

in autumn may winter where they land, the central and east European Blackcaps which migrate SE to the eastern Mediterranean in autumn to feed on figs do not stay there when the climate deteriorates later in the year, but change their movement and pass on SSW around the east border of the Sahara to winter in Africa.

As Mr. Moreau has taken pains to point out (*J. Animal Ecology* 21: 250-271) a vast number of birds breeding across the whole width of the northern hemisphere from the Canadian arctic through Europe and Asia to Alaska winter in Africa. A great many of these birds perform long migrations before they ever approach the final long desert crossing to the Ethiopian region, and must then refuel for the desert crossing, where as Mr. Moreau so rightly observes they are assisted by the NE trade-winds in autumn but opposed by them in spring. In the area between 30° and 45° latitude where they refuel much space is occupied by mountain ranges, steppes, and seas swept by sudden small local storms, described by Admiral Lynes, a man who as a result of his profession seems likely to be a sound authority on the subject (*Brit. Birds* 3: 36 et seq.; it is curious how Mr. Moreau omits to mention this paper, though he does mention the storms whenever they provide evidence for broad front migration across the Mediterranean by causing birds to descend in large numbers on ships). In autumn there are few large areas in this zone where birds can refuel in large numbers, and the most important of these appear to be the west coasts of Iberia and Morocco, and the eastern shores of the Mediterranean where they are moistened by westerly winds off the sea. In spring the conditions for birds in this zone are better after winter rain, but the birds are now very tired after crossing the desert against the wind, and they again make for much the same refuges to refuel before passing on to the breeding grounds.

After omitting inconvenient species such as the Blackcap, Mr. Moreau provides a table to demonstrate that many birds appear to be evenly distributed across the width of the Mediterranean area on migration. But this table seems highly misleading, because the area of land and sea is not evenly distributed across this zone, but is much greater at each end than in the middle. SW Iberia and west Morocco or Cyprus and Egypt (or preferably Asia Minor and the Lebanon) are both larger and more fertile than Malta and Tripoli, for example. It follows that if birds such as Redstarts *Phoenicurus phoenicurus* or Common Whitethroat *Sylvia communis* appear equally abundant across the whole of this area, many more must be passing around the ends of the Mediterranean than across the middle. Thus the evidence provided by direct observation appears to support that provided by various banding analyses by Continental European (mainly German) workers in suggesting that there must be a "migratory divide" in parts of Europe between populations of birds which pass round one end of the Mediterranean and Sahara on passage, and populations which pass round the other end. It seems possible that if your reviewer were to obtain access to a radar set he might be able to find evidence for such phenomena in North America as well.

W. R. P. Bourne.

## RECENT LITERATURE

### BANDING

(See also numbers 22, 23)

1. **Report on Bird-Ringing for 1961.** Robert Spencer. 1962. *British Birds*, 55: 493-543. . Ringing Supplement 1962. 1961 was a banner year in the number of birds ringed, species ringed and recoveries reported. An exciting new species, ringed in Ireland, is also the first record for the British list—a Fox Sparrow (*Passerella iliaca*). The first British ringed bird ever found in Australia is a Manx Shearwater (*Procellaria puffinus*) from Skokholm, Wales. Interesting ages were a Blue Tit (*Parus caeruleus*) of 8 3/4 years, a Great Tit (*P. major*) of 10 years, and an Arctic Tern (*Sterns macrura*) of 22 years.—M. M.Nice.

## MIGRATION

(See also number 31)

**2. How to calculate the way the crow flies.** (Beräkning av "teoretiska fågelvägen".) Karl Fredga and Kerstin Fredga. 1962. *Vår Fågelvärld*, 21: 205-207. (English summary.) Many a bird-bander as he holds a foreign recovery in his hand asks himself: "How far did this bird fly to come here? How far is it from where it was banded to where it was recovered?" Although the actual distance traveled by a bird may be an unsolvable problem, here the authors attempt to answer the question by suggesting a new formula for the calculation of the shortest distance between two points on the earth's surface.—Louise de K. Lawrence.

**3. Migration at Falsterbo Bird Station 1959. Report No. 21.** (Fågelsträcket vid Falsterbo fågelstation ar 1959.) Staffan Ulfstrand. 1962. *Vår Fågelvärld*, 21: 190-204. (English summary.) Observations continued from 1 July to 15 November. As usual the report contains several interesting points. The greatest number of Greylag Geese (*Anser anser*) counted at Falsterbo passed over in July. A sudden change in the weather from warm, calm and clear to rain and strong SW winds is thought to be the main factor causing the remarkably heavy mass movement of species on 24 October. This change, possibly in combination with another weather system in the northeast, exercised a pressure upon the night-flying birds between 23 and 24 October, which presumably forced them in over the Swedish mainland. Another point of interest were two escaped cage-birds, a Cockatoo (*Cacatua roseicapilla*) and a Budgerigar (*Melopsittacus undulatus*), which arrived at Falsterbo on 8 August and 25 July, respectively, and blithely migrated out over the sea in entirely the same fashion as their wild kin.—Louise de K. Lawrence.

