

enter the cells after the door is shut and automatically locked; however, they occasionally manage to force a door open from the inside. Therefore, it would appear that self-locking doors would be a desirable potter trap feature to safeguard trapped birds from potential predators.—Kenneth W. Prescott, New Jersey State Museum, Trenton, New Jersey.

RECENT LITERATURE

BANDING

(See also 14, 18, 35)

1. **Tenth Annual Report of the Australian Bird-banding Scheme, July 1963 to June 1964.** W. B. Hitchcock. 1966. *C. S. I. R. O., Div. Wildl. Research*, Tech. Paper No. 11: 1-49. In the period of time covered, 104,200 birds of 392 species were banded, and there were 13,911 recoveries of 217 species. Notable recoveries included: a Sooty Shearwater banded in California; two Short-tailed Shearwaters recovered within three months of banding in Japan and U. S. S. R.; a known-age Wandering Albatross, breeding in its tenth year.—David W. Johnston.

2. **Report No. 1 from Tåkern Bird Station 1965.** (Verksamheten vid Tåkerns fågelstation 1965.) Göran Bergengren. 1967. *Vår Fågelvärld*, 26: 59-67. (English summary.) The main reasons for establishing this new bird station were the scientific value of regular observations at a lake of the famous Tåkern type in central Sweden and to observe inland migrations, a field hitherto largely unexplored. A total of 5,353 birds of 101 species was banded. The most interesting among the 76 recoveries was a Sedge Warbler (*Acrocephalus schoenobaenus*) banded 28 August and found dead at Nice on the French Riviera the following 20 September.—Louise de K. Lawrence.

MIGRATION

3. **Water-birds over the Sahara.** R. E. Moreau. 1967. *Ibis*, 109(2): 232-259. This survey of the status and distribution of northern migrants in Africa south of the Sahara is a sequel to Moreau's similar survey of land birds (*Ibis*, 103a: 373-427, 580-623, 1961). Many shorebirds and one duck (the Garganey) occur in thousands or hundreds of thousands across Africa from Senegal to Sudan, but are rarely if ever seen in transit across the desert. Distributional surveys and band recoveries both suggest that many species winter S. W. or even W. S. W. of their breeding areas, but there is only circumstantial evidence that they cross the desert diagonally. Little is known about physiological preparations for migration in these species.—I. C. T. Nisbet.

4. **Grouping of Nocturnal Migrants.** E. Eastwood and G. C. Rider. 1966. *Nature*, 211(5054): 1143-1146. Two independent measurements indicated that each "angel" detected by a high-power surveillance radar station in England corresponded to between 4 and 35 birds. Use of a second radar set with a better spatial resolution showed that some groups of birds travel at night as well-defined flocks. However, "others, and perhaps the majority, are pseudo-groups . . ." i.e., chance associations of independent birds within the large volume of air sampled by the surveillance radar.—I. C. T. Nisbet.

5. **Bird Hazards to Aircraft -- Operation Birdtrack 66/1.** Anonymous (Canadian Forces H. Q. Directorate of Flight Safety). 1967. Circulated by Associated Committee on Bird Hazards to Aircraft, National Research Council of Canada. During 1965-66, photographic and visual monitoring of a radar screen was used to provide a continuous service forecasting concentrations of birds at the Canadian Forces base at Cold Lake, Alberta. As measured by the radar system itself (a dangerously circular check!), the forecasts were reasonably reliable, although they were made by a meteorologist with no previous knowledge of birds

and (apparently) little briefing. The report includes some useful basic data on heights of flight, hourly patterns, and day-to-day fluctuations.—I. C. T. Nisbet.

6. On the Navigational Ability of Some Passerine Birds. (O sposobnosti k navigatsii v nekotorykh vorobinykh ptits.) R. L. Potapov. 1966. *Doklady Akademii Nauk USSR*, 171(1): 226-228. *Sylvia nisoria*, *S. borin*, and *Erythrura erythrura* trapped at Rybachi (on Baltic Sea) and transported by airplane 6000 km southeast to Dushanbe, were tested in circular (Kramer) cages. The *S. nisoria* group was previously "conditioned" to Dushanbe time, and the *Erythrura* group to Khabarovsk time. Notwithstanding the different sets of their "internal clocks" all three groups maintained their characteristic autumn orientation for Rybachi, *i. e.* they did not show any shift or change of direction. In each group some individuals took a direction in reverse of the transportation. The author believes that this is a demonstration of "kinetic memory" and not astronavigation.—Leon Kelso.

7. An Investigation of the Migratory Orientation of Passerine Birds. (Issledovaniya preletnoi orientatsii vorobinykh ptits.) M. E. Shumakov. 1967. *Vestnik Leningradskogo Universiteta, biol. ser.*, 1967(3): 106-118. (Brief English summary). Experiments on 250 individual birds of 36 species showed again that the circular cage method is most suitable for study of migratory orientation in passerines, the rhythmic activity of birds in cages being characterized by oriented migratory restlessness in the hours when in natural conditions their migration occurs. The orientation of migratory unrest in case of astro-orientation corresponds in general to the species' migration course at that particular time, and shows clearly marked seasonal modifications coincident to changes in direction of a species at a particular time or latitude. During cloudiness the orientation is usually random and influenced by cage features or local reference points.

Juvenals, never having migrated, showed the general orientation of their species similar to adults. Nocturnal migrants are able to hold to a general direction not only by stars at night but by the sun by day. Twenty-five such nocturnal migrants had a daily activity cycle that showed two peaks, evening and morning. The diurnal migrants (11 species) showed a peak of activity in the morning hours.

On 5 species (23 individuals of *Fringilla coelebs*, *Emberiza hortulana*, *Erythrura erythrura*, *Sylvia atricapilla*, and *Erithacus rubecula*) the effect of the earth's magnetic field was tested. Taken on the Kursk (or Courish) Spit during migration, their activity in circular cages was checked during clear and cloudy weather; then they were taken to the center of the Kursk magnetic anomaly which gives a compass declination of 60° from normal in a field intensity of 1000 Oersted. There the checking was repeated in complete cloudiness to exclude astro-orientation. None of the birds manifested any definite directional trend. However all of them showed a two-fold or more increase in general activity in this magnetic anomaly (*e.g.*, from 561 to 1560 in average number of movements per hour in *Fringilla coelebs*). This is in line with previous observations (see *Bird-Banding*, 37: 294, 1966, rev. no. 15).

