

PERIODICAL LITERATURE

EDITED BY GLEN E. WOOLFENDEN

A NEW PERIODICAL

ANNUAL REVIEW OF ECOLOGY AND SYSTEMATICS. R. F. Johnston (ed.). 1970. Vol. 1. Pp. x + 406. Annual Reviews Inc., 4139 El Camino Way, Palo Alto, California. Cloth, \$10.00 (Foreign, \$10.50).—This new annual is recommended to ornithologists having an interest in its title subjects. The first volume contains, for example: "The units of selection," by R. C. Lewontin; "Contemporary systematic philosophies," by D. L. Hull; "Analysis of character variation in ecology and systematics," by T. J. Crovello; "Ecological aspects of endogenous rhythmicity," by J. T. Enright; "Spacing patterns in mobile animals," by J. L. Brown and G. Orians; and "Refuging," by W. J. Hamilton III and K. E. F. Watt.—J.W.H.

ANATOMY AND EMBRYOLOGY

- CRACRAFT, J. 1970. Mandible of *Archaeopteryx* provides an example of mosaic evolution. *Nature*, 226: 1268.—In *Archaeopteryx* the entire ventral border of the mandibular fossa of the lower jaw is formed by the dentary. This condition is typical of modern birds rather than reptiles. Other characters of the lower jaw are reptilian, suggesting it is made up of a mosaic of primitive and advanced characters. The lower jaw morphology suggests that *Archaeopteryx* may have been more advanced toward the avian level of organization than previously thought.—K.P.A.
- HEPPLESTON, P. B. 1970. Anatomical observations on the bill of the Oystercatcher (*Haematopus ostralegus occidentalis*) in relation to feeding behavior. *J. Zool.*, 161: 519–524.—Describes the gross internal morphology of the bills of adults and young. A bony core contains large nerves running the length of the bill. These break up toward the tip and form numerous sensory corpuscles. This structure is important in allowing the Oystercatcher to exploit inland situations as it has done recently in northern Britain.—K.P.A.
- HEPTONSTALL, W. B. 1970. Quantitative assessment of the flight of *Archaeopteryx*. *Nature*, 228: 185–186.—This theoretical consideration of the flight performance of *Archaeopteryx* is based on parameters of the preserved specimens. In gliding flight it was inferior to the Fulmar (*Fulmarus glacialis*) and man-made gliders, having a high sinking speed (1.5 m/sec). The wings were strong enough to support the bird's weight, but it was unable to hover. Because of air flow disruption by the long claws on the fore edge of the wing, hovering flight would have required a wingbeat rate (20/sec) twice that of a pigeon (*Columba livia*), which the musculature was not capable of achieving.—K.P.A.
- KATOH, A., AND M. BRAVERMAN. 1970. Chick lens differentiation *in vitro*. *J. Morphol.*, 132: 109–116.—Portions of chick embryo destined to form the eye, the lens, and part of the brain placed in a liquid culture formed a crystalline lens, the cells of which synthesize proteins unique to the lens. Placode cells elongated to form fiber cells directly rather than invaginating to form a lens vesicle, but the shape of the lens was essentially normal.—A.S.G.
- KENNEDY, R. J. 1970. Directional water-shedding properties of feathers. *Nature*, 227: 736–737.—Drops of water on feathers tend to roll off distally. Greater angles of tilt are needed to move a water drop of given volume toward the base of the

- feather than toward the tip. Moving distally off the feather, the drop presses down the distal barbules in its path; moving proximally, the barbules rise up against it.—K.P.A.
- PARROTT, G. 1970. Aerodynamics of gliding flight of a Black Vulture *Coragyps atratus*. J. Exp. Biol., 53: 363-374.—Aerodynamic parameters determined for a vulture trained to fly in a wind tunnel show the maximum L/D (11.6) considerably lower than values in the literature calculated from sailplane chases. Parasite drag coefficients (0.0113-0.0179) are not unusually low, but similar to those of conventional airfoils. The bird varied its wing span and wing area over a continuous range in a linear relationship with air speeds and glide angles.—A.S.G.
- PURTON, M. D. 1969. Structure and ultrastructure of the liver in the domestic fowl, *Gallus gallus*. J. Zool., 159: 273-282.
- RIJKE, A. M. 1970. Wettability and phylogenetic development of feather structure in water birds. J. Exp. Biol., 52: 469-479.—A structural parameter comprising diameter and spacing of barbs and barbules is critical in determining water repellency of feathers. The ability to repel water is not necessarily correlated with resistance to water penetration. Waterproofing properties result from a balance of the structural parameter and resistance to water penetration. Various combinations related to ecological requirements of different species may be found. Aquatic forms seem to have a phylogenetic tendency toward optimizing waterproofing properties.—A.S.G.
- SPRING, L. 1971. A comparison of functional and morphological adaptations in the Common Murre (*Uria aalge*) and Thick-billed Murre (*Uria lomvia*). Condor, 73: 1-27.
- TUCKER, V. A., AND G. C. PARROTT. 1970. Aerodynamics of gliding flight in a falcon and other birds. J. Exp. Biol., 52: 345-367.—A Lesser Falcon (*Falco jugger*) was trained to glide in a wind tunnel where its aerodynamics could be studied. The L/D of the bird was determined to be equivalent to that of a model glider of about the same wingspan and about one-fourth that of a good sailplane. The falcon varies its wing configuration to achieve near maximum L/D over its range of gliding speeds. Considerable attention is given to estimations of parasite drag in gliding birds, especially in regard to predicting gliding performance of a bird without wind-tunnel tests. Birds studied have conventional values for parasite drag. Maximum terminal speed of the falcon in a vertical dive is estimated to be 100 m/sec.—A.S.G.

BEHAVIOR

- BUCKLEY, P. A., AND J. P. HAILMAN. 1970. Black-headed Gull and five species of terns skimming over water. Brit. Birds, 63: 210-212.—Believed to be drinking, in the manner of a foraging Black Skimmer.—H.B.
- CHERKIN, A. 1970. Eye to eye transfer of an early response modification in chicks. Nature, 227: 1153.—Zeier (see Auk, 87: 835) reported that a trained loss of the cliff avoidance response did not transfer from eye to eye in the chick, whereas imprinting and pattern discriminations do transfer. Cherkin's experiment demonstrates interocular transfer of trained loss of the "innate" pecking response in chicks. His results therefore contradict Zeier's generalization that tasks involving responses for which there is a strong innate component are more susceptible to interocular transfer than are reactions that oppose an innate tendency.—K.P.A.
- CUNNINGHAM-VAN SOMEREN, G. R. 1970. Animated perches and feeding associations of birds in the Sudan. Bull. Brit. Ornithol. Club, 90: 120-122.—Use of live perches

- by Carmine Bee-eaters, and multispecies congregations following large animals relate to effective insect foraging in a difficult, but highly productive environment.—F.B.G.
- DRIVER, P. M., AND D. A. HUMPHRIES. 1970. Protean displays as inducers of conflict. *Nature*, 226: 968.—Defines protean behaviors as behaviors that are sufficiently unsystematic in appearance to prevent a reactor from predicting in detail the position and/or actions of the actor. The authors propose that protean displays arouse mutually incompatible tendencies in the reactor, i.e., they induce conflict. This results in a longer reaction time, which must reduce a predator's chances of capturing prey. Protean displays induce conflict through: 1) the presentation of simultaneous stimuli, each requiring a different response; 2) the erratic nature of the display, which precludes anticipation; 3) the unpredictable pattern, which is highly resistant to learned countermeasures.—K.P.A.
- GORMAN, M. L. 1970. The daily pattern of display in a wild population of Eider Duck. *Wildfowl*, 21: 105–107.—Male *Somateria m. mollissima* exhibit diurnal and tidal rhythms. Display is more frequent on flood than ebb tide and peaks occur at dawn and dusk.—G.E.W.
- HANCOCK, C. G., AND P. J. BACON. 1970. Diving times of Red-necked Grebe. *Brit. Birds*, 63: 299–300.
- HARTZLER, J. E. 1970. Winter dominance relationship in Black-capped Chickadees. *Wilson Bull.*, 82: 427–434.
- HEPPLESTON, P. B. 1970. The function of Oystercatcher piping behaviour. *Brit. Birds*, 63: 133–135.—An aggressive response that functions almost exclusively in territorial defense against other Oystercatchers.—H.B.
- HICKMAN, G. C. 1970. Egg transport reported for the Red-bellied Woodpecker. *Wilson Bull.*, 82: 463.
- HOFFMAN, K. 1969. Zum Tagesrhythmus der Brutablosung beim Kaptaubchen (*Oena capensis* L.) und bei anderen Tauben. *J. Ornithol.*, 110: 448–464.—The Masked Dove resembles other pigeons in that the male incubates continuously for most of the day, the female for the remainder of the day and night. Although the incubation schedule is fairly regular, times of change vary both between nests and from day to day for a given nest. (English summary.)—H.C.M.
- KILHAM, L. 1971. Roosting habits of White-breasted Nuthatches. *Condor*, 73: 113–114.
- LANCASTER, D. A. 1970. Breeding behavior of the Cattle Egret in Colombia. *Living Bird*, 9: 167–194.—Observations of *Bubulcus ibis* in a colony of the Cauca River near Cali from September 1968 to July 1969. Both sexes have red irides, legs, bill, and lores for about 2 weeks, usually beginning with nest building and ending with clutch completion. Hostility, with the forward, upright, supplanting-runs, and fighting, is typical of both sexes. Pair formation involves strong aggressive components of several displays by both sexes. Females subdue unmated, displaying males by landing on their backs and repeatedly striking at the head. Territory shrinks from a few square yards to essentially only the nest. Both sexes defend.—G.E.W.
- LUMSDEN, H. G. 1970. The shoulder-spot display in grouse. *Living Bird*, 9: 65–74.—Many tetraonids display their contrasting white proximal underwing coverts in situations of intention to fly away in fear. In some species the function of the spot changes to an expression of fear during conflict. In male Black Grouse and Capercaillie the spot is enlarged and its display is an expression of aggression.—G.E.W.

