

of at least three, which, at the time, were traveling westward at an approximate rate of two miles per hour through a rather dense stand of Mountain Hemlock, *Tsuga Mertensiana* (Bong.) Sargent, in the manner characteristic of this species of jay in late summer. One of the specimens, University of Kansas Museum of Natural History Number 23499, had on its leg Biological Survey band number A283458. Mr. F. C. Lincoln kindly supplied the information that this band had been issued to Mr. W. T. Frost, formerly of the ranger staff of Crater Lake National Park. According to Mr. Frost's data this Gray Jay was banded as an adult at Annie Spring on 27 December, 1937. It was retrapped nine times on that day and four times on the following day. A yellow band was placed on its leg for sight identification. This yellow band had been lost by the time of the above described recovery. This recovery is of interest not only because of the age of at least nine years attained by this bird but also because of its proximity at the time of recovery, one and one-eighth miles, to the banding locality.—D. S. FARNER, Museum of Natural History, Lawrence, Kansas.

**A White-throated Sparrow Return.**—On October 26, 1946, I retrapped in our garden at 29 Chestnut Street, Salem, Massachusetts, a White-throated Sparrow (*Zonotrichia albicollis* (Gmelin)) banded No. A150515 at the same spot by me on December 16, 1945. The bird was in a plumage intermediate between the winter or immature and adult when banded and was in adult plumage when retrapped. This example had not been trapped by me from the time it was banded until the return record was made. As only one other of this species was banded in the fall of 1945 and none until this autumn of 1946, this represents a fifty per cent return ratio of birds banded the preceding season. The return bird is undoubtedly a winter resident in the area.

Although this return offers no strikingly unusual features, owing to the relative scarcity of returns taken for this form, I have been advised to put it on record. I had a previous return for the species at the same spot some years ago.—BENJAMIN SHREVE, 29 Chestnut Street, Salem, Massachusetts.

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## RECENT LITERATURE

Reviews by Donald S. Farner and others

### BANDING

**1. Results of Bird-Banding Activities under the Auspices of the Rijksmuseum van Natuurlijke Historie te Leiden, XXIX.** (Resultaten van het ringonderzoek betreffende den vogeltrek, ingesteld door het Rijksmuseum van Natuurlijke Historie, XXIX.) G. C. A. Junge. 1942. *Limosa*, 15(1/2): 19-27. This is a summary of bird-banding activities for 1941 including also a few previously unreported records from earlier years. Among the interesting records are those of ten Cormorants, *Phalacrocorax carbo sinensis* (Shaw and Nodder), banded during the breeding season from 1929 to 1937, all recovered at the banding locality during the breeding season of 1941. A Purple Heron, *Ardea purpurea* L., banded as a juvenile bird in Holland in June, 1935, was shot in Italy in March, 1941. A Moorhen, *Gallinula chloropus* (L.) was banded at Stein 2 February 1937, and was found dead at this locality 3 March 1941. Two Lapwings, *Vanellus vanellus* (L.), banded as young in 1938 and 1940 respectively were recovered at the banding locality during the breeding season of 1941. A Swallow, *Hirundo rustica* L., was banded as a juvenile bird at Voorschoten 4 August 1935 and recovered dead at Wassenaar 3 May 1941. A Song Thrush, *Turdus ericetorum* Turton, was banded at Hilversum 22 May 1937 as a juvenile bird and was found dead at

the same locality 30 May 1941. A Marsh Tit, *Parus palustris longirostris* Kleinschmidt, was banded 4 February 1934 at 's Graveland and was retrapped there 16 April 1936, 7 December 1936, 4 January 1938, 28 January 1938, and then trapped at Oosterhout, North Brabant 2 March 1941. A Carrion Crow, *Corvus corone* L., was banded at Hilversum 16 May 1937 and was found dead in the same month at the same locality in 1941. In 1941, in the Netherlands, 7,882 birds were banded as a result of the banding program of the Rijksmuseum. Most numerous were the Lapwings of which 1,019 were banded. Others banded in considerable numbers were as follows: Little Bittern, *Ixobrychus minutus* (L.), 106; Black-headed Gull, *Larus ridibundus* L., 321; Black Tern, *Chlidonias niger niger* (L.), 172; Song Thrush, 134; Blackbird, *Turdus merula* L., 212; Starling, *Sturnus vulgaris* L., 1,083.—D. S. F.

**2. Results of Bird-Banding Activities under the Auspices of the Rijksmuseum van Natuurlijke Historie te Leiden, XXX.** (Resultaten van het ringonderzoek betreffende den vogeltrek, ingesteld door het Rijksmuseum van Natuurlijke Historie te Leiden, XXX.) G. C. A. Junge. 1943. *Limosa*, 16(1/2): 38-46. This is a summary of bird-banding activities for 1942. Among the interesting records is that of a Little Bittern, *Ixobrychus minutus* (L.), banded 19 June 1940 at Reeuwijk and recovered 1.5 km. from the banding locality 19 July 1942. A Herring Gull, *Larus argentatus* Pontoppidan, banded 18 July 1926 at Haamstede in the Netherlands was recovered in a trap near Antwerp 5 February 1942. Four Pied Flycatchers, *Muscicapa hypoleuca* (Pallas), including three females and one male, banded during the breeding season of 1941 at Wierden were retrapped and released during the breeding season of 1942 at the same locality. In 1942, in the Netherlands, 5,151 birds were banded. The Chaffinch, *Fringilla coelebs* L., was the most frequently banded species, 1,346 being banded during the year. Other species banded in considerable numbers are as follows: Siskin, *Carduelis spinus* (L.), 254; Linnet, *Carduelis cannabina* (L.), 254; Starling, *Sturnus vulgaris vulgaris* L., 493; Black-headed Gull, *Larus ridibundus* L., 252; and Lapwing, *Vanellus vanellus* (L.), 668.—D. S. F.

**3. Results of Bird-Banding Activities under the Auspices of the Rijksmuseum van Natuurlijke Historie te Leiden, XXXI.** (Resultaten van het ringonderzoek betreffende den vogeltrek, ingesteld door het Rijksmuseum van Natuurlijke Historie te Leiden, XXXI.) G. C. A. Junge. 1944. *Limosa*, 17(1): 18-25. This paper summarizes the bird-banding activities for 1943. A very interesting record is that of a Honey-Buzzard, *Pernis apivorus* (L.), banded at Zeddum in the Netherlands 6 August 1932 and shot at Vällen Lake, near Upsala, Sweden, 21 August 1943. A Coot, *Fulica atra* L., banded at De Cocksdrop 12 July 1938 was recovered at the same locality 10 November 1943. A Lapwing, *Vanellus vanellus* (L.), banded at Vogelenzang in the Netherlands 11 June 1927 was shot about 25 September 1943 on the beach at Raposa, Portugal. A Short-eared Owl, *Asio flammeus* (Pontoppidan), banded 6 June 1930 at Ameland was found dead near the banding place 19 March 1943. A Song Thrush, *Turdus ericetorum* Turton, banded 16 May 1931 at Santpoort was recovered dead at Maurik, also in the Netherlands, early in November 1943. A curious record is that of a Blackbird, *Turdus merula* L., banded at Aerdenhout in the Netherlands 10 June 1942 and captured at Egersund, Norway, 11 January 1943. A Sky Lark, *Alauda arvensis* L., banded at Esschen 13 October 1931 was captured and released at Haarlem 22 June 1943. The total number of birds banded under auspices of the Rijksmuseum in 1943 in the Netherlands was 9,594. Of these, 2,356 were Starlings, *Sturnus vulgaris* L.; 1,513 were Chaffinches, *Fringilla coelebs* L.; and 778 were Linnets, *Carduelis cannabina* (L.).—D. S. F.

**4. Bird-Banding by the Museum of Natural History of Göteborg in 1942.** Göteborgs Naturhistoriska Museums ringmärkingar av flyttfåglar under

1942. L. A. Jägerskiöld. 1943. *Göteborgs Musei Årstryck* 1943: 69-83. During 1942 7,120 birds were banded by 56 cooperators. During 1941 there were 7,917 banded by 59 cooperators. Species banded in greatest numbers in 1942 were the Willow Warbler, *Phylloscopus trochilus* (L.), 208; Pied Flycatcher, *Muscicapa atricapilla* L., 1,118; Great Tit, *Parus major* L., 320; House Martin, *Chelidonaria urbica* (L.), 458; Sand Martin, *Clivicola riparia* (L.), 331; White Wagtail, *Motacilla alba* L., 204; Starling, *Sturnus vulgaris* L., 476; Black-headed Gull, *Larus ridibundus* L., 664. During 1942 bands were placed on 109 species. One hundred and six recoveries and returns for 1942 of birds banded in Sweden are reported. Also recoveries of five birds banded in other countries are recorded. A House Martin banded 13 July 1940 at Djupasand, Aneboda, Småland was recovered 10 km. south of the banding locality 7 July 1942. Starlings banded in Sweden were recovered in July and August in Denmark and in winter in England and Scotland.—D. S. F.

**5. Bird-Banding by the Museum of Natural History of Göteborg in 1943.** (Göteborgs Naturhistoriska Museums ringmärkingar av flyttfåglar under 1943.) L. A. Jägerskiöld. 1944. *Göteborgs Musei Årstryck* 1944: 73-88. In 1943 there were 7,317 birds banded by 78 cooperators. Species banded in greatest numbers were the Fieldfare, *Turdus pilaris* L., 230; Redstart, *Phoenicurus phoenicurus* L., 228; Whinchat, *Pratincola rubetra* (L.), 203; Willow Warbler, *Phylloscopus trochilus* (L.), 240; Pied Flycatcher, *Muscicapa ficedula* L., 1,073; Great Tit, *Parus major* L., 439; House Martin, *Chelidonaria urbica* (L.), 477; Swallow, *Hirundo rustica* L., 245; White Wagtail, *Motacilla alba* L., 286; and Starling, *Sturnus vulgaris* L., 589. Bands were placed on 116 species. One hundred and twenty-six recoveries and returns of birds banded in Sweden are reported for 1943. Six records of birds banded in other countries and recovered in Sweden are reported. A Song Thrush, *Turdus musicus* L., banded 20 June 1942 at Ormängen, Gränsjön, Värmland was recovered at the banding locality 4 June 1943. A Fieldfare banded at Svalnäs, Djursholm 31 May 1942 was recovered at the banding locality 16 June 1943. A House Martin banded 7 July 1942 at Myckelmåsa, Simonstorp, Östergötland was recovered 17 km. west of the banding locality 31 July 1943. A Swallow banded at Lillasäte, Höör, Skåne 8 July 1938 was retaken 7 May 1943 at 4.2 km. southwest of the banding place.—D. S. F.

