## RECENT LITERATURE

Edited by JACK P. HAILMAN

## BANDING AND LONGEVITY

(See also 23)

**1. Sixteenth annual report of the Australian Bird-banding Scheme, July 1969 to June 1970.** D. Purchase. 1971. *Div. Wildl. Res. Tech. Paper No.* 22., *C. S. I. R. O. Melbourne*, 78 pp.—This is another of the series of fine banding reports produced by the Scheme. The introduction summarizes progress on a number of banding studies and notes some of the more interesting recoveries obtained during the period covered by the report. A most useful feature is a bibliography that lists a large share of recently published papers dealing wholly or in part with banding of Australian birds.

Most of the information is presented in three tables. The first lists by species the total number banded and recovered, listing separately the number banded as non-flying young. Totals are given for both 1969-1970 and for the total banded since the inception of the Scheme in 1953. During 1969-1970 a total of 72,437 birds of 387 species was banded, bringing the grand total since 1953 to 934,190 birds of 680 species. Birds banded most frequently in 1969-1970 include the Eastern Silvereye (*Zosterops lateralis*) (7,475), Pied Cormorant (*Phalacrocorax varius*) (5,848), Crested Tern (*Sterna bergii*) (5,434), and Stubble-quail (*Coturnix pectoralis*) (5,373). As of this report, the silvereye was the only Australian species of which over 100,000 had been banded.

The second table presents full data on 205 selected recoveries from 77 species that were reported since 1 July 1970, and comments on their significance are given. More than a quarter of these recoveries are of seabirds and should interest ornithologists studying their distribution and dispersal.

The third table lists longest elapsed time between banding and recovery for 52 selected species and also lists age at banding and the annual report in which full recovery data were published. Through 30 June 1970 the greatest elapsed times were 15 years, 1 month, and 12 days for a Wandering Albatross (*Diomedea exulans*) banded as an adult, 14 years, 8 months, and 10 days for a Straw-necked Ibis (*Threskiornis spinicollis*) banded as a nestling, and 14 years, 7 months, and 16 days for a Pied Goose (*Anseranas semipalmata*) of unknown age when banded. The greatest elapsed time for a passerine was 11 years, 11 months, and 9 days for a Black-backed Magpie (*Gymnorhina tibicen*) banded as an adult.—Roger B. Clapp.

**2. Bird ringing in Senegal 1969-1970.** G. Jarry. 1970. *Ring*, **6**(64-65): 67-68.—Expeditions sent by the French Centre de Recherches sur les Migrations des Mammiferes et des Oiseaux of Paris banded 1,330 birds of 68 species in 1969 and 2,712 birds of 42 species in 1970. A total of 21 birds banded in Europe, 15 of them Sand Martins (or Bank Swallows, *Riparia riparia*), were caught in 1969 and 1970. Banding and recovery data are given for the 13 birds, 9 of them Garganey Teal (*Anas querquedula*) that were banded in Senegal and subsequently recaptured in Europe.—Roger B. Clapp.

**3. Preliminary report on bird banding in New Zealand 1964-1971.** C. J. R. Robertson. 1972. *Notornis*, **19**(1): 61-73.—This brief paper consists primarily of three tables. The first lists by species the numbers banded, recovered, and the number of extra recoveries for birds previously recovered for the period from 1 April 1964 through 13 March 1971 and includes as well totals for previous banding activities. To date, more than 537,000 birds have been banded, a large number (283,385) of them from 1964 through 1971. Totals for many gamebirds, however, are omitted or inexact.

Two subsequent tables list a provisional summary of banding and recovery totals and a selection of "interesting recoveries" received 1964-1971. The latter lists species, band number, often imprecise banding and recovery localities (*e.g.*, south Indian Ocean, Argentina) and dates, and age (*i.e.*, period between banding and recovery) and distance traveled. Examination of the table suggests that the principal interest in these recoveries is either the distance traveled or the "age"

of the bird. The paper would have been more valuable had some discussion of the significance of these recoveries been included in the text. At worst, a more informative system of presenting recovery data (such as that used in *The Ring*) should have been utilized.

It would also have been helpful if scientific names had been given. As it is, the list of 173 "species" banded to date is evidently the result of a most liberal taxonomic policy. The list includes within it as distinct such curious species as "Mallard cross" and "Duck, Grey or Mallard" as well as separate entries for a number of forms (*e.g.*: the North and South Island Fantails, *Rhipidura fuliginosa* subsp.) which most taxonomists consider only subspecifically distinct.—Roger B. Clapp.

**4. Iowa bird banding summary for 1971.** D. M. Roosa. 1972. *Iowa Bird Life*, **42**(1): 17-20.—Species totals are given by common name and a list is presented of Iowa banders with a total for each of the number of individuals and species banded. This paper is yet another example of the many banding reports that have neglible scientific value and whose sole function is apparently the promotion of the "ring and sling" approach to banding.—Roger B. Clapp.

**5. Cormorant ringing in Saskatchewan, Canada.** C. S. Houston. 1971. *Ring*, **6**(67): 125-128.—Additional information on banding of the Double-crested Cormorant (*Phalacrocorax auritus*) is given (*cf.*, review no. **1** in *Bird-Banding*, **43**(1): 57, 1972). Banding totals are given for colonies at various lakes for from one to four year periods from 1923 through 1969. For each period, percentages are calculated for the proportion recovered, for the proportion of these recovered within six months of banding, and for the proportion that were reported as shot. Overall, 14.2% of 4,838 birds banded were subsequently recovered, but the recovery percentages during the 1950's and 1960's have tended to be lower. Calculations from figures presented by the author reveal a recovery rate of 17.2% for the 3,119 birds banded through 1949 and a rate of 8.8% for 1,720 birds banded thereafter. For the same two periods the proportion of recoveries reported as shot was respectively 59.9% and 55.3%.—Roger B. Clapp.