- MACDONALD, S. D. 1970. The breeding behavior of the Rock Ptarmigan. *Living Bird*, 9: 195-238.—Life history, behavior, and habitat preferences of *Lagopus mutus* at Bathurst Island, Northwest Territories, Canada, during most of two breeding seasons, profusely illustrated with good photographs and drawings. Red combs, which develop in males in spring, function as visual signals in all encounters with conspecifics and with some other animals. Comb size and color intensity indicate the individual's aggressiveness. The species' black tail and the male's black face mask also are important in displays.
- After return to the breeding grounds, typical flock feeding behavior lasts until May when male aggressiveness causes groups to disperse. Females restrict themselves to a breeding habitat controlled by one male, adopt a submissive attitude, and begin to molt. Polygamy does occur, and a hierarchy among these females seems to develop. At least six male and three female calls exist. Egg laying begins in mid-June and males do not assist with nesting duties.—G.E.W.
- McKINNEY, F. 1970. Displays of four species of blue-winged ducks. *Living Bird*, 9: 29-64.—Compares displays in four *Anas* species—*clypeata*, *smithi*, *discors*, and *cyanoptera*. Male displays associated with pair formation include three derived from feeding—lateral dabbling, head-dip, and up-end. Several male displays are given rarely by females. Most display movements and calls are present in all four species, but the two shovelers have a few patterns that are absent or infrequent in the two teal. Male plumage patterns and most calls are species specific. Feeding behavior and territoriality have influenced the evolution of displays.—G.E.W.
- MESTER, H. 1969. Staubbaden und Einemsen bei Pieper. *J. Ornithol.*, 110: 487-492.—First descriptions of dust-bathing in pipits. Pipits dust-bathe and indulge in anting; wagtails apparently do not, providing further material for speculation on the taxonomic relationships of these two groups. (English summary.)—H.C.M.
- MINOCK, M. E. 1971. Social relationships among Mountain Chickadees (*Parus gambeli*). *Condor*, 73: 118-120.
- MORSE, D. H. 1970. Territorial and courtship songs of birds. *Nature*, 226: 659-661.—Male Black-throated Green Warblers (*Dendroica virens*) have two song types: Song A is sung chiefly in the presence of conspecific males and Song B chiefly in the presence of conspecific females. In a study on small coastal islands in Maine, Song A (territorial) occurred less frequently among males who had no neighboring territory holders than among males in large populations. Song B (courtship) initially occurred more often among isolated males. The results suggest that the song type used is determined by behavioral context rather than heredity.—K.P.A.
- NICOLAI, J. 1969. Beobachtungen an Paradieswitwen (*Steganura paradisaea* L., *Steganura obtusa* Chapin) unter der Strohvitwen (*Tetraenura fischeri* Reichenow) in Ostafrika. *J. Ornithol.*, 110: 421-447.—Field studies of three species of parasitic widowbirds. Where the parasites occur in the range of the host species, nest parasitism is heavy. Two forms of the host species *Pytilia melba* (*kirki* and *percivali*) occur sympatrically with the Paradise Widowbird. The widowbird parasitizes only the *percivali* form of the Melba Finch. Describes territoriality, distribution, population density, courtship behavior, and other aspects of the biology of the birds. (English summary.)—H.C.M.
- OBERHOLZER, A., AND B. TSCHANZ. 1969. Zum Jagen der Trottellumme (*Uria aalge aalge*) nach Fisch. *J. Ornithol.*, 110: 465-470.—Discusses the development of fishing behavior in 17 hand-reared Common Murres. The birds were able to catch slow-moving fish without help or prior experience as early as 25 days of age. (English summary.)—H.C.M.

- OLNEY, P. J. S. 1970. Studies of Avocet behavior. Brit. Birds, 63: 206-209.—Aggressive and sexual behavior illustrated with 15 photos.—H.B.
- PENGELLY, W. J., AND J. KEAR. 1970. The hand rearing of young Blue Duck. Wildfowl, 21: 115-121.—Describes feeding, preening, vocalization, locomotion, and social behavior of *Hymenolaimus malacorhynchos*. Most recent descriptions of the downy plumage are erroneous. Excellent jumping abilities and vivid undertail coloring are considered adaptive to its fast-moving mountain stream habitat.—G.E.W.
- REA, A. M. 1970. Winter territoriality in a Ruby-crowned Kinglet. Western Bird Bander, 45: 4-7.
- SIMMONS, K. E. L. 1970. Further observations on food-hiding in the Corvidae. Brit. Birds, 63: 175-177.
- SIMMONS, K. E. L. 1970. Aerial drinking and bathing by some tropical seabirds. Brit. Birds, 63: 212.
- SIMMONS, K. E. L. 1970. Duration of dives in the Red-necked Grebe. Brit. Birds, 63: 300-302.
- STEVENSON, J. G., R. E. HUTCHISON, J. B. HUTCHISON, B. C. R. BERTRAM, AND W. H. THORPE. 1970. Individual recognition by auditory cues in the Common Tern (*Sterna hirundo*). Nature, 226: 562-563.—When landing calls were played to chicks, filial responses occurred significantly more often to calls of the chicks' parents than to calls of other terns.—K.P.A.
- STORER, R. W. 1967. Observations on Rolland's Grebe. Hornero, 10: 339-350.—An abundant grebe in Argentina, *Rollandia rolland* has typical grebe breeding displays plus a unique bumping ceremony. Anatomy and downy chick patterns justify the genus *Rollandia* and also suggest closer affinity to ancestral grebe stock than to other living grebe species.—B.A.H.
- TANAZA, R. 1971. Behavior and nesting success relative to nest location in Adélie Penguins (*Pygoscelis adeliae*). Condor, 73: 81-92.
- TAYLOR, W. K. 1970. The double-scratch in the genus *Poocetes*. Wilson Bull., 82: 465.
- VERNER, J., AND M. M. MILLIGAN. 1971. Responses of male White-crowned Sparrows to playback of recorded songs. Condor, 73: 56-64.
- WILEY, R. H. 1971. Song groups in a singing assembly of Little Hermits. Condor, 73: 28-35.

DISEASES AND PARASITES

- BENNETT, G. F. 1970. *Trypanosoma avium* Danilewsky in the avian host. Canadian J. Zool., 48: 803-807.—Illustrates the courses of infection of *T. avium* in an experimentally inoculated Java Sparrow (*Padda oryzivora*) and in a naturally infected Blue Jay (*Cyanocitta cristata*) and Robin (*Turdus migratorius*). The avian host-parasite relationship differs from that associated with mammalian trypanosomes. The author concludes that *T. avium* is a neglected but promising experimental organism.—H.W.K.
- CHANDLER, R. E. 1970. Helminth parasites of California quail (*Lophortyx californicus*) from the Okanagan Valley, British Columbia. Canadian J. Zool., 48: 741-744.—Three helminth species were found: 2 cestodes, *Rhabdometra odiosa* and *Choanotanea infundibulum*, and one nematode, *Acuaria spinosa*.—H.W.K.
- CROMPTON, D. W. T., AND M. C. NESHEIM. 1970. Lipid, bile acid, water, and dry matter content of the intestinal tract of domestic ducks with reference to the habitat of *Polymorphus minutus* (Acanthocephala). J. Exp. Biol., 52: 437-445.—In domestic ducks fed *ad libitum*, lipids are removed in the anterior portion of the

- intestine, but most materials accumulate in the posterior portion. Concentrations of bile acid, identified by gas chromatography, in the posterior intestine reach 5.18 mg/g of intestinal contents. *Polymorphus minutus* easily withstands such concentrations *in vitro*, and it is suggested that abrasive roughage is a more serious hazard to its survival.—A.S.G.
- KLUKAS, R. W., AND L. N. LOCKE. 1969. An outbreak of fowl cholera in Everglades National Park. *J. Wildl. Dis.*, 6: 77-79.—Found primarily in *Fulica americana* and some ducks during winter 1967-68. Scavengers of diseased birds did not appear affected.—B.A.H.
- LEDGER, J. A. 1970. Ectoparasite load in a Laughing Dove with a deformed mandible. *Ostrich*, 41: 191-194.—A heavy infestation of the mallophaga *Caloceras* on head and neck, but only normal infestations of other genera.—M.A.T.
- NEWMAN, M. W. 1970. Large schizonts of *Leucocytozoon* from the kidney of the Ruffed Grouse (*Bonasa umbellus*). *Canadian J. Zool.*, 48: 879-880.—A description of schizonts from two grouse (out of 40 shot) taken in Alberta and a comparison with megaloschizonts of *L. simondi*.—H.W.K.
- WILHELMSSHAVEN, B. F. 1969. Der bemerkenswerte Lebenszyklus des marien Vogeltramatoden *Gymnophallus choledochus*. *J. Ornithol.*, 110: 471-474.—An investigation into the life cycles, biological significance, etc., of two species of trematodes that infest the gall bladders of European shorebirds. (English summary).—H.C.M.

