

## RECENT LITERATURE

EDITED BY GLEN E. WOOLFENDEN

### ANATOMY AND EMBRYOLOGY

- FISHER, H. I. 1966. Hatching and the hatching muscle in some North American ducks. *Trans. Illinois Acad. Sci.*, **59**: 305-325.—The pre- and early post-hatching development of *M. complexus* is described for eight anatids. The time of occurrence of certain developmental events appears to be correlated with length of incubation period. Changes in bulk of the muscle caused primarily by movement of lymph. Weight of muscle at hatching is roughly correlated with thickness of egg shell. The hatching mechanism in the Ruddy Duck is very different from that of certain dabbling ducks and pochards.—G.E.W.
- HUDSON, G. E., R. A. PARKER, J. V. BERGE, AND P. J. LANZILLOTTI. 1966. A numerical analysis of the appendicular muscles in various genera of gallinaceous birds. *Amer. Midl. Nat.*, **76**: 1-73.—Representatives of 35 genera, from all subfamilies were compared with regard to 125 items of wing and leg myology. Results indicate that recognition of Cracoidea for Megapodiidae and Cracidae is justified. The grouse are considered distinct at the family level. Phasianidae is held to include the Odontophorinae, Phasianinae, Meleagridinae, Numidinae, and Pavoninae. *Opisthocomus* placed in a separate order. An analysis using a scoring system with weighted values was compared with correlation coefficients without weighting.—A.S.G.

### BEHAVIOR

- ADKISSON, C. S. 1966. The nesting and behavior of Mockingbirds in northern lower Michigan. *Jack-pine Warbler*, **44**: 102-116.—At the northern limit of their geographical range, two pairs each of *Mimus polyglottos* occupied about 45 acres, presumably because of the absence of neighboring pairs. Vocalizations of males included ones similar to those of several species which breed only to the south. Includes observations (mainly at one nest) of egg-laying, incubation, brooding, feeding young, and foraging by adults.—R.B.
- ANDREW, R. J. 1966. Precocious adult behaviour in the young chick. *Animal Behav.*, **14**: 485-500.—Of properly stimulated male chicks 20 to 30 per cent attempted copulation with the stimulating object (a human hand) during the first 16 days after hatching, with full copulatory sequence as early as the second day. Similar results obtained for gamecocks; two species of pheasants and guinea fowl showed intense juvenile tid-biting. Frequency of male copulators was not significantly affected by a variety of test experiences related to moving objects in the period of imprinting. Testosterone increased the percentage of male copulators but did not affect females. A mechanism for sexual imprinting and a common mechanism for juvenile tid-biting and social facilitation of feeding are discussed.—A.S.G.
- ANDREW, R. J. 1966. The relation between the following response and precocious adult behaviour in the chick. *Animal Behav.*, **14**: 501-505.—Chicks first tested at one, two, three, and eight days after hatching in visual isolation from moving objects. No significant differences were detected in latency of first approach or length of excursions among age groups or between sexes. Following was given in unreduced intensity at three days and was still elicitable at eight days. Testosterone may facilitate following by males.—A.S.G.

- ANGLES, R. 1966. Feeding association of seabirds with basking sharks. *Brit. Birds*, **59**: 433-434.
- BERGER, A. J. 1966. Head-scratching behavior of some hand-raised birds. *Wilson Bull.*, **78**: 469.
- BERTHOLD, P. 1966. Zum Verhalten nichtbrütender einjähriger Stare (*Sturnus vulgaris*). *Vogelwarte*, **23**: 231-232.—Yearling, non-breeding Starlings often show elements of breeding behavior. (In German.)—H.C.M.
- CANDLAND, D. K., AND D. MILNE. 1966. Species differences in approach-behaviour as a function of developmental environment. *Animal Behav.*, **14**: 539-545.—Young cats, chickens, guppies, and rats were raised alone or in groups and with or without manipulative objects. These were then tested, at various ages, for preference for a homospecific or for an object. All chickens showed a marked preference for animals over objects, that increased with age; the preference was lower in those raised in isolation with objects.—A.S.G.
- COLLIAS, N. E., E. C. COLLIAS, D. HUNSAKER, AND L. MINNING. 1966. Locality fixation, mobility and social organization within an unconfined population of Red Jungle Fowl. *Animal Behav.*, **14**: 550-559.—Flocks of free-ranging banded Red Jungle Fowl at the San Diego Zoo were observed from September, 1962 to April, 1964. The flocks showed locality fixation to small territories centered on roosting sites. Young of the year generally remained near the home roost, although some moved to small peripheral populations which, along with evicted adult males, formed new roosts. Roosting sites remained stable in spite of a high turnover due to mortality.—A.S.G.
- KING, B. 1966. Herring Gulls trying to snatch fish from Great Northern Divers. *Brit. Birds*, **59**: 247.
- McFARLAND, D. J., AND A. B. L'ANGELLIER. 1966. Inhibition of drinking during satiation of feeding behaviour in the Barbary Dove. *Animal Behav.*, **14**: 463-467.—Onset of satiation of feeding behavior was marked by a pause, here interpreted as a shift of attention. With water present, doves drank during pause. Presence of water did not affect the time of occurrence of the pause. Results suggest that osmotic receptors in the digestive tract may be involved.—A.S.G.
- McKINNEY, F. 1965. Spacing and chasing in breeding ducks. *Wildfowl Trust, 16th Annual Report*, pp. 92-106.—An important review of spacing mechanisms in waterfowl, particularly *Anas*. Classic views of avian territoriality cannot be applied except in those species with small home ranges, strong pair-bonds, and a high level of hostility; many chases earlier interpreted as territorial defense are actually attempts to rape strange females. The resulting spacing of nests is regarded as an anti-predator mechanism.—P.A.J.
- MORSE, D. H. 1966. The context of songs of the Yellow Warbler. *Wilson Bull.*, **78**: 444-455.
- NELSON, J. B. 1966. The behaviour of the young Gannet. *Brit. Birds*, **59**: 393-419.—Behavior from hatching to independence, and relationship with parents and other adults, described. "Fledging occurs at 90 days without starvation or any interference from the parents."—H.B.
- NICKELL, W. P. 1966. Ring-necked Pheasant moves newly hatched young. *Wilson Bull.*, **78**: 472.
- PATERSON, A. 1966. Swifts mating in mid-air. *Brit. Birds*, **59**: 308.
- POWER, D. M. 1966. Agonistic behavior and vocalization of Orange-fronted Parakeets in captivity. *Condor*, **68**: 562-581.

- RUSCHI, A. 1963. [The nuptial display of some Amazonian hummingbirds.] Bol. Mus. Biol. Prof. Mello-Leitão, Divulg., **6**: 1-5.—Describes the nuptial display of *Topaza p. pella*, *Popelaira langsdorffi melanosternon*, and *Threnetes leucurus cervinicauda*. (In Portuguese.)—E.E.
- SMITH, F. V., AND W. B. TEMPLETON. 1966. Genetic aspects of the response of the domestic chick to visual stimuli. Animal Behav., **14**: 291-295.—Hereditary factors did not account for the responsiveness to a certain distant visual stimuli.—A.S.G.
- STIMSON, L. A. 1966. Feigned death [of a Sooty Tern]. Florida Nat., **39**: 153.—When approached in a nesting colony, a Sooty Tern first dragged its wings, then fell over on its back and seemed dead; when thrown into the air it flew off.—E.E.
- SUFFERN, C. 1966. Is the flight-sound of the Mute Swan vocal? Brit. Birds, **59**: 344-345.
- THORPE, W. H., AND M. E. W. NORTH. 1966. Vocal imitation in the Tropical Boubou Shrike *Laniarius aethiopicus major* as a means of establishing and maintaining social bonds. Ibis, **108**: 432-435.—Two hand-reared individuals, a female and one of unknown sex caged together for a month developed an antiphonal song pattern. After the female died, the remaining bird persistently sang both parts of the duet for several weeks. Sound spectrograms are included. This case presented as confirmation of the authors' view "that one of the major functions of the imitative ability of birds is to establish and strengthen the social bond."—W.B.R.
- WALKER, K. 1966. Mute Swan taking over broods of Shelducks. Brit. Birds, **59**: 432-433.
- WATERS, E., AND C. J. FEARE. 1966. Purple Sandpipers feeding above the littoral zone. Brit. Birds, **59**: 345-348.