**6. Two unusual albatross recoveries.** C. J. R. Robertson. 1972. *Notornis*, **19**(1): 91.—The band and leg bone of a Royal Albatross (*Diomedea epomophora*), banded as a chick at Campbell Island, 23 May 1970, were recovered at Temitangi, Tuamotu Archipelago about the middle of 1971. A Wandering Albatross (*Diomedea exulans*), banded as a nesting adult on Antipodes Island, 1 February 1969, was recovered dead at Taiaro Island, Tuamotu Archipelago in late December 1971.—Roger B. Clapp.

**7. Sexing Red-billed Gulls from standard measurements.** J. A. Mills. 1971. *N. Z. J. Mar. Freshwater Res.*, **5**(2): 326-328.—Measurements were made of freshly killed specimens of 88 male and 77 female *Larus novaehollandiae* from breeding colonies on the Kaikoura Peninsula, New Zealand. Bill length and depth at gonys were found most useful for sexing adults. Utilizing a discriminant function, 90. 1% of the gulls with measurements falling into the range of overlap could be sexed with a 99% confidence interval. Male values were above and female below 22.875 when bill length (in mm.) multiplied by .26012 was added to bill depth at gonys. Depth at gonys was measured vertically from the point of inflection on the mandible to the upper edge of the maxilla and bill length was measured in a straight line from the tip to the outer edge of the gape.—Roger B. Clapp.

**8. Trapping ducks with a floating clapnet.** F. J. Koning. 1970. *Ring*, **6**(64-65): 65-66.—This brief note describes and figures a net with which the author and his associates were able to capture 1,200 Tufted Duck (*Aythya fuligula*) ducklings over a period of seven years in the Netherlands.—Roger B. Clapp.

**9. Yellow-eye Canary: longevity in captivity.** R. Liversidge. 1971. *Ostrich*, **42**(2): 143.—A Yellow-eye Canary (*Serinus mozambicus*) was found with a broken wing 1 January 1954 at Bedford in the eastern Cape. It was still surviving at an age of at least 16.5 years in July 1970, but was then blind in both eyes.—Roger B. Clapp.

## MIGRATION, ORIENTATION, AND HOMING

(See also 6, 23, 25, 26, 31)

**10. Spring migration and weather in eastern Canada: a radar study.** W. J. Richardson. 1971. *Amer. Birds*, **25:** 684-690.—This short paper summarizes very briefly two springs' observations at two radar sites in New Brunswick and Nova Scotia, together with less detailed data from twelve other radar sites in eastern Canada. The main directions of flight were NE and ENE in the Maritime Provinces, but move to the north farther inland. NE movements were densest in the western parts of Highs and in the eastern parts and warm sectors of Lows; dense NE movements were also recorded on several occasions behind cold fronts, in cases when the winds there were from the W or WSW. Reversed (southward) migrations were frequent behind cold fronts when the winds there were from the NW or N.—I. C. T. Nisbet.

**11. Autumn migration and weather in eastern Canada: a radar study.** W. J. Richardson. 1972. *Amer. Birds*, **26:** 10-17.—This is another tantalizingly brief summary in which four years' observations at four radar stations are compressed into four pages of text and two pages of diagrams. The major findings are as follows. The main direction of movement was between SSW and WSW, including over-water movements from Newfoundland to Nova Scotia, from eastern Quebec to New Brunswick, and from Nova Scotia to New England. In addition, there were frequent over-water movements to the SE (attributed to shorebirds) and to the S or SSE (attributed to passerines). Reversed movements in directions between N and E were also frequent, at times far offshore. The shorebirds flew very high, regularly up to 15,000 feet and at times up to 21,000 feet. Birds from the SW movements which were over the sea at dawn reoriented to the W, NW or N, often gaining altitude as they did so; this reorientation was not seen in association with SE or S movements. Dense SW movements were seen in the east and central parts of Highs, but not close behind cold fronts; in contrast, dense S and SE movements were seen close behind cold fronts, and in the north and northeast parts of Highs. Reversed movements were closely associated with following winds. A unique observation is reported of birds moving rapidly northwards on the east side of a dissipating hurricane.—I. C. T. Nisbet.

**12. Tracking radar studies of bird migration in or near cloud layers.** T. C. Williams, J. M. Williams, J. M. Teal, and J. W. Kanwisher. 1971. Associate Committee on Bird Hazards to Aircraft (National Research Council, Ottawa), Field Note 58 (13 pp.).—This note presents data on nocturnal migrants observed with a high-precision tracking radar located on the coast of Virginia. Most of the tracked birds maintained constant direction and height under overcast skies, or even between two layers of cloud. Flying under overcast skies two birds, which descended to lower altitudes where the wind velocity was different, nevertheless maintained roughly constant tracks, although to do so they had to make substantial changes in their headings. In contrast, two birds flying between cloud layers appeared to maintain roughly constant headings as they descended into a different wind regime, so that there were substantial changes in their tracks. These preliminary data suggest that visual clues may be necessary for birds to correct for changes in the wind velocity.—I. C. T. Nisbet.

**13. Observations on the spring migration of Lesser Snow and Blue Geese through Southern Manitoba.** H. Blokpoel. 1971. Associate Committee on Bird Hazards to Aircraft (National Research Council, Ottawa), Field Note 56 (32 pp.).—The departure of some 650,000—1,000,000 *Anser caerulescens* from a staging area in southern Manitoba was tracked using a surveillance radar at Winnipeg International Airport. Most of the birds left during two nights, 15-17 May 1970, following a 10-day period of poor weather. Different populations appeared to fly in slightly different directions. The birds flew in a variety of wind conditions: ground speeds of individual flocks varied from 17 to 73 knots (31-134 km/hr), but air speeds were relatively constant (49-61 km/hr). On one night the geese flew consistently ENE, notwithstanding a change in wind direction.—I. C. T. Nisbet.

