

The Saw-whet Owls were always captured between 0500 and 0700 in the morning and in an open or semi-open area where there were a few small evergreens. Considering one net up during an entire night at a net-night, I have had nets up 903 net-nights between 1 July and late November since 1960 (1960, 224; 1961, 245; 1962, 132; 1963, 141; and 1964, 161 nights.). Considering the average night period as eight hours, the number of night-net hours was 7,224 and only three species (30 individuals) were captured. The Saw-whet Owls were captured 7 November 1960, 14 October 1961 (2), 22 October 1962, 24 October 1962, 12, 13 and 27 October 1963, and 12 and 25 October 1964. All were captured in Muskegon County except the first and fifth which were captured at Battle Creek.

All of these birds were weighed and measured. Following is a summary of their weights and wing measurements:

SPECIES	WEIGHT (GRAM)	WING (mm)	NUMBER
Saw-whet Owl	95.17 (85.1-113.6)	134.6 (123-146)	10
Whip-poor-will (a. m.)	55.7 (46.3-63.3)		11
(p. m.)	57.8 (53.2-68.6)		6
all	56.5	159.2 (152-169)	17
Nighthawk	80.1 (72.2-86.1)	204 (188-222)	3

Thus, I feel that a person is justified in placing nets the night prior to a mist-netting day and that if he is cautious, examining them after dark and prior to daylight, he will catch some of the night species at dusk and dawn.—Lawrence H. Walkimshaw, 1703 Wolverine Tower, Battle Creek, Michigan.

RECENT LITERATURE

BANDING

(See also 13)

1. **Forty Years of Bird-banding in the USSR.** M. Lebedeva and T. Shevareva. 1964. *Okhota i Okhotnische Khozyaistvo* (Hunting and Game Management), No. 4: 21-23. (In Russian). Bird-banding in the Soviet Union was initiated by a group of young amateur naturalists at the Timiryazev Memorial Biostation in 1924, when they released birds carrying bands stamped "Moskva, BION" and the serial number. That was the start of the present national "Banding Bureau." In 1927 a little over 3,000 birds were banded; in 1938, 10,000, and by 1959 the annual total was about 200,000. Over the period of 40 years about two million birds were banded. Reports of subsequent recoveries of these birds are constantly being received at the Banding Center, where about 50,000 records of recoveries have accumulated, which have been utilized in over 200 published papers. From 1956 onward this activity was expanded from tagging young on nests to trapping adults during migration, and from the precincts of a few national reserves to numerous additional stations. Ornithological research parties were sent to distant areas of the Union and influenced workers there to engage in banding of widely distributed species. In a 1959 project 57,196 Starlings were tagged.

In 1956 an extensive waterfowl banding project was undertaken on the lakes of northern Kazakhstan. Many species have been banded in Kirghiz; and in Turkmenistan, at the Hasan-Kul Reserve, a large-scale project for banding wintering ducks and shore birds has been maintained. Systematic bird-banding has been extended to the Far-East where at Khanka Lake (north of Vladivostok) the Far-Eastern Ornithological Station has banded many species and significant reports of recoveries have been received. The Purple Heron and Little Egret (*Ardea purpurea* and *A. egretta*), tagged there in the nesting season, were taken in winter in south China, Viet Nam, Thailand, and Malaya.

At present bird-banding is being utilized in almost all projects involving research on birds as disease vectors, in acclimatization experiments, and in orientation studies. This includes the projects of the Zoological Institute of the National Academy of Sciences USSR and the academies of the allied republics, in reserves and game management stations, the game warden services, and others. Such

projects render annual reports to the Banding Center, which exchanges information on banding projects with 50 nations of the world.

Banding returns are being used for determining game populations in certain areas. The ratio of recoveries to the known total of individuals banded is regarded as the same as the ratio of known total of birds shot to the problematic population of birds in a territory investigated, which population is calculated on that basis. This method is considered reliable for censuses of both sedentary and migratory species in localities where they have congregated for molting or wintering.—Leon Kelso.

2. An Analysis of the Records of a South African Ringing Station. M. K. Rowan. 1964. *Ostrich*. **35**(3): 160-187. Banding data are frequently too few to permit valid statistical treatment. Working with capture and recapture records amassed for six years, Rowan skillfully analyses the results and their implications for banding in South Africa. 13,182 birds belonging to 88 species are considered. Over the six-year period the recovery rate was only 0.46%. For individual species (especially weavers) Rowan discusses randomness in recapture patterns, "lapse rate," life expectancy, and mortality. This is a thought-provoking article.—David W. Johnston.

MIGRATION

3. Molt, Body Weights, Gonadal Development, and Migration in *Motacilla flava*. Kai Curry-Lindahl. 1963. *Proc. XIIIth Intern. Ornith. Congr.*: 950-973. Different races of Yellow Wagtails winter together in tropical Africa and experience the same environmental conditions, but their molt, fat deposition, gonad development, and migration take place at different times. Those which breed in southern Europe in April molt some two months earlier than those which breed in Lapland in June. It is concluded that the timing of the spring behavior is controlled by factors which operate on the breeding-grounds: this conclusion is essentially opposite to that of the paper by King (see review number 4).—I. C. T. Nisbet.

4. Autumnal Migratory-Fat Deposition in the White-crowned Sparrow. James R. King. 1963. *Proc. XIIIth Intern. Ornith. Congr.*: 940-949. Both wild and captive birds were studied, in an area where the species winters. Whereas deposition of fat in spring takes place very rapidly, at exactly the same date in different birds and in different years, deposition of fat in autumn is a more gradual process and its timing is more variable. King argues that, for physiological reasons, autumnal fat deposition cannot be controlled directly by contemporaneous stimuli such as decreasing day-length. He suggests that it is part of the cycle initiated by lengthening days in spring, which therefore act as a remote timer for the autumn events.—I. C. T. Nisbet.

5. Annual Physiological Cycles in Captive Birds of Differing Migratory Habits. C. M. Weise. 1963. *Proc. XIIIth Intern. Ornith. Congr.*: 983-993. Five species of sparrows and the Hermit Thrush were studied. In all six species, fat deposition was less regular and less extensive in autumn than in spring. It is suggested that in these species (which migrate overland), spring fat deposition is primarily an adaptation for moving into a hostile climate, rather than for making long flights. The species with more northerly breeding-ranges exhibited more nocturnal restlessness than the more southern species.—I. C. T. Nisbet.

6. The Annual Cycle and *Zugunruhe* in Birds. Carl W. Helms. 1963. *Proc. XIIIth Intern. Ornith. Congr.*: 925-939. This paper contains too much jargon for easy reading, but it includes an interesting discussion of the nature of *Zugunruhe* and a critique of studies which use it. Helms identifies two types of nocturnal unrest (of which one broadly corresponds to migration in free birds, the other to weather-induced activity in summer and winter), but he does not give objective criteria for distinguishing them in practice. As more and more variables are held constant in an experimental situation, the pattern of unrest becomes more and more variable, and its relation to migration more and more uncertain. Helms argues that, if meaningful results are to be obtained, the annual cycle of birds must be studied as a whole, using a poly-variable (sic) approach.—I. C. T. Nisbet.

7. Comparison of Fat Levels in Migrating Birds Killed at a Central Michigan and a Florida Gulf Coast Television Tower. Larry D. Caldwell, Eugene P. Odum, and Shirley G. Marshall. 1964. *Wilson Bull.*, **75**(4): 428-434. In autumn, typical trans-Gulf migrants have more than twice as much fat when killed in Florida as do birds of the same species killed in Michigan. This situation is reversed in the White-throated Sparrow, which winters around the Gulf, and is less clearly marked in species such as the Red-eyed Vireo, whose status as a trans-Gulf migrant is doubtful. These results suggest that long-distance migrants begin southward migration with low to moderate fat reserves and short flights, and proceed in progressively lengthening stages.—I. C. T. Nisbet.

8. Change of Lipids in Eastern Great Reed Warbler. II. Chemical Observations. Tsukasa Nakamura. 1963. *Memoirs, Faculty of Liberal Arts and Education, Yamanashi University*. No. 14. The fat content of Great Reed Warblers collected on their breeding grounds in Japan increased from about 1 gram during May-August to 6-8 grams (18-26% of total weight) before departure in September and October. At the same time the liver weights increased, due partly to an increase in fat content. The fat deposited before migration was lighter in color than that earlier in the season, had lower melting points, higher saponification values and lower acid values. The author suggests that the pre-migratory fat deposits consist of relatively short-chain fatty acids, which are easier to metabolize than long-chain fats.—I. C. T. Nisbet.

9. Homeostasis of the Nonfat Components of Migrating Birds. Eugene P. Odum, David T. Rogers, and David L. Hicks. 1964. *Science*, **143**(3610): 1037-1039. Birds killed in spring after long migratory flights contained slightly *more* water than very fat birds killed in autumn at the outset of their migrations. No detectable differences were found between the weights of nonfat dry material in the bodies of fat and lean birds.—I. C. T. Nisbet.

POPULATION DYNAMICS

10. The Fall Migration of Black Terns in the Baltic Region 1960. (Svarttärnans (*Chlidonias nigra*) sträck i Östersjöområdet 1960.) Gunnar Strömberg. 1964. *Vår Fågelvärld*, **23**: 256-265. (English summary.) The data gathered indicate a marked movement of Black Terns along the western coastline of the Baltic Sea. Apparently this movement originated in eastern Europe. Increased numbers of Black Terns in migration were also reported from the British Isles and Switzerland.—Louise de K. Lawrence.

11. The Effects of the Severe Winter of 1962/63 on Birds in Britain. H. M. Dobinson and A. J. Richards. 1964. *British Birds*, **57**(10): 373-434. An impressive, carefully documented report based on answers to questionnaires relating to 261 areas in Great Britain. The severest weather lasted in most parts of the country from late December to early March. "Observed mortality was heavy and widespread." During the following breeding season "Kingfishers, Grey Wag-tails, Goldcrests, Stonechats, Wrens, Barn Owls, Snipe, Long-tailed Tits and Green Woodpeckers, in that order, were apparently the most heavily reduced." Feeding of birds, at food tables and through rubbish heaps and sewage farms, played an important role in helping to reduce mortality.—M. M. Nice.

