

RECENT LITERATURE

Reviews by Margaret M. Nice

BANDING AND MIGRATION

1. Results from the First Ten Years of Banding Belgian Birds in the Nest. (Résultats du Baguage au Nid des Oiseaux de Belgique pour les Dix Premières Années (1928-1938).) R. Verheyen. 1939. *Bull. du Musée royal d'Histoire nat. de Belgique*, 15 (49) : 1-36.—A valuable piece of work. As a rule nestlings are found to return to the region of their birth, within 5, 10, 15 or 25 kilometers according to species. There were 447 cases of such return and only a few exceptions (notably with the Cormorant (*Phalacrocorax carbo*), while a Sparrow Hawk (*Accipiter nisus*) settled 62 kilometers from its birthplace and a Kestrel (*Falco tinnunculus*) 130. Of 5 species 132-228 birds were retaken, of 5 others from 51-82, and of 6 others from 25-44. In 15 of these the mortality during the first two years ranged between 76 and 92 per cent, (with the Jackdaw (*Coleus monedula*) it was 44 per cent), the average of all being 82 per cent.

A large number of species are found to be only partially migratory: Sparrow Hawk, Stock Dove (*Columba oenas*), Skylark (*Alauda arvensis*), Mistle Thrush (*Turdus viscivorus*), Redbreast (*Erithacus rubecula*), Greenfinch (*Chloris chloris*), Chaffinch (*Fringilla coelebs*), Great Tit (*Parus major*), Pied Wagtail (*Motacilla alba*), and Starling (*Sturnus vulgaris*). Data are given on longevity. Mention is made of a Blackheaded Gull (*Larus ridibundus*) taken in Labrador in September 1933. The total number of young banded in the nest is not given. It would be of great interest to have a similar study of returns and recoveries of nestlings banded in this country.

2. Eight Years of Banding of Western Gulls. Reed W. Ferris. 1940. *Condor*, 42 : 189-197.—Young *Larus o. occidentalis* disperse north and south from a breeding colony on the Oregon coast. Of 2,674 banded, 226 were retaken—8.41 per cent. Adults tend to return to the "general region of nativity during the breeding season." Mortality of the immatures is greatest in the winter. Individuals may become resident in the locality in which they settle in their first winter. Depredations on the Murres and Cormorants are negligible. In other places they have been destructive; perhaps this is associated with the disturbance due to repeated visits of eggers.

3. The Black-headed Gulls of Geneva. (Les Mouettes rieusses de Genève *Larus r. ridibundus* (L.)) P. Géroudet. 1940. *Nos Oiseaux*, No. 149 : 195-209.—The Gulls leave Geneva in March and return in July; in October they start to beg for bread, while by November great numbers visit the city looking for hand-outs; during winter they are parasitic on man. On cold days and just preceding snowstorms it is possible to catch them by hand for banding. Some birds fight, others scream and alarm their fellows, still others are quiet and return at once to beg for more bread. Passers-by become much interested. It is possible to read bands of Gulls banded in foreign countries, even without catching the birds. In 7 years 1200 have been banded in Geneva; returns (killed and injured birds) and recoveries come to about 4.25 per cent; no figures are given for sight returns. There have been over a hundred cases of returns to the same winter quarters, sometimes 5 years later, sometimes 2, 3, and 4 years in succession. Some migrants have been recorded 2 years in succession, and then killed further south. A few Gulls change winter quarters.

4. The Migration of the Pied Flycatcher. (Ueber den Zug des Trauer-Fliegenschneppers, *Muscicapa hypoleuca* (Pall.)) R. Drost and L. Schilling. 1940. *Vogelzug*, 11 : 71-85.—Sixty-three birds banded as nestlings were found breeding less than one kilometer from their birthplace, 20 were found up to 10 kilometers, 4 up to 25, and one as far as 40. Sixty-four birds banded as adults were found breeding less than one kilometer from the former nesting site, 10 up to 10 kilometers, and one as far as 40 kilometers. Krätzig found young breeding

as far away from the birthplace as 102 and 150 kilometers. As to speed of migration, it averaged 71 kilometers per day.

Of 114 nestlings 73.6 per cent died in the first year, 16.7 per cent in the second year, 7.9 per cent in the third, 0.87 per cent in the fourth and the same in the sixth. This gave an average age of 13 months.