**4. The Bean Goose in northern Halland, Sweden.** (Sädgåsen (*Anser fabalis*) i norra Halland.) Ralf Lennerstedt. 1962 *Vår Fågelvärld*, 21: 174-181. (English summary.) Since far back in the past, the coastal marshes and inland fields of this province on the west coast of Sweden provide favored stopover localities for the Bean Geese on their spring and fall migrations. This report is based on a 5-year study.

The geese arrive in late September and early October, move south in December-January, to return in February-March. By 1 May the last goose has disappeared inland and northwards. Although the temperature of the air is of major importance, other factors also tend to influence the movements of the geese, especially in the fall. One of these is the shortening of daylight which causes the grass of the pastures to cease growing and to wilt. Early warm springs encourage migration, thus decreasing the number of geese and the duration of their stopover, while late and cold seasons inhibit migration and often create large accumulations of geese in these particular areas. The diagrams in the text are computed by the logarithmic method.—Louise de K. Lawrence.

**5. A Danish-Swedish goose census in the autumn 1960.** (En dansk-svensk gåsräkning hösten 1960.) Birger Jensen, Gunnar Markgren, Sven Mathiasson. 1962 *Vår Fågelvärld*, 21: 182-189. (English summary.) The species involved in this count undertaken 30 October included Bean Geese (*Anser fabalis*), Pink-footed Geese (*A. fabalis brachyrhynchos*), and White-fronted Geese (*A. albifrons*). For a day chosen at the height of the fall migration, the results showed that an unexpectedly small number of geese, 22,100 in all, were present in the selected 28 census localities. The authors disagree about the reasons involved. Suggested are: an earlier or a delayed migration, the prevailing weather having caused a shift to some overnight resting places not visited by the census-takers, and hunting pressure in Denmark causing escape movements away from the census areas.—Louise de K. Lawrence.

## POPULATION DYNAMICS

(See also number 10)

6. **A Study of Survival of Adult Fulmars with Observations on the Pre-laying Exodus.** G. M. Dunnet, A. Anderson and R. M. Cormack. 1963. *British Birds*, 56(1): 2-18. In 1950 color banding of nesting *Fulmarus glacialis* was first started on the island of Eynhallow in Orkney; this project is still continuing. No bird banded as a nestling has, as yet, been found breeding. Both "males and females leave the breeding area for about a fortnight before egg-laying." "The female returns, lays and departs again, within usually a few hours, leaving the male to undertake the first major incubation stint. This is much longer than any subsequent stint, averaging six or seven days and sometimes extending eleven days. Later stints probably average four to five days." Many elaborate statistical calculations are made as to longevity of the breeding birds, the last estimate indicating a mean duration of adult life of  $15.58 \pm 1.95$  years.—M. M. Nice.

## LIFE HISTORY

7. **The occurrence and breeding biology of the Spotted Crake in north-eastern Scania.** (Småfläckiga sumphönans (*Porzana porzana*) förekomst och häckningsbiologi i nordöstra Skåne.) Sven-Axel Bengtson. 1962. *Vår Fågelvärld*, 21: 253-266. (English summary.) This study was carried out from 1956 through 1960 and includes data on population density, habitat selection, migration, daily rhythm, incubation, and nest-leaving.

The bird is found in lakes and marshes where there is an abundance of reeds, of which the species *Equisetum* appears to be of greatest importance. The common whistled note is uttered by the male. It has a function similar to that of song with reference to territory and mate. Given mostly at night, it reaches a peak in daylight between 0400 and 0600 during mid-May when as many as 94 notes per minute may be recorded.

During pre-copulatory displays the female moves forward in a crouching position. The male, with head and body horizontally extended, rushes at her from behind in relays, giving cackling notes. As the male mounts he gives a sibilant note. Preliminary displays are often characterized by the birds standing face to face, bobbing and blowing with lowered heads.

The clutch consists of from 6 to 12 eggs laid at an average rate of 2 eggs in 3 days. Incubation starts with the laying of the 6th egg. The incubation period is from 18 to 20, average 19, days. Both sexes incubate, although the female assumes the better part of it. Attentiveness rises towards the end of the incubation period; at one nest it rose from 86 percent during the first week to 94 percent during the last week. Of 53 eggs, the hatching success was 85.7 percent.

Upon hatching the young stay in the nest for an average time per young of 34-38 hours. During this time they are constantly brooded and possibly fed perhaps once. Feeding does not really start until the first hour after the family abandons the nest. The young become capable of flight at the age of about 34-35 days. The species is double-brooded. A fine contribution on the life history of an extremely secretive bird.—Louise de K. Lawrence.

8. **The Natural History of the Oilbird, *Steatornis caripensis*, in Trinidad, W. I. Part I. General Behavior and Breeding Habits.** D. W. Snow. 1961. *Zoologica, Scientific Contributions of the New York Zoological Society*, 46 (Part I): 27-48. A very interesting report of a 3½ years' observations on this strange member of the Caprimulgiformes. The birds live and nest in pitch-dark caves, finding their way in and out by echo-location. They fly gregariously at night to feed on the fruits of forest trees. Both parents incubate the two to four eggs. Incubation is slow—33-35 days, and fledging extraordinarily slow—90 to 125 days. Small young are fed 5 to 6 times a night, large young 3 or 4 times. Young acquire temperature control at about 3 weeks of age. The paper concludes with a discussion of the probable course of evolution of this remarkable species.—M. M. Nice.