12. Rook Numbers in Nottinghamshire over 35 Years. A. Dobbs. 1964. *British Birds*, **57**(9): 360-364. Nest censuses of *Corvus frugilegus* in five years between 1928 and 1962 showed a considerable increase in 1944 and 1958 but a sharp decline (38%) in 1962. The increases may have been in response to much greater acreage in grain; the sudden drop was probably due to deaths from chlorinated hydrocarbon seed dressings. A voluntary ban on such dressings has now been adopted.—M. M. Nice.

13. Longevity, Mortality and Causes of Death in the Kestrel, *Falco tinnunculus*. (Lebensdauer, Sterblichkeit und Todesursachen beim Turmfalke, *Falco tinnunculus*.) Alfred Schifferli. 1964. *Orn. Beob.*, **61**(3): 81-89. (Summary in English). This paper is based largely upon data from recoveries of 416 birds banded in Switzerland and Finland. The oldest bird reached an age of 16 years and 3 months, but the average age was about 1½ years. "After the first half-year of

life, the average yearly mortality is 35% for Swiss and 44% for Finnish Kestrels." At breeding time in Switzerland 35% of the population was first-year birds. As to be expected, the greatest cause of death (65%) was of birds "shot and otherwise killed by man," many of these being taken in France, Italy, and Spain.—David W. Johnston.

14. Fluctuations in the Number of Giant Petrels at Ngauranga, Wellington Harbour, New Zealand. C. Patricia Mellwaine. 1964. *Emu*, **64**: 33-38. A correlation between the numbers of Giant Petrels (*Macronectes giganteus*) and the amount of available offal is demonstrated. The petrels feed close inshore on offal released into the sea from the "Ngauranga freezing works," the peaks in petrel numbers coinciding with peaks in lamb and sheep slaughtering. Conversely, at the peak of the whaling season these petrels were quite scarce at Ngauranga but were recorded in large numbers at Tory Channel where the whales were being processed. Dispersal of young birds from the breeding grounds and migration also have an effect on the numbers of these petrels in New Zealand waters.—David W. Johnston.

NIDIFICATION AND REPRODUCTION

(See also 45, 46)

15. Breeding of the Thailand Hoopoe *Upupa epops longirostris* Jordan. Kenton C. Lint. 1964. *Avicultural Magazine*, **70**: 119-122. Mr. Lint, Curator of Birds, San Diego Zoological Garden, is an expert in raising rare birds. In this paper he reports what "is believed to be the first breeding record for the family in the Western Hemisphere as well as the first captive breeding record for this subspecies." In 1961 six yearling Thailand Hoopoes arrived from Bangkok; in March, 1964 two of the birds formed a pair. The male fed his mate and invited her to inspect the nesting hole. She laid three eggs and incubated them for 18 days; she left the nest only to drink, being fed on the nest entirely by her mate. The chicks remained in the nest for 28 days. Details are given of the diet fed to the birds.—M. M. Nice.

16. Notes Concerning a Breeding Pair of Pygmy Owls. (Anteckningar rörande häckande spurvuggla (*Glaucidium passerinum*) .) Erik Jansson. 1964. *Vår Fågelvärld*, **23**: 209-222. (English summary.) This is an informative presentation of observations on a pair of Pygmy Owls during the nesting season in southern Dalecarlia, central Sweden. On 13 March 1961 the male was found calling from several calling posts in the territory while the female flew out from a cavity in a tall aspen. On 4 April the first copulation was observed. From then on coition occurred usually three times every night until the third egg was laid. After this it became irregular, finally to cease. Beginning ten days after copulation started, six eggs were laid at intervals of two or three days each and a seventh egg was found 20 days after the sixth egg was laid. With the laying of the fifth egg, the female began incubation. The incubation period lasted 28 days. Five of the eggs hatched within 24 hours and two eggs disappeared. Nest-life lasted 29 days for the first fledgling and 32 days for the other four.

During the nesting season the male did most of the hunting. Arriving with the prey, he called, then passed the food to the female either outside or inside the nest. After hatching, the female fed the young, tearing the prey apart and dividing it between them. The male never performed this duty and in the absence of the female only deposited the prey beside the young. Surplus food was stored in several cavities at various distances from the nest-tree and towards the end of nest-life sometimes on branches. Prey animals consisted mainly of small rodents. In the early evening and in the morning small birds were taken in place of the rodents at the time when the owls' period of activity briefly overlapped that of the nocturnal mammals. During nest-life 215 prey animals were taken. Of these 136 were small mammals and 79 birds, mostly nestlings.—Louise de K. Lawrence.

LIFE HISTORY

(See 44, 46, 51, 52)

BEHAVIOR

(See also 22, 38, 47)

17. Culturally Transmitted Patterns of Vocal Behavior in Sparrows. Peter Marler and Miwako Tamura. 1964. *Science*, **146** (3650): 1483-1486. In each discrete population of White-crowned Sparrows (*Zonotrichia leucophrys*) there is one predominant pattern of song of the adult males "which differs in certain consistent respects from the patterns found in neighboring populations." Some 88 of these sparrows were raised by hand under a variety of acoustical environments. Males captured between the ages of 30 and 100 days developed songs that matched the dialects of their home areas. Birds between the ages of 3 to 14 days and kept as a group in a large sound-proof room developed songs differing both from the species song and from their home dialects. In the laboratory it was possible to teach an alien dialect. "Once the song is established further acoustical experience does not change the pattern." Sonograms are given of the songs of 35 males both wild and experimental. A very interesting study.—M. M. Nice.

18. Studies on the Expressive and Social Behavior of the Raven. (Untersuchungen über das Ausdrucks- und Sozialverhalten des Kolkraben (*Corvus corax corax* L.)) E. Gwinner. 1964. *Z. Tierpsychol.*, **21** (6): 657-748. (Summary in English.) Eighteen ravens were hand-reared, kept in two separate cages and often allowed free flight. The author refutes the theory of sexual dominance in pair formation in this species. In his summary he says: "In those portions of behaviour in which individual relationships are predominant, displays are often highly variable . . . This lack of rigidity allows the birds to communicate more subtle details of social information to a partner or to a well known member of a group. The best example is provided by vocal signals which are highly modifiable by individual experience. This allows members of one pair to recognize each other personally and to transmit information directed only at the partner, even over long distances." This is a long, detailed, fully documented and impressive study, abundantly illustrated with photographs, sketches, sound spectrograms and charts.—M. M. Nice.

19. Threat and Appeasement Behavior in the Buzzard. (Droh- und Beschwichtigungsgebärden beim Mäusebussard (*Buteo buteo* L.)) Johannes Gothe. 1964. *Z. Tierpsychol.*, **21**(6): 749-754. (Summary in English.) Two wintering Buzzards were photographed in their encounters over carrion baits. The most aggressive display consists in spreading both wings. Subordination is shown by cowering, while "complete submission is indicated by lying motionless on the ground with one wing extended vertically upwards."—M. M. Nice.

20. Imprinting in Birds. Eckhard H. Hess. 1964. *Science*, **146**(3648): 1128-1139. Dr. Hess enumerates five differences between imprinting and association learning. He summarizes the effect of socialization on following and imprinting as found in domestic fowl chicks, and in ducklings; the subjects that spent two hours in the company of their siblings before being introduced to the model followed the model well at the first trial but proved later not to have become imprinted to it—this in contrast to those subjects kept in isolation before exposure to the model. Chicks receiving electric shocks during imprinting were more effectively imprinted than the controls. Impressive results were obtained from experiments on imprinting chicks to the characteristics of food objects; those individuals "which had been rewarded for pecking, on the 3rd day of age, at a stimulus which innately they preferred less were never observed to lose their new pecking preference, even after long periods without reinforcement" (p. 1138).

Experiments are now planned on environmental imprinting. These "will, it is hoped, make it possible to plot a maturational sequence of three imprinting phenomena in the life of the bird, all of them occurring within the first days of life and molding adult behavior: filial imprinting on the 1st day; environmental imprinting on the 2nd day; and food imprinting on the 3rd day. Maturationally scheduled processes thus appear to be, to a large extent, responsible for imprinting's being a special kind of learning, different from conventional association learning" (p. 1138).

Dr. Hess emphasizes that in laboratory experiments on innate behavior "the experimenter must be constantly aware of its basic vital function" (p. 1138). This is an important, convincing paper.—M. M. Nice.

21. Imprinting in an Altricial Bird: The Blond Ring Dove (*Streptopelia risoria*). Erich Klinghammer and Eckhard H. Hess. 1964. *Science*, **146** (3641): 265-266. Ring Doves were taken from their parents when they were from 4 to 14 days old and were raised by hand. Twenty-five of them were kept in complete visual isolation from other doves until sexual maturity, whereas 11 were placed in a community cage after weaning. When tested as adults in a free-choice situation between a Ring Dove and a human being, most of the first group that had been taken up to the age of 7-9 days chose the person; those taken later chose the dove or made no choice. All the doves in the second group chose the dove. The authors conclude that the critical age for imprinting in this altricial species coincides with the onset of fear, i.e., at 7-9 days. They also conclude that imprinting in the Ring Dove "can be said to be reversible."—M. M. Nice.