**14. An age differential of migrants in coastal California.** C. J. Ralph. 1971. *Condor*, **73:** 243-246.—Autumn migrants of three common species caught at Point Reyes Bird Observatory on the California coast included 94-96 per cent young birds. Those caught on the Farallon Islands, 25 km offshore, included 97-100 per cent young birds. Ralph reviews the various explanations put forward for the preponderance of young birds among autumn migrants on the East Coast, and suggests that genetically-induced navigational errors among young birds are the most likely explanation for the phenomenon in California.—I. C. T. Nisbet.

**15. The standard direction of the Scandinavian Chaffinch during autumn migration throughout its area of passage.** A. C. Perdeck. 1970. *Ardea*, **58:** 142-170.—The Scandinavian Chaffinch (*Fringilla coelebs*) is something of a classic example in the migration literature: a bird whose standard direction changes several times during the course of its autumn migration, from S or SSW in Norway and Sweden, through SW by S in Denmark and Germany, WSW in Holland, to W by N in northern France. In this paper Perdeck essentially ignores the extensive data on Chaffinch migration in the Scandinavian, German, and British literature, and reanalyses the problem on the basis of banding recoveries and of his own observations by standardized methods, carried out over a 10-year period in six countries. The results confirm the account given above in some detail, but it is doubtful whether the increased rigor of this demonstration justified the effort involved. The function of the circuitous migration may be to avoid long crossings of the North Sea.—I. C. T. Nisbet.

**16. Goal orientation versus one-direction orientation in Teal *Anas c. crecca* during autumn migration.** W. J. Wolff. 1970. *Ardea*, **58:** 131-141.—1426 Teal caught on autumn migration through the Netherlands were transported southwards and released in Switzerland. Most of the direct recoveries of birds transported as juveniles were near to a WSW-ENE axis through the release point, indicating a one-directional orientation by the juveniles (WSW is the normal direction of migration through the Netherlands). However, a surprising number of birds moved ENE (equivalent to reversed migration) after release. In contrast, five out of six of the direct recoveries of birds transported as adults were to the W or NW, indicating goal-orientation to the normal wintering range. In subsequent years recoveries of adults continued to be within the normal range, whereas those of birds transported as juveniles were generally displaced southwards, and possibly also eastwards. The difference between the behavior of adults and juveniles agrees with that found previously by Perdeck in Starlings and Chaffinches, but disagrees with that found by Rüppell in Hooded Crows.—I. C. T. Nisbet.

**17. The effect of directional training on initial orientation in pigeons.** J. R. Alexander and W. T. Keeton. 1972. *Auk*, **89:** 280-298.—Six series of experiments failed to show any consistent influence of the "training" of pigeons to home from one direction on their homing performance when subsequently released in another direction. Previous investigations of this effect have given conflicting results, but one rather convincing set of experiments (by Graue) has been described in the literature. Alexander and Keeton suggest that effects of training are not a general phenomenon.—I. C. T. Nisbet.

**18. Magnets interfere with pigeon homing.** W. T. Keeton. 1971. *Proc. Nat. Acad. Sci.*, **68:** 102-106.—This paper reports, somewhat too briefly, a complicated set of experiments which appear to indicate that magnets carried by pigeons sometimes—but not always—disrupt their homing performance. The effects of the magnets are additional to the effects of experience, training, distance of release, and visibility of the sun: no very clear pattern is evident. The most convincing evidence for the effects of magnets was obtained in releases of experienced birds under overcast skies, and of birds on their first homing flights under clear skies.—I. C. T. Nisbet.

**19. An examination of possible orientation of animals by the geomagnetic field. 1. Parameters adequate as fixed destination points for migrating and homing birds.** (K analizy vozmozhnosti orientatsii zhivotnykh po geomagnitnomy polyu. 1. Parametry dostatochnye dlya zadaniya finishnoi tochki pochtovykh i pereletnykh ptits.) A. Appenyanski and V. Pechurin. 1971. *Reactions of biological systems to weak magnetic fields* (Symposium), Moscow, 1971: 23-26. (In Russian.)—A theoretical analysis of possible avian orientation by the geomagnetic field finds no prospect of guidance by isodynes (lines connecting points of uniform field stress), since arrangement of the latter is mainly latitudinal, whereas migrant routes are largely longitudinal. Also rejected is the possibility of orientation by isoclines (lines of similar magnetic declination). Also considered is the possibility of defining definite points on the earth by magnetic stress only. The most suitable parameter for this should be magnetic declination relative to the plane of the horizon. However at least one stable point for each parameter is required, *e.g.*, the earth's gravity. Setting a destination point by coordinated magnetic declination to local gravity, we get a rough system of coordinates which would narrow down to three alternate or pseudo-destination points, since the number of theoretically possible points with the two parameters uniform on all the earth is four, *i.e.*, where isoclines cross geographic parallels. Experimental proof of this would be to observe migrant bird behavior at alternate theoretical (*i.e.*, pseudo-destination) points (if such can be found), particularly routes of homing pigeons released closer to pseudo-than to actual home destinations.—Leon Kelso.

