

males of any age, it seems patent that such colorations, were lost by fading or were never present in the skins examined. If the bird-skins studied by the investigators mentioned were originally without rump-colorations of the sorts described, then such colorations noted at present may be due to the nature of the food eaten at banding stations, for Dwight (*ibid.*, p. 174) writes that caged male Purple Finches often lose their brilliant color, which is never regained while the birds remain in captivity, a fact believed to be due to the loss of some ingredient in their food. He reports that the colors assumed by such males are "bronzed or golden."

This circumstance lends some support to the view that the loss of rosy plumage described may have had a similar explanation—which, if true, would make it likely that the change from yellowish to rosy was caused by the qualities of the food eaten. However, it so happens that we caged one of Mrs. Whittle's Purple Finches (B50051) in October, 1928, which was unable to fly well when banded, a juvenile bird which we kept captive till the spring of 1931. His food during this period was largely sunflower seeds with some ash and Indian currant seeds, rose seeds, and red maple and lilac buds. In the fall of 1929 he assumed a faintly rosy plumage, which was replaced at the 1930 molt by a much more rosy plumage, though not of the intensity or normal old males. That variable rump-coloration is common among olivaceous birds (immature males and females) and sufficiently so to warrant mention in my notes at the time of banding is shown by the figures for April, 1933. Out of twenty-five birds (not including adult males) twelve were so described, and thirteen had rump of normal coloration. These birds were banded as they reached here from their winter quarters, and so far as known they had never before eaten sunflower seeds, so that, if the variations noted were due to their food, other kinds than sunflower seeds were the cause.

The conclusion of Dwight and the plumage-history of B50051 are conflicting. The occurrences of varied rump-coloration are numerous, and many appear to occur among birds not having previously visited banding stations, so that I am disposed to believe that the artificial food-supply played little part in the changes described in case of B69309, and that in general it does not account for the variously colored rump feather tracts observed.—CHARLES L. WHITTLE, Peterboro, New Hampshire.

RECENT LITERATURE

The Birds of Newfoundland Labrador.—by Oliver Luther Austin, Jr. This well printed quarto volume, Number VII of the Memoirs of the Nuttall Ornithological Club, supplies a very welcome addition to the regional lists of North American birds. Dr. Austin has brought to his task a wide knowledge of the subject treated, for he spent three summers in exploring and collecting along the Labrador coast and has in addition read very extensively the literature on the region and has also made careful studies of much ornithological material in museums and private collections.

In his introductory chapters Dr. Austin gives a brief review of ornithological explorations in Labrador from earliest accounts to the present time, and then gives the itineraries of his own three trips to the region. The first of these, in 1926, consisted largely of reconnaissance work in preparation for the collecting trips of the next two summers but in 1927 and 1928 intensive studies, including considerable bird-banding, were carried on by Dr. Austin, ably assisted and abetted by his father, Dr. Oliver L. Austin, Sr.

Then follows a very interesting discussion of the origin and history of the

Labrador avifauna, and following the annotated list of birds is a valuable bibliography occupying some seventeen pages.

One hundred and seventy-seven species and subspecies of birds are listed from Newfoundland Labrador but twenty-eight of these are placed upon the hypothetical list as not corroborated by authentic specimens, while twenty-seven others are listed as of casual occurrence only in the region.

As might be expected, water birds and shore birds form a very large part of the avian population as compared with land birds, the proportion being ninety-nine species and subspecies of the former to seventy-eight of the latter. Some of the studies of the breeding habits of birds which are only seen in the United States as winter visitors, are of especial interest, while some very suggestive return records of banded birds are included in the volume. Outstanding among these banding returns are those of two Arctic Terns, banded as nestlings at the Red Islands in Turnavik Bay, one of which was recovered near La Rochelle, France, ten weeks after banding, and the other near Port Shepstone, Natal, South Africa, after a journey of some nine thousand miles in about ninety days, a long distance record for the recovery of a banded bird. Another interesting recovery was that of a Razor-billed Auk, banded August 11, 1928, which was found dead and badly oiled at Southampton, Long Island, N. Y., March 3, 1929.

As might be expected from an enthusiastic bird-bander like Dr. Austin, studies of distribution occupy considerable of the author's attention. Eight pages, for example, are devoted to a discussion of the Canada Jay, and to an exposition of the writer's theories as to the origin of the various races of this plastic species and their manner of distribution. But the volume should be read to be appreciated and we recommend it highly to all students of ornithology.—J. B. M.

