RECENT LITERATURE

BANDING

(See also 11, 13, 21)

1. Pairing of Red-backed Shrikes from Same Brood. L. J. Raynsford. 1964. *British Birds,* **57**(11): 469. A nesting pair of *Lanius collurio* proved to have been banded from the same brood on the same common the previous year.—M. M. Nice.

2. Pairing of Robins from Same Brood. Edwin Cohen. 1964. *British Birds,* **57**(11): 469. A pair of *Erithacus rubecula.* color-ringed in 1960 as members of the same brood, produced young in 1962. The male had previously been mated to his mother, color-ringed as a juvenile in 1956.—M. M. Nice.

3. Bird-Banding at Powdermill, 1964. Robert C. Leberman. 1965. Powdermill Nature Reserve Research Report No. 12, Carnegie Museum. 19 pp. In 1964, 7754 new birds were banded. This figure included 124 species in 34 families, about one-half of which were fringillids. Returns in 1964 included 300 birds of 40 species. Three Black-capped Chickadee recoveries in New York and West Virginia indicate some regular seasonal movements in this species. Other recoveries and foreign retraps are presented for the Canada Warbler and Evening Grosbeaks.—David W. Johnston.

4. Ninth Annual Report of the Australian Bird-banding Scheme, July 1962 to June 1963. W. B. Hitchcock. 1964. *Div. Wildl. Research Tech. Paper* No. 7, 1-40. During 1962-63, 83, 218 birds of 355 species were banded. This total figure included 11,648 Eastern Silvereyes (*Zosterops lateralis*). There were 9,444 recoveries of 195 species. For 88 selected recoveries full data are presented. Among the notable foreign recoveries were Flesh-footed Shearwaters to Korea, Wandering Albatross to Kerguelen Islands (South Indian Ocean), and the White Egret to New Guinea.—David W. Johnston.

MIGRATION

(See also 30, 40)

5. Technical Details of Radar Equipment Detecting Birds, and a Bibliography of Papers Reporting the Observation of Birds with Radar. M. T. Myres. 1964. *Assoc. Comm. on Bird Hazards to Aircraft,* Field Note No. 9. (Available gratis from the Secretary of the Committee, c/o National Research Council of Canada, Ottawa 2, Ontario.) A useful bibliography listing 88 papers on radar observation of birds published through early 1964. Myres points out that most radar operators still do not realize that their equipment can detect birds, and that this is a serious handicap to the extension of ornithological studies.—I. C. T. Nisbet.

6. Distance Navigation in the Adelie Penguin. J. T. Emlen and R. L. Penney. 1964. *Ibis,* **106**(4): 417-431. Penguins released on featureless ice plateaus in Antarctica showed good northward orientation, if the sun was clearly visible. Experiments suggested that their behavior was a simple one-directional orientation (towards the sea), using the sun as a compass and an "internal clock" to correct for its secular movement. Birds released east of their colony oriented west of north and those released west of their colony oriented east of north, but the authors do not regard this as evidence for bi-coordinate navigation.—I. C. T. Nisbet.

7. Migrating Swallows and Meadow Pipits Drowning in Sea. M. Greenhalgh. 1965. *British Birds,* **58**(1): 21-22. A brief but interesting account of several *Hirundo rustica* and *Anthus pratensis* drowning after being hit by waves.—David W. Johnston.

8. Notes on Nocturnal Passing of Thrushes in Belgium. (Notes sur le Passage Nocturne des Grives en Belgique). A. Rappe. 1964. *De Giervalk*, **3**: 338-361. This article is a study of nocturnal migrant thrushes in autumn and is supplemented by numerous tables. Peak numbers of the migrants were detected at about 9:30 PM, none being recorded after 12:30 AM. A lengthy part of the report deals with the influence of climatic conditions on nocturnal migration of two species of thrushes.—David W. Johnston.

9. Migration Habits of Golden Plovers. E. G. Franz Sauer. 1963. *Proc. XIIIth Intern. Ornith. Congr.*: 454-467. Ten Golden Plovers were hand-raised on St. Lawrence Island, Alaska, and used for orientation experiments in specially-designed Kramer-cages in Madison, Wisconsin and in San Francisco. In spring birds in San Francisco oriented to the northwest (324°-327°) when they could see the sun, which Sauer interprets as orientation along the great circle route from San Francisco to St. Lawrence Island. This explanation is weakened, however, by the fact that in autumn birds in San Francisco oriented ESE (107°) and those in Madison east (90°). Sauer dismisses these directions as "back azimuths of the spring modes" (i.e., tracks parallel to the great circle routes from Alaska towards San Francisco and Madison), but this explanation seems far-fetched, indeed incomprehensible (if the birds could navigate well enough to select great circle routes, why did they orient in the wrong direction?).

The Golden Plovers from St. Lawrence Island should belong to the Asiatic race *Pluvialis dominica fulva*, but Sauer gives no other reasons for his assumption that his birds were part of the Pacific-migrating population, and not of the Atlantic-migrating population which is known to fly east in autumn and northwest in spring. Many other uncontrolled factors were involved in the experiments (e.g., shifts in the birds' internal clocks, experience of the sun's movement at two or three different places). Sauer's results, although impressive and significant, do not justify his far-reaching conclusions.—I. C. T. Nisbet.

POPULATION DYNAMICS

(See also 26, 30, 31, 39, 40, 41)

10. Effects of the Cold Weather of 1962/63 on the Blackbird Population of Dollis Hill, London. Eric Simms. 1965. *British Birds*, **58**(2): 33-43. Censuses of the breeding pairs of *Turdus merula* were carried out each year from 1951-1964 on an area of 546 acres in north-west London; the population was territorial and resident and fluctuated between 185 and 218 pairs except in 1963 when, after a very severe winter, it numbered only 86 pairs. Of 15 "ancestral" territories within 180 feet of the author's home only two were occupied in 1963. Color ringing at Dollis Hill "from 1951 onwards indicated that about 65% of Blackbirds survived to the next breeding season," much the same as I found with my breeding Song Sparrows under favorable conditions (1937). Despite generous feeding by many people the whole Blackbird population moved out in early January, 1963 and few returned, suggesting either a catastrophe elsewhere or, "alternatively, that a highly sedentary population had lost the ability to 'home'." (p. 39).

In late March, 1964 a dawn census revealed "the astonishingly high total of 244 singing males .... The early morning chorus of Blackbird song at this time was one of the most memorable and beautiful experiences of the 21 years in which I have known this area." "Song continued with an unparalled brilliance; display and fighting were fierce and unrelenting and it was clear that the whole territorial lay-out was in a state of flux." The number of pairs finally settled itself at about 200. The pair in the author's garden deserted five nests before finally raising a brood of two. A very interesting study.—M. M. Nice.

11. Factors Determining the Numbers of Song Sparrows, Melospiza melodia (Wilson), on Mandarte Island, B. C., Canada. Frank S. Tompa. 1964. *Acta Zoologica Fennica*, **109**: 1-73. The author lived on Mandarte Island (see review No. 40) from May through August from 1960-63. Otherwise each month he spent three to four days on the area and the neighboring islands

censusing his Song Sparrows. He netted and banded 675 individuals with aluminum and colored rings. He made few observations on nests because such activities drew the attention of the breeding Northwestern Crows.

A large population of Song Sparrows lives the year around on Mandarte Island. Winters are mild, summers generally dry. These birds are strongly territorial, defending small breeding territories, and foraging in undefended areas—grassland and the tidal zone. Enemies were practically absent. No snakes, Cowbirds (*Molothrus ater*), or predatory mammals occurred there. The crows destroyed two Song Sparrow nests during the four years covered.

The number of breeding pairs from 1960-63 was 46-48, 47, 44, and 69, respectively, while unmated males numbered 4-6, 7, 25, and 12, respectively. Territories averaged 322 square meters in 1961 and 229 in 1963, in contrast to the conventional Song Sparrow territories on neighboring islands which averaged from 1,000-3,000 square meters. On San Francisco Bay during the year with the peak population territories of this species averaged 416 square meters (Johnston, 1956), whereas in central Ohio they averaged about 2,700 square meters. (Nice, 1957).

Young males attempt to establish themselves in the fall, fighting so fiercely both then and in the spring that some contestants apparently lost their lives. Following a late and heavy snowstorm in March, 1962 at the time when most of the territories had been established, more than 30% of the established population perished from this climatic catastrophe. The 14 adult males that died during the snow were replaced by 21 young males, but as there was no reserve of females, the large number of unmated males seriously interfered with the nesting activities of the 44 pairs that had established themselves. Vigorous fights lasted throughout the breeding season. During the following winter survival of adults and juveniles was extremely high, resulting in a large population of mated pairs as well as a dozen extra males that kept the population in a turmoil at the start of nesting.

Fledging success was calculated by taking "the total number of young still alive at the end of breeding season and before the start of emigration [of some of the young] and divide it by the number of breeding pairs, thus obtaining the *index of productivity*". (p. 41) This index ranged in three years from 4.1 to 4.6, but in 1962 it was only 2.8.

"The regulation of numbers on Mandarte Island occurred through the adjustment in the numbers of the young population: increased territorial activities caused mortality of the young during the autumn and the emigration of surplus numbers to neighboring islands with lower densities," (p. 57)

The paper presents 26 tables, 8 figures, and 10 plates depicting types of vegetation. Eight appendices give details on vegetation and breeding birds of Mandarte and neighboring islands, on arthropods seen taken by the Song Sparrows, and calculations of survival rates of the populations studied. Dr. Tompa is to be congratulated on a fine contribution to ornithology.—M. M. Nice.