## DISEASES AND PARASITES

- BALLARD, N. B., AND O. W. OLSEN. 1966. Helminths of the Starling, *Sturnus vulgaris vulgaris* L., from northeastern Colorado. J. Parasitol., **52**: 372.—Three cestode, two acanthocephalan, and two nematode species are reported from 48 of 70 birds collected near Fort Collins.—J.S.M.
- BASSINI, E. 1966. [Results of examinations effected on various species of wildlife.] Ric. Zool. appl. alla Caccia, **41**: 1-26. Univ. Bologna.—Reports diseases found in birds and mammals from 1959 to 1965. Coccidiosis was the most common disease of wild animals. (In Italian; English, French, and German summaries.)—E.E.
- BLANKENSHIP, L. H., R. E. REED, AND H. D. IRBY. 1966. Pox in Mourning Doves and Gambel's Quail in southern Arizona. J. Wildl. Mgmt., **30**: 253-257.—Infections were found in only 38 wild Mourning Doves and 11 Gambel's Quail in 1963. The low incidence suggests that it causes little mortality.—J.P.R.
- BOYD, E. M. 1966. Observations on nematodes of herons in North America including three new species and new host and state records. J. Parasitol., **52**: 503-511.—Based on collections from 34 Great Blue Herons, 23 Green Herons, and 7 American Bitterns shot in Massachusetts and Ontario. New species of *Strongyloides*, *Capillaria*, and *Tetrameres* described.—J.S.M.
- BRADSHAW, J. E., AND D. O. TRAINER. 1966. Some infectious diseases of waterfowl in the Mississippi flyway. J. Wildl. Mgmt., **30**: 570-576.—Most significant finding was the presence of Newcastle disease antibodies in 17 per cent of 236 Canada Geese and 14 per cent of 267 Mallards. No evidence of arboviruses and a low incidence of parasitism were found.—J.P.R.
- CHABRECK, R. H. 1965. Sarcosporidiosis in ducks in Louisiana. Trans. 30th N.

- Amer. Wildl. Conf., pp. 174-184.—*Sarcocystis rileyi* reported from 35.7 per cent of 961 adults and 0.4 per cent of 552 immature ducks of nine spp. No seasonal, sex, geographical or infestation rate differences were noted. (From Wildl. Rev., **119**: 58, 1965.)—J.S.M.
- CHIRIAC, E. 1963. Contributii la cunoașterea helmintofaunei păsărilor din R.P.R. Anal. Univ. Buc., Seria științ. Nat. Biol., **12**: 171-180.—Cestodes of 75 birds of 17 species in Rumania are listed and annotated. (French and Russian summaries; from Helminthol. Abstr., **35**: no. 1475, 1966.)—J.S.M.
- FAUST, E. C. 1966. New and previously described dicrocoeline trematodes from Chinese birds. J. Parasitol., **52**: 335-346.—Five new species and nine other trematodes described from 20 bird species representing 11 families, chiefly from the Peking area. Order and family distribution for the 233 avian hosts of the world (34 from China) and summary of the world distribution of the 156 avian dicrocoeline species are tabulated. Distribution, hosts, and host-parasite relationships of avian Dicrocoeliinae discussed.—J.S.M.
- GUOZDEV, E. V. 1962. [Trematodes of game birds in South Kazakhstan.] Tr. Inst. Zool., Alma-Ata, **16**: 89-124.—The 74 species annotated and listed under their hosts: 67 species of game and economically important birds were examined. (In Russian; from Helminthol. Abstr., **35**: no. 1455, 1966.)—J.S.M.
- MAKSIMOVA, A. P. 1962. [Trematodes of wild aquatic birds in the Turgay lakes.] Tr. Inst. Zool., Alma-Ata, **16**: 125-134.—The 35 species annotated and listed under their hosts; 135 birds of 15 species were examined in Kazakh S.S.R.—(In Russian; from Helminthol. Abstr., **35**: no. 1037, 1966.)—J.S.M.
- OSHMARIN, P. G. 1964. [Some new genera and species of trematodes from birds of Vietnam.] Zool. Zh., **43**: 652-661.—Five new flukes described from the intestine of four bird species. (In Russian; English summary; from Helminthol. Abstr., **35**: no. 791, 1966.)—J.S.M.
- SPASSKAYA, L. P. 1962. [Cestodes of birds of Tuva. V. Species from Galliformes and some rapacious birds.] Acta Vet. Hung., **12**: 423-444.—Of 296 galliform birds examined in the U.S.S.R., 46 were infected with 7 species of cestodes; of 73 falconiforms examined, 21 were infected with 10 species. (In Russian; German summary; from Helminthol. Abstr., **35**: no. 198, 1966.)—J.S.M.
- SULTANOV, M. A. 1961. [Distribution of helminth fauna of birds in the Uzbek S.S.R.] Dokl. Akad. Nauk Uzbek. SSR, year 1961, no. 9: 52-54. (In Russian, Uzbek summary)—J.S.M.
- VAN DEN BROEK, E., AND J. JANSEN. 1964. Parasites of animals in the Netherlands. Suppl. 1: Parasites of wild birds. Ardea, **52**: 111-116. (From Wildlife Rev. **118**: 48, 1965.)—J.S.M.
- VANDE VUSSE, F. J. 1966. Sarcocystis (Protozoa: Sarcocystidae) from three new avian hosts. J. Parasitol., **52**: 22.—Iowa records from *Bubo virginianus*, *Tyrannus tyrannus*, and *Toxostoma r. rufum* are new family records for this muscle parasite.—J.S.M.
- WILLIAM, I. C., AND M. P. HARRIS. 1965. The infection of the gulls *Larus argentatus* Pont., *L. fuscus* L., and *L. marinus* L. with Cestoda on the coast of Wales. Parasitology, **55**: 237-256.—Recovery of 11 cestode species from 111 *L. argentatus*, 46 *L. fuscus*, and 148 *L. marinus* are reported. Several new host records. The cestodes did not appear to harm the birds. (From Helminthol. Abstr., **35**: no. 201, 1966.)—J.S.M.