## NIDIFICATION AND REPRODUCTION

(See also numbers 7, 8, 22)

**9. Researches on the Biology of the Dotterel in Swedish Lapland.** (Untersuchungen zur Biologie des Mornellregenpfeifers (*Eudromias morinellus* L.) In Schwedisch Lappland.) Hans Rittinghaus. 1962. *Zeitschrift für Tierpsychologie*, 19(5): 539-558. Summary in English. Despite hail and snow storms the author studied the behavior of these handsome plovers on a small mountain in North Lapland. He distinguished individuals by means of colored bands. In courtship "the male was the active partner; his nest-scraping and building activities were attentively observed and answered accordingly by the female, whereupon the male copulated with her near the hollow." Both partners have a brood patch. The female helped incubate the eggs early in the period, but later the male took sole charge. While he was leading the chicks, he was sometimes joined by a female whose behavior indicated she could well have been the mother of the brood.—M. M. Nice.

## BEHAVIOR

(See also numbers 7, 9)

**10. A Field Study of the Black and White Manakin, *Manacus manacus*, in Trinidad.** D. W. Snow. 1962. *Zoologica, Scientific Contributions of the New York Zoological Society*, 47(2): 65-104. A 4½ year study was made in Trinidad of this small, abundant manakin, which lives largely on fruit. Each male clears a "court" for himself on the forest floor in close proximity to the courts of other males. "Display goes on all through the day, with a marked peak soon after the dawn and another peak in early afternoon." "Display continues all year but is much reduced during the molt." The olive-green female, visits the display ground and joins a male in a highly coordinated dance on the court. She builds her nest, incubates her two eggs for 18-19 days, and cares for her young for 13-15 days in the nest and about as long afterwards. Of 227 nests only 44 were successful in fledging young—19 percent. Annual survival of the adults was very high—89 percent of 38 color-banded males, while the survival of the females appeared to be equally high. An illuminating discussion is given on the evolution of communal displays. An exceedingly interesting study.—M. M. Nice.

**11. On the Phylogenetic Origin of the Snap Display in the Common Heron (*Ardea cinerea* L.).** G. P. Baerends and N. A. Van der Cingel. 1962. *Zoological Society of London Symposia*, 8: 7-24. The authors suggest that "the derivation of this display is complex, i.e. that more than one phenomenon have contributed to its present form."—M. M. Nice.

**12. On the Evolutionary Derivation of Wing Display in Burmese Red Junglefowl and Other Gallinaceous Birds.** J. P. Kruijt. 1962. *Zoological Society of London Symposia*, 8: 25-35. An attempt to interpret wing-lowering in the waltzing or courtship display of *Gallus gallus spadiceus*. The author concludes that this movement is a compromise between an aggressive tendency to flap the wings and the escape tendency to fold the wings. Many sketches illustrate the different wing movements of this fowl in waltzing, copulating, fighting, and sexual chasing.—M. M. Nice.

**13. Imprinting in Relation to Drive Interactions in Burmese Red Junglefowl.** J. P. Kruijt. 1962. *Zoological Society of London Symposia*, 8: 219-226. Nine male junglefowls were raised in groups, either all male or of both sexes, but separated from the pullets at the age of 3 months. All these cocks copulated successfully when introduced to hens at the age of 11 to 27 months. Eleven males were raised in isolation, each chick in a pen by himself, where he could hear but not see other chicks. Of these males only two were able to carry out copulatory behavior when they met females for the first time at the age of 9 to 16 months. The aggressive and escape behavior of these isolated males was abnormal. Most of them passed through a stage when they occasionally showed strong escape behavior. "They run madly through the cage, ducking now in one, then in another corner, often screaming as if they were being handled by humans. Sometimes the

fit lasts for hours." Or the cock might begin to show aggressive behavior, at first directed to his own tail! Some of them pull out their own tail feathers. "Later the isolated cock may also attack humans." These and other activities are illustrated with sketches. A very interesting paper.—M. M. Nice.

**14. Studies of Aggressive Capercaillie.** I. J. Ferguson-Lee. 1963. *British Birds*, **56** (1): 19-22. A discussion of five cock *Tetrao urogallus* in Scotland that attacked people, automobiles, sheep, and a horse, but not dogs. Each lived in a small woods near a road and was believed to have no rivals of its own species. Hence it may have been that their aggressive behavior in spring might have been "turned towards any other large moving object." Two of the males had behaved in this way during four springs and one for five. There are six excellent photographs by C. E. Palmar.—M. M. Nice.

**15. On the Biology of the Red-legged Partridge.** (Zur Biologie des Rothuhns (*Alectoris rufa*). Otto von Frisch. 1962. *Die Vogelwelt*, **83** (5): 145-149. Four chicks of this partridge were caught in June 1960 and raised in captivity. All lived peaceably together until March 31, 1961 when two "mated and set up a territory within the cage within a few hours," pursuing and injuring the other two. The female of the pair laid 13 eggs in one nest and immediately after 6 in another. She then died from blackhead. The author cites four references, but apparently missed Derek Goodwin's detailed study of this species in the *Ibis* (1953) **95**: 581-614.—M. M. Nice.