5. New Results on the Homing of Goshawks. (Neue Ergebnisse über Heimfinden beim Habicht.) W. Rüppell. 1940. *Vogelzug*, 11:57-64.—Twenty-seven Goshawks (*Accipiter gentilis*) were released at distances in all directions from their homes; one returned from 140 kilometers, two of three from 200 kilometers, and none from 600 kilometers (south and east). Twelve birds were found at an average distance of 58.5 kilometers from the place of release. Young birds ordinarily settle within 60 kilometers of their birthplace. The hunting radius of adults is calculated to be about 5 kilometers in nesting time, and much larger in winter, but not over 100 kilometers.

6. Temporary Change of Breeding Place with the European Quail. (Zeitweilige Massen-Umsiedlungen von Wachteln (*Coturnix coturnix*.) H. Grote. 1940. *Vogelzug*, 11:85-86.—The Russian ornithologist, A. N. Formosow, reports that in dry years Quail fail to nest in their usual haunts, the population settling in localities where rain has been abundant; he believes they return to their former nesting places in later years.

7. Repeated Return of Buzzard (*Buteo buteo*) to the Same Winter Quarters. (Langjährige Wiederkehr eines Mäusebussards (*B. buteo*) an denselben Ueberwinterungsplatz.) L. Schuster. 1940. *Vogelzug*, 11:86.—A distinctively marked Buzzard came to the same circumscribed wintering place in Germany 12 years in succession.

8. The Behaviour of the Robin. Population Changes over Four Years. David Lack. 1940. *Ibis*, April:299-324.—Male *Erithacus rubecula melophilus* were found to be resident, but this was true of only 30 per cent of the females, some of which probably migrated, while others moved locally. Of 92 banded nestlings, 7 "have since resided" in the region of their birthplace. About 20 per cent of the males fail to get mates. One male was bigamous.

Studies based on color-banding are reported in Numbers 11 and 13.

LIFE HISTORY

9. Notes on the Habits and Distribution of the White-tailed Eagle in N.W. Iceland 1939. E. L. Arnold and P. I. R. Maclaren. 1940. *British Birds*, 34:4-11.—Two nests of *Haliaeetus albicilla* were found with two young, seven with one young. At one nest the smaller young was intimidated by the attacks of the larger, and later died. Food consisted of birds, fish and dead lambs. In general the farmers are proud of their Eagles. Some Eagles die from eating poisoned bait put out for foxes or Great Black-backed Gulls, while some are taken from the nest and sold to dealers. There is a bibliography of 16 titles.

10. Further Notes on the Nesting Habits of the Virginia Rail. Henry Mousley. 1940. *Wilson Bulletin*, 52:87-90.—Observations on 5 nests of *Rallus limicola* showed the incubation period to be 19 days.

11. The Biology of the Ringed Plover. (Beiträge zur Biologie des Sandregenpfeifers (*Charadrius hiaticula* L.)) Hannes Laven. 1940. *Journal für Ornithologie*, 88:184-287.—A notable study on breeding behavior and population problems, based on the use of colored bands. The work, carried out on a 10 kilometer stretch of beach on the Kurische Nehrung in East Prussia, was started in 1936 by Zagarus, and continued by Laven for three more years. Each banded bird was given a "field number" from 1 to 158, the males even numbers, the females uneven. Young were given double numbers, for example 27/28, then if one returned to breed, it kept whichever number was appropriate to its sex. Pairs were also numbered from 1 to 30. Two females were present 4 years, 2 females

and 3 males 3 years, and 2 females and 8 males 2 years. In 12 pairs, 5 times the male was larger, 5 times the female was larger, twice the wing length was the same. Wing length varied from year to year in the same bird.

Faithfulness to mates is the rule. This is not only "territory faithfulness", since courtship takes place on a separate part of the beach. There was no case of change of mates during one season, and none from year to year where both survived uninjured. But two birds that had each lost a foot were not accepted by their former mates; they mated with each other and raised young. A detailed study was made of behavior throughout the nesting cycle, and interesting charts given. Both parents share incubation and care of the young; incubation lasts 24 days; the young are fledged in 22 days. Those of the first brood soon leave, but those of the second brood may stay longer with their parents.