## DISTRIBUTION AND ANNOTATED LISTS

- ADAMS, M. C. 1966. Firecrests breeding in Hampshire. *Brit. Birds*, **59**: 240-246.—First certain nesting records for Britain. A song variant is described.—H.B.
- BAIRD, J., AND K. S. ANDERSON. 1966. Gambel's White-crowned Sparrow collected in Massachusetts. *Condor*, **68**: 601.
- CARTER, W. A. 1966. Bachman's Sparrow in Oklahoma. *Wilson Bull.*, **78**: 475-476.
- CHEKE, A. S. 1966. Notes on sea-birds seen on a journey across the Indian Ocean. *Ibis*, **108**: 628-630.—In early August, 1963, 12 species seen from shipboard, Aden to Penang via Ceylon.—W.B.R.
- DIEN, J., AND H. RINGLEBEN. 1966. Der einflug pelagischer Vogelarten nach Deutschland im Herbst 1963; mit Hinweisen auf Nachbarländer. *Vogelwarte* **23**: 181-190.—The stormy autumn of 1963 brought many unusual pelagic birds to Germany and neighboring countries, including several previously unrecorded species. (In German; English summary.)—H.C.M.
- FUTCHER, A. G., AND L. R. BRAND. 1966. Noteworthy records of shearwaters in the Gulf of California. *Condor*, **68**: 600.
- HARBER, D. D., AND THE RARITIES COMMITTEE. 1966. Report on rare birds in Great Britain in 1965 (with 1958, 1959, 1961, 1962, 1963 and 1964 additions). *Brit. Birds*, **59**: 280-305.—Includes records of 17 North American species.—H.B.
- KUMERLOEVE, H. 1966. Zu Brutverbreitung und Durchzug des Weisstorches, *C. ciconia* (L.), in Kleinasien. *Vogelwarte*, **23**: 221-224.—Breeding distribution and migration of White Storks in Asia Minor. (In German.)—H.C.M.
- MARTENS, J. 1966. Brutvorkommen und Zugverhalten des Weisstorchs (*C. ciconia*) in Griechenland. *Vogelwarte*, **23**: 191-208.—Breeding distribution and migration of the White Stork in Greece. (In German; English summary.)—H.C.M.
- MCCASKIE, G. 1966. The occurrence of longspurs and Snow Buntings in California. *Condor*, **68**: 597-598.
- MCCASKIE, G., R. STALLCUP, AND P. DEBENEDICTIS. 1966. Notes on the distribution of certain icterids and tanagers in California. *Condor*, **68**: 595-597.
- MORTENSEN, C. E. 1965. First Scandinavian record of Wilson's Phalarope (*Phalaropus tricolor*). *Vår Fågelvärld*, **24**: 240-243.—Sight record near Ammarnäs, Swedish Lapland (16°13' E, 65°58' N) on 24 June 1965 by two observers supported by several photos. First observation from European continent, although species has been seen 11 times since 1954 on the British Isles. (In Danish; English summary.)—M.D.F.U.
- MUNTEANU, D. 1965. Schiță avifaunistică a bazinului montan al Bistriței. *Anal. Știin. Univ. "Al. I. Cuza" din Iași, Sect. II a (Biol.)*, **XI**: 103-121.—Survey of the avifauna of the mountainous basin of the Bistrita River, Rumania, including 197 species (60.5 per cent nesting) of 45 families. Categorizes species by habitat (alpine zone; coniferous, beech, mixed, and oak forest; valleys and depressions) and zoogeographic origin (European, 56 per cent of the breeding species; Transpalearctic, 19 per cent; lesser numbers of Siberian, Mongol-Mediterranean, Mediterranean, and Tibetan). (In Rumanian; Russian and French summaries.)—R.B.
- NELSON, M. G. 1966. Key West Quail-dove at Lake Worth [Florida]. *Florida Nat.*, **39**: 154.—Description and photograph of bird seen by many on 3 May 1966.—E.E.
- O'NEILL, J. P. 1966. Notes on the distribution of *Conothraupis speculigera* (Gould). *Condor*, **68**: 598-600.
- PAULSON, D. R. 1966. New records of birds from the Bahama Islands. *Notul. Nat.*, no. 394, 15 pp.—Records of about 60 species (mostly from Bimini, Great

- Abaco, Cat Island, and San Salvador) include both a number that extend known ranges of resident land birds and several North American migrants that are firsts for the West Indies, among them a Snow Bunting.—W.B.R.
- RISING, J. D. 1966. First specimen of the Gray-headed Junco from Kansas. Kansas Ornith. Soc. Bull., **17**: 18.—An adult male, probably *Junco c. caniceps*, taken in Seward County on 29 April 1966.—A.S.G.
- SPRINGER, H. K. 1966. Unusual bird records from Hooper Bay, Alaska. Condor, **68**: 600–601.
- STEVENSON, H. M. 1966. The status of Traill's Flycatcher in Florida. Florida Nat., **39**: 151.—Over 20 fall specimen records but none from spring.—E.E.
- STIMSON, L. A. 1966. A remarkable ten days at the Dry Tortugas. Florida Nat., **39**: 149–150.—Report on birds observed after a southwest storm in early May. Observed on several days were *Chordeiles gundlachii* and *C. acutipennis* (heard trilling and repeatedly observed), as well as two western tyrannids and a Western Tanager. Flocks of arriving Cattle Egrets noted.—E.E.
- TENAZA, K., AND R. TENAZA. 1966. First report of the Starling nesting in San Francisco, California. Condor, **68**: 600.
- TORDOFF, H. B. 1966. Black-headed Gull in Michigan. Jack-pine Warbler, **44**: 147.
- VOOUS, K. H. 1966. Beaudouin's Harrier-eagle *Circaetus beaudouini* in Uganda. Ibis, **108**: 627.—First record.—W.B.R.
- WEHNER, R. 1966. Einfluge der Weissflügelseeschwalbe (*Chidonias leucopterus*) nach Mitteleuropa. Vogelwarte, **23**: 173–180.—Temporal and spatial distribution of visits of the White-winged Black Tern to Central Europe. (In German; English summary.)—H.C.M.

## ECOLOGY AND POPULATION

- BRENNER, F. J. 1966. The influence of drought on reproduction in a breeding population of Redwinged Blackbirds. Amer. Midl. Nat., **76**: 201–210.—A population in Centre Co., Pennsylvania, studied from 1960 through 1964. Average annual precipitation was 6.55 inches below normal, and dominant vegetation of the marsh changed from cattails to sedges. The number of males establishing permanent territories was not affected. Females and nestlings declined to a low in 1963, with some recovery in 1964, a year with heavy rain in April. Apparently rainfall affected population size indirectly through its influence on insect biomass.—A.S.G.
- BRINCK, P., A. SVEDMYR, AND G. VON ZEIPEL. 1965. Migrating birds at Ottenby Sweden as carriers of ticks and possible transmitters of tickborne encephalitis virus. Oikos, **16**: 88–99.—Studies of birds trapped at the Ottenby Bird Station on the island of Öland in the Baltic Sea showed that ticks are carried by numerous bird species. Infestation rates during autumn migration varied from zero to nine per cent. Virological and serological tests were essentially negative.—H.W.K.
- CRAMP, S., AND A. D. TOMLINS. 1966. The birds of Inner London 1951–65. Brit. Birds, **59**: 209–233.—In 1950, 32 species bred in the 40 square mile area; in 1965, 35. Of 30 regular breeding species, 12 increased, 5 decreased in numbers. Over-all density estimated between 18 and 35 birds per 10 acres, with feral pigeons and House Sparrows making up 90 per cent of the total.—H.B.
- ENRIGHT, J. T. 1966. Influences of seasonal factors on the activity onset of the House Finch. Ecology, **47**: 662–666.—In a laboratory study cold ambient temperature caused male birds to awaken later, relative to dawn, than did warm tem-