Der Vogelzug, Vol. 4, No. 1, January, 1933.—This number opens with an account by Schüz of a great invasion of waxwings (*Bombycilla garrula*) in middle Europe in 1931-1932. After reviewing the available facts, Schüz concludes that the berry-crop in the breeding range and its immediate surroundings controls the bulk of the migratory movements of this bird and that lack of berries precipitates extensive wanderings; that the weather apparently has no immediate influence, yet the migration is no mere forward groping for food, but is apparently conditioned by endocrine secretions, just as in typical migrant birds.

Schildmacher contributes the first of a series of studies on the physiology of the migratory instinct. He reports here on experiments in which various doses of the female sex hormone were injected into the breast muscles of young and old female Redstarts (*Phainicurus ph. phainicurus*) that were trapped during the autumn migration. He found that during the fall migration both young and old females show a loss of, or a great reduction in, the migratory "unrest" when given certain doses of female sex hormone (the effective doses varying from four injections of five mouse-units each to four injections of thirty mouse-units each). Towards the end of the migration season doses of less than twenty mouse-units proved ineffectual. Doses of more than fifty mouse-units failed to lessen or destroy the migratory uneasiness, but this is interpreted as due to the fact that such large amounts of hormone tend to put the bird in the condition of a spring migrant. The fact that the minimum effective dosage increases towards the end of the migration season indicates that autumn migration is correlated with a diminution of the sexual hormone. Whether the gonads are really the primary factors or whether they themselves are conditioned by other organs will be dealt with in further investigations.

Technau interprets data on banded Black-headed Gulls (*Larus ridibundus*) relating to the geographical shifting of the breeding-spots of the individual birds. He finds that the average shifting in year-old birds is between one hundred and two hundred kilometers. If one takes as a criterion the distance between the birthplace and the breeding place the next year or years, and tabulates the birds accordingly, one finds that in the group between one thousand and two thousand kilometers the yearling birds are two and one third times as numerous, and between one thousand and five thousand kilometers, seven times as numerous as the older birds. In general it may be said that distant rediscoveries of gulls in fully adult breeding plumage are often due to sickness which prevents their returning. Yearling birds are usually not to be found in the breeding region even in April, but mostly appear in their colonies only in the course of the breeding season.

Among the short notes we find the first recovery of a banded Swift (*Apus apus*) in Africa: the bird was banded at Celle (52° 37' N., 10° 5' E.) on July 8, 1931, and was recovered at Tumba Kapia, Kasai district, Belgian Congo, on August 31, 1932. Another interesting record is the recovery of an Oriole (*Oriolus oriolus*) at Kasr, Egypt, banded in Pomerania.—H. F.

Der Vogelzug, Vol. 4, No. 2, April, 1933.—Hagan opens this number with an account of the spring migration of 1932 at Lübeck with respect to the climatic conditions. The season was characterized by extreme periods, and the migration seemed to be roughly correlated with these climatic changes.

Sturm writes of the waning of migration and flights at high altitudes and suggests that at times the last migrants of a species may fly high overhead to get to their destination while to the earth-bound observer the migration, although still going on, seems to be on the wane.

Steinfatt describes his experiences of bird migration on the Pyrenean Peninsula on the Mediterranean in the autumn of 1932, listing the birds seen by him here.

Ecke started a comprehensive scheme of banding Barn Swallows in 1931. In the autumn of that year the great swallow catastrophe occurred (previously noted in this journal) and this naturally destroyed much of the otherwise probable percentage of returns the next year. A few of the birds did survive, however, and he finds that they all returned from one to eighteen days later in 1932 than they had in 1931 (when they were banded as spring migrants). Data are also presented regarding the wanderings of young swallows. The local breeding population in 1932 was 30 per cent less than in the previous year, probably because of the disaster in the autumn of 1931.

Drost and Schüz present compilations regarding the after effects of the swallow disaster of 1931 as evidenced by the status of the birds in 1931 in various German provinces and in Poland, Esthonia, Finland, and Scandinavia. Most places suffered a definite diminution in the breeding swallow populations, but it is hoped that lessened competition between the survivors may serve to bring the birds back to their former numbers.

Schüz contributes another part of his compilations of return records and recoveries of birds banded at non-German European stations, and Rutke describes the autumn migrations of the common Curlew (*Numenius arquata*). The adults appear to migrate apart from the birds of the year, at least they appear to form flocks of their own before actually leaving.

Among the shorter articles are notes on the early summer migration of the Lapwing (*Vanellus*), on the wanderings of the Puffin (*Fratercula arctica*) in the Mediterranean and off the southwestern portion of the Portuguese coast, and on the banding records of the Coal Tit (*Parus major*) and the Blue Tit (*P. caeruleus*).—H. F.