There is evidence that long-distance migrants (*Erythrura erythrura* and *Sylvia nisoria*) change direction of migratory restlessness corresponding to change of cage location relative to their wintering areas. Medium-distance migrants (*Fringilla coelebs* and *Sturnus vulgaris*) showed a simple direct compass type of orientation. Apparently they are sensitive to the latitude but not to the longitude of a locality. There is a bibliography of 30 titles.—Leon Kelso.

8. Weather and Late Spring Migration of Birds into Southern Ontario. W. John Richardson. 1966. *Wils. Bull.*, 78(4): 400-414. Arrivals of migrants were compared with a variety of weather variables by means of elaborate cross-tabulation techniques. Temperature and tailwinds were thought to have the major influence on migration; rain, pressure gradients, fronts, warm sectors and changes in humidity were also correlated with migration, but were dismissed (without objective statistical analysis, however) as secondary effects.

Although the analysis of data was more detailed than in previous studies, the results are somewhat academic, because the data were based uncritically on waves of grounded migrants. The bias in this observational technique has now been demonstrated so widely that there is little value in continuing its use without thorough justification.—I. C. T. Nisbet.

POPULATION DYNAMICS

(See also 14, 16)

9. Midwinter Censuses of Ducks and other Waterfowl along the Swedish Coast 1964-1966. (Midvinterräkningar av änder och annan sjöfågel längs svenska kusten 1964-1966.) Leif Nilsson. 1967. *Vår Fågelvärld*, **26**: 37-53. (English summary.) The data are presented in six tables and the distribution of six species are shown on maps. Data on sex-ratio as well as the proportion of young birds were also obtained for certain species. The difficulties and the problems involved in censuses of this kind are discussed.—Louise de K. Lawrence.

10. The Occurrence of White-backed and Three-toed Woodpeckers in the Province of Närke, central Sweden. (Förekomsten av vitryggig hackspett (*Dendrocopos leucotos*) och tretåig hackspett (*Picoides tridactylus*) i Närke.) Roger Gyllin and Kent Larsson. 1967. *Vår Fågelvärld*, **26**: 30-36. (English summary.) The Three-toed Woodpecker, known since earliest records, is an annual breeding bird in the province. The population, estimated at no less than 5-10 pairs, shows no decline in recent times. The White-backed Woodpecker, having also bred regularly from as far back as records exist, now seems to be on the verge of extinction, mainly because of the disappearance of the mature forests.—Louise de K. Lawrence.

NIDIFICATION AND REPRODUCTION

(See also 18, 19, 26, 32)

11. Territoriality in the Water Rail in Early Spring. (Revirförhållanden hos vattenrall (*Rallus aquaticus*) tidigt på våren.) Sven-Axel Bengtson. 1967. *Vår Fågelvärld*, **26**: 6-18. (English summary.) The study was conducted in 1964 and 1965 in a marshy alder, sedge, and *Phragmites* habitat at Lake Hammarsjön in northeastern Scania. Because the rails are very quiet when they first arrive in the spring, exact dates could only be obtained by crisscrossing the area on foot after the ice disappeared. The birds reacted very strongly to disturbances then, while later they were almost impossible to flush. Most of the 27 territories were near open pools where feeding was good. Aggregation around the territory first established built up quickly before any of the other territories were established. Within the territory the owner weaved a network of trails, and it was here that defense of the territory took place. Intruders were chased to the approximate boundaries. The average size of 33 territories was 320 square meters.—Louise de K. Lawrence.

12. The Responses of Incubating Ringed Turtle Doves (*Streptopelia risoria*) to Manipulated Egg Temperatures. Edwin C. Franks. 1967. *Condor*, **69**: 268-276. A statistical analysis of the behavior of three pairs of Ringed Doves to manipulated temperatures in artificial eggs is the subject of this paper. Gular flutter and extended neck were shown at high temperatures, elevated feathers, shortened neck and shivering at low temperatures. "Incubation persisted at all manipulated temperatures between -4 and 62°C, even in one instance when the clutch was maintained warmer than body temperature for 13 days and in another when the eggs were near freezing for 39 hours. Therefore, the temperature of the eggs is not an immediate cause of incubation behavior."—Margaret M. Nice.

13. Biology of the Immigrant Cattle Egret *Ardeola ibis* in Guyana, South America. Rosemary H. Lowe-McConnell. 1967. *Ibis*, **109**(2): 168-179. First recorded in South America in the 1930's, at present this species is taking over long-established heronries of the indigenous herons in Guyana (formerly British Guiana). Its astonishing success depends mainly on its breeding biology; it responds immediately to the onset of the rains and gets the best nest sites; pairs are established promptly and nesting starts without delay. This species usually "has two peak nesting periods a year, instead of one as the indigenous herons generally

have." "The age at which breeding starts was not determined." (This has been shown to be at one year, see *Bird-Banding*, 38: 157, 1967.) Cattle Egrets benefit from man's clearing and draining land for stock. They feed mainly around stock and are not shot for "food by hungry and rapidly-increasing" people as is the case with the indigenous herons that feed along the shore.—Margaret M. Nice.

14. The Biology of Oystercatchers *Haematopus ostralegus* on Skokholm Island, S. Wales. M. P. Harris. 1967. *Ibis*, 109(2): 180-193. A population of about 50 pairs was studied between 1963 and 1965. The adults were color-banded, and sexed by bill measurements, the females being somewhat larger than the males. "Some Oystercatchers breed at three years but most do not do so until four or five." Annual adult survival was 88 and 90 percent for the two years. Predation by Lesser Black-backed Gulls (*Larus fuscus*) was the main cause of egg loss. Table 3 lists "Annual mortalities of some [10 species of] sea and coastal birds, obtained by studies of living birds at breeding colonies." A very interesting paper.—Margaret M. Nice.

15. Breeding Success of the Pochard and the Tufted Duck in Czechoslovakia. Jiří Havlín. 1966. *Bird Study*, 13(4): 306-310. Hatching success of 188 nests of the Pochard (*Aythya ferina*) was 67.6 per cent and of 167 nests of Tufted Duck (*A. fuligula*) 72.1 per cent. "Losses are distinctly higher earlier in the season than they are later, obviously because of the better shelter afforded by the growing vegetation."—Margaret M. Nice.