12. The Breeding Biology of the Hooded Crow in the Outer Archipelago of Southwestern Finland. (Zur Brutzeitlichen Biologie der Nebelkrähe (*Corvus corone cornix* L.) im Aeusseren Schärenhof Südwestfinnlands.) Rauno Tenovuo. 1963. *Ann. Zool. Soc. 'Vanamo'*, **25**(5): 1-147. (Summaries in English and Finnish.) The Hooded Crows of the region studied specialize in the nesting season on the eggs of Common Eiders (*Somateria mollissima*). They start nesting two weeks later than the crows on the mainland, apparently an adjustment to the time of abundance of duck eggs. Average clutch size was 4.68 ± 0.06; this corresponds to clutch size on the mainland. Largely due to uncertainties of obtaining sufficient eggs the mortality of the small chicks on the archipelago is higher than that on the mainland. Nevertheless the crows exert too heavy a pressure on the eiders. Almost a third of the report is devoted to the food habits of the crows on the archipelago. An excellent, thoroughly documented study.—M. M. Nice.

13. Mathematical Methods for Determining a Bird Population According to the Percentage of Returns. (Methode Mathematique d'Estimation d'Une Population d'Oiseaux d'Apres le Pourcentage des Reprises). L. Yeatman and Y. Berthelot. 1964. *L'Oiseau et la Revue Française d'Ornithologie*, **34**(3-4): 258-263. This article in French discusses two methods for estimating population sizes of birds using percentages of returns.— David W. Johnston.

14. Regulation of Sea-bird Numbers. M. K. Rowan. 1965. *Ibis*, **107**: 54-59.This is a discussion of population control mechanisms among certain pelagic species of south temperate seas. Three principal ideas are explored: defence of nest-site, availability of nest-site, and food. Among the arguments set forth on the food situation is the author's belief that "competition for food is unlikely to become much more acute in the breeding season than out of it."—David W. Johnston.

15. Dynamics of a Population of California Quail. Ralph J. Raitt and Richard E. Genelly. 1964. *J. Wildl. Mgmt.*, **28**(1): 127-141. This study was conducted from 1950 to 1957 in the Coast Range hills of central California, and is based on observations and recaptures of banded *Lophortyx californicus*. Fall age ratios varied from 56.5 immatures: 100 adults to 222 immatures: 100 adults. Higher productivity was positively correlated with early onset of breeding, and negatively correlated with summer fog and rain. Rain and cold in spring delayed onset of breeding, and reduced chances of successful renesting; in summer they increased chick mortality. Overall mortality rate was 71%, and there was little difference in age-specific mortality rates. After quail reached the first September of life, mean life expectancy was 9.7 months; turnover period for the cohort was 4 years. Male quail suffered higher mortality than females through most of the first year of life, but thereafter females had higher mortality rates. Seasonal movements, and sex and age differences in mobility, are described. "Population reductions were carried out in two winters, and in both years the population had returned to normal size by autumn. Immigration of birds from surrounding areas, rather than compensatory changes in mortality and productivity, appears to have been responsible for the recovery."—Robert S. Hoffmann.

16. Composition of the Finnish Populations of Capercaillie, Tetrao urogallus, and Black Grouse, Lyrurus tetrix, in the Autumns of 1952-1961, as Revealed by a Study of Wings. Matti Helminen. 1963. Papers on Game Research, No. 23, Finnish Game Found., Helsinki, 124 pp. The pattern in molt of the outer two primaries has been used for many years by wildlife biologists studying population dynamics of grouse. Aims of the present study were to check the reliability of this aging technique, and to consider yearly variations in age class composition in a hunter-sample of 6734 Capercaille and 8207 Black Grouse wings. Helminen concludes that "it is not always possible to distinguish the ninth and tenth primaries of young and old . . . on purely objective grounds . . . . however . . . the age class . . . can nearly always be determined [subjectively] . . . ." Juvenal grouse following the first prebasic molt (=postjuvenal: Humphrey and Parkes' terminology is used) are distinguished from yearlings that have not yet shed the juvenal-type primaries 9 and 10 by the degree of wear on the aftershaft of primary 10. Size and shape of Capercaillie wings varied geographically. Populations in southern Finland have the longest primaries, and reflect intergradation between *T.u. major* and *T.u. uralensis*. Those in central Finland, with shorter primaries, represent *T.u. uralensis*. Capercaillie of northern Finland are assigned to the nominate race, and their long, pointed wings are probably associated with greater mobility of the northern populations. Wing collections are compared with other hunting statistics, and fluctuations in population density are discussed. Age ratios of wing samples are considered to be a "sufficiently accurate index of the breeding success." Overall ratio of juveniles to one adult female is 2.56 in Capercaillie, and 3.34 in Black Grouse. Annual variation in age ratio varies directly with relative abundance of grouse in autumn, but peak populations usually are the result of two successive years of good breeding success. Mean annual adult mortality after the first of January was 40% for Capercaillie and 80% for Black Grouse, as calculated from age ratios. However, the estimate for the latter species appeared excessive and is probably closer to 60%. Mortality of juveniles during the first fall and winter is somewhat higher.—Robert S. Hoffmann.

17. Some Responses of Bobwhites to Snow Cover in Southern Illinois. John L. Roseberry. 1964. *J. Wildl. Mgmt.*, **28**(2): 244-249. In February and March, 1960, heavy continuous snow cover and below-average temperature in southern Illinois had marked effects on *Colinus virginianus*. Roosting and loafing sites were shifted from open to woody cover, and most feeding was re-

stricted to adjacent patches of unharvested corn and soybeans. Coveys became more sedentary and range areas shrank from an average of 23.7 acres to as little as 3.3 acres. Of a pre-snow population of 162 Bobwhite, 29 are thought to have died during the 23 days of severe weather, with heavier mortality occurring where waste grains were least available.—Robert S. Hoffmann.

18. Behavior and Ecology of Certain Ducks during the Postbreeding Period. Lewis W. Oring. 1964. *J. Wildl. Mgmt.*, **28**(2): 223-233. Thirteen species were studied in 1961, in southeastern Idaho, from desertion of hens by drakes until flight feathers were renewed. Pintail, Canvasback, Lesser Scaup, Redhead, and Mallard drakes left their mates at the start of, or early in, the incubation period. Blue-winged and Cinnamon teal, Shoveler, Baldpate, and Gadwall drakes usually did not break the pair bond until incubation had continued for some time. Only Ruddy Duck drakes accompanied hens with broods. Abandoning drakes formed large aggregations, which were joined by pairs unsuccessful in nesting, started the "eclipse" molt, and became flightless. Mallards were first, followed by Pintails, other dabbling ducks, and finally, the divers. Behavior during this period is described. While most dabblers concentrated in marsh areas, diving ducks and Baldpates gathered on large lakes and stayed in open water. Concentrations consisted of both local birds and those which must have come from several hundred miles away. Ruddy Ducks apparently migrated elsewhere to molt.—Robert S. Hoffmann.

19. Effect of Drought on Reproduction of the Lesser Scaup. John P. Rogers. 1964. *J. Wildl. Magmt.*, **28**(2): 213-222. During severe drought in 1957-60, breeding density of *Aythya affinis* on a study area in southwestern Manitoba decreased sharply, from 65 pairs in 1958 to 24 in 1959, and only 17 pairs in 1960. Lowering of water level dried out many potholes and formed wide mud flats around others. In 1959 pairs departed from the potholes abnormally early, without nesting. Other pairs remained, but nesting was inhibited, and intensity of search for nest sites was low. Groups of pairs loafed on larger potholes throughout the breeding season. Inhibition of nesting was associated with incomplete ovarian development, but testes were not affected. Exposed mud flats were thought to be the inhibitory factor. In other years nesting efforts were made, but production of young was low, because of much nest predation, mostly by striped skunks. Scaups, because they nest close to water, are particularly vulnerable to predators hunting along the water's edge, and its effect is more serious because of low prevalence of renesting.—Robert S. Hoffmann.

20. Vitamin A and Productivity in Gambel's Quail. Charles R. Hungerford. 1964. *J. Wildl. Mgmt.*, **28**(1): 141-147. Population fluctuations in *Lophortyx gambelii* were known to be related to adequate late winter and spring rainfall. The present study demonstrates that high productivity depends on abundant spring and early summer ground cover of succulent annuals, which permits increased storage of vitamin A or a similar substance. When average vitamin A reserves were below 550 micro-grams/liver, testis and ovary development was inhibited. In dry years there is a reduction in or complete lack of breeding, the quail failing to pair, or to leave the winter coveys.—Robert S. Hoffmann.

21. Mortality and Average Age of Some Sea Birds. (Sterblichkeit und Durchschnittsalter einiger Küstenvögel.). Gerhard Grosskopf. 1964. *J. f. Ornithol.*, **105**(4): 427-449. (English summary). The author has calculated anew the average age and average annual mortality for a number of sea birds and suggests that ". . . long distance recoveries always lead to a higher mortality rate than those at the place of banding." Also ". . . proper age values of [certain sea] birds . . . can only be obtained by population studies, or by the evaluation of recoveries at the place of banding." A worthwhile paper, re-evaluating methods for calculating population parameters of sea birds.—David W. Johnston.

22. Ecology of Duck Populations in the Island Group of Valassaaret, Gulf of Bothnia. Olavi Hildén. 1964. *Annales Zoologici Fennici*, 1:153-279. This study was made from 1949-1963 on Valassaaret, the outer archipelago of the Gulf of Bothnia; this bird sanctuary consists of 7 relatively large islands and about 60 small treeless islets. On these barren islets Common Gulls (*Larus canus*)

and Arctic Terns (*Sterna paradisea*) are abundant nesters: 7 species of ducks showed a preference for nesting in company of these larids that exert a protective influence against predators. This social attraction is very strong with the diving ducks—Tufted Duck (*Aythya fuligula*) and Scaup (*A. marila*), it is moderate with the Mallard (*Anas platyrhynchos*), Pintail (*A. acuta*), Shoveller (*Spatula clypeata*), Velvet Scoter (*Melanitta fusca*) and Red-breasted Merganser (*Mergus serrator*), but almost non-existent with the Eider (*Somateria mollissima*) and Goosander (*Mergus merganser*). The diving ducks that nest near the shore are often able to save their nests from destruction through flooding by rapidly building them up even as high as 30-60 centimeters. Gulls do not posses this instinct.