ECOLOGY

22. On the Ecology and Ethology of the Boreal (Tengmalm's) Owl. (Studier över pärlugglans (*Aegolius funerus*) ekologi och etologi.) Åke Norberg. 1964. *Vår Fågelvärld*, **23**: 228-244. (English summary.) This study, conducted from 1957-1963, covers 19 nests, some located in boxes with removable lids. Long watches, careful observation, and analyses of pellets produced the comprehensive data presented here. Territorial singing may sometimes occur also by day in the vicinity of the nest site. Eggs are laid at intervals of about two days. The variability of clutch size as well as the difference in size of the nestlings are of definite survival value in years of food scarcity. The incubation period is 27 days and the nest-life period 30 days. At the occurrence of outside disturbances the owl typically flies into the nest-hole. Woodpeckers do the same. It is suggested that this "curiosity" prevents the owl from being surprised by predators in the nest, an argument I cannot quite follow. In the woodpeckers this behavior affords occupation of a strategic position of defense inside the doorway, from which telling attacks can be launched upon tree-climbing predators almost without risk to the defender. After the natal down is shed, the plumage of the nestlings is chocolate brown, only relieved by four elongated white markings, all of which radiate from the bill or, conversely, "point" to the bill and thus possibly help to guide the feeding parents in the obscurity of the cavity. Before flying to the nest-hole, the owl always first alights on some favorite perch where the prey is transferred from the talons to the bill. Detailed analyses of the pellets show that of 495 prey animals, *Microtus* species accounted for 49.3%, *Sorex* species for 38.6%, and *Passeres* for 4%. Excellent photographs illustrate this interesting paper.—Louise de K. Lawrence.

23. Birds Caught by Octopuses. K. A. Hindwood. 1964. *Emu*, **64**: 69-70. Several instances of octopuses attacking sea birds are noted. Victims were Silver Gulls (*Larus novaehollandiae*), Crested Tern (*Sterna bergii*), and Little Penguin (*Eudyptula minor*). It is of interest to add this invertebrate to the list of predators on birds resting on the water or those feeding below the surface.—David W. Johnston.

PARASITES AND DISEASES

(See 24, 40)

CONSERVATION

(See also 12)

24. Residues of Organo-Chlorine Insecticides in a Golden Eagle. 1964. Adam Watson and N. C. Morgan. *British Birds*, **57** (9): 341-344. Some body tissues of a dead Golden Eagle were examined for the presence of insecticides. Low levels of lindane, heptachlor epoxide, and dieldrin were found but DDE in

fat was higher than expected. Since the bird was already in poor condition (evidence of tuberculosis), it is doubtful that death was caused by the insecticides. Nonetheless, this particular eagle had been resident for at least six months in an area where there were no sheep or arable farms (potential sources of insecticides).—David W. Johnston.

25. Interaction of Evening Grosbeak (*Hesperiphona vespertina*) and Spruce Budworm (*Choristoneura fumiferana* (Clem.)) in a Localized Budworm Outbreak Treated with DDT in Quebec. J. R. Blais and G. H. Parks. 1964. *Can. Jour. Zool.*, **42**: 1017-1024. The senior author of this paper is a forest entomologist with the Canadian Forestry Service, working out of the Forest Research Laboratory at Sillery, in Quebec. The junior author is familiar to *Bird-Banding* readers for his Evening Grosbeak papers. Those dealing with the species in Quebec appeared in **34**: 22-30 and **34**: 73-86, plus a general note in this issue. B. M. Shaub also discussed Quebec records of the species in **31**: 150-156.

Outbreaks of the spruce budworm in eastern Canada were controlled by the aerial application of DDT at the rate of $\frac{1}{2}$ lb. per acre. In 1962 the watershed of the Patapedia River in Quebec still contained an appreciable number of budworms, as it was the last remaining unsprayed area of any size. A striking concentration of Evening Grosbeaks resulted from this abundance of food, and contributed to the final collapse of the outbreak. The authors doubt that the birds (together with other natural controls) would have brought the outbreak under control without spraying, but felt that the birds had a significant effect once the peak had passed.

The authors conclude that the sharp decline in numbers of grosbeaks in the Patapedia area represents a dissipation of an abnormal concentration brought about by abundant food, rather than massive mortality from DDT. A study about the same time in New Brunswick after similar spraying, using census techniques, showed no ill effects on the birds (Macdonald, D. R. and Webb, F. E. 1963. "Insecticides and the spruce budworm." In "The dynamics of epidemic spruce budworm populations." Edited by R. F. Morris. *Mem. Entomol. Soc. Can.*, **31**: 288-310). It is true that dead birds are not conspicuous in spruce forest, and that the maintenance of numbers in a census tract may mask mortality together with an influx from elsewhere. However, the background which Blais and Parks describe here makes it apparent that the end of such abnormal food supplies would have made it impossible for such a concentration of grosbeaks to recur in the Patapedia area.—E. Alexander Bergstrom.

MORPHOLOGY AND ANATOMY

(See also 3, 27, 35)

26. A Study of Swift Weights. T. W. Gladwin and B. S. Nau. 1964. *British Birds*, **57**:(9): 344-356. In 1962 and 1963, 2,546 Swifts (*Apus apus*) were caught in mist nets, then banded and weighed before being released. The authors found diurnal weight changes: most birds weighed twice the same day showed a considerable increase in weight by late afternoon. Differences in weight from day to day are partly related to cold weather which brought about a marked weight reduction. From May into July average weights varied from 36.2 - 48.2 g., whereas the extreme weights were 30.8 and 54.6 g. Heaviest weights were detected during spring migration. This paper would have been strengthened had the authors related the extensive physiological findings of Koskimies (1950) on this species.—David W. Johnston.

PHYSIOLOGY

(See 8)

PLUMAGES AND MOLTS

(See 27)

ZOOGEOGRAPHY

(See also 33, 34, 41, 42, 53)

27. Waxwings at Cluj (Koložsvár) and its vicinity. (A Csonttollú Koložsváron és Környékén). Alexandru Filipăscu. 1962-1963. *Aquila*, **69-70**: 159-167. (In Hungarian with English summary.) The main text of this paper concerns the winter occurrences of *Bombycilla garrulus* in Rumania. Abundant food supply, less so than weather, influences their numbers. An interesting side-light concerns the red tips of the secondaries (p. 167): "The well known red horny formations on the secondaries and on the tail feathers develop as follows: at the beginning phase the dissolution of the cells can be observed in the construction of the distal end of the rachis which is followed by their terminally becoming flat and horny. Next lipochron and zooerithrin gradually accumulate in that zone."—David W. Johnston.

28. The Marsh Warbler in the Region of Gotenburg and Northern Halland, West-central Sweden. (Kärrsångaren (*Acrocephalus palustris*) i Göteborgstrakten och norra Halland.) Stig Jacobsson. 1964. *Vår Fågelvärld*, **23**: 200-208. (English summary.) The recent northward extension of the range of this mid-European warbler is noted. The initial expansion apparently took place during the 1950s. The census work undertaken 1959-1962 now shows the species to be common in most of its preferred habitats within the region. The bird is a late migrant and a night singer. The sex ratio shows the males to be markedly more numerous than the females.—Louise de K. Lawrence.

29. Radde's Bush Warbler found in Sweden. Ottenby Bird Station Report No. 42. (Videsångaren (*Phylloscopus schwarzi*) anträffad i Sverige 1962.) Per-Sture Ljungdahl. 1964. *Vår Fågelvärld*, **23**: 223-227. (English summary.) This warbler, whose breeding range extends in a narrow belt over south-eastern Siberia, Korea, Manchuria, and northern Mongolia with winter quarters in Indochina, was collected at Ottenby 25 September 1962 and later was identified by Derek Goodwin of the British Museum. This is a first record for Sweden and the sixth for Europe.—Louise de K. Lawrence.

30. Stilt Sandpiper found in Sweden. (Styltsnäppan (*Micropalama himantopus*) anträffad i Sverige.) Bengt Danielsson. 1964. *Vår Fågelvärld*, **23**: 193-199. (English summary.) On 13 and 14 July 1963, respectively, two parties reported sighting a strange shore bird in the same place on the island of Öland. Both groups, unknown to each other, identified their birds as Stilt Sandpipers. The first party described their specimen as an adult in spring plumage; the bird seen by the second party apparently was molting into fall plumage. A week later a Stilt Sandpiper was banded in Lincolnshire-Norfolk and two weeks later another was identified at Chichester.—Louise de K. Lawrence.

SYSTEMATICS

(See also 39, 53)

31. A Guide to the Identification of Certain Passerines. (Bestämningssguide för vissa tättingar.) Lars Svensson. 1964. Grafiska Institutets Press, Stockholm, 40pp. This booklet is primarily intended as a help to the correct identification of the bird in the hand. It treats 117 of the most difficult to identify species and subspecies of northern Europe. Apart from descriptions of fall and spring plumages, dimorphism, the color of the gape, and leg, emphasis is placed on measurements of wings, tail, culmen, and inner feather vanes. Detailed instructions on the proper way to take these measurements are given. All wing measurements are of the flattened wing and the reasons for this discussed. The precise drawings which demonstrate differentiating markings and measurements in minute detail are exceedingly helpful. The small handy format and the clear and concise treatment of the material makes this guide a valuable aid for the serious bird student and bander.—Louise de K. Lawrence.

32. A Guide to the Ageing and Sexing of Wood Warblers (Parulidae) in Fall. Chandler S. Robbins. 1964. *EBBA News*, 27(5): 199-215. Here is a valuable reference for banders. It is one that I intend to keep in my banding kit because, within the span of eight pages, one can find in summary form descriptions of fall adults and immatures. The tables on wing chords and body weights are of limited value to most banders who, unfortunately, usually don't have access to accurate calipers or field-scales. Furthermore, within a given species neither wing-lengths nor weights would be of much assistance in determining sex or age because of overlaps in measurements.

A word of caution is necessary on the ageing of fall warblers by skull ossification. Robbins implies that this is an all-or-none phenomenon by making reference to "skull ossified" and "skull not ossified." In practice, though, birds-of-the-year have the skull roofs in various degrees of "ossification." Thus, one immature may have its frontal and parietal bones almost completely single-layered ("soft" or the "not ossified" condition suggested by Robbins). In another, the double-layered condition might have proceeded medially and anteriorly to the extent that only small "windows" of the single-layered condition remain. In this latter case it is frequently most difficult to locate the small "windows" using the technique suggested by Robbins, that is, unless the observer takes great care in surveying the entire skull roof for evidence of a single-layered area.—David W. Johnston.