**6. Bird-Banding by the Museum of Natural History of Göteborg in 1944.** (Göteborgs Naturhistoriska Museums ringmärkingar av flyttfåglar under 1944.) L. A. Jägerskiöld. 1945. *Göteborgs Musei Årstryck* 1945: 74-89. In 1944 there were 10,104 birds banded by 89 cooperators. Bands were placed on 137 species. Among the species banded in large numbers were the Fieldfare, *Turdus pilaris* L., 551; Pied Flycatcher, *Muscicapa atricapilla* L., 1,785; Great Tit, *Parus major* L., 1,034; Sand Martin, *Clivicola riparia* (L.), 292; Swallow, *Hirundo rustica* L., 305; White Wagtail, *Motacilla alba* L., 354; Starling, *Sturnus vulgaris* L., 1,001; Lapwing, *Vanellus vanellus* (L.), 144; and Black-headed Gull, *Larus ridibundus* L., 345. Eighty-three returns and recoveries of Swedish-banded birds are recorded. A female Redstart, *Phoenicurus phoenicurus* (L.) was banded 2 km. southeast of Ed, Dalsland, 3 June 1943 and was retaken at the same place 24 June 1944. A Pied Flycatcher banded at the same locality 6 June 1943 was recovered at the banding locality 12 June 1944. A Swallow banded 23 June 1943 at Rydgoholm, Västergötland, 23 June 1943 was recovered about 10 km. from the banding locality 13 June 1944. From 1911, when bird-banding was begun, to 1944, 146,502 birds have been banded. There have been 4,380 recoveries and returns. Greatest numbers of returns and recoveries have come from the common Gull, *Larus canus* L., 1,035; and the Black-headed Gull, 1,257.—D. S. F.

**7. Results of Ringing Black-headed Gulls Wintering in and Migrating through Switzerland.** (Ergebnisse der Beringung in der Schweiz überwintern-

der und vorbeziehender Lachmöwen.) Lukas Hoffman. 1945. *Der Ornithologische Beobachter*, 42(6/7): 73-97. Based on 552 returns and recoveries of *Larus ridibundus* L., also on some 700 Gulls marked with color on wings and tails (See No. 23, Burckhardt, 1945). The Black-headed Gulls that migrate through and winter in Switzerland nest in the countries to the north and east—Sweden, Russia and Denmark being the farthest limits. Many spend the whole winter in the same place, some in a very small area, while others range throughout a city; some may fly 15 to 420 kilometers to another lake, then return shortly. Some come back year after year to the same place, as many as five years in Zürich and Geneva; others are found in entirely different localities. Fourteen Gulls were older than 10 years, three of them at least 14½ years. The greatest age for a banded Gull of this species is 25 years (Cerny, *Der Vogelzug* 1939). A splendid example of utilizing banding data.—M. M. Nice.

**8. Capture of Adult Ground-Nesting Birds on the Nest for Ringing Purposes.** Fr. Haverschmidt. 1946. *Dansk Ornithologisk Forenings Tidsskrift*, 40(2): 97-107. James Schenk, former director of the Royal Hungarian Ornithological Institute, showed the author his methods of capturing waders on the nest with clapnets. Although able to spend only a little time capturing birds in Holland, Fr. Haverschmidt obtained some interesting results. A Black-tailed Godwit, *Limosa limosa* (L.), caught on the nest in 1929 was taken two years later in almost the same place; another was taken three years later. A breeding Avocet, *Recurvirostra avosetta* L., captured on its nest in 1929 was found killed by a stoat beside its nest 30 kilometers from its former breeding place. Two Oystercatchers, *Haematopus ostralegus* L., ringed in June 1930 as breeding birds on their nests, in August 1937 were found dead in the same place, killed by eating poisoned eggs. "In this bird sanctuary the Oystercatcher developed the bad habit of killing and eating the eggs and chicks of terns (*Ardea* 20: 176. 1931.) whereby they were becoming a great menace to the tern colonies." Poisoned eggs kept them in check. The author suggests that systematic ringing of all the adults and young in small settlements of terns will yield the best results.—M. M. Nice.

## MIGRATION

**9. Astronomy and Ornithology.** William A. Rense. 1946. *Popular Astronomy*, 54(2): 1-19. In this paper the author describes how, with two observers, a recorder and two telescopes (15 to 30 power), and a small amount of other equipment, it is possible to obtain data on height of migration, average direction of migration, and density of migration. This is a tool with almost unlimited possibilities for the study of bird migration.—D. S. F.

**10. The Occurrence and Migration of the Sheld Duck with Reference to Field Observations on the Gooise Coast.** (Voorkomen en Trek van de Bergeend, *Tadorna tadorna* (L.), naar aanleiding van veld-observaties aan de Gooise kust.) J. Hoogerheide and W. K. Kraak. 1942. *Ardea*, 31(1/2): 1-19. Adult Sheld Ducks disappear from the area in June-July and reappear in October and November. The period of absence coincides with the molting period at which time the adults are unable to fly. Banding data show that these adult birds, together with adults from Scotland, Sweden, England, and Germany congregate in the "Deutsches Bucht" area of northwestern Germany where they molt. The authors find in their data no indication of a true autumn migration in the case of the adults and assume if such does occur that it is far less important than the "migration" to the molting area. The authors are further inclined to believe that after the molt the adults return to the breeding places. The young do not "migrate" to the molting area but may show some type of true fall migration since they disappear from the coast in the fall.—D. S. F.

**11. Homing of Free-living Starlings Transported away after a Year's Captivity at their Home.** (Ueber das Heimfinden freilebender Stare bei Verfrachtung nach einjähriger Freiheitsentziehung am Heimatort.) Werner Rüppell und Wilhelm Schein. 1941. *Der Vogelzug*, 12(2/3): 49-56. Eleven Starlings, actually breeding or with the breeding urge, and with migratory experience, were transported 114 km. SSW and released. Six (55 percent) returned during the same spring. Fifteen young Starlings, raised in captivity and without migratory experience, were transported, after a year's captivity at their birthplace, 114 km. SSW and released. Two returned after 13 days; two others returned after 2.5 and five months respectively. Thirty free-living adults with migratory experience were transported after a year's captivity at the "home" locality, 114 km. SSW and released. Seventeen (57 percent) returned during the same spring. The first returned in three days. "Bearing in mind further consideration of the problem, the hypothesis of an action of the earth's magnetic field in distant orientation is ascribed less plausibility than the assumption that the orientation ability of migratory birds is to be attributed to an interaction, still unknown in detail, of sensory processes which are now known individually, but perhaps still unknown in the scope of their activity." (p. 56).—D. S. F.

**12. Migratory Relationships of the European Goldfinch.** (Zugverhältnisse des europäischen Stieglitzes, *Carduelis carduelis* (L.)) Ilse Grittner. 1941. *Der Vogelzug*, 12(2/3): 51-73. This paper is based on the analysis of 105 recoveries and returns of which 42 recoveries were at distances of more than 100 km. from a banding locality. Although considered as primarily non-migratory, at least a portion of the population is actually migratory. The migration is quite regular and in the usual southwesterly direction characteristic of migratory birds in Germany. Most of the migration appears to be to Belgium although there are recoveries also from southern France and Spain. Birds banded as adults and recovered dead had an average age of one year, three and one-half months; those banded as young and recovered dead had an average age of about one year. As a cage bird this species has been known to live as much as 15 to 19 years. One Goldfinch was recovered the day after banding about 100 km. from the banding locality. Another was recovered after six days 170 km. from the banding locality. A third traveled 260 km. in no more than 11 days.—D. S. F.

**13. The Migration of the Woodcock in Russia.** (Ueber den Zug der Waldschnepfe (*Scolopax rusticola*) in Russland.) H. Grote. 1941. *Der Vogelzug*, 12(2/3): 73-80. The principal migratory route is along the west coast of the Caspian Sea, lower Volga River Valley and thence along the Ural Mountains. A much less important route passes along the east coast of the Caspian Sea. There is also a migration northward in the valleys of the Dnepr and Don rivers.—D. S. F.

**14. The Autumn Migration at two Places in Southern Finland and its Dependence on External Factors.** (Der Herbstzug an zwei Orten in Südfinnland und seine Abhängigkeit von äusseren Faktoren.) Lars von Haartman and Göran Bergman. 1943. *Acta Zoologica Fennica* 39. 33 pp. The data on which this paper is based were gathered by means of observations at two localities. "Schärenhof von Esbo SW Helsingfors" and "Gut Lemsjöholm im Kirchspiel Askais W Åbo," mostly in September and October 1946. The paper contains a wealth of interesting observations although in general they do not allow many definite conclusions to be drawn. Except in isolated instances the authors were unable to show positive correlations between increased intensity of southward migration and cold weather *per se*. Among the exceptional cases are an instance of increased migratory density of the Siskin, *Carduelis spinus* (L.); a southward invasion of the Redpoll, *Carduelis flammea* (snow and cold weather in northern Finland); an increase in migration density of the Hooded Crow, *Corvus cornix* L.

(cold weather and snow). The authors place more emphasis on the effect of weather on migration through the operation of high and low areas and cold fronts of atmospheric pressure. Data are cited showing marked increases in the observed numbers of migrating passerine birds with the passage of a cold front. Data are presented on directions of migration including variations and anomalies thereof.—D. S. F.

**15. A New Contribution to the Knowledge of the Southern Boundary of the Winter Range of German Swallows.** (Ein neuer Fund zur Kenntnis der Südgrenze des Winterquartiers deutscher Rauchschwalben (*Hirundo rustica*.) E. Schüz. 1941. *Der Vogelzug*, 12(2/3): 80-82. The author discusses the circumstances concerning the recovery of a note bound to the foot of a Swallow. This note consisted of two lines, the first, "Grüsse meine teure deutsche Heimat!" and the second, in addition to a name, "Otawi D. S. W. Afrika." If this proves to be genuine it will be the most southern record for German-banded swallows.—D. S. F.

**16. The Migratory Route of the German Swallow over the Mediterranean Sea.** (Zum Zugweg deutscher Rauchschwalben (*Hirundo r. rustica* L.) über das Mittelmeer in die Heimat.) R. Drost. 1942. *Der Vogelzug*, 13(3/4): 133-134. This is an interesting account of a Swallow to which was attached a note by an Italian soldier on 8 March 1942 while on the Island of Linosa (35°50' N, 12°05' E) south of Sicily. The bird was recovered as a breeding bird on 24 April 1942—or a few days earlier—at Teisendorf (47°32' N, 12°49' E) in upper Bavaria.—D. S. F.