- peratures when day lengths were held constant. With constant temperature, greater day lengths caused later awakening. Extrapolations to field conditions are discussed.—H.W.K.
- FAIRLEY, J. S. 1966. Analyses of Barn Owl pellets from an Irish roost. *Brit. Birds*, **59**: 338–340.
- GYSEL, L. W. 1966. Ecology of a red pine (*Pinus resinosa*) plantation in Michigan. *Ecology* **47**: 465–472.—A savanna-like area of 1,302 acres in northern Michigan was planted from 1919 to 1923 with red pine. A study in 1939 ascertained changes in the structure of the component plant communities and the composition and density of associated animal populations. This second study makes comparisons with a nearby, unplanted, or natural, community. As the pine forest matured there were fewer mammal and bird species.—H.W.K.
- JONES, R. D., JR. 1965. Returns from Steller's Eiders banded in Izembek Bay, Alaska. Wildfowl Trust, 16th Annual Report, pp. 83–85.—Banding results indicate that wintering populations at Izembek Bay are made up largely of birds that breed in Siberia and that in most years migrate to Izembek Bay prior to molting. However, in 1964 the molt was completed prior to arrival, which was nearly three months later than normal.—P.A.J.
- JONES, R. D., JR., AND D. M. JONES. 1966. The process of family disintegration in Black Brant. Wildfowl Trust, 16th Annual Report, pp. 75–78.—Contrary to previous views regarding family stability in geese, family groups arriving at Izembek Bay, Alaska, during fall migration tended to break up prior to the birds resuming their southward migration. Such family instability has important implications in estimates of productivity.—P.A.J.
- KURY, C. R. 1966. Osprey nesting survey. *Wilson Bull.*, **78**: 470.
- LOERY, G. ET AL. 1966. Thirtieth breeding-bird census. *Aud. Field Notes*, **20**: 604–634, 642–672.—Breeding bird censuses for 1966 from the U. S., Canada, and Mexico (84 localities). Of special interest are the counts in shelter-belt areas of North Dakota, first reported in 1965. The most densely populated habitat reported was a fresh-water marsh in a New York city park.—E.E.
- LOFTS, B., AND R. K. MURTON. 1966. The role of weather, food and biological factors in timing the sexual cycle of Wood Pigeons. *Brit. Birds*, **59**: 261–280.—For males, temperature was of little or no importance in spermatogenesis until March, when active cell division was in progress; then sharp temperature rises accelerated development and drops inhibited it. Winter cold and rainfall seemed unimportant. Good food supply also accelerated spermatogenesis. Females appeared to have an autonomous cycle until about April; the final burst of follicle growth depended on stimuli normally experienced only during courtship.—H.B.
- LÖHRL, H. 1966. Zur Biologie der Trauermeise (*Parus lugubris*). (Mit Bemerkungen über die Untergattung *Poecile*). *J. f. Orn.*, **107**: 167–186.—Field notes on habitat specificity and behavior of the rare Sombre Tit during its reproductive period in the Dalmatian range near Omiš, supplemented by observations on four hand-reared birds taken as nestlings. Among the cold-hardy tits of the subgenus *Poecile*, found predominantly in northern latitudes and mountain habitats at high altitudes, the Sombre Tit is thought to limit its very restricted range to southeastern Europe, Asia Minor, and adjacent Iran to avoid severe nest competition (tree holes) with *Parus major*, which is similar in size. Likewise, *P. cinctus*, next in size to the Great Tit, occupies a northern zone where the latter is again absent. No other tits compete with the Great Tit for nest sites. (In German.)—E.G.F.S.

- PERRINS, C. M. 1966. The effect of beech crops on Great Tit populations and movements. *Brit. Birds*, **59**: 419-432.
- RICKLEFS, R. E. 1966. The temporal component of diversity among species of birds. *Evolution*, **20**: 235-242.—The average length of the breeding season of individual bird species occupied nearly the same proportion of the total breeding season in 11 localities of wide geographic distribution, thus eliminating the temporal component of increased tropical species diversity. Further analysis gives no evidence that closely related sympatric species stagger their nesting seasons. Temporal diversity within the total breeding season resulted from specific feeding differences and availability of food. The longer tropical breeding season differed only in having an expanded time scale. Lower intensity of breeding, smaller clutches, and lower nesting success may reduce interspecific competition.—G.E.W.
- SNOW, D. W. 1965. A possible selective factor in the evolution of fruiting seasons in tropical forests. *Oikos*, **15**: 274-281.—Fruiting seasons of 19 morphologically and ecologically similar species of *Miconia* (Melastomaceae) were spread out evenly throughout the year. Fruit produced is important in diet of smaller frugivorous birds such as manakins and tanagers. Staggered fruiting seasons may have evolved through interspecific competition and dispersal of seeds by birds to favorable clearings, may have been important.—H.W.K.
- USPENSKI, S. M. 1965. The geese of Wrangel Island. Wildfowl Trust, 16th Annual Report, pp. 126-129.—The first summary of breeding data for Lesser Snow Geese for this island in the East Siberian Sea. In 1960 and 1964 there were 130,000 and 114,000 occupied nests, respectively, making this the major nesting center of this goose. Pacific Brant also breed and molt there in much smaller numbers.—P.A.J.
- WARBURG, M. R. 1965. The evolutionary significance of the ecological niche. *Oikos*, **16**: 205-213.—A review of the niche concept and an analysis of its evolutionary significance. Although resulting from studies on mesic- and xeric-inhabiting isopods, principles discussed apply to all living forms.—H.W.K.
- WEBSTER, J. D. 1966. An analysis of winter bird-population studies. *Wilson Bull.*, **78**: 456-461.
- WILLIS, E. O. 1966. Interspecific competition and the foraging behavior of Plain-brown Woodcreepers. *Ecology*, **47**: 667-672.—A detailed study of competition between this woodcreeper and other bird species that eat army ants in Central and South America. The woodcreeper forages in a narrower but more productive zone when interspecific competition is low. Where ground foraging competitors occur the woodcreeper moves to higher or peripheral and less productive zones.—H.W.K.
- ZWICKEL, F. C. 1966. Winter food habits of Capercaille in north-east Scotland. *Brit. Birds*, **59**: 325-336.

## EVOLUTION AND GENETICS

- CHEKE, A. S. 1966. Sparrows in Corsica and Sardinia. *Ibis*, **108**: 630-631.—Although *Passer (domesticus) italiae* and *P. (d.) hispaniolensis* intergrade clinally on the Italian peninsula, no evidence of gene flow was found between populations of *italiae* in Corsica and *hispaniolensis* in Sardinia. Isolating effects of the narrow sea barrier (six miles wide) are probably reinforced by a wider belt of inhospitable habitat in southern Corsica.—W.B.R.
- DILLON, L. S. 1966. The life cycle of the species: An extension of current concepts. *Syst. Zool.*, **15**: 112-126.—A suggested "life cycle" of a species divided into four portions: neospecies are characterized by increasing range and abundance and no

subspeciation (e.g., Starling in North America); mesospecies have stable range boundaries, high abundance, and subspeciation (Song Sparrow); euspecies have stable boundaries and high abundance, but reduced subspeciation (Mourning Dove); telospecies are marked by reduced range and abundance and no subspeciation (Whooping Crane). The stages need not follow this sequence. The mesospecies, via the return of some subspecies to the neospecies stage, is the primary source of new species.—A.S.G.