33. Geographical and Sexual Variation in the Long-tailed Jaeger *Stercorarius longicaudus* Vieillot. T. H. Manning. 1964. *Biol. Pap. Univ. Alaska*, No. 7: 1-16. The author's primary interest appears to be a consideration of the species to determine whether or not *S.l. pallescens* Løppenthin is a valid race. In the study he examined 538 Nearctic and Palearctic specimens, especially the color grades of adults. He also took bill and wing measurements and included some weights taken off specimen labels. On the basis of pigmentation of the underparts 87 per cent of the Nearctic and western and central Palearctic specimens are separable. For both bill and wing measurements differences between the two geographical series were not significant. Manning claims that, for a limited number of specimens, there is a correlation between wing length and body weight but not between bill length and body weight. One aspect which I feel Manning has overlooked is the possibility that some of the color variations are those associated with age, a feature which, admittedly, has not been demonstrated in the Long-tailed Jaeger but which is noticeable in other jaegers.—David W. Johnston.

34. Catalogue of Fossil Birds. Parts 1 (1963) and 2 (1964). Pierce Brodkorb. *Bull. Fla. State Mus.*, 7: 179-293; 8: 195-335. Not since the publication of Lambrecht's *Handbuch der Palaeornithologie* in 1933 has anyone attempted to catalog (and re-evaluate) all the fossil birds of the world. Dr. Brodkorb has not only painstakingly undertaken this task of bringing up to date such a list but he has also amassed valuable data on original descriptions and synonyms. Based largely upon priorities, he provides "new" names for many taxa.

Part 1 covers birds from the Archaeopterygiformes through the Ardeiformes. It covers 49 families in 15 orders and 374 species, about two-thirds of which are extinct. Part 2 (Anseriformes through Galliformes) covers 13 families in 3 orders and 474 species. These two parts, then, cover 856 species, of which 542 are extinct and 314 are living.

These two publications will be of special value to those interested in fossil birds. They are also valuable because of the proposed changes in ornithological nomenclature especially of higher taxa. We anticipate with pleasure the concluding volumes of this momentous work.—David W. Johnston.

35. Osteology of Gallinaceous Birds. J. Alan Holman. 1964. *Quart. Jour. Fla. Acad. Sci.*, 27: 230-252. From his study of postcranial osteology of the Galliformes, the author concludes that the families of curassows (Cracidae), hoatzins (Opisthocomidae), and megapodes (Megapodiidae) comprise a closely-related group. Other families in the order recognized by Holman are the Numididae, Meleagrididae, and Phasianidae, the latter family including subfamilies of grouse, pheasants and immediate relatives, and New World quails. The proposed new classification differs from earlier ones of Wetmore, Stresemann, Brodkorb, and others, principally by the reshuffling of families and subfamilies.—David W. Johnston.

FOOD

(See 11, 14, 25)

SONG

(See 17, 43)

BOOKS AND MONOGRAPHS

36. Thoreau on Birds. Compiled and with Commentary by Helen Cruickshank. 1964 McGraw-Hill Book Co., New York, N. Y. 6 1/4 x 9 3/4 in. 332 pp. Price \$7.95. Nine black-and-white plates from Wilson's *American Ornithology* (1832), five from Nuttall's *Manual of Ornithology* (1832), and two from Audubon's *Birds of America* (1841) strikingly illustrate what unsatisfactory bird books were available to Henry Thoreau. Mrs. Cruickshank contrasts present bird trips with those of Thoreau: "At the present period in history when travel by car and hurried walking from one point to another are characteristic of field trips, Thoreau teaches a leisurely way of going afield with relaxed and intent attention" (p. 12). Most of the quotations are taken from Thoreau's *Journal*, but samples are also given from others of his writings. Hawks, Crows and Blue Jays, Scarlet Tanagers, Pine Grosbeaks, Redpolls, Fox and Song sparrows—all are touched upon with love and keen appreciation. It is, however, the Wood and Hermit thrushes that inspired Thoreau's most exalted and poetical thoughts in regard to birds.

Mrs. Cruickshank's comments are informative in giving current names corresponding to obsolete ones in Thoreau's writings, in telling the present status in Concord of many of the birds, and in supplying biographical background. Unfortunately various errors have crept into her comments on the birds mentioned in the book. Of these I will mention three.

The Cowbird egg does *not* hatch in "about ten days" (p. 22), but in 11-12 days. It is startling to read that "European cuckoos . . . usually parasitize members of the crow family, especially magpies." This is not true of the Common Cuckoo (*Cuculus canorus*) that is found throughout Europe, but of the larger Great Spotted Cuckoo (*Clamator glandarius*) that breeds in Spain and Portugal, Africa, and Asia Minor. Finally, it is a pity to find the repetition of A. A. Allen's estimation that "less than 20 per cent of the nests he found each year" succeed (p. 105). On the contrary, "the success rate of open nests of altricial birds in the North Temperate Zone has been found in 24 studies on 7,788 nests to range from 38 to 77 per cent, averaging 49." Success for hole-nesting altricial birds exceeds 66%. (Nice, *Auk*, 74: 305-321. 1957).—M. M. Nice.

37. Audubon's Wildlife. Edwin Way Teale, with selections from the writings of John James Audubon; 251 plates. 1964. The Viking Press, New York. 256 pp. Price \$15.00. The aim of this new volume, as stated on dust jacket and in the editor's introduction, is to provide "a new look at the birds and animals" painted by the most renowned early American ornithologist. This new look is obtained by employing a varying scale of enlargement in the reproductions, up to the full life size of the Elephant Folio plates. Since the book is of quarto size, the larger scale reproductions can include only portions of the original plates, and only a few complete plates are reproduced in reduced scale. The effect is uneven. One of the values of the Audubon paintings is the balance and composition of the whole plate, in which the principal subject—the bird or mammal depicted—forms a harmonious totality with the background and secondary subjects of the painting. While much interesting detail can be seen in the large-scale reproductions, all too often these fragments appeal to the curiosity of the viewer rather than to his sense of beauty. Moreover, instead of "arresting . . . the intense vitality" of the originals these portions tend to over-emphasize certain distortions or unnatural postures of the subjects, utilized by Audubon within the artistic context of the whole painting but jarring when seen in isolation. This is most clearly felt when one inspects those plates which, contrary to Teale's implication in the introduction, are considerably larger than life-size; i.e. they are magnifications of the Elephant Folio plates. Examples such as the Blue Jay, Red-headed Woodpecker, and Swallow-tailed Kite forcibly reminded me of certain types of modern

"pop art." Recent works of Roy Lichtenstein, for example, bear a considerable resemblance to the enormous woodpecker spread across pages 26 and 27. This sort of empty magnification appears to me to have only a sort of gargoyle attraction, but it obviously appealed to the publishers, for they have utilized it again on the cover design and dust jacket.

In addition to the main series of plates, a few of which are in color, accompanying the text are a series of small marginal reproductions, measuring about $1\frac{1}{2}$ by 2 inches. These are sometimes of the whole plate, but often are only portions, which is confusing to the reader who is not familiar with the original plates.

While the unusual reproductions form the main reason for producing a book of this sort, the text provides much enjoyment, without the disharmonies occasioned by the plates. A short prologue, entitled "Audubon and Wildlife," sketches the fascinating life of the artist. This is followed by five sections—"Woods, Fields, and Brushlands," "Marsh and Swamp," "Lake and River," "Prairie, Desert and Mountain," and "Sea and Shore." Each section is designed to bring together species in natural ecological groups. A brief introduction by the editor discusses the ecological setting in Audubon's time, and how it has changed up to the present. Following this are excerpts from Audubon's *Ornithological Biography*, or *The Viviparous Quadrupeds of North America*, giving accounts of five to ten species of birds and mammals. The plates are arranged in groups roughly corresponding with the sections. However, a species which rates a text account may not be illustrated other than in a small marginal cut, and many species which appear in the plates have little relationship to their page-mates in ecological setting. Thus in the first section we have pictures of such diverse forms as the Mangrove Cuckoo, Collie's Magpie-jay, Harris's (sic) Hawk, and Eskimo dog, along with the more appropriate Passenger Pigeon and Oppossum. To say that "both in text and plates [the materials] fall so naturally into such ecological groupings" is to strain the reader's concept of ecological order. The book closes with a two page epilogue, "Wildlife since Audubon," a summation of the growth of our American social conscience as it affects living creatures.

While some of the statements in the editor's notes on the plates might be questioned, they are on the whole accurate and informative, with several exceptions. The marginal illustration for the beaver (*Castor canadensis*) is actually the completely unrelated mountain beaver (*Aplodontia rufa*) which is fully depicted in a subsequent plate. Plate 245 is identified as a ground squirrel (*Citellus richardsoni*) when it is actually the arboreal red squirrel (*Tamiasciurus hudsonicus*).

The present volume invites comparison with earlier efforts to bring Audubon's works before a wide public. The most successful of these were the Macmillan Company's *Birds of America*, especially the 1941 edition, and Houghton Mifflin's *Audubon's America* (1940). The full range of Audubon's genius is displayed, as an artist in the first, and as observer and narrator in the second book. More recently, his last work, *The Viviparous Quadrupeds of North America*, has been published to complement the previous offerings. The present book duplicates much of the previously published material, but is unique in one respect. The large scales of the plates do, as advertised, produce an unusual visual impact. For the person familiar with Audubon, the effect may be stimulating. However, the person wishing an introduction to the artist may well prefer to begin with those books which offer a more thorough and balanced, if not so novel, a treatment.—Robert S. Hoffmann.