**16. Types of Movements, Social Behavior, Courtship and Nest Build-up in the Indian White-eye.** (Bewegungsformen, Sozialverhalten, Balz und Nestbau des Gangesbrillenvogels (*Zosterops palpebrosa* Temm.)). Peter Kunkel. 1962. *Zeitschrift für Tierpsychologie*, **19** (5): 559-576. Summary in English. Ten Indian White-eyes were kept and observed in an aviary. The birds have a strong "contact" drive towards their fellows, especially at night. "Conflict of contact and escape drives results in a very conspicuous behaviour pattern, a slow turning from side to side." "During pair formation the male offers his head to the female for preening, thus suppressing, at least partly, her tendencies to attack or to flee." "The male only feeds the female when she threatens him. Thus feeding, too, serves to suppress her agonistic tendencies." Both male and female build the nest. These birds drink by sucking. They pry with their bills — *zirkeln*), a behavior pattern hitherto reported for relatively few passerines — Sturnidae, Icteridae, Corcidae, and the Penduline Tit. This interesting paper is illustrated with 11 photographs.—M. M. Nice.

**17. Analysis of the Sexual Behavior of the Red-crested Pochard.** (Zur Analyse der sexuellen Verhalten der Kolbenente, *Netta rufina* (Pallas).) Hans Lind. 1962. *Zeitschrift für Tierpsychologie*, **19** (5): 607-625. Summary in English. The author analyzes "the sexual and semi-sexual" behavior of this diving duck under the headings "Origin of display," "Causation" and "Comparison," concluding: "*Netta rufina* is obviously closely related to the genus *Aythya*. However, there is also a rather close relationship to the genus *Anas*, and this is more pronounced in *Netta* than in any other diving duck." Nine photographs illustrate the article.—M. M. Nice.

**18. An Analysis of the Displays of the European Eider *Somateria mollissima mollissima* (Linnaeus) and the Pacific Eider *Somateria mollissima v. nigra* Bonaparte.** F. McKinney. 1961. *Behaviour*, Supplement VII: 1-124. With 13 plates, 13 figures and 31 tables. Also summaries in German. Studies for this important work were carried out on the Inner Farne island and at Slimbridge, England, and at Nelson Lagoon in Alaska. A detailed analysis is given of the displays of the two races of Eiders, "largely by investigating the frequency of each display in a variety of different natural situations and the association of displays with one another and with overt acts of attack, escape, and copulation." (p. 2). The report is well supplied with sketches and photographs taken from many movie films. Dr. McKinney has succeeded excellently in his aim of describing and analysing the behavior patterns associated with pair-formation, copulation and hostile encounters in both eiders in his "attempt to determine their motivation, function and evolutionary origin," (p. 64). A notable study.—M. M. Nice.

**19. Aspects of Pair Behavior in the African Parrot *Agapornis personata*.** (Aspekte des Paarverhaltens von *Agapornis personata* Reichenow.) Roger Alfred Stamm. 1962. *Behaviour*, **19** (1-2): 1-56. Summary in English. The pairing behavior of captive East African parrots was watched and analyzed. Single birds in a flock seek partners. "The pair forms gradually as the tension between future mates, when they approach one another, slowly diminishes." "An adult shows a very close social contact only towards its mate;" this is manifested through mutual preening, beak touching, and feeding of the mate. The female receives all her food from her mate during incubation and the fledging period, and often later as well. The study is provided with 20 photographs and many sketches.—M. M. Nice.

**20. Development of the Reed Warbler. A Behavior Study.** (Die Jugendentwicklung des Teichrohrsängers (*Acrocephalus scirpaceus*). Eine Verhaltensstudie.) Monica Impehoven. 1962. *Revue suisse de Zoologie*, **69** (4): 77-191. Summaries in German, French and English. This interesting doctoral thesis represents a vast amount of work — field observations during three summers, hand-raising of 38 young taken from the nest at ages from 3 to 10 days. Physical development was carefully studied, and experiments carried out on gaping. More than 40 photographs are included.

The Reed Warbler's development follows closely that of other small passerines with short (10-11 day) fledging periods except for its adaptation to life among reeds. The fledgling jumps to a reed, climbs up above the nest level, and remains clinging tightly to its reed. Later, in bathing, it leans down into the water clinging to a reed; it dips its head and breast quickly into the water and with vigorous wing movements splashes water over its body.

Interestingly enough, this species scratches its head "directly", "from under the wing." This it does from its 9th day and throughout adulthood. Simmons (*Ibis*, **99**: 180) records the Sedge Warbler (*A. schoenobaenus*) as scratching like most passerines "indirectly", "over the wing." Dr. Impehoven is mistaken when she states (p. 184) that her observations are in contrast to those on all passerines whose head-scratching methods have hitherto been described. Instances of the direct method in this order have been cited by Nice, 1943; Simmons, 1957; Fickens, 1958; and Nice and Schantz, 1959.—M. M. Nice.

## ECOLOGY

**21. On waterfowl and lake types.** (Om sjöfaglar och sjötyper.) Birger Pejler. 1962. *Vår Fågelvärld*, **21**. 267-274. (English summary.) This article is a by-product of a zoo-plankton investigation of lakes in central Sweden, which shows that certain correlations are to be found between the type of water preferred by waterfowl and their habits. Most of the data submitted concern the Arctic Loon (*Gavia arctica*) and the Mute Swan (*Cygnus olor*).