16. Hybridization and the Nature of the Isolating Mechanism in Sympatric Populations of Meadowlarks (*Sturnelia*) in Ontario. Laszlo J. Szijj. 1966. *Z. f. Tierpsych.* 23(6): 677-690. (Summary in German.) Between 1958 and 1962, Dr. Szijj studied nine nests of *Sturnella magna* hybrid *S. neglecta* in Ontario where the eastern form is abundant, the western a new-comer. Seven of these nests belonged to two *magna* males and three *neglecta* females, and two to two *neglecta* males and two *magna* females. Hatching success was rather low (46.55 per cent) and fledging success was poor. Two hybrids raised by hand were apparently sterile. Male meadowlarks court females of both species, but females customarily respond only to the call note of the male of their own species that apparently "serves as the releaser signal for the appropriate response(s) of females just prior to copulation." In explanation of the few "mismatched pairs" occurring on the periphery of the range, the author suggests; "The threshold of selectivity may be lowered when no conspecific males are available during the critical early stages of the breeding season."—Margaret M. Nice.

LIFE HISTORY

17. The Diurnal Rhythm of the Corn Bunting. (Dygnsrhyth hos kornsparven (*Emberiza calandra*)). Roger Gyllin. 1967. *Vår Fågelvärld*, 26: 19-29. (English summary.) Dorset in southern England was the locality and the time was June to August 1965 and April to June 1966 when the author engaged in this study. The intensity of singing showed four distinct peaks, the first (almost twice as high as any of the others) upon awakening, the second in mid-morning, the third in mid-afternoon, and the fourth in the evening during the last hour before roosting. When the days were at maximum length the birds were active a total of 17 hours. The males went to roost later than the females. Three groups of birds were distinguished in the order of their awakening: the Skylark (*Alauda arvensis*), the thrushes, and the rest of the passerines including the Corn Bunting. Light intensity influenced both the awakening and the cessation of activities at night. However, during cloudy days activities were extended in relation to a given light intensity. The time difference between the cessation of activities of the first and the last males was shorter in cloudy weather than on clear days. Thus the influence of the internal rhythm upon the birds' activities sometimes superceded that of light intensity. Under unfavorable conditions, in inclement weather for instance and in winter, this has evident survival value.—Louise de K. Lawrence.

18. On the Breeding Biology of the Dunlin. (Zur Brutbiologie des Alpenstandläufers *Calidris alpina schinzii*.) R. Heldt. *Corax*, **1**(4): 173-188. Observations were made in 1959-1965 on the North Sea coast in the Schleswig-Holstein area. Males arrive in late March and occupy nesting territories (often last year's) marking them by nuptial flights. In early April the females arrive; nuptial display of males is intensified (details given), and calling occurs even by night. As shown by banding data, annually about 20 percent of the females stay at the preceding year's territories, or not over 100 m from them. At the time of pairing, males perform a nest-scraping display over several nest hollows (see Holmes, *Condor*, **68**(1): 10, 1966) and in a unique ritual "show" them to the females. Of banded birds 40 males and 44 females in various years paired with different partners; 15 pairs bred together 2 years; 7 pairs, 3 yrs.; and 2, 4 yrs. The first egg is deposited in the latter half of April (usually in latter half of day) on bare soil of nest hollow; during subsequent egg-laying the nest construction is accomplished. Of 295 complete sets, 246 had 4 eggs; 31, 3; 16, 2; and 2, 1. Measurements of 177 eggs are given. Incubation is by the female at night, and by males in the day; changeover occurs at 0700-0800 and 1700-1900 hours. Incubation starts at close of laying (or rarely with first egg); incubation period is 22 days. First young are hatched 10-20 May; they leave the nest as soon as they are dry. Sometimes females mate with other males while the first broods are in care of males. Of 448 young banded 2.8 per cent nested in the same area in subsequent years. Sexually mature at one year, the younger birds lay eggs later, after mid-May. Their average survival is about 5 yrs. At the close of the nesting period the families disperse, departing southward in June and early July.—Leon Kelso. (Translated and adapted from abstract by A. Poslavskii in *Russian Biological Abstracts*, **4**(1): 46, 47, 1967, in absence of original journal.)

19. On the Biology of the Common Sandpiper in the Leningrad Region. (K biologii kulika-perevozchika v leningradskoi oblasti.) N. S. Ivanova. 1966. *Vestnik Leningradskogo Universiteta, Ser. Biol. No. 2*, **1966**(9): 23-32. 5 photos. (English summary.) This life history study of *Actitis hypoleucos* was made along the western shore of Lake Ladoga in 1962 and 1963. The 23 nests observed were located 15-75 m from the water: 3 on open sand, 6 in shrubbery, 5 at the forest edge, and 9 in coniferous forest. Nesting density was 1-1.5/km of coast. As a rule the species avoids nesting on islands. The bulk of egg-deposition was 15-22 May, and mass-hatching, 12-20 June. Second clutches were observed mid-to late June, the latest hatching being 15 July. The species sojourns in the Leningrad region about 4 months: arrival, mid-to late April and departure, mid-to late August. In warm weather hatching may require only 1-2 minutes, but in cold weather an egg's hatching may be protracted 3-4 days. Of 83 eggs in the 23 nests, 72 hatched successfully. Incubation period is 20-22 days, Incubation is by the female; both parents care for the brood, the male remaining at a distance, warning of approaching danger. Two-week-old young can make short flights. A brood remains together after becoming able to fly (early July) until flock formation (late July).—Leon Kelso.

BEHAVIOR

(See 16)

ECOLOGY

20. The Ecological Function of Nutcrackers in the Zirben Larch-woods, and at Timberline on the Oberengadins. (Die ökologische Funktion des Tannenhähers im Zirben-Lärchenwald und an der Waldgrenze des Oberengadins.) F. K. Holtmeier, 1966. *J. f. Ornith.*, **107**(3-4): 337-345. An account of the role of *Nucifraga caryocatactes* in renewal and maintenance of *Pinus cembra* in the Alps, particularly at timber line. In the sub-lingual pouch 30-70 pine nuts are carried on each seed-sowing flight.—Leon Kelso.

PARASITES AND DISEASES

21. **The Fleas of Burrow-dwelling Birds and their Possible Role in Plague Epizootology in Turkmeniya.** E. N. Zagniborodova and G. S. Bel'skaya. 1965. *Izvestiya Akad. Nauk Turkmenskoi SSR, Seriya Biol.* No. 3: 69-74. In desert or semidesert areas of southwest Asia an extraordinary number of birds (16 species) nest in earthen burrows dug by themselves or by mammals. On 811 bird specimens collected 86 specimens of 18 species of fleas were found of which but two *Ceratophyllus fringillae*, and *Frontopsylla frontalis* are primarily avian parasites; the rest are mammalian, parasitic or insectivores, rodent, and carnivores. *Oenanthe isabellina* and *O. lugens* dwelling in burrows of *Rhombomys opimus* (see *Bird-Banding*, 37(2): 135, 1966, review no. 31) were infested by the most fleas (10 species). No fleas were found on *Oenanthe oenanthe* and *O. picata*, which rarely visit mammal burrows. The specific composition of the avian flea population was closely correlated with the birds' ecology; birds nesting in mammal burrows had a much richer flea fauna. *Oenanthe isabellina*, when choosing a nest site, visits 25-30 mammal burrows. Of the 18 species of fleas found on burrow-dwelling birds, 8 are plague vectors. It is believed that the presence of burrow-dwelling birds in mammal colonies may promote the dispersal of flea vectors of diseases to healthy animals.—Leon Kelso.