## POPULATION DYNAMICS

**(See 24, 29)**

## NESTING AND REPRODUCTION

**(See also 30)**

**20. Some new perspectives on the breeding ecology of Common Grackles.** A. J. Erskine. 1971. *Wilson Bull.*, **83**(4): 352-370.—Erskine does indeed present several new perspectives on the study of grackle biology. This paper is a significant step toward a more accurate understanding of the Common Grackle on a continental scale. The usefulness of Nest Record Cards and Breeding Bird Survey data for assessing abundance in various parts of the range is examined. Not unexpectedly the measure designed to show general patterns, the Breeding Bird Survey, yields superior results. The pattern that emerges shows areas of peak density between 38 and 43° N on the Atlantic Coast and in the Mississippi Valley. Using these density data, the "main ranges" are plotted for four species: Rusty and Brewer's blackbirds, Common and Great-tailed grackles. Unfortunately he does not distinguish between the Great-tailed (*Quiscalus mexicanus*) and Boat-tailed (*Q. major*) grackles. The range of the Common Grackle is apparently bounded on the west at nearly the same area where the ranges of these two larger grackle species meet along the Gulf Coast. The largely allopatric ranges coupled with habitat considerations suggest competition among these species, and that a revision of the genus *Quiscalus* is in order. Similar analyses are carried out on nest-site selection, laying date, clutch size, and breeding success using Nest Record Card data from the Maritime Provinces of Canada. The biases inherent in using these data are pointed out. He postulates that laying dates are correlated with mean daily temperatures and that clutch size is inversely related to laying date. Erskine's findings are more in the order of hypotheses than discoveries. The paper represents a game plan more than a boxscore and raises numerous exciting questions for future work.—Paul B. Hamel.

**21. Incubation, care of young, and nest success of the Common Grackle (*Quiscalus quiscula*) in northern Ohio.** G. R. Maxwell, II, and L. S. Putnam. 1972. *Auk*, **89**(2): 349-359.—The authors of this work have, through painstaking observation, confirmed hunches of previous workers regarding these aspects of grackle breeding biology. They have, in the process, followed a case-

study approach rather than the population-orientation they profess at the outset. They begin by listing three problems of grackle biology: 1. Why the recent population increase? 2. What is the mechanism of blackbird flocking behavior? 3. How fast are the birds increasing and at the competitive expense of which other species? The paper that follows bears on none of these questions directly. Instead the authors provide a baseline set of data concerning the incubation and nestling periods that can be used in future studies. Their estimate of length of incubation at 13 days, 4 hours, is accurate, and future work will probably not improve on it. Their findings of decreased brooding by the female parent, increased rate of feedings, and decreased parental consumption of fecal sacs, as the young grow, are all as expected. While also expected, their postulate of negative correlation of incubation constancy with temperature is not as solidly evidenced in the data. Incubation constancy in Fig. 1 appears to increase as incubation progresses except for very warm days. Other factors need to be investigated in this regard, especially precipitation, wind velocity, and the wind-chill factor. They point out that attempting to measure nesting success in a grackle population often adversely affects that success. Their measurement of one-egg-in-three producing a fledgling is more reminiscent of a stable than an expanding population. The chief strength of this paper is the great amount of time spent observing a relatively few nests and the consequent sharp focus on the occurrences at those nests.—Paul B. Hamel.

**22. Some notes on the biology of the Spectacled Guillemot in South Primor.** (Nekotorye dannye o biologii ochkogo chistika v yuzhnom Primore.) Y. Nazarov and V. Labzyuk. 1972. *Biol. nauki.*, **1972**(3): 32-35 (In Russian.)—Whereas not very rare in the Asiatic Far East, *Cepphus carbo* field observations are not substantial enough for comparison with those of related alcids. From colonies studied in islands on Peter the Great Bay (1963-1970), the following notes were added. Associated in small flocks of 20-120 at sea, pairing occurred in April; courtship pursuit by males is described. This continued until settled at nest sites, which were only 1-20 m above tidal level in rock clefts usually, or 120 m above on promontories. The eggs, two per clutch although previously reported as one, were laid on bare rock, often washed by tidal spray, in May and June. Their shape varied from elongate-elliptic to broadly ovate; most of them hatched in June. The young were active from two days onward, and observation of them was hindered by their hiding among rocks. The Jungle Crow, *Corvus macrorhynchus*, was their chief enemy.—Leon Kelso.

**23. Straw-necked Ibis (*Threskiornis spinicollis*) in South Australia: breeding colonies and movements.** M. Waterman, D. Close, and D. Condon. 1971. *S. Aust. Ornithol.*, **26**(1): 7-11.—A historical survey of colonies and an analysis of recent recoveries are presented. From 1963 through 1970, 16,631 ibis were banded at three localities, Bool Lagoon, Narrung Narrows, and Mullins Swamp. Sixty-three (0.51%) of the 12,333 birds banded at Bool Lagoon and Narrung Narrows before 1970 had been recovered through 23 July 1971. Analysis of these recoveries indicated a strong tendency to move toward the east and northeast with 29 of the recoveries occurring at distances of more than 500 miles from the natal colony. Birds more than six months old tended to be recovered at greater distances than younger birds. Only four of 14 recoveries of birds more than one year old were obtained within 500 miles of the colony of origin. Conclusions reached in this paper might have been strengthened had appropriate statistical tests been included.—Roger B. Clapp.

**24. Some breeding aspects of Herring Gulls at Kawinaw Lake, Manitoba.** K. Vermeer. 1971. *Blue Jay*, **29**(4): 207-208.—*Larus argentatus* was studied on two small islands during May and June 1971. Mean laying interval between eggs and mean incubation period were respectively 2.3 ± 0.6 (n = 62) days and 25.8 ± 0.1 (n = 67 ) days. Hatching success for 472 eggs was 69.9% with no significant difference being found between success early and late in the season. Hatching success of 132 eggs in three-egg clutches (67.4%) was significantly higher than that found in one and two-egg clutches (26.3% for 19 eggs). Data on egg length and width in relation to laying sequence are presented for a sample of 39 three-egg clutches.—Roger B. Clapp.