If a set is lost, the pair may leave, or they may go on laying sets, even as many as five. Of 68 young banded, 6 returned, 3 of them as migrants. Two bred 6 kilometers and one 11 kilometers from the birthplace. Of 284 eggs laid during the 4 years, 102 or 36 per cent hatched. Of 228 eggs laid during the last 3 years, 74 (32 per cent) hatched and only 34 (15.5 per cent) were fledged. If half of these lived to breed, a pair must nest 4 years in order to replace themselves. The average age of adults was 2.2 years. In 1937 55 per cent of the banded adults returned, in 1938 68 per cent, and in 1939 50 per cent, figures that compare well with my results on male Song Sparrows and Hann's on Ovenbirds. Both sexes of the Ringed Plovers returned equally faithfully to their territories. The author does not do justice to his study in his summary.

12. Crow Depredation in Heron Nesting Colonies. Rollin H. Baker. 1940. *Wilson Bulletin*, 52 : 124-125.—A colony of 1,500 Little Blue Herons (*Florida caerulea*) and 3,000 Snowy Egrets (*Egretta thula*) nesting in an area of less than an acre in Texas was destroyed by a colony of 40 Crows (*Corvus brachyrhynchos*). Black-crowned and Yellow-crowned Night Herons (*Nycticorax naevius* and *Nyctanassa violacea*) that were less concentrated were less injured.

13. Polyandry in the Oven-Bird. Harry W. Hann. 1940. *Wilson Bulletin*, 52 : 69-72.—While continuing his fine studies of *Seiurus aurocapillus*, the author discovered among his color-banded birds a nest of young being fed by one female and two males, while a third male, that had lost his mate, took an active interest in the female. It was to this last bird's territory that she took her share of the young after they had left the nest. Her original mate "must have been more tolerant than the average male, or he would have driven out his rivals."

14. An Experiment in Songbird Management. W. L. McAtee. 1940. *Auk*, 57 : 333-348.—A bird-attraction project was carried out for six years on an area first of 2½ acres, later 3½, in Maryland, for the purpose of increasing bird enemies of chestnut weevils. A bath, a martin house and 98 separate bird boxes brought a threefold to fourfold increase in nesting birds. As to the weevils, they "were not perceptibly reduced in numbers; their increase, however, may have been checked." The number of broods per acre was 18.3 in 1928, 26.6 in 1929, 19.7 in 1930 and 20.5 in 1931. The decrease during the last two years may have been correlated with drought.

Nesting success was very high during these years: with Starlings (*Sturnus vulgaris*), 410 young fledged from 472 eggs, 84.5 per cent of success; with House Wrens (*Troglodytes domesticus*), 399 young fledged from 469 eggs, 83.7 per cent success; with English Sparrows (*Passer domesticus*) 97 young fledged from 114 eggs, 78.5 per cent success; with Bluebirds (*Sialia sialis*), 66 young fledged from 74 eggs, 91.2 per cent success. Nesting success of hole nesters usually runs about 65 per cent.

INCUBATION AND FLEDGING

15. Incubation and Fledging Periods of African Birds. R. E. and W. M. Moreau. 1940. *Auk*, 57 : 313-325.—Little reliable information has been published on this subject except for European birds. The authors follow Heinroth in

taking "the time the last egg is laid as the beginning of the incubation period and the hatching of the young as its end." p. 313. It is often difficult to decide when a young bird is "fledged"; the authors suggest the time at "which the bird can raise itself in the air with its wings." p. 315. Data are given for about 45 African species. Many "have incubation periods corresponding closely to, and certainly no longer than, those of their Nearctic and Palearctic relatives", but the *Euplectes* spp. take 18 days, "while the African Hirundinidae and three of the Sylviidae also take slightly, but definitely, longer than their Temperate Zone relatives." p. 322. "On the whole the African birds take longer to fledge than do comparable Temperate Zone birds, but not in (inverse) proportion to the shorter daylight." p. 324. The working day for these species is "more than 30 per cent shorter than in the British nesting season. On the other hand, practically without exception African broods run smaller in number than those of allied Temperate Zone birds." The authors mention the difficulty of finding nests and "very high mortality in the nest", but unfortunately give no figures on this. A valuable paper.

16. Rhythm in the Brooding and Feeding Routine of the Black-chinned Hummingbird. Frank Bene. 1940. *Condor*, 42 : 207-212.—Observations on a nest of *Archilochus alexandri* near Phoenix, Arizona. Some 30 hours were spent watching on 5 days between April 20 and May 1, the young ranging from 2, 3 to 13, 14 days. On April 20 and 23 the female spent 54 and 58 per cent of the observation time on the nest, on April 25, 44 per cent, on April 29, 10 per cent. The average number of trips per hour to feed the young increased regularly from 2.3 to 3.1. On April 20 there was a very regular rhythm of one visit to brood, the next to feed and brood, the third to brood, and so on.