**17. The Invasions of 1942.** (Von den Invasionen 1942.) R. Drost and E. Schüz. 1942. *Der Vogelzug*, 13(3/4): 140-152. The fall of 1942 was a season of invasions by more northern and northeastern species into central Europe. There was an extensive invasion of Crossbills, *Loxia curvirostra* L., southward and westward as far as the Netherlands. Considerable numbers of the Great Spotted Woodpecker, *Dryobates major* (L.), appeared in East Prussia and in smaller numbers at Helgoland, and in strikingly larger numbers than usual in the Harz Mountains. Other invaders were the Coal Tit, *Parus ater* L.; the Nutcracker, *Nucifraga caryocatactes* (L.); the Jay, *Garrulus glandarius* (L.); the Long-Tailed Tit, *Aegithalos caudatus* (L.); the Siskin, *Carduelis spinus* (L.); the Twite, *Carduelis flavirostris* (L.); the Waxwing, *Bombycilla garrulus* (L.); the Pine Grosbeak, *Pinicola enucleator* (L.); the Fieldfare, *Turdus pilaris*; the Long-Tailed Jaeger, *Stercorarius longicaudus* Vieillot; the Parasitic Jaeger, *Stercorarius parasiticus* (L.); and the Rough-legged Hawk, *Buteo lagopus* (Pontopiddan). The appearance of the last three in unusual numbers is correlated with the abundance of lemmings.—D. S. F.

**18. The Fall Migration of the Swift, *Apus apus apus* L.** (Zum Wegzug unserer Mauersegler (*Micropus a. apus*.) B. Hoffmann. 1943. *Der Vogelzug*, 14(2/3): 76-77. Three observations, 23 July 1915, 5 August 1942, and 11 August 1942, on the beginning or early phase of fall migration of this Swift.—D. S. F.

## PHYSIOLOGY

**19. Body Temperature and Insulation in Some Finnish Birds.** (Körpertemperatur und Wärmeschutz bei einigen finnischen Vögeln.) Pontus Palmgren. 1944. *Ornis Fennica*, 21(4): 99-103. Body temperatures, as measured by insertion of a thermometer in the esophagus immediately after the death of the bird, are recorded for thirteen species, all passerine except *Dryobates major* L. Highest temperatures were recorded in Crossbills, *Loxia curvirostra* L., 43.1° C. to 44.0° C.; lowest temperatures were found in *Parus cinctus* Boddaert,

34.6-39.8° C. These results are discussed in relation to body weight, total feather weight, and ratio of feather weight to body weight.—D. S. F.

**20. An Apparatus for Recording the Daily Rhythm in Caged Birds.** (Eine Anlage für Registrierung der Tagesrhythmik bei Käfigvögeln.) Pontus Palmgren. 1943. *Der Vogelzug*, 14(1): 12-18. This is a description of an ingenious apparatus designed to record the movements of a bird to and from, and on the perch in the cage.—D. S. F.

**21. Reeds as a Source of Food for Insectivorous Birds in Winter.** (Schilfrohr als Nahrungsquelle für insektenfressende Vögel im Winter.) F. Tischler. 1943. *Der Vogelzug*, 14(2/3): 69-71. The probable importance of this source of food is indicated in view of the large numbers of Lepidoptera larvae, beetles, and Diptera harbored therein.—D. S. F.

### BEHAVIOR

**22. The Sage Grouse Dance.** E. Z. Rett. 1946. *Santa Barbara Museum of Natural History, Museum Leaflet*, 21(4-6): 39-45. This is a very interesting account of some observations made on the dance of *Centrocercus urophasianus* (Bonaparte) in Mono County, California. It contains interesting data on spacial relations relative to this phenomenon. "In the area where we worked, which was roughly one mile square, we found four strutting grounds. These places varied from a small clearing 150 feet across to the big meadow where we made most of the observations." "It was about 5:20 A.M. and he counted 108 males strutting on the meadow and there were many more in the sage brush (*Artemisia*). He estimated there were about 300 birds in sight. . . . They begin strutting when it is still dark." There is a rather detailed account of the behavior of the males during strutting. Generally the males were in the open while strutting, although at some of the smaller flats they were observed to strut in the brush. The observations concerning the behavior of the birds when the strutting was interrupted by the appearance of predators are interesting. "One morning while waiting for the sun to come up so as to get pictures, we counted 95 birds on the flat strutting and popping away. All at once all activity ceased and every bird crouched close to the ground with head extended so that each resembled a little hummock. The reason for this was a Golden Eagle (*Aquila chrysaetos*) circling above us. In a few moments all but three birds flew off into the brush-covered hills that surrounded the meadow. After about ten minutes the three birds began to strut and the others started flying back. We left at 6:45, but all the birds that were there previously had not returned. The eagles evidently get a considerable number of these grouse as we found patches of feathers all over the flat where birds had been killed." "The Morning of April 21, we arrived at the meadow at 5 o'clock. Not a Sage Grouse was in sight, but out in the flat were two Golden Eagles. As soon as we stopped the car they flew off. We went away and returned about an hour later and found twenty birds strutting. As we came in sight of the flat a coyote ran across it, and immediately all the birds crouched. As soon as the coyote ran over the hill that borders the north side of the meadow, the grouse started strutting again." During the strutting the males pay no attention to the females and vice versa. Once 95 birds were counted, of which only five were hens. Of the males only six fought, there being apparently little aggressiveness among the males during strutting. Most of the birds fly to the strutting area either singly or in small bunches from two or three to a dozen. Some walk. A flight of four miles to the strutting area was observed.—D. S. F.

**23. Gull Observations in Basle.** (Möwenbeobachtungen in Basel.) Dieter Burckhardt. 1944. *Der Ornithologische Beobachter*, 41(5): 49-76. Valuable study largely of Black-headed Gulls, *Larus ridibundus* L. (See No. 7, Hoffmann,

1945.) Some 700 of the birds were colored on wings and tail, the change in appearance being ignored by the other gulls. Individuals were found to be rather strictly bound by space-time relationships; most stayed in circumscribed areas throughout the day and joined and left the communal roosting places according to the degree of light. In contrast to the situation on the breeding grounds, birds did not know each other personally and *no peck order existed*. Although highly social, especially in the air, they are "distance-animals," each insisting on a certain amount of space between itself and its neighbors. Examples are given of "social-attack," which is stimulated by a certain cry, and of substitute behavior when quarreling over food or perches, while photographs show many instinctive actions, such as stretching, bathing, etc. Eight different cries are distinguished. Comparisons are made with other wintering gulls. A paper full of careful, detailed observation of behavior with stimulating discussion and interpretation.—M. M. NICE.

**24. Note of Willow-Warbler.** R. H. Brown. 1946. *British Birds*, 39(9): 279-280. The "queer chittering note" of *Phylloscopus t. trochilus* reported by Smith and Butlin (see reviews Nos. 14 and 15, *Bird-Banding*, 17: 173, 1946) and by Kuusisto (No. 40) was heard in the presence of a Tawny Owl (*Strix aluco sylvatica*). This would seem to correspond with the note of "fright"—tik-tik-tik—in the Song Sparrow.—M. M. NICE.

**25. On the Territory of the Dipper in the Winter of 1943-44 on the Aare near Bern.** (Ueber die Territorien der Wasseramsel, *Cinclus cinclus* (L.), im Winter 1943/44 an der Aare bei Bern.) Walter Vogt. 1944. *Der Ornithologische Beobachter*, 41(3/4): 36-43. Description of very definite territorial boundaries, with map of winter territories and discussion of behavior of these and other birds at different distances from an approaching person. The Dipper sings in winter to proclaim territory. It is not clear to the reviewer whether or not these territories are held by pairs or individuals.—M. M. NICE.

**26. "Injury-Feigning" of Blackbird.** G. Beven. 1946. *British Birds*, 39(8): 248. This behavior, rarely seen in *Turdus merula* L. was noted on one occasion where it saved the life of a young bird. A cat was bounding after a fledgling "when the adult male suddenly appeared, went right down in front of the cat and fluttered as if injured, just above the ground a yard or so ahead. This drew the cat off most successfully, so that the youngster reached shelter." The cat went to a bush apparently containing another young bird, whereupon "the cock swooped down at it to within an inch or so."—M. M. NICE.

**27. "Anting" by Magpies.** E. Reynolds. 1946. *British Birds*, 39(10): 313. Two *Pica p. pica* (L.) collected "ants in their beaks and, raising their wings, tail and breast-feathers, etc., wiped the ants under the feathers until they were well covered."—M. M. NICE.

**28. Song of Female Greenfinch.** I. J. F. Lees. 1946. *British Birds*, 39(8): 244. A female *Chloris ch. chloris* L. sang while standing over young. "The song was far more tuneful and far sweeter than the average Greenfinch's song and took the form of a slow, drawn-out warble, which quickened into a twitter at the end."—M. M. NICE.

## LIFE HISTORY

**29. The Relationship between Migration and the Breeding Biology of Birds.** (Beziehung zwischen dem Zug und der Brutbiologie der Vögel.) Friedrich Kipp. 1943. *Journal für Ornithologie*, 91(1): 144-153. Of 41 species of birds which migrate relatively short distances such as to the Mediterranean region, western France, or England, 28 normally have two broods per year, eight



have two or three, and seven have only one. These species are able to spend a relatively long period in the breeding region. For birds which migrate to South Africa, however, the time spent in the breeding area is shorter and there is only one brood per season. Within each of the genera *Anthus*, *Motacilla*, *Phylloscopus*, and *Saxicola* there are numbers of both groups. The line of separation between the two groups is 20 to 22 weeks in the breeding area. Those which stay longer usually have two broods or more; those which stay less usually have a single brood. However, *Acrocephalus arundinaceus* and some other species which spend only about 20 weeks in the breeding area also have two broods. However, in these the second clutch is begun before the young of the first clutch are independent. Swallows, despite their long migration to South Africa, are able to spend 23 to 25 weeks in the breeding area and have two broods per season. In isolated instances two broods per season may occur even in a relatively short residence in the breeding area due to small clutch size. Thus Goatsuckers in about 16 weeks have two clutches of two eggs each. "We can thus propose the following *migration-breeding rule* (Zug-Bruten Regel): The period of time in breeding area and the number of broods per season are harmoniously integrated. In a period of residence in the breeding area of more than five months, as also among the permanent residents, two broods annually occur; for shorter periods, on the other hand, almost always there is a single breeding cycle per season. The relation between the period of residence in the breeding area and the number of broods appears understandable without further explanation. Much more astonishing, on the other hand, is the following fact: The clutches of the migratory birds with one brood per season shows no greater number of eggs than the clutches of the species of the same genera which have two broods per breeding season. . . . The above-established rule can therefore be extended: With a summer residence in the breeding area of less than five months there occurs only a single brood without an increase in number of eggs per clutch over that of related species with more broods. We come, therefore, to the surprising conclusion that the number of eggs and hence the number of offspring which are necessary for the maintenance of the species is, for the highly developed migratory birds, a great deal smaller, that is, about one half as great as in the cases of non-migratory species or species with short migrations." (p. 148). The author then states that the frequent assumption that migrating birds sustain greater losses is erroneous. This is explained by the assumption that the tropics and subtropics, where the birds which make long migrations spend the winter, and the migrations themselves, actually provoke smaller losses than do the rigors of the winters in the breeding areas or in nearby winter areas. As supporting evidence, the author points out the generally smaller clutches of species which breed in the tropics. These are extremely interesting ideas which in general, are well supported by the tabulated data. Certainly, in some instances at least, there are rather sweeping generalizations which might not stand up under critical examination. Nevertheless, the ideas are stimulating and deserving of careful consideration. An examination of the breeding species of the northern United States from this point of view would be of interest. The author also discusses at considerable length the *symmetry of the length of residence in the breeding area*, i.e. the ratio of time before, to the time after solstice, spent in the breeding area. Among those species, cuckoos for example, whose complete molt occurs in winter, fall migration begins closer to solstice than arrival in spring.—D. S. F.