Ravens (*Corvus corax*) and Hooded Crows (*C. corone cornix*) are the chief predators of the nests, in this area. Total eggs losses for the Velvet Scoter averaged 15.7%; for 8 other species of ducks it ranged from 22-26%. Mortality for the ducklings, however, was high due to cold weather, rough seas and predation by large gulls. The total percentage losses (eggs and young losses combined) during the 3 study seasons (1958, 1960, 1962) varied between the following limits: Wigeon 46-86; Shoveller 49-97; Tufted Duck 76-95; Scaup 90-98, Eider 46-97; Velvet Scoter 92-100; Red-breasted Merganser 78-92% "(too high a value, as some of the broods move away from the area)" (p. 272).

Breeding success is markedly better on inland lakes than on marine archipelagos. Results of the large number of studies on productivity of North American ducks on inland waters show agreement for "the brood mortality is relatively low (20-50, on the average 30%)" (p. 269).

This is an important study, presenting 48 figures and innumerable tables, packed with information on nesting ducks, fully documented from European and North American sources. Dr. Hildén is to be congratulated on his detailed, comprehensive presentation—M. M. Nice.

NIDIFICATION AND REPRODUCTION

(See also, 1, 2, 11, 12, 22, 26, 35, 37, 40)

23. Studies of Less Familiar Birds: 130. White-tailed Eagle. George Waterson. 1964. *British Birds*, **57**(11): 458-466. The White-tailed Eagle (*Haliaëtus albicilla*) ranges over a vast area of the north Palearctic region; due to persecution, largely by sheep-farmers, its numbers everywhere have been greatly reduced. At a nest watched in Norway by J. F. Willgohs (1961) the male parent incubated 27% of the time; on occasion he fed the chicks and also brooded them Thirteen splendid photographs by seven photographers are presented.—M. M. Nice.

24. Clutch Size and Numbers of Eggs Laid by Brown-headed Cowbirds. Robert B. Payne. 1965. *Condor*, **67**(1): 44-60. This study is based on one season in southern Michigan and another in the northern part of the Lower Peninsula. Sixty adult female *Molothrus ater* were collected from large flocks and their ovaries examined in serial sections for post-ovulatory follicles. Some birds gave no signs of egg-laying while others showed evidence of laying 10 to 12 eggs per season. "Cowbirds lay in clutches of one to six eggs. Mean clutch size is 3.1 eggs . . . Times between clutches range from a few days to a few weeks." The author concludes that "the numbers of clutches and the numbers of eggs laid in a season are greater in Brown-headed Cowbirds than in non-parasitic icterids." An interesting table gives figures on numbers of eggs laid by brood parasites—four species of cowbirds and the European Cuckoo (*Cuculus canorus*) which does *not* lay in clutches—; 33 references are cited. A fine contribution on a subject on which there has been much speculation.—M. M. Nice.

25. Perch-cooing and Aspects of Breeding Behavior of Mourning Doves. Gary L. Jackson and Thomas S. Baskett. 1964. *J. Wildl. Mgmt.*, **28**(2): 293-307. An earlier study had shown that under penned conditions unmated male *Zenaidura macroura* "perch-cooed" over ten times more often than mated males regardless of the stage of the nesting cycle, and maintained a higher cooing rate for a longer period each morning. This was confirmed for wild birds in the present study; in addition, unmated birds performed "flapping-gliding" flight 83 times

more frequently than mated birds, resulting in much higher mobility. "Perch-cooing" and "flapping-gliding" are considered to function in attracting a female, rather than in maintaining or defending the territory. Unmated males held, at best, poorly defined territories, whereas mated males occupied well-defined territories. Pair formation, copulation, nest-site selection, nest building, and territorial behavior are described.—Robert S. Hoffmann.

LIFE HISTORY

(See also 48)

26. Breeding and Feeding Habits of the Black Wheatear Oenanthe leucura in Southern Spain. Frank Richardson. 1965. *Ibis*, **107**: 1-16. This is a most interesting study of a little-known species. Territoriality is limited to the nest-site area, and the birds carry large rocks (up to 28 g) in building a foundation for the nest. Data are presented for nest-site selection, incubation, attentiveness, and fledging activities. Considerable discussion is devoted to feeding—methods, adaptations, and contents of pellets.—David W. Johnston.

BEHAVIOR

(See also 18)

27. Ontogeny of Social Behaviour in Burmese Red Jungle-fowl (Gallus gallus spadiceus) Bonnaterre. J. P. Kruijt. 1964. *Behaviour*, Suppl. XII: 1-201. (Summary in German.) Observations and experiments were made on several hundred individuals, all of them descended from three cocks and five hens imported from Burma. The author concludes from his experiences with these and domesticated breeds of chickens that "no great differences exist in the behaviour of domesticated and wild *Gallus gallus*." (p. 9) Two earlier, more detailed papers by Dr. Kruijt have already been reviewed in *Bird-Banding*, **34**: 169, 1963.

The present volume concentrates on the development of male sexual behavior tracing the ontgeny of social behavior from hatching to maturity. In great detail the following subjects are treated: individual maintenance activities; early escape behavior; early aggressive behavior; interaction of these first and second stages; early male sexual behavior; interaction of male sexual and agonistic behavior, first and second stages; behavior of males experienced in mating and fighting; behavior of females; behavior of birds raised without normal social experience.

The author concludes that "The ontogenetic data of this paper give strong support for the hypothesis that agonistic tendencies [aggression and escape], in interaction with the tendency to copulate, determine form and occurrence of the courtship displays." (p. 190). An important and scholarly contribution to ethology.—M. M. Nice.

ECOLOGY

(See 18, 22, 29, 36, 41, 47, 48)

CONSERVATION

(See also 50)

28. The Swedish Avifauna and the Biocides. (Den svenska fågelfaunan och biocidskadorna.) G. Otterlind and I. Lennerstedt. 1964. *Vår Fågelvärld*, **23**: 363-415. (English summary.) Sweden's Ornithological Society requested and received about 100 reports in answer to a questionnaire asking for information on (1) dead and paralyzed birds found; (2) unsuccessful nestings and reduced breeding results; (3) changes in population densities of various species; and (4) other observations relevant to the above points. This paper is a summary of these reports. All data are given in great detail relating to the locality and the extent and

manner used in the application of pesticides, the species, and its ecological niche. Knowledgeable discussions deal with the relative potency of various chemicals, the general situation of wildlife versus agricultural needs of pest control, the ecological requirements of given animals and, not the least important, the more or less preservatory influence of these adaptations. Special stress is laid on the high mortality of the birds' offspring as represented by infertile eggs and young dead in the nest for no apparent reason, on the prevailing slovenliness in the use and misuse of pest-controlling chemicals, quantities of which are often carelessly spilled on the ground as baited seeds or left accessible in other ways, constantly endangering the lives of birds, other animals, and even man himself.

An impressive list of birds, dealing with the degree of their vulnerability and their present status, include: the Yellowhammer (*Emberiza citrinella*), Ortolan Bunting (*Emberiza hortulana*), Corn Bunting (*Emberiza calandra*) now apparently extinct in Sweden, House and Tree sparrows (*Passer domesticus* and *P. montanus*), Greenfinch (*Chloris chloris*), Chaffinch (*Fringilla coelebs*), larks, Starling (*Sturnus vulgaris*), Corvidae, ten other passerines, Columbidae, Galliformes, gulls, shorebirds, waterfowl, and, last but not least, 17 species of hawks and owls. Positive proof of exposure, death, and destruction, from poison was obtained on all these in the 100 reports. The seriousness of the situation is plain and dangerously enhanced by the latent and residual effects of these materials which make direct prevention and cure hopeless. For this reason, unless stringent measures of poison control are undertaken without delay here and elsewhere, a considerable number of species appear doomed to extinction. The disturbance in the balance of nature thus brought about and its effect on all life can scarcely be foreseen. The only hopeful manifestation shown by this and other reports of the same kind, which are now being published with increasing frequency, seems to be the fast spreading and deepening concern about the biocides. It may stop, or at least slow down and redirect along more judicious lines, the avalanche of risk-filled change resulting from so many of man's undiscerning experimentations that sometimes follow in the wake of extended knowledge.—Louise de K. Lawrence.

29. Human Ecology. Some Thoughts on Brash Pioneering in an Orderly World. Daniel McKinley. 1964. *Atlantic Naturalist,* Sept.,: 165-174. Another of Mr. McKinley's trenchant appeals to common sense and to appreciation of the wonderful earth on which we live. He contrasts the ecology of the far North with its few species, periodic explosions, and die-offs with the security of the tropics with its small numbers of a great variety of species. He warns us of the "deadly threat implicit in . . . promises that the good life is assuredly possible in a world dedicated merely to feeding and clothing an ever-increasing number of people." And he asks the all important question: "When are we going to stabilize our numbers and concentrate on enriching our lives?"—M. M. Nice.