- GILLHAM, E., J. M. HARRISON, AND J. G. HARRISON. 1966. A study of certain *Aythya* hybrids. Wildfowl Trust, 17th Annual Report, pp. 49-65.—Hybridization under wild conditions among various species of pochards (*Aythya*) produced plumage patterns among males that often closely resemble other species. Male hybrids resembling Lesser Scaups may result from two different hybrid combinations, neither of which involves Greater Scaup. Speculations on the possibility of species formation by reticulate evolution in the pochards are presented.—P.A.J.
- JOHNSON, N. K. 1966. Bill size and the question of competition in allopatric and sympatric populations of Dusky and Gray flycatchers. *Syst. Zool.*, **15**: 70-87.—Analysis of bill size and shape, comparing allopatric and sympatric populations, revealed no evidence of character displacement, implying the lack of interspecific competition for food. Sexual dimorphism in bill indicated intraspecific competition. Different niches within and between the two species are also suggested by differences in wing shape. (From author's abstract.)—A.S.G.
- SHARPE, R. S., AND P. A. JOHNSGARD. 1966. Inheritance of behavioral characters in  $F_2$  Mallard  $\times$  Pintail (*Anas platyrhynchos* L.  $\times$  *Anas acuta* L.) hybrids. *Behaviour*, **27**: 259-272.—Data from the study of 11  $F_2$  male hybrids allowed the establishment of a hybrid index based on behavior. All hybrids performed individual displays, or parts thereof, almost identical with those of the parental species where such are similar in both species, or performed intermediate displays where such differ in the parental species. Hybrids performed displays unique to one or the other parent types in an "all or none" fashion, and no displays not typical of one or both parental species were performed. A significant positive correlation ( $r = +0.756$ ) between inheritance of behavioral and plumage characteristics in the  $F_2$ 's supports the theory of genetic control of both, probably by means of a few genes.—G.E.W.

#### GENERAL BIOLOGY

- BAPTISTA, L. F. 1966. Albinistic feathers in storm petrels (Hydrobatidae). *Condor*, **68**: 512-514.
- BENGSTON, S. A. 1966. Field studies on the Harlequin Duck in Iceland. Wildfowl Trust, 17th Annual Report, pp. 79-94.—A highly informative paper on breeding biology, based on five years of study. The species is shown to be a much more efficient diver in rushing streams than are other ducks of the area.—P.A.J.
- BEVEN, G. 1966. Studies of less familiar birds: Black Woodpecker. *Brit. Birds*, **59**: 233-240.—Summary of data on habitat, range, voice, general habits, breeding, and food.—H.B.
- COLTHERD, J. B. 1966. The domestic fowl in ancient Egypt. *Ibis*, **108**: 217-223.—The earliest known reference to the chicken is in the Indus Valley civilization, ca. 2500 B.C. From India it spread, probably in trade, to Mesopotamia by ca. 2200 B.C., and to Egypt by ca. 1850 B.C.; but it was apparently rare in Egypt for another millenium. Belief that chickens were known to the Egyptians at a

- much earlier time rests on interpretation of two hieroglyphs now thought to represent quail and guinea fowl.—W.B.R.
- DORNEY, R. S. 1966. A new method for sexing Ruffed Grouse in late summer. *J. Wildl. Mgmt.*, **30**: 623-625.—Of 1,518 birds about two-thirds of adults and one-half of juveniles could be sexed, with an error of one to four per cent, by measuring the length of a single barb 50 mm from the tip of the central tail feather. The remaining birds fell into an area of overlap.—J.P.R.
- DREWIEN, R. C., R. J. VERNIMEN, S. W. HARRIS, AND C. F. YOCOM. 1966. Spring weights of Band-tailed Pigeons. *J. Wildl. Mgmt.*, **30**: 190-192.—Weights of 386 adults and 10 juveniles on the Humboldt State College campus, Arcata, California.—J.P.R.
- FRENCH, R. P. "1965" (rec'd 1 November 1966). The nesting behaviour of the Yellow-bellied Seedeater. *Caribbean J. Sci.*, **5**: 149-156.—Observations at three nests (two unsuccessful) of *Sporophila nigricollis* in Trinidad included: nest-building, 5 to 12 days; clutch-size, 2; incubation period, ca. 12 days; and fledging period, ca. 10 days. Incubation and care of young was mainly by the female. The successful pair started a second nest eight days after the first brood fledged.—W.B.R.
- FREDGA, K., AND I. FRYCKLUND. 1965. The ringing activity at the Ledskär Bird Station in 1957-1963. *Vår Fågelvärld*, **24**: 193-217.—First report of this banding station on the Baltic coast of Central Sweden, about 90 km north of Uppsala. A total of 15,578 birds banded and 189 recoveries reported, some being discussed in detail; with maps and tables. (In Swedish; English summary.)—M.D.F.U.
- FREEMYER, H. R. 1966. Nesting Red-tailed Hawks in Lyon County, Kansas. *Kansas Ornith. Soc. Bull.*, **17**: 15-16.—Notes on placement, structure, and success of 22 nests.—A.S.G.
- HARFORD, H. 1966. Tufted Titmouse destroys bagworms. *Wilson Bull.*, **78**: 474.
- JEHL, J. R., AND D. J. T. HUSSELL. 1966. Effects of weather on reproductive success of birds at Churchill, Manitoba. *Arctic*, **19**: 185-191.—A severe wind and rain storm in July caused extensive mortality from exposure among passerine bird nestlings. Few non-passerine species and nests containing only eggs were affected. Poor survival of altricial passerine young resulted from their inability to withstand, or escape, the cold, wet, and windy conditions.—G.E.W.
- JONES, R. E. 1966. Spring, summer, and fall foods of the Columbian Sharp-tailed Grouse in eastern Washington. *Condor*, **68**: 536-540.
- KAMMERAAD, J. W. 1966. Further notes on nesting and survival of Yellow Warblers. Jack-pine Warbler, **44**: 124-129.—In nest building, females often used materials from their previous nest (sometimes completely dismantling it) or the nearby nests of other females. Territory size decreased from early to late summer, possibly because of immigration of birds from areas that proved unfavorable. Of 26 eggs in nine nests, 9 young fledged.—R.B.
- LABISKY, R. F., AND G. L. JACKSON. 1966. Characteristics of egg-laying and eggs of yearling pheasants. *Wilson Bull.*, **78**: 379-399.
- LANYON, W. E. 1966. Melanism in the Ovenbird. *Wilson Bull.*, **78**: 474-475.
- MUELLER, H. C., N. S. MUELLER, AND R. W. MUELLER. 1966. Rough-legged Hawk catches fish. *Wilson Bull.*, **78**: 470.
- NICKELL, W. P. 1966. The nesting of the Black-crowned Night Heron and its associates. Jack-pine Warbler, **44**: 130-139.—In colony on Harsen's Island, St. Clair Co., Michigan, there were 500 to 1,097 active nests, 1951-56, located about