17. Black-headed Gulls Incubating for 75 Days. F. B. Kirkman. 1940. *British Birds*, 34 : 22.—A pair of *Larus r. ridibundus* had one egg on April 30 and two on May 2; on May 25 these were still unhatched, and the author gave them a sky-blue wooden egg. They sat on this until July 13 "some 50 days beyond the normal."

18. Male Rook Incubating. D. Nethersole-Thompson and D. W. Musselwhite. 1940. *British Birds*, 34 : 44.—At a rookery of *Corvus frugilegus* one bird was seen to feed his mate, which then left the nest, while the first bird settled down to brood. The authors consider "wing-action" by the begging hen as "no doubt 'a form of 'submissive ceremony'", but is such an interpretation necessary? It is a technique characteristic of many young birds and of some nesting females that stimulates the act of feeding in parents or mates. It seems strange to call this behavior "submissive."

BIRD BEHAVIOR

19. Social and Sleeping Habits of Central American Wrens. A. F. Skutch. 1940. *Auk*, 57 : 293-312. A charming account. Costa Rica has 22 species of Wrens. Pairs "may remain mated throughout the year", in many "both males and females are good singers", the pair keeping "in contact by singing back and forth", this song replacing a call note. Some perform in "antiphonal fashion", others in unison. Many wrens build nests for sleeping purposes; these are simpler than the breeding nests.

Detailed observations are given on 14 species as to nesting and sleeping habits, as well as singing. With the Gray-crowned Wood Wren (*Hemicorhina leucophrys*) two eggs are laid; these hatch in 19-20 days. The House Wren (*Troglodytes musculus*) lays 3-4 eggs that hatch in 15 days, fledging taking 18-19 days. Juvenile birds help feed young of later broods; 4 or possibly 5 broods are raised each year. With the Rufous-browed Wren (*Troglodytes rufociliatus*) in Guatemala the male brings food to his incubating mate, apparently the only case recorded of this behavior in wrens. The Banded Cactus Wrens (*Heleodytes zonatus*) live in groups of a dozen or more; 11 may sleep together. Unmated birds assist in the care of the young.

20. A Note on Song and the Breeding Cycle. M. Colquhoun. 1940. *British Birds*, 34 : 12-14.—Records were kept on the singing of a number of Song Thrushes (*Turdus ericitorum*) and Blackbirds (*Turdus merula*) between 6.30 and 8.30 A. M. It is suggested that "males which are biologically most efficient, because of that efficiency are relatively silent." If a male has an isolated territory and is mated, "he may rarely sing during the hours of full daylight."

21. The Social Hierarchy in Ring Doves. Mary A. Bennett. 1939. *Ecology*, 20 : 337-357.—After 273 hours of observation on *Turtur risorius* in which 10,915 "pecking contacts" were recorded, the author concludes, "A peck-dominance, rather than a peck-right, determines the social organization of caged flocks of ring doves." The average number of contacts in female flocks was 20.1 per hour, in male flocks 53.8 per hour. When a bird was dyed, the others showed fright for a short time, then started to court the colored bird. Changes in length of tail made no impression.

22. The Social Hierarchy in Ring Doves. II. The Effect of Treatment with Testosterone Propionate. Mary A. Bennet. 1940. *Ecology*, 21 : 148-165.—As with domestic fowl and canaries the injection of this androgen into males and females augmented aggressiveness, and induced many changes in the hierarchy. Peck-dominance changed into peck-right. "Male characteristics . . . appeared in hitherto passive females."

23. Identity of Specialized Feeding Habits of the Turnstone and the Oystercatcher. J. M. Dewar. 1940. *British Birds*, 34 : 26-28.—*Arenaria i. interpres* opens mussels and overturns limpets in the same specialized manner as does *Haemotopus ostralegus*.

24. Territorial Behavior and Populations of Some Small Mammals in Southern Michigan. Wm. H. Burt. 1940. *Misc. Publ. Zool. Univ. Mich.* 45 : 1-58.—Studies of wood mice, chipmunk, flying squirrel and shrews were made by means of live trapping and marking by "notches punched in ears and by clipped toes." All these animals were found to have small home ranges. "The small rodent that is ever in danger of being captured by one of its enemies must be thoroughly familiar with the area over which it travels." "One animal does not necessarily retain the same territory for life, nor do females always stay in the same area throughout the breeding season." Territory is a necessity for food and shelter; it is "important in limiting the population in an area."

LIGHT VERSUS ACTIVITY

25. Light Versus Activity as a Regulator of the Sexual Cycle in the House Sparrow. Gardner M. Riley. 1940. *Wilson Bulletin*, 52 : 73-86. Careful experiments that separated the two factors—light and activity—showed that the former stimulated gonadal development in male *Passer domesticus*, while the "bills of activity-treated males retained the light color characteristic of the sexually inactive male, and the testes remained in a quiescent state." "In females neither increased light nor activity rations were effective in stimulating ovarian development."

CENSUSES

26. Frequency of Occurrence of Birds on the Berkeley Campus, University of California. T. L. Rodgers and C. G. Sibley. 1940. *Condor*, 42 : 203-206.—An analysis of 120 lists made in 1938 and 1939 according to Raunkaier's Law of Frequency.

27. A Bird Census of St. Kilda, 1939. E. M. Nicholson and J. Fisher. 1940. *British Birds*, 34 : 29-35.—When St. Kilda was evacuated of its human inhabitants in 1931 a census was taken of the breeding birds. In the present census

taken 8 years later a great increase was found in Starlings, perhaps correlated with the abundance of sheep, in Eider Ducks that are no longer robbed of their eggs, and in Common Snipes. There was a distinct increase in Meadow Pipit, Shag and Razorbill, and a decrease in Black Guillemot.

ECOLOGY

28. Effect of Excessive Cold on Birds in Southern Louisiana. E. A. McIlhenny. 1940. *Auk*, 57:408-410.—Vast numbers of Starlings came in November and "cleaned up the available seed supply" and after that ate all the berries, so there was no food left on the bushes when the native birds arrived in January. When the cold weather came, ducks flew west while enormous numbers of Woodcocks came and were "slaughtered by the tens of thousands, with sticks, .22 rifles and shotguns." All were extremely thin. Birds found in numbers that had perished from starvation were Killdeer, Kinglets, Phoebes and a few Myrtle Warblers. "The greatest suffering seemed to be with the tree-dwelling insectivorous birds, which did not seem to adapt themselves to going low into the thick grass. Killdeer actually starved by hundreds." Starlings and grackles pecked through the ice "to beds of clover and chickweed."

29. Food Habits of the Northern Bald Eagle in the Aleutian Islands, Alaska. Olaus J. Murie. 1940. *Condor*, 42:198-202.—Twenty-eight nests of *Haliaeetus leucocephalus alascanus* were examined and all food items, totalling 399, were collected. Sea birds constituted the chief source of food. Only one fox pup was found and that might have been carrion. The food habits "are harmless so far as man's commercial interests are concerned."

30. Birds as a Factor in Controlling Insect Depredations. C. Cottam and F. M. Uhler. 1940. *Bur. Biol. Surv. Wildlife Leaflet BS-162*. 600.—Instances, both old and new, of beneficial action by birds are given, while considerable space is devoted to the value of woodpeckers in destroying spruce beetles and locust borers, and to the importance of birds in combatting celery pests. The authors suggest planting haw and wild plum along the ditches and setting aside small strips as refuges every mile in the solidly planted areas of celery.

BOOKS

31. The Handbook of British Birds. IV. H. F. Witherby, F. C. R. Jourdain, N. F. Ticehurst and B. W. Tucker. 1940. London. Witherby. 461 pp. 25/.—The fourth volume of this superb series covers the Cormorants, Gannets, Petrels, Grebes, Divers, Pigeons, Sand-Grouse, Waders, Bustards and Crane. It is impossible to praise too highly the scope and execution of this undertaking, with its splendid illustrations in color and its wealth of accurate information on all phases of bird biology. Results of many years of banding in the British Isles are reported. There have been 360 recoveries of British ringed Cormorants (*Phalacrocorax c. carbo*); these show that the species is largely sedentary, although a few, both young and old, migrate. The 203 recoveries of Gannets (*Sula bassana*) prove that the young are definitely migratory, but the birds become less so from year to year. With the Stock Dove (*Columba oenas*) the adults are sedentary, the young partly migratory. The Rock Dove (*Columba l. livia*) used to breed on the sea-cliffs of England and Wales, but now is restricted to Scotland and Ireland, and here they are mixed with feral domestic doves. The Fulmar (*Fulmarus g. glacialis*) originally bred in only one locality in the British Isles—St. Kilda—; it first settled in the Shetlands in 1878. It spread in four directions; there are now about 21,000 breeding pairs on St. Kilda, and not quite twice as many outside in 196 known colonies. The birds are present in 60 other stations, but are not definitely known to have bred.