WILDLIFE MANAGEMENT

(See also 15, 16, 17, 18, 19, 20, 25, 37, 51, 52)

30. Distribution and Migration of the Redhead. Milton W. Weller. 1964. *J. Wildl. Mgmt.,* **28**(1): 64-103. Based primarily on aerial survey and band recovery data accumulated by the U. S. Fish and Wildlife Service. Highest breeding populations are in the central prairies, whose potholes provide sufficiently deep water with dense emergent vegetation. Breeding range has recently expanded to Alaska, and the species has increased in density in northwest Canada, probably because of drought in 1958-61 in the prairie pothole region. Over three-quarters of the wintering population is found along the Gulf Coast of Texas and Tamaulipas, about 12% on the Atlantic Coast, and less than 3% on the Pacific Coast. Fall migration is complex, and a detailed regional analysis is given; it begins in mid-September and peaks a month later. Postbreeding "molt migration" in late summer results in frequent northward and eastward movements of both juveniles and adults. "The present distribution and migration pattern indicates that the redhead originated in western or southwestern North America . . . [and] has only recently invaded the prairie pothole region, either because of loss of habitat in its area of origin or because of the expansion of a successful species"—Robert S. Hoffmann.

31. Report on the International Waterfowl Counts from 1960-61 to 1962-63 and the National Waterfowl Count in 1962-63 in the German part of Switzerland. (Bericht über die internationalen Wasservogelzählungen 1960/61 bis 1962/63 und die nationale Wasservogelzählung 1962/63 in der deutschen Schweiz.) Hans Leuzinger. 1964. *Ornith. Beob.*, **61**: 143-176. (Summary in English). This is an extensive article on waterfowl censuses conducted on a large scale. During the winters when the counts were made, weather conditions were influential on numbers of waterfowl. Another important factor was water level. In 1962-63 when the winter was extremely cold, there was a decrease in species that normally over-winter in the area but an increase in numbers of birds normally over-wintering farther north. Mortality was especially noticeable in Mute Swans, coots, and grebes, though other species left when all the lakes froze over. Still other species (mallards) appeared to be more resistant to the cold. Additional aspects of fluctuating populations over the three-year period are discussed.—David W. Johnston.

MORPHOLOGY AND ANATOMY

32. An Investigation of Herring Gulls (*Larus argentatus*) from the Västervik Archipelago on Sweden's Baltic Coast. (Ett grätrutmaterial från Västervik skärgård.) Sune Andersson. 1964. *Vår Fågelvärld*, **23**: 337-347. (English summary.) The specimens collected after poison-baiting showed a "highly significant" difference between the sexes in the length of bills and tarsi. The variations of the measurements are discussed with special reference to the diverse gull populations represented in this material. Methods and formulae are described and the results illustrated in five diagrams.—Louise de K. Lawrence.

33. Woodcock Age and Sex Determination from Wings. Fant W. Martin. 1964. *J. Wildl. Mgmt.* **28**(2): 287-293. "Immature woodcock retain most secondaries during the postjuvenal molt . . . (first-year adults) and older woodcock molt all secondaries during the post-nuptial molt . . . ." Adult and juvenal secondaries are figured, and an age key is constructed. Sex is determined by width of outer three primaries, which are narrower in males.—Robert S. Hoffmann.

PHYSIOLOGY

(See also 38)

34. The Deep Body Temperature of an Unrestrained Ostrich Struthio camelus Recorded Continuously by a Radio -- Telemetric Technique. John Bligh and T. Carr Hartley. 1965. *Ibis*, **107**: 104-105 Temperatures of the thoracic cavity were recorded continuously for 48 hours with the aid of a radio transmitter. During this period the temperature varied between 38.3° and 40.2°C. It was interesting to note a slight decrease in temperature between sunset and sunrise.—David W. Johnston.

35. Chemical Inhibitors of Ovulation in the Pigeon. William H. Elder. 1964. *J. Wildl. Mgmt.*, **28**(3): 556-575. Experiments carried on for four years showed *Columba livia* to be resistant to many substances effective in inhibiting ovulation in other animals. These included: "tranquilizers, gametocides, antithyroid compounds, hypophyseal inhibitors, insecticides, fungicides, and coccidiostats." Success was finally attained with the anticholesterol compound SC-12937 (22, 25-diazacholestanol dihydrochloride); this, when fed for 10 days, inhibited eggs for 3-6, even in some cases 12 months. Dr. Elder believes that "the presence of live, nonreproducing birds should be a barrier to the rapid ingress of other nuisance birds which usually follows large removals by poisoning and trapping."—M. M. Nice.

36. Studies on the Physiological and Ecological Background to the Reproduction of the Capercaillie (*Tetrao urogallus* Lin.) Vidar Marcström. 1960. *Viltrevy*, **2**(1): 1-85. (In English with Swedish summary). This study is a sequel to Höglund's paper on temperature regulation and activity in the capercaillie chick (*Viltrevy*, **1**: 1-87. 1955). A total of 127 chicks, hatched in incubators from eggs laid by wild hens, was used. The experimental group was not fed, simulating the situation when bad weather prevents chicks from feeding, while a control group was fed a previously tested mixture of egg yolk, ant eggs, and bilberry leaves. Chicks were then sacrificed daily for 5-6 days, and carbohydrate, lipid, and protein content of yolk sac and liver were determined, as well as body cholesterol levels. Weight of the yolk sac averaged 16.55% of the total body weight; intensive yolk resorption increased reduced body dry weight (yolk sac excluded) by 10% during the first day of life, even though the chicks do not yet feed. However, because of tissue dehydration, reduced body wet weight remained constant during this period. By 2.5 days, 3/4ths of the yolk sac was absorbed. Details of lipid, carbohydrate, and protein metabolism are presented. Fat deposits in the chick's body at hatching are in the form of insulating subcutaneous fat. In starving chicks, this fat is mobilized after resorption of the yolk sac is complete. "This reduces the thermal insulation of the body still more, and finally the emaciated chicks perish." Marcström concludes that weather during the first week or two of the chick's life, particularly after the first day, is very important: cold, wet weather results in high chick mortality. This was supported by limited field experimentation.—Robert S. Hoffmann.

37. Normal Development and Causes of Reproductive Failure in Canada Geese. Jack S. Wood. 1964. *J. Wildl. Mgmt.*, **28**(2): 197-207. Canada geese usually are reproductively mature when three years old, but some mature a year earlier (see **Breeding Age of Canada Geese.** J. J. Craighead and D. S. Stockstad. 1964. *J. Wildl. Mgmt.*, **28**(1): 57-64). A study of 148 semidomesticated *Branta canadensis* of known age and breeding history revealed that subcutaneous injection of 1.5 chicken pituitaries resulted in ovarian maturation of two-year-old birds, but no development of the oviduct. Injection of pituitaries into nonreproducing three-year-old geese did not change gonadal development, and autopsy showed that they were already mature. However, when several pairs were released from crowding, nesting began in a few days. "It was postulated that reproductive failure resulted from a lack of *ovulatory peaks* in the secretion rate of the luteinizing hormone."—Robert S. Hoffmann.

PLUMAGES AND MOLTS

(See also 16, 33)

38. On Radioactive Marking of Color Areas of the Bird Feather. (Über die radioaktive Markierung von Farbarealen der Vogelfeder). Manfred Lüdicke. 1962. *Verhandlungen der Deutschen Zoologischen Gesellschaft in Wien*; article 33, 375-384. The use of radioactive tracers to follow the movements and deposition of substances in many biological processes has long been overdue in studies of feather physiology. The possibility of transportation of substances in or on the feather after formation involves color deposition and change in the physiological field, and plumage care, including bathing and anting, in the behavioral department. The possibility of chemical transportation of substances in or on the feather after its formation is definitely proven in the results reported in this article and in other citations in the bibliography. By injecting radioactive sodium sulfate (isotope S35) into pigeon (*Columba livia*) breast muscles during regrowth of previously removed remiges, it was found that the tracer flows into the outer section of the feather that had emerged before injection; that it moves outward by "primary rhythms" of short periods, and later, body-ward by "secondary rhythms" of longer periods. The outward movement of material through dry feather substance was noted definitely for distances of 4.5 to 20.0mm.—Leon Kelso.

ZOOGEOGRAPHY

(See also 16, 45, 47, 48, 49, 52)

39. Recent Changes in the Avifauna on the Swedish East Coast with Special Reference to their Causes. (Förändringar i ostkustens fågelfauna och något om orsakerna därtill.) Viking Olsson. 1964. *Vår Fågelvärld,* **23:** 352-362. (English summary.) A condition for prolonged migration is the existence of suitable habitats along the path of extended movement. The Little Tern (*Sterna albifrons*) recently "took a giant leap" from the south region of the Baltic coast to the northern part of the Gulf of Bothnia, a distance of some 1000 km. The interjacent coastland, lacking in this tern's primary requirements of low sandbars and shallow shores, is formed of bedrock. "The present range of the Little Tern in an uncommonly neat way shows that the resistence of a coastal bird to cover the distance of a few miles from the sandy shore to the rocky type may be harder to overcome than that of the hundredfold greater distance which separates the suitable habitats in the south from those in the north. That breeding, nevertheless, has occurred on the rocky coast in between seems to indicate an adaptation (gradually increasing) to this undesirable habitat."

In similar fashion the author discusses and analyzes the northward extension of the range of the Sandwich Tern (*Sterna sandvicensis*), now colonizing the central part of the Baltic coast where it has never before been observed. Southward trends of the Arctic Skua [Parasitic Jaeger] (*Stercorarius parasiticus*) and the Long-tailed Duck [Oldsquaw] (*Clangula hyemalis*), the present distribution of the Mute Swan (*Cygnus olor*), the Lapwing (*Vanellus vanellus*), and others, are also carefully analyzed from the standpoint of their ecology. This interesting paper would have gained from a more detailed English summary.—Louise de K. Lawrence.

