

The significant feature of this horde of felines is that when I questioned the foreman and commented on the number of cats living there he stated that generally the greater number left in the spring and foraged for themselves in the woods, coming back to the farm again when the weather became inclement and they remained until the following spring when they left for the woods and fields. This being the case there will be probably thirty-eight cats at large securing their living from birds and small mammals and one can easily imagine what a toll of wild life they will take.—CHARLES B. FLOYD.

A Recovery Record of a Roaming Eastern Purple Finch.—A record that illustrates the roaming habit of the species was made by Eastern Purple Finch (*Carpodacus p. purpureus*) 138-15209, banded on July 30, 1938, at the Wharton Bird-Banding Station, Groton, Massachusetts. This bird was then a juvenile, and was one of two birds of this species trapped on that date. The bird repeated at the station on August 1.

The next report of this young Purple Finch came to us via the Biological Survey, who informed us that it was trapped and released by Mrs. Mary Bowers at her station at 19 Hubbard Street, Concord, Massachusetts. From Groton to Concord is about 16 miles in a southeasterly direction.

The erratic travels of the Eastern Purple Finch are well known, but a remarkable example of this phenomenon is the trip back to Groton made by this bird. Trapped and released at Concord on August 19, it was taken again as a repeat at Groton on August 21, having made the 16 mile return trip in two days.—EDWIN A. MASON, Wharton Bird-Banding Station, Groton, Massachusetts.

Auxiliary Perch for Top-opening Traps.—Banders who use top-opening traps are often annoyed by birds perching on the open door and subsequently springing the trap without catching the bird. This trouble can be alleviated with an ordinary wire coat hanger or a piece of hay wire. I prefer an enameled coat hanger as it is rust-proof. The wire is bent into a "U" shape, similar to a croquet arch, the top of the "U" being an inch wider than the top of the door. Fasten the inverted "U" solidly to the trap. The wire can be bent to any angle and as it is always higher than the door, birds will perch on it instead of the door. It is also convenient when such traps are covered by snow, since the perch will often protrude above the surface, thus locating the traps and serving as handles at the same time.—GEOFFREY GILL, 24 Overlook Drive, Huntington, L. I., N. Y.

RECENT LITERATURE

Reviews by Margaret M. Nice and Thomas T. McCabe

BANDING AND MIGRATION

1. Bird-Banding Notes.—1938. Vol. 2(16):269-294. In North America 346,056 birds were banded in 1938, the total since 1922 reaching 2,828,100. The ten species landed in greatest numbers were: Chimney Swift (*Chaetura pelagica*) 25,607; Herring Gull (*Larus argentatus*) 18,805; White-throated Sparrow (*Zonotrichia albicollis*) 17,026; Pintail (*Dafila acuta*) 16,360; Junco (*Junco hyemalis & oreganus*) 14,701; Common Tern (*Sterna hirundo*) 14,376; Mallard (*Anas platyrhynchos*) 13,587; Franklin Gull (*Larus pipixcan*) 10,841; Green-winged Teal (*Nettion carolinense*) 8,372; Robin (*Turdus migratorius*) 8,023.

Great numbers of birds are banded on this continent, but the accumulating data are not being utilized.

Some information is given on longevity: two Mallards were at least 15 years old, one at least 14, one at least 11; a Crow (*Corvus brachyrhynchos*) was at least 14; two Red-tailed Hawks (*Buteo borealis*) and a Caspian Tern (*Hydroprogne caspia*), reached 13 years; a Chimney Swift at least 12, a Herring Gull 10; Common Terns 10, 9, and 8; a Chickadee (*Parus atricapillus*) at least 8 years and a Nuttall

Sparrow (*Zonotrichia leucophrys nuttalli*) 7. A Greater Scaup (*Nyroca marila*), banded in Oregon in December 1926, was retrapped there in 1927, 1928, 1935 and 1938. A Nighthawk (*Chordeiles minor*), banded June 1933, was retaken on the same roof in 1937 and 1938, the bander being confident that it had nested there in 1934, 1935 and 1936.

A strange migration fact was shown by the capture in Alabama in March 1937 of a Cedar Waxwing (*Bombycilla cedrorum*) banded in April 1935 in California.

2. Banding in Czechoslovakia. (III. Beringungsbericht der Tschechoslowakischen Ornithologischen Gesellschaft für das Jahr 1937). J. Jirsik and Ing. O. Kadlec. 1938. *Sylvia*, 3:17-44. Eighty-two coöperators banded 10,380 birds of 123 species in 1937, the most popular species being Black-headed Gulls (*Larus r. ridibundus*), Barn Swallows (*Hirundo r. rustica*), Starlings (*Sturnus v. vulgaris*), Martins (*Delichon u. urbica*), and Blackbirds (*Turdus m. merula*). Most fall migration is to the southwest, but a few recoveries come from the south or southeast. A Barn Swallow banded August 9, 1937 as a nestling, was found in Germany June 3, 1938 95 km. to the north of its birthplace. A Rook (*Corvus frugilevus*), banded May 11, 1937, was found May 5, 1938 near Strassburg, France, 610 km. west of the place of banding. The authors say it was "nesting" p. 44, but it appears to have been a young bird (its "age" at recovery is given as 11 months, 21 days, p. 23) and Rooks do not nest until two years old.

3. The Isle of May Bird Observatory, Autumn Report, 1937.—The Midlothian Ornithological Club. 1938. *Scottish Naturalist*, 232:103-106. This praiseworthy attempt to keep a coöperative record of bird migration past a famous lighthouse island was able to function for one month only in the autumn of 1937, though some further knowledge of the migratory movement was provided by the lightkeepers.—T. T. McC.

4. Relation of Temperature to Early Migrants.—John S. Main. 1938. *Wilson Bulletin*, 50:190-193. A discussion of the relation of warm waves and spring migration, in particular the abnormally warm week of February 17-23, 1930, and the accompanying early migration. Bissonnette (*Wilson Bulletin*, 1937:255) suggests that in such cases the temperature factor "is difficult to separate from brighter days due to less overcast skies," but "in January and February of that year the hours of sunshine throughout the region were less than normal." (Main). Various authorities are mentioned, but few references given. One of the most pertinent sets of data supporting the author's thesis was missed, namely the migration of the Song Sparrow as treated in the reviewer's *Studies in the Life History of the Song Sparrow*, I. Trans. Linnaean Society of New York IV. 1937.

5. Further Experiments on the Relation of the Sex Glands to Migratory Behavior.—(Weitere Versuche über die Beziehungen der Keimdrüsen zum Zugverhalten.) P. Putzig. 1938. *Der Vogelzug*, 9:189-200. Experiments with castrated birds were continued; a Hooded Crow (*Corvus cornix*) migrated over the Baltic 400 km. north; a Garden Warbler (*Sylvia borin*) showed "migration-restlessness"; a Black-headed Gull returned to its nesting colony when released 55 km. away, but soon left, the same being true of a Starling. White Storks (*Ciconia ciconia*) winter in South Africa, so undertake the spring migration when days are shortening; nevertheless a captive adult, subjected to additional hours of light in the winter, showed enlarged gonads.

6. The Physiology of Migration in Birds.—(Zur Physiologie der Zugruhe bei Vögeln.) F. W. Merkel. 1938. *Berichte des Vereins Schlesischer Ornithologen*, 23:1-73. Extended observations are reported on several captive Whitethroats (*Sylvia communis*), Black-caps (*Sylvia atricapilla*) and Redbreasts (*Erethacus rubecula*), the average weight of the bird and of its food being given each half month for 10-15 months with notes as to its migratory activity and state of molt. Unfortunately no mention is made of temperature conditions. Spring migration restlessness, as shown in revolving cages, lasted until the molt, while fall migration extended well into the winter.