DISTRIBUTION AND ANNOTATED LISTS

- AGEY, H. N., AND G. M. HEINZMANN. 1971. The Ivory-billed Woodpecker found in Central Florida. *Florida Naturalist*, 44: 46-47, 64.—*Campephilus principalis* seen and/or heard on 11 occasions from 1967 through 1969. Innermost secondary specifically identified by Alexander Wetmore. Exact locality not given for obvious reasons.—R.W.S.
- ALLSOPP, E. M. P., K. ALLSOPP, AND K. L. FOX. 1970. American Redstart in Cornwall. *Brit. Birds*, 63: 141-153.—First British record, 21 October 1967.—H.B.
- ATWOOD, J. L. 1970. Sharp-tailed Sandpiper in Santa Barbara. *California Birds*, 1: 153-154.
- BORRETT, R. D., AND H. D. JACKSON. 1970. The European Wheatear (*Oenanthe oenanthe* (L.) in southern Africa. *Bull. Brit. Ornithol. Club*, 90: 124-129.—South African records, including three recent Rhodesian specimens, are primarily of vagrants from the main wintering grounds which apparently are north of the Zambezi River.—F.B.G.
- BRAVERY, J. A. 1970. The birds of Atherton Shire, Queensland. *Emu*, 70: 49-63.—An annotated list of 314 species based on 19 years' observations.—L.L.S.
- BRITTON, P. L. 1970. Two new shrikes for Kenya. *Bull. Brit. Ornithol. Club*, 90: 133-134.—*Lanius mufumbiri* is a common inhabitant of the papyrus swamps west of Lake Edward and interacts with *Lanius barbarus*, which is restricted to the swamp edge. Also reports vagrant record of *Lanius nubicus*.—F.B.G.
- BRITTON, P. L. 1970. Birds of the Balovale District of Zambia. *Ostrich*, 41: 145-190.—Notes on 345 species made during a two-year stay describe habitat, local distribution, and seasonal movements.—M.A.T.
- BYLIN, K. 1970. [On the distribution in northern Sweden of the Buzzard *Buteo buteo* and some other species.] *Vår Fågelvärld*, 29: 300-302.—Discusses the occurrence of the nominate race *buteo* and the eastern race *vulpinus*. (In Swedish; English summary).—L.DEK.L.
- DEVILLERS, P. 1970. Chimney Swifts in coastal southern California. *California*

- Birds, 1: 147-152.—Includes section on swift identification and discusses many recent records in California.—B.A.H.
- EASTERLA, D. A. 1970. Hermit Warbler in Missouri. *Wilson Bull.*, 82: 464.
- EASTERLA, D. A. 1970. First nesting colonies of the Lark Bunting in Missouri. *Wilson Bull.*, 82: 465-466.
- ECKERT, K. R. 1970. Winter record of a Canada \times White-fronted Goose hybrid (?). *Loon*, 42: 34-35.
- ELY, C. A. 1970. Mid-winter bird count for 1969. *Kansas Ornithol. Soc. Bull.*, 21: 1-6.
- ELY, C. A. 1971. Pelagic observations of the Japanese White-eye in the Central Pacific. *Condor*, 73: 122-123.
- EVANS, G. H. 1970. Blackpoll Warbler on Bardsey. *Brit. Birds*, 63: 155-157.—First British record, 22 October 1968.—H.B.
- GRANT, P. J. 1970. Blackpoll Warbler in the Isles of Scilly. *Brit. Birds*, 63: 153-155.—First British record, 12 October 1968.—H.B.
- HALL, B. P. 1970. A new record from Algeria. *Bull. Brit. Ornithol. Club*, 90: 136.—Observations of *Lonchura malabarica*.—F.B.G.
- HALL, G. A. 1971. The list of West Virginia birds. *Redstart*, 38: 2-18.—Reprints available: Brooks Bird Club, 707 Warwood Ave., Wheeling at \$0.50 ea.—G.E.W.
- HANSON, W. C. 1971. The 1966-67 Snowy Owl incursion in southeastern Washington and the Pacific Northwest. *Condor*, 73: 114-116.
- IRWIN, M. P. S., AND C. W. BENSON. 1970. Some Rhodesian and Mozambique records of the Bronze-naped Pigeon *Columba delegorguei delegorguei*. *Bull. Brit. Ornithol. Club*, 90: 131-132.—Three male Rhodesian specimens are intermediate between *C. d. sharpei* and *C. d. delegorguei*. Discusses relict distribution in this area.—F.B.G.
- JACKSON, H. D. 1970. Further records of *Caprimulgus europaeus plumipes* Przevalski in south-eastern Africa. *Bull. Brit. Ornithol. Club*, 90: 135.—First record for Mozambique and an altitudinal extension.—F.B.G.
- KARR, J. R. 1971. Ecological, behavioral, and distributional notes on some central Panamá birds. *Condor*, 73: 107-111.
- KING, B., AND D. B. HUNT. 1970. Parula Warbler in the Isles of Scilly. *Brit. Birds*, 63: 149-151.—First British record, 16-17 October 1966.—H.B.
- McCASKIE, G. 1970. The occurrences of four species of Pelecaniformes in the southwestern United States. *California Birds*, 1: 117-142.—Reviews local status of Brown Pelican, Blue-footed Booby, Brown Booby, and Magnificent Frigatebird. Many records are from inland areas north of the Gulf of California.—B.A.H.
- McCASKIE, G. 1970. A Red-faced Warbler reaches California. *California Birds*, 1: 145-146.—First record for the state, a specimen, and one of few from lowlands.—B.A.H.
- McKEAN, J. L., J. BYWATER, AND L. S. HALL. 1969. Two recent observations of the Grass Owl in eastern Australia. *Australian Bird Watcher*, 3: 196-198.
- MENGEL, R. M. 1970. A second definite nesting record of the Painted Bunting, and notes on the species in Kansas. *Kansas Ornithol. Soc. Bull.*, 21: 7-8.—Gives details of a nesting attempt in Douglas County, and summarizes the general and breeding distribution of *Passerina ciris* in the state.—M.A.J.
- NILSSON, S. G. 1970. [Breeding birds in southern Småland, Sweden.] *Vår Fågelvärld*, 29: 275-285.—An annotated list. (In Swedish; English summary.)—L.DEK.L.
- PARMALEE, P. W., AND G. PERINO. 1970. A prehistoric archaeological record of the Roseate Spoonbill in Illinois. *Trans. Illinois State Acad. Sci.*, 63: 254-258.—A partial skeleton of an adult *Ajaia ajaja* found in an Hopewellian-period (ca. 200

- A.D.) burial mound in Illinois may be from a bird collected locally. Pottery bearing a "spoonbill motif" from the same period collected in Illinois and Louisiana suggests the range of *Ajaia* once may have been greater than at present.—B.A.H.
- PAYNTER, R. A., JR. 1970. Species with Malaysian affinities in the Sundarbans, East Pakistan. Bull. Brit. Ornithol. Club, 90: 118–119.—Extends ranges of *Picus vittatus* subsp., *Pitta moluccensis megarhyncha*, *Pachycephala c. cinerea*, and *Dicaeum trigonostigma rubropygium* from Burma.—F.B.G.
- PETTERSSON, A. 1970. [Lesser Yellowlegs *Tringa flavipes*, a first record for Sweden.] Vår Fågelvärld, 29: 286–287.—One individual observed 3–4 October 1969 at Lake Kvismaren, central Sweden. (In Swedish; English summary.)—L.DEK.L.
- PULICH, W. M. 1971. Some fringillid records for Texas. Condor, 73: 111.
- RICHARDS, G. L. 1971. The Common Crow, *Corvus brachyrhynchos*, in the Great Basin. Condor, 73: 116–118.
- ROUX, F., AND C. W. BENSON. 1970. The Red-chested Flufftail *Sarothrura rufa* in the Central African Republic. Bull. Brit. Ornithol. Club, 90: 117.—Two adult females recently collected from Bongui are assignable to the race *elisabethae*.—F.B.G.
- SKUTCH, A. 1971. The birds of Nosara. Florida Naturalist, 44: 11–12.—A locality on the west coast of Costa Rica.—B.A.H.
- SMITH, F. R., AND THE RARITIES COMMITTEE. 1970. Report on rare birds in Great Britain in 1969 (with 1960 and 1968 additions). Brit. Birds, 63: 267–293.—Includes 21 North American species. One, the first Evening Grosbeak, on St. Kilda, 26 March.—H.B.
- STARK, R. W. 1970. A brief history of the House Sparrow in Indiana. Indiana Aud. Quart., 48: 56–57.—Apparently introduced in 1867, 1871, and 1877.—B.A.H.
- TAVERNER, J. H. 1970. Mediterranean Gulls nesting in Hampshire. Brit. Birds, 63: 67–79.
- ULFSTRAND, S. 1970. [Winter distribution in Sweden of the Buzzard *Buteo buteo*, the Sparrow Hawk *Accipiter nisus*, and the Hen Harrier *Circus cyaneus* 1969–1970.] Vår Fågelvärld, 29: 270–274.—The census revealed 55 Buzzards, 103 Sparrow Hawks, and 16 Hen Harriers concentrated in the south and around the coasts. (In Swedish; English summary.)—L.DEK.L.
- WALLER, C. S. 1970. Rufous-sided Towhee on Lundy. Brit. Birds, 63: 147–149.—First British record, 7 June 1966.—H.B.
- WAUER, R. H. 1970. A second Swallow-tailed Kite record for Trans-Pecos, Texas. Wilson Bull., 82: 462.