40. The Breeding Birds of Mandarte Island, British Columbia. R. Drent, G. F. van Tets, F. Tompa, and K. Vermeer. 1964. *Can. Field-Naturalist,* **78**(4): 208-263. Mandarte Island, 100 meters wide by 700 long, plays host to some 5,500 individuals of six seabird species, which makes it the largest and most varied colony on the inner south coast of British Columbia. In 1957 a permanent field camp was established on the island by the Department of Zoology, University of British Columbia at Vancouver. The authors of this paper each lived there for two to three summers; van Tets concentrated on cormorants (*Phalacrocorax auritus, P. pelagicus*), Drent on Pigeon Guillemots (*Cepphus columba*), Vermeer on Glaucous-winged Gulls (*Larus glaucescens*), and Tompa on Song Sparrows (*Melospiza melodia*). "Exclusive of cliffside, shrubbery and trees make up some 30 per cent, bare rock and grassy areas some 70 per cent, of the 5 hectare surface area of Mandarte." The island lacks mammalian predators. Large numbers of the birds were banded with aluminum and colored rings.

The Double-crested Cormorant increased from 1-3 pairs on its first arrival in 1927 to 135-150 pairs in 1957-60. The incubation period is 28 days, fledging period 6-7 weeks. During two years in 66 nests 273 eggs were laid, 165 chicks were hatched (60%), and 157 chicks fledged (57.5%). The Pelagic Cormorant increased from 25 pairs in 1915 to 370-380 in 1960. Each pair averaged 3.8 eggs to a set, hatched 2.5 chicks (60%), and fledged 2.0 (53%).

The Glaucus-winged Gull increased from 450 pairs in 1915 to 2100 in 1962. Incubation period averaged 27.1 days, fledging period about 30 days. During three years 2723 eggs were laid in 1044 nests; 1618 chicks were hatched (58.7%) and 922 fledged (33.9%). The chief cause of loss was the killing of wandering chicks by adult gulls.

In the Pigeon Guillemot, incubation averaged 30 days, fledging 35. "The young leave the colony directly and have nothing further to do with their parents who continue to join the colony assembly long after the chicks have departed (observation on banded birds)." From 1957-1959 reproductive success was excellent: each pair averaged about 1.9 eggs, hatched about 1.2 chicks (62.1%), and raised 1.1 to departure (57.9%). But in 1960, although hatching was good, fledging was poor; due to drought, protective vegetation was lacking to the juvenile gulls, some of which scrambled into guillemot cavities and pecked to death 15 guillemot chicks.

For the study on the Song Sparrow see review No. 11.

The chief predator on the sea-birds was the Northwestern Crow (*Corvus caurinus*), the 25 pairs of which took in one season more than 1,000 eggs of the four species of sea-birds, as well as many small chicks. Yet all these species are thriving despite these losses.

This is a notable paper reporting detailed observations on adequate populations and well documented with references to publications on related species in the Old and New Worlds.—M. M. Nice.

SYSTEMATICS

(See 48)

FOOD

(See also 12, 26)

41. Food Ecology of the Wood Stork (Mycteria americana) in Florida. M. Philip Kahl, Jr. 1964. *Ecol. Monographs*, **34**: 97-117. Parts of seven years devoted to study in southern Florida showed that the breeding cycle of the Wood Stork is not regulated by photoperiods but by water levels and food availability. "During the dry season (November-April) fish are concentrated in densities of several thousands per m^3 of water, whereas during the wet season (May-October), fish are widely dispersed." In five years Wood Storks started nesting at the beginning of the dry season but in two years of extreme drought they did not even attempt to nest. Food is primarily secured by "tactolocation," the bird swallowing anything that touches its partly open beak as it walks through shallow, muddy water. "Use of low-energy soaring flight between nesting colony and feeding ground enables storks to go as far as 20-25 miles (32-40 km) with relatively little energy expenditure, and to select areas where the ecological density of food is high." An excellent, thorough study.—M. M. Nice.

42. The Autumn Food of Asio f. flammeus Pontopp. in the Vicinity of the City of Tampere, South Finland. Jorma Aho. 1964. *Ann.Zool. Fenn.*, **1**: 375-376. Pellets from Short-eared Owls were collected between August and November near an airport. The greatest number of owls seen simultaneously was eight. Voles (*Microtus*) comprised about 93% of the prey items and birds only about 1%. Comparisons are made with similar studies on this species by other investigators.— David W. Johnston.

43. The Food Habits of the Red-winged Blackbird, Agelaius phoeniceus, in Manitoba. Ralph D. Bird and Lawrie B. Smith. 1964. *Can. Field-Naturalist*, **78**(3): 179-186. In southern Manitoba the food of the Red-winged Blackbird consisted in spring and autumn of 90 per cent vegetable material—seeds of cereal crops, sunflowers, and weeds. In June and July animal food (mostly insect pests) made up from 70 to 100 per cent of the diet. A total of 434 birds was collected. "The total volume of food and mineral grit found in the gullet and gizzard increased with the season. The average, per bird, for May, June, July, August and September was 1.25, 1.30, 1.60, 1.75 and 2.95 cc, respectively. . . . . The mineral grit was greatest when the vegetable food was greatest and was absent when the diet was solely insects",—its place being taken by the hard parts of the prey. "One gizzard contained 44 jaws and 77 chitinous plates," from the hind legs of grasshoppers. Three tables present detailed findings on the food of these blackbirds.—M. M. Nice.

44. Food of the Long-billed Marsh Wren, Telmatodytes palustris griseus, in the Salt Marshes of Sapelo Island, Georgia. Herbert W. Kale II. 1964. *Oriole*, **29**: 47-61. In summer the principal food items were Hymenoptera, Coleoptera, Diptera, and spiders. Homoptera, Hymenoptera (especially ants) Coleoptera and Hemiptera were consumed in winter. Small quantities of pseudoscorpions and gastropods were also taken.—David W. Johnston.

SONG

(See 55)

BOOKS AND MONOGRAPHS

45. Birds of the New York Area. John Bull. 1964. Harper and Row. xiv + 540 pp. Price $8.95. This is a model for treatises on the birds of a state or local area with wide appeal from the newest beginning bird-watcher to the most experienced. Bull had the advantages of following Chapman, Griscom, and Cruickshank in discussing the region, and of a generation of very active bird-watchers since Cruickshank's book. However, the quality of the book depends on Bull's own wide experience in the field, and his consistent, level-headed evaluation of the evidence.

One of the strong points of the book is its emphasis on species or plumages likely to be confused, particularly under pressures to run up a long list of birds seen in Christmas counts or elsewhere. No doubt the number of rareties reported on the count day is out of all proportion to other reports before and after the count day, though it should be kept in mind that a great many observers (like myself) are too busy or lazy to get into the field much at other times. Echoing Oliver Austin's comments in the last issue on a different area, I have semantic difficulties with five species which are listed as hypothetical but reliable! At that, Bull is to be commended for not deciding that his personal records are not hypothetical (one of the five species in question was seen by him—a Great White Heron (*Ardea occidentalis*), on which I would certainly respect his judgment). The book makes good use of banding data, such as a comparison of the numbers of Philadelphia Vireos (*Vireo philadelphicus*) netted on peak days with what an observer may hope to see.

Bull comments that "the Blue-winged Warbler has penetrated into Golden-winged Warbler areas since the late 1940's, especially in the vicinity of Ithaca, N. Y., and very likely elsewhere." I agree that this is a general advance for the Blue-winged (*Vermivara pinus*). It began to supplant the Golden-winged (*V. chrysoptera*) about 1908 at New Britain, Conn., and in the Connecticut Valley north of Portland (Conn.) only after 1913. It became established in the valley in Massachusetts only in the 1930's. The Golden-winged, in Connecticut, is now largely a bird of the higher hills as a breeding species, plus a few lower areas with no obvious explanation except perhaps local relict populations. It would be most interesting to map a sizable area for the two species in breeding season (with ecological notes) and then repeat the mapping in five to ten years.

The discussion of the House Finch (*Carpodacus mexicanus*) is of particular interest to banders, in distinguishing it from the Purple Finch (*C. purpureus*). The bill shape (culmen streight in Purple, convex in House) is unreliable, because some House Finches vary to the point of being indistinguishable on this point. Tail shape (slightly forked or notched in Purple, square or slightly rounded in House) is reliable, except that Purple Finches with worn rectrices may lack an obvious fork. One general point and five others for specific plumages do appear reliable:

Purple Finch	*House Finch*
1. Form—robust.	1. Form—slender.
2. Adult male—wing-bars pinkish.	2. Adult male—wing-bars white or whitish.
3. Adult male—belly and flanks unstreaked.	3. Adult male—belly and flanks conspicuously streaked with dusky.
4. Adult male—pinkish color quite uniform on dorsal surface, no contrast with head and rump.	4. Adult male—crown and rump red, in striking contrast to dull gray-brown back.
5. Adult female—prominent superciliary especially behind eye; often with a noticeable malar streak.	5. Adult female—no superciliary, or barely perceptible; no malar streak.

6. Adult female—marked resemblance to female Rose-breasted Grosbeak in miniature; distinct heavy streaking on whitish background.

6. Adult female—over-all dingy and dusky coloration; streaking tends to coalesce, imparting a uniformly dark appearance."

Bull mentions, without affording them a place in the list, that "in 1962 a pair of one of the South American cardinals was reported nesting at West Sayville, L. I. The escaped pair not only had built a nest, but had also succeeded in raising young!" This reminds me of the Red-crested (or Brazilian) Cardinals (*Paroaria cristata*) reported to have nested successfully at Essex, Conn. about that time; one of this species (possibly from the Essex birds) remained at a feeding station near Hartford in early 1965. The point at which a species becomes entitled to a place in the list is hard to define. A species should not be denied a place because it was established through escaped birds, or because it ceases to expand beyond a limited area. Certainly one breeding record is not establishment of the species. The coincidence of the Connecticut and Long Island records, perhaps of the same species, does suggest the outside possibility of a release or escape of a number of the birds, which would enhance the chance of their establishing themselves. The odds are heavily against their doing so, but other scattered records should be watched for.—E. Alexander Bergstrom.