Interesting data are given on the weight of 28 incubating Pied Flycatcher (*Muscicapa hypoleuca*) females and the weight of three of the same birds when feeding young; the average of the former was 15.13 grams, of the latter 12.3. The author states that "after the breeding season, weight steadily increases to reach a high point at the beginning of migration." p. 9. This, however, was not true of the Song Sparrows I studied, nor does Kendeigh's work corroborate it (*Auk*, 1938:416-467.) It is difficult to get any consistent picture from the author's results between weight of the bird, amount of food taken, and migratory state.

Temperature and hunger are found to have a marked influence on the inception of migration, but barometric pressure appears to be of little importance. The metabolism of the migrating bird is discussed at some length. No direct influence was found between the gonads and the start of migration. There is a bibliography of 89 titles.

Further experiments on problems of migration will be found in No. 55.

LONGEVITY

(See No. 1)

WEIGHT

7. **On the Weight of Finnish Birds.**—(Ueber das Gewicht finnischer Vögel.) J. S. Grönvall. 1938. *Ornis Fennica*, 15:83-85. Average weights are given for some 50 species captured for banding; in many cases they are separated as to sex. For other data on weight see Nos. 6 and 26.

LIFE HISTORY

8. **Incubation Periods of Mallard, Pintail and Long-tailed Duck.** J. M. Dersheid. 1938. *British Birds*, 32:151-153. Two young Icelandic Mallards (*Anas platyrhynchos subboschas*) hatched in 25 days and grew quicker than common Mallards under similar conditions; when one month old they were practically full grown, being well feathered and the sex recognizable by color of bill and voice. Comparable figures are not given for the common Mallards, but Bent (Bull. 126, U. S. Nat. Mus. 1923) mentions 10 weeks as the age at which "the young bird is fully grown." The author considers 28 days as the usual incubation period of the common Mallard; Bent gives 26 days, Heinroth ('22) 25½-26. The incubation period of the Pintail (*Dafila acuta*) is given as 23 days (also by Heinroth), and of the Old-squaw (*Clangula hyemalis*) as 24.

9. **A Week in the Highlands.**—S. S. Chesser. 1938. *Oologist's Record*, 18:35-40. An account, full of the soundest information, of a week in late May on Loch Ness and the surrounding "lochans." Highlights are a discussion of apparently non-breeding pairs of Widgeon (*Mareca penelope*), a phenomenon more common among the Anatidae than the author realizes, and descriptions of nests of this species, of the Common Gulls (*Larus canus*), which, here at least seem to nest on the ground, not on trees or stumps as the American *brachyrhynchus* so often does, and of the Slavonian Grebe, which we call the Horned Grebe (*Colymbus auritus*).—T. T. McC.

10. **Partial Nidification of the Flightless Cormorant.**—Malcolm Davis. 1938. *Auk*, 55:596-597. This amounts to a mere news item, and not a very satisfactory one, so confused, inconsequent, and repetitive are the facts, so glaring the omissions. Four eggs were laid, two broken by the feet of the male, the two remaining found to be infertile. The courtship of the same pair of *Nannopteron harrisi* has been studied by Davis and Friedman (*Scientific Monthly*, June 1936: 560).—T. T. McC.

11. **Florida Crane a Resident of Mississippi.**—E. A. McIlhenny. 1938. *Auk*, 55:598-602. Another discovery of a survival of major importance on the Gulf coast. Mr. McIlhenny, with the aid of locally resident friends, has found a substantial and apparently ancient breeding colony of *Grus canadensis pratensis* on the wet lands of southeastern Mississippi. One flock contained twenty-five birds,

another thirty-four. The author tells of visiting one nest and has second-hand reports of more than a dozen others. There are photographs of a nest and eggs, a downy chick, and older immatures raised by hand after being rescued from nests ruined by storm and flood.—T. T. McC.

12. **Central Wisconsin Crane Study.**—F. N. Hamerstrom, Jr. 1938. *Wilson Bulletin*, 50:175-184. Sandhill Cranes (*Grus canadensis tabida*) are rare breeders in Wisconsin; a study of their habitat requirements shows that they need large blocks of peat bogs.

13. **Colony Nesting of the Kestrel.**—(Kolonieweises Brüten beim Turmfalken). Georg Steinbacher. 1938. *Beiträge Fortpflanzungsbiologie der Vögel*, 14:228. Near Munich in 1930 in a small low spruce and pine woods 20 pairs of Rooks (*Corvus frugilevus*) and 15 of Kestrels (*Falco tinnunculus*) were nesting, the latter using old Rook and Magpie nests. Some trees held nests of both species, while in one case two Kestrel nests were only a few meters apart. The author thought the large numbers of these Falcons might be due to the abundance of mice in the moss. The colony suffered persecution and practical destruction.

14. **Nesting of the Water-Rail.**—(Zur Fortpflanzungsbiologie der Wasserrale, *Rallus a. aquaticus* L.) Rud Zimmermann. 1937. *Mit. Vereins sächsischer Ornithologen*, 5:105-111. Both parents incubate, the female doing the larger part, while her mate feeds her assiduously, coming every few minutes with an insect. The parents carry small young about in their bills, grasping them by the neck.

15. **Nesting of the Moorhen.**—(Nogle jagttagelser over Groenbenet Roerhoe i Nyngletiden.) Vagn Holstein. 1938. *Dansk ornith. Forenings Tidsskrift*. 1938:31ff. The male *Gallinula chloropus* is the chief nest builder; while his mate incubates, he builds "play nests" that are used for hovering the first-hatched young. The male does some of the incubating and occasionally feeds his mate on the nest. Incubation lasts 14 days.

16. **A Contribution to the Biology of the Musophagiformers, the so-called Plantain-eaters.**—R. E. Moreau. 1938. *Ibis*, 2(14th Ser.): 639-671. A great deal of sound information, much of it in the nature of correction of traditional or long-accepted error, drawn from what is after all very scant material representing the group the author raises to ordinal rank,—the Plantain-eaters which almost certainly never eat plantains, or *Bannanenfresser* which occupy a continent where the banana is not indigenous and which do not eat it when introduced.

A large part of the paper deals with matters of pure morphology, especially the down-plumages and their sequence, though many of the topics have immediate functional or behavioristic significance. The author does not find in the early wing-ratios a provision for special juvenile activity, fails to detect wing-claws where they have been described, and narrows the degree and doubtless the function of the "semi-zygodactyly." Incidentally, he also destroys the tradition of the bleaching of living birds by rain or bath-water solution of the turacin pigment. The accounts of the development of behavior and the stages of physical activity in young birds raised—unfortunately not from a very early age—in captivity, are all too brief.—T. T. McC.

17. **The Texas Nighthawk in its Summer Home.**—Gayle Pickwell and Emily Smith. 1938. *Condor*, 40:193-215. Interesting observations on nesting behavior of *Chordeiles acutipennis texensis* in the Santa Clara Valley, California. The incubation period was 18 and 19 days; the female incubated and brooded during daylight; while the male "brooded chiefly in connection with feeding visits" in the evening and early morning. Feeding was by regurgitation, the bill of the parent being "thrust into the open mouth of the young." The young are able to walk a little, shortly after hatching. Fear came at about 11 days, one bird giving an intimidation display at the age of 12 days. The young are well fea-

thered at this time, but do not fly until the age of 3 weeks. They "presented a crouch-concealment protective reaction at an early age, and such reactions were used until they are able to fly."

The first reaction of an incubating or brooding bird to an approaching human is "freezing" or "concealment by self" as the authors term it; then "injury feigning." One female, however, when the human approached on hands and knees went through a spectacular intimidation display—raised wings and wide-open mouth. The article is illustrated with fine photographs of the various displays. A long bibliography is appended, but reference to two studies on the nest life of *Chordeiles minor* would have been of interest.—Bowles, *Auk*, April, 1921, and Herrick's "Home Life of Wild Birds." (1902).