22. **Instructions for Collecting Bird Parasites.** George E. Watson and A. Binion Amerson, Jr. 1967. *Smiths. Inst., Mus. Nat. Hist., Information Leaflet* 477: 1-12. Especially written for field collectors, this leaflet outlines standard procedures for the collection and preservation of parasites of birds. The first five pages are devoted to techniques applicable to arthropod parasites (louse flies, fleas, feather mites, feather lice, ticks, skin mites, and nasal mites). Directions are then given for autopsies of birds and subsequent preservation of helminth parasites. Most of the techniques and chemicals mentioned herein, with prior preparation, are reasonably available to a bird collector, who can make valuable contributions to parasitology by obtaining and preserving parasites.—David W. Johnston.

WILDLIFE MANAGEMENT

(See 31)

MORPHOLOGY AND ANATOMY

(See also 29)

23. **Morphological Peculiarities of the Buccal Cavity of Corvidae as Related to Food Transportation.** Yu. V. Eigelis, and B. V. Nekrasov. 1967. *Zool. Zhurn.*, 46(2): 258-263. (English summary.) Observations in the laboratory and in the wild on the Hooded Crow (*Corvus cornix*), Rook (*C. frugilegus*), Jackdaw (*C. monedula*), Magpie (*Pica pica*), and Common Jay (*Garrulus glandarius*) showed that the sublingual pouch, as formed in *Nucifraga caryocatactes*, and various fringillids, is absent in these species, but that two other adaptations for food transportation are present. The first, peculiar to the Crow, Rook, Jackdaw and Magpie, is an ante- or prelingual enlargement of the lower buccal cavity anterior to the tongue, the latter being held to an extreme posterior position. The muscles of the tongue and hyoid apparatus (musculi trachealis, cleidohyoideus, stylohyoideus, geniohyoideus, mylohyoideus and ceratoglossus) and dermal folds in the mouth floor, are decidedly modified in adaptation to this buccal cavity distention. The second adaptation, peculiar to *Garrulus glandarius*, is a very distensible esophagus, accommodating a volume of about 30cc, or room for about 8 or 9 small acorns. The relative weight of food transported in the various corvid species is roughly 3 to 5 per cent of that of the bird.—Leon Kelso.

PHYSIOLOGY

24. Behavioural Reactions to Hyperthermia in *Scopus umbretta* and *Balaeniceps rex*. M. P. Kahl. 1967. *Ostrich*, **38**(1): 27-30. Captive individuals of the Hamerkop (*Scopus*) and Whale-headed stork (*Balaeniceps*) were exposed to heat-stress experiments. *Scopus* responded with rapid, continuous panting but *Balaeniceps* reacted with gular flutter. Neither of these species excrete on their legs when overheated as do storks (Ciconiidae). The author uses this latter behavioral trait as evidence that neither *Scopus* nor *Balaeniceps* is very closely related to the Ciconiidae.—David W. Johnston.

PLUMAGES AND MOLTS

(See 30)

ZOOGEOGRAPHY

(See also 10)

25. Notes on Four Rare Bird Species on Spitsbergen. Ingemar Ahlén. 1967. *Vår Fågelvärld*, **26**: 1-5. (In English.) During the Svalbard Expeditions in 1962 and 1964 these birds were recorded: a Buff-breasted Sandpiper (*Tryngites subruficollis*) found near a sewer outlet, a Lesser Black-backed Gull (*Larus fuscus*), several Guillemots (*Uria aalge*) (at least three "bridled"; the first positive proof of the species occurring at Spitsbergen), and one dead Garden Warbler (*Sylvia borin*) found in a cave. The area is located between latitudes 76° 20' and 79° 12' N.—Louise de K. Lawrence.

26. The Birds of Western Taimyr. (Ptitsy zapadnogo Taimyra.) A. V. Krechmar, 1966. *Trudy Zoologicheskogo Instituta, Akad. Nauk USSR*, **39**: 185-312. 22 figs. (In Russian.) Most of the subject area is within the drainage of the Pysasina River, just east of the Yenisee River estuary, extending 650 km north to south and about 300 km east to west. Ornithologically, it is associated with such famous names as Middendorff, Seebohm, Popham, Buturlin, and Haviland. With harsher climate and much less variety of terrain than the Pamir avifauna (described in the same volume), it nevertheless has twice as many breeding bird species (about 112) and much higher populations of those. An introduction reviews its ornithological history and outlines the four years of present explorations, including observations of 500 nests of 98 species. There is a review of the vegetative and geological features of the area followed by an abundantly annotated systematic list. Of particular interest in the field notes is the evidence that females of *Tringa glareola* and *Heteroscelis incanus* abandon broods to the care of the males soon after hatching, as has been established for *Limnodromus*. A chapter on seasonal phenomena notes that spring migration is mainly from the south or less often, the southwest, rather than coastwise from the east as in eastern Siberian areas. And fall departure is likewise mostly directly southward, and it is spread out over a longer time, from early August to early October, and as in spring largely along major river channels. In general the shorebirds are the first and the geese are the last to depart. There is a bibliography of 37 titles.—Leon Kelso.

27. Birds from North Borneo. Max C. Thompson. 1966. *Univ. Kans. Publ., Mus. Nat. Hist.*, **17**(8): 377-433. Although the bulk of this paper concerns species accounts, some attention is given to habitat preferences (forests, plantations, etc.) and breeding seasons in North Borneo. One tentative conclusion emerging from seasonality of breeding is that "there appears to be little correlation between rainfall and breeding season . . ."

In the annotated list, two species new to Borneo are reported along with six previously unrecorded from North Borneo. Frequent data on reproductive condition and body weights are included in the accounts.—David W. Johnston.