46. Birds of the Luxembourg City Park. Today and Yesterday. (Die Vögel des Luxemburger Stadtparks. Heute und Früher.) René Schmitt. 1964. *Luxemburger Liga für Vogelkunde und Vogelschutz.* Sektion Luxemburgstadt. 40pp. The city of Luxemburg can well boast of the beautiful 22-hectare park within its boundaries. In 1961 early morning visits were made by the author almost daily from April through June; 318 pairs of 34 species were recorded, an average of 14.5 pairs per hectare (5.8 pairs per acre). Thirty other species occurred as visitors during the years 1959 to 1963. The most abundant nesting birds were Blackbirds (*Turdus merula*) and Starlings (*Sturnus vulgaris*), which, however, preferred holes in ancient trees to the boxes provided.

A table is given of the success from 1959 to 1963 of eight species nesting in boxes: from 266 of 333 nestings, young were fledged—80 per cent—a high figure. Summaries are given of three reports on the birds of the park in 1906, 1909 and 1911. This attractive booklet is illustrated with Marcel Brillon's excellent photographs of nesting birds.—M. M. Nice.

47. The Breeding Birds of Kansas. Richard F. Johnston. 1964. *Univ. Kans. Publ., Mus. Nat. Hist.*, **12**(14): 575-655. Price $.75. A very active interest in birds is evidenced by this bulletin in which acknowledgments are made to 58 observers for data on migration and nesting. A brief description is given of "Kansas as a place lived in by birds." Of the 179 (see note on p. 581) breeding species in the state, 101 inhabit woodland, 39 marshes, 23 grassland, and three xeric scrub, whereas the rest are unanalyzed. "Using Mayr's (1946) breakdown of geographical origin of the North American bird fauna, about 53 per cent of the woodland passerine birds in Kansas are of 'North American' origin, 22 per cent are of 'Eurasian' origin and 14 per cent are of 'South American'origin." Sixty-four species reach their distributional limits in Kansas—31 their western limits, 14 their northern, 11 their eastern, and eight their southern.

Under "Breeding Seasons" Dr. Johnston states he has 875 records of breeding by 24 species resident in northeastern Kansas and 2,522 records for 46 migrants—a grand total of 3,397 records! Fifty pages are devoted to "Accounts of Species." Ten tables give dates of arrival and departure for 65 species, whereas there are eight histograms of breeding schedules for 66 species; these show range and peak of egg-laying. Under each species the topics covered are range in the state, subspecies involved, if any, breeding schedules, clutch size, and nest characteristics.

A useful map of Kansas shows the more than one hundred counties of Kansas. Of the 43 references cited only 17 appear to concern Kansas birds directly, the others dealing with biological matters of general interest.

Dr. Johnston is to be congratulated on his bulletin—a masterpiece of condensation and clarity. It will stimulate further work in Kansas and elsewhere.—M. M. Nice.

48. Birds of Prey of the World. Mary Louise Grossman and John Hamlet. 1964. Clarkson N. Potter, Inc., New York. 9 3/4 x 12 3/4 inches. 70 full color illustrations, numerous other photographs, maps. 496 pp. Price $25.00. Vast in scope and lavishly illustrated, this work is truly one of the monumental contemporary ornithological publications. The authors have combined their literary talents with years of research, personal experiences with raptors, and the excellent photography of Shelly Grossman to produce the most complete, single volume on the two orders of raptorial birds. In addition to the excellent color photographs, there are 283 photographs in duotone and 646 flight silhouettes. Many of these illustrations, though of captive birds, are among the clearest and most spectacular photographs available today. No doubt the inclusion of such fine photographs has contributed to the cost of the book.

Part I is a collection of chapters dealing with general features of raptors. Chapter titles are: Prehistory, Birds of Prey and Man, Ecology and Habits, Designs for Survival, and Conservation. Each chapter is a reasonable summary of the subject, although one gets the impression from time to time that considerable emphasis is given to falcons and falconers and that owls have been somewhat slighted. Occasionally there are repetitious statements, as between picture captions and the text (in four places one finds that gyrfalcons pre-empt or usurp peregrine nesting sites). The chapters on ecology and designs for survival (adaptations) are especially well written and organized. The latter chapter discusses many significant structural adaptations of the eyes, ears, wing structure and flight, bills, and feet.

Part II is entitled "Atlas and Field Guide to Birds of Prey of the World." It encompasses 272 pages and will likely prove to be the most useful part of the book. Systematically, 289 falconiform birds and 133 species of owls are analysed. There is a flight silhouette for most species, characteristic colors and sizes, descriptions of juveniles and immatures, breeding range maps, and a miscellany of life history information termed "habits." The authors forthrightly admit certain limitations in these species accounts, such as flight silhouettes being derived from a study skin, but in many instances the silhouettes and verbal descriptions are supplemented with photographs. For the owls, there are helpful descriptions of call notes. In a few cases I have detected errors in the breeding range maps. Neither the Mississippi Kite nor Sharp-shinned Hawk breeds throughout the southeastern United States as the small maps indicate, and the breeding distribution of *Falso sparverius* in Alaska is in error (see *Birds of Alaska*, Gabrielson and Lincoln, 1959, p. 258). Nonetheless, in no other single volume will one find such a wealth of distributional and life history data.

Finally, 13 pages are devoted to a bibliography. Not only are there general, topical, and regional references but also species references arranged alphabetically according to genus and then to species.

Some specialists may disagree with the lumping of genera or species. Some readers may be dismayed over the portrayal of so many captive birds, some clearly showing jesses. When all is said and done, however, this weighty tome will remain as an indispensable monograph on the world's birds of prey.—David W. Johnston.

49. Birds over America. Roger Tory Peterson. 1964. New and revised edition, *Dodd, Mead and Company*, New York, 342pp. 79 illustrations. Price $7.50. When this book came into my hand I was glad not to have seen the earlier edition. This made it possible to approach the reading of it first hand with a perfectly fresh mind.

With the exception of some faulty binding (pp. 14-15) which affects the text and perhaps afflicts only the review copy, the exterior of the book, format, type, the absence of typographical errors, elicit nothing but approval. It is a nicely and durably produced publication that will grace any library.

As I open the book, the illustrations immediately spring forth to engage attention. Of course much may be expected from so renowned an artist as the author in selection, arrangement, and overall artistry. Nor is one disappointed. The photographs more than fulfill expectations. To choose any prize winners is difficult. As one decides on the fine frontispiece of the young Bald Eagle (*Haliaeetus leucocephalus*), the pages fall apart at the First Flight of an Osprey (*Pandion haliaetus carolinensis*) about to launch itself from atop a spiked pole (p. 1); at Ebb Tide, the delicious picture of a frothy wave flattening itself upon the beach, anon to wet the

feet of five unnamed gulls which cast long shadows on the sand behind them (p. 82); and at the ballet-dancing Barn Owl (*Tyto alba pratincola*) pirouetting elegantly upon landfall in the darkness (p. 113). It is impossible to say which one is most beautiful or remarkable or if any one of all the others, not even mentioned, is not of equally high quality. Moreover, most of the individual pictures represent sagas in themselves, how they were taken, the difficulties involved, the excitement felt by the camera man, all of which lend to them added reality and piquancy.

The book itself is actually a timely and valuable record of the development of bird-watching in its lighter as well as its more serious and meaningful aspects. It is written with the authenticity of one of its most notable addicts who has intimate knowledge not only of the birds themselves but also of the most prominent practitioners of bird-watching, and of the evolution of method and practice which give the richest results. From many viewpoints bird-watching nowadays has become an important phase of human preoccupation. It draws people away from themselves and out of their small worlds into the world of nature. It excites curiosity without which expansion of knowledge and understanding is impossible. It widens visions and thus counteracts myopia. There is no conceivable situation in life that prevents its practice. It is therefore of significance that such a record should have been written, because it has a meaning beyond the ordinary. As the fascination of bird-watching spills over and creates wider rings of probing and searching for extended knowledge, better understanding, more encompassing vision, new learning, new facts and theories are constantly added and evolved.

The Peterson version of this record in its highly readable style puts the reader, whether he is a serious or a purely amateurish watcher of birds, or none at all, immediately at home in the variety of places and situations into which the versatile author leads the way. We have been there before, it seems, because of our previous experiences however different. We have compiled the lists, seen the sights, heard the songs, bird calling to bird. Only the words etched by the apt pen intensify and illuminate the memories, turning illusion into another personal reality.

Except for the disappearance from the scene of the late Dr. A. A. Allen, one of the bird-watching brotherhood's most luminous lights, the revised edition has caught up with most of the fast-moving progress in all its aspects. But perhaps the changes in the avian world under the pressures of modern civilization and population dynamics will not leave it authentic for long. Mankind's unsettling and often poisonous effects upon the environment precipitate change at neck-breaking speed. I wonder, for instance, if today the Red-eyed Vireo (*Vireo olivaceus*) can rightly still be considered one of eastern North America's most abundant species of songbird? Many observers, including M. M. Nice and myself, feel the time is past and that this vireo now belongs to the "critical" species whose population within a few recent years has shown a crash-like decline and about whose future recovery we can only guess.