## ECOLOGY

(See 20, 26, 31, 33, 34, 36)

## WILDLIFE MANAGEMENT AND ECONOMIC ORNITHOLOGY

**25. Birdproofing aircraft.** Anonymous. 1970. *Science Dimension*, **2**(5): 12-14.—To reduce bird hazards to aircraft, the National Research Council of Canada engages in a birdproofing investigation program. The main research device is a pneumatic cannon that fires chicken carcasses and simulated birds at speeds up to 620 mph. International airworthiness test codes adopted a 4 pound bird as standard weight for impact tests on windshields, but the U. S. Federal Aviation Administration requires an 8 pound bird as standard. The present (1970) test placed a Tudor cockpit under temperature control to simulate flight conditions in front of the cannon muzzle. A stretched vinyl windshield of 11/16-inch thickness took the impact of a chicken carcass traveling at 212 mph. "The result: a foot-square hole in the windshield; chicken parts scattered in and around the fuselage; and an immediate start on planning for a further series of tests with a thicker windshield."—Leon Kelso.

## CONSERVATION AND ENVIRONMENTAL QUALITY

**26. Effect of PCB on nocturnal activity in caged Robins, *Erithacus rubecula*.** L. S. Ulfstrand, A. Södergren, and J. Rabøl. 1971. *Nature*, **231**: 467.—Migrant Robins were kept for about 13 days on a diet incorporating small quantities of polychlorinated biphenyls (PCB) and then tested in Emlen-cages. Their orientation did not differ from that of the controls, but their total activity is said to have been significantly greater. If valid, these results have serious implications: increased activity in migrant birds could lead to fatal navigational errors, and the doses of PCB were extremely small—lower than those to which many wild migrants are now exposed. Perhaps fortunately, however, the results are not very convincing: the measure of activity in an Emlen-cage is a subjective evaluation of the density of ink on paper, and the actual numerical estimates are not given. Clearly, the experiment needs to be repeated under more rigorous conditions.—I. C. T. Nisbet.

**27. Treatment of oiled birds in California.** Anonymous. 1971. *Marine Pollut. Bull.*, **2**(9): 132.—At a spill in San Francisco Bay in 1969, about 7,000 waterfowl of 40 species died. Of 4,500 birds brought in for treatment, only 300 were saved, of which only 100 could be released. Such high mortality points up the present lack of experience in cleaning and restoring the victims.—Leon Kelso.

**28. Successful cleaning of oiled birds in Holland.** D. van Kampen. 1971. *Marine Pollut. Bull.*, **2**(9): 140-142.—Through an accident at a local electric plant in 1971, on a bay between Maas and Vaal, swans, geese, ducks, and coot totaling about 10,000 were victims of an oil break, and several thousand died. Of about 100 taken to a rescue station, 30 died in transport. For treatment, a compound "Panoles" was spread on the plumage and rinsed off in water at 40°C for cleaning. While drying out, they were fed bread mixed with sunflower seed oil to clear the intestinal tract. Terramycin (0.1% solution, 10cc) was injected for antishock effect. A mixture of "Purcellin" (10-40%) and ammonia was applied to restore water repellence of plumage. After such treatment the birds were gradually accommodated to water in basins. They accepted vermicelli, macaroni, and spaghetti as food. Piramicidin in the drinking water controlled aspergillosis. Recovery percentage was 55%.—Leon Kelso.

## PARASITES AND DISEASES

**29. Retention of specific plague causative antigens in pellets of predatory birds.** (Sokhranenie spetsificheskogo antigena vozbuditelya chumy v pogadkakh khishchnykh ptits.) V. Lobachev and M. Linshiz. 1971. *Z. Zhurn.*, **50**(10): 1593, 1594. (In Russian, English summary.)— The prospects of use of

food remnant pellets, not only for prey population studies but for location of plague infestation centers, are being investigated. Using pellets of Little Owl, *Athene noctua* (n = 91), and Black Kite, *Milvus migrans* (n = 13), which had been fed white mice infected with plague causative agent of "EV strain," the material was analyzed by antigen neutralization and passive hemagglutination methods. The latter method was more sensitive, finding an antigen persistence of two days after disgorging of the pellets. The antigen persisted more strongly in the owl pellets, more in the fur than in the bones.—Leon Kelso.

**30. Some noteworthy records of cowbird parasitism in southern Alberta.** N. G. Kondla and H. W. Pinel. 1971. *Blue Jay*, **29**(4): 204-207.—Data are presented on the parasitism of 10 passerines by the Brown-headed Cowbird (*Molothrus ater*). The most unusual record is what is apparently the second instance of parasitism of the Dusky Flycatcher (*Empidonax oberholseri*). One of 62 (1.6%) Red-winged Blackbird (*Agelaius phoeniceus*) nests observed in 1970 was parasitized as compared with 17 of 32 (53.1%) Brewer's Blackbird (*Euphagus cyanocephalus*) nests observed in 1970 and 1971.—Roger B. Clapp.

## PHYSIOLOGY

(**See also 18, 19, 26, 33, 40**)

**31. Seasonal fluctuation of energy metabolism and thermoregulation in the starling.** (Sezonnye izmeneniya energeticheskogo obmena i termoregulyatsii u skvortsa, *Sturnus vulgaris*.) A. Davydov. 1972. *Zh. Evolyutsii Biokhimii i Fiziol.*, **8**(2): 203-205. (In Russian, English summary.)—Oxygen consumption of roosting Baltic latitude populations of the Starling varied along with body temperature according to seasons but not in close correlation with air temparature. Winter energy metabolism at −10°C was 15% higher than for the summer temperature of 20°. But at comparable temperatures, whether −10° or 20°C, oxygen consumption and body temperature were higher in summer by 20% or more than in winter. The argument offered is that in Baltic and north European areas daily energy expenditure is favored by shorter daylight, over twice less in winter than in summer. If the total energy requirement in winter is so much less than in summer this may induce Baltic wintering populations to stay in the north rather than follow other passerines migrating southward.—Leon Kelso.