Deep-diving species belong predominantly to the oligotrophic lakes. Species whose feeding habits require shallow depth, such as the Mute Swan, are to be found mostly in eutrophic waters. Large lakes are more attractive to waterfowl than the smaller ones mainly because they present greater environmental diversity. Thus both the loon and the swan may inhabit the same lake though in different parts; the loon where the water is deep and clear, the swan in the shallower reed-grown localities. Because they offer a more uniform environment, the small lakes are either comparatively poor in species or they are "extreme", that is, attractive specifically to a few species.

"Even if these correlations do not give a complete picture of the animals' habitat requirements, they offer, nevertheless, positive proof of certain factors related to the free water . . ." Such analyses, the author suggests, may constitute starting points for other more detailed ecologic-ethological investigations.—Louise de K. Lawrence.

## WILDLIFE MANAGEMENT

(See also number 5)

**22. The Mourning Dove in Illinois.** Harold C. Hanson and Charles W. Kossack. 1963. *Illinois Department of Conservation Technical Bulletin* No. 2:1-133. Southern Illinois University Press, Carbondale, Illinois. This comprehensive

study of *Zenaidura macroura* is based on reports on 10 to 15 nesting study areas each year, on large scale banding of nestlings from 1954-58, on extensive autopsying of birds shot by hunters, and on observation of some 150 doves in captivity. Nine out of twelve recoveries of nestlings banded the previous year occurred in the same county in which they were reared. As to the time of laying of the two eggs of a clutch, 63 percent were laid on alternate days, 27 percent on successive days. When a nesting came to an unsuccessful end, the first egg of the next clutch was usually laid 6 days later; when the first nesting was successful, the interval before the first egg of the next clutch was usually 30 days.

Success of 949 nests in Illinois averaged 64 percent, while success in 29 other studies over the country ranged from 29 to 77. Later nests proved more successful than earlier ones. The number of nests found in Illinois from 1950-58 were as follows: from 1 April - 12 May, 490, success 64 percent; from 13 May - 23 June, 346, success 61 percent; from 24 June - 4 August, 88, success 69 percent; from 5 August - 15 September, 16, success 81 percent. Photographs of a series of eggs incubated from 0 to 13 days is accompanied by descriptions of daily development as observed through a portable egg candler. A very fine series of daily photographs of nestlings from 0 - 14 days is matched with a detailed description of the appearance, size, feather growth and general development on each day, including a most useful "key character" for each day.

As to the matter of dove hunting in Illinois, the authors point out that very few of these birds are still nesting in September, and they suggest a self-regulating factor in the situation, namely that when doves are low in numbers, few men bother to hunt them.

I have mentioned only a few of the interesting findings in this valuable report. It can be heartily recommended to a wide circle of readers.—M. M. Nice.

## ZOOGEOGRAPHY

(See also numbers 21, 33, 34)

**23. Seasonal Activity and Ecology of the Avifauna of an American Equatorial Cloud Forest.** Alden H. Miller. 1963. *University of California Publications in Zoology*, 66 (1): 1-78. \$1.50. In this Colombian cloud forest two rainy seasons and two dry seasons, neither very pronounced, occur each year. A peak in breeding was found in April and May, a peak in molting from June to September. Details are given on the occurrence and activities of the avifauna, and data on weights and colors of soft parts, etc., of the specimens taken.—M. M. Nice.

**24. Little Bunting found breeding in the Sarek, Swedish Lapland.** (Dvärgsparven (*Emberiza pusilla*) anträffad häckande in Sarek, Lappland.) Kai Curry-Lindahl. 1962. *Vår Fågelvärld*, 21: 161-173. (English summary.) This bird is rarely encountered in the western part of northern Europe. A lone female was found in a swampy willow-covered locality at the base of a mountain. This agrees with earlier observations of the species' habitat preferences. The nest was on the ground tucked in under a willow. The bird was watched while she incubated 6 eggs. Her longest session lasted over four hours. The author argues against the probability of a *bona fide* westward extension of the species' range, suggesting instead that this was a case of prolonged migration.—Louise de K. Lawrence.

**25. Observations on the Imperial Eagles in Scania, southern Sweden, during the summer and fall 1961.** (Iakttagelse af Kejsereørne (*Aquila h. heliaca*) i Skåne sommer og efterår 1961.) Erik Hansen and Niels Hesselbjerg Christensen. 1962. *Vår Fågelvärld*, 21: 241-249. (English summary.) Between 9 July and 25 November 1961 two immatures of this southern species were seen on numerous occasions by a number of experienced observers. The locality was a forest edge parkland with southern exposure not far from the place where the Scania Ornithological Society put out food in the form of slaughter house offal for wintering raptors. The comprehensive English summary outlines the process of identification by comparison and elimination.—Louise de K. Lawrence.