"As we waited on the porch for the black clouds to break, a chorus of varied thrushes, the robins of the rain forest, made cathedral music with their eery harmonic whistles in the dark firs below. When the first big drops fell one thrush hopped from its shelter in the shadows, and as the downpour increased in tempo, flew from branch to branch until it perched on the tip of the tallest tree. There it sang, as I have seldom heard a bird sing, while the rain pelted down. Never have I seen a bird express such oneness with the elements, nor in such a setting, for to face the fresh breeze on Rainier is to blow the cobwebs from one's soul." For this passage alone I recommend *Birds over America* to anyone looking for a meaning of life.—Louise de K. Lawrence.

50. The Sign of the Flying Goose/A Guide to the National Wildlife Refuges. George Laycock. 1965. Natural History Press, Garden City, New York (published for the American Museum of Natural History). xi + 299 pp. Price $5.95. Following a foreword by Secretary of the Interior Stewart L. Udall, Laycock discusses in some depth the origin and nature of 17 typical National Wildlife Refuges. He comments on the measures needed to have each effective ecologically-most informative for those who may feel that merely setting aside certain land is virtually the whole problem. Whereas the book obviously encourages visits to the refuges, Laycock makes it plain that some regulation of sightseeing is necessary to maintain the primary purposes of the refuges, particularly during the breeding

season. He concludes with comments on the great strides made during the 1930's, on current threats to the refuges ("The Despoilers"), and on needs yet to be met. An appendix describes briefly the other refuges. The book should be helpful in giving laymen a clearer idea of the refuges and their problems.

How does Laycock's work compare with other efforts in its field? The first major work I'm familiar with is *Wildlife Refuges*, by Ira N. Gabrielson (1943—apparently now out of print). Gabrielson was then Director of the Fish and Wildlife Service, personally familiar with almost all refuges then in existence, and one of the great figures of wildlife management and conservation in general. However, the book naturally doesn't cover the many new refuges set up in the intervening years.

The other comparable book is *Exploring our National Wildlife Refuges* by Devereux Butcher (revised second edition, 1963). This deals fairly briefly with all the refuges, and thus is less detailed than Laycock on 17 refuges but more detailed on the others. It is more profusely illustrated. Whereas both books do a good job in conveying the interest and value of the refuges, the authors have rather different viewpoints. Butcher (an executive of an association opposed to animal trapping) gives little weight to the common interest hunters and the general public have in improving and preserving wildlife habitats. Laycock (a sports writer) passes rather lightly over some of the inroads made in recent years on the basic concept of these areas as refuges more than shooting grounds.—E. Alexander Bergstrom.

51. Waterfowl Tomorrow. J. P. Linduska, ed. U. S. Dept. Interior, Gov. Print. Off. Washington, 1964. 770 pp. Price $4.00. This large volume is of continental magnitude. Composed of contributions from 103 different authors, whose experience is sketched in a terminal section, it is about the 48 species of anatids resident in North America. One might expect the "unity in diversity" theme to be strained by such an approach, but in fact the editor and his managing editor, A. L. Nelson, have managed to produce a coherent, well-organized book. It is written primarily for the layman, but this does not prevent it from being a valuable encyclopedia of water-fowl facts, whose usefulness to ornithologists is enhanced by a fairly extensive index.

The book's title emphasizes the critical future faced by North American waterfowl. However, early chapters discuss the basic biology and ecology of anatids. Chapter headings are sometimes not particularly enlightening—"Mammoths and Mallards," for example, discusses the significance of glacial topography to waterfowl habitat. Suffice it to say, then, that there are successive chapters on the duck species' distribution and migration, one on each of the three main areas of duck breeding concentration, and others on the various areas of secondary production. Then follow chapters on the geese and swans, their systematics, distribution and biology.

Delacour's taxonomy is followed in the *Branta canadensis* group, but discussion of this complex subject is made more difficult by maps that do not distinguish between breeding and wintering areas, and that use different terms for various "populations" and subspecies. However, abundant population data on the different races are presented. White-fronted Geese, and the Snow and Blue geese each rate chapters, the Brant, Ross', and Emperor geese another, and the last is devoted to the two native swans.

The fifth section discusses each of the major flyways, with another chapter on Mexican wintering grounds. Climate and physiology, wet land characteristics, important migration stops and wintering grounds, and species composition and numbers are discussed for each area. The final biological section includes chapters on density-legislative environmental factors which influence population density. Geomorphology, water, weather, food and cover plants, and their importance to waterfowl are discussed in general terms. Other chapters consider waterfowl "travels and traditions," interspecific relationships with other wetland birds and mammals, and the special case of predator-prey relationships. There are three chapters on diseases and parasites.

The remaining half of *Waterfowl Tomorrow* contains contributions to the art and science of waterfowl management. This starts with a section describing the effects of human activity on waterfowl habitat. The plain villain of the piece is drainage of wetlands, euphemistically termed "reclamation" The history of

human ignorance, and worse, greed, makes these chapters gloomy reading, yet their authors "feel some cautious optimism" over recent progress in marsh and pothole conservation. Such developments are also a part of the next chapters on various sorts of water impoundments. Other problems discussed include waterfowl crop depredations, water polution, the currently topical danger of insecticides, and the special threat of lead poisoning.

Further on, after a group of chapters on refuges and sanctuaries, another section deals with the multifarious activities of waterfowl management; water level manipulation, soil chemistry, planting of aquatic vegetation, use of herbicides and fire, and techniques of crop farming, grazing, and mowing to improve habitat. Carp control, nest boxes, and salvage of waste places also claim chapters. At times the text reads like a do-it-yourself manual, but a wealth of useful information and advice is presented.

The final section discusses the title theme, *Waterfowl Tomorrow*. This is something of a miscellany, and includes material which duplicates, or could better have been placed with, earlier chapters. However, it is redeemed by R. C. Clements' thoughtful analysis, and forecast of the future. Of present drainage, polution and environmental exploitation, he says ". . . these destructive tendencies are currently built into the fabric of our society. It is the manufacturers of earth-moving equipment . . . who lobby drainage and road-building schemes the rest of us don't need or don't want . . . . It is greed, shortsightedness, and ruinous economic competition that puts off solutions to the scandalous pollution of our environment." But for the future he forsees that ". . . tomorrow's American citizen is likely to be much more perceptive of a wider range of outdoor values because he has already progressed so far in this direction. If, however, he fails, for one reason or another, to achieve that higher awareness that alone can allow him to continue enjoying the rich wildlife resources of America, he will quickly lose everything."

The format will be familiar to anyone who has used the U. S. Department of Agriculture's Yearbook series, which this volume complements in some respects. The double column format, abundant photographs, and sketches by the talented Bob Hines combine to produce a handsome book. Maps are the only major deficiency; a large fold-out endpaper map locates many names and places but is awkward to use in conjunction with the text. Outline maps of the United States and Canada in the section on breeding distribution contribute nothing, and a good map of breeding and wintering duck abundance appears far too late, in the book's last section. There are a few species maps, but about 85% of North American waterfowl are not represented; maps for each species would have been very useful, and their omission cannot be argued on grounds of space economy in a book as large and as lavishly illustrated as this one.—Robert S. Hoffmann.

52. Grouse Management Symposium. T. G. Scott, ed. 1963. *J. Wildl. Mgmt.*, **27**(4): 527-895. This issue of the *Journal* is entirely devoted to North American tetraonids. The editor's introduction indicates the need for special reviews, so that the wildlife biologist may be kept up-to-date on advances in specific fields, and hoped that this symposium would provide a broad survey of grouse biology and management. Whereas the papers are diverse and informative, few are actually review papers, and the symposium as a whole falls somewhat short of the editor's goal in this respect. However, a great deal of new research, and some old, has been brought together, and the results are of real interest to ornithologists. Among the reviews is the lead paper, by J. W. Aldrich, "Geographic orientation of American Tetraonidae." The distribution of each grouse species is discussed and illustrated with maps. Geographic variation is discussed, and correlated with ecological variation and geographic isolation, although in a few cases Aldrich seems to over-reach his data in attempting to find such correlations. Following this, the symposium papers are arranged by species; Blue Grouse are first. "Blue grouse brood cover selection and land-use implications," by T. W. Mussehl, shows that brood cover of adequate height and coverage may be seriously reduced by livestock grazing in Montana. "Significance of location, year, sex, and age to the autumn diet of blue grouse," by D. A. Boag, indicates that autumn diet in Washington is quite varied, and that food availability may influence subsequent reproduction. Three other papers consider age, plumage, census, harvest and trapping.

Spruce Grouse, with a distribution second only to Ruffed Grouse, have received very little attention from biologists, and the papers assembled here reflect

this. Two are brief food habits studies from Montana and Ontario. "Status of Spruce Grouse in Michigan," by G. A. Ammann, reviews past and present distribution and abundance; he believes the species is usually associated with jack pines, near small clearings. "Notes on the harvest of spruce grouse," by H. G. Lumsden and R. B. Weeden, surveys hunting regulations and harvest, and summarizes sex and age differences in plumage.

Eleven papers concern Ruffed Grouse. The majority deal with various aspects of population dynamics. "Grouse abundance and June temperatures in Wells Gray Park, British Columbia," by R. W. Ritcey and R. Y. Edwards, correlates above average spring temperatures with high grouse harvest the following fall. "Sex and age structure of Wisconsin ruffed grouse populations," by R. S. Dorney, is based on analysis of wings and tails collected from hunters. Significantly higher proportions of juveniles occur in the bag in the northern part of the state than elsewhere, and the adult sex ratio is male-favored in the west. Several hypotheses are offered concerning this geographic variation in population structure. In "Seasonal movements of ruffed grouse in Wisconsin," by J. B. Hale and R. S. Dorney, data on 615 individual movements of 441 birds are given. They generalize that Ruffed Grouse in the fall have relatively small ranges, though juveniles are more mobile than adults, and some wander far. Winter movements are shorter than fall, and show no age or sex difference. Drumming males in spring are sedentary, but females are more mobile.