## ZOOGEOGRAPHY AND DISTRIBUTION

(**See 36, 39**)

## SYSTEMATICS AND PALEONTOLOGY

**32. The plight of taxonomy.** E. O. Wilson. 1971. *Ecology*, **52**(5): 1.—This editorial acknowledging at last the long apparent decline in systematics' relative position, is peculiar in two respects: it is in the leading ecological journal on this continent, and is authored by an apparent non-taxonomist. The sentiment is expressed in the "jazz-age" song which admonished: "*Don't bring me 'posies' when its 'shoesies' that I need.*" Among various factors emphasized is the plight of museums which must house the collections, the types and typification, the basis of concepts of the numerous species described since ancient times. And this recalls the need of funds and professional positions for workers in this, the oldest branch of biological science. Regretfully here, there are parallels to the much discussed plight of the poor suffering human minority. He is asking for compassion in a situation in which little or none is prevalent. The leaders, the eminent ones, are never wrong, so it would seem (recalling poet Robert Burns' implication: not seeing ourselves as others see us). Those who have "arrived," or who "have it made," show little concern for the beginners or "climbers," except to ward them off. Promptly with emergence of xerox reproduction it is pronounced (by Crowson), no reason given, that such cannot be considered "scientific," whereas the

cost of printing our largest bird journal is now $36.50 per page. The decline of systematics means the drift of smaller into larger collections, where they are not much safer in light of upheavals and "burnouts," and fewer outside competitors for the curators thereof. But with the coming of an antitaxonomist into local power, as in case of the old Biological Survey, the big may be broken up and redistributed, if destruction by neglect and pests has not intervened. None of the big, healthy and wholesome, from that part of the country, ever admits being against taxonomy; he just wants it to be of the right kind. Recalling those who say: "*I don't know music but I know what I like*"; yet someone has to know one note from another if it is to be composed or played; so, if systematics or music is to rise above the level of the "tin ears," it must go beyond the "I like" standards. —Leon Kelso.

## FOOD AND FEEDING

**33. Energetics of foraging: rate and efficiency of nectar extraction by hummingbirds.** L. L. Wolf, F. R. Hainsworth, and F. Gary Stiles, 1972. *Science*, **176** (4041): 1351-1352.—The authors undertake to show how much energy in calories can be obtained from the flowers of three species of *Heliconia*: *tortuosa, rostrata, imbricata,* by three species of hummingbirds: *Phaethornis superciliosus, Thalurania furcata* (male), and *Amazilia tzacatl.* All three species were able to utilize one of the *Heliconia* species and one species of hummingbird could utilize all three species. It is made clear that the authors have only estimated the energy expenditure of the birds while the bill is inserted in the corolla and the energy obtained from the nectar in the same length of time. There are two tacit assumptions here: (1) the bird is drinking the whole time the bill is in the corolla; (2) the bird takes all the available nectar from each flower. The authors show to their satisfaction that each species of birds leaves a fixed amount of nectar behind and that the rate of secretion of nectar is a constant. Since the flowers, but not the birds, were numbered, they had an estimate of the amount of nectar available in each flower at the time of any visit. They do not, however, state clearly, although they must have done so, that they kept a record of the time intervals between visits to each numbered flower. The important table is the authors' Table 4, in which they give an equation for every combination of birds and flowers, in terms of calories expended during drinking and calories obtained. They do not in the literal sense state a measure of efficiency. The interesting thing about these equations is that each shows an intercept of the Y axis. This means that even if the bird obtains no nectar it does expend some energy in such a visit. The reviewer would prefer to state a cost/benefit ratio. If we ignore the Y-intercept, the cost/benefit ratio is the coefficient of X. These ratios are shown in the table below:

| | *Cost/Benefit Ratio* | |
|---|---|---|
| *H. tortuosa* | .10 | *P. superciliosus* |
| *H. rostrata* | .07 | *P. superciliosus* |
| *H. imbricata* | .11 | *P. superciliosus* |
| *H. imbricata* | .04 | *T. furcata* |
| *H. imbricata* | .08 | *A. tzacatl* |

The greater the relative benefit, the lower the ratio. It can be easily calculated that if the cost rises as high as 10, then the effect of the Y-intercept is negligible. The reviewer wonders whether it would not be possible to make these measurements in captivity in such a way that the actual weight of nectar taken up by the bird can be determined.—C. H. Blake.

**34. On food plasticity of young of insectivorous and granivorous birds.** (O kormovoi plastichnosti ptentsov nasekomoyadnykh ptits.) I. Prokofieva. 1971. *Biol. Nauki,* **14**(11): 14-19. In Russian.)—Among selected pairs of altricial passerine species of approximate size, broods were exchanged between nests for rearing by alien parents. Five young of uncertain age of Willow Warbler (*Phylloscopus trochilus*) were exchanged with four of Blackcap (*Sylvia atricapilla*). All survived, the former fledging in three, the latter in five days. Three 1-day young of Spotted Flycatcher (*Muscicapa striata*) were swapped for five 2-day young of Icterine Warbler (*Hippolais icterina*); the former departed after 12 days,

the latter after 9. Six 2-day Red-backed Shrike (*Lanius collurio*) were changed with six 1-day Redwing (*Turdus musicus*); the former departed after 10, the latter, 9 days. The food fed to the young shrikes by the thrushes was mostly earthworms, but adequate for them. Four 5-day young of Spotted Flycatcher were swapped for four 4-day young of Whinchat (*Saxicola rubetra*); both broods survived. Five 3-day young of Blackcap in a nest of Spotted Flycatchers did not survive five days; the insect food was supposedly too coarse. Three 6-day young of Willow Tit (*Parus montanus*) placed in the nest of Redstarts (*Phoenicurus phoenicurus*) died in 7 days, supposedly for lack of their preferred caterpillars and spiders. Four 5-day young of Scarlet Grosbeak (*Carpodacus erythrinus*) were exchanged with four 5-day young of Whitethroat (*Sylvia communis*). Two of the latter died in two days, evidently unadaptable to seeds as food; the former brood grew and fledged successfully. Young insectivores' food plasticity did not extend into the granivorous range, whereas the reverse occurred, and substitution of coarse for soft insects was not survived.—Leon Kelso.