38. The Evolution of Social Organization and Visual Communication in the Weaver Birds (Ploceinae). John Hurrell Crook. 1964. Supplement X, *Behavior*. E. J. Brill, Leiden. VIII, 178 pp., 14 figures, 10 tables, XX plates. Price 30 guilders. This book is based mainly on field studies by the author over a period of five years in Africa, India, and the Seychelles. Of the 105 species of Ploceinae recognized by Moreau (*Ibis*, **102**: 298:321; 443-471. 1960), Crook has made detailed observations on the behavior of some 26 species.

The book is divided into two main parts: (1) "Comparative Study" (pp. 3-68), describing population dispersion patterns, aggressive and territorial behavior, pair formation, and copulation in various species; (2) "Analysis and Discussion" (pp. 69-157), giving a theoretical interpretation of the interaction of drives or internal tendencies underlying each posture or display, a discussion of the evolution of displays and of variations in pair formation in different species, and concluding with some applications to taxonomy and phylogeny of the sub-

family. There follow long summaries in English and in French and a list of references.

In the Ploceinae the male generally weaves a nest to which he attempts to attract the female, often before the nest is finished. In the simplest nest invitation display as seen especially in the more solitary breeders, there is first much pursuit of unmated females, and when the male returns to his territory he may be followed by the female. The male then hops in and out of his nest repeatedly until the female flies to join him there. In the case of the more gregarious species which nest in trees in relatively open habitats with good visibility, foreshortening of such to and from activities has resulted in a pattern of pair formation and nest advertisement in which the male displays on his nest. He often flutters or beats his wings as if intending to fly after the female but remains attached to the nest, as the author interprets it. Crook also points out that selection pressure favoring close attachment of the male to his nest in the case of gregarious breeders helps guard against the robbing of nest materials so prevalent in crowded colonies.

Crook would relate the Asian Ploceinae, to which he has given much study, most closely to certain African species (included in the genus *Textor* by J. P. Chapin) which build nests specialized in having a bottom entrance and often a special ceiling or roofing layer. One of the best clues to generic relationships in the Ploceinae comes from the structure and building of the nest, and there are marked differences between the nests of Asian species and those of African species of *Textor* or of the closely related genera, *Hyphanturgus* and *Malimbus*. Nests of the Asian species differ in shape, having the vertical dimensions of the brood chamber longer than the horizontal (external measurements); they differ in the frequent use of mud in the nest; and when an entrance tube is present it differs strikingly in the exact mode of attachment to the brood chamber. They also differ from typical *Textor* nests in lacking a specialized ceiling. (For details, see Collias and Collias, *Univ. Calif. Publ. Zool.*, 73, 1964.) Some of the similarities of the Asian Ploceinae to certain African species, such as the presence of an entrance tube on pensile nests, could be due to convergent evolution. My own inclination at present, differing from that of Crook, would be to take the Asian Ploceinae directly off a common ancestral stock along with the two main lines of African Ploceinae, the *Textor-Hyphanturgus-Malimbus* line on the one hand and the *Quelea-Euplectes* line on the other. This presumed ancestral stock would have a crude simple nest with a side entrance and lacking a specialized ceiling.

The crudest nests of Asiatic Ploceinae are those built by *megarhynchus* and *hypoxantha*. Salim Ali and John Crook have furnished invaluable information by their rediscovery of the former species and their close description of its behavior and nest-building. Unfortunately, similar details of the behavior and mode of nest-building in *hypoxantha*, the Asian Golden Weaver, are apparently still unknown. Chapin (1954, p. 305), being impressed by the very close resemblance in bill form and color pattern of *hypoxantha* to the African *superciliosa*, united them into one genus, *Ploceëlla*, a conclusion reinforced as he duly noted by the crudely woven nest with side entrance that typifies each species. Crook takes exception to this grouping, mentioning that he has now made detailed observations of the nest and construction behavior of *superciliosa* (detailed account apparently not yet published). He states that "when these are compared with available information on the *hypoxanthus* nest (Oates, 1883; MacKenzie, 1916; Smythies, 1953; H. C. Smith quoted by Salim Ali *in litt.*) it is clear that, although both structures are globular, the fabric and building techniques are totally dissimilar. The nest of *hypoxanthus* resembles that of *P. megarhynchus* of northern India, while the *superciliosus* nest is virtually identical with, though smaller than the nest of *Amblyospiza*. It follows that *hypoxanthus* and *megarhynchus* be grouped together in the same species group of the genus *Ploceus*." Chapin (p. 306) also mentioned that he had examined eight nests of *superciliosa* and all bore a marked resemblance to nests of *Amblyospiza*, though smaller, and he placed *superciliosa* immediately after *Amblyospiza* in his taxonomic arrangement, although keeping it in a separate genus. Until details of the different stages of nest-building in *hypoxantha* (I find no description of this in any of the published references cited nor does Crook furnish details) as well as of the behavior of this species are studied, its taxonomic position will continue to remain rather uncertain.

A great deal of thought and effort has gone into this book. The author has traveled widely and has made many useful and precise observations. The work

reflects his broad biological training, his theoretical tendencies, and his keen interest in his subjects. Although somewhat repetitious it covers a good deal of material, often in condensed or tabular form. A proclivity for shorthand symbolic designations makes it a little hard to read until one memorizes the code. The treatment of literature is a bit vague at times, and one cannot always distinguish easily the original observations of the author from those reported in the literature by others. Insofar as I can judge, the observations are accurate with only very rare and minor exceptions (e.g., the "completed nest of *Amblyospiza*" of plate XX is not really a complete nest since the entrance had not yet been narrowed down to the normal diameter). But any drawbacks of this scholarly study seem rather trivial in comparison with the many original contributions and together with the articles on which it is based, it represents a landmark in the advancement of our knowledge of the true weaverbirds and their behavior.—N. E. Collias.

39. Short Key to the Birds of the U. S. S. R. (Kratkii opredelitel' ptits SSSR) A. I. Ivanov and B. K. Shtegman (=Stegmann), with 349 figures and 41 photographs. 1964. "Nauka" (Academy of Sciences). Moscow-Leningrad. 528 pp. Price, 1 ruble, 95 kopecks (\$2.17). Students of Palaearctic and circum-boreal birds have available to them an increasing number of references on Eurasian species. This volume provides what appears to be a very useful key to the avifauna of the Soviet Union, although the proof of a key is with the unknown specimen in hand, and it was not possible to perform such a test. The book is one of the new faunal series produced by the Zoological Institute of the Academy of Sciences in Leningrad and has the same general format as their recent (1963) *Mammals of the USSR*. Ivanov is head of the department of vertebrate zoology at the Institute, and Shtegman has long been affiliated there (presently at the Institute of the Biology of Inland Waters at Ribinskoe reservoir).

The introduction and a section entitled "How to use the key" occupy less than nine pages, including a figure of bird topography with Russian terminology. This is followed by a "List of birds of the Soviet Union," arranged according to the Wetmore system. The authors indicate that the past lack of such a list has necessitated use of several multi-volume works, and hope that the present compilation represents a step toward an official checklist. The list is impressive, with a total of 722 species when the manuscript was completed; while it was in press, one new nesting species and four migrants were added, but these are not included in the key.

The key proper includes keys to the orders, families, genera, and species. Each order and family is briefly characterized as to morphology, habits, habitat, and number of taxa occurring in the USSR. Species keys identify juvenile and winter plumages as well as breeding adults. For each species there is brief description of the bird and its ecological and geographic distribution. For example, of that most cosmopolitan of birds, the Osprey, there is written: "Dorsal surface of body dark-brown, head and neck light; along sides of head behind eyes, a dark band; under-body light, sometimes with a small number of dark longitudinal streaks on breast and sides. Size 476-532 mm. Shores of fish-containing rivers and lakes in the greater part of the USSR, except tundra. Outside the USSR: distributed world wide, except the Arctic."

The keys at all levels are well-illustrated by B. S. Rozhdestvenska. These drawings, and the photographs throughout, demonstrate the considerable progress that has been made in illustrative techniques in recent years, although in a few the retoucher's hand is still obtrusive. Very few errors were found, although my facility with Russian is not sufficient to detect them easily. The photograph of the Common Murre is incompletely captioned, however, and that of the female Red-breasted Merganser is called *M. merganser*, although the correct Russian common name appears. Indices to common and Latin names, and a table of contents are placed in the back of the book. The "Literature" section is disappointingly short; only 11 titles are listed, all of which are Union-wide in scope. Inclusion of the recent excellent regional works, such as *Birds of Kazakhstan* and *Birds of the Ussuri Region*, would have been valuable.

Although such a key is not a systematic revision, it is interesting to compare its nomenclature with that of its predecessor, the four volume *Birds of the USSR* edited by Ivanov. In the present volume the subfamily Turdinae contains 18 genera and 59 species which Portenko in the earlier work placed in 4 separate sub-

families, and 20 genera, but only 48 species. Similarly, the genus *Emberiza*, recognized by Ivanov and Shtegman to have 25 species, was split into 10 genera by Portenko. This key, then, recognizes broader generic boundaries, but tends to split species. Further changes in taxonomy will undoubtedly be forthcoming as the birds of Siberia and the Soviet Far East become better known. In the meantime this book provides a good brief treatment of the rich Soviet avifauna.—Robert S. Hoffmann.

40. Evolutionary Trends in the Avian Genus *Clamator*. Herbert Friedmann. 1964. *Smiths. Misc. Coll.*, 146(4): 1-127. The genus *Clamator* is a primitive group of Old World cuckoos—the Crested Cuckoos—, whose young lack the evicting behavior pattern shown by some other genera of Cuculidae. The ancestral species was the Pied Cuckoo (*C. jacobinus*) that dispersed from southeast Africa over most of Africa where it gave rise to the Stripe-breasted Cuckoo (*C. leuallantii*) and to India where it gave rise to the Red-winged Cuckoo (*C. coromandus*). From this last species developed the Great Spotted Cuckoo (*C. glandarius*) that dispersed in ancient times as far east as Spain and northern Africa and in recent times down to southern Africa. Some of the Crested Cuckoos lay white eggs and some greenish blue eggs, but *C. glandarius* lays a “patterned, speckled or blotched egg . . . and the inference to be derived from the evidence is that it developed together with an early fixation upon magpies as hosts” (p. 93). In fairly recent times “this form suddenly expanded its range southward to encompass much of Africa south as far as Cape Province” (p. 93); here there were no magpies, yet this cuckoo continues to lay the same magpie-adapted eggs in a wide variety of host nests and succeeds in having its young raised.