SYSTEMATICS

(See 24)

FOOD

(See also 20, 23, 32)

28. **A Method of in-vivo Study of the Feeding Habits of Adult Birds.** N. P. Kadochnikov. 1967. *Bulletin of the Moscow Naturalists' Society, Biol. Ser.* (Byulleten Moskovskogo Obshchestva Ispytatelei Prirody, otdel. biol.), 72(1): 29-34. The above author introduced and developed in Russia the neck-ringing, or neck ligature, method of food habits study of young birds. A method of obtaining for study the food contents of the stomachs of adult birds without killing them seemed appropriate. This was accomplished by the special force-feeding of chemicals, *e. g.* 1 per cent solution of tartar emetic (antimony potassium tartarate) in experiments with Rooks and Starlings. After introduction of the emetic into the stomach through the mouth by a rubber tube (1cc for the Rooks; 0.5cc for Starlings) the food was disgorged within 2-14 minutes by the former; 2-17 min. by the latter; the vomiting was complete in 0.25 to 1 minute, usually. There were no toxic after-effects. The tests were performed both on captive and wild birds.—Leon Kelso.

BOOKS AND MONOGRAPHS

29. **Avian Myology.** J. C. George and A. J. Berger. 1966. Academic Press, New York and London. 500pp., 151 photomicrographs, 70 anatomical figures. \$18.00. This is essentially two books, one by George on the histology and physiology of muscle fibers (203 pp., 164 photomicrographs), the other by Berger on gross anatomy of the dermal and skeletal muscles (251 pp., 85 anatomical figures).

The section by George reviews the occurrence of glycogen-loaded white fibers, fat-loaded red fibers, and intermediate fibers in birds of diverse taxa. The pectoralis muscle is covered in 118 pages, including 100 photomicrographs. Histochemical staining is used to demonstrate the presence of enzyme systems which are divided into eleven groups. The cross-section photomicrographs are mostly from the pigeon but sections from many other birds are shown. In addition similar stained sections indicate the occurrence of myoglobin, glycogen, mitochondria, and fat.

The supracoracoideus muscle is discussed in 26 pages, of which 15 pages consist of photomicrographs showing mitochondrial localization of succinic dehydrogenase activity in 30 species of birds.

A chapter of 30 pages deals with the occurrence of red and white fibers, fat, certain enzymes, and myoglobin in the abdominal muscles and certain wing muscles of the pigeon and fowl. The function of the abdominal and other muscles in respiratory movements is discussed.

A chapter of 25 pages considers the energy problem in bird migration and deals with fat deposition, loss, and metabolism. It is concluded that the fuel for muscular contraction during migration is chiefly fat, although the glycogen content of some birds shows a marked increase prior to migration. "It is likely that fat is synthesized from glycogen and protein."

This section on histochemistry is long on details and makes numerous references to pertinent literature, but suffers from a lack of concise summarization. There is no explanation of how the tissues were prepared or how the histochemical staining was performed. Although the photomicrographs are mostly of high quality, many are so similar in appearance that one wonders at the value of including such a large number. Occurrence of various enzymes and other biochemical components can be just as effectively documented in tables such as those on pages 132 and 135. It seems likely that one-half of these illustrations could have been omitted without reducing the quality of the presentation.

The section by Berger on the comparative gross anatomy of the skeletal muscles begins with a review of the problem of varied terminology and debatable

synonomies. He numbers the digits of the wing I, II, and III, considering the recent trend of numbering them II, III, and IV as based on inadequate evidence. Leg "formula muscles" of Garrod, Hudson, and Berger are discussed and examples given for many families. Accounts of the various muscles are purely descriptive and no information is given on innervations or functions. Descriptions of caudal muscles are very brief and are illustrated by a single figure. More complete treatment of this group would have been very helpful.

For nearly all appendicular muscles two types are described, *Columba livia* and *Agelaius phoeniceus*, followed by a section of "Comparative data" discussing modifications in other birds. Many muscles in the two types are very similar, yet both are described rather fully. Tabular summaries of some of the principal muscle modifications in different taxa would have saved considerable space and facilitated quick reference. Muscle measurements are given in millimeters but these are not very helpful; expressing the length or width of a muscle as a percentage of the length of an appropriate bone would be far more meaningful and such data could be used in comparisons by other investigators.

Much space could have been saved in this book by eliminating unnecessary photomicrographs and redundant descriptions. Chapter X on "The origin of birds and the evolution of sustained flight" might better have been omitted. Space saved by these economies could have served to shorten the book or add a section on the taxonomic implications of muscle modifications.

In spite of these criticisms *Avian Myology* will be an indispensable reference for anyone concerned with either the histology and histochemistry of bird muscle tissue or the gross anatomy of skeletal muscles and their modifications. The copious references to the hundreds of entries in the approximately 24 pages of bibliography are an especially useful feature—Geo. E. Hudson.

30. The Molt of Birds. (Die Mauser der Vögel.) Erwin Stresemann and Vesta Stresemann. 1966. *J. f. Ornith.*, Sonderheft to Vol. 107, I-VIII, 448 pp. Friedlander & Sohn, Berlin. (In German; a study aided by the Chapman Memorial Fund.) While the study of feathers has suffered some neglect in certain aspects, such as physiology, their replacement and plumage terminology has had considerable attention of late, much of it controversial. A thorough review of this study, pursued by the authors over a period of 10 years with visits to the chief museums of the U. S. and England, should await its complete translation. In the meantime it may be noted that it is comprised of a general section (pp. 1-58) wherein, after the developmental history of molt research, and the research material and methods of this study are outlined, such topics as plumage nomenclature and molt sequence, the molting process in general, the feather papilla, feather growth, replacement of flight feathers, wing molt and migration, wing molt and the breeding cycle, periodicity of molting, and molts and systematics are discussed with a bibliography of 125 titles. This is followed by a systematic section (pp. 59-448) wherein molt data from bird specimens in 34 museums of the world is presented in sequence of the present German classification system. The data for some widespread and common species are remarkably scanty. Strange to relate, there is not one figure, map, or table in the book. A pertinent bibliography is appended to the treatment of each order.

This is a study of worldwide scope, whose senior author is rated by some as the leading ornithologist of this era. There is a great wealth of details which suggest additional problems to be solved.—Leon Kelso.