**30. On the Breeding Habits of the Snow Finch.** (Ueber die Brutgewohnheiten des Schneefinken *Montifringilla n. nivalis* (L.).) E. M. Lang. 1946. *Der Ornithologische Beobachter*, 43(3): 33-43. Results of seven winters of banding Snow Finches in the Urserntal with observations on five pairs in nesting boxes. The male plays an important part in the choice of the nesting site; one was seen to slip in and out of many holes while his mate stood passively by; finally he sang inside of one cavity, his mate followed him and they spent a long time inside.

The female builds the nest and incubates the eggs. Six sets, measured as laid, showed no regular increase or decrease in size. The eggs out of one nest were taken as laid to see whether the bird would keep on laying; after the fourth egg the pair deserted. Before copulation the male circles singing around his mate, alighting after a gliding spiral, displaying the white secondaries, wing coverts and tail feathers. The male calls his mate off the nest during incubation; this lasts 13-14 days, not 18 as reported by others. The young increased in weight from 2.5 grams at hatching to 31.5 grams at eleven days; eyes opened at four days. Fledging takes at least fifteen days. A hand-raised bird went through bathing motions in Frau Lang's hair when it was loose; on the 24th day it made copulatory motions on people's hands, resuming this behavior at six weeks.

The averages of 224 weights were as follows: Oct. 34.5 grams (two birds); Nov. 36.5 (9); Dec. 44.7 (57); Jan. 44 (47); Feb. 42.3 (60); Mar. 41.3 (18); Apr. 36.9 (14); June 37.6 (15); July 37 (2). Snow Finches are not migratory, although they move to some extent up and down the mountains according to the weather. Although the author states there was no sex difference in weight, he did find definite difference in wing measurements, males averaging about 124 mm., females about 117. He also found that wing length increases with age.—M. M. NICE.

**31. The Magpie in the Sempach Lake Region.** (Aus dem Leben der Elster im Sempacherseegebiet.) Jak. Huber. 1944. *Der Ornithologische Beobachter*, 41(1/2): 1-7. In 1926 *Pica pica* (L.) was a rare bird in the Sempach Lake region; now it has much increased. In winter Magpies roost together in willows and alders by the lake and fly six to seven kilometers to their feeding grounds. By the end of February pairs take up their territories; both birds build covered breeding nests and sleeping nests, often in the same or neighboring trees, but occasionally as far apart as 400 meters; the male does most of the work on the sleeping nest. First sets ordinarily contain six to eight eggs, but in four years when cockchafers (June bugs) were abundant some contained eight to ten eggs.—M. M. NICE.

**32. Contribution to the Knowledge of the Breeding Biology of the Nuthatch.** (Beitrag zur Kenntnis der Brutbiologie des Kleibers (*Sitta europaea caesia*.) J. Bussmann. 1943. *Der Ornithologische Beobachter*, 40(5/6): 57-67. Many measurements are given of the growth of feathers, bill, etc., and changes in weight of the six young Nuthatches. Weight increased from three grams on the second day to 25-27 on the 16th day, then decreased to 23-24 grams on the 22nd day. Eyes opened at nine to twelve days. Feeding was recorded by the terragraph with the following results: 4th day 166 trips, 6th 255, 8th 263, 11th 215, 12th 287, 14th 263, 16th 276, 18th 353, 20th 335, 22nd 270. At many trips astonishing numbers of caterpillars, spiders, flies, and moths were brought; once the male carried eight caterpillars at once. The long fledging period (usually 24 days) is accompanied by more brooding than with most small passerines; on the 4th day the female was spending half the daylight hours on the nest, and on the 8th about a fifth, while brooding continued to some extent until the 20th day. At night she brooded until the 19th day. Sixteen days after leaving the nest the family were still together. A small boy helped the author by getting the young out of the cavity and back again; the parents stationed themselves on a limb over the boy, knocked pieces of moss and bark on top of him and finally flew to his head and pecked him.—M. M. NICE.

**33. Contribution to the Breeding Biology of the Nuthatch.** (Beitrag zur Kenntnis der Brutbiologie des Kleibers, *Sitta europaea caesia*.) J. Bussmann. 1946. *Der Ornithologische Beobachter*, 43(1): 1-5. Description and sketches of the plastering of the entrance and inside of a nest box by a female Nuthatch; she also carried in nesting material, while her mate proclaimed territory and

occasionally fed her. The nine eggs were incubated by the female and hatched in fourteen days.—M. M. NICE.

**34. Do Juvenile Birds Survive Less Well than Adults?** David Lack. 1946. *British Birds*, 39(9): 258-265. Farner (*The Wilson Bulletin*, 57: 58. 1945) in calculating longevity and life expectancy of the American Robin, *Turdus migratorius migratorius* (L.), based the calculations on the first November 1 of the bird's life. This date was selected in order to allow the banded juvenile and immature birds to become dispersed and hence avoid possible bias in the sample because of higher rate of recovery in the neighborhood of banding stations. The banding data themselves, although without statistical reliability, suggested that this might be true. Life expectancy as thus calculated was then approximately the same (1.2-1.3 years) for each November 1 of the bird's life. Lack (*British Birds*, 36: 166-175. 1943) had used August 1 as the initial date for his calculations of life expectancy for *Turdus merula* L. In using this date he found a lower expectancy of 1.6 years on the first August 1 than the expectancy of 1.9 years which he found for the second August 1 and the third August 1. Farner in comparing this with the constant life expectancy in the American Robin on each 1 November suggested the possibility that the lower expectancy calculated by Lack for the first August 1 might be due to a sample biased by a higher rate of recovery among undispersed banded juvenile and immature birds. In this paper Lack presents the results of a re-examination of his data on the Blackbird as well as other species in order to test this suggestion. His data show quite convincingly that the lower expectancy on the first August 1 is genuine and not due to a disproportionate sample. It is due apparently to a higher death rate during this period. This death rate declines to almost a normal adult death rate by 1 November and becomes the same as the normal adult death rate by 1 January. The author suggests that future studies of similar nature base the calculations on the first January 1 of the bird's life as was done by Kraak, Rinkel and Hoogerheide (*Ardea*, 29: 151-175. 1940.) in their studies on the Lapwing, *Vanellus vanellus* (L.). The reviewer heartily approves of this suggestion. It should be pointed out for those who may wish to read this paper in its entirety that a typographical error has occurred in Table III. The third column should be headed, "On second Aug. 1st of life." This is noted in *British Birds*, 39(10): 320.—D. S. F.

**35. The Fourteen-Year Stork Colony at Rossitten.** (Vierzehn Jahre Storchsiedlung Rossitten.) E. Schüz. 1943. *Der Vogelzug*, 14(2/3): 90-109. The Kurische Nehrung in East Prussia is unfavorable for the White Stork although conditions are suitable at Rossitten. There is a record of a breeding pair in 1905 followed a lapse until 1930 when new colonization occurred. This paper is based on observations and banding studies conducted on this colony from 1930 through 1943. The observations involve about 60 pairs. Storks appear in the area of their birthplace exceptionally during the first year, occasionally during the second, but usually not until the third. The youngest breeding storks at Rossitten were third-year birds. One pair remained intact for three years. Return to the same nest site for three consecutive years was observed in five individuals; one returned five times. Return to the area, but not to the same nesting site, was observed four times, with a break, in one instance and possibly seven in another.—D. S. F.

**36. The Breeding of Marsh and Montagu's Harriers in North Wales.** A. W. Colling and E. B. Brown. 1946. *British Birds*, 39(8): 233-243. *Circus aeruginosus aeruginosus* (L.) had not bred in North Wales since 1877; in 1945 a pair (neither of which was fully mature) hatched four young the last week in June, but raised only one. The male did all the hunting for the family, dropping the prey to the female on the ground; the male would land at the nest, but leave in a few seconds, while his mate remained and prepared the food. She was molting heavily and was not seen to visit the nest after July 28, although she remained

in the vicinity until Aug. 6. The male now delivered the prey directly to the young. Moorhens, *Gallinula chloropus* (L.), young pheasants and rabbits were the chief items of food. The first flight of the young bird was seen Aug. 11; on the 22nd it caught in mid-air prey dropped by its father.

Montagu's Harrier, *Circus pyargus* (L.) had not been known to breed in Wales since 1900; on June 23 a nest with three young about 10-14 days old was found. Besides the parents there was another male in normal adult plumage that "seemed to share the 'territory' of the nesting pair, and was tolerated by both male and female even in the vicinity of the nest," yet he was never seen catching prey. The male hunted for the family; he "never settled at the nest, but was generally met in the air by the female. Food exchange occurred mostly by dropping, but sometimes the prey was passed from foot to foot." Three young were raised.—M. M. NICE.

**37. Preliminary Observations on a Colony of Reed-Warblers.** Philip E. Brown. 1946. *British Birds*, 39(10): 290-308. Two seasons' work with *Acrocephalus scirpaceus scirpaceus* (Hermann) in a reed-bed in Lincolnshire. Table III shows the approximate area of territories of nine cock birds watched in June 1946; one decreased from 448 square yards to 285, another from 344 to 110, three were lost "to intruding cocks," while one increased from 170 to 440 yards. The author does not tell how he distinguished individual birds, nor male and female, yet from the details given, one would think colored bands or colored feathers necessary. Considerable interference was found between adjoining cocks, and unmated males sometimes won territory and mate away from the original bird, even after egg-laying had started. Although the unpaired male builds a "cock nest," usually a mere platform, all the building of the real nest seems to be done by the female. "The spells on the eggs of the males averaged seven minutes with a maximum of 12½; of the hens, 11½ minutes, with a maximum of 26." Sometimes birds "stripped" their nests, using the material for new nests, usually within ten yards. Photographs are given of a male coming to the nest during a thunderstorm and sheltering his incubating mate.—M. M. NICE.