“In a sense, this amounted to an escape from too specialized a form of host relationship; one which, had it been adhered to, would have markedly limited the parasite geographically, for the cuckoo is a bird of warm climates, whereas the magpie’s range extends far to the north where the parasite would not be able to follow it, and the two are sympatric only in a limited area” (p. 26).

Dr. Friedmann concludes this interesting and scholarly work with sections on additional hosts of these Crested Cuckoos recorded since 1949 and with a bibliography of 22 pages.—M. M. Nice.

41. The Terrestrial Vertebrates of Dalsland in Southwestern Sweden. A zoogeographical study. Nils-Gerhard Kravik. 1964. *Acta Vertebratica*, 3: 1-239. Located against the Norwegian border in west-central Sweden, Dalsland is one of the country’s smallest provinces, covering 4136 sq. km. In this monograph Kravik creates a zoological map of considerable interest, filled with valuable information. In Part I he describes the area’s rock formation, types of soil, morphology, lakes, climate, and vegetation much of which is alpine. Thus, for instance, “one can wander kilometer after kilometer on a carpet of dwarf birch (*Betula nana*)” across the muskegs of the northwestern part of the province. Significantly, the zone where southern species reach their most northerly, and the northern species their most southerly, distributional limits crosses the region. The species belonging to this zone, also called *limes norrlandicus*, are discussed extensively and data given on their origin, trends of distribution, habitat preferences, and breeding. Distributional maps accompany these notes.

Part II deals with population censuses and density calculations. The method used by the author is described and its merits discussed in detail. Of special interest to students engaged in quantitative appraisals of animal populations, especially when dealing with census work in larger areas, are the author’s penetrating analyses of the principles involved in other population studies as well as his own, in particular those done by Finnish ornithologists. Three main types of census-taking are distinguished: 1) the slow study area survey based on the discovery of nests; 2) the quick study area survey when repeated counts are made along parallel lines; 3) strip survey with counts taken within a certain section of the survey zone. The results are considered from the viewpoint of individual “dominance” (predominance?), abundance, and habitat selection, and are richly illustrated with tables and diagrams. All data are contained in five appendices.

Part III covers annotated lists of 36 mammals, 236 birds, 6 reptiles, and 5 amphibians.

This is an important contribution to biological science. With few exceptions, the study is written in excellent English.—Louise de K. Lawrence.

42. A Distribution Study of the Birds of British Honduras. Stephen M. Russell. 1964. A. O. U. *Ornith. Monogr.*, No. 1, 195 pages. Price \$4.50. This nice, solid piece of work makes a fitting lead-off paper for the A. O. U.'s new monograph series. In it the author has assembled and evaluated all the data available on the birds of the interesting old Crown Colony at the base of the Yucatan Peninsula. Having this information so well summarized in one convenient package is certain to prove most useful to students of New World birds, even though the colony's political boundaries have little distributional significance, and the several well-marked life zones it contains and their faunas extend well into neighboring Guatemala and Mexico.

The author's treatment of two perennially sticky problems, those of vernacular names and of sight records, deserves comment. For common English names of the North American species, he follows the 5th edition A. O. U. *Check-List*. For species not in the *Check-List* he "draws heavily" on the names proposed in Eisenmann's *Species of Middle American Birds*, except for about 50 species for which he revives other names already in the literature that he feels "are more satisfactory." Most of these are personal or geographical proper names, such as Boucard's Tinamou, Mexican Thick-knee, and Wagler's Oropendola, that Eisenmann discarded in favor of descriptive ones. It must be admitted that Slaty-breasted Tinamou, Double-striped Thick-knee, and Chestnut-headed Oropendola are rather cumbersome mouthfuls, and they certainly have not caught on at all well. Thus in reverting to the older and more familiar names, Russell has the forces of both precedence and usage in his favor. As I have commented elsewhere, trying to get us bird folk to discard established vernacular names is well nigh hopeless.

In the matter of species recorded without substantiation by British Honduras specimens, the author virtuously and dutifully relegates 36 of these to the "hypothetical" category. These he encloses in brackets in their normal systematic position, and he gives the available data for each so the reader may evaluate them. Unfortunately he attempts to assess their validity himself by listing (p. 125) the 26 of them he considers "reliable." Of course this is tommyrot—if a record is hypothetical it isn't reliable, and if it is reliable it isn't hypothetical.

Three of his 26 species I would not have considered hypothetical in the first place—the occurrences of the Great Blue Heron, Caspian Tern, and Common Tern are each authenticated by several recoveries in the area of birds banded in North America. Two others, the Striped Cuckoo and Orange-crowned Warbler, were netted, banded, and released by his colleagues, who were certainly competent to identify them in the hand, and probably unaware that no British Honduras specimens existed. Most of his other 21 "reliable" species are based on recent sight records by himself and his colleagues from Louisiana State University.

Of the ten hypotheticals he thus rejects, five are manifestly misidentifications or otherwise unfounded. The remaining five are again sight records by capable, though long deceased field men, N. S. Goss and M. E. Peck. Goss was before my time, but I can't imagine a man of his experience misidentifying a flock of Green-winged Teal. I knew Morton Peck, who was a botanist as well as an ornithologist, to be a careful, conscientious field man. He was thoroughly able to identify White Pelican, Black-billed Cuckoo, Burrowing Owl, and Piping Plover, and he would not have reported them without being certain of them. In the absence of specimen verification I cannot see that the Goss and Peck sight records are any less "reliable" than those by the author and his friends. But for my money they are still sight records, subject to possible error, incapable of being verified, and as such just plain, unmodified hypotheticals.—O. L. Austin, Jr.

43. Song and Garden Birds of North America. Alexander Wetmore. 1964. National Geographic Society, Washington, D. C. 400 pp., 555 illustrations (509 in color). Price \$11.95. Over the past decade there has been a steady flow of bird books: field guides, birds of a certain group or geographical area, textbooks, and the like. The present book is strictly for the laity because in it "... you can look up any of 327 species—nearly all that breed north of Mexico—study its picture, and learn its life history, breeding and wintering ranges, and characteristics." To achieve this goal Dr. Wetmore and 14 other prominent ornithologists have combined their scientific and literary talents in this fascinating treatise, illustrated with some of the finest of modern photographs.

One is immediately overwhelmed by the beautiful color photographs by such experts as Eliot Porter, Frederick Kent Truslow, Allan D. Cruickshank, and others. Supplementing these are attractive paintings by Allan Brooks and Walter Weber. Four of Mr. Porter's photographs appear to be the same as those used in *The Birds of Arizona* (Phillips, Marshall, and Monson. 1964. Univ. Ariz. Press). No doubt Dr. Wetmore and his staff were painstakingly careful in selecting the illustrations for the book, because not only are the colors accurately portrayed but also each bird has generally been shown to best advantage for identification purposes.

The introductory chapter, entitled "The Way of a Bird," is a lucid compendium of modern ornithology. It touches upon a variety of subjects ranging from anatomy to behavior, egg colors, feeding, and migration. The following 30 sections of various lengths are devoted to specific birds (Coppery-tailed Trogon), groups of birds (sparrows and buntings), or families. For each species there is a biographical sketch, usually less than one page in length, covering habits, nesting, range, and characteristics. Other chapters deal with the general topics of courtship and nesting, behavior, and field identification. This last chapter, entitled "What Bird is That?" and prepared by Roger Tory Peterson, is a kind of instruction guide to bird identification.

Finally, the book contains one of the most attractive features I've ever seen, that extra dimension of ornithology, namely bird song. A small album of unbreakable records is included in a tuck-away pocket at the back of the book. The 70 birds recorded thereon are selected from the book and are so arranged and numbered that a listener can quickly turn to the species account, read about the bird, see its picture, and hear its song all at once! The fidelity of the recordings is on par with the excellent text and illustrations.

Undoubtedly the designers of this book had difficulties in determining what species to include. Just what is a "song and garden bird?" They consider hummingbirds, kingfishers, and woodpeckers as "garden birds," but by the same token, why were cuckoos, goatsuckers, and doves not included? Considering the likely audience, I wonder about the inclusion of such rarities (in North America) as McKay's Bunting, Worthen's Sparrow, European Goldfinch, Fieldfare, and some others. The neophyte is apt to be perplexed when he finds that Indigo, Lazuli, Painted, and Varied buntings are not in the section entitled "Sparrows and Buntings," but rather are found with the "Cardinals, Grosbeaks, and Finches."

The Society is to be congratulated for making available this striking popular account of song and garden birds. We anticipate with pleasure the appearance of a companion volume on water, game, and predatory birds.—David W. Johnston.

44. Studies in the Life History of the Song Sparrow. Margaret Morse Nice. 1964. Vol. I and II. Dover Publications Inc., 180 Varick St., New York 14, N. Y. Price \$1.75 each. Considered by many ornithologists to be *the* definitive life history study of a bird, these two volumes have now been faithfully reprinted by Dover. Since they have been out-of-print for many years, it is a pleasure to find them once again available, especially at such a nominal cost.—David W. Johnston.