31. Fundamentals of Game Surveying. (Osnovy Okhotoustroistva.) D. N. Danilov, editor. 1966. Forest Industries Publishing House, Moscow. 331 pp. From the contents the title would seem to mean "survey" in the sense of the work of the old U. S. Biological Survey, or Geological Survey, or anyway, more intensely and practically applied game management. In chapters I and II, Danilov outlines the history of this work from 1926 onward, and modes of inventory of areas under management. The remainder of the book represents the variously combined efforts of the editor and workers Ya. S. Rusanov, A. S. Pykovskii, E. I. Soldatkin, and P. B. Jorgenson. In chapter III numerous census methods are described. Chapt. IV describes methods of establishment of shooting norms. The evaluation of game management areas occupies Chapt. V whereas Chapt. VI deals with biotechnical measures, *i. e.*, the management of food, cover, nesting areas, and other conditions. Chapt. VII describes modes of administration of the

stock of game species, with regard to hunting and trapping in particular, and Chapt. VIII continues with the administration of areas under game management. Chapt. IX discusses a great variety of cartographic methods for game management. Chapt. X discusses the organization of game survey work in general, particularly the recruiting of personnel. There are 5 appendices providing chiefly forms and information for record-keeping and a bibliography of 113 titles, just 7 of which are non-Russian, including W. B. Grange's *The Way to Game Abundance . . .*, and Aldo Leopold's *Game Management*, which seem to have received ample consideration in the writing of this book. At any rate it is a compact well-written book, about the most readable one for a non-Russian reader that I have seen.—Leon Kelso.

32. The Birds of the Pamirs. (Ptitsy Pamira.) R. L. Potapov. 1966. *Trudy Zoologicheskogo Instituta, Akad. Nauk USSR*, **39**: 1-119. The Pamirs constitute the highest mountain massif in the USSR; ranging from about 9,000-24,000 ft., and they are isolated from lower plains by other surrounding high ranges. In correlation with cold and arid climate, prevalence of strong winds and other details available in any of the larger encyclopedias, the efforts of 20 or more explorers and exploring parties which have visited this area since 1874 have found only 50 bird species as definite breeders, and a total list of 172 species including migrants. Another feature is the small clutch-size of species in more arid exposed habitats; thus *Eremophila alpestris*, *Delichon urbica*, *Ptyonoprogne rupestris*, *Pyrhhorcorax pyrrhhorcorax*, *Oenanthe deserti*, *Phoenicurus ochruros*, *Prunella fulvescens*, *Motacilla alba*, and *Montifringilla nivalis*. In most parts of their ranges, these species lay 4-5 or even 7 or 9 eggs, but here deposit clutches of 1-3 eggs. This feature is attributed by the author to severity of climate and scarcity of insect foods because species at lower altitudes with richer vegetation and insect life in these same mountains show no reduction in egg numbers. The most abundant species in the whole area is the Rosy Finch, (*Leucosticte brandti pamirensis*) which nests as high as 15,000 ft. and like many high montane species feeds at altitudes as much as 3,000 ft. lower than where it nests (see *Bird-Banding*, **36**(4): 276, 1965, rev. no. 14). Like American forms of *Leucosticte* it has paired sublingual pouches for food transportation, but unlike them feeds solely on vegetable matter. Pouches in numbers and completeness of adaptation to severity of conditions is the world-wide steppe-deserticoline Horned Lark (*Eremophila alpestris*). Special attention is given to this species: unlike other races it lacks aerial courtship display, but resembles them in nest construction, and enduring nest temperatures varying from 19.2 to 33.8°C while incubating. Of the 50 breeding species the Horned Lark is alone in being double-brooded. A prominent environmental response to the intense radiation of these high altitudes is a deeper pigmentation in the skin of the upper parts of the young of open-nesting species such as the larks and sandgrouse.

In addition to introductory historical and geographic accounts of the area and a systematic account of the breeding species, there are sections discussing their seasonal life, altitudinal distribution (which varies from year to year), a zoogeographical analysis of their regional relationships and derivation, their geological history, and a bibliography of 124 titles.—Leon Kelso.

33. A Biology of Birds with Particular Reference to New Zealand Birds. B. D. Heather. 1966. Ornithological Soc. of New Zealand, Upper Hutt, N. Z. 102 pp. 13/6 (N. Z.). New Zealand bird enthusiasts will welcome the present booklet because it draws heavily on New Zealand birds in describing the many features of avian biology. In preparing *A Biology of Birds* the author is apparently trying to bridge the gap between amateur birdwatchers and the professional ornithologists. Indeed, C. A. Fleming in a foreword notes: "from the pleasure of watching wild birds it is a short step to making discoveries about them." To this I would suggest a further step, namely, analysing and interpreting the discoveries particularly as a discovery might relate to the broad spectrum of avian biology and conservation.

Sections of the booklet are devoted to characteristics, phylogeny, classification, ecologic distribution and variations in New Zealand birds, birds and man in N. Z., anatomy and physiology of birds, and "practical work." In the latter section Mr. Heather draws attention to methods of and needs for life history studies

(field projects), banding studies, and aspects of bird photography and behavior. In nearly every section, one finds references for further reading, many of these references being, as might be expected, from works on British bird life.

A strong plea for conservation is detectable in the section on the effects of man on birds in N. Z. All of us, the lay community included, could profit by the remarks that "the conservation of native birds (unlike forest or soil conservation) can seldom be justified on economic grounds; nor does it need to be. It is an expression of one of man's most mature ideals, by which he shows awareness of the unique position he has come to hold in nature, and of the responsibilities that go with it." Certainly, New Zealand's bird life has been drastically affected by the introduction and explosive spread of rats, cats, and stoats and by man's continuing modification of natural habitats.

Clear diagrams and excellent photographs are used to illustrate this volume. A bibliography, glossary, and appendix (aims and activities of the Ornithological Society of New Zealand) terminate this valuable publication.—David W. Johnston.

34. Oklahoma Birds. Their Ecology and Distribution, with Comments on the Avifauna of the Southern Great Plains. George Miksch Sutton. 1967. Univ. Okla. Press, Norman. 674pp. 6-1/8" x 9-1/4". \$9.95. Some fifty years ago Oklahoma had lost most of its most celebrated birds—Passenger Pigeons, Eskimo Curlews, Swallow-tailed and White-tailed kites, Carolina Parakeets, and Ivory-billed Woodpeckers. Moreover, only a handful of naturalists were seriously interested in the birds that remained, no more than five individuals besides ourselves when my husband and I started our studies in 1919. After the publication in 1924 of our small preliminary bulletin that emphasized the past glories and present problems of Oklahoma bird life, six more individuals added much to our information for the much more detailed bulletin we published in 1931. Now the flourishing Oklahoma Ornithological Society boasts a membership of over 650 bird enthusiasts. Credit for the present great interest in birds in Oklahoma is largely due to the author of *Oklahoma Birds* and to Fred and Marguerite Baumgartner, now of Wisconsin.

