensive study of a population of Yellow-eyed Penguins, *Megadyptes antipodes* (Hombron and Jacquinot), on the Otago Peninsula, Mr. Richdale speaks with authority. Fifty pages are devoted to facts about the 460 penguins banded as young—their history as juveniles and later as adults: this information is summarized in no less than 56 tables. In a final section general problems are discussed and pertinent literature on both non-passerines and passerines reviewed. Some of the subjects are: return of young birds to place of hatching, influence of age on breeding biology, inbreeding in the wild state, factors causing the formation of a new breeding station and the onset of breeding at the breeding station. The place of hatching and parentage of 162 individuals was known. "Of the 398 fledglings which entered the sea, 24 percent have returned to breed on the Otago Peninsula." "Two-year-old Yellow-eyed Penguins produce significantly lighter and narrower eggs than three-year-olds . . . in the fourth and fifth years maximum weight and width are reached." Interesting generalizations are made in regard to the influence of age on breeding biology in various birds: "(1) Breeding may commence in different species from the end of the first year to perhaps the end of the eighth year; (2) the onset of breeding, where there is a difference between the sexes, is earlier in females; (3) fertility among young birds, especially males, may be low; (4) in young birds the clutch-size tends to be less than for older birds."

With these penguins and with petrels, juveniles molt at the same time as adult unemployed birds, while parents molt later. Inbreeding in the wild state seems seldom to occur, but when it does happen it does not seem to be deleterious; only one case was found with the penguins, brother and sister mating. There are ten fine photographs by the author, a species index and excellent subject index. In the acknowledgements Mr. Richdale writes: "My last, but not least, tribute is to the Trustees of the Dunedin Savings Bank, who so magnanimously made available a substantial grant towards the cost of producing this monograph. Without such enlightened assistance publication would have been impossible and the data assembled herein would have remained forever buried in my field notes." Such a fate would have meant a loss to science. This careful, scholarly study is warmly recommended to all biologists.—M. M. Nice.

86. Waterfowl of Japan. Oliver L. Austin, Jr. 1948. Report No. 118, Natural Resources Section, General Headquarters, Supreme Commander for the Allied Powers. May be purchased from the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C. This report summarizes the available information, primarily for the use of Occupation officials in their administration of waterfowl resources as an adjunct of the Japanese economy. It is based on a review of the published literature, on hitherto unpublished banding and kill records from the files of the Ministry of Agriculture, and on 30 months of

fieldwork by Occupational personnel. An annotated list of the 40 species known from the islands is followed by sections on distribution, methods of waterfowling, and population trends. Seven species are accidental, one species breeds commonly and four more in limited numbers toward the north, and the remainder are winter residents; thus Japan is essentially a wintering ground for waterfowl raised on the tundras of Siberia. From an original condition of great abundance, stocks have been declining for about 100 years; all geese are either gone or too scarce to be of economic importance, and waterfowling is centered on at most a dozen species of ducks. Netting, decoying, and liming are more widely practised than shooting, and the account of these methods, amplified by sketches and photographs, will interest American workers in management. The report as a whole is well planned, concise but adequate, and agreeably illustrated with small drawings and silhouettes by Japanese artists. Incidentally, the fact that this is No. 118 in a series of similar Natural Resources reports and preliminary studies, which are listed on the back pages, testifies to the thoroughgoing nature of the Occupation of Japan.—Joseph A. Hagar.

87. Fieldbook of Natural History. E. Laurence Palmer. 1949. McGraw Hill, 330 West 42nd Street, New York 18, x+664 pp. $5. This amazing volume contains condensed descriptions of more than 2000 items of natural history—stars, minerals, plants, and animals. For all species of plants and animals included scientific and common names are given. Most species are illustrated. Worthy of particular commendation is the inclusion of domestic and introduced species in their respective systematic positions with notes on their origins and affinities. Although numerous suggestions will doubtless be forthcoming in respect to the species included, it appears that the selection is perhaps as reasonably representative as possible. The section on animals consists of 298 pages and includes 955 species; 111 pages are devoted to birds. For each species of bird there is a condensed description, brief statement of range, notes on ecology, description of nest and breeding habits, notes on economic value and status, notes on flight and migration, etc. This book must be evaluated in terms of the groups for whom it was prepared—lay students of natural history and teachers of natural history. For these, it will be a most useful tool. Actually its use may extend much farther, as a tool in elementary courses in ecology, field biology, etc. "In summary, the author has endeavored to write the kind of book he would have liked to have had available when he began the study of natural history as a youngster, as well as a book he can use now and in his old age to add the research and experience of others to what he may see for himself in his experiences with natural history." (p. viii.) The author appears to have succeeded notably well. This fieldbook will occupy a unique niche in the library of American biology.—D. S. F.