18. Observations at a Rufous Hummingbird's Nest.—A. Dawes DuBois. 1938. *Auk*, 55:629-641. An altogether charming series of word-pictures covering the last two days of incubation of *Selasphorus rufus* and the first twelve days after hatching. Largely free of statistical matter and technical theorizing, but animate with a wealth of better things, and illustrated by a single photograph so superb that future photographers might as well give up the subject.—T. T. McC.

19. Swallow Broods.—(Schwalbenbruten). M. Brinkmann. 1938. *Beiträge Fortpflanzungsbiologie der Vögel*, 14:161-166. Nesting censuses of Barn Swallows and Martins in 6 villages of Upper Silesia for 5 years. *Hirundo rustica* varied from 340 to 441 pairs, *Delichon urbica* from 63 to 100. Despite the Swallow migration catastrophe in the fall of 1936, their numbers increased in 1937. The average number of young raised by the Barn Swallows was 4.1 in the first brood, 3.5 in the second and third (only about 1 per cent of the pairs attempt third broods). The Martins averaged 4 young in the first brood and 3.3 in the second. About two-thirds of the Barn Swallows raised second broods, about one-third of the Martins. The former averaged six young per pair per season, the latter 4.5.

The Bank Swallow (*Riparia riparia*) raises two broods. There has been a decrease in the size and number of colonies.

20. Nest Life of the Nuthatch.—(Das Brutleben des Kleibers, *Sitta europea* (homeyeri Hartert).) Otto Steinfatt. 1938. *Mit. Vereins sächsischer Ornithologen*, 5:178-180. Nuthatches are permanently resident, remaining all year on or near their territories. Nest building is shared by both sexes and lasts about 17 days; incubation takes 16 days and fledging 22. The female incubates, being fed to some extent by her mate; she broods the young, but both parents feed about equally. The female spent the night on the nest even before the eggs were laid, and continued this practice till the young were 16 days old.

An all-day observation of a nest on the third day of incubation showed 8 hours 17 minutes spent on the nest (73 per cent of the day) and 3 hours off. Periods on ranged from 3-84 minutes, averaging 31.1; periods off ranged from 1-27, averaging 11.3. The female came off 16 times, 7 times being called off by her mate, who fed her 19 times.

When the six young were 2 days old the nest was watched from 3.00 a. m. to 7.30 p. m.; they were brooded 5 hours and 8 minutes; and were fed by the female 60 times and by the male 59 times. The first feeding came at 3.23, the last at 7.15. The number of feedings per hour ranged from 1-15, averaging 7.4. Thirteen days later the nest was watched from 2.45 a. m. to 8.15 p. m.; the female fed 149 times, the male 129. The first feeding came at 3.11, the last at 7.14; the number of feedings per hour ranged from 2-27, averaging 16.4. The female removed excreta 31 times, the male 30. The young stayed with the parents some 14 days after leaving the nest, then wandered away, joining companies of Titmice. An admirable study.

21. The Nesting of the Chiffchaff.—(Das Brutleben des Weidenlaub-sängers.) Otto Steinfatt. 1938. *Berichte Vereins schlesischer Ornithologen*, 23:1-8. With *Phylloscopus collybita* the female builds, incubates, and feeds alone. While building she keeps in touch with the tirelessly singing male by call notes;

one such bird stole nesting material from a nearby Song Thrush's nest. Four all day observations were made. One nest was watched from 3.00 a.m. to 7 p.m. on the third day of incubation. The weather was foggy, then sunny. The female was on 85 per cent of the time, making 17 trips off. Her periods on the nest lasted from 5-141 minutes, averaging 49.1 minutes; her periods off from 2-25 minutes, averaging 8.2 minutes. Another nest was watched from 3.00 a.m. to 8 p.m. on the 11th day of incubation, the day being sunny and warm. The bird made 34 trips, staying on 70 per cent of the time. The periods on the nest lasted from 1-56 minutes, averaging 19.6; her periods off ranged from 1-17 minutes, averaging 8.2.

The same nest was watched when the 4 young were 3 and 4 days old from 3.00 a. m. to 8.00 p. m., a clear, warm day. The mother left the nest 48 times, brooding the young 24 per cent of the day. She stayed on from 2-9 minutes, averaging 4.8 minutes, and stayed away from 1-37 minutes (once 80 minutes), averaging 14.9 minutes. The number of feedings were 99, 6.2 per hour. Excreta were removed 16 times.

Five days later the number of feedings totalled 228 throughout the day, an average of 13.4 per hour; excreta were carried off 26 times.

The female brooded the young at night till they were 9 and 10 days old. Incubation period is 15 days, fledging period 13 and 14, the young being cared for out of the nest for 8-10 days. Two broods are raised. There is a very loose bond between the mates after the eggs are laid, and polygamy sometimes occurs. A thorough, careful study.

22. Observations on the Chiffchaff.—(Beobachtungen am Weidenlaubvogel (*Phylloscopus c. collybita*) H. v. Treuenfels. 1938. *Beiträge Fortpflanzungsbiologie der Vögel*, 14:124-129; 185-188. These notes agree with Steinfatt's study in the length of incubation, fledging, etc. The female spends 4 days building, then waits from 3-5 days before beginning to lay. In building a [second nest she may use material from the first. While incubating she stays on 20-30 minutes and off for 6-10 minutes, often being called off by her mate.

23. Observations on the Breeding Habits of Nigerian Estrildine Weaver-birds.—William Serle. 1938. *Oologist's Record*, 18:40-45 and 60-63. Descriptions of some nine forms of this group, (Estrildines), very much from the egg-collector's point of view, but with good brief material on nests and nest-sites.—T. T. McC.

24. Observation on the Nesting of the Redbreast, Whinchat, Chaffinch and Linnet.—(Nestbeobachtungen beim Rotkehlchen (*Erithacus r. rubecula*), Braunkehlchen (*Saxicola rubetra*), Buchfink (*Fringilla c. coelebs*) und Hänfling (*Carduelis c. cannabina*.) Otto Steinfatt. 1937. *Verh. Orn. Ges. Bay.* 21:139-154. A nest of the Redbreast with 6 young was watched all day two days before the young left: the first meal came at 3.13, the last at 7.48. One insect was brought at a time, and a total of 228 trips made. The number per hour ranged from 5-25, averaging 13. Excreta were carried off 54 times.

Three all-day observations were made at a nest of Whinchats with 5 young, 3, 2, and 1 days before leaving. The total numbers of meals were 345, 401, and 306, respectively, the average number per hour being 20, 24, and 18. One insect was carried at a time. Excreta were removed 92, 109 and 80 times respectively.

The Chaffinch is the most abundant bird in the Rominter Heide, East Prussia. Two broods are raised each year. The female builds and incubates, the incubation period being 12 days. Fourteen hours observation at a nest with 5 young about 9 days old showed 36 feedings by the male, and 27 by the female, with excreta removed 32 times. The average number of meals per hour was 4.5.

The Linnet also raises two broods. The female incubates, and broods the young until they are 11 days old. Incubation lasts 13 days, fledging the same. Feeding is by regurgitation. At a nest with eggs four days before hatching the female incubated 78 per cent of the seven and one-half hours of observation; when the young were 6 days old she brooded them 40 per cent of 10 hours observation,

the male feeding them 3 times, the female 11. An all day record when the young were 12 and 13 days old showed that the male fed 23 times and the female 27.

25. **The Nesting of the Redpoll.**—(Zur Fortpflanzungsbiologie des Birkenzeisigs (*Carduelis flammea* [L.]).) G. Timmermann. 1938. *Beiträge Fortpflanzungsbiologie der Vögel*, 14:201-206. Observations on the nesting of a pair of *Acanthis linaria* (according to our Check-List) in an aviary in Iceland. Notes are given on three nestings. The female built, incubated and brooded, being fed on the nest by her mate. In two cases the young left the nest at 12 days, but were not able to fly until 16 and 17 days; in the third case they remained until 17 days at which time they could fly. They became independent at 24 to 26 days.