In 1924 we had admitted 316 full species of birds to the state list; in 1931, 334 species. (Both these lists contained a small number, about 6 percent, of carefully screened sight records.) Dr. Sutton's book accepts 394 species, every one supported by a properly identified specimen. Of the species in his book classed by him as hypothetical, although seen by competent observers, 24 would have been accepted by us. So according to our reckoning the numbers of species reported as occurring in Oklahoma stand thus: 1924, 316; 1931, 334; 1967, 418—an increase of 32 per cent over the total 43 years ago, 25 per cent over that of 36 years ago.

Dr. Sutton made collecting expeditions to Oklahoma from 1932 to 1937; in 1952 he joined the teaching staff at the University of Oklahoma. "That fall, with the help of a small but remarkable group of graduate students, . . . [he] started a representative collection of Oklahoma birds." He has "worked", at least briefly, in every one of the 77 counties. In his Introduction he describes the exceedingly different habitats in the state, telling of his favorite places for finding rewarding species.

In the main body of the book the author discusses each family represented in Oklahoma—its general characteristics, world distribution, numbers of species, and those most notable—all richly informative. Under each species of the Oklahoma list he describes its distribution in the state, citing a great number of records, and in the case of rare species including records in neighboring states. Where subspecies are involved he goes into detail as to which race each of the abundant specimens most closely resembles. I heartily applaud his refusal to lump the Spotted Towhees with the Eastern Towhees, when he states "in my opinion differences in song and alarm-notes declare them to be full species."

In recent years a number of new species have come into Oklahoma—among them the Cattle Egret, Purple Gallinule, Boat-tailed Grackle, Black-crested Titmouse, Golden-fronted Woodpecker, and Vermillion Flycatcher, all of which have nested in the state. Turkeys have been re-established in suitable places and are doing well, although some of them undoubtedly have a mixture of domestic blood. Starlings, first recorded in Oklahoma in November, 1929, are now found throughout the state; they specialize in usurping the holes of Flickers and Red-bellied Woodpeckers.

During our last years in Oklahoma (1926-27) we had become expert on shore-bird identification and we were keenly on the look-out for the Buff-breasted Sandpiper that in the past must have migrated through Oklahoma in large numbers. We never found it. Now, happily, it is a regular spring and fall transient.

Besides the sober facts of distribution and comparison of specimens as to subspecific traits, Dr. Sutton brings out many items of special interest. I will mention a few. He calls the Ruby-throated Hummingbird "an explorer species that has conquered a vast temperate area inhabited by no other hummingbird." He graphically describes the amazing abundance of blackbird species 60 years ago as well as in the present. He has observed at least 30 occupied nests of the Brown Towhee, near Kenton, "but have yet to see a nest with a cowbird egg or chick in or under it. Can this be because the cowbird will not alight on the thickly-spined cholla?"

Well worth quoting is this striking paragraph:

"No citizen of Oklahoma can afford to forget that these birds of prey are constantly consuming such important 'enemies' of mankind as grasshoppers and cotton rats. The commoner the pests, the more constantly they are eaten. The hawks are not trying to help us. They are not trying to win either protection or popularity. They are living their own wonderful lives, and we, as reasonable, sentient fellow beings, should be grateful for their existence."

Dr. Sutton hopes that his book will serve as a basis for further work. For instance, he suggests more collecting of certain species, for example the Canada Goose; study of nesting habits and requirements of many species, more observations in particular parts of the state and thorough study of cowbird parasitism. And he emphasizes a truth of fundamental significance:

"Of grave importance is widespread recognition of the fact that birds cannot exist without habitat; that unless habitat continues, the birds themselves will not continue."

The book is illustrated with pen and ink drawings of 28 species and a painting of a Harlan Hawk—all by the author, who is a distinguished artist. Two helpful maps are included: one of the 77 counties in the state, the other an "historical" map that shows the rivers, the Indian Nations, the wildlife refuges, and state parks.

This is an impressive book, scholarly and full of interest; it represents many rewarding experiences in a fascinating state, as well as a vast amount of study in the museum.—Margaret M. Nice.

35. The Behavior of Bicolored Antbirds. Edwin O. Willis. 1967. *Univ. Calif. Publ. Zool.*, 79: 1-127. \$3.50. Most ornithologists' knowledge of antbirds is limited to the derivation of the family name (Formicariidae) or the fact that these are "lower" passerines that frequently associate with army ants in tropical America. The present report and others by Willis, however, raise a number of intriguing questions about these birds and their relationships with ants. "In particular, one question immediately comes to mind: what kinds of social and nesting systems can permit birds to exploit wandering swarms of ants consistently?" What kind or kinds of territories can be established when the adults depend to a large degree on insects stirred up by nomadic ant columns?

In order to answer these and other questions, the author studied Bicolored Antbirds (*Gymnopithys bicolor*) in Panama, Costa Rica, and Colombia. Banded birds were watched carefully around the ant swarms, up to 15 antbirds attending a swarm at a given time. Interestingly enough, the antbirds are quite antisocial and rather quickly set up peck orders at each swarm. Various forms of agonistic behavior result in dominance and subdominance. Challenging and cringing displays, representative of aggressive and submissive behaviors, follow a "rule of angles—angles are closed at the extremities and opened near the center of the body in aggressive behavior while the reverse is true for submissive behavior."

Of particular interest to most readers will be the discussion on territories. Because ant swarms are nomadic, the question arose as to whether the ant birds are also nomadic when they nest. Briefly, nesting antbirds restrict their wanderings to the vicinity of a nest, nesting pairs being able to locate swarms as much as 400 meters from the nest. Actually antbirds are territorial but to the extent that they exclude no intruders and pairs often forage together while nesting. That is to

say, foraging areas might overlap but nesting areas are those of nonoverlap or minimal overlap. Willis defines the territory in this context as "a space in which one animal or group dominates others which become dominant elsewhere." He further suggests that these antbirds can nest and still follow ants because of their loose territorial system expressed in dominance hierarchies.

A considerable portion of the work is devoted to foraging and agonistic behavior and the development of behavioral patterns. Sonograms are included in this important contribution.—David W. Johnston.