**38. Pete, Our Pet Baltimore Oriole.** Mrs. F. W. Pugsley. 1946. *News from the Bird-Banders*, 21: 32-36. A hand-raised female *Icterus galbula* (L.) was a "fine songster with a voice softer than that of the male." She sang a typical oriole song, singing mostly in early spring. Towards the last of April she showed migration-restlessness for about three weeks, whirring her wings rapidly, running along her perch and "uttering at intervals a shrill call that we never heard before; her eyes were wide open, but she was not conscious of our presence, in fact did not see us!" This she did each spring and for a few days each fall, feeding up beforehand for the "journey." She paid no attention to wild male orioles; "but about the time the orioles were building their nests," she would gather and weave material, but never shaped a nest. Each June she shed her long toe-nails, then grew them again, apparently an adaptation for safe brooding of nestlings.—M. M. NICE.

## ECOLOGY

**39. The Importance of Ecologic Fixation in Faunistic Investigations.** (Die Bedeutung der oekologischen Beharrungstendenz für faunistische Untersuchungen.) Josef Pietzmeier. 1942. *Journal für Ornithologie*, 90(3/4): 311-322. This interesting paper is based primarily on an investigation of the Song Thrush, *Turdus viscivorus viscivorus* (L.), in the Münster area of northwestern Germany. This species was not uncommon in this region before 1900, but then disappeared completely. In 1928 it reappeared, and thereafter gradually increased in density as a breeding bird. Ecologic observations revealed it to be primarily a species of deciduous trees. In mixed forests, it was found also to prefer deciduous trees.

Also it was found to show a distinct preference for the edge of forest and, even more so, for groves and small groups of deciduous trees. It is even described by the author as a bird of the meadows. In order to ascertain the origin of the birds of the Münster area the author examined the ecologic characteristics of the populations in adjacent areas. All surrounding populations were found to be primarily coniferous-forest birds or otherwise ecologically unrelated to the recently established Münster-area population. An exception is the population of northern France which is ecologically identical to that of the Münster area. An examination of the literature reveals that there has been a gradual eastward expansion of this ecologic population-type through Belgium, Holland, northern Rhineland, and northwestern Westphalia. This expansion had been proceeding for about 20 years. The author regards this example as evidence for a *rule of ecologic fixation*. Other examples are cited and the question is raised as to the possibility that ecologically ubiquitous species may in reality consist of several ecologically fixed populations.—D. S. F.

**40. Studies on the Ecology and Daily Rhythm of the Northern Willow Warbler.** (Studien über die Oekologie und Tagesrhythmik von *Phylloscopus trochilus acredula* (L.)) Päivio Kuusisto. 1941. *Acta Zoologica Fennica*, 31. 120 pp. This doctor's thesis, published after the death of the author in battle, is an elaborate study extended over several years. The Willow Warbler is an exceedingly abundant territory-holder in central Finland, frequenting particularly the birches that are rich in insect food suited to its needs (pp. 66-166). Activities at several nests at Savonlinna were studied with the help of a recording instrument, described and illustrated. Nest building lasts four to five days, the female working hard at first, little later; egg laying took place very regularly between 3 and 4 o'clock A.M. At this high latitude (62° N) the beginning and ending of daily activities show no definite relation to light; in June there must be only some two hours of "darkness," civil twilight occurring at about 11 and 1 and sunrise about 2:30.

During incubation time spent in sleep by three females amounted to 4, 6, 6¾ hours with one bird, 3, 5, 6, 6, 6½ with another, while with a third eight records ranged between 7 and 9½ hours; the last two were incubating at the same time (diag. 10). Some females left the nest several times during the night. Diagram 12 gives the incomplete record of incubation at one nest from the 5th to 9th days; activity lasted 15¼, 15¼, 15, 16 and 18 hours; on the 6th, 7th and 8th days the bird left the nest 30, 27, 27 times, on the 9th something over 35. Length of periods on this subject in *Bird-Banding*, 17: 173, October 1946; also No. 24 in this minutes off the nest. The young are fed in the nest for 14 days, the number of meals increasing up to the age of eight and nine days. On two days near the beginning there were some 150 feedings, at eight to ten days all day records at three different nests amounted to 356, 404 and 524 feedings; while three near the end of the period came to 295, 333, and 589. Two complete records of the whole period reached 3300 and 5000 feedings. Unfortunately in none of these cases is the number of young mentioned. The amount of time at night spent in the nest by brooding females ranged between 4 hours 20 minutes to 6 hours 32 minutes with six individuals. The special note aroused by the presence of a Cuckoo is mentioned (p. 66). (See articles by Smith and Butlin Nos. 14 and 15, on this subject in *Bird-Banding*, 17: 173, October 1946; also No. 24 in this issue.) A detailed study was made of the available insects in conifers and hardwoods and the decision reached that the Willow Warbler has greatly benefited from the increase of the latter due to man's activities. A fine study, yet to my mind, there are too many charts and too few tables and not as many definite facts as could be wished.—M. M. Nice.

**41. The Turnstone in its Relationship to the Environment.** (Der Steinwalzer, *Arenaria i. interpres* (L.) in seiner Beziehung zur Umwelt.) G6ran

Bergman. 1946. *Acta Zoologica Fennica*, 47, 144 pp. A most interesting, thorough behavior study with constant references to recent European studies on other shorebirds. Ten pairs (some of them color-banded) were observed for six seasons on the outer reefs 15-25 kilometers west of Helsingfors; of ten banded breeding birds nine returned the following summer and seven the next. Of 64 banded young one male returned to breed. Anatomically the Turnstone is adapted to bare flats in contrast to the Redshank, *Tringa totanus totanus* L., that weighs about the same (110 grams) and lives in the grassy parts of the same islands; measurements and X-ray pictures of young show that the legs are much shorter, the claws much sharper and stronger in the former than the latter.

Pairs on the outer reefs nested earlier than those on inner reefs, despite higher temperatures in the latter regions; the author's explanation is that the character of the breeding grounds on the inner reefs is not as satisfactory a releaser in regard to the inborn pattern as that of the outer reefs. Incubation in seven cases lasted 23 days, in two 24 days and in one 26-27. Temperatures in the nest increased from 30°-31° C. during early stages to 38°-40.6° C. in late stages. Of 112 eggs in 28 sets 81 hatched (72.3 percent) and 66 young were fledged (58.9 percent). Two color-banded pairs held the same territories three years in succession. Eye-sight in deep twilight is far better than that of gulls and terns. Turnstones bathe in fresh water, not salt. Territory is defended by a special threatening attitude that may end in pursuit and fighting; females do not defend territory much until after the young hatch. Copulation is incited by all sorts of disturbances—rivals, predators, etc. The female usually incubates from sunrise until about 3-5 P.M., the male the rest of the time.

The male's interest in the nest greatly increases during incubation, as is shown by the relative distance he stands while "keeping watch."

The first sight of the young always releases hovering in the parent. Young start to peck when a little over an hour old, first pecking at all objects; when 8-12 hours old they peck mostly at moving objects, from three days only at moving objects. Freezing at parental warning starts before hatching, and well feathered young will freeze at the warning note of the male upon the approach of a person. Adults react with hovering upon the crying of the young or their quick approach during the first two weeks, but 17-20 day young are repulsed. Short flights are possible at 19 days, full flights at 24-26. Young orient themselves to parents more by sound than sight; adults never go to a crying chick, but call it to them; Redshanks go to their chicks. For the first week both parents care equally for the young, but after that the female gradually takes over territory defense while the male cares for the chicks. Females leave in July, males and young in early August.

Sets of Turnstone and Redshank were exchanged and hatched at the same time; the Redshank adults were excited by the calls of their newly hatched young in the Turnstone nest; the Redshank young answered them, yet stayed with their foster parents and the next day ignored the calls of their real parents. All went smoothly until the chicks were twelve days old, when the female Turnstone pecked one; it screamed and the male came to hover it. The adult Turnstones did not respond to the notes of their young, hatched by the Redshanks; the latter raised the foster young successfully, but began to show some antagonism when they were eleven days old.

Turnstones usually nest in colonies of the Common Tern, *Sterna hirundo* L. and Arctic Tern, *Sterna macrura* Naumann, more rarely in gull colonies, but never in large ones. They react to the alarm notes of all the Laridae and also of the Redshank. The terns never serve as species-companions, but the Ringed Plover, *Charadrius hiaticula* L., and Northern Dunlin, *Erolia alpina alpina* (L.), do; these are driven off territories, but associated with during migration; all three are about the same size and it may be that the white wing band serves as a releaser for social flight.

If a crow flies over a Turnstone's nest, the parent immediately leaves with a loud note and the nest is robbed; in tern colonies, however, the Turnstone is warned beforehand and leaves its nest without betraying its whereabouts. Terns leave their nests and attack a passing crow, while gulls hurry back to their eggs. Turnstones often attack gulls and also Starlings, possibly because of their crow-like color; they never attack terns. Some Turnstones eat the eggs of terns and gulls with no particular reaction from their victims. "The behavior of the gulls and terns to the Turnstone is a good example of how slight is the response of these birds, when a bird whose appearance does not make the impression of an enemy either through an inborn pattern or through conditioning, robs their nests and remains in their midst," p. 122.

Very interesting experiments were made with cardboard models; models larger or smaller than Turnstones and those of miscellaneous shapes were ignored, as were discs without "heads" or eyes; head and neck coloring proved more important than body coloring. Males attacked male models, attacked and tried to copulate with female models; females attacked female models and one tried to copulate with such a model, thus showing sexual ambivalence. Crow models induced alarm cries and attacks from the gulls and terns and a White Wagtail, *Motacilla alba* L., strong alarm from Redshanks and Chaffinch, *Fringilla coelebs* L., and mild alarm from the Turnstones. The terns even attacked the model of a crow's head that was moved back and forth across the observation tent. A notable paper.—M. M. NICE.

**42. Changes in Ecology and Return to the Previous Breeding Place or Birthplace by the Barred Warbler.** (Bestandsänderung und Heimatreue bei der Sperbergrasmücke (*Sylvia nisoria*). M. Posingis. 1942. *Der Vogelzug*, 13 (3/4): 155-156. These observations were made on the Kurische Haff by the light-house keeper at Windenburg. In 1925 Barred Warblers were common among the blackberry bushes, *Rubus caesius* L. During the ensuing years the area was used as pasture for cattle and the blackberry as well as the Barred Warblers almost disappeared. With the reappearance of the brush the birds again became common. In 1942, 25 singing males were noted in a stretch of 500 meters. Of special interest are the records of the return of four of 60 Barred Warblers banded as young to their birthplaces and the return of five of 28 banded adults to the previous breeding place.—D. S. F.