26. **Seasonal Variations in the Tree Sparrow.**—A. Marguerite Baumgartner. 1938. *Auk*, 55:603-613. This paper examines the complete annual cycle of gross, and to some degree anatomical and histological, variation in a migrant (*Spizella a. arborea*) except for the periods actually spent in migratory flight, with Ithaca, New York, representing the wintering grounds and Churchill, Manitoba, the breeding grounds. All plumages are carefully described, the weights graphed, degrees of fat described on the basis of some 455 specimens, the immature skull followed to the last trace of incomplete ossification on February second, and over a hundred ovaries sectioned and stained, though not, unfortunately, at least in the present paper, with complete analysis of gonadal development, but merely in hopes of finding means of distinguishing first-year from older birds in winter. Nothing is said of increased fat-content just before spring departure, a point which might well have borne special attention. Of such solid and permanent work, based on investigations of such scope, it is hard to speak too well.—T. T. McC.

27. **Some Unusually Large Broods; Scarcity of Late Nests.**—Amelia R. Laskey. 1938. *Migrant*, 9:70-71. In a season of abundant rainfall nests of Robins, Mockingbirds, and Thrashers were found with 5 nestlings, Bluebirds and Bewick Wrens with 7 each. One color-banded pair of Mockingbirds (*Mimus p. polyglottos*) raised four broods within an area 9 by 36 yards. "Two fledglings left the first nest April 21, four from the second nest on May 22, three left the third nest June 25, and four left the fourth nest by July 30." A truly remarkable record.

BIRD BEHAVIOR

28. **Preliminary Notes on the Behavior and Ecology of the Eastern Willet.**—Wm. Vogt. 1938. *Proc. Linnaean Society of New York*, No. 49, 1937: 8-42. A notable study on *Catoptrophorus s. semipalmatus* nesting in New Jersey, carried out by means of an elevated blind. "The Willet is a highly territorial bird and guards the boundary of its demesne, through much of the breeding season, as vigorously as does any passerine." The birds, however, are paired before claiming territory, and the male defends his mate before he defends territory. Territory is proclaimed by a spectacular ceremonial flight in which the male, "rapidly and loudly calling *pill-will-willet*" rises high in the air, circling about and flickering the tips of the wings "like tongues of black and white flame," p. 18. Flicker wings are also an integral part of the courtship display, although here the male stays on the ground and uses a different note. "The vibrating of the Willet's wing seems clearly to satisfy Lorenz' (1935) requirement of 'improbability' as a criterion of a releaser impinging upon innate perceptory patterns." p. 30.

The Willet is highly socialized, disregarding "all territorial boundaries when repulse of an enemy is involved." That these screaming mobs constitute an effective means of defense is shown by the "hasty retreat beat by Crows." Mobbing often occurs *in vacuo* as well as in the presence of predators.

29. **Predation of Gulls in Murre Colonies.**—R. A. Johnson. 1938. *Wilson Bulletin*, 50:161-170. A very interesting article on the behavior of *Uria aalge* in relation to predation by *Larus marinus* and *L. occidentalis* and to disturbance by man. The author concludes: "The murre normally nesting in colonies on remote islands or inaccessible cliffs has not evolved a series of responses which permit it to

adapt to repeated disturbances in a way to promote the preservation of its eggs. The greater degree of adaptation appears to be in its ability to re-form a breeding colony and produce a new crop of eggs. Breeding colonies of murres which are located in the range with Western Gulls or with Great Black-backed Gulls may be seriously affected either by a pressure from excessive numbers of gulls or from a fear conditioning resulting in gull predation of the eggs or the abandoning of them in locations not accessible to gulls. This fear reaction is a colony response although it may start in one individual. At first the flight from the breeding site will not occur until the colony has experienced a series of stimuli ending in contact with a predator. After the conditioning the complete series of responses is set off by the warning stimulus."

30. Experiences with the Saker Falcon.—(Quelques Expériences avec le Faucon sacre (*Falco cherrug cherrug* Gray.) G. Dementiev. 1938. *L'Oiseau et la Revue française d'Ornithologie*, 8:592-601. Three young in juvenal plumage—about a month old—were sent to the author, having had no food on a 4-day journey. (A Black Kite, *Milvus k. korschum*, lived a month without food or water before dying!) The young defended themselves in the infantile manner by throwing themselves on their backs and holding up their claws against their assailant. After they could fly, they either left the vicinity of an enemy or attacked him with their claws. Before they could fly, "prey" had either alarmed them or called forth no reaction; afterwards anything that moved was captured, "covered" in characteristic falcon manner, and eaten in stereotyped fashion. All this behavior was similar in the three birds and clearly innate. There was almost no quarreling between them. Their hearing was acute and they recognized their master's step at a distance.

31. A Rare case of Hyperdactyly in the Kestrel.—(Ein seltener Fall von Hyperdaktylie beim Turmfalke, *Falco t. tinnunculus* L.) H. Esther. 1937. *Mitt. Ver sächs. Ornith.* 5:111-115. A young Kestrel with 16 toes was brought to the author; he always attempted to catch mice in the manner of his species, although his deformity prevented him from grasping them.

32. The Biology of the Pale-headed Rosella.—(Zur Biologie des Blasskopf-rosellas, *Platycercus adscitus*.) Helmut Hampe. 1938. *Journal für Ornithologie*, 86:529-543. Observations on captive birds. Incubation lasted nineteen and one-half days, fledging 35. A tame young female tried to feed the author's finger at the age of 52 days; and at 5 months made overtures to a male *P. icterotis*. The Rosella mate for life. As to dominance in parrots, in species of *Forpus* and *Agapornis* both sexes have equal rank, and in some of the latter the female is dominant over the male, often being victor in the frequent fights.

33. Some Feeding Habits of the Red-Breasted Sapsucker.—Charles G. Danforth. 1938. *Condor*, 40:219-224. An interesting article showing that *Sphyrapicus varius daggetti* "follows the sap down the tree on the shady side;" that it may average 30 or more new holes in a day, and that "A cycle in the utilization of food trees is followed by the bird through its choice of trees which flower or bud in sequence."

34. The Display of the White-plumed Bird of Paradise.—(Beobachtungen über die Balz des Paradiesvogels *Paradisaea guilielmi* Cab.) Otto Wagner. 1938. *Journal für Ornithologie*, 86:550-553. An account, illustrated by sketches, of the remarkable display of two males in nearly adult plumage in the zoo in Sydney; the birds displayed for 20 minutes, and later for 43 minutes, but the three females in the flying cage paid no attention to them. There were three groups of figures the birds doing everything together. They stayed from 15 seconds to 2 minutes in one position, giving little cries. In the first position, they sat side by side, turned towards each other and then away with their wings spread up or down. In the second group of figures they sat side by side with outspread wings, fell over and hung with heads down, then stood stiffly with their bills pointing upright.

In the last figure one hung below the branch, the other stood above him, both with outstretched wings. In the wild this communal courtship has been described with five or six males hanging beside each other, while the females watch from a nearby tree.

35. The Significance of Combat in Male Rosy Finches.—Howard Twining. 1938. *Condor*, 40:246-247. The Sierra Nevada Rosy Finch (*Leucosticte tephrocotis dawsoni*) "has no fixed territory." The mated male is busy driving other males away from his mate, most pursuits consisting of "short twisting flights in which the intruder is routed without bodily contact," but at other times strenuous fighting takes place. "Rosy Finches feed peaceably in flocks on the feeding grounds except when a mated pair is present, whereupon the other males are driven away. A building female is seldom unaccompanied, and is always defended from all other males by her mate." When she starts to incubate, he feeds her on the nest, and "evidently becomes entirely unconcerned over the presence of other males."