36. The Watcher at the Nest. A Classic Personal Study of Bird Territory and Mating. Margaret Morse Nice. 1967. Dover Publications, Inc., New York, New York, 159 pp., 18 black-and-white illustrations, 2 animated maps. \$1.50. Rereading this historic but very modern study of the home life and life in a home of a number of different birds, I am again impressed by the patience of the "Watcher" and her ability as a writer to charm as well as inform. To those young bird people who seem to me to be in a hurry to have "instant" results in their projects, there is in this book a glimpse of the painstaking, time-consuming work which won for Dr. Margaret Morse Nice in 1942 the Brewster Medal for her studies in the Life Histories of the Song Sparrow.

Several things have been added to *The Watcher at the Nest*. One is Mrs. Nice's (page 85) note on Cowbird studies that followed her own. Another is Roger Tory Peterson's name as illustrator on the cover and the title page. Dover has also repeated the Bell Vireo picture from page 116 on the cover where it looks more important and gay. Careful readers of the original Macmillan edition, if they did not recognize R.T.P.'s signature on the drawing, would have seen his name spelled out on the map facing page 40.

Those who have not read this book before will be delighted to find the chapter "Loti: the tale of a Bobwhite." Written long before the current best seller, *That Quail Robert*, it has more realism and charm in less than 10 pages than Robert has in a whole book. An aggravating and fascinating character in Chapter 16 is the flirtatious male Mourning Dove that refuses to acknowledge the domestic duties of mating.—Elizabeth S. Austin.

37. Attracting Birds: from the Prairies to the Atlantic. Vern E. Davidson. 1967. Thomas Y. Crowell Co., New York, N. Y. 252 pp. \$6.95. *Caveat emptor!* The amateur birdwatcher who is apt to buy this book because it its title is also apt to be lost in the maze of its contents. The author is fond of lists and flat statements and ignores the fact that birds won't always fit into categories.

The first chapter, "Food Preferences", discusses experiments Mr. Davis made in studying the foods of birds by examination of crop and gizzard contents. Later feeding experiments in his backyard made him conclude that birds selected food by taste. He dyed and painted millet to test the birds' reactions to color but says nothing about testing for a reaction to smell.

The next two chapters contain all the 13 illustrations in the book. They are the usual drawings of all the ordinary feeders and nesting boxes. These chapters also contain lists, lists, and more lists, dignified by the title "Tables" in the table of contents. What has a list of "Birds that eat aquatic animals such as fish and crustaceans" have to do with attracting birds, or a list of "Birds that feed chiefly on flying insects"?

The list of "Birds that nest on the ground, cliffs, or beaches" includes "vultures (2 species)." But the Black Vulture also often nests in hollow stumps and the Turkey Vulture sometimes uses trees. The Mourning Dove is in the same list but it rarely nests on the ground when trees are available. Speaking of the Mourning Dove, on p. 61 Mr. Davis says, "Mourning Doves feed only on the ground. . . ." The ones in our garden come to four feeding shelves on top of five-foot poles; hundreds of Mourning Doves have been caught there and banded.

The subtitle "from the prairies to the Atlantic" gives the author elastic territorial boundaries but it is stretching them considerably to include "tropical Americas" as he does in the account of the Smooth-billed Ani on page 46. The list of trees in this account may be used as nesting sites by the anis in tropical America, as Mr. Davis claims, but in sub-tropical Florida the birds use melaleuca and date palms. Another stretching of territorial bounds is the inclusion of the Common Puffin which is very much at sea and not between the prairies and the

Atlantic. Why should this book (supposedly on attracting birds) include a puffin, the Anhinga, Razor-billed Auk, American Avocet, Eskimo Curlew, and Ivory-billed Woodpecker?

In the list of plants are a number such as "paulonia, royal," "shrubalthea," and "sweetshrub" with the information that they are "not important to birds" or "Apparently unused by birds." What a waste of space! The three counties of south Florida where the Spotted-breasted Oriole has been naturalized will be grateful for the information that papayas are their "choice" food.

In the annotated alphabetical list of birds and plants Mr. Davis has given the scientific name of each species he discusses. I can see no practical use for his two last lists, an alphabetical list of birds that starts with "Acanthis, redpoll" and ends with "Zonotrichia, sparrow." The plants are listed the same way and Liberty Hyde Bailey is turning over in his grave.

In the acknowledgements on page *xiii*, C. Russell Mason, Executive Director of the Florida Audubon Society, has been rechristened Mason C. Russell. So from beginning to end this book is cluttered with errors, birds that cannot be attracted to garden, farm, or hunting lodge, and plants that cannot be cultivated easily. Anyone wanting to learn about attracting birds will be much better off with "Attracting Birds," Conservation Bulletin No. 1., obtained from the Superintendent of Documents, Washington, D. C. for fifteen cents.—Elizabeth S. Austin.

MISCELLANEOUS

38. Magnetic Effects in Biology. M. M. Vilenchik. 1967. *Uspekhi Sovremenoï Biologii*, 63(1): 54-72. Summaries on animal responses to magnetism are few, the likelihood of such having long been discredited. This paper discusses briefly a number of avian references.—Leon Kelso.

NOTES AND NEWS

The University of Massachusetts Press (Munson Hall, Amherst, Mass. 01002) has published *The Book of the American Woodcock*, by William G. Sheldon (\$8.50). Readers will recall his descriptions in *Bird-Banding* of techniques such as use of high poles for mist nets for this species.

Dates to keep in mind: June 8 and 9, 1968, on Cape Cod, for the spring field meeting of NEBBA.

Demand for mist nets continues heavy. In the fiscal year that ended August 31, 1967, NEBBA shipped over 5,400 nets, far more than in any prior year. Despite very substantial reserve stocks, we were still unable to fill every order immediately. Ordering early may avoid delays in your banding project. For information on the ten net types in stock (9 listed in the January, 1966 issue, plus type HT—like H but tethered), please write to Mr. E. A. Bergstrom, 37 Old Brook Road, West Hartford, Conn. 06117.

The Smithsonian Institution and the United States Department of the Interior have designated part of their page allotment under the National Science Foundation translation program for the six volumes of Dement'ev and Gladkov: *The Birds of the Soviet Union*. The series is being translated in Jerusalem by the Israel Program for Scientific Translations which holds the copyright. Drs. A. Birron and Z. S. Cole are the translators and Dr. Cole is editor. Both are bilingual scientists. Page proof is being checked by Smithsonian and Fish and Wildlife Service ornithologists before being released for final printing. Volume 1 has already appeared and is available for \$3.00, paper-bound, from the U. S. Department of Commerce, Clearing House for Federal Scientific and Technical Information, Springfield, Virginia 22151. It is also available from European booksellers at \$10-25. The translation for Volume 4 has been completed and page proof has