## CENSUSES AND POPULATIONS

**43. The Index of Heron Population, 1945.** W. B. Alexander, with supplementary note entitled "The Balance of Population in the Heron" by David Lack. 1946. *British Birds*, 39(7): 201-206. The nineteenth year of this study of heron populations again bears out Alexander's contention that the population (as indicated by number of nests counted in rookeries) shows a sharp decline in the spring following a severe winter. Although the temperature in England and Wales again dropped to the danger level, 33° F., during the past winter, the period was too brief to affect the population as a whole. But in eastern England where the cold period was most severe the index fell off from 108 in 1944 to 91 in 1945. In Lack's provocative discussion of the heron population data he rightly points out that the most interesting finding is not the decrease following each severe winter but the rapidity with which a reduced population returns to normal but fails to maintain that same rate of increase once the normal population level is reached. This phenomenon he refers to one of the density-dependent mortality (or reproductive) factors discussed by Nicholson (*Journal of Animal Ecology*, 2: 132-178. 1933), and states that "One may suppose that the Heron population is primarily controlled by a mortality factor . . ." Lack concludes that food shortage is the most likely cause. A shortage due to direct com-

petition seems unlikely in good years with mild winters. Surely it would be equally probable that the limiting factor may be influencing reproduction rather than mortality. If true this would present another example of what Leopold has termed *saturation point* (*Game Management*, Chas. Scribners Sons, 1936).—WM. H. ELDER.

**44. Determination of Bird Densities in Winter.** (Vogelbestandsaufnahmen im Winter.) Pontus Palmgren. 1943. *Ornis Fennica*, 20(4): 94-98. The author by a linear census-method studied the winter populations of birds in the forest of the region around Helsingfors. Although the data are expressed primarily in terms of numbers per species per 10 kilometers travelled by the investigator, they probably indicate a density for all species of 105 individuals per square kilometer (about 42 per acre) in early winter and 60 per square kilometer (about 24 per acre) in late winter. Densities in West Lapland were much lower, 15-20 individuals per square kilometer (about 6-8 per acre).—D. S. F.

**45. The Changes in Relative Numbers of the White-Fronted Goose and the Bean Goose.** (Ueber Aenderung im Zahlenverhältnis von Blässgans (*Anser albifrons*) und Saatgans (*Anser fabalis*.) Hardenack von Viereck. 1943. *Der Vogelzug*, 14(2/3): 71-73. Since 1880 and even since 1924 there has been a marked increase in the numbers of the White-fronted Goose and a corresponding decrease in the Bean Goose as migrant birds in East Prussia. The Bean Goose is now regarded as a rare bird whereas in 1880 Hartert regarded the White-fronted Goose as rare.—D. S. F.

## CONSERVATION

**46. Maori and Mutton-Bird.** L. E. Richdale. 1946. Dunedin, N. Z., *Otago Daily Times*. 16 pp. 2/6. Another of Mr. Richdale's splendid "Wild Life" series, all of which, with their delightfully written summaries of his researches on the life histories of New Zealand birds and with their fine photographs, should be most successful in arousing public interest. This one concerns *Puffinus griseus* (Gmelin), which is familiar to many of us on Atlantic crossings as it courses over the waves. "The New Zealand Mutton-bird, or Sooty Shearwater, as it is known in other countries, is probably the commonest sea-bird in this part of the globe, if not in the whole world. It has been roughly estimated that some twenty million birds are in existence." "The nightly home-coming of countless numbers of petrels on these bird islands of New Zealand, and elsewhere, is one of the marvels of the world, to be experienced by only a few privileged ones of the human race." The main points in the life history are given (for details see *Condor*, May, 1944 and March 1945) and the complicated methods of capture and preparation of the young by "birders" described, some young being "taken annually for food by those Maoris who hold ancestral rights."—M. M. NICE.

**47. The Scientist Outside the Laboratory.** Harlow Shapley. 1946. *American Scholar*, 15: 411-415. That most people are blind to the absolute dependence of human life on soil, plants and other animals is only too evident; it is, however, shocking to find a prominent scientist proposing in a scholarly journal that we should: "Invent inexpensive methods for the transformation into effective fuel and palatable foods of the now worthless brush and scrub timber, which covers much of New England and other wilderness regions. In other words solve the major problems of botanical waste." Prof. Shapley needs to learn the fundamentals of biology and ecology; I would recommend to him No. 57 in these reviews and "Conservation of Natural Resources," University of Pennsylvania, 1941—M. M. NICE.



## GEOGRAPHIC DISTRIBUTION AND ZOOGEOGRAPHY

**48. The Mockingbird in Iowa.** Warren N. Keck. 1946. *Iowa Bird Life*, 16(2): 23-27. The Mockingbird, *Mimus polyglottos polyglottos* (L.), has been observed in 51 counties in Iowa; there are breeding records for 22 counties. There are no records from the north central counties suggesting either that this species has followed the main waterways, the Missouri and Mississippi rivers northward, or that the more recently glaciated region of north central Iowa is less favorable to the species.—D. S. F.

**49. The Biogeography of the East Indies—The Greater Soenda Islands. I.** (Biogéographie de l'Insulinde; les Grandes îles de la Sonde (I).) J. Berlioz. 1942. *Compte Rendus sommaire de Seances de Société de Biogéographie*, 1942: 19-85. This paper contains a brief summary of the geologic history of Malaya in which it is shown that the present geographic features date from the Tertiary. Two influences can be detected in the modern fauna. One is very old and is derived from the fauna of the ancient Malayan continent. The more recent appears to be the result of a gradual extension into Malaya of the Asiatic fauna. These elements occur in indirect proportion to the distance from the Asiatic continent. The author recognizes four faunal provinces in the Indo-Malayan Region. The *Malayan Province* includes the Malay Peninsula and the adjacent islands. It is the richest of the provinces in number of species. The *Sumatran Province* includes Sumatra, Banka, Billiton and other adjacent islands. The *Borneo Province* includes Borneo and adjacent islands. It has many characteristics in common with the Malayan and Sumatran provinces. Absence of certain forms and the presence of certain specialized forms indicate an earlier isolation of this province. The *Java Province* includes Java, Madoera, Bali and other adjacent islands. The number of species is slightly decreased but with more endemic forms. There are some Australo-Papuan elements. There is a general discussion of the faunal characteristics of Sumatra.—D. S. F.

**50. Bird Notes from Fawcett, Alberta.** Bernard W. Baker and Lawrence H. Walkinshaw. 1946. *The Canadian Field-Naturalist*, 60(1): 5-10. These notes are based on observations made between 19 May and 2 June 1942. There is an annotated list of species observed and a table giving the number of each observed. Many of the notes concern observations on nests and eggs.—D. S. F.

**51. Preliminary Report of the Birds and Mammals of Glacier National Park, British Columbia.** J. A. Munro. 1945. *The Canadian Field-Naturalist*, 59(6): 175-190. This paper contains a description of the physiography and life zones of the area in addition to the annotated list of 65 species of birds.—D. S. F.

**52. Birds on Tinian in the Marianas.** Theodore Downs. 1946. *Transactions of the Kansas Academy of Science*, 49(1): 87-106. This paper consists of notes on fifteen species based on observations made by the author during a period of military duty, 31 May to 17 October 1945, on Tinian.—D. S. F.

## BOOKS

**53. Bird Migration.** (Vogeltrek.) G. J. van Oordt. 1943. E. J. Brill, Leiden, The Netherlands. 145 pp. This is a revision of the treatise on bird migration published under the same title by the author in 1936. It includes information from the American and British literatures through November 1941 and April 1940 respectively and from other literatures up to 1 March 1943. In considering the migration of birds the author indicates that there must be likewise a consideration of periodic movements of other groups of animals. Consequently

in the introduction attention is devoted to migration of other animals with particular attention to salmon. Bird migration is defined as follows (p. 4): "Under bird migration we understand then the movement of certain species of birds from the breeding area to the winter area and the return from the winter area to the breeding area. Bird migration is a definitely oriented and periodic phenomenon; all other movements accomplished by birds do not fall into the concept of migration." The introduction also contains reviews of some of the more or less generally known facts about migration in the northern hemisphere, migration in the southern hemisphere, and migration in the tropics. Attention is also given to invasions from the south and the ecologic relation between the breeding area and the winter area. There is a brief discussion of the possible origin of bird migration based mostly on the treatment of this subject by Thomson (*Problems of Bird Migration*, H. F. and G. Witherby, London, 1926) and by Mayr and Meise (*Theoretisches zur Geschichte des Vogelzuges. Der Vogelzug*, 1: 149-172, 1930). The remainder of the book is divided into a descriptive part and a theoretical part.

One chapter in the descriptive part is used to review the observed physical details of migration with emphasis on the situation in the Netherlands. A section is devoted to winter invasions by more northern species. The discussion of broad-front and narrow-front migration is concluded (p. 48) as follows: "So we can thus see that a broad front is the rule for most species of birds and that only in a few cases is a narrow front followed." Material on altitude and speed of migration is summarized. Also there is a review of the literature which shows the tendency of birds to return annually to the same breeding area and that which shows the use of the same winter area. Although there are some evidences indicating the use of the same migratory route in successive seasons, the opinion of Drost (*Zieht der einzelne Vogel stets auf demselben Weg? Ardea*, 30: 215-223, 1941) that this seldom occurs is cited. Ten pages of the descriptive part are used in the presentation of data concerning the influence of meteorologic phenomena. In general this deals with the relations of temperature, clouds, rain, and snow. With the exception of the citing of Schenk (*Die Prognose des Frühjahrszuges der Waldschnepe in Ungarn. Proc. 7th Int. Ornith. Congress*, Amsterdam, pp. 357-365, 1931) concerning the influence of low pressure areas on the migration of the European Woodcock, *Scolopax rusticola* L., there is no discussion of the rather promising field of the influence on bird migration of high and low pressure areas and the movements of air masses. The first portion of the theoretical part is given to a discussion of migratory instinct (*het trekinstinct*). This is in many respects the most interesting part of the book. It is a brief but careful and scholarly consideration of the data available at the present time. After a consideration of such external influences as changes in temperature and changes in light as the causes of migration the author draws the following conclusion (p. 96): "The more one considers the migration problem the more one comes to the conclusion that changes in external conditions have no influence on the development of the migration instinct and only can have a subordinate influence on the finding of expression in migratory movements." This is further amplified as follows (p. 97): "Migratory birds come periodically into migratory disposition and only then when there is migratory disposition can external factors bring the inclination to migrate." Further, "Migratory movements are thus the expression of a periodically returning instinct; this last can prevail over other instincts." The development of the migratory instinct can be influenced not only by external factors but also internal factors such as hormones. Attention is given to the possible roles of thyroxin and sex hormones. In neither case is there conclusive evidence. As a matter of fact there is an increasing body of evidence indicating that sex hormones have little or no effect on migration. Among this evidence are the observations of apparently normal migration by castrated birds. The author very rightfully points out that the field of the endocrine physiology of migration is one in which there is much controversy and in which many experiments appear

contradictory. Many data are difficult to interpret properly because the experiments have been performed on caged birds, thus creating abnormal conditions.