88. Pennsylvania Birds of Prey. R. D. McDowell and L. A. Luttringer. 1948. Pennsylvania Game Commission, Harrisburg, Pa. Paper. 32pp. 25 cents singly, 15 cents in lots of 20 or more. The object of this pamphlet is to help people to identify the birds of prey and "to understand in a general way the part they play in nature." Twenty hawks and owls are shown in flight and in repose, both in color and black and white, while charts demonstrate their food habits. Emphasis is placed on the fact that all are protected by law except the Great-Horned and Snowy owls and three Accipiters. Although Pennsylvania's disastrous experiences in the past with bounties on Goshawks is a classical example of the folly of this practice, nevertheless the Commonwealth at present has a bounty on this species. It is disappointing to find no mention of Hawk Mountain Sanctuary and the remarkable work done by Mrs. Edge in protecting these splendid birds. Let us hope that farmers and sportsmen will study this pamphlet and cease persecuting the birds of prey. The authors point out that man is the greatest enemy of wildlife. "The birds of prey from a numerical or destructive standpoint should be the least of our worries."—M. M. Nice.

89. Pennsylvania Birdlife. Hal H. Harrison. Undated. Pennsylvania Game Commission, Harrisburg, Pa. Paper. 72 pp. 50 cents singly, 40 cents in lots of 20 or more. An attractive pamphlet illustrated with six color plates by J. B. Abbot and over 100 of Mr. Harrison's splendid photographs—note particularly the Cowbird pictures on p. 46. In clear and readable style the author discusses the value of birds, how to study and how to attract birds and the con-

servation of birds. He then gives a brief checklist of the birds of Pennsylvania followed by thumb-nail sketches of 50 common birds of the Commonwealth. This pamphlet should do a great deal to arouse interest in birds in children and their parents.—M. M. Nice.

90. How to Know the Birds. Roger Tory Peterson. 1949. The New American Library of World Literature, Inc., 245 Fifth Avenue, New York 16, N. Y. x + 144 pp. 35 cents. This little book projects the author's unique technique of illustration and description to the level of the casual observer who has never previously employed a bird guide. Following a brief discussion of devices used in identifying birds in the field, there is a section on "The Families of Birds" in which, for each family, some of the common species are listed with, in each case, the identifying characteristics most useful in the field. Emphasis is placed on species of eastern United States. The section on habitats is quite effective and very appropriate for this type of book. There are 12 pages of silhouettes of common birds which should be useful to the beginner. Considering the limitations imposed by space, quality of paper, and general make-up of the book, the author has shown remarkable judgment in choice and presentation of material. I believe that there can be no doubt that this book will reach a large, previously uninterested, segment of the population, and will develop therein an interest and appreciation of birds. In this way it will be an important contribution to American ornithology and wildlife conservation.—D. S. F.

CORRECTION

Lines 9 and 10, p. 36, Vol. 18(1), January 1947. Should read: . . . . SSW and released. None returned. Two were retaken after 13 days at the release locality; two were found at the release place at 2.5 and five months respectively.

The Permanent Committee for International Ornithological Congresses has instructed the Ornithological Society of Sweden to organize the 10th International Ornithological Congress. It is to be held at Uppsala on June 10th-17th, 1950.

According to the preliminary program the opening of the Congress will take place on Saturday, June 10th, at 2 p.m. Sunday, June 11th, will be devoted to an all-day excursion; June 12th-17th to Congress discussions as well as another all-day excursion and an afternoon tour. Before and after the Congress, excursions will be arranged to various parts of Sweden.

Ornithologists from all countries are cordially invited to attend. The Congress fee is 25 Swedish crowns, and applications should be sent in before the end of February, 1950. Applicants will be furnished with a detailed program.

At the Congress a few survey lectures will be held by lecturers specially invited. Other members may also lecture or give short announcements.

A preliminary invitation to the Congress will be distributed very soon through representatives in every country, and can also be obtained from the following address: 10th International Ornithological Congress, Uppsala, Sweden.

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