**35. Red-cockaded Woodpecker.** J. V. Dennis. 1972. *Natl. Parks*, **46**(4): 24-27.—The salient statement is that, oddly enough, *Dendrocopos borealis* utilized pine resin in a way unique among birds. It always starts a flow of resin in the immediate vicinity of a roosting or nesting cavity. It does this by drilling out small pits up and down the trunk, and sometimes on nearby branches as well. A reason suggested is that this operation frustrates prospective competitors for the cavities. A question by the reviewer: Is this far removed from the Red-breasted Nuthatch's habit of smearing its nest cavity entrance with pine pitch?—Leon Kelso.

**36. Some features of spatial distribution of marine birds with respect to food competition.** (Nekotorye osobennosti prostranstvennogo raspredeleniya morskikh ptits v svyazi s pishchevoi konkurentsiei.) V. Shuntov. 1972. *Z. Zhurn.*, **51**(3): 393-405. (In Russian, English summary.)—This survey of habits and distribution of marine birds over the world ocean as a whole with regard to size groups of both birds and food items, from mesoplankton to large fishes and cephalopods, finds the water surface apportioned among them according to minimal competition for, at the same time, maximal utilization of the food supply. Areas remote from breeding grounds are nonetheless foraged over by seabirds, influenced by seasonal and multi-annual cycles.—Leon Kelso.

**37. Notes on the winter food of Screech Owls in central Utah.** D. G. Smith and C. R. Wilson. 1971. *Great Basin Nat.*, **31**(2): 83-84.—This study reports an analysis of 67 pellets collected in Springville from January through early March 1969. All were attributed to a single *Otus asio*. Food items taken most frequently were House Sparrows (*Passer domesticus*), Meadow Mice (*Microtus pennsylvanicus*) and earwigs (*Forficula auricularia*) which represented respectively 46.3, 17.5, and 16.3% of the 80 individual food items tabulated. Estimates of the biomass ingested indicated that the sparrows, mice, and the Starling (*Sturnus vulgaris*) together comprised 94.6% of the diet.—Roger B. Clapp.

**38. Food habits of the Burrowing Owl in central Oregon.** C. Maser, E. W. Hammer, and S. H. Anderson. 1971. *Northwest Sci.*, **45**(1): 19-26.—The authors report an analysis of 347 pellets collected in the Crooked River National Grassland, Jefferson County. Tabulation of the food items is presented by season with pellets collected in July (60), October (20), February through April (228), and May (39), respectively representing summer, fall, winter, and spring. Food items occurring most frequently in the diet of *Speotyto cunicularia* were the Sage Vole (*Lagurus curtatus*), a burying beetle (*Nicrophorus hecate*), the Great Basin Pocket Mouse (*Perognathus parvus*), the Deer Mouse (*Peromyscus maniculatus*), and a Jerusalem cricket (*Stemopalmatus* sp.). These represented respectively 25.6, 14.5, 12.1, 5.8, and 5.1% of the 1,151 prey individuals taken.

The authors make no biomass calculations which would have been helpful in clarifying the relative importance of different items of diet. Only seven birds, a California Quail (*Lophortyx californicus*) and six unidentified passerines, were found in the pellets, but one might suppose that these birds contributed more to the owls' welfare than is suggested by the tabulation of frequency of occurrence.

Further, the authors' evident dependence on the importance of the raw totals of frequency of occurrence by season led to some conclusions that seem not well documented. For example, they state that the pocket mouse sustained the heaviest predation in winter, apparently basing this conclusion on the observation that 89 of 139 individuals appeared in pellets collected during that season. My calculations from the authors' data of mice per pellet, however, give figures that run from .33 to .39 for summer through winter and with a figure of .58 for the spring sample. The authors also state that the Northern Pocket Gopher (*Thomomys talpoides*) was preyed upon mostly during the winter. Gopher-per-pellet figures for winter and fall samples are respectively .08 and .15. These figures, though hardly constituting a rigorous analysis, do suggest that the paper would have profited from a more analytical approach.—Roger B. Clapp.

## BOOKS AND MONOGRAPHS

**39.** ***Birds of South Vietnam.*** Philip Wildash. 1968. Charles E. Tuttle Co., Rutland, Vt. and Tokyo. 234 pp. $7.50—Almost 600 species are included, more than 200 being illustrated in color. The text is simple, each species-account containing habits, distribution, and identification. The illustrations, apparently by the author (who served with the British Foreign Office and Diplomatic Service), are generally fine for field guides, and I particularly like the Bar-tailed Godwit (*Limosa lapponica*) on plate VII scratching its head. However, the plates each have relatively few birds such that at least twice the number of species could have been illustrated. Some line drawings are sprinkled through the text. Since many of the abundant species of South Vietnam are widespread, this guide will be useful over a wide region of southeastern Asia.

I believe that a field guide should be "field guide" size: 6 x 9 inches simply does not fit into the pocket of any clothes I wear. But if you should—for some bizzare reason—find yourself in South Vietnam you should have this guide with you.—Jack P. Hailman.