**26. Supplementary notes on the Imperial Eagles at Håckeberga, Scania, and a comparison between Imperial and Tawny Eagles.** (Några kommentarer angående kejsarörnarna (*Aquila heliaca*) vid Håckeberga och differenserna mellan kejsarörn och stäppörn (*A. rapax*.) Staffan Ulfstrand. 1962. *Vår Fågelvärld*, **21**: 250-252. (English summary.) The Imperial Eagles present in Scania during the summer and fall of 1961 wintered in the same area and were still there at author's last visit early in April 1962. These notes deal principally with the changes in the plumage of one of the immatures during the winter and early spring. The first sign of molt occurred in December 1961. By the end of observations, the bird did not resemble an immature of either the Golden (*A. chrysaetos*) or the Tawny Eagles. Its coloration was distinctly mottled and streaky. It was also heavier of form and movement than the gracile Tawny Eagle.

It is a remarkable fact that these rare and conspicuous raptors (only two previous records exist for Sweden) were for over half a year consistently left in peace by sportsmen and collectors alike.—Louise de K. Lawrence.

**27. Desert Warbler at Ottenby 1961.** Report No. 34. (Ökensångaren (*Sylvia n. nana* [Hemp. & Ehrenb.] vid Ottenby 1961.) Ragnar Edberg. 1962. *Vår Fågelvärld*, **21**: 275:278. (English summary.) This bird was caught in a mist net 20 October 1961, the first within a week of three new species for Sweden of Siberian distribution. Its normal homeland is the desert areas of Asia with principal wintering grounds in Persia and around the Red Sea.—Louise de K. Lawrence.

**28. Yellow-browed Warbler at Ottenby 1961.** Report No. 35. (Tajgasångaren (*Phylloscopus i. inornatus* [Blyth]) anträffad vid Ottenby 1961.) Carl Gustav Ohman. 1962. *Vår Fågelvärld*, **21**: 279-284. (English summary.) A long-expected visitor from Siberia, this bird was caught 27 October 1961. A long period of predominantly easterly winds preceded its arrival. The species' normal distribution is over the forested areas of Siberia with winter ranges in India, Malaya, and Indochina. Accidentals are almost yearly encountered on Heligoland and on the east coast of England.—Louise de K. Lawrence.

**29. Long-billed Dowitcher in Sweden.** Report No. 36 from Ottenby Bird Station. (Långnäbbad beckasinsnäppa (*Limnodromus scolopaceus* [Say]) anträffad i Sverige.) Wolf Jennings. 1962. *Vår Fågelvärld*, **21**: 285-291. (English summary.) This bird, whose breeding grounds extend from the northeastern tip of Siberia to Alaska with winter quarters in California, Louisiana, and Florida, was caught at Ottenby 25 October 1961. Identification was confirmed by Pitelka. This is a first record for Sweden. An occurrence of the Short-billed Dowitcher (*L. griseus*) dates back to 1818.—Louise de K. Lawrence.

## PHYSIOLOGY

**30. Embryonic and Early Postembryonic Erythropoiesis in Liver, Spleen, Yolk Sack and Bone Marrow of Birds.** (Embryonale und frühe postembryonale Erythropoiesis in Leber, Milz, Dottersack und Knochenmark der Vögel.) Luise Schmekel. 1962. *Revue Suisse de Zoologie*, **69** (32): 559-615. Summaries in German, French and English. In the lizard *Lacerta* and the Anatidae the formation of erythrocytes takes place up to the 3rd-8th day before hatching. "In Passeres, *Larus*, *Apus* and *Gallus* it ends around the time of hatching." In *Melospittacus* and *Columba* it is still found during the first week after hatching. Erythropoiesis occurs in the liver in Passeres, *Columba*, *Melospittacus*, *Apus* and *Larus*, but not in *Anatidae*, *Gallus* and *Lacerta*. The author distinguishes "archaic, primary features" in this process from "phylogenetically younger, secondary features."—M. M. Nice.

## BOOKS AND MONOGRAPHS

**31. The Migrations of Birds.** Jean Dorst. 1962. Houghton Mifflin Co., Boston, Massachusetts, pp. 1-xix, 1-476. Price \$6.75. When the French fore-runner of this volume appeared in 1956, I concluded my review of it (*Bird-Banding* (1957) **28**: 55): "Even for those who do not read French, this is one of the best source books of general information on migration yet published." It is a pleasure

to be able to report that this new American edition is *the* best source book on migration I have yet to see.

I have both volumes before me, and the present one is no mere literal translation of its predecessor, but a completely revised and updated work. Although it follows the same general format and chapter headings, the author has ironed out the few minor slips in the French edition and has completely rewritten many chapters to include and conform to more recent findings. The four years following the appearance of "*Les migrations des oiseaux*" saw some of the most striking and dramatic advances in our knowledge of bird migration, particularly in the fields of orientation and navigation and of the basic physiology of the phenomenon. In these years came the discoveries of Sauer, Sutter, Williamson, Thomson, Schuz, Merkel, Lowery and Newman, Marshall, Lack, Kramer, Hoffman, and Wolfson, to mention only a few of the many who contributed significantly in this short period. The conclusions of all their works are presented here simply and clearly, and a number of new illustrations, maps, charts, graphs, and diagrams are based on these most recent studies.