45. An Introduction to Bird Life for Bird Watchers. Aretas A. Saunders. 1964. Dover Publications, Inc., 180 Varick St., New York, N. Y. 256 pp. Price \$1.00. "This Dover edition . . . is an unabridged and corrected republication of the work first published by Doubleday and Company in 1954 under the former title: *The Lives of Wild Birds*." Readers should be reminded of the subjects covered—identification of birds in the field, keeping notes and records, migration, nesting cycle, plumages, bird behavior, songs and calls, food, ecology, and conservation. It is an interesting little book, lucidly written, and illustrated with line drawings by Dominick D'Ostilio.—David W. Johnston.

46. The Breeding Biology of the Acadian Flycatcher. R. E. Mumford. 1964. *Misc. Publ. Mus. Zool., Univ. Mich.*, No. 125, 50pp. The flycatchers of the genus *Empidonax* include a number of species that are so similar in general appearance that they cannot be identified in the field with certainty. In attempting to work out relationships in a group of this kind, it is essential to consider the comparative biology of the species involved as well as their detailed morphology. The paper under review represents an important contribution to our knowledge

of the breeding biology of the Acadian Flycatcher (*Empidonax vireescens*). The information was gathered at the Edward S. George Reserve near Pinckney, Michigan, in the breeding seasons of 1955, 1956, and 1957. A number of individuals were netted and color-marked for individual identification. Since there is no sexual color dimorphism in this genus, it was possible by this method to ascertain unequivocally the roles of the sexes in carrying out the various activities connected with the breeding effort, thus enhancing the value of the study considerably. Males arrived on the study area between May 10 and 17. Thirteen territories averaged 2.4 acres, ranging from 1.3 to 4.0 acres. Songs and calls are described. Hostility between members of a pair, first described for the Western Flycatcher (*E. difficilis*), was also found in some pairs of the Acadian Flycatcher. It seems likely that long-term studies such as this will indicate such behavior for most, if not all, of the species of *Empidonax*. The female does most, if not all, of the searching for a nest site, and she alone constructs the nest. Occasionally a nest from a previous season is refurbished and used. Of 25 clutches in which all eggs were marked, three were of two eggs, 21 were of three, and one was of four. Eggs were laid one day until the clutch was complete. Nests are occasionally parasitized by the Brown-headed Cowbird. Only three of 48 eggs which were incubated until normal hatching time failed to hatch. Incubation periods were 14 days at five nests, 14.5 days at one, and 15 days at two. Attentiveness averaged 73.4% of a total observation time of 93 hours, 16 minutes, at seven nests. A detailed, day-by-day description of the nestlings is given, including growth rate for the first 12 days. Feeding of the young was shared about equally by the members of a pair and both parents removed fecal sacs. Of five broods fledging normally, three left the nest on the thirteenth day, another on approximately the same day, and one on the fourteenth day. Brooding was done by the female only and was not observed after the ninth day of nestling life. Young left the nest either by flying directly from it or by hopping to a nearby branch and flying from there. Fledglings caught insects by the eighth day out of the nest but they were fed by the adults for at least 14 days. The birds leave the breeding area in August and early September.

This brief review presents only the very basic findings that resulted from this study; there is considerable additional information on a variety of other subjects. As more information becomes available on the *Empidonax* flycatchers, it becomes increasingly evident that the general pattern of the breeding biology (exclusive of vocalizations) of the various species is remarkably similar, with interspecific differences in rather minor details only.—John Davis.

47. Predators and Anti-predator Behaviour of the Black-headed Gull (*Larus ridibundus* L.). H. Kruuk. 1964. *Behaviour*, Supplement XI. 129 pp., 22 photographs, text illustrations. 36 guilders. This paper presents a wealth of information on the reactions of Black-headed Gulls to predators and their reactions to the defense mechanisms of the gulls. It is based upon extensive observations in the gullery at Ravenglass, in northwest England, during the breeding season. (The Ravenglass colony is on dunes along the coast, an unusual site for a breeding colony of European Black-headed Gulls. It seems likely, however, that the behavior of the Ravenglass birds is more or less typical of the species.) Field observations were supplemented by simple experiments, such as presenting eggs to predators outside the colony and presenting models of predators to gulls within the colony.

Interactions were observed between Black-headed Gulls and Carrion Crows (*Corvus corone*), Herring Gulls (*Larus argentatus*), Lesser Black-backed Gulls (*L. fuscus*), Peregrine Falcons (*Falco peregrinus*), harriers (*Circus* spp.), Oystercatchers (*Haematopus ostralegus*), Coots (*Fulica atra*), European Foxes (*Vulpes vulpes*), Stoats (*Mustela erminea*), and European Hedgehogs (*Erinaceus uropaeus*). Some of these species prey almost exclusively on eggs and chicks; one (the peregrine) preys exclusively on adults; and the others take both adults and chicks.

Kruuk demonstrates that Black-headed Gulls usually react differently to different predators. In some cases, they also react differently to the same predator in different situations. He suggests that all the anti-predator behavior patterns are composed of the same elements: "attack, fleeing, exploration, social attraction, and attraction to the nest-site." The observed differences between patterns seem to be due to variations in the strength of these basic components.

Kruuk concludes that all the anti-predator responses are adaptive and have survival value. Of course, this might have been assumed on general principles (it is difficult to imagine how or why they could have been evolved if they were not advantageous). Nevertheless, it is gratifying to see all the detailed supporting evidence assembled in this paper.—Martin H. Moynihan.

48. Wild Fowl Decoys. Joel D. Barker. 1964. Dover Publications, Inc., New York, N. Y., republication of 1954 edition; xxvii + 156 pages, 140 plates, 4 in color. Paperbound. Price \$2.75. A small edition of this unique treatise on the development, manufacture, and use of duck, goose, shore bird, and other decoys in North America was first published in 1934. By then market-hunting had been outlawed for three decades and shore bird-gunning for almost two. The handmade duck decoy was long a thing of the past, replaced by standardized, machine-made replicas, and shore bird decoys were not produced at all. The author, by profession an architect and by avocation a sportsman who had been making his own duck decoys for years, was one of the first to recognize decoy-making as a vanishing folk-art and to start collecting representative examples of it. In this volume he combines his flair for writing and fine draftsmanship to tell the story of the development of the wild fowl decoy from its crude beginnings among prehistoric Indian tribes to its peak of perfection in the late 19th and early 20th centuries by such craftsmen as the Crowells of East Harwich, Cape Cod, to name the ones most familiar to me of the many he mentions. The illustrations are drawings and photographs of decoys from his collection, which was probably one of the most comprehensive ever made, and included examples from all the well-known wild-fowling centers from Maine southward along the Atlantic coast to the Mississippi delta. It is a fascinating bit of ornithological folk-art and history well worth preserving for posterity.—O. L. Austin, Jr.

49. The World of Birds. James Fisher and Roger Tory Peterson. 1964. Doubleday and Co., Inc., Garden City, N. Y. 288 pp. 9½ x 13 inches. Price \$22.95. Upon first hearing the title of this book, one's thoughts probably turn to the two previous major publications on the world's birds: Gilliard's *Living Birds of the World* (1958) and Austin's *Birds of the World* (1961). The present volume, however, is not only organized differently from these two books, but it also has a different approach. The authors' stated objective is to analyze the galaxy of 8,580 species using "... important approaches that have inspired ornithologists through the years." These "approaches" are embodied in the first seven chapters whose titles include: How Birds Live, Birds of the Past, Bird Society, and others. The combination of clear writing and colorful illustrations admirably communicate to the reader salient aspects of the "approaches."

Page after page of the first seven chapters contain the brilliant illustrations of Peterson. Occasionally one gets the impression that a particular subject is over-illustrated, but more often than not the birds depicted, though numerous, adequately supplement the text by showing relevant variations. In fact, it is easy to become engrossed with the illustrations at the expense of the readable text.

The critical reader will discover some inconsistencies from one part of the book to another. On page 41 one finds that the wing of *Archaeopteryx* "... with primary flight feathers (8) attached to hand and wrist ... is just like many a modern bird's wing." But on page 16 there appears the statement that "no normal flying bird has less than nine primaries . . ." While *Archaeopteryx* probably was not a normal flying bird, still its eight primaries are unique among birds (with the exception of *Porzanula*). "Deserts, tundras . . . support less than one bird to the acre . . ." (p. 73), but "some Alaskan and Canadian rich tundras support from 200 to 530 (birds per hundred acres) . . ." (p. 112). On page 144 one learns that "ornithologists know the colors only of birds which lived after this date (1600)," yet Chapter III (Birds of the Past) contains five pages of Peterson's vivid paintings of fossil birds. Many of these illustrated forms possess not only elaborate color patterns of plumage but also colors of soft parts, such as wattles, feet, bills—and even the iris of *Tilanus walleri*, known only from a tarsometatarsus and phalanx! Some might argue that this is artistic license, but at least the reader should be reminded that these are merely artistic reconstructions.

As might be anticipated in a book of this range there are errors in facts. Contrary to the statement on page 15 that a Ruby-throated Hummingbird can fly up to 60 mph, Greenewalt (1960) ably demonstrated that "top speed for the female

ruby throat corresponds to a wind velocity of about 27 miles per hour." It is disturbing to note on page 18 that testes "lie over the kidneys," yet the ovary "lies between the kidneys," when indeed neither of these two statements is accurate. The sentence (p. 18) that "a bird's heart and blood system is more reptile-style than mammal-style . . ." would be most difficult to substantiate. The nostrils of woodcock and snipe are not at or near the tip of the bills as is implied on page 21. The Cattle Egret was not first seen "in Florida in 1941 or 1942" (p. 77), but, according to reliable published sources, about 1951 or 1952. Certainly the following statement (p. 15) should never have slipped by: "Birds were the fastest animals until aircraft reached 195 m.p.h. in 1920."

One of the most valuable parts of the book is Chapter VIII (The Regiment of Birds). Nearly 100 pages are devoted to maps showing the breeding distribution and fossil distribution of the 200 families of birds. For each family no characteristics (except for a silhouette) are given but included are the geological period when a member of the family first appeared, the number of genera (living and fossil), the number of species (living and fossil), and probable place(s) of origin of the family. Many an ornithologist will find these family maps extremely useful, though some errors or omissions have been detected. For example, the symbol for fossil auks is missing for Florida. On page 170 the Pandionidae is said to be "cosmopolitan" when actually the map shows the family to be distributed in the breeding season over only about one-half of the earth's land surface.