ECOLOGY AND POPULATION

- BENSON, D. A. 1970. Age and sex ratios of ducks harvested during the 1968–69 hunting season. Canadian Wildl. Serv., Progress Note No. 14: 24 pp.
- BERGMAN, R. D., P. SWAIN, AND M. W. WELLER. 1970. A comparative study of nesting Forster's and Black Terns. Wilson Bull., 82: 435–444.
- BRAITHWAITE, L. W., AND H. J. FRITH. 1969. Waterfowl in an inland swamp in New South Wales. I. Habitat. CSIRO Wildl. Res., 14: 1–16.
- FRITH, H. J., L. W. BRAITHWAITE, AND J. L. MCKEAN. 1969. Waterfowl in an inland swamp in New South Wales. II. Food. CSIRO Wildl. Res., 14: 17–64.
- BRAITHWAITE, L. W., AND H. J. FRITH. 1969. Waterfowl in an inland swamp in New South Wales. III. Breeding. CSIRO Wildl. Res., 14: 65–109.—During drought many nomadic waterfowl move from temporary wetlands to refuges in cumbungi (*Typha* spp.) swamps. One 7,000-acre swamp is the subject of these papers. The first includes a plant list. The second paper includes volume and frequency of food items for 9 species based on collected specimens. Food information includes seasonal

- and age variability in feeding, habitat source, and factors affecting food availability. When food is superabundant little competition exists among species that may use the same food. At other times interspecific competition appears to be reduced by differential food preference. Permanent cumbungi residents are chiefly deep water feeders and do not suffer from invasions of drought refugees, which tend to be edge feeders. Part III presents breeding data for 9 species as determined by field and gonad studies. Factors mentioned affecting breeding include behavior, seasonality, and maturation rates. Permanent cumbungi residents generally breed with more periodicity than refugees, indicating a greater effect by fixed seasonal events. Food availability appears to have a greater effect on nomads than on residents.—B.A.H.
- BULSTRODE, C. J. K., AND D. E. HARDY. 1970. Distribution and numbers of the Pink-footed Goose in Central Iceland. *Wildfowl*, 21: 18–21.—The proposed flooding for hydro-electric dams would be disastrous to the increasing population of *Anser brachyrhynchus*.—G.E.W.
- COOPER, A. B. 1969. Golden Eagle kills red deer calf. *J. Zool.*, 158: 215–216.
- DEBENT, A. F. 1970. Some results of bird-banding in the Congo (Kinshasa). *Ostrich*, 41: 195–199.—Palearctic and local species were banded. The overwintering swallows come from eastern Europe; population structure and mortality rates for a number of local species.—M.A.T.
- ERSKINE, A. J. 1970. The co-operative breeding bird survey in Canada, 1966–1969. Canadian Wildl. Serv., Progress Note No. 15: 19 pp.—Reports on the first four years of Canadian surveys made in cooperation with similar efforts in the United States.—B.A.H.
- FESTETICS, A., AND B. LEISLER. 1970. Ecology of the Danube, with particular reference to waterfowl in Lower Austria. *Wildfowl*, 21: 42–60.—The ecology of a river, with emphasis on waterfowl, based on a 5-year cooperative project. Analyzes individual species for population size, phenology, distribution, feeding, and roosting.—G.E.W.
- FFRENCH, R. P., AND F. HAVERSCHMIDT. 1970. The Scarlet Ibis in Surinam and Trinidad. *Living Bird*, 9: 147–165.—Life history observations of *Eudocimus ruber* made primarily at Gandoe in Surinam and Caroni Swamp in Trinidad. Breeding appears to be sporadic at some colonies. One of 16 recoveries of 1,500 birds banded at Gandoe is from French Guiana 280 miles away. Scarlet Ibis breed in the rainy season, often in company with the locally common herons. They nest in mangroves, usually lay two eggs in Surinam and three in Trinidad, and incubate for about 23 days. Young climb about in the nest tree when 2 or 3 weeks old and can fly when 4, although probably they normally do not do so until 6. Additional data are provided on development, and on molt, morphology, and conservation.—G.E.W.
- HORSTKOTTE, E. 1969. Der Einfluss feuchtkuhler Witterung im Frühjahr 1969 auf den Brutverlauf der Nachtigall. *J. Ornithol.*, 110: 493–498.—The breeding success of the Nightingale in 1969 was reduced significantly by cold and rainy weather. (English summary).—H.C.M.
- JOHNSON, A., AND H. HAFNER. 1970. Winter wildfowl counts in south-east Europe and western Turkey. *Wildfowl*, 21: 22–36.—A description of the major wetlands in Rumania, Bulgaria, Yugoslavia, Greece, and western Turkey and a summary of counts made during ca. 25 visits in the 1960s.—G.E.W.
- JÖNSSON, I., AND C. SCHAAR. 1970. [The food of the Long-eared Owl *Asio otus* at Lund, Scania, during the winter 1969/70.] *Vår Fågelvärld*, 29: 303–304.—Small mammals made up 94.2 percent of pellet contents. (In Swedish).—L.DEK.L.
- KING, J. G. 1970. The swans and geese of Alaska's Arctic Slope. *Wildfowl*, 21: 11–

- 17.—A mid-summer, 1966, aerial survey of 23,000 square miles of Alaska's Arctic Slope indicates the area is of low production, but perhaps of considerable importance to the species involved when high production areas fail. Studies should be undertaken to reduce the damage that human influx is bound to cause.—G.E.W.
- LAVERY, H. J. 1970. The comparative ecology of waterfowl in north Queensland. *Wildfowl*, 21: 69-77.—The suitable habitat varies markedly between the wet (November-April) and dry seasons. The abundant artificial wetlands do not increase seasonal stability. Of the 11 breeding species, 6 are coastal, 4 inland, and one is found in both habitats. Post-breeding individuals move to permanent localities, mostly coastal, as temporary water evaporates.—G.E.W.
- MEANLEY, B. 1970. A million Robins and 10,000 Pine Siskins in the Dismal Swamp. *Atlantic Naturalist*, 25: 40.—Robins roosting and feeding on *Ilex* and *Smilax*; believed the northernmost such roost. The siskins fed on white cedar.—B.A.H.
- MILSTEIN, P. LE S., AND R. D. JACKA. 1970. Establishment of a large heronry. *Ostrich*, 41: 208-210.—In April 1967 Barberspan overflowed forming a new pan, Leeupan. In November a heronry was established there, with eventually over 1,800 nests, mostly of Cattle Egrets, but including other herons, ibises, darters, and cormorants.—M.A.T.
- MLECKO, B. E. 1968. Notes on the birds of Costa Rica with special emphasis on flocking. *Proc. Iowa Acad. Sci.*, 75: 457-462.—Observations on the composition, habitat type, and vertical stratification of 364 bird flocks seen over an 8-month period.—J.J.D.
- MOFFETT, G. M., JR. 1970. A study of nesting Torrent Ducks in the Andes. *Living Bird*, 9: 5-27.—Breeding biology observations of the little-known *Merganetta armata* made September to November 1968 in Rio Negro Province, Argentina. They feed exclusively on stonefly larvae *Rheophila* taken from rapid mountain streams. Based on observations at two nests, the species is monogamous, territorial, and only the female incubates. Incubation lasts about 44 days. Displays include bowing, "mule kicks," and the male enticing the female back to the nest. Torrent Ducks "using their tails as a kind of skulling oar" is remarkable, if true. Beautiful photographs, including three full page color plates, accompany the article.—G.E.W.
- NELLIS, C. H., J. J. ZOHRER, AND D. W. ANDERSON. 1970. Mallard—Green-winged Teal associations in southern Wisconsin. *Wilson Bull.*, 82: 461-462.
- NILSSON, L. 1970. [The international mid-winter waterfowl censuses.] *Vår Fågelvärld*, 29: 145-148.—A brief review of reports from Sweden, Denmark, U.S.S.R., Germany, and Switzerland. (In Swedish; English summary.)—L.DEK.L.
- NILSSON, L. 1970. [Swedish waterfowl censuses January 1969-1970 and November 1969.] *Vår Fågelvärld*, 29: 149-159.—A part of the international waterfowl census scheme. (In Swedish; English summary.)—L.DEK.L.
- NORMAN, F. I. 1970. The effects of sheep on the breeding success and habitat of the Short-tailed Shearwater, *Puffinus tenuirostris* (Temminck). *Australian J. Zool.*, 18: 215-229.—Trampling nest burrows and induction of thick vegetation by sheep did not affect breeding success.—J.J.D.
- NOWAK, E. 1970. The waterfowl of Mongolia. *Wildfowl*, 21: 61-68.—The major physiographic features and waterfowl habitats are described for Mongolia, one of the major production areas in Asia. The customs, laws, and religion of the human inhabitants have resulted in little alteration of the natural populations.—G.E.W.
- PEARSON, D. L. 1971. Vertical stratification of birds in a tropical dry forest. *Condor*, 73: 46-55.