The book concludes with a well-selected bibliography of 50 pages, with a cut-off date apparently of 1960. Useful also are two indices, one of the birds and the other of geographical places mentioned in the text, which really cover about all any consultant needs to find what he wants. I am indeed happy that this fine, carefully prepared and presented work is now available in English. It is a "must" for the shelves not only of every student of ornithology, but of everyone the least bit interested in birds.—O. L. Austin, Jr.

**32. The Bird in the Hand / A Field Guide for Ringers and Bird Observatory Workers.** R. K. Cornwallis and A. E. Smith (2nd edition, revised by Kenneth Williamson). 1963. British Trust for Ornithology, Field Guide No. 6. 78 pages, illustrated. (For the first edition, see *Bird-Banding*, 31: 234-235, Oct. 1960.) Price 6 shillings. Though designed primarily for use by British ringers in their homeland, this little manual contains much information on bird-handling techniques that American banders might find useful. As its title implies, it contains nothing on methods of catching birds, but starts with the bird in the trap or net. Its first section is devoted to instructions in the safest and simplest (always the best) methods of removing birds from traps or nets, handling them for banding, examination, and study, keeping them for short periods when necessary, and even of releasing them. Trechant remarks are included on the treatment of sick and injured birds and on the disposal of the inevitable occasional casualties, with instructions how to pack and ship them to museums and laboratories where the best use can be made of them. Emphasis is placed throughout on the bird's safety and well-being during handling, which can never be overstressed even, or perhaps particularly, among the most veteran banders.

The next section, on affixing bands, contains much commonsense advice on using the correct size (a list of correct sizes for all British species would have been a useful addition), how to close the band, and what birds *not* to band—any whose identification is in doubt, sick or injured ones, chicks whose legs are still too small, and nestlings of certain species prohibited by Ringing Committee regulations (those building covered nests). Good instructions and warnings are included on the ticklish procedure of banding nestlings and on the use of colored bands.

Part III, "Identification and Examination", presents the standard methods of measuring, weighing, deparasiting, and recording colors and stages of molt, following the *Handbook of British Birds* terminology. The emphasis here, and quite rightly, is on the necessity of keeping accurate and detailed records made at the time, on the spot, and of negative as well as positive findings. Several standardized forms are recommended for listing various types of data.

More than half the booklet is given over to a guide to sexing and ageing the species British ringers handle most commonly. For each it lists briefly and succinctly the pertinent sex and age variations in color and measurements. This section is interleaved with blank pages for the ringer to use for his own notes and additions. Issuing the guide punched for a loose-leaf binder, as we are doing for the American banders' manual, might prove even more practical.—O. L. Austin, Jr.

**33. Subantarctic Campbell Island.** Alfred M. Bailey and J. H. Sorensen. 1962. Denver Museum of Natural History *Proceedings* No. 10,: 1-305. An expedition from the Denver, Colorado, Museum of Natural History, headed by its Director, Dr. Alfred M. Bailey, spent 6 weeks in January and February 1958 on

Campbell Island, 400 miles south of South Island, New Zealand. The co-author of this book, Mr. J. H. Sorenson, New Zealand naturalist, had been constantly afield on the island from 1941 to 1945 and had become thoroughly acquainted with its vertebrate animals and its plants. Campbell Island is a rugged, volcanic island, covering about 40 square miles. In the Historical Sketch we learn that it was discovered in 1810 and that in a few years its great herds of seals had been almost exterminated. In 1895 5,000 sheep were placed on the island and "this has resulted in a marked change in the vegetation of the island." It is hoped that the last of these introduced mammals will soon be eliminated.

After a discussion of the geology and interesting vegetation of the island accounts are given of sea lions, fur seals, and elephant seals. Sixty-one species of birds have been recorded from Campbell Island, 26 having been reported as breeding. Six species of penguins nest and five of albatrosses. Much is known of the life history of the Royal Albatross through the studies of L. E. Richdale, but little is known about the Wandering Albatross. The authors suggest it would be of great value if the nesting population of this remarkable bird could be ringed and all birds measured. "The men of the meteorological station probably would welcome such a project" (p. 123).

Giant Petrels and Southern Skuas are useful scavengers, the latter devouring many of the super-abundant Norway rats. Of the dozen passerines recorded, eight of which breed on the island, nine were self-introduced from New Zealand where their ancestors were introduced from Great Britain a hundred years ago.

The book concludes with a 6-page bibliography and a 4-page index. It provides a fascinating account of this grim, sub-antarctic island and its wildlife. It is profusely illustrated with magnificent photographs of the scenery, the plants, the mammals, and the birds. Many of the photographs are extraordinary — the grotesque elephant seals, the ridiculous baby Mollymawks, the majestic albatrosses. It is a book to be treasured and enjoyed time and again.—M. M. Nice.

**34. Preliminary Field Guide to the Birds of the Indian Ocean for Use during the International Indian Ocean Expedition.** George E. Watson, Richard L. Zusi, and Robert E. Storer. 1963. U. S. National Museum, Smithsonian Inst., Washington, D. C. pp. i-x, 1-214. Photo-offset. No price given. Modern large-scale sea-going scientific expeditions seldom have a trained ornithologist aboard, and when they do it is usually fortuitously. Ornithologists on these "task forces" usually have to steal what little time for bird work they can from their regular assigned duties, which in the recent past have ranged anywhere from those of medical officer to meteorologist.