These are a few samples of the information packed into this book. Many American species are treated at length, even those, chiefly shore-birds, whose

claim to inclusion is based on a few stragglers. To all ornithologists seriously interested in biological problems the Handbook of British Birds will be a source book of extraordinary value.

32. Structural Adaptations in Thrashers (Mimidae: Genus *Toxostoma*) with Comments on Interspecific Relationships. Wm. L. Engels. 1940. *Univ. California Publ. Zool.* 42 : 341-400.—The new vertebrate anatomy is "seeking to expose the fundamental anatomical mechanisms underlying the habits of animals." Thrashers get most of their food from the ground, not by scratching, but by probing. The wings are relatively short and most of the species seldom fly. "Thrashers of the genus *Toxostoma* exhibit two marked tendencies of behavior: toward ground foraging, and toward running rather than flying as a means of locomotion." p. 395. "In the essential muscular mechanisms, then, all thrashers are pre-adapted to the digging habit. . . . The adaptations of the curve-billed thrashers to the digging habit consist in the elaboration of the inherited muscular mechanism." p. 396. An excellent study, based on a great deal of careful research.

33. Great Wings and Small. Bird Stories of Our Day. Frances E. Clarke, Compiler. N. Y. Macmillan. 331 pp. \$2.50.—Another compilation without much to recommend it. The best selections are from Burroughs, Muir and Hudson; there are also a number of good propaganda articles for conservation, as well as some short stories of the nature faking variety. One selection (Birds that are Your Friends) takes the prize for ignorance. We are told that a "distinguished naturalist . . . has spotted several wild pigeons. He believes they ventured up from some hideout in Mexico, and hopes that they may become naturalized Americans again, multiplying and spreading and adding their glory once more to our wilderness areas. Wild pigeons have been classified as extinct," p. 15. When will publishers ask advice of ornithologists before bringing out bird books?

34. Birds of Western Pennsylvania. W. E. Clyde Todd. 1940. Univ. of Pittsburgh Press. Qto. 730 pp. 22 plates in color, illustrating 118 species, by George M. Sutton. \$5.00.—This long awaited volume is impressive in its thorough treatment of the distribution of bird life in this region over a period of almost 50 years. Climate, physiography and ecological conditions (largely deforestation) are discussed. Under "Distribution of Bird Life" a "Provisional Life-Zone Map of Western Pennsylvania" is given showing Canadian, Carolinian and Alleghanian Fauna, yet the author considers that "these divisions are misleading in a broader sense", p. 14. Two "faunal groups of species" have approached "from opposite directions to meet and commingle." Largely because of deforestation, "the Canadian element is receding and is being replaced by a more austral type", p. 13. In the chapter on "Present Status of Bird Life", we read: "Two especially favored species, the Robin and the House Wren, have increased beyond normal bounds in the past forty or fifty years, as has also the Cardinal. Nevertheless, taken by and large, the small Passerine and Picarian birds have certainly decreased during this period." p. 15. The larger birds have suffered far more—birds of prey, upland game birds, waterfowl, Woodcock and Mourning Dove.

Most of the book is devoted to the list of birds, from which, strangely enough, "the Ring-necked Pheasant, the European Starling, and the so-called English Sparrow have been omitted." Even if the distribution of these species were of no interest in itself, all three exert a marked influence on our native species. Good field descriptions are given, but when it comes to size, instead of length in inches, or weight, comparisons are made "with well-known species", a confusing method, quite at variance with the general tone of the volume. An excellent feature is the inclusion of maps of breeding and other records for many species.

Mr. Todd considers the Robin "far too numerous", I suppose because of its depredations on fruit. Since 1911 there has been a "tendency towards winter residence", correlated, perhaps, "with the mildness of our recent winters." The House Wren's "excessive increase in numbers is as deplorable as the decrease in

the numbers of our waterfowl and birds of prey", p. 412. The author describes the wren's intolerance towards other species and advocates the removal of the boxes. "Either we must do this, or else we must be prepared to justify, to future generations and to ourselves, the dearth of such birds as the Yellow Warbler, the Chipping Sparrow, the Baltimore Oriole, the Warbling Vireo, the Bluebird, and others equally beautiful and desirable."