- 6.5 feet up in stand of willows in an extensive marsh. In Kent Co., Ontario, nests were in open marsh and made of dead leaves of cattails piled high enough to protect eggs from the water. Clutch size was 3.4 eggs based on a sample in late April. Regurgitated food for young consisted of leeches, giant water bugs, and water beetles. Of 2,850 young banded, 47 recoveries (86 per cent three years old or less) showed a scattering before a general southward movement. Common Grackles and Red-winged Blackbirds scavenged in the nests.—R.B.
- NICKELL, W. P. 1966. Ring-necked Pheasants hatch in nest of Blue-winged Teal. *Wilson Bull.*, **78**: 472-474.
- RAITT, R. J., AND R. D. OHMART. 1966. Annual cycle of reproduction and molt in Gambel Quail of the Rio Grande Valley, southern New Mexico. *Condor*, **68**: 541-561.
- RECHER, H. F. 1966. Some aspects of the ecology of migrant shorebirds. *Ecology*, **47**: 393-407.—Ecological relationships among migrant waders studied, including distribution, migration dates, habitat preferences, food organisms, stomach contents, and species diversity. Environmental conditions encountered during migration and interactions with other individuals are important factors in the evolution of morphological and behavioral differences of shorebird species.—H.W.K.
- ROWLEY, J. S. 1966. Breeding records of birds of the Sierra Madre del Sur, Oaxaca, Mexico. *Proc. Western Found. Vert. Zool.*, **1**(3): 107-204.—This Booklet, with maps and photographs in color and in half-tone, illustrating habitats and nests, gives information on the breeding of 108 species, including, for 95, descriptions of nests and many eggs. A variety of pertinent and often new data on breeding activity and other behavior included. Enlarged testes in males are not sufficient evidence for the time or even the place of breeding, for in tropical birds, especially hummingbirds, males may be in breeding condition for much longer period than females.—E.E.
- SHARLAND, R. E. 1966. Bird ringing in Nigeria, 1965. Eighth annual report. *Nigerian Field*, **31**: 185-188.—About 4,000 of the 5,096 birds banded were Yellow Wagtails (*Montacilla flava*). This species provided the bulk of the recoveries and returns.—W.B.R.
- SMITH, R. W. 1966. A case of xanthochroism in the Yellow-faced Grassquit *Tiaris bicolor*. *Ibis*, **108**: 627-628.—Most of the plumage of an adult male banded in Jamaica was "a very pale primrose yellow." The bird was aggressive and persistently drove other grassquits away from feeders.—W.B.R.
- STEWART, P. A. 1966. Running speed of Bobwhite. *Wilson Bull.*, **78**: 318.
- VINCE, M. A. 1966. Artificial acceleration of hatching in quail embryos. *Animal Behav.*, **14**: 329-394.—Single eggs from clutches of Japanese and Bobwhite quail, on stimulation by sound or vibration for approximately 48 hours, tended to hatch before unstimulated eggs from the same clutch.—A.S.G.

## MANAGEMENT AND CONSERVATION

- BERGER, A. J. 1966. Experiences with insectivorous birds in captivity. Jack-Pine Warbler, **44**: 65-73.—Comments on small aviaries and diet.—R.B.
- BERGERUD, A. T., AND W. E. MERCER. 1966. Census of the Willow Ptarmigan in Newfoundland. *J. Wildl. Mgmt.*, **30**: 101-113.—Tests of direct count, King strip census, Lincoln index, becking count, and aerial census suggested that becking and aerial counts were sufficiently accurate for management purposes.—J.P.R.
- DECINO, T. J., D. J. CUNNINGHAM, AND E. W. SCHAFER. 1966. Toxicity of DRC-

- 1339 to Starlings. *J. Wildl. Mgmt.*, **30**: 249-253.—DRC-1339 is highly toxic to Starlings. Most other birds, especially hawks and House Sparrows and mammals are more resistant. The margin of safety is less for some game birds. There appears to be little danger that carnivorous birds and mammals will be killed by eating poisoned Starlings.—J.P.R.
- EATON, R. L. 1966. Protecting metal Wood Duck houses from raccoons. *J. Wildl. Mgmt.*, **30**: 428-430.—Structural modifications of houses are recommended because of methods used by raccoons to gain entry to Illinois-type metal houses.—J.P.R.
- GATES, J. M., AND G. E. OSTROM. 1966. Feed grain program related to pheasant production in Wisconsin. *J. Wildl. Mgmt.*, **30**: 612-617.—A 10 per cent increase in pheasant production is attributed to the Federal Feed Grain Program. Recommendations are made for improving production on Program lands.—J.P.R.
- HARTUNG, R., AND G. S. HUNT. 1966. Toxicity of some oils to waterfowl. *J. Wildl. Mgmt.*, **30**: 564-570.—All of several oils tested caused lipid pneumonia, gastrointestinal irritation, fatty livers, and adrenal cortical hyperplasia. Toxicity of ingested oils plays a definite role in waterfowl mortalities due to oil pollution.—J.P.R.
- KEITH, J. O., AND M. S. MULLA. 1966. Relative toxicity of five organophosphorus mosquito larvicides to Mallard ducks. *J. Wildl. Mgmt.*, **30**: 553-563.—Mallards survived short-term exposures to Baytex and Parathion at 5 ppm in their food, but chronic exposure to 25 ppm were fatal. SD-7438, Sumithion, and Guthion would be less hazardous. No apparent effects noted in field enclosure tests.—J.P.R.
- KORSCHGEN, L. J. 1966. Foods and nutrition of Ruffed Grouse in Missouri. *J. Wildl. Mgmt.*, **30**: 86-100.—Analysis of 7,000 samples of Ruffed Grouse droppings collected year-round from three recently stocked areas revealed 85 per cent of foods came from understory plants, forbs, and grasses. Hop hornbeam was a major winter food. The need for mixed vegetative types in grouse habitat is emphasized.—J.P.R.
- LEWIS, J. B., AND R. P. BREITENBACH. 1966. Breeding potential of subadult wild Turkey gobblers. *J. Wildl. Mgmt.*, **30**: 618-622.—Testes of 14 of 50 subadults shot in spring hunting seasons in Missouri contained mature sperm. Testes development in subadults may be related to social status and population density and may affect the age ratio of the kill. Management implications are discussed.—J.P.R.
- LOCKE, L. N., N. J. CHURA, AND P. A. STEWART. 1966. Spermatogenesis in Bald Eagles experimentally fed a diet containing DDT. *Condor*, **68**: 497-502.
- LUDWIG, J. P., AND C. S. TOMOFF. 1966. Reproductive success and insecticide residues in Lake Michigan Herring Gulls. *Jack-pine Warbler*, **44**: 77-85.—On the mainland next to Bellow Island gullery hundreds of tons of insecticides are used annually on orchards; around Pismire Island the known use of insecticides has been slight. Survival to fledging in 1965 was estimated as 0.4 chicks per pair at Bellow Island and 1.2 at Pismire. The difference in mortality was mostly in the egg stage, probably because of a high percentage of severely cracked eggs. Insecticide (DDT, TDE, dieldrin) residues were about 20 per cent higher in tissues of adults at Bellow Island; residues in eggs were similar in the two areas. Gulls at Bellow Island were noticeably more aggressive; it is possible that cracking of the eggs was by adults whose behavior was affected by chronic poisoning.—R.B.
- MALONE, C. R., AND V. W. PROCTOR. 1966. Rearing Killdeers for experimental purposes. *J. Wildl. Mgmt.*, **30**: 589-594.—Details of rearing, housing, and feeding of 62 Killdeers given.—J.P.R.