- ROTH, V. D. 1971. Unusual predatory activities of Mexican Jays and Brown-headed Cowbirds under conditions of deep snow in southeastern Arizona. *Condor*, 73: 113.
- SCHARTZ, R. L., AND J. L. ZIMMERMAN. 1971. The time and energy budget of the male Dickcissel (*Spiza americana*). *Condor*, 73: 65-76.
- SCOTT, P. 1970. The wild swans at Slimbridge. Publ. by the Wildfowl Trust. 12 pp. (2 of text, 8 of photographs and drawings).—A brief account of the history and activities of the *Cygnus columbianus bewickii* that winter at Slimbridge. Individuals are recognized by bill color pattern and rings. In seven years no divorces are known, and lost mates sometimes are not replaced until the third season. Breeding begins when 4 or 5 years old. Cygnets follow parents on twice yearly 2,600 mile migrations and may join their parents for 1 or 2 more years.—G.E.W.
- SKUTCH, A. F. 1970. Life history of the Common Potoo. *Living Bird*, 9: 265-280. —Observations of one nesting of *Nyctibius griseus* in Costa Rica. Both parents incubated the single egg laid in a knothole 30 feet up a tree in an exposed site for at least 33 days. Brooding of the white-downed chick was almost continuous for the first 2 weeks. The young was fed insects by regurgitation, first flew when 47 days old, and departed on day 51.—G.E.W.
- SONDELL, J. 1970. [Nesting and hunting territories of the Marsh Harrier *Circus aeruginosus*. Kvismaren Bird Sta. Rept. No. 16.] *Vår Fågelvärld*, 29: 288-299.—Two types of territories are established, the nesting territory, which is defended against all intruders, and the hunting range, which is defended only against intrusions of other Marsh Harriers. A tendency toward colonial nesting is believed to be innate. The availability of separate hunting ranges determines the number of pairs in the colony. (In Swedish; English summary.)—L.DEK.L.
- SOUTHERN, H. N. 1970. The natural control of a population of Tawny Owls (*Strix aluco*). *J. Zool.*, 162: 197-285.—Reports a 12-year study on populations of Tawny Owls and their two main prey species, *Apodemus sylvaticus* and *Clethrionomys glareolus*, made near Oxford, England. The owls are territorial and highly vocal in spring. The young remain in their parents' territory for a long period after fledging. Some pairs refrained from breeding, others laid eggs but failed to hatch them, and others hatched young but failed to raise them. This reproductive "failure" was associated with the numbers and availability of rodent prey. At low prey densities no owls attempted to breed. The population remained relatively stable. Young birds unable to establish a territory either starved or emigrated from the woodland.—K.P.A.
- TAYLOR, W. K. 1970. Giant water bug in an owl pellet. *Wilson Bull.*, 82: 462-463.
- WALCHECK, K. C. 1970. Nesting bird ecology of four plant communities in the Missouri River breaks, Montana. *Wilson Bull.*, 82: 370-382.
- ZELENY, L. 1970. Bluebird nesting box project—1969. *Atlantic Naturalist*, 25: 33-38.—Includes estimates of nesting success and probable causes of failures.—B.A.H.

EVOLUTION AND GENETICS

- BARLOW, J. C., AND D. M. POWER. 1970. An analysis of character variation in Red-eyed and Philadelphia Vireos (Aves: Vireonidae) in Canada. *Canadian J. Zool.*, 48: 673-680.—This study examined trends of variation in sympatric Canadian populations of two vireo species that often occupy the same micro-habitat. Measurements of bill length, width, and depth, and wing, tail, and tarsus lengths were subjected to univariate and multivariate analyses. Character correlations and patterns of geographic variation for individual characters are different for the two species and do not show parallel trends in geographic variation.—H.W.K.

- DIAMOND, J. M. 1970. Ecological consequences of island colonization by Southwest Pacific birds, II. The effect of species diversity on total population density. *Proc. Natl. Acad. Sci.*, 67: 1715-1721.—Adaptations of species on Karkar, Adamosin, and Bagabag Islands, off northeastern New Guinea, as compared to supposed original stocks on mainland New Guinea and New Britain.
- LACK, D. 1970. The endemic ducks of remote islands. *Wildfowl*, 21: 5-10.—Eight endemic subspecies of *Anas*, derived from 7 mainland species (*A. platyrhynchos*, *strepera*, *bahamensis*, *gibberifrons*, *acuta*, *georgica*, *castanea*), occur on remote tropical or subantarctic islands. Most islands have but one species, which is of medium size regardless of the size of the mainland form, and with but one exception it has a generalized diet. The males, and some of the females, tend to lose their specific recognition marks. The many other ducks that have reached these islands presumably are prevented from establishing themselves by existing broader-niched species.—G.E.W.
- MOREAU, R. E. 1969. Climatic changes and the distribution of forest vertebrates in West Africa. *J. Zool.*, 158: 273-282.—The distribution and evolutionary history of fishes, frogs, birds, and mammals is reviewed in relation to several barriers in West African forests. The Baoule V (a large area of savanna about 5° W in the Ivory Coast) has not been a complete barrier in the last 20,000 years, yet the distribution of all groups except birds shows the influence of the barrier. The Dahomey Gap, a band of savanna running east and west, is an important barrier to all groups; 11 of 188 bird species are limited by it and 24 subspeciations are associated with it. The lower Niger River, at present only a few hundred yards wide, was occupied by a large estuary as recently as 30,000 years ago. Evidence of this barrier still exists, even in birds, with 6 of 187 species limited by it and 11 to 22 subspeciations associated with it. Of the vertebrate groups examined, birds were least influenced by the barriers.—K.P.A.
- PEAKALL, D. B. 1970. The Eastern Bluebird: its breeding season, clutch size, and nesting success. *Living Bird*, 9: 239-255.—Data from 8,108 nests of *Sialia sialis* were used in this first major analysis from the North American Nest-record Card Program. After an historical review of nest-record card programs and a discussion of sources of bias in such data, the results of analyzing bluebird nest-record cards by 15 geographical areas are given. In all areas mean clutch size decreases toward the end of the breeding season. Both length of breeding season (expressed as 90 per cent of the clutch completion dates) and clutch size were greater in the middle latitudes of the range, coinciding with the highest breeding density of the species. Nesting success showed no clinal pattern. An appendix summarizes methods and criteria used in card editing and computer analysis.—S.C.W.

GENERAL BIOLOGY

- ANDERSSON, A., AND K. E. FRIDZEN. 1970. [Great Black-backed Gull (*Larus marinus*) catches scaup (*Aythya marila*) on the Stream of Stockholm.] *Vår Fågelvärld*, 29: 267-269.—Five good photographs of the gull catching and killing the duck. (In Swedish.)—L.DEK.L.
- BELL, H. L. 1970. The Flamed Bowerbird *Sericulus aureus*. *Emu*, 70: 64-68.—*Sericulus aureus*, *chrysocephalus*, and *bakeri* are considered closely related. The author feels that these species regularly construct bowers, and gives various plausible reasons why these are found so infrequently.—L.L.S.
- BOSWALL, J. 1970. Age of acquiring adult plumage in *Gypaetus barbatus*. *Bull. Brit. Ornithol. Club*, 90: 120.—About 6 years in a captive individual.—F.B.G.