The final chapter treats Birds and Men or conservation, and, again, the subject is well presented. Lists of rare and extinct species are given. There is, finally, a bibliography or a "guide to further reading . . . selected with great difficulty, as much fine work has had to be omitted for reasons of space." Principal journals and societies found in major geographical sections are also included, though, here again, the list is a selective one, and this reviewer was disturbed to find *Bird-Banding* misspelled as well as the Cooper and Wilson Societies inaccurately termed "Clubs."

In spite of these few errors that some might consider to be inconsequential, there is no doubt that this grandiose volume will be well-received among bird-enthusiasts. It will, I feel certain, take a prominent place among the other outstanding ornithological works of the same scope. Certainly much time and research has gone into the assembling and preparing of data and illustrative material for the book.—David W. Johnston.

50. The Status of Ornithological Literature, 1964. (Studies in Biological Literature and Communications, No. 4). Paul H. Baldwin and Donald E. Oehlerts. 1964. Biological Abstracts, Inc., Philadelphia, Pennsylvania. 53 pp., 1 fig., 7 tables. Some years ago the Research Committee of the American Ornithologists' Union requested that a survey of the current world literature of avian biology be made. The present spiral-bound booklet is the result of the survey and ". . . attempts to list the most important serial publications, the coverage of these titles by the major indexing and abstracting services, and the locations of the best ornithological collections in the United States." The data presented herein (mostly in tabular form) will help each of us to evaluate his own coverage of the avian literature and will aid libraries in assessing their holdings.—David W. Johnston.

51. Life Histories of North American Jays, Crows and Titmice. Part I and II. Arthur C. Bent. 1964. Reprinted by Dover Publications, Inc., New York, N. Y. 495 pp. \$2.50 each. Part I includes the corvids through the Southwestern Raven (*Corvus corax clarionensis*)—214 pages. Part II concludes the corvids and contains all the Paridae. Appropriate plates are found at the end of each part, and the index is at the end of Part II.—David W. Johnston.

52. Life Histories of North American Cuckoos, Goatsuckers, Hummingbirds, and Their Allies. Part I and II. Arthur C. Bent. 1964. Reprinted by Dover Publications, Inc., New York, N. Y. 506 pp. \$2.50 each. With a few minor exceptions these paper-backs are faithful reproductions of Bent's work published in 1940 as Bulletin 176 of the U. S. National Museum. Part I contains pages 1 to 244 (through *Chordeiles minor aserriensis*) and Part II contains pages 244 to 506. Plates are assembled at the end of each part, but the index for both parts is found at the end of Part II.—David W. Johnston.

53. Geographic Variation in the White-crowned Sparrow *Zonotrichia leucophrys*. Richard C. Banks. 1964. *Univ. Calif. Publ. Zool.*, **70**: 1-123. Ever since Grinnell in 1928 named the Puget Sound White-crowned Sparrow, *Zonotrichia l. pugetensis*, as a race separate from the Nuttall's White-crowned Sparrow, bird-banders in coastal California have been plagued by the thought that they may be trapping members of two races of White-crowned Sparrow without knowing for certain to which race a given bird belongs. This nuisance to the conscientious bird-bander, however, is a most interesting phenomenon to students of taxonomy and evolution: in the species *Zonotrichia leucophrys* the pattern of morphological variation is highly complex and ill-defined. It does not fit most of the text-book generalizations about geographic variations. That is one conclusion presented by Richard Banks in this impressive monograph. Banks' thorough and painstaking analysis presents an exceedingly complex picture of variation in external morphology, not only between such closely related forms as *nuttalli* and *pugetensis*, but also between other population clusters within this wide-ranging species.

In the very vagueness of the differences Banks has analyzed, and in the lack of geographical patterns, lies one of the most interesting aspects of this much-studied species. Not until Banks took the pains to scrutinize all the available museum specimens could we be sure that the baffling and ill-defined picture of variation in external morphology is real. Unsatisfactory though this may be to those who want a neat picture, it is philosophically satisfactory, viewed in the light of the probable recency of the morphological differentiae, and their combination with more trenchant differences in physiology and behavior. It is time that the variation in morphological characters is given the attention it merits. Banks has done this.

Banks measured 1,928 specimens as to length of wing, tail, bill, tarsus, and middle toe, and determined the ratio of tarsus length to wing length. He analyzed body weights of males. He investigated variations in color of rump, bend-of-wing, and lore. He defines five classes of color of bend-of-wing, and three classes of lore color. In the study of molt and aging, he sets up five classes of crown color.

Banks gives the usual data on standard deviation and standard error of the mean. He uses the coefficient of variation to express and compare the intrapopulation variation in measured characters, and the coefficient of difference, as defined by Mayr, Linsley, and Usinger, to express interpopulational variation.

Altogether, 62 populations of White-crowned Sparrow are analyzed. Throughout the monograph Banks avoids groupings corresponding to the races as at present constituted; instead, he groups the specimens into five clusters of populations: Pacific Coastal, Montane, Alaskan, Rocky Mountain Intergrade Series, and Trans Canadian populations. The analysis of each of the five groupings includes a section on interpopulational and intrapopulational variation in each mensural character, followed by a section on color.

There follows a section entitled "Review of Variation Within the Species." The general reader is advised to read this section first. The next section on "Relationships of the Forms" is followed by a summary of the main conclusions.

From the welter of detailed analyses emerge some facts and conclusions which the reviewer found especially interesting:

1. *Z. l. oriantha* is not sufficiently different from *Z. l. leucophrys* to warrant a separate subspecific name, and *oriantha* should be considered synonymous with *leucophrys*. The proposed trinomial, *nigrilora*, is rejected for the birds of eastern Canada. Hence if we follow Banks, the number of races of this species would be reduced to four.

2. The arguments of Swarth and Grinnell as to whether *gambelii* should be accorded specific rather than subspecific status are reviewed but left unresolved. Banks follows Grinnell's opinion that in the present state of knowledge the forms are best considered subspecies.

3. Banks takes up, one by one, the rules which attempt to correlate patterns of intraspecific variation with variations in climatic conditions, and shows that none of these except Gloger's rule that reddish phaeomelanins increase in more arid parts of the range of a species, applies to White-crowned Sparrows. Thus, study of this paper is a good antidote to the temptation to generalize; neither Bergmann's, Hamilton's, nor Allen's principles apply to this species. (The author

points out, however, that there is actually little apparent climatic variation in the range. Moisture, hence a cool climate, is achieved in different ways in different parts of the range—on the Pacific Coast by fog, in the northern parts of the range by rainfall, and in the high mountains by nearness to running streams.)

4. The most reliable character for distinguishing *pugetensis* from *nuttalli* is the greater tarsal length of the latter.

5. Even with the objective analysis made possible by the spectrophotometer, Banks finds no clearcut geographic variation in color of rump such as exists between Rand's "redbrown" and "olive" designations. Such a distinction is possible only if the upper back is included.

6. By logic and comparison with other passerine species, Banks concludes that some of the southern populations on the Pacific Coast completely replace the crown feathers in the first prenuptial molt. Hence, even in *nuttalli*, one cannot use crown color to separate with certainty all first year from all older birds.

Banks considers untenable the scheme proposed by Rand (1948), who postulated that the presently discontinuous variation of loreal color and back color were at one time polymorphs in a continuous population. He proposes an alternative history of the forms. (p. 115-116). The reviewer confesses that she finds parts of the argument hard to follow. We wish the author, having assumed an adaptive polymorphic value in loreal color, had gone on to propose some mechanism whereby the loreal color might be subject to selective pressures.

If one were to be supercritical of an obviously sound and useful work, one might say that this paper suffers from one of its virtues. The mass of detailed observation is so great that it is hard to see the woods for the trees. In spite of the many excellent figures, much that is pertinent to problems which should be the concern of modern biologists may go unnoticed, buried in the mass of detail.

Depending on one's temperament and degree of sophistication in studying variation in populations of native vertebrates, one may be intrigued, baffled, frustrated, or inspired by the complex picture of variation presented by Banks. The reviewer, having experienced all these emotions at one time or another with respect to this species, congratulates the author on his detachment and objectivity. His consistent use of population clusters divorced from the presently constituted races is particularly commendable.—Barbara Blanchard DeWolfe.

XIV INTERNATIONAL ORNITHOLOGICAL CONGRESS, GREAT BRITAIN, 1966

The dates for the Congress have been fixed as follows:

Scottish Study Cruise:	16-23 July 1966 (inclusive)
Scientific Meeting in Oxford:	24-30 July 1966 (inclusive)

The Congress is open to all ornithologists over the age of 18 years.

The Study Cruise, on the 12,800 ton liner "DEVONIA", of the British India Steamship Company, will leave from Glasgow, sail round the North of Scotland and its seabird islands, and end in Edinburgh. Parties will be landed on some of the islands. Accommodation on board will be in a limited number of 1-, 2-, 3-, and 4-berth cabins, and in dormitories. A special night train will convey members from Edinburgh to Oxford, where they will arrive during the course of the Sunday morning, 24 July.

Accommodation in Oxford will be arranged in University Colleges, or, if desired, a list of hotels will be supplied. After a formal opening on the Sunday evening, 24 July, the rest of the week will be devoted to scientific meetings. These will consist of Plenary Sessions in the mornings, at which invited speakers will review recent advances in selected fields of ornithology, and of sectional sessions in the afternoons, at which short, offered papers will be read. In addition there will be exhibits, a whole day excursion, film shows, and a Social Centre for informal contacts.

Members may apply for either: both the Oxford meeting and the Study Cruise, or: the Oxford meeting only. Application forms, with full details, can be obtained from: