

miles up the Illinois River from the place of banding. C604901 was found suffering from exhaustion on July 18, 1933, at Highland Park, some one hundred and fifty miles up the Illinois River northeast from Depue, or one hundred miles in a straight line. It was later released. C632802 was recovered at Lake Forest, five miles north of Highland Park, on August 25, 1933. The bird was reported shot because found eating goldfish. I believe these birds followed up the Illinois River to the points where they were recovered.

The Depue rookery contained fully six hundred nests.—KARL E. BARTEL, 2528 W. Collins Street, Blue Island, Illinois.

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RECENT LITERATURE

It has been decided as an experiment to group reviews when feasible under subjects which are of importance to bird-students primarily for the purpose of suggesting problems for study by banding methods.

If one wishes to obtain an article, he may do one of three things: buy the journal containing it; ask his library to borrow it for him; or, write to the author (in care of the journal if necessary), asking for a reprint.

RETURNS AND RECOVERIES

Recovery of Marked Birds. H. F. Witherby, 1933, *British Birds*, 27, pp. 87-102. This list has one excellent feature in that the birds ringed as nestlings and those ringed as adults are clearly differentiated, something that should always be stated in any report on banded birds. The records, however, would be more useful to readers outside of Great Britain if distance and direction of the place of recovery from the place of marking were given. Also it might be pointed out that if the terminology of *Bird-Banding* were adopted, the word "Return" might be substituted for the phrase "Recovered where Ringed" and "Recovery" for "Recovered away from where Ringed."

The records give some data as to longevity: 3 Robins (*Erithacus rubecula melophilus*), 3 Blackbirds (*Turdus m. merula*), 1 Starling (*Sturnus v. vulgaris*), and 2 Lapwings (*Vanellus vanellus*) of 5 years, a Blackbird and a Chaffinch (*Fringilla c. caelebs*) of 6 years, a Turtle Dove (*Streptopelia t. turtur*) and a Curlew (*Numenius a. arquata*) of 7, and a Great Black-backed Gull (*Larus marinus*) of 10 years.

As to the return of nestlings to their place of birth, 39 individuals of 7 species were found there in subsequent breeding seasons, but 10 were found at other places, in 7 cases in the same county, in 3 not. It is in such instances that the distance from the place of marking is especially important.—M. M. N.

Swedish Banding Papers. Prof. L. A. Jägerskiöld has written a number of reports on the banding work of the Biological Society of Gothenburg, this activity having been started in 1911, but discontinued from 1915-1921. The majority of the birds banded have been young; there seems to be no systematic trapping of adults. The total number banded by the end

of 1932 was 46,673 birds of 146 species; the total retaken by August 1, 1933, 1641, or 3.3 per cent.

The paper in English¹ gives a good résumé of the work through 1930, although the reproduction of the maps is poor. The chief migration routes of the Black-headed Gull (*Larus ridibundus*) are discussed; the west coast of Europe is "the main route, and all the rivers" are "by-ways leading from it." The Herring Gull (*Larus argentatus*) and Great Black-backed Gull (*Larus marinus*) have yielded high returns (11.4 and 18.8 per cent by 1933 (5)); they "must be regarded as vagabonds rather than migratory birds."

A Common Tern (*Sterna hirundo*) was taken near Cape Town, Africa, eight and one half years after banding, and others were found near the marking place, "one ten years and a few days after she had been marked."

The other papers are in Swedish, a language with which the reviewer is unfamiliar, yet the main facts are not difficult to decipher. The first bulletin² has a large number of excellent maps showing the places of recovery of the various birds, many of them with dates.

The report of the year 1930³ mentions a four and one half-year-old Common Heron (*Ardea cinerea*), and a five-year-old Willow Warbler, (*Phylloscopus trochilus*) ringed June 30, 1925, and recovered in France, August 6, 1930.

The next annual report⁴ tells of a Spotted Flycatcher (*Muscicapa striata*) taken in Greece, August 25, of an Arctic Tern (*Sterna paradisæ*) in South Africa in December, and of a Sandwich Tern (*Sterna sandvicensis*) in Senegal, Africa, in November—all three birds captured the year they were banded.

The last paper is of particular interest⁵ since it gives a summary of all banding to date, as well as the report of 1932. In the lists returns, *i.e.* captures near the place of marking after a migration, are given in black type. Of six species of Gulls 34,343 have been banded and 1303 retaken—3.8 per cent. Of six species of Terns 5946 have been banded and 47 retaken—0.8 per cent. Of 341 Common Herons 65 were taken—19 per cent; of 185 Curlews (*Numenius arquata*), 29, or 15 per cent. Of seventeen species of Hawks and Owls 398 were ringed and 51 retaken—12.8 per cent, almost the same percentage as that reported by W. F. Eaton in this journal (January, 1933, pp. 49-50) for unprotected Hawks and Owls in North America.

There are a number of noteworthy records of longevity in this last paper: Swifts (*Apus apus*) of 5 and 7 years, Herring Gulls of 5 and 6 years, Black-headed Gulls of 5, 6, and 7 years, Common Gulls (*Larus canus*) of 6, 7, and 8 years, a Sandwich Tern of 7 years, and an Arctic Tern of 11 years, this bird having been banded in Öland, July 7, 1922, and retaken there June 29, 1933.—M. M. N.

Danish Banding. More than one hundred thousand birds have been banded with Peter Skovgaard's rings, nine thousand of them in Iceland, the rest in Denmark. More than five thousand recoveries have been re-

¹ The Migrations of Some Swedish Birds. 1931. *Arch. Zool. Ital.* 16, pp. 565-576.

² Göteborgs Biologiska Förenings Flyttfagelmärkningar. (*Göteborgs Biologiska Förening*, 1904-1929, pp. 25-83.

³ Zoologiska Avdelningen. Göteborgs Museum Arstryck, 1931, pp. 21-20.

⁴ Zoologiska Avdelningen. Göteborgs Museum Arstryck, 1932, pp. 46-54.

⁵ Göteborgs Naturhistoriska Museums ringmärkningar av flyttfaglar under 1932 Göteborgs Musei Arstryck, 1933, pp. 21-32.

ported. Most of the birds have been ringed when young; ducks, terns, gulls, and shorebirds figuring largely.

Mr. Skovgaard's papers,¹ all well equipped with maps, discuss the results from the geographical point of view: Danish birds recovered in the British Isles (4), France (3), Spain (1); and Icelandic birds recovered in Europe (2) and the British Isles (5), this last article being illustrated with sketches of many of the birds in question. The tables indicate by different type whether a bird was a nestling or an adult when banded, and dates of recovery more than a year after banding are given in black type.

The majority of the Danish-marked birds appear to winter in France, Portugal, and Spain. Some of the Lapwings (*Vanellus vanellus*) winter in Ireland, but others go southwest "through Belgium, France and Spain, to Morocco, and return the same way. In unusually hard winters those migrating to Ireland go farther south through Cornwall and Brittany, to join the second route" (4). As to the White Stork (*Ciconia c. ciconia*), "The migration route goes mostly southeast through Europe to Asia Minor, along River Nile to Rhodesia, Transvaal, Natal, and Cape Colony. A few go southwest through Westfalen, Belgium, France, Spain, and Cameroons, to join the same winter quarters." (4).

In comparison with the Swedish data few old birds are reported: two Common Gulls (*Larus canus*) of five years, a Lapwing of six and one half, and a Black-headed Gull (*Larus ridibundus*) of seven being the only examples in these papers of birds more than four years old, the vast majority being less than two years old.

Perhaps the most striking map is that of the migration of the European Widgeon (*Mareca penelope*) from Iceland (1), (2), (5). Most of the birds travel through Great Britain and France to Spain and Italy, but one young bird was taken in western Russia, and four were taken on the Atlantic coast from Nova Scotia to Maryland.

The author cites the case of the two migration routes of the Black Stork (*Ciconia nigra*) and states that of four birds banded in the same nest two followed the southeast route and two the southwest. Young birds of some species spread out in all directions in the fall, gradually attaching themselves to old birds that know the migration route. The author suggests that in some birds the migration routes are inherited, while in others they are not (2).—M. M. N.

Ringed Birds taken in Bulgaria.—Thirty-three birds ringed in other countries have been taken in Bulgaria,² among them fifteen White Storks, seven ducks, and six Black-headed Gulls. A map shows the localities of banding and recovery. Seven Storks (five from Denmark) came from the northwest, many birds from directly north, and four from the northeast—two Black-headed Gulls from Central Russia and two Pintails (*Dafila acuta*)

¹ Sobre las Emigraciones de las Aves. 1930. Conferencias y reseñas Científicas de la Real Sociedad Española de Historia Natural, 5, nos. 3-4, 125-134.

² Zug der Islaendischen Vögel und anschliessende Bemerkungen über den Vogelzug in Europa. 1931. Proc. VIIth Int. Ornith. Congress at Amsterdam, 1930; 392-405.

³ La France et le Passage des Migrateurs Danois. 1931. *Alauda*, Série II, no. 4; 1-18.

⁴ Birds Ringed in Denmark Recovered in British Isles. 1932. *Irish Naturalists' Journal*, 4, nos. 5 & 6; 1-8.

⁵ Birds Ringed in Iceland Recovered in British Isles. 1932. *The Farmers' Journal*, Belfast, Ireland. April.

⁶ Pateff, Pawel 1931. Die im Ausland beringten und in Bulgarien erbeuteten Zugvögel. Mitt. Königl. Naturwissenschaftlichen Inst. in Sofia, 4; 115-120.

from the Caspian Sea. One of the Storks was seven years old, another fourteen years old.—M. M. N.

LONGEVITY

Ages of House Finches Trapped During February, 1933, at Pasadena, California. H. and J. R. Michener, 1933, *The Condor*, 35, pp. 183-185. A very interesting analysis of the ages of a population of *Carpodacus mexicanus frontalis*. One hundred twenty six captured in February, 1933, had been previously banded as immatures; of these 40.5 per cent were $\frac{1}{2}$ year old, 31.7 per cent $1\frac{1}{2}$ years old, 11.9 per cent $2\frac{1}{2}$ years old, 8 per cent $3\frac{1}{2}$ years old, 5.5 per cent $4\frac{1}{2}$, 1.6 per cent $5\frac{1}{2}$, and 0.8 per cent $6\frac{1}{2}$ years old. Thus of these birds just before the breeding season, 40 per cent were first-year birds, and 60 per cent older. Two birds had been banded as adults eight years before. This paper merits careful study for data not only on age, but sex ratio and differential mortality of immature and adult birds.

Other recent records of long-lived individuals are an eight-year-old Western Mockingbird (*Mimus polyglottos leucopterus*), (H. Michener, 1933, *News from the Bird-Banders*, No. 8, p. 8), a seven and one half-year-old Gambel's Sparrow (*Zonotrichia leucophrys gambeli*) (Allen, *ibid.*, p. 25), an eight and one half-year-old Gambel's Wren-tit (*Chamaea f. fasciata*) (E. L. Sumner, *ibid.*, p. 21), a seven-year-old Catbird (*Dumetella carolinensis*) (L. A. and F. H. Test, *Inland Bird Banding News*, 1933, 5, No. 1, p. 3), a ten-year-old Purple Finch (*Carpodacus p. purpureus*) (M. J. McGee, *ibid.*, No. 2, p. 11), and a twenty-three-year-old Parasitic Jaeger (*Stercorarius parasiticus*) (C. Oldham, 1933, *British Birds*, 27, p. 139). This last bird, a female of "rather below average size," "was tamed as a nestling in 1910 by a lad who used to feed it on his way home from school. The bird came back to Foula next spring and subsequently. When the lad was killed in the war, his friends continued to feed it for his sake. It returned as usual this year [1929]" and "came daily to be fed at the door" of a house on the Isle of Foula.

(For other items on Longevity see Recoveries.) Small passerines have a potential life-span of some fourteen to eighteen or even twenty-four years in captivity (Flower, S. S. 1925, *Proc. Zool. Soc.*, pp. 1366-1422), but the mortality rate is so high that even a four- or 5-year old bird is noteworthy, and one eight to ten is most remarkable. The mere fact of having escaped dangers for so many years is not so important as the question of the behavior of such a mature bird. Does it owe its long life in some degree to greater cautiousness? Does it weigh more than a young bird? Does he hold territory and sing as vigorously as ever? Or are her eggs any different in size or number from those of a young bird? Do birds in nature ever live to be too old to breed? Graf Zedlitz (*Jour. für. Ornith.*, 1926, 74, pp. 296-308) wrote of non-breeding Hooded Crows (*Corvus. c. cornix*) in Sweden that led a kind of club life, some being young birds and some very old. The old males weighed considerably more than their breeding fellows, but this was not true of the old females.—M. M. N.