The three North American species of ptarmigan are practically unutilized by sportsmen. Biologists, too, have neglected them on this continent and only three papers are presented. "Habitat and population dynamics of white-tailed ptarmigan in Montana," by T. S. Choate, is the first major study of this species. The low adult mortality rate (29%), low productivity, and maximum longevity of perhaps 15 years are very unusual for a galliform population. "Management of ptarmigan in North America," by R. B. Weeden, considers the Rock and Willow ptarmigan. A review of characteristics of the species and their environment, and population dynamics, is followed by discussion of present utilization and management.

The prairie chickens are in the most precarious state of all North American grouse. Of the four original taxa, one race is extinct and another nearly so. The presently threatened population is discussed in "Status of Attwater's prairie chicken," by V. W. Lehmann and R. G. Mauermann. In the last 25 years the population has declined about 85%, due principally to habitat deterioration, and only 1,335 remained in 1963. The greater prairie chicken has also suffered from land use changes, as documented in R. E. Yeatter's "Population responses of prairie chickens to land-use changes in Illinois." The gradual decline is attributed to more intensive cultivation, and the replacement of redtop grass seed crops by legume hay crops. Two other papers discuss raptor predation and winter census. The lesser prairie chicken, with much smaller range, has had a somewhat different history than its congener. In "The lesser prairie chicken in Colorado," D. M. Hoffman indicates that from 1959-63, the species has increased steadily, due to pasture rotation, moderate grazing, grass reseeding programs, and, not the least, better moisture conditions. However, another paper chronicles different conditions in the Texas panhandle. "Identification and analysis of lesser and greater prairie chicken habitat," by R. E. Jones, is a study of the two species where their ranges met in Oklahoma. Habitat differences (lessers use small units of shortgrass intermixed with larger units of shrubs or half-shrubs, and greater use small units of short or midgrass intermixed with larger units of tallgrass) and food differences are analyzed.

Sharp-tailed grouse are among the better studied species, and it is a surprise to find only two papers on them in the symposium. "Status and management of sharp-tailed grouse in Michigan," by G. A. Ammann, reviews changes in that state's populations since the author published his major study seven years ago. The species has decreased somewhat on the Upper, and increased on the Lower Peninsula, largely as a result of habitat changes. Habitat development by controlled burning and herbicide spraying is practical, but expensive. The other paper analyzes sharptail brood habitat.

The sage grouse, most stenotopic of the tetraonids, has retreated very little from its original range. However, it is potentially vulnerable to the increasing practice of herbicide spraying of sagebrush, and a major study such as "Ecology,

productivity, and management of sage grouse in Idaho," by P. D. Dalke and others in therefore timely. The population studied was highly mobile, moving 13-27 miles to brood range from strutting grounds, and 30-50 miles to winter range, for an annual round trip of 50-100 miles. Counts of strutting cocks, and brood censuses in early July, are useful. Sex, age, and reproductive criteria are discussed. These latter points are also considered in the other two papers.

The final two papers are reviews. "Disease and infection in the Tetraonidae," by C. M. Herman, cautions against the tenacious assumption that a single "grouse disease" is a cause of grouse mortality, and calls for new tools and techniques to attack problems in wildlife diseases. Gardiner Bump's "History and analysis of tetraonid introductions into North America," recounts unsuccessful attempts to stock capercaille, black, hazel, and willow grouse. He also makes a case for the possibility of successfully introducing the first two species, though without considering possible effects on native species. The symposium is closed by an excellent evaluation of the constituent papers by Frederick and Frances Hamerstrom, who served as its assistant editors. Those wishing informative summaries of the contents should turn here first.

In such a heterogeneous array of contributions it is not possible to point out minor errors or points of disagreement in individual papers and I shall make instead only a few general comments. The photographs do not indicate sex of the birds illustrated, and in some cases this is not evident by inspection. Usage of common names is somewhat confusing; in some papers both racial names (*ex.* dusky, sooty grouse) and species name (blue grouse) are used. Finally, a more representative survey of work currently in progress might have been possible had a longer time (say, several years) been allotted to assembling the contributions. This is said in full appreciation of the difficulties faced by editors of such a symposium, but a better volume could have resulted from the elimination of certain minor papers and the inclusion of more reviews and major papers. It is to be hoped that The Wildlife Society will continue to publish symposia, and in the future more frequently than once every ten years.—Robert S. Hoffmann.

53. Argen the Gull. Franklin Russel. 1965. Alfred A. Knopf, Inc. New York, 239 pp. 9 photographs by the author, 1 map (the coast of Atlantis or perhaps Shangri-la). Price $4.95. Mr. Russell is a fine professional writer but he reminds me of the so-called Very Important Persons who came to Japan during the American occupation for a visit of five days or perhaps five weeks. When they returned to the United States, they felt qualified to write a book about Japanese life and thought. It is possible after a brief visit to describe superficially Japanese geisha girls, a shrine, and Fujiyama, but not even after five years of daily association with Japanese in their homes would a student of far eastern mores feel competent to write of Japanese life and thought. Franklin Russell dares to put thoughts and emotions into a Herring Gull's brain and heart that a lifelong student of animal behavior would hesitate to presume existed. He has even endowed Argen the Gull with the ability to dream.

Mr. Russell makes a very exciting story of the evolution of gulls and the life of a Herring Gull from egg to senility. In his first chapter he introduces a theory new to science when he suggests that perhaps feathers developed to keep primitive birds warm and were later found useful for flight.

The book contains some factual Herring Gull behavior, probably adopted from Tinbergen's *The Herring Gull's World*. Certainly much of the story of Argen's first mating came from the section entitled "The Formation of New Pairs" in that fine work. But Russell takes no notice of Tinbergen's theory that cannibalism among gulls occurs only in overcrowded colonies.

If one can overlook scientific inaccuracy, anthropomorphism, and the author's over-active imagination, *Argen the Gull* may be labeled "Leisure Time Reading." The pictures are more "Art Photography" than bird illustrations. The jacket design is pleasing.—Elizabeth S. Austin.

54. Rare and Exotic Birds. Robert Cushman Murphy. 1964. The Odessy Press, New York. 45 pp., 75 color photographs by Arthur Singer. Price $0.95. This beautiful little book is a delightful combination of the lesser known abilities of two very gifted men. Robert Cushman Murphy, outstanding as a scientist, demonstrates his fund of bird folklore and his gift for story telling. Arthur Singer,

outstanding as a bird artist, demonstrates his ability as an exceptionally fine nature photographer. The text links together sound science, ornithological anecdote, and little-known legend to hold the interest of the reader who is less interested in birds than an ornithologist. The pictures amply illustrate Dr. Murphy's last sentence, a quote from Dr. F. M. Chapman, "Birds are Nature's most eloquent expression of beauty, joy, and freedom."—Elizabeth S. Austin.

55. Bird Songs / Adventures and Techniques in Recording the Songs of American Birds. Norma Stillwell. 1964. Doubleday and Company, Inc., Garden City, New York. xix + 194 pp. Price $4.95. An attractive tale of 12 years and 180,000 miles of travel throughout the U. S. by the author and her husband, the late Jerry Stillwell. After his retirement, the Stillwells became absorbed with recording bird songs in the wild, with the encouragement of Peter Paul Kellogg and others at Cornell. The high quality and wide variety of the results led to a series of commercial records, which were praised by reviewers and have given a great deal of pleasure to their public. This is not a technical treatise, though the author does comment on such matters as trying to record songs clearly by a babbling brook. It does convey the enthusiasm and enjoyment the Stillwells derived from the project, and the sheer hard work involved. I had the pleasure of meeting the Stillwells early in their journeys (over some buff-bellied hummingbirds in the Rio Grande Valley), and of receiving Jerry's characteristic brief postcards with pointed comments on their later travels. From one standpoint, the book is a vivid illustration of the possibilities of a second career after retirement. From a broader standpoint, few of us accomplish this much in a full career, much less in 12 years.—E. Alexander Bergstrom.

NOTES AND NEWS

We note with regret the death of Lawrence Boylston Chapman on May 13, 1965, at the age of 78. He was professor emeritus of marine transportation and marine engineering at the Massachusetts Institute of Technology. His services to NEBBA included a term as president from 1941 to 1948. He contributed major papers to *Bird-Banding* on Tree Swallows, based upon his colony of the species at Princeton, Mass. Many NEBBA members will recall pleasant and informative field meetings at Princeton.

Effective with this issue, printing costs of *Bird-Banding* have risen somewhat. We intend to absorb this increase within present membership and subscription rates. However, now more than ever we need the help of readers in recommending the journal to others who might enjoy it.

Because of this increase in printing costs, the price of whole copies of an issue to authors, when ordered in advance, is now 40c each, including postage within the U. S. Prices for separates of papers or notes are still as shown in the July, 1963 issue.

Favorable comments from users of type H nets (30mm mesh, otherwise like type A in specifications, and like type C in price) continue to reach us. One sizeable station comments: "On the whole, I think they are excellent. They seem to be equally good for catching warblers as well as thrushes, tanagers, etc. I did see one or two warblers slip through, but these were the exceptions . . . Some larger birds were caught but quite a few got away, i.e. robins, blue jays. All things considered, I think that they can and should be the net type used where small birds are predominant." Another user comments: "30mm. seems to be just right for warblers, especially yellowthroats. My experience has been that when they are caught in 36mm. mesh they are usually extremely tangled, otherwise they go right through." Another large station comments: "We used a lot of the 1 1/2" [36mm.] nets last year and our final totals really showed the difference; we had many more of the larger birds (thrushes, catbirds, etc.) but fewer warblers, hummingbirds, etc., so we've decided to go back to the smaller mesh [30mm.] in most of our lanes." These experiences confirm that no one net size is effective for all sizes