36. The Birds of Reevesby Island, Sir Joseph Banks Group, South Australia.—H. T. Condon. 1938. *South Australian Ornithologist*, 14:187-192. Excellent brief comments on the appearance and behavior of a small number of pelagic and littoral birds watched during a twelve-day visit to these islands in December 1936.—T. T. McC.

37. *Micropus pacificus*, Fork-tailed Swift.—T. Brandon. 1938. *South Australian Ornithologist*, 14:195-196. Two paragraphs of description of the behavior of flocks of this little-known bird near Wilmington, South Australia.—T. T. McC.

38. The Behavior of Birds in the Summer Night.—(Beobachtungen über das Verhalten der Vögel in der Sommernacht.) J. E. Paatela. 1938. *Ornis Fennica*, 15:65-69. Observations on the time of first and last song of about 20 species at 60° North Latitude during June; passerines slept from 1-5 hours; several slept so deeply that the alarm notes of their mates failed to awaken them.

39. Some Labyrinth Experiments with Small Birds and Mice.—(Einige Labyrinthversuche mit Kleinvögeln und Mäusen.) P. Palmgren, H. Ahlquist and E. Sylvén. 1938. *Ornis Fennica*, 15:74-77. Redbreasts (*Erithacus rubecula*), a Garden Warbler, (*Sylvia borin*), Bullfinches (*Pyrrhula pyrrhula*) and Pine Grosbeaks (*Pinicola enucleator*) as well as white mice were tested in a simple maze with food as the goal. All the birds learned it in 4-6 tests. The mice found the goal more quickly at first, but their curves did not reach the minimum as soon as did those of the birds.

40. Is a Psychological Interpretation of so-called Animal Hypnosis Justified?—(Ist eine tierpsychologische Betrachtung der sogenannten "tierischen Hypnose" berechtigt?) Fritz Steiniger. 1938. *Journal für Ornithologie*, 86:516-528. The author disagrees with Masarey's thesis (*Journal f. Ornithologie*, 85: 694) that akinesia, one manifestation of which is so familiar to banders when the bird lies on its back in the open hand, can be explained wholly on biochemical grounds as a result of the out-pouring of adrenalin during excitement; he considers it an instinctive action.

SONG

41. **The Singing of the Mockingbird.**—Loye Miller. 1938. *Condor*, 40:216-219. A discussion of the "imitations" in the song of *Mimus polyglottos*. An interesting method was followed in indicating on one line all original *motifs* as sung and all imitated *motifs* on another line; such records showed 2-11 per cent of imitated material. The imitated notes are analyzed as to excellence and the "nature of mimicry," some being classed as "probably true mimesis" and others as "possibly fortuitous." "The fortuitous resemblance is held to be due, not to inherited mimesis, but to the great complexity of the mocker's vocal and psychic equipment." An excellent article, even though the literature on the subject is almost entirely ignored.

42. **Instinctive Music.**—Sydney E. Ingraham. 1938. *Auk*, 55:614-628. This brilliant paper, if we understand it correctly, is built around the discovery that bird song, as well, so the author believes, as many of the spontaneous utterances of human beings, is based on an inherent tendency to use intervals which approximate those of at least the lower part of the physical series of overtones, with an equally inherent power, within these series, to change from key to key. This involves a consciousness of intervals in terms of *ratios* of the wave-lengths employed rather than in terms of the absolute frequencies, and constitutes an instance of the psychological generalization known as the "Weber-Fechner Law."

This is as much as to say that "if the stimuli from external objects are increasing in geometrical progression, the psychological series increase only in arithmetic progression." In such a natural system changes of key will be instinctively felt throughout the range of the fundamental and overtones, in contrast to a system in which change of key must depend upon arbitrary computations, as in the "well-tempered scale" of the sophisticated human musician, which is required by such instruments as the piano or clavichord (unless with a greatly enlarged keyboard), though not by the violin or the voice.

Toying with this concept the author chanced to "draw the graph of an arithmetic scale on semi-logarithmic paper" (*i. e.* to plot the logs of an arithmetic series) and soon noticed that the divisions bore a certain resemblance to the diatonic scale. Pursuing the idea, he found that what was really represented was the theoretic framework of the series of overtones, or Helmholtz order of Harmonic Partials, (first the octave, then the fifth, then the notes of the common chord, etc. etc.), which naturally accorded with the overtone intervals he had just been studying on the records and films made at Cornell and supplied to him by Mr. Brand.

The songs of a number of birds are transcribed from the films to semi-logarithmic paper by the use of graphical symbols. In spite of a certain number of random notes, the burdens of the songs appear (most convincingly in the case of the Brown Thrasher) to accord with the natural series of musical ratios.

Much of the latter part of the paper is devoted to the application of the concept to pure musical theory, without special reference to bird song. As the author readily admits, neither the existence of the physical scale nor the divergence of the well-tempered scale from it are novel ideas. None the less the present application of them seems to the reviewers to contain matter of the highest importance in two respects. First in its evidence of the deep-seated or universal existence of a corresponding sense in the higher animal world, and, second, as the most promising program so far undertaken to demonstrate a rational organization in the sounds uttered by birds.

Animal psychologists may be trusted to object that the author seems somewhat over-ready to attribute such changes of pitch and key to the bird's ear rather than to the mechanical limitations of its syrinx, and the inevitable question arises whether we are to think of a song-bird as a "wandering voice" or as a miniature steam-calliope.—BARBARA D. BLANCHARD and T. T. McC.

ECOLOGY AND POPULATION PROBLEMS

43. Regional Distribution of Breeding Birds in the Flood Valley of the Kokemäenjoki.—(Ueber die Regionale Verteilung der Brutvogelfauna im Flussgebiet des Kokemäenjoki). Olavi Kalela. 1938. *Annales Zoologici Societatis Zoologicae-Botanicae Fennicae Vanamo*, 5 (9): 291 pp. A careful, detailed study of the occurrence in summer of different species over an area of 550 square kilometers. Two methods of censusing were used: *A*—a count of all birds within a zone 40 meters wide; *B*—all birds seen and heard while censusing. The singing male was counted as representing a pair. The vegetation is described in detail because of its prime importance for bird distribution. More than half the volume is given over to an examination of the southern element in the avifauna, species that have recently appeared and increased in response to cultivation of the land An important contribution to ecology.

44. A Quantitative Study of a Fjeld Region in North Finland.—(Versuch zur quantitativen Untersuchung der Vogelfauna einer Fjeldgegend in Nordfinnland.) Olof Granit. 1938. *Ornis Fennica*, 15:53-65. Three zones are represented: alpine; subalpine, in which birches are dominant; wooded, chiefly covered with pines. Censuses were taken over many different habitats in the 3 zones, the totals of all averaging as follows: alpine, 11 pairs of nesting birds per square kilometer; subalpine, 71 pairs; wooded, 60 pairs. As to the number of species the alpine zone had 10, subalpine 25, and wooded 46.

45. Wildlife Census Methods Applicable to National Parks and Monuments.—[Robert S. Bray.] 1938. National Park Service, Dept. Interior, Washington, D. C. 20 pp. mimeographed. A valuable summary of the subject, treating methods of censusing seabirds, waterfowl, upland game birds, and mammals with a bibliography of 106 titles.

46. Report of the Field Work Committee, 1936-7.—J. J. Hickey. 1938. *Proc. Linnaean Society of New York*, No. 49. 1937: 73-83. An appeal for "actual figures" on bird populations which will indicate "exact changes" with the passage of time. Censuses in units of time afield are recommended and a valuable list of "environmental types" with "suggested indicator species" given. Such lists should be worked out for all localities studied by field ornithologists, and could serve as a working basis for an adequate knowledge of bird populations. Much has been done in this line in England, Finland and Germany.