- BROOKE, R. K. 1970. Buccal colors in some sunbirds. Bull. Brit. Ornithol. Club, 90: 134-135.—Orange is the normal color in *Nectarinia*, but adults are variable.—F.B.G.
- BROWN, R. D. 1970. Yellowthroat caught in common burdock. Wilson Bull., 82: 464-465.
- CAMPBELL, T. R. 1970. Loon concentration on Mille Lacs Lake. Loon, 42: 36.—Over 500 *Gavia immer* in Minnesota in early November.—B.A.H.
- CLAPP, R. B., AND L. N. HUBER. 1971. Imperfect albinism in a Red-tailed Tropicbird. Condor, 73: 123.
- CONRADS, K. 1969. Beobachtungen am Ortolan (*Emberiza hortulana* L.) in der Brutzeit. J. Ornithol., 110: 379-420.—A detailed, extensive study of behavior, ecology, and breeding biology of the Ortolan Bunting. An excellent life history (with a lengthy but poor English summary).—H.C.M.
- CRITCHLEY, R. A., AND J. J. R. GRIMSDELL. 1970. Nesting of the Shoebill *Balaeniceps rex* Gould in the Bangweulu swamps. Bull. Brit. Ornithol. Club, 90: 119.—Annual survey in northeastern Zambia revealed six nesting pairs.—F.B.G.
- CUNNINGHAM-VAN SOMEREN, G. R. 1970. On *Prodotiscus insignis* (Cassin) parasitizing *Zosterops abyssinica* Guerin. Bull. Brit. Ornithol. Club, 90: 129-131.—Describes white-eyes feeding nestling honeyguide.—F.B.G.
- DAVIS, G. J. 1970. Seasonal changes in flocking behavior of Starlings as correlated with gonadal development. Wilson Bull., 82: 391-399.
- DUSI, J. L., AND R. T. DUSI. 1970. Nesting success and mortality of nestlings in a Cattle Egret colony. Wilson Bull., 82: 458-460.
- ELGAS, B. 1970. Breeding populations of Tule White-fronted Geese in northwestern Canada. Wilson Bull., 82: 420-426.
- EVANS, R. M. 1970. Oldsquaws nesting in association with Arctic Terns at Churchill, Manitoba. Wilson Bull., 82: 383-390.
- FISK, E. J. 1970. Common Grackle kills Cedar Waxwing in air. Wilson Bull., 82: 465.
- FREDRICKSON, L. H. 1970. Breeding biology of American Coots in Iowa. Wilson Bull., 82: 445-457.
- FREEMAN, D. J. 1970. The rediscovery of the Black Grass Wren *Amytornis housei* with additional notes on the species. Emu, 70: 193-195.—Last seen in 1901, *Amytornis housei* was rediscovered in northwestern Western Australia; it is apparently fairly common in this little-known region.—L.L.S.
- FRIEDMANN, H. 1970. Further information on the breeding biology of the honeyguides. Los Angeles Co. Mus. Contrib. Sci., No. 205: 1-5. An egg of *Indicator maculatus maculatus* taken at Boron in the Ivory Coast, is the first of the nominate race to be described. Included are new data on five bee-eaters as host species for *I. indicator*, and new records of barbets as hosts for *I. minor* and *I. conirostris*.—H.H.
- FRITH, C. B. 1970. The nest and nestling of the Short-tailed Paradigalla *Paradigalla brevicauda* (Paradisaeidae). Bull. Brit. Ornithol. Club, 90: 122-124.
- HARRISON, C. J. O., AND C. B. FRITH. 1970. Nests and eggs of some New Guinea birds. Emu, 70: 173-178.—Nests and eggs of 26 species including 10 not previously described.—L.L.S.
- HOLMBERG, J. A. 1970. [The birds of Lake Roxen, central Sweden, 1953-1967.] Vår Fågelvärld, 29: 179-222.—A comprehensive assessment of this region's birdlife, including behavioral observations of each species, and influence of water levels and temperatures. Migratory movements are more dependent on temperature in spring

- than fall. Tendencies to follow topographical guidelines are more pronounced in fall. The format of this study and the figures and diagrams are noteworthy. (In Swedish; English summary.)—L.DEK.L.
- HOLMES, R. T. 1971. Latitudinal differences in the breeding and molt schedules of Alaskan Red-backed Sandpipers (*Calidris alpina*). Condor, 73: 93-99.
- HUBBARD, J. P. 1970. Geographic variation in the *Dendroica coronata* complex. Wilson Bull., 82: 355-369.
- KEAR, J. 1970. Studies of the development of young Tufted Duck. Wildfowl, 21: 123-132.—Compared with other diving ducks and the Mallard, newly-hatched *Aythya fuligula* chicks are large in relation to the size of their mother. Weight gain through the first 5 weeks is slow in comparison to temperate dabblers. First flight occurs at 7 weeks. Presents plumage characteristics, secondary sexual differences, other growth measures, and food conversion rate.—G.E.W.
- KEAR, J., AND R. J. SCARLETT. 1970. The Auckland Islands Merganser. Wildfowl, 21: 78-86.—A summary of information on extinct *Mergus australis* including many references and appendices listing data on all known specimens. Final extinction may have been due largely to man, with the last specimens taken in 1902.—G.E.W.
- KURODA, N. 1969. A chick of *Chloris sinica* born with one wing. J. Ornithol., 110: 482-486.—Anatomical and other notes on a finch that hatched and fledged successfully without its left wing.—H.C.M.
- MARSHALL, W. H. 1970. Woodcock sex and age ratios and weights in Minnesota. Loon, 42: 31-33.
- MIDDLETON, A. L. A. 1970. The breeding biology of the Goldfinch in southeastern Australia. Emu, 70: 159-167.—The European Goldfinch (*Carduelis carduelis*) is essentially unchanged in its biology since its introduction from Europe. It is closely associated with artificially modified environments and seems not to compete with native species.—L.L.S.
- OGDEN, J. C. 1970. Florida Bay Osprey population study. Florida Naturalist, 43: 113-114.—A preliminary report on nesting and food.—F.E.L.
- PARMELEE, D. F. 1970. Breeding behavior of the Sanderling in the Canadian High Arctic. Living Bird, 9: 97-146.—Courtship, mating activities, pair-bond relationship, and role of the sexes in care of the eggs and young in *Crocethia alba*, based on observations at 14 nests including one under a constant 14-day surveillance. Sanderlings were widely scattered both years, with not more than 6 or 8 pairs per square mile. Both sexes arrived together (3 to 9 June in 1968 and 8 to 15 June in 1969). Mating occurs at scrapes apart from the nest scrapes. With but one exception, clutches consisted of 4 eggs, which were laid at intervals of 26 to 29 hours. Incubation was 24.2 and 31.6 days at two nests. Pair bonds dissolve before incubation, and only one adult, either sex, cares for the eggs and young. Sustained flight occurs 17 days after hatching and most young flew strongly by 2 to 9 August. Flocks of adults of both sexes developed in early July and diminished in late July.—G.E.W.
- PARTCH, M. 1970. Prairie Chicken exodus: notes on the Prairie Chicken in central Minnesota. Loon, 42: 5-19.—A well documented historical account describing routes of invasion and subsequent decline.—B.A.H.
- PRESCOTT, K. W. 1970. Replacement of rectrices by Song Sparrow. EBBA News, 33: 204.—Full replacement of removed feathers in less than 48 days.—B.A.H.
- RALPH, C. J., AND C. A. PEARSON. 1971. Correlation of age, size of territory, plumage, and breeding success in White-crowned Sparrows. Condor, 73: 77-80.

- REA, A. M. 1969. Species, age, and sex determination in the genus *Tyrannus*. Western Bird Bander, 44: 32-35.
- REA, A. M. 1970. Age determination of Red-shafted Flickers. Western Bird Bander, 45: 52-54.
- REILLY, P. N. 1970. Nesting of the Superb Lyrebird in Sherbrooke Forest, Victoria. Emu, 70: 73-78.—Nesting studies of *Menura novaehollandiae* show that females construct the nests and tend the eggs. Incubation is about 45 days and the nestling period about 43. Males usually are not seen at the nest, but are aware of its location and will defend it against intruders.—L.L.S.
- SHARMA, I. K. 1970. Breeding of the Indian White-backed Vulture at Jodhpur. Ostrich, 41: 205-207.—Notes on 50 nests.—M.A.T.
- SIEGFRIED, W. R. 1970. Double wing-moult in the Maccoa Duck. Wildfowl, 21: 122.—Once past the age of one year, three male and one female captive *Oxyura maccoa* molted their remiges twice a year in January and June. *Oxyura australis* and *Biziura lobata* are reported to have the same cycle.—G.E.W.
- STRESEMANN, E., AND V. STRESEMANN. 1969. Die Mauser einiger *Emberiza*-Arten. II. J. Ornithol., 110: 475-481.—The second in a series of papers on the molt of various species of *Emberiza*. The appearance of this original work in a volume that essentially is a *Festschrift* in honor of Professor Stresemann's 80th birthday testifies to the continued productivity of this most remarkable ornithologist. (English summary; but do not be misled by the names given for the various plumages.)—H.C.M.
- THOMAS, D. G., AND A. J. DARTNALL. 1970. Difference in size between the sexes of the Curlew Sandpiper. Emu, 70: 89.—Female Curlew Sandpipers (*Calidris ferruginea*) have significantly greater wing, tarsal, and bill lengths than do males, based on 57 adults collected in Tasmania.—L.L.S.
- VERBEEK, N. A. M. 1971. Hummingbirds feeding on sand. Condor, 73: 112-113.
- WALKER, A. F. G. 1970. The moult migration of Yorkshire Canada Geese. Wildfowl, 21: 99-104.—Although of recent origin, the molt migration of a part of the Yorkshire population of *Branta canadensis* is firmly established.—G.E.W.
- WEEKS, H. P. 1970. Eastern Phoebe nesting in an old Barn Swallow nest. Wilson Bull., 82: 463-464.
- WILLIAMS, M. P. 1969. A Pigeon Hawk captures a Starling. Bull. Oklahoma Ornithol. Soc., 2: 13.
- WILSON, H. C. 1969. Black Terns nest in Door County. Passenger Pigeon, 30: 173.—Wisconsin.—B.A.H.
- YOUNG, A. M. 1971. Foraging for insects by a tropical hummingbird. Condor, 73: 36-45.
- YUNICK, R. P. 1970. The Pine Siskin wing stripe and its relation to age and sex. EBBA News, 33: 267-274.—Stripe brightness and width may be useful criteria for ageing and sexing siskins.—B.A.H.

MANAGEMENT AND CONSERVATION

- BANKO, W. 1971. Preservation of Maui's endangered forest birds. Condor, 73: 120-121.
- BANKS, R. C. 1970. Birds imported into the United States in 1968. U. S. Dept. Interior, Spec. Sci. Rept.—Wildl. No. 136: 64 pp.
- CORNWALL, G. 1971. Environmental hazards of pesticides. Florida Naturalist, 44: 3-6.