- MARTINSON, R. K. 1966. Proportion of recovered duck bands that are reported. *J. Wildl. Mgmt.*, **30**: 264-268.—Band reporting rates decreased from 52 to 32 per cent in the United States between 1960 and 1962, concurrent with restrictive hunting regulations, increased duck banding, and changes in methods of relaying information to those reporting bands.—J.P.R.
- MCEWEN, L. C., AND R. L. BROWN. 1966. Acute toxicity of dieldrin and malathion to wild Sharp-tailed Grouse. *J. Wildl. Mgmt.*, **30**: 604-611.—In Montana, 52 adult male grouse were live-trapped, given single oral doses of insecticide or lactose, and released. The LD50 of dieldrin was 6.9 mg/kg, and of malathion between 200 and 240 mg/kg. Birds with sub-lethal doses showed changes in social status and breeding behavior and may have been more vulnerable to predation.—J.P.R.
- MILLS, H. B., W. C. STARRETT, AND F. C. BELLROSE. 1966. Man's effect on the fish and wildlife of the Illinois River. *Illinois. Illinois Nat. Hist. Surv., Biol. Notes* no. **57**: 24 pp.—Siltation, pollution by sewage and industrial wastes, loss of floodplain lakes to agriculture, and water level changes caused by impoundment have substantially destroyed the natural resources of this river. Despite less pollution in recent years, adverse changes (particularly of bottom fauna and aquatic plants) continue, apparently from cumulative pollution effects. Since the mid-1950's, Lesser Scaup, Ring-necked Ducks, and Canvasback declined from an average of 1.5 million annually to about 125,000; a fall flight of up to 15,000 Double-crested Cormorants disappeared; and sharp decreases of nesting Great Blue Herons and Common Egrets are suspected.—W.B.R.
- STEPHEN, W. J. D., R. S. MILLER, AND J. P. HATFIELD. 1966. Demographic factors affecting management of Sandhill Cranes. *J. Wildl. Mgmt.*, **30**: 581-589.—Using existing criteria, Sandhill Cranes at Last Mountain Lake, Saskatchewan, could not be separated into different subspecies and appeared to represent a single population. Cranes are lightly hunted but annual recruitment is low and population data are needed for management.—J.P.R.
- STIRLING, I., AND J. F. BENDELL. 1966. Census of Blue Grouse with recorded calls of a female. *J. Wildl. Mgmt.*, **30**: 184-187.—Territorial males were censused by their response to the recorded precopulatory calls of a female. The method is fast and accurate.—J.P.R.

## MIGRATION AND ORIENTATION

- CALDWELL, L. D., AND G. L. WALLACE. 1966. Collections of migrating birds at Michigan television towers. Jack-pine Warbler, **44**: 117-123.—Data from seven towers, 1959-64. Within spring or fall samples, the rank in abundance changed little between years. Very similar species composition of samples from towers up to 30 miles apart.—R.B.
- DAVIS, P. 1966. The great immigration of early September 1965. *Brit. Birds*, **59**: 353-375.—Analyzes record numbers of migrants on England's east coast and some cross-Channel areas. Evidently most birds were part of the SSW-oriented stream from Scandinavia to Iberia, and were disoriented, concentrated, and forced down by overcast and heavy rain.—H.B.
- KOCH, A., D. MAGNUS, H. SEILKOPF, AND H. BARON (COMMENTARY BY E. SCHÜZ). 1966. Der Weisstorch-Zug im Raum Sinai bis Kena in landschaftsmorphologischer Sicht. *Vogelwarte*, **23**: 209-220.—A study of migration of White Storks around the eastern Mediterranean and in northeastern Africa. Topography and ecology of the areas along the migration route are emphasized. (In German.)—H.C.M.

- KRAMER, P. 1966. Der Eisvogel (*Alcedo atthis*) auf dem Zug in und durch die Camargue. Vogelwarte, **23**: 164-172.—Migration observations and band recoveries of Kingfishers in the Camargue, southern France. (In German; English summary.)—H.C.M.
- MICHENER, M. C., AND C. WALCOTT. 1966. Navigation of single homing pigeons: airplane observations by radio-tracking. Science, **154** (no. 3747): 410-413.—Pigeons flown repeatedly to points 35 to 40 miles from their loft never homed twice by the same route; all routes were within 10 miles of a straight line. When they could not see the sun, the pigeons perched until it came out again. Pigeons apparently navigated by sun-compass orientation, perhaps using landmarks as rough reference points. Within about 10 miles of the loft, they seemed to rely only on landmarks, homing whether or not they could see the sun. From unfamiliar, distant points, pigeons flew in the trained compass direction seemingly until lack of known landmarks showed them the course was incorrect. Then, they usually re-oriented correctly probably by true, bi-coordinate navigation.—W.B.R.
- RICHARDSON, W. J. 1966. Weather and late spring migration of birds into southern Ontario. Wilson Bull., **78**: 400-414.
- ROOS, G. 1965. Notes from Falsterbo Bird Station, summer and autumn 1962. Vår Fågelvärld, **24**: 257-271.—Day to day data on birds that show migratory restlessness, or actually fly out over the Baltic, in the midsummer months. Irruptions of crossbills and of *Dendrocopos* and other woodpeckers mentioned. (In Swedish; English summary.)—M.D.F.U.

## MISCELLANEOUS

- COPPINGER, R. P., AND B. C. WENTWORTH. 1966. Identification of experimental birds with the aid of feather autographs. Bird-Banding, **37**: 203-205.—The bird's own pollex was grafted on the crown where it continued to produce feathers.—G.E.W.
- CROUCH, D. E., AND L. S. CROUCH. 1966. A portable avian egg incubator. J. Wildl. Mgmt., **30**: 187-189.—An insulated plywood box with a light-bulb and thermostat, used to transport partly incubated eggs over 300 miles.—J.P.R.
- HEIN, D., AND A. O. HAUGEN. 1966. Illumination and Wood Duck roosting flights. Wilson Bull., **78**: 301-308.
- HEWITT, O. H., AND P. J. AUSTIN-SMITH. 1966. A simple wing tag for field marking birds. J. Wildl. Mgmt., **30**: 625-627.—Colored nylon wing tags, fastened around the humerus, used to mark 1,365 birds of five species. No injuries, feather wear, or changes in behavior were noted.—J.P.R.
- KOEPCKE, M. 1965. Ornithologische Forschungen in Peru. Peruanische Post, no. 29, 15 July 1965.—Ornithological workers in Peru. (In German.)—E.E.
- LEVY, S. H., J. J. LEVY, AND R. A. BISHOP. 1966. Use of tape recorded female quail calls during the breeding season. J. Wildl. Mgmt., **30**: 426-428.—Males of Harlequin, Gambel's, and Scaled quail in breeding condition readily responded to tape recorded female calls. The technique may be useful in population studies of these birds.—J.P.R.
- MOHR, C. O., AND W. A. STUMPF. 1966. Comparison of methods for calculating areas of animal activity. J. Wildl. Mgmt., **30**: 293-304.—Methods for calculating areas of animal activity compared, including those commonly used for birds. Since many home ranges are elongate, both practical and theoretical considerations require that this be recognized.—J.P.R.
- OELKE, H. 1966. 35 years of breeding-bird census work in Europe. Aud. Field

- Notes, **20**: 635-642.—Discussion of methods and rules as related to density, variety, and area.—E.E.
- RUSCHI, A. 1963-1966. [The common names of Brazilian hummingbirds. (Trochilidae—Aves).] Bol. Mus. Biol. Prof. Mello-Leitão, Divulg. **5**: 7-32.—A nominal list (without indication of distribution) of the species and subspecies of Brazilian hummingbirds, with one or more Brazilian names and an English name. Subsequent bulletins (7 to 32, inclusive) are separate lists of similar format for each of the states, territories, and federal district of Brazil. (In Portuguese; English summary).—E.E.
- RUSCHI, A. 1966. Hummingbirds bibliography of A. Ruschi. 1949-1966. Bol. Mus. Biol. Prof. Mello-Leitão, Ser. Divulg., **33**: 1-8.—His 84 publications on hummingbirds listed with full title and dates.—E.E.
- SALTER, S. H. 1966. A note on the recording of egg activity. Animal Behav., **14**: 41-43.—Technique described for recording movement and sound produced by incubating avian embryos. The system may be reversed for stimulus input to the egg.—A.S.G.
- VAN VELZEN, W. T. 1966. Das amerikanische Bird-Banding-Programm. Vogelwarte, **23**: 161-163.—A thumbnail sketch of bird-banding activities in North America (In German.)—H.C.M.
- WARHAM, J., W. R. P. BOURNE, AND H. F. I. ELLIOTT. 1966. Albatross identification in the north Atlantic. Brit. Birds, **59**: 376-384.