WEIGHT

A Year's Study of House Finch Weights. J. L. Partin, 1933, *The Condor*, 35, pp. 60-63. This valuable study is based on one thousand weights of eight hundred birds in Los Angeles. There was an increase in weight in December, January, and February, but a drop back to normal in March. Males average somewhat heavier than females except during the

breeding season. Juveniles in May weighed 95 per cent as much as the adults; in June, 92.8 per cent; in September, 98 per cent. Birds weighed least in the early morning, "the average daily fluctuation for adults amounting to about 3.5 per cent."

One possible clue to this gain in weight in winter is given in E. L. Sumner, Sr.'s "Seasonal Behavior of Some Golden-Crowned Sparrows" (*The Condor*, 1933, 35, pp. 180-182). Four *Zonotrichia coronata* were kept in captivity and weighed three times daily for sixty days, "a marked correlation" being found "between the daily mean temperature and the weights of the birds. Whenever there was a sharp rise in the mean temperature, the weights of all four birds would drop sharply about twenty-four hours later; a decided fall in the mean temperature would be followed by a marked increase in the weight of all four."—M. M. N.

LIFE HISTORY

A Territory and Mating Study of Mockingbirds. Mrs. F. C. Laskey, 1933, *The Migrant* (Nashville, Tenn.) 4, pp. 29-35. A fine example of what can be done with colored bands and well directed zeal. The males of *Mimus p. polyglottos* were permanent residents in Nashville, Tennessee, holding territory in winter as well as summer, but not in August and September. Song started in late February, increased in mid-March, and reached its height near the end of March, when the birds sang with "ecstatic madness," "tossing themselves into the air." On March 28th the first female arrived, giving a "peculiar rasping" note; both males tried to entice her to their territories by "flying to limbs, running to forks, giving the *cluck-cluck* sounds," and later carrying twigs to shrubs and vines. Several females came, but left again, usually quite promptly, but one stayed a week. When a female was present, the songs of the male were "shorter, moderated in tone and tempo." April 9th and 10th the two males got mates that remained with them throughout the season, each pair raising two broods. The young of the first pair were not seen after the end of June.—M. M. N.

A Brief Study of the Courtship of the Eastern Cardinal (*Richmondia cardinalis cardinalis* Linnæus). J. M. Shaver and M. B. Roberts, 1933, *Jour. Tenn. Acad. Science*, 8, pp. 116-123. Cardinals are rather exceptional in that the female as well as the male has a well-developed song. In this paper the important rôle of the female's song in courtship is described: the female sings a song, and the male answers her with the same song, changing to a new song as soon as she does. "From February 20th until their nesting time—which for this pair began March 23d—both birds sang daily."

The authors point out that the study "would have been far more significant had it been possible to identify each individual bird absolutely throughout the study. At the time of the study (1924-25) the authors did not know of the banding (ringing) work of Burkett with groups of colored bands and of course this method had not yet been used in the United States, the work of Butts, and those that followed in his steps, came later."—M. M. N.

Relations Between the Sexes in Song Sparrows. M. M. Nice, 1933, *Wilson Bulletin*, 45, pp. 51-59. Mates of *Melospiza melodia beata* in Columbus, Ohio, normally remain together throughout one season, although occasionally a female deserts one mate for another—usually before nesting starts, but two did so in between broods when they had followed young into the territory of an unmated male. Five cases of remating two years in

succession have been recorded. Two cases of bigamy were observed. A few males seldom sing, yet have been as successful as the zealous singers.—M. M. N.

Migratory Behavior in Song Sparrows. M. M. Nice, 1933. *The Condor*, 35, pp. 219-227. The character of migrating or not migrating has proved stable in the majority of the breeding Song Sparrows under observation, but two summer-resident males have changed to residents and six residents (one of them a female) have changed to summer residents. Charts are given showing the inheritance of this character in twelve families for two generations, and in three families for three generations; resident sons of migratory parents were often found and once a migratory son of a resident father. The proportion of male residents has fluctuated around 50 per cent, that of the females has increased steadily from twelve to twenty-seven per cent. Other species, many of them European, are mentioned in which an analogous situation has been found. "Perhaps the migratory instinct is latent in all my Song Sparrows; it functions normally in some individuals, but for some reason lies dormant in others most of the time. It is possible that the weather at the time of the fall migration has an influence on the effectiveness of the urge in some of the birds."—M. M. N.