The final chapter of the theoretical part of this book is devoted to the problem of orientation in migration. This involves a consideration of most of the classical experiments. The possibility of the young learning the migratory route from the adults, the author believes, must be discounted in many species. Results of experiments on migration by young birds lead the author to suggest (p. 116) "that all young migratory birds possess an inherent 'sense of direction' ["richtingzin"]. If we use this word ["richtingzin"] we must bear in mind that with this term nothing is explained, but only a faculty is proposed, of which we know only the result." In his concluding pages the author points out the important contributions to the details of migration which remain to be made by banding studies, although these studies will, of course, contribute little to our knowledge of the physiology of migration. Field ornithology can contribute much to our knowledge of the effect of meteorologic phenomena and other external influences on migration. There are ten pages of very useful bibliography. This book is a scholarly and well integrated treatise on migration despite its brevity and despite the tendency towards emphasis on conditions in the Netherlands. It is heartily commended to all students of bird migration.—D. S. F.

**54. Glossary of European Birds.** (Glossarium Europae Avium.) Harriet I. Jørgensen and Cecil I. Blackburne. 1941. Ejnar Munksgaard. Copenhagen. 10 kroner (about \$2.25). This remarkable little book contains the common names for the species of European birds in seventeen languages. The organization is tabular with an alphabetic arrangement by genera. Under each scientific name (binomials only) the common name, whenever such exists, is given successively in Czech, Danish, German, English, Spanish, French, Icelandic, Italian, Magyar, Dutch, Norwegian, Polish, Portuguese, Russian, Finnish, Swedish, and Turkish. In ornithology common names are used much more extensively than in the other branches of zoology both because of the greater standardization of common names and because of the greater numbers of amateurs who participate in ornithological research and publication. It seems highly probable that the important initial step in the achievement of international understanding will have to occur among the scientists for it is among scientists that there is already a common basis for understanding. Because of the large number of ornithologists, both amateur and professional, ornithology offers one of the best fields for the development of international understanding and cooperation. The publication of this book, despite the fact that it appeared during some of the darkest days in history, marks an important stride toward a broader internationalism in ornithology. The authors, the publisher, and the Rask-Oersted Fund, which gave financial assistance, are to be commended.—D. S. F.

**55. The Breeding Birds of Denmark with Special Reference to Changes During the Last Century.** Poul Jespersen. 1946. Einar Munksgaard, Copenhagen. 19 pp. 6 kroner (about \$1.35). This little book, published by the Danish Section of the International Committee for Bird Preservation, may be regarded as a general inventory of the breeding species of Denmark with an accounting of recent trends in abundance. The basic portion of this book is an annotated list of 217 species and subspecies known to, or suspected to breed or to have bred in Denmark. Principal annotations deal with changes in abundance and distribution. Thirty of the species in this list are of uncertain status. Ten species have with certainty become extinct as breeding birds in Denmark during the 19th and 20th century. There is little chance that they will ever re-establish themselves as breeding birds. These include the Roller, *Coracias garrulus garrulus* L.; Hoopoe, *Upupa epops epops* L.; Eagle-owl, *Bubo bubo bubo* (L.); Short-toed Eagle, *Circæetus gallicus gallicus* (Gmelin); Sea Eagle, *Haliaeetus albicilla* (L.); the Kite, *Milvus milvus milvus* (L.); the Osprey, *Pandion haliaetus*

*haliaetus* (L.); the Common Crane, *Grus grus grus* (L.); the Great Snipe, *Capella media* (Latham); and the Caspian Tern, *Hydroprogne tschegrava* (Lepechin). In addition there is a list of 17 species including, among others, the White Stork, *Ciconia ciconia ciconia* (L.), which have decreased markedly in numbers in the last half century. Principal factors in extinction and decline in numbers have been the activities of hunters and collectors, drainage of lakes and marshes, modern methods of forestry, cultivation of moors, and climatologic changes. At least twelve species have become firmly entrenched as breeding species in the latter part of the 19th century and even during the early part of the 20th century. Principal factors in these immigrations are believed to be changes in climate and the development of fir plantations. Most of these species have come from the south; eight of the twelve are passerine. In addition there are seven species which have arrived and become established recently. These are the Bullfinch, *Pyrrhula pyrrhula* (L.), 1916, probably from northern Germany; Grey Wagtail, *Motacilla cinerea cinerea* Tunstall, 1923, probably from Germany; Wigeon, *Anas penelope* (L.), 1926, possibly derived from liberated and "half-tame birds"; Red-crested Pochard, *Netta rufina* (Pallas), 1940, "presumably an immigrant from North Germany"; Tufted Duck, *Aythya fuligula* (L.), 1905, "presumably coming from Sweden"; Lesser Black-backed Gull, *Larus fuscus* (L.), 1925; and the Kittiwake, *Rissa tridactyla tridactyla* (L.), 1941. The introduced Pheasant, *Phasianus colchicus* (L.), has become established well. The House Sparrow, *Passer domesticus domesticus* (L.), has increased in general despite a decrease in the larger cities. The Starling, *Sturnus vulgaris vulgaris* (L.), has likewise increased in the last one hundred years. Interesting also is the change in biotope of the Blackbird, *Turdus merula merula* (L.), formerly a distinct forest bird, "now numerous in gardens and parks." Although not mentioned in this book, it seems likely that the intrusion of southern species is to be correlated with the maritimization of the Baltic climate which began in the middle to latter part of the 19th century; this has been discussed extensively by Scandinavian authors in recent years.—D. S. F.

**56. The Life of the Hummingbirds.** (La Vie des Colibris.) J. Berlioz. 1944. Histoires Naturelles 4, Gallimard, Paris. 198 pp. 90 francs. This is a charming non-technical book written for the layman by the world's foremost authority on hummingbirds. The author shows himself to be one of those rare individuals who, as a leading authority and specialist, can still portray his specialty in a manner that should captivate the interest of all. The opening chapter in which the general characteristics of the family are discussed is followed by an interesting chapter on locomotion. Of interest are the data on rapidity of wing beat in the hummingbirds (20 to 50 beats per second) as compared to a sphynx moth (72 per second) and to Diptera and Hymenoptera (80 to 190 per second). The third chapter discusses food and feeding and the corresponding adaptations of hummingbirds for the procurement of nectar and for small arthropods from flowers. The following chapter, an account of reproduction and nidification, is accompanied by excellent photographs. The second part of the book, entitled "The Hummingbirds in Nature," contains chapters on habitats and on distribution and migration.—D. S. F.

**57. Report on Activities of the Conservation Section; Division of Agricultural Cooperation; Pan American Union (1943-1946).** L. S. Rowe, Director. 1946. Pan American Union. Washington, D. C. 148 pp. This masterly volume, largely the work of William Vogt, includes reports on surveys of México, Guatemala, Chile and Venezuela, the longest section (pp. 28-111) being devoted to Mexican Natural Resources—Their Past, Present and Future. "Especial attention should be called to the thesis that generally, in Latin America, there is a dangerous degeneration of land from areas of valuable land-use capability to areas that approximate the unproductiveness, in every sense,

of the desert. This tendency can be fully understood only in terms of the dynamic and functional concept of renewable resources, and by recognizing that these resources *must be considered in their totality*, as part of an almost infinitely complex organic structure," (p. 1.). An appalling picture is given of land abuse, becoming steadily worse with the ever-increasing population. "It is probably no exaggeration to say that from 75 to 90 percent of Latin America's land area is unsuitable for cultivation, except with such practices as are now almost non-existent. It is also no exaggeration to say that México, Central America, and South America altogether form a vanishing continent," (p. 21.).

In reports on the possible guano resources of México and Chile, brief accounts are given of the chief guano birds of the West Coast, and exceedingly interesting, but all too brief, references to their sociology and behavior; for instance guanays or White-breasted Cormorants, *Phalacrocorax bougainvillii* (Lesson) need to nest in great colonies because of their communal fishing habits. Seven-year population cycles are mentioned, and the basic importance of protection from man, and the dangers of indiscriminate destruction of natural enemies are stressed. An impressive and challenging work that deserves the widest circulation.—M. M. NICE.

**58. A Naturalist on Lindisfarne.** Richard Perry. 1946. Drummond, London. 248 pp. 15s. This attractive little volume with its handsome photographs of Holy Island off the coast of Northumberland, its history of the human inhabitants, of visiting naturalists and of the birds, with its bibliography, indices and map, represents a great deal of research in old records and a great deal of observation by the author (1090 days in 7½ years) on the island itself, where the weather is often bad, but the birds are breath-taking. The greater part of the book is devoted to the author's own experiences: Through the Seasons, Birds of Passage (here the effects of wind and fog on migration are discussed at some length), Wading Birds, Wildfowl and Seaducks, Seafowl, Fulmar Petrels. Mr. Perry writes with vividness, originality and at times much beauty. For example, he is speaking of "a cloud of Godwit": "no sooner has this great concourse gathered together on the spit, than its individuals are impelled by a common and irresistible excitement, at so vast a gathering of their kind, to give free rein to that supreme expression of all their moods—Flight; and five thousand of them, rising as one, go whirling out over the tumultuous ocean; changing direction, soaring, stooping, with a hardly credible, spontaneous swiftness; splitting into separate flights, coalescing once again, weaving farther out over the sea, until lost to sight in the blown spray's mist that ever hangs over this storm-bound coast."—M. M. NICE.