- GAVRILOV, E. I., AND I. F. BORODICHIN. 1970. Bird ringing in Kazakhstan. *Ring*, 6: 38-40.—Banding is oriented towards migrants.—B.A.H.
- NEW ZEALAND WILDLIFE SERVICE. 1970. *Wildlife, 1969—A review*. Dept. Internal Affairs, Wildl. Serv., Wellington, N.Z.: 59 pp.—This first annual aims to review current work and future plans of the New Zealand Wildlife Service. Includes research reports on Kakapo, Takahe, Paradise Duck, Grey-faced Petrel, Canada Goose, Gannet, albatrosses, Laughing Owl, Orange-fronted Parakeet, the Pukepuke Lagoon project, bird reserves, banding, island surveys, game management (including Black Swans), and recent publications.—B.A.H.
- SIEGFRIED, W. R. 1970. Wildfowl distribution, conservation and research in southern Africa. *Wildfowl*, 21: 89-98.—Includes a description of southern Africa's physiography and wildfowl habitat.—G.E.W.

MISCELLANEOUS

- ALDRICH, J. W. 1970. Review of the problem of birds contaminated by oil and their rehabilitation. U. S. Dept. Interior, Resource Publ. 87: 23 pp.
- BORRERO H., J. I. 1970. A photographic study of the Potoo in Colombia. *Living Bird*, 9: 257-263.—Six full-page monochrome photographs of two adult and one young *Nyctibius griseus* and a partial chronology of one nesting.—G.E.W.
- BOSWALL, J. 1970. New Palearctic bird sound recordings during 1969. *Brit. Birds*, 63: 324-332.—Eleven discs or sets described and evaluated, and a translated commentary given for one notable French set.—H.B.
- CLARK, W. S. 1970. Migration trapping of hawks (and owls) at Cape May, N.J.—third year. *EBBA News*, 33: 181-189.—Describes trap systems that use live lures, bow traps, mist nets, and Ver-Bail pole traps. Tables show efficiency of different traps for various species, and a map of the trapping station is included.—B.A.H.
- HAMMERSTROM, F. 1969. A peripatetic Robin nest. *Passenger Pigeon*, 30: 159-160.—A building bearing the nest was moved 130 yards and the nest then was moved gradually to a tree 18 yards away; the young fledged.—B.A.H.
- MAYR, E. 1969. Erwin Stresemann zum 80. Geburtstag. *J. Ornithol.*, 110: 377-378.—A tribute to Prof. Stresemann on the occasion of his 80th birthday.—H.C.M.
- McCLURE, H. E. 1970. The future of bird ringing in Asia. *Ring*, 6: 32-34.—Summary of current banding programs in countries of Asia. Present social and political strife and low living standards preclude development of good banding schemes except in Japan, Malaya, and India.—B.A.H.
- PURCHASE, D. 1970. The Australian bird-banding scheme—its problems and future. *Ring*, 6: 25-31.—Includes discussion on the poor information return from banding not oriented toward specific research problems. A solution has been the initiation of two permit types: Class "A" allows banding for research problems and class "B" for assisting "A." Only class "A" banders are supplied with bands.—B.A.H.
- ROWAN, M. K. 1970. Bird ringing in southern Africa. *Ring*, 6: 34-38.—A long history of poor financial support has limited banding efforts. Recovery rate is poor except for palearctic migrants, and emphasis of the banding program is changing accordingly.—B.A.H.

MIGRATION AND ORIENTATION

- COLLISTER, A. 1970. Operation Recovery in Rocky Mountain region. *Ring*, 6: 3-4.—An historical account with discussion of objectives and results.—B.A.H.
- CURTIS, S. 1969. Weather patterns and spring migration. *Passenger Pigeon*, 30: 151-159.—Daily counts in a 20-acre plot in Wisconsin from mid-March through May in 1963 and 1964 are related to weather data.—B.A.H.

- EVANS, P. R. 1970. Timing mechanisms and the physiology of bird migration. *Sci. Progr.*, 58: 263-275.—A short review of some of the proximate factors that determine the timing of migration.—J.J.D.
- GAUTHREAUX, S. A., JR., AND K. P. ABLE. 1970. Wind and the direction of nocturnal songbird migration. *Nature*, 228: 476-477.—The passage of nocturnal passerine migrants was watched in spring and fall at Athens, Georgia, and Lake Charles, Louisiana, using a portable ceilometer and 20× binoculars. Data from a total of 12 nights with clear to partly cloudy skies were selected to show the influence of different wind directions on the directions of the migrants. During both seasons, the flight directions of the birds were downwind, regardless of wind direction ($P < 0.001$). On two nights when the wind shifted in direction about 70°, the flight directions of the migrants shifted significantly with the wind ($P < 0.001$). These results are discussed in relation to radar studies and proposed stellar orientation mechanisms.—K.P.A.
- HERBERT, A. D. 1970. Spatial disorientation in birds. *Wilson Bull.*, 82: 400-419.
- HOUSTON, C. S. 1970. Hawk and owl banding in Saskatchewan, Canada. *Ring*, 6: 5-8.
- HUDEK, K. 1970. Proposal for ringing the Greylag-geese in central Europe. *Ring*, 5: 1-3.—*Anser anser* apparently uses four migration routes in Europe, which color banding would define.—B.A.H.
- HUDSON, R. 1970. Recoveries in Great Britain and Ireland of birds ringed abroad. *Brit. Birds*, 63: 243-253.—List for 1968 includes American Widgeon from New Brunswick.—H.B.
- KEETON, W. T. 1970. Do pigeons determine latitudinal displacement from the sun's altitude? *Nature*, 227: 626-627.—One tenet of the Matthews sun navigation hypothesis is that a bird determines its latitudinal displacement by comparing the noon altitude of the sun at the displacement site with the sun's path, which it remembers from its home location. To test this part of the hypothesis, Matthews prevented pigeons from seeing the sun or sky for 6 to 9 days near the autumnal equinox. The birds were then released 78 miles south of their home loft. The change in the sun's declination during these days was so great that the noon altitude at the release point was less than it had been at home on the first day of isolation. Most of the experimental birds flew south, away from home, whereas control birds homed. Keeton repeated this experiment and found no significant differences between experimentals and controls in vanishing directions or homing speeds. Immediately following this paper are some comments by Matthews. He criticizes Keeton's experiment because the first group of birds was released only 32.5 miles from home (the paper states 52.5 miles) in an area they had probably homed from before (although this is not stated in the paper). A second release was made with birds that had no previous flight experience more than 20 miles south of the loft. Nevertheless Matthews claims that the birds may have been homing on the basis of landmarks.—K.P.A.
- KEETON, W. T. 1971. Magnets interfere with pigeon homing. *Proc. Natl. Acad. Sci.*, 68: 102-106.—Magnets glued to the backs of experienced pigeons often resulted in disorientation when the birds were released from distances of 17 to 31 miles (27-50 km) under total overcast, whereas no such disorientation occurred during similar releases under clear skies. The magnets did, however, often cause disorientation when first-flight birds were released under sun, and some disturbance to experienced pigeons released under sun at longer distances was indicated. Bibliography.

- ROYALL, W. C., JR., J. L. GUARINO, J. W. DE GRAZIO, AND A. GAMMELL. 1971. Migration of banded Yellow-headed Blackbirds. *Condor*, 73: 100-106.
- SOUTHERN, W. E. 1970. Orientation in gulls: effect of distance, direction of release, and wind. *Living Bird*, 9: 75-95.—*Larus delawarensis* and *L. argentatus* were released from 2 to 150 miles from the Roger City, Michigan, colony. Increased distance did not drastically lower returning. Particular areas, perhaps those familiar to the birds, had low return rates. Gulls were released at nine compass directions from the colony. *L. delawarensis* released from WNW and N had the lowest return rates, 44 and 59 per cent. The lowest *L. argentatus* return rate, 33 per cent, was from the SW. Topographical features near some release sites caused adverse effects by acting as false clues. Probably weather influenced departure from release sites. Gulls departed more readily if conditions were suitable for flight. Overcast was the worst condition.—G.E.W.
- WALLENTINUS, H. G. 1970. [The spring migrations of some Swedish birds.] *Vår Fågelvärld*, 29: 160-178.—A phenological investigation, based on field observers' records, of spring arrivals and the migratory progress northwards. (In Swedish; English summary.)—L.DEK.L.

PHYSIOLOGY

- HAYWOOD, J., S. P. R. ROSE, AND P. P. G. BATESON. 1970. Effects of an imprinting procedure on RNA polymerase activity in the chick brain. *Nature*, 228: 373-375.—Exposure to an imprinting stimulus has been shown to be associated with an increase in incorporation rates of lysine into protein and uracil into RNA in the forebrain roof of day-old chicks. This work reports a marked increase in RNA polymerase activity in the same area of the brain after a 30-minute exposure to the imprinting stimulus (a flashing light). Smaller, but significant, increases occurred in the forebrain base and midbrain.—K.P.A.
- HIKIDA, R. S., AND W. J. BOCK. 1970. The structure of pigeon muscle and its changes due to tenotomy. *J. Exp. Zool.*, 175: 343-356.—The tendon of the biventer cervicis, a muscle containing both "slow" and "fast" fibers was severed in a number of pigeons. The muscle was then removed for histological examination at periods from 6 to 71 days. Changes, in the form of swelling and migrating nuclei, are evident as early as the 6th day in "fast" fibers. In distinction to mammalian muscle, tenotomy induced a faster myopathy in "fast-twitch" than in "slow-twitch" fibers. Tenotomized avian muscles demonstrate conditions typical of various human muscle diseases.—A.S.G.
- ISHII, S., A. K. SARKAR, AND H. KOBAYASHI. 1970. Ovarian ascorbic acid-depleting factor in pigeon median eminence extracts. *Gen. Comp. Endocrinol.*, 14: 461-466.—The ovarian ascorbic acid-depleting (OAAD) activity of median eminence extract was accounted for by the activity of arginine vasotocin localized in the anterior part of the eminence. Differences between OAAD factors in birds and mammals are discussed.—K.P.A.
- LEHMAN, G. C. 1970. The effects of hypo- and hyperthyroidism on the testes and anterior pituitary glands of cockerels. *Gen. Comp. Endocrinol.*, 14: 567-577.—Hypo- and hyperthyroidism brought about by the administration of propylthiouracil (PTU) and thyroxine had no effect on testis and pituitary weights. Thyroxine injections also produced no effect on the uptake of ³²P by the gonad, but uptake was significantly increased in hypothyroid birds. A significant decline in pituitary gonadotrophic potency occurred following thyroxine treatment. No change was found in hypothyroid birds.—K.P.A.