## PHYSIOLOGY

- ALGAUHARI, A. E. I., AND F. I. AMER. 1966. Comparative studies on the islets of Langerhans in granivorous and carnivorous birds. Zool. Anz., **176**: 254-258.—Compares the pancreatic tissues of *Columba livia* and *Falco tinnunculus*. Islets of Langerhans are small and diffuse in the pigeon and larger in the falcon. In the pigeon most of the islets composed of alpha-cells (glucagon secreting); in the falcon, beta-cells (insulin secreting) more numerous and larger than alpha-cells. The differences may be related to the diets of the two species.—R.G.W.
- ASCHOFF, J. 1966. Circadian activity pattern with two peaks. Ecology, **47**: 657-662.—Experimental studies on *Chloris chloris*, *Fringilla montifringilla*, and *F. fringilla* indicate that the basic double-peaked pattern of locomotor activity (dawn and dusk) is a persistent property of the circadian (24-hour) oscillating system. This endogenous pattern persists in artificial light-dark cycles with and without interposed twilight.—H.W.K.
- BARTHOLOMEW, G. A. 1966. The role of behavior in the temperature regulation of the Masked Booby. Condor, **68**: 523-535.
- BERG, W., A. JOHNELS, B. SJÖSTRAND, AND T. WESTERMARK. 1966. Mercury content in feathers of Swedish birds from the past 100 years. Oikos, **17**: 71-83.—A study on the mercury content of feather shafts of galliforms (three species), falconiforms (four), strigiforms (three) and one passerine. Beginning in the 1940's and 50's, Hg concentrations increased to at least 10 to 20 times the constant levels found in specimens from 1840 to 1940. Alkyl-Hg compounds used as seed dressings indicated as being chiefly responsible for this increase. The higher up the food chain, the greater was the concentration of Hg compounds.—H.W.K.
- BLÖSCH, M. 1966. Die Aktivität der Salzdrüsen; Eine Untersuchung an frieliebenden und gefangenen Silbermöwen, *Larus argentatus*. Vogelwarte, **23**: 225-231.—Ob-

- servations of nasal-salt secretion in free-living and captive gulls. Periods of secretion and associated behavior are described. (In German.)—H.C.M.
- EL-WAILLY, A. J. 1966. Energy requirements for egg-laying and incubation in the Zebra Finch, *Taeniopygia castanotis*. *Condor*, **68**: 582-594.
- FRASER, R. C. 1966. Polypeptide chains of chick embryo hemoglobins *Biochem. Biophys. Res. Comm.*, **25**: 142-146.—Electrophoretic studies show three hemoglobin types consisting of three different polypeptide chains in seven-day *Gallus gallus* embryos. There is a sequence in the development of the various hemoglobins during embryogenesis, and the mechanism for this control is discussed.—A.H.B.
- GEELEHOED, S. E., AND J. L. CONKLIN. 1966. An electrophoretic study of proteins in chick embryonic fluids. *J. Exp. Zool.*, **162**: 257-262.—Acrylamide gel electrophoresis of serum, allantoic and amniotic fluids, and egg white in 7 to 18 day chicks. Most amniotic fluid proteins are probably derived from the albumin sac, those of the allantoic fluid, from the serum. There seems to be some selectivity in the fractions passing from plasma to allantoic fluid.—A.S.G.
- HASHIMOTO, K., AND F. H. WILT. 1966. The heterogeneity of chicken hemoglobin. *Proc. Natl. Acad. Sci.*, **56**: 1477-1483.—Fractionation by chromatography and starch-gel electrophoresis showed a minimum of five adult hemoglobin types, all differing from one another primarily in one of the two sub-unit components. There are at least three hemoglobin types in the five-day embryo, also differing among each other in one of the two sub-unit components. Embryonic hemoglobin types differ from adult types in both sub-unit components.—A.H.B.
- HOSICK, H. L. 1966. The influence of light intensity on oviposition of the Coturnix Quail. *Wilson Bull.*, **78**: 434-443.
- MANWELL, C., C. M. BAKER, AND T. W. BETZ. 1966. Ontogeny of haemoglobin in the chicken. *J. Embryol. Exp. Morph.*, **16**: 65-81.—Electrophoresis and peptide analysis showed that *Gallus gallus* embryos (three-five days old) produce three hemoglobins incorporating five separate peptide chains. These differ from the two hemoglobins of the later embryo and adult, although they appear to have two polypeptide chains in common. Oxygen equilibria and Bohr effect of adult and early embryos are very different. The change from embryo to adult hemoglobin production occurs at the end of day five of incubation.—A.H.B.
- ROGERS, D. T., JR., AND E. P. ODUM. 1966. A study of autumnal postmigrant weights and vernal fattening of North American migrants in the tropics. *Wilson Bull.*, **78**: 415-433.
- SIMONS, J. A. 1966. The ontogeny of the multiple molecular forms of hemoglobin in the developing chick under normal and experimental conditions. *J. Exp. Zool.*, **162**: 219-230.—Chromatography on carboxymethyl cellulose showed that seven-day-old *Gallus gallus* embryos produced four hemoglobin molecules. Later the frequencies of the four forms changed and a fifth appeared. There was no change after hatching. The adaptive advantage of multiple forms with different physiological characteristics may relate to the variable oxygen availability during development.—A.H.B.

## TAXONOMY AND PALEONTOLOGY

- JOHNSGARD, P. A. 1965. Observations on some aberrant Australian Anatidae. Wild-fowl Trust, 16th Annual Report, pp. 73-83.—Behavioral features of the little-studied Freckled Duck (*Stictonetta naevosa*) support anatomical evidence suggesting anserine affinities. The shoveler-like Pink-eared Duck (*Malacorhynchus membranaceus*) is

- evidently a dabbling duck having convergent behavioral and structural adaptations in common with the true shovelers.—P.A.J.
- JOHNSGARD, P. A. 1966. The biology and relationships of the Torrent Duck. Wildfowl Trust, 17th Annual Report, pp. 66-74.—Field observations on nearly all of the described forms of Torrent Ducks (*Merganetta*) support the view that only a single species should be recognized and that several of the described subspecies are probably invalid. The genus should either be shifted to the perching duck tribe or be given separate tribal status and placed adjacent to the perching ducks.—P.A.J.
- MONROE, B. L., JR., AND T. R. HOWELL. 1966. Geographic variation in Middle American parrots of the *Amazona ochrocephala* complex. Occ. Pap. Mus. Zool., Louisiana State Univ., no. 34, pp. 1-18.—Seven races recognized for Middle America, including three that are first described herein, namely *Amazona ochrocephala magna*, *A. o. belizensis*, and *A. o. parvipes*. Three groups of populations may be recognized in the species complex, yellow-headed, yellow-naped, and yellow-crowned types.—G.E.W.
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