47. Report of the Field Work Committee 1937-38.—Robert P. Allen. 1938. *Proc. Linnaean Society of New York*, No. 49, 1937: 84-92. A further account of the "constructive field work" of this most energetic society, the author reporting briefly on the cooperative project of color-banding Herring Gulls throughout their breeding range in this country; on inquiries into the incubation period of 27 species; into the distribution of breeding colonies of 3 species of Terns, of Black Skimmers, Herring Gulls and 3 species of Swallows on Long Island, the results shown on maps; and into migration dates of 21 key species.

48. Black-crowned Night Heron Colonies on Long Island.—Robert P. Allen. 1938. *Proc. Linnaean Society of New York*, No. 49, 1937: 43-51. In 1935 there were 20 heronries of *Nycticorax n. hoaculi* approximating 3500 pairs. "During 1936 and 1937 four of these heronries were destroyed and the total population apparently reduced to about 3,000 pairs. The average number of pairs per heronry (1937) is 188.3." Four of the heronries are known to be over 50 years old. The number of pairs ranged from 4 to 600. Crows take eggs on occasion, but since the Heron lays a second set, the author concludes "that on Long Island, crow predation is by no means a threat to the nesting success of the Black-

crown." Severe storms and accumulation of old nests are responsible for some reduction in numbers, as is human persecution, but "the most frequent cause is land development."

49. The Index of Heron Population, 1938.—E. M. Nicholson. 1938. *British Birds*, 32:138-144. These careful censuses on the Grey Heron (*Ardea cinerea*) are taken each year, yielding valuable results. After 1928 there was a decrease for 6 years and after that an increase, 1938 reaching the highest point of all.

50. Natural Regulation of Over-population of Storks in East Prussia through Migration Losses and Nesting Failures in 1937.—(Ueber die natürliche Regelung der ostpreussischen Storchübervölkerung durch Zugverluste und Brutaussfall im Jahre 1937.) F. Hornberger. 1938. *Beiträge Fortpflanzungsbiologie der Vögel*, 14:168-175. In 1930 there were 350 occupied nests of *Ciconia ciconia* around Insterburg; in 1936 750. In 1930, 3 young were raised per pair, in 1935, 1.5. Twelve banded Storks nested from 0-45 km. from their birthplace, and two from 160-180 km. Two bred when three years old. Great losses were suffered apparently in Africa and during the spring migration of 1937; most of the birds returned very late, and only 0.8 young were raised per nest. Sixty per cent of the pairs raised no young at all. The season of 1938 was more successful, since 1.3 young were raised per nest.

51. The Influence of Mouse Years on the Breeding of our Hawks and Owls.—(Der Einfluss der Mäusejahre auf das Brutgeschäft unserer Raubvögel und Eulen.) Martin Schmaus. 1938. *Beiträge Fortpflanzungsbiologie der Vögel*, 14:181-184. Recent mouse years have been 1930, 1933-34, 1937; in the first and last plagues there were almost as many wood mice (*Mus sylvaticus*) as field mice (*Microtus arvalis*). The Common Buzzard (*Buteo b. buteo*) usually lays two eggs and raises one young; in mouse years it lays 3 and 4 eggs and raises two and three young. Nesting may also be earlier in a mouse year than in other years. The Tawny Owl (*Strix aluco*) normally lays 2 to 4 eggs; in 1930 two nests with 5 eggs were found, and one with 6 young; in 1937 one was located with 7 young. Nesting also occurs earlier than usual. As to the Barn Owl (*Tyto alba*), one pair in 1931 had 3 eggs, in 1932 they raised no brood, in 1933 they had 8 eggs, in 1934 5 eggs, in 1935 and 1936 4 eggs, while in 1937 the first laying contained 7 eggs, the second 8. Others have reported the same—no breeding in a year with little food and two broods in mouse years.

52. The Great Horned Owl as an Indicator of Vulnerability in Prey Populations.—Paul L. Errington. 1938. *Journal of Wildlife Management*, 2:190-205. Instances are given where over-population was evidenced in increased representation in pellets of *Bubo virginianus* in the case of Bobwhite, Ruffed Grouse, Pheasants and muskrats. "While the horned owl is not an infallible indicator of vulnerability for specific prey populations, it is believed to be the nearest approach to such an indicator of any predator we have as yet worked with." p. 195.

53. Winter in Arctic Lapland.—Colonel R. Meinertzhagen. 1938. *Ibis*, 2, (14th Ser.) 754-759. This brief account of a midwinter trip extending hundreds of miles north of the arctic circle to the northern ocean is full of thumb-nail sketches of the ways of life and the winter feeding-habits of the small land population, with something as well of the sea birds, and leaves one with a surprisingly satisfactory notion of a highly-specialized avian scene. One might have expected greater circumpolar uniformity,—the picture is very different from that of the forested nearctic. On the land the redpolls, crossbills, and Pine Grosbeaks are among the few familiar recurrences. No hawks, no owls, no woodpeckers or at

least none seen, the tits replacing the chickadees, and bullfinches, magpies, and hardy thrushes, Fieldfare (*Turdus pilaris*) and Redwing (*T. musicus*) filling niches left empty in our own north,—all this creates an aggregate not only picturesque but exotic.—T. T. McC.

54. Water Birds of the Kivu.—(Les Oiseaux Aquatiques du Kivu. Contribution à l'étude de la faune ornithologique du Congo Belge.)—Léon Lippens. 1938. *Le Gerfaut*, 28, Fasc. Spécial: 1-104. Although the Kivu is on the equator and food appears to be abundant at all times, most of the water and shore birds have a restricted breeding season—March to June,—beginning at the start of the dry season. The Egyptian Goose (*Alpochen aegypticus*), however, nests practically throughout the year. Fine pictures are given of many of the larger species, and there are some life history notes, as the parasitism of the Marabou Stork (*Leptoptilus crumeniferus*) on the Vultures, snatching pieces of meat from the bills of the latter; and the unwillingness of Egyptian Geese to swim on Lac Edouard and the entire absence of ducks there despite abundance of food supply, both phenomena apparently due to the presence of large carnivorous fish.

LIGHT AND REPRODUCTION

55. Light and Seasonal Reproduction in Animals.—Wm. Rowan. 1938. *Biological Reviews*, 13:374-402. Dr. Rowan has triumphantly proved his contention that it is increasing length of day and not light *qua* light that is responsible for the development of the sex glands in many birds of the Northern Hemisphere. House Sparrows (*Passer domesticus*) and Juncos were "subjected to increasing periods of mechanically induced wakefulness in total darkness" for four weeks; the former "attained virtually full breeding condition while the juncos were highly developed. Gonads of another group which were synchronously receiving lengthening periods of feeble illumination (not strong enough to keep them awake) remained at the winter minimum." p. 402.

The whole paper is of great interest, giving a critical review of the experiments in this field on birds, mammals, fish, reptiles, amphibia and insects.

SEXUAL SELECTION AND CONCEALING COLORATION

56. Sexual Selection Among Fishes.—G. K. Noble. 1938. *Biological Reviews*, 13:133-158. A very interesting paper, showing the remarkable diversity of breeding behavior among fishes. Here are some of the author's conclusions: "1. It has been shown experimentally that female jewel fish, *Hemichromis bimaculatus*, will select the most highly coloured of several possible mates. Further, this selection will be made when only visual cues are available to her. 2. Although female choice has played a role in the development of sexual adornment in fish, nuptial colours may have several functions in the group: (a) They may serve to threaten rivals or enemies. (b) They may emphasize gestures which are essential to the formation of nuptial bonds. Some of these gestures are 'display' but others are 'symbolic' of nest building. (c) As a result of learning, nuptial colours may serve to identify sex and thus increase the efficiency of breeding behaviour. (d) Nuptial colors may aid young fish to learn to distinguish their parents from adults of related species. 3. The pattern of breeding behaviour has an important influence on the genesis of sexual adornment. (a) In most territory-guarding fishes the males are conspicuously coloured, and the females are conspicuous if they defend the nest or young. Exceptions occur in forms with poor vision and in some of large size. (b) In most school breeders there is no sex dimorphism in colour, although pearl organs or other devices for holding the female may be present." p. 154.