Under each species a vast number of references are given, concerned with the occurrence of the bird in the region under consideration. These are arranged under the various scientific names in vogue at different times, and also the English name. Sometimes there is a note as to the nature of the record—nesting habits, wintering, etc. The value of publishing such meticulous records is open to question.

There are a number of errors in the sections under "Habits." It is stated that Song Sparrow "young are out of the nest in about two weeks, but they follow their parents until after the post juvenal molt", p. 657. As a matter of fact they leave the nest at 10 days and they leave the parents at four weeks, some two weeks before the post juvenal molt has begun. The incubation period of the Spotted Sandpiper is given as "fifteen days", p. 220, whereas it has been shown by both Nelson and Mousley to last 21 days. As to the Cowbird, Mr. Todd seems to have read nothing later than Friedmann's "The Cowbirds", published in 1929. He reiterates the time-worn fable that the incubation period is ten days; I have never found a definite instance of such a period, every carefully reported case being 11 or 12 days or even longer. He credits the Cowbird with being "monogamous (although not strictly so)", although appearances are all to the contrary, and observations of color-banded birds in Ohio showed them to be promiscuous. He says, "Every single Cowbird in existence must thus have been raised at the expense of a nestful of other and more desirable birds", p. 591. Many birds raise sizeable families of their own along with a Cowbird foster-child; this has been reported by many people, especially Hann with Ovenbirds and myself with Song Sparrows and some other species. Mr. Todd believes that Cowbirds "have increased unduly with the clearing and cultivation of the country."

A great addition to the value of the book lies in the charming paintings by Mr. Sutton. These are arranged according to an unusual and excellent plan, namely two, four, six or nine separate pictures to each plate, each "designed to convey a suggestion of local habitat."

35. Life Histories of North American Cuckoos, Goatsuckers, Hummingbirds and their Allies. Arthur Cleveland Bent. 1940. *Bull. U. S. Nat. Mus.*, No. 176, pp. I-VIII +506, 73 plates.—In the thirteenth volume of his *Life Histories of North American Birds*, Arthur Cleveland Bent completes his consideration of the non-passerine species.

Of the species treated in the current volume, some are common, widely distributed birds, well known to us all—the Ruby-throated Hummingbird and the Whippoorwill for example. Others rarely cross the southern borders of the United States and hence are known thoroughly only to students of tropical birds, for example the anis—strange, unbirdlike creatures with curious communal nesting habits whose young strongly suggest a reptilian ancestry. Mr. Bent has carefully sought out from the literature accounts of the habits of these little known birds and, to augment his own observations, has solicited contributions from men familiar with them, thus rounding out good life histories.

We may note two of Mr. Bent's life histories which stand out as especially praiseworthy. His account of the Belted Kingfisher, a bird before our eyes all summer, is full of interest, showing the habits of the bird in intimate detail, and in writing of the Black Swift he brings out the mystery of its history with dramatic effect. For many years no one knew where the Black Swift nested. It was supposed to breed on high, inaccessible mountains, but in 1901 a nest was discovered in a crevice on the face of a sea cliff overhanging the Pacific Ocean in California. Although this report was received with incredulity, it was eventually proved correct, and many years later the Swift was found to breed also on mountain cliffs and on the walls of canyons, sometimes hidden away behind a waterfall.

Another history of surpassing merit is that of the Roadrunner, contributed by George Miksch Sutton. Dr. Sutton writes so vividly of this bird, which he has studied for years and evidently admires greatly, that the reader, once he has read the story, feels that he knows the Roadrunner too, although he may never have seen one except through the eyes of Dr. Sutton.

Mr. Bent wisely devotes generous space to the numerous western hummingbirds, dealing with each species fully and emphasizing the minute peculiarities of its behavior. Readers will be charmed by the account by Alexander F. Skutch of the White-eared Hummingbirds, congregated into "singing assemblies." He says: "Perhaps the most typical note of the male White-eared Hummingbird in the singing assembly is a low, clear *tink tink tink*, sounding like the chiming of a small, sweet-toned silver bell. . . . Some individuals toll their little bells very rapidly, others more slowly and deliberately."

Two old world cuckoos are included in the volume. One may question the suitability of according them a full life history in a book on North American birds, on the basis of a single individual of each species which once strayed into Alaska from the Eastern Hemisphere.—WINSOR M. TYLER.