This will doubtless be true for most of the vessels partaking in the all-out assault on the Indian Ocean in 1963-64. Each will be crammed with all sorts of miscellaneous scientists, mainly oceanographers, hydrographers, geographers, geophysicists, and what-not, but no cabin-space will be available for a zoologist unless his primary interests are invertebrates or fishes. For that matter, opportunities for bird work on such voyages are limited, and can be exceedingly thwarting and frustrating. Collecting from a large vessel under way, or even hove-to on an oceanographic station, is next to impossible, and chances to get ashore at good birding spots are all too few and always too short and hurried. Much potentially priceless ornithological material from faraway places has gone to waste in the past because nobody aboard knew what to look for, what was worthwhile and what wasn't, or what to do with what they might get.

This meaty manual, though prepared in considerable haste by the Division of Birds of the USNM under a National Science Foundation Grant, should go far to stimulate interest in the birds of the Indian Ocean among the non-ornithological scientific personnel aboard, and encourage far more collecting of useful material than usually results from such forays. It is designed for practical field use; though bound in flimsy paper covers, the pages are punched for a 3-ring binder so they can be augmented later with loose-leaf inserts. It is too large (8" x 10 1/4") and bulky to carry in one's pocket, but this is no drawback aboard ship and allows more space for the cogent information with which it is crammed.

The first section consists of detailed instructions on collecting bird specimens in the field. The descriptions of how to make birdskins and prepare skeletal material are simple, explicit, and amply illustrated with good, clear drawings. Techniques of freezing and pickling specimens are included, as well as how to collect and blow eggs, and pertinent hints on storing and packing. The necessity of proper labeling is stressed throughout.

Next comes a section on field identification of all the groups and many of the species likely to be encountered. For each group 19 full-page drawings in black and white illustrate the identifying characteristics of its most important members clearly and unmistakably. Those of the various sea birds showing how to distinguish between the often confusing members of Procellariiformes, Pelecaniformes, and Charadriiformes should prove especially useful aboard ship. This is followed by a synoptic species list, giving scientific and vernacular names for 278 species found pelagically, archipelagically, or insularly in the Indian Ocean, with short notes on the identification and known distribution of each.

More than half the book is devoted to summaries of the avifauna of the 17 main islands and island-groups in the Indian Ocean. Each is introduced by a topographic map of the island, with notes on its location, topography, vegetation, and climate, its known sea-bird breeding sites, and a short resume of our ornithological knowledge thereof. This is followed by detailed notes on the species recorded for each island, with remarks on what especially to look for and what particularly is needed in the way of bird material therefrom.

In short this manual contains just the sort of material every ornithologist wishes he had time and opportunity to dig out for himself before departing for a new and unfamiliar region — and practically never can. I can't help thinking how useful I would have found such a compilation on the South Pacific, on Korea, and on Antarctica, each of which I left for unexpectedly and with barely time to get my gear packed, none whatever to dig out the available literature or to familiarize myself with what I was about to encounter ornithologically — and when I got there I had to dig out what I could the hard way, without benefit of prior knowledge and the experiences of those who had gone before. It sets a pilot pattern which can and should be followed for every major expedition to distant and little-worked areas. If the IOE doesn't bring back more significant ornithological material than any previous such venture, it won't be this manual's fault!—O. L. Austin, Jr.

#### MIST NETS SOLD BY NEBBA

The prices shown in the accompanying list are those in effect since October, 1962, reflecting the end of U. S. customs duties on nets. We hope they will be stable for some time to come, but the prices are subject to change without notice. Nets are imported as a service to our members and to other netters, and are priced close to actual cost. Any net income is used to build up our working capital, and eventually will be used toward the support of *Bird-Banding's* ten-year indices — valuable references which don't pay their own way fully. Nets are in stock for immediate shipment, but we have not been fully successful in keeping all types in stock at all times. Therefore, if you can anticipate your needs, an early order may avoid delay in your project.

The prices shown include shipment by surface parcel post within the U. S.; for shipment by air parcel post, add 10%. If desired, we can ship by parcel post "special delivery" or "special handling", at the actual extra cost.

For shipment by surface parcel post outside the U. S., add 10% to the prices shown. For shipment by air parcel post outside the U. S., we charge the actual postage, which is substantial, instead of the 10%. On shipments outside the U. S., the purchaser (1) pays any customs duties levied by his country, and (2) should remit in U. S. dollars or in currency freely convertible into U. S. funds at par.

We regret that we cannot ship by other methods, such as air freight. The light weight of nets (about 4 oz. for type A) makes parcel post the most economical method in almost all cases. Also, we are not equipped to handle the substantial extra paper work involved in freight shipments (net shipments and the paper work connected with them are handled entirely by volunteer, spare-time labor).

Institutions may order by letter or purchase order, without advance payment; terms, 30 days net (and no cash discount).

New members or subscribers may include payment in the same check as for the nets.

Permits to band birds in the U. S. or Canada do not authorize the use of nets unless specifically endorsed; those ordering nets for the first time are asked to show their permit number, or to explain how the nets will be used. Nets are sold only for scientific purposes, to individuals or institutions that appear qualified to use them.