**59. Birds of the Philippines.** Jean Delacour and Ernst Mayr, with line drawings by Earl L. Poole and Alexander Seidel. 1946. The Macmillan Company, New York. xv + 309 pp. \$3.75. Although a member of the *Pacific World Series* published under the auspices of the American Committee for International Wild Life Protection, this book is, in general organization and method of treatment, a companion volume to Dr. Mayr's "Birds of the Southwest Pacific" (The Macmillan Company, 1945). There has not been a thorough treatise of Philippine birds since R. C. McGregor's "Manual of Philippine Birds" (1909-1911), which is now exceedingly rare. "The Birds of the Philippine Islands" (1931-1935) by the Marquess Hachisuka has been completed only through the first two volumes. The primary purpose of the *Pacific World Series* was to foster a greater understanding of natural history among the members of our armed services and consequently to further the desire to conserve and protect the wild life of the Pacific world. Unfortunately, from this standpoint, this volume in its appearance one year after the cessation of hostilities is late for such purposes. Otherwise, fortunately it provides a much needed treatise of Philippine birds, suitable for field work, and which will be useful for many years to come. The systematic section was prepared independently by families by the two authors,

33 having been prepared by Mr. Delacour and 26 by Dr. Mayr. Reciprocal reading and checking by the authors have given the book a thorough uniformity. Since McGregor employed only binomial nomenclature, considerable revisions have been necessary in order to conform with the more modern concept of the species. Because of the preference of the authors for large genera there has been extensive lumping, especially as compared to Hachisuka's volumes. (See Delacour and Mayr, 1945, Notes on the taxonomy of birds of the Philippines. *Zoologica*, 30: 105-117. Review in *Bird-Banding*, 17(2): 95-96.) Nine pages are devoted to "Bird Geography in the Philippines" in which are recognized an Eastern Province consisting of Luzon, Mindanao, and surrounding islands; and a Central Province including the more western islands from Tablas to Negros and Cebu. In addition, three marginal districts are recognized. These are the Mindoro District, the Luzon Strait or Northern District, and the Sulu District. The brief section on bird habitats in the Philippines and the ecologic notes contained in the discussions of individual species in the systematic section contribute much to the value of the book. Common names, often adopted from McGregor, are given for each species. Keys to genera and species are included in the systematic section under most of the families.—D. S. F.

**60. The Birds of Northern Thailand.** H. G. Deignan. 1945. *U. S. National Museum Bulletin* 186. 616 pp. Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., \$1.25. The area encompassed by this treatise includes "Chiang Rain Province and those parts of the provinces of Mae Hong Son, Chiang Mai, Lamphun, Lampang, Phrae, and Nan lying north of latitude 17°47' N." This important monograph is the product of four years' collecting by the author during his residence in Siam in addition to a most careful and scholarly consideration of the collections and publications of other ornithological investigators in northern Siam, including Gyldenstoepe, Eisenhofer, Hugh McCormick Smith, and de Schauensee. The introductory material includes a review of previous ornithological work concerning the area, discussion of geography, physiography, climate, breeding seasons, migration, faunistics, and vegetation. The annotated list, extending from page 28 to page 572, gives synonymy, notes on abundance, ecologic and other biologic observations for each of the species and subspecies.—D. S. F.

**61. Monograph of the Shrikes of the Genus *Lanius*.** (Monographie des Pies-Grêches du genre *Lanius*.) Georges Olivier. 1944. Lecerf, Rouen. 326 pp. This monograph is the product of a type of research, the study of a natural group throughout its entire range, which has much to contribute to modern ornithology. The first part consists of 58 pages in which the general characters of the family Laniidae and genus *Lanius* are discussed. Also are included a section on classification and a phylogenetic diagram. The second part is a systematic treatment of the genus in which four groups are recognized: (1) A primitive group containing *cristatus*, *isabellinus*, *tigrinus*, *collurio*, *gubernator*, *collurioides*, and *vittatus*. These occur as breeding birds primarily in Europe and Asia. (2) The *excubitor* group containing *bucephalus*, *excubitor*, *sphenocercus*, and *ludovicianus*. This group breeds in North America, Europe, Asia, and Africa. (3) The *Indo-malayan* group contains *minor* and *schach* and breeds as a group from New Guinea through Eurasia to the Atlantic. (4) *African* group consisting of *excubitorius*, *cabanisi*, *collaris*, *newtoni*, *mackinnoni*, *dorsalis*, *nubicus*, *senator*, and *souzae*. These species occur in Africa and southern Europe. For each species or subspecies there is a list of synonyms; a list of published illustrations; descriptions of adults and young; characteristics for field identification; geographic distribution; description of nest, eggs, and reproductive habits; habits and feeding habits. A noteworthy monograph under any conditions, its appearance during the darkest days of recent French history makes it even more remarkable. The value of this treatise is much enhanced by numerous maps and several plates, nine of which are excellently colored. There are seventeen pages of bibliography.—D. S. F.

**62. Insect Dietary.** Charles T. Brues. 1946. Harvard University Press, Cambridge, Massachusetts. xxvi + 466 pp. \$5.00. This is a charming and readable book, its text excellently permeated with a wealth of well-chosen and interesting examples. The author estimates that the actual number of species of insects is probably in the neighborhood of ten million. An important factor in the ability of this group of animals to produce such a prodigious number of species and correspondingly tremendous numbers of individuals is the enormous variation in food habits and utilizable foods. Treatment of the vegetarian insects is accomplished in three chapters dealing respectively with herbivorous insects, gall insects, and those which feed on fungi and other microorganisms or enter into symbiotic relations with them. Four chapters are devoted to the carnivorous insects. There is a chapter in which predatory insects are discussed and a brief chapter is devoted to parasitism in general followed by separate discussions of endoparasites and ectoparasites. The chapter on ectoparasites is of particular interest to ornithologists because of the information which it contains on Mallophaga, Hippoboscidae, and other parasites of birds including a discussion of the relation of ectoparasites to avian systematics. The final chapter, one which may seem to be out of place in such a book, deals with insects as food for other organisms. This is of interest to ornithologists not only because of the material and discussions concerning the consumption of insects by birds but because it also provides a comparison of the insectivorous activities of various groups of animals. Each chapter is concluded with a classified list of references. This is a most commendable contribution to the literature of the science of biology.—D. S. F.

**63. A Naturalist's Scrapbook.** Thomas Barbour. 1946. Harvard University Press. x + 218 pp., 20 pls. \$3.00. Fourth in a series of well-known previous *operae minori* by the same author, *A Naturalist's Scrapbook* arouses the attention of the reader from cover to cover. This book contains a widely scattered sum of subjects, like a gossip account of how T. B. outwitted many competitors in obtaining precious, or unique specimens for his Museum; descriptions of far-away lands, mostly islands, that he loved so much; an interesting discussion of the principal problems of biogeography, etc. Here and there, the bossy personality of the author, very subtly expressed in phrases like the following, comes out, "The Museum in Boston [of the Boston Society of Natural History] is, I believe, destined to be a museum devoted to public entertainment and instruction, especially of young people, a glorified and most honorable adjunct to the public school system, as well as a center for popular adult education in science" (italics are the author's). Then, the coming and going of Barbour's daughters, like a *leit-motif* in the soft cadence of the book.

Quite a considerable amount of information on the early and formative periods of the Museum of Comparative Zoölogy, at Harvard College, is contained in the initial chapters. A consideration of several zoological problems, in an attractive form, follows, interspersed with personal reminiscences of Barbour's experiences in the islands of the Malay Archipelago and the Caribbean lands. The chapter entitled "Two Pleasant Memories" is certainly worth reading, showing as it does the literary talent of the writer much better than others. Finally, "A Retrospect" of some family connections says more of Barbour's somewhat complicated psychology as a leader of social affairs, a scientist and a museum executive than the rest of his book.

Only one slight correction, concerning the date of arrival of Louis Agassiz in the United States. Barbour says in two or three occasions (p. 18 *et al.*) that Agassiz came to this country in 1847. A revision of his biography indicates that he arrived in New York in the month of October 1846. Outside of this minor mistake, *A Naturalist's Scrapbook* is a wonderful piece of entertainment in parazoological literature, that may well fill a Sunday afternoon with the reading of the lively adventures of a man who described himself as "a frank and unashamed packrat."—Manuel Maldonado-Koerdell.

**64. Birds in Kansas.** Arthur L. Goodrich, Jr. 1946. *Report of the Kansas State Board of Agriculture* June, 1945, 64: 1-340, 6 col. pls., 169 figs. "Birds in Kansas" is one of a series of publications issued by the State Board of Agriculture intended to acquaint residents with the fauna and flora of their state. From the standpoint of the value of such a work to the layman, and especially to the school children of Kansas, this book is definitely meritorious. Any publication informing the public about the lives of living organisms is to be welcomed, provided the information it presents is accurate. However, to the reviewer it seems a pity that so much money was spent in publishing this work without an attempt having been made in its preparation to bring to light a considerable body of *new* facts concerning the birdlife of this interesting midwestern state. To have done this would have made "Birds in Kansas" useful to layman and ornithologist alike, both in and outside of Kansas. One searches in vain for dates of arrival and departure for migratory species, for definite nesting records, and for notes on behavior and life history of birds in Kansas. For each of several rare species, we are told only that the bird in question is a "straggler"; no actual record is given, nor even the season in which it has been known to appear in the state. For example, the Caspian Tern is listed on page 209 with a brief description, a statement of general range, the derivations of the specific and subspecific names, and the statement that this tern "is the largest of its type." We are told, in conclusion, that "though relatively common along the sea coasts and at its nesting grounds, the Caspian tern is probably quite out of its own in Kansas, and rare indeed within our borders." The reviewer wondered, and still would be wondering, if the late W. S. Long's "Check-List of Kansas Birds" (*Trans. Kansas Acad. Sci.*, 43: 433-456, 1940.) were not at hand, if there is a *bona fide* record for the species for the state.

Information that would have enhanced the value of the book was readily available, some of it probably in the author's own files, and certainly much of it in excellent collections of Kansas birds in the state's institutions of higher learning, which collections apparently were not consulted to any great extent. It seems hardly fitting also that a 340-paged book dealing with the birds of Kansas omits mention of such outstanding names in Kansas ornithology as C. D. Bunker, J. M. Linsdale, G. C. Rinker, and A. Wetmore and that only passing reference is made to N. S. Goss and F. H. Snow. Even the brief citation on page 7 to Long's "Check-List" is both incomplete and incorrect. The book is without a bibliography.

The book may not have been intended for advanced and serious students of ornithology. Yet, it appears to have been as evidenced by the author's frequent excursions into avian nomenclature and systematics, including even an indirect reprimand (p. 215) of the A.O.U. Committee on Nomenclature wherein he is wholly in error.

Outline drawings by L. A. Fuertes are used profusely throughout the text. However, the artist intended that these be used only for students to color and not as bird portraits. Since the book was distributed freely to Kansas schools, this aim of the artist still may be fulfilled.—G. H. Lowery, Jr.

#### CORRECTION

M. P. G eroudet, editor of *Nos Oiseaux*, calls attention to an error in the review of his paper 'Le fuligule nyroca dans la r gion de Gen ve.' This review, which appeared in *Bird-Banding*, 16, no. 1, 1945, p. 45, states that "The author has noted the tendency of this species [*Nyroca nyroca*] . . . to be found in flocks with the Tufted Ducks (*Nyroca fuligula* (L.))" but should read . . . in flocks of Common Pochards (*Nyroca ferina* (L.)).