- LUSTICK, S. 1971. Plumage color and energetics. *Condor*, 73: 121-122.
- MURTON, R. K., B. LOFTS, AND N. J. WESTWOOD. 1970. The circadian basis of photoperiodically controlled spermatogenesis in the Greenfinch *Chloris chloris*. *J. Zool.*, 161: 125-136.—Previous work has shown that keeping Greenfinches on a daily light schedule of 7L: 17D stimulates a peak in LH secretion, but does not induce spermatogenesis. During this experiment, the total number of hours of light was held at 7, but the 7th hour was given on various schedules as an interruption during the dark period. Spermatogenesis was stimulated with cycles in which the 1-hour light pulse occurred from 9.5 to 18 hours prior to "dawn" (peak at 10 hours before "dawn"). It is concluded that LH and FSH are produced at different phases of a circadian type rhythm(s). Short constant photoperiods (e.g., 7L: 17D), as found in winter in temperate regions, may engage only the LH-sensitive phase leading to interstitial cell rehabilitation. Long days engage both LH and FSH phases leading to spermatogenesis.—K.P.A.
- QUAY, W. B. 1965. Histological structure and cytology of the pineal organ in birds and mammals. *Progr. Brain Res.*, 10: 49-86.—A review with inclusion of original data and suggestions for further study. Many avian pineals retain a system of lumina lined by ependymal cells or their derivatives; some parenchymal cells appear to be secretory. From author's summary.—B.A.H.
- RALPH, C. L., AND H. J. LYNCH. 1970. A quantitative melatonin bioassay. *Gen. Comp. Endocrinol.*, 15: 334-338.—Description of a sensitive and specific bioassay for melatonin based on the dermal melanophore response of larval *Rana pipiens*. Also gives methods for culturing the frog larvae.—K.P.A.

TAXONOMY AND PALEONTOLOGY

- BENSON, C. W., R. K. BROOKE, R. J. DOWSETT, AND M. P. S. IRWIN. 1970. Notes on the birds of Zambia: part V. *Arnoldia* (Rhodesia), 4: 1-59.—Systematic and distributional notes on 150 Zambian species in preparation for a new checklist. *Buphagus erythrorhynchus bestiarum* subsp. nov. is described from southern Rhodesia (p. 4) by Brooke (not the joint authors).—M.A.T.
- BROOKE, R. K. 1970. Taxonomic and evolutionary notes on the sub-families, tribes, genera and sub-genera of the Swifts (Aves: Apodidae). *Durban Mus. Novit.*, 9: 13-24.—A revision of swift classification above the species level. The spine-tailed swifts are made a tribe, Chaeturini, of the subfamily Apodinae, and *Cypseloides* is placed in its own subfamily Cypseloidinae. *Semicollum* subgen. nov., with type *Acanthylis semicollaris* DeSaussure, 1859, and *Hydrochous* subgen. nov., type *Collocalia gigas* Hartert and Butler, 1901, are described.—M.A.T.
- FORD, J. 1970. Variation in the *Sericornis frontalis maculatus* subspecies group. *Emu*, 70: 168-172.—Races treated are *S. f. balstoni* (including *houtmanensis*), *S. f. maculatus*, and *S. f. mellori* (including *condoni* and *mondraini*). Variation is clinal, with step-clines occurring between *maculatus* and *mellori*, and between *maculatus* and *balstoni*. The contact between yellow-bellied *maculatus* and the white-bellied races *balstoni* and *mellori* is apparently secondary.—L.L.S.
- FRITH, C. B. 1970. Sympatry of *Amblyornis subalaris* and *A. macgregoriae* in New Guinea. *Emu*, 70: 196-197.
- FROST, P. G. H., AND W. R. SIEGFRIED. 1970. Notes on the plumage of Buzzards from Socotra. *Bull. Brit. Ornithol. Club*, 90: 136-142.—The Socotran Buzzard is intermediate between *B. buteo* of the Palearctic and *B. oreophilus* of Africa. It is probably a race of *B. buteo* but additional material is needed.—F.B.G.
- HOLYOAK, D. T. 1970. The relation of the parrot genus *Opopsitta* to *Psittaculiro-*

- tris*. Emu, 70: 198.—Suggests merging *Opopsitta* and *Suavipsitta* into *Psittaculirostris*, forming a genus comprised of five species.—L.L.S.
- HOWARD, H. 1970. A review of the extinct avian genus, *Mancalla*. Los Angeles Co. Mus. Contrib. Sci., No. 203: 1–12.—Statistical evidence indicates the presence of two species of this genus of fossil flightless alcids in the Pliocene San Diego Formation. A new species, *Mancalla milleri*, is described for the smaller and more abundant of the two. New locality records for the genus are cited, extending its range into northern California (Humboldt County) and Baja California, Mexico.—H.H.
- HUBBARD, J. P., AND R. C. BANKS. 1970. The types and taxa of Harold H. Bailey. Proc. Biol. Soc. Washington, 83: 321–332.—A critical review that rejects the following of Bailey's subspecies: *Guara alba longirostris*, *Haliaeetus (leucocephala?) floridana*, *Megalornis canadensis woodi*, *Coturnicops noveboracensis richii*, *C. n. emersoni*, *Zenaidura macroura peninsulari*, *Streptopelia risoria alba* (an aviary strain), *Thryothorus ludovicianus alleghani*, *Vireosylva ilivaceus scotti*, *Dendroica discolor collinsi*, *Thryospiza maritimus shannoni*, *Melospiza melodia rossignolii*, and *M. m. alleghanii*. *Bonasa umbellus helmei* is accepted as valid. Several mammals also are rejected.—B.A.H.
- MILLER, W. E. 1971. Pleistocene vertebrates of the Los Angeles Basin and vicinity (exclusive of Rancho La Brea). Bull. Los Angeles Co. Mus. Nat. Hist., Sci. No. 10: 124 pp.—Lists the terrestrial vertebrates from 60 Late Pleistocene sites. Discusses six sites in detail (two of them new) with emphasis on the mammalian fauna, but including records of a dozen or more species of birds. A new locality record for the extinct turkey *Parapavo californicus* is cited from La Mirada on the Los Angeles-Orange County boundary line. The entire terrestrial fauna of the Los Angeles Basin is Late Pleistocene in age, indicating that the basin was, for the most part, inundated by the sea prior to that time.—H.H.
- PARKER, S. A. 1970. Taxonomy of the populations of *Sericornis beccarii* inhabiting Cape York Peninsula. Emu, 70: 69–72.—A historical treatment of lessening gene flow, due to climatic factors, between hybridizing *S. b. minimus* and *S. b. dubius*.—L.L.S.
- PARMELEE, D. F., M. D. SCHWILLING, AND H. A. STEPHENS. 1970. Gruiform birds of Cheyenne Bottoms. Kansas Ornithol. Soc. Bull., 21: 25–27.—An annotated list.—B.A.H.
- ROSS, G. J. B. 1970. The specific status and distribution of *Pogoniulus pusillus* (Dumont) and *Pogoniulus chrysoconus* (Temminck) in southern Africa. Ostrich, 41: 200–204.—The red-fronted *pusillus* and the yellow-fronted *chrysoconus* are allopatric in southern Africa, with orange-fronted birds occurring among the yellow-fronted birds in Transvaal. The author considers the orange-fronted birds color variants of *chrysoconus*, but they vary independently in size from the sympatric populations of *chrysoconus* and may be a distinct taxon. This is obviously a problem for the field, not the closet naturalist.—M.A.T.
- WETMORE, A. 1967. Further systematic notes on the avifauna of Panamá. Proc. Biol. Soc. Washington, 80: 229–242.—Describes *Neocrex columbianus ripleyi* subsp. nov., *Phaeochroa cuvierii furvescens* subsp. nov., *Haplophaedia aureliae galindoi* subsp. nov., *Hylocharis eliciae earina* subsp. nov., *Lampornis castaneoventris homogenes* subsp. nov., *Trogon collaris heothinus* subsp. nov., and *Lysurus crassirostris eurous* subsp. nov. and adds *Myiobus villosus villosus* Sclater and *Myiodynastes chrysocephalus minor* Taczanowski and Berlepsch to the local avifauna.—B.A.H.