In respect to (c) above, we are told on p. 137 that "Sex recognition in the guppy is a learned response." Individual males of *Lebistes reticulatus* if reared alone, "will be found to attempt mating as readily with a male as with a female," but if reared with other species, "will not school with this species, but with their own when given an opportunity. The inherited schooling response of guppies is visual."

57. The Present Standing of the Theory of Sexual Selection.—Julian S. Huxley. 1938. Reprinted from *Evolution: Essays Presented to E. S. Goodrich*. pp. 11–42. An interesting discussion of the subject throughout the animal kingdom with a bibliography of 58 titles, from which, however, the names of Selous and Cinat-Thompson are absent. The functions of conspicuous characters are classified into various categories, for instance, whether "adapted primarily to arrest attention" or to "stimulate emotion." "Among the former will be found characters subserving recognition, deflexion [injury-feigning, etc.], distance warning and distance threat. Among the latter are those threat and warning characters adapted to elicit fear; e. g. bristling of manes, . . . and also characters adapted to arouse sexual emotion." p. 14. "It appears definite that true female choice, of the type postulated by Darwin, in which a female deliberately selects one male from among a number of rivals present at one time, does occur" in the case of the "ruff, blackcock, and probably various birds of paradise." p. 40.

58. Survival Value of Acridian Protective Coloration.—F. B. Isely. 1938. *Ecology*, 19:370–389. Grasshoppers were picketed on harmonizing and contrasting backgrounds and records kept of the numbers eaten by English Sparrows, Mockingbirds, Blue Jays, Bantams and a Turkey. The author concludes that "*Concealing coloration protects.*" "These results clearly prove that cryptic coloration protects the acridian prey from bird predators, since birds intent on securing acridians as insect-food often failed to see and repeatedly passed over protectively colored acridians, while the non-protected were consistently eaten. Acridian warning coloration appears indubitably to have survival value. Hence there can be no doubt as to the *natural selection value* of acridian protective coloration under bird-predator pressure." p. 388. The non-protectively colored grasshoppers are prolific, while "the greater the perfection of the natural camouflage the less prolific are the acridian species." p. 387.

BOOKS

59. The Handbook of British Birds. II. Warblers to Owls.—H. F. Witherby, F. C. R. Jourdain, N. F. Ticehurst and B. W. Tucker. 1938. London. Witherby. 352 pp. 25s. The first volume of this Handbook was reviewed in the July 1938 *Bird-Banding*; the second volume is equally admirable. In this book the rest of the Passeres are treated—Warblers, Thrushes, Wrens, and Swallows,—also the Swifts, Goatsuckers, Kingfishers, Woodpeckers, Cuckoos, and Owls. The inclusion of synonymies is a useful feature. Subject headings under each species are: Habitat; Field-characters and General Habits; Voice; Display and Posturing; Breeding; Food; Distribution Abroad; Migrations; Descriptions; Characters and Allied Forms. Under the topic Breeding are given nest site and material; number, color and size of eggs; breeding season; incubation period and share of sexes; fledging period and care by each sex; number of broods. The color plates show each species in two to five plumages. An excellent feature is the chart showing season of song.

The only improvement that the reviewer could wish for would be more complete references than merely the name of the authority; if the date were added, many articles could be traced through the Zoological Record.

The authors are to be heartily congratulated on their fine work.

60. Handbook of German Birds. (Handbuch der Deutschen Vogelkunde.) II. Pici, Macrochires, Upupae, Meropes, Halcyones, Coraciae,

Caprimulgi, Striges, Cuculi, Accipitres, Gressores, Phoenicopteri, Steganopodes, Anseres.—Günther Niethammer. 1938. Leipzig. Akademische Verlagsgesellschaft M. B. H. 545 pp. 16.80 RM. The German Handbook (see *Bird-Banding*, Oct. 1937 for review of the first volume) which is to be complete in three volumes rather than five, lacks the colored plates of the British work, describes plumages in less detail (but does give weights of the birds), omits the section on Voice, Display and Posturing, but sometimes gives fuller details as to nesting habits, and includes full lists of parasites recorded from each species. Otherwise the books cover much the same ground in much the same manner, giving an extraordinary amount of detailed, trustworthy information and showing how far ahead in life history studies both Great Britain and Germany are of America.

61. The Flight of Birds.—C. Horton-Smith. 1938. London. Witherby. 182 pp. 7s 6d. An interesting popular account, discussing "The bird as a flying animal, Types of Flight—gliding, soaring and flapping; The alighting and rising bird, Velocity of flight, Safety devices employed by birds," etc. Under types of flight, the author tells us: "The heaviest birds are usually typically sailing fliers. Birds of flapping flight are of relatively small weight."

The bibliography contains only 17 titles. The last sentence in the book gives us further advice, "The serious student of bird flight should consult the original papers of Lord Rayleigh, P. Idراع, S. P. Langley, Sir G. T. Walker, and others which have appeared in the leading scientific journals," but apparently the student is supposed to do his own searching in these journals for the articles by the first three gentlemen.

62. Birds at Concord, New Hampshire.—Francis B. White. 1937. Concord. The Rumford Press. 126pp. A carefully annotated list of 194 species charmingly written, and telling something of the changes in status of some of the birds during recent years.

63. The Bird Life of Louisiana.—Harry C. Oberholser. 1938. Bull. 28. Dept. Conservation, State of Louisiana, New Orleans. 833 pp. 8 colored plates, 37 photo. \$1.00, (but free to libraries and scientific institutions in U. S. A. and foreign countries). In this large publication 430 species and subspecies are treated in conventional style with some attention paid to field marks and "habits," and detailed instances cited of occurrences. The bibliography is arranged chronologically, but is repeated under each author in the index (with each author's full Christian and middle names repeated up to 46 times in one case). One interesting paper, however, was missed—Wm. Gates' study of nesting Mourning Doves, Bull. 14, Gulf Biol. Sta. Cameron, La. 1909.

The introductory chapters are disappointing since only one page is devoted to geography and habitat features, and one and a half to the history of ornithology in the state. One of the most unfortunate oversights was the failure to include any map.

There is an interesting Calendar of Bird Migration from southern and northern Louisiana, and a good chapter on bird protection. The volume should do much to stimulate popular interest in birds in the state.

64. The Birds of the Lake Umbagog Region of Maine.—Part 3. William Brewster. 1937. Part 4. Ludlow Griscom. 1938. *Bull. Museum Comp. Zool., Harvard College*, 66:403-521; 523-620. The first two parts of Mr. Brewster's manuscript of his observations from 1871 to 1909 on the birds of this region (which lies partly in New Hampshire) were published in 1924 and 1925, concluding with the Hawks and Owls. The last portion of the completed manuscript, which covered the birds in the Third Check-List order through the Blackbirds, appeared in November 1937, while Part 4 came out in February 1938, the former edited, the latter compiled by Mr. Griscom, who had to "work out the status of the remain-

ing hundred species from the diaries and journals, and select extracts of special interest written with Mr. Brewster's inimitable charm and grace." Mr. Griscom is to be congratulated on the success of his labors. Both sections are full of valuable life history observations. Of particular interest in the "Supplement" to Part 4 is the comparison of present conditions with those covered by the diaries. "Perhaps the best news is that the lapse of thirty years has seen no essential changes for the worse." Some of the birds that have disappeared are the Marsh, Cooper and Red-tailed Hawks, Whip-poor-will, Pine and Rose-breasted Grosbeaks, Purple Martin, Philadelphia and Warbling Vireos. Others have increased—the Red-shouldered Hawk, Pileated Woodpecker, House Sparrow, and eight species of Warblers; while two new nesting species have moved in—House Wren and Starling.