**40.** ***Bioacoustics of Birds.*** (*Bioakustika Ptits.*) V. D. Ilichev. 1972. Moscow University Press, Moscow. 286 pp., 35 figures. Price uncertain, about $10.00 U. S. (In Russian.)—As readers of our reviews may have noted, this author, now heading Moscow University's Laboratory of Ornithology, at age 34 succeeding founder G. P. Dementiev, has for some time been researching the morphology and biophysics of avian hearing, and voice production. For the above this book serves as a brilliant summation with an international review of the efforts of other workers on these topics. Using ultramodern electronic equipment, there have been elicited many new facts on the specificity of birds' acoustic orientation, the interacting evolution of auditory and vocal systems, ecological parallelisms, bilaterality and binaural structural differences, newly defined lateralization, and mosaicity of evolutionary trends. A new hypothesis of passive localization as related to sound spectra is suggested. There is an introduction and eight sections comprised of 33 chapters that include: The acoustic system, describing external and middle ears, cochlea and acoustic centers; Bio- and functional features of avian hearing, range and zones of optimal hearing, electrophysiological features; Spatial hearing and localization, as operating through accumulated reaction, role of sound organizing and transformation, role of structural asymmetry, conditioned reflexes, and echolocation; Sound producing systems, syrinx, larynx, and instrumental voice; Voice and vocal signalization, physical features, antiphonal signaling, imitation, and interspecific vocal communication; Acoustic repellents and their utilization, extent of damage to be controlled, and practical difficulties in application (these are complicated by many local, specific, seasonal, and behavioral factors); Ecological correlations and structural parallelisms, discusses deeper systematic as compared with ecological features, hearing as correlated to voice production, parallelisms in conspicuous external features (a notable discovery is the role of the facial rim and disc in the hearing of crepuscular harriers, nightjars, and owls); Evolutionary aspects of acoustic orientation, dwells on hearing as related to voice (whereas chiefly they developed parallel and interrelated, in some lines voice production is dominant, as in passerines, and in others sound perception and location is more perfected); Also, local intraspecific and geographic populational differences are detailed at length. In the summary chapter it is stated that the outer, more super-

ficial features of the hearing equipment are more plastic and responsive to local conditions; that it is more economical to develop a new feature than to revise an old one; that the more advanced or specialized ear structures are not confined to the genera and families supposedly higher in evolution; that lines of development for hearing and other senses show an irregular or mosaic, rather than a regular or furcate branching pattern; that not what is produced or received as sound but how well or poorly is more important. And above all, the "lateral" position of the bird class as a whole is emphasized in that their acuostic orientation is essentially different from that of other terrestrial vertebrates. "*Inertia in thought is always hard to overcome, especially for those who, occupied on voice and hearing of mammals, only occasionally turn to birds as being some "premammalian" vertebrates.*" We can say the same with regard to the feather and plumage. The bibliography includes 654 titles.—Leon Kelso.

**41.** ***Nightwatchmen of Bush and Plain.*** David Fleay. 1972. Taplinger Publ. Co. New York. $x + 163$ pp., illustrated. $8.50.—Up to 1930 at least it could be surely stated that only one book devoted seriously and exclusively to owls existed, that being Vol. 2 of R. Bowdler Sharpe's *Catalogue of Birds of the British Museum.* Others treating the nocturnal group extensively shared subequal space with vultures, hawks, and their like. In the 10 recent years several more have appeared, maintaining a continued swell of interest in the group. The present book, illustrated with many striking photographs, some in color, "is the result of over forty years of dedicated and immensely hard work, and at times danger and hardship." "What a thrill it is, in the quietness of the night, to hear the call of an owl." The almost sinister fascination owls seem to evoke in some followers is here lavished on four species of the genus *Ninox* and four of the genus *Tyto,* these being all the owls that Australia affords. Those of the former group are so hawk-faced and otherwise un-owlish that to view a tray of their skins in a museum is disturbing, whereas having four species of the Barn Owl type is unusual for one country. The book exceeds the strigine limit by a tacked-on although well illustrated chapter on Australian Frogmouths and Nightjars. As all up-to-date, for the present, writers should do, the author rejects roundly any oldtime superstitions of ill-omen or the spiritually sinister and occult in owls, yet his devotion in his early years almost flunked him out of school; then after a radical procedure in his position at the Melbourne Zoo: "refusal to feed horsemeat to Frogmouths" he had not the foresight to resign in favor of a career in freelance writing before he could be discharged, an event that promptly followed. Nor to owls' extrasensory influence should be charged his adventures with *Scourge* and *Urge,* the euphonious titles he gave to two Powerful Owls, *Ninox strenua,* his particular favorites, obtained and cultivated from the wild at considerable cost of effort, in hope of inducing breeding in captivity. For a time he had occasion to wonder which liked him the least (or, as in Ophelia's song to Hamlet: *How should I your true love know, from another one?*") This was answered one dark morning when he chanced to enter their cage without use of the flashlight. The individual *Urge,* weight about 3 pounds, landed on his head with such force that after a stunned moment to recover he thought that at least the roof had fallen in. He needed a week to recover fully, and the worst he could afford to do to the playful owl was to segregate her in a distant cage. The reviewer had occasion recently to point out to a colleague that in colored plates of a book the artist had made the mistake of painting perching owls with three toes directed forward, only to be chided to the effect that everyone should not be expected to know that true owls perch with two toes forward. In the numerous photos in this book, it is soothing to note that however wild and "way-out" these Australian owls, they know enough at least to stand uniformly with two toes, if not necessarily "the best foot," forward.—Leon Kelso.

**42.** ***Reptiles and Amphibians of North America.*** Alan E. Leviton. Undated. Chanticleer Press, Doubleday and Co., Inc., N. Y. 250 pp. $9.95.—For sake of completeness we note another in the series "Animal Life of North America" (see *Bird-Banding,* **43:** 75, 1972). Like the others, this fine volume combines excellent photographs with a general, and accurate text, making it a good gift for the naturalist friend.—Jack P. Hailman.