65. Canoe Country.—Florence Page Jaques. 1938. Minneapolis. Univ. Minnesota Press. 82pp. \$2.50. An utterly fascinating book. It is a happy thing to know there is still unspoiled wilderness in our country, and it is a treat indeed to read this absorbing tale of the experiences there of two lovers of the wild. Mrs. Jaques has the rare gift of imparting the essence of the adventure with its moments of ecstasy and sometimes of discouragement. The illustrations by Mr. Jaques are a fitting accompaniment to a book that will be treasured and reread again and again.

66. A Book of Birds.—Mary Priestley. N. Y. Macmillan. 384 pp. \$2.50. An "anthology of bird literature," mostly prose, mostly from English authors, but with a few quotations from the Bible and Aristotle and a number from Americans. The reviewer has been unable to find any *raison d'être* in the arrangement, passages from one author being widely scattered, nor is there any division into sections. It is unfortunate that the fine passage from Chapter XI of Hudson's "Hind in Richmond Park" has been broken into five pieces (pp. 18, 192, 194, 196 and 204), and in such a way that in two selections it is not clear what bird is being described: on p. 195 an engraving of "Curlew" illustrates a paragraph that really refers to the Golden Plover, and in the exquisite description (p. 191-2) of the migrating call of the Upland Plover there is no clue whatever as to the identity of the bird. The author and title of book or article are cited under each quotation, but unfortunately no dates are ever mentioned.

The book has a wealth of fine, inspiring passages, not only appreciative of the aesthetic value of birds, but many that add to our knowledge of their behavior. Many of them also are rather unfamiliar and hence particularly welcome. The 82 wood engravings by Tunnicliff are a pleasing addition to this delightful book.

67. This is Our World.—Paul B. Sears. 1937. Norman. Univ. Oklahoma Press. 292 pp. \$2.50. A telling appraisal of man's place in nature and his present maladjustment. Human ecology is the subject and in lively, readable style, illustrated by amusing sketches, Dr. Sears discusses "The Living Symphony . . . and the Modern Dissonance," and the Patterns of Inanimate Nature, of Living Nature and of Human Cultures.

"All of the great continents bear witness with abandoned cities, mines, and fields, drifting dunes and denuded hills, to the fact that human activity can persist in a suicidal course of doing the things that it has always done, in the way it is accustomed to do them until the means of survival themselves are exhausted. Wherever intelligence becomes polarized into routine, the human animal is in danger of doing what the chestnut blight fungus has done to itself by destroying all the native chestnut trees in the eastern United States." p. 248.

The author's hope for a "balanced adjustment" lies in our realization of the gravity of the maladjustment and the use of all our intelligence in facing the situation, at the same drawing upon "the reservoir of great common morale."

68. Soils and Men.—Yearbook of Agriculture 1938. U. S. Dept. Agriculture,

Washington, D. C. 1232 pp. \$1.75. The present Yearbook is devoted entirely to this most vital of all subjects—an impressive array of articles dealing with Soil from all possible angles. Although only one title mentions Wildlife (Kenny and McAtee), yet the whole subject of soil erosion has a direct bearing on it. The map on p. 93 of General Erosion in the United States is a startling sight, showing as it does moderate to severe erosion over most of our country. It deserves the widest publicity.

69. Field and Wildlife Technic in Wildlife Management.—Howard M. Wight. 1938. Ann Arbor, Mich. Univ. Michigan Press. Lithoprinted. \$1.50. This manual for use of students in the School of Forestry and Conservation at the University of Michigan treats a great variety of topics: The Scientific Method, Observations and Notes; Cover Maps; Census Methods; Collecting; Animal Records and Specimens; Food Habits Research; Activity of Animals; Life History Studies; General Technic. There is a vast amount of useful information here on mammals as well as birds. The chapter on Life History Studies is disproportionately short, consisting of only 5 pages.

70. The Nation's Forests.—William A. DuPuy. 1938. N. Y. Macmillan. 264 pp. \$3.00. A popular account of the forests of the United States in their relation to man. After an account of the abuse of these valuable resources—wholesale cutting of the timber, fire largely due to cigarettes and camp-fires, erosion following lumbering and over-grazing, more cheerful topics are presented: the excellent work of the Forest Service in fire prevention and replanting, the trend towards "sustained yield" in private holdings, the method of putting out a small fire, and "wilderness areas" in the National Forests. The chapter on Wild Animals in the Forests tells of the unfortunate effects of over-abundance of deer and elk; the author recommends more shooting, not leaving mountain lions to do their work. The author does not write with a biological viewpoint towards the forest in relation to the birds, mammals and insects that inhabit it. The book is profusely illustrated with splendid photographs.

BIRD DISEASES

(Reviews by Dr. Carlton M. Herman)

Studies on the Trematode Parasites of Ducks in Michigan with Special Reference to the Mallard.—W. Carl Gower. June 1938. *Memoir* 3, Agric. Exp. Sta., Mich. State College. 94 pp. This is a very comprehensive review of the trematode worms of ducks. The memoir is divided into two parts. The first deals with reports of trematodes from ducks in Michigan. Besides a comprehensive review of previous reports, the author examined over 200 ducks at autopsy. These included eleven species, mostly Mallards. One hundred and twenty-five mallards were also used in experiments. Fifteen species of worms are reported.

The second part of the memoir is devoted to a key to the genera, diagnosis of families and genera, and lists of species reported from ducks. It is cross-indexed and contains a bibliography of 189 titles.

Preliminary Report of Infectious Avian Encephalomyelitis.—H. van Roekel, K. L. Bullis and M. K. Clarke. 1938. *Jour. Amer. Vet. Assoc.* 153:372-375. This disease, previously referred to as "epidemic tremor," is believed to have its greatest incidence in the New England States. It is caused by a filterable virus which attacks the brain. Naturally infected chicks have been observed upon removal from the incubator 24 and 48 hours after they were hatched. The disease usually makes its appearance in natural outbreaks when the chicks are from one to two weeks of age. The first symptoms are a dull expression of the eyes, followed by evidence of incoördination of the leg muscles. As the disease progresses, the

birds rest on their haunches, move with much unbalance or fall on their sides. Some birds exhibit a tremor or vibration of the head and neck, which may be brought on by exciting the chick. The percentage of mortality is not definitely known, but may exceed 50 per cent. The authors transmitted the infection by inoculation into the brain with material from infected chicks. They consider that field and laboratory evidence suggests that the infective agent may be egg-borne, and that the breeding stock serves as the reservoir of the infection.

The Occurrence in Nature of "Equine Encephalomyelitis" in the Ring-Necked Pheasant.—E. E. Tyzzer, A. W. Sellards, and B. L. Bennett. 1938. *Science* 88 (2291): 505-506. Four pheasants obtained from a locality in Connecticut were diagnosed, by laboratory methods and injection of laboratory animals, to be infected with this virus disease that affects the brain. It is considered that the form found in birds is the same as the organism frequently affecting horses and in a few cases in man. Other authors have previously reported this disease from chicks, pigeon, a species of vulture, the stork, the duck, the goose, the European blackbird and the common harrier of Europe. The authors conclude their article with the following: "A search for spontaneous infection in migratory birds is indicated. Extensive surveys will be required in order to know just how widely the infection is spread in nature. It may be only under accidental circumstances or when the infection rises to a certain level that it overflows and becomes a serious problem as regards the horse and even the human being."

NOTICE TO BIRD-BANDERS

The present editor of *Bird-Banding* having resigned, it is a pleasure to announce that he will be succeeded by Mr. James Lee Peters on March first 1939. All manuscripts and correspondence after the above date should therefore be sent to him at the Museum of Comparative Zoology, Harvard College, Cambridge, Massachusetts.

Mr. Charles L. Whittle will occupy the